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Bhutan Telecom Ltd.

REQUEST FOR PROPOSAL (RFP)

CONVERGED BUSINESS SUPPORT SYSTEM (CBSS)

BT DigitalCore | Next-Generation Converged Digital BSS Platform

Item	Detail
RFP Reference	BT DigitalCore CBSS RFP V1.61
Issue	V1.61 Final Issue
Document status	Final Issue for Release
Issue date	2nd October 2026
Bid validity	180 calendar days
Contract type	Supply, integration, migration, commissioning, warranty and AMC
Classification	Confidential
Owner	BIA/IT, with business, network, finance, procurement, security and other BT stakeholders
Bid submission period	Closing date: 10 November 2026 at 11:30 AM Bhutan Standard Time (UTC+6), as stated in Section 2
Bidding currency	BTN, INR and USD
Implementation duration	Nine (9) months from contract/PO commencement
Parallel operation	November-December 2027
Production Go-Live / GA	1 January 2028
Warranty	12 months from Production Acceptance; Year 1 under full warranty
AMC	Seven (7) consecutive annual AMC years following Warranty; quote AMC Year 1 through AMC Year 7 separately; BT annual call-off

0. DOCUMENT CONTROL, RESPONSE CODES AND INTERPRETATION

0.1 Core Interpretation Rules

- Priority convention, coding and ordering: M = Must and is the DEFAULT classification for all committed Day-1 CBSS functional, non-functional, integration, migration, security, operational and acceptance requirements. S = Should and is reserved principally for genuine future-readiness, separately activatable future commercial capabilities, or recommended priced options not required for initial operational acceptance. C = Could and shall be used sparingly for optional innovation/value-add. M does not automatically mean MPF/pass-fail and does not necessarily mean OOTB; an M requirement may be delivered through released OOTB functionality, configuration, or included customization/integration unless the requirement explicitly states otherwise. Every priority-bearing requirement ID embeds M/S/C as DOMAIN-M###, DOMAIN-S### or DOMAIN-C###. Requirements are presented M first, then S, then C. Any priority change requires recoding and traceability-register update.
- FC means functionality is available in the proposed released version, included in the technical and commercial baseline, licensed for the contracted capacity, and demonstrable with evidence.
- Normal discovery of details for an already-identified integration, workflow or business function does not create a Change Request. Change control applies only to genuinely new scope introduced after contract baseline.
- The Prime Contractor remains end-to-end accountable for all OEMs, partners, subcontractors, infrastructure sizing, integration, migration, testing and lifecycle support.
- Configuration over customization is mandatory: business rules, products, tariffs, workflows, reports, dunning, notifications, campaigns, tenant settings and other routine operations shall be GUI/configuration-driven wherever technically reasonable.
- BT-issued written addenda take precedence over the affected tender text. This RFP defines the normative scope, priorities and acceptance obligations. Supporting response templates and packaging/count summaries do not reduce that scope. Where two normative requirements differ, the stricter requirement applies unless BT issues a written clarification. Bidder narrative, standard terms and a template formula result do not override the RFP or an approved contractual commitment.
- How to read and respond to this RFP: the RFP body and applicable annexes define the requirement baseline; Annex AG is the governing requirement/compliance traceability structure; Annex AL is the authoritative evidence index; Annex AH defines verification/acceptance methods; Annex AB contains formal E2E acceptance scenarios; Annexes K/L/M and related schedules define infrastructure, software/licensing and third-party dependencies; Annex AC is the authoritative technical/commercial exceptions register; Annex AE is the authoritative structured cross-group interface responsibility register; Annexes V/AF govern commercial/TCO responses. Bidder responses shall preserve Requirement IDs and cross-references across these instruments.

Controlled terminology: Compliance Code = FC/AL/PC/NC; Delivery Mode = OOTB/CFG/CUS/3P/RMP; Priority = M/S/C; Evidence obligation = ME/CE/SE; Evidence strength = E3/E2/E1/E0. Product ID identifies a proposed product/platform/component in the Product Master; Interface ID identifies a logical interface in Annex AE; Exception ID identifies an Annex AC exception; Price Line ID identifies the corresponding commercial line; Test/E2E ID identifies verification/acceptance evidence. Production Acceptance, Stabilization/Hypercare and Final Acceptance are distinct contractual events and shall not be used interchangeably.

- COMMON means a programme-wide requirement applicable across the overall CBSS platform or more than one Functional Group. COMMON/CROSS means a requirement specifically governing an interface, dependency, shared state, orchestration, reconciliation or end-to-end process crossing Functional Groups A, B and/or C. Both apply to every offered scope to which they are relevant.
- E2E Acceptance means verification of the complete applicable business/service journey across components, interfaces, data/state transitions and operational outcomes, including financial/service reconciliation and failure/recovery behaviour where relevant; successful component or interface testing alone does not constitute E2E Acceptance.
- FC (Fully Compliant) shall be declared only where the capability is available in the proposed released version, included in the baseline technical and commercial scope, licensed for the contracted capacity and demonstrable/verifiable. Configuration may remain FC when the underlying released capability exists; customization or third-party dependency shall be disclosed through the prescribed Delivery Mode and dependency fields.
- "Where applicable", "as applicable", "where in scope" and similar qualifiers refer to applicability to the BT services, systems and integrations described in Sections 7 and 9, Section 12 and Annex F. They do not permit a bidder to self-declare a requirement non-applicable. Any claimed non-applicability shall be raised as a clarification or recorded in Annex AC, failing which the requirement is treated as applicable.

0.2 Compliance and Delivery Codes

Code	Meaning
FC	Fully Compliant: available in the proposed released version, included in baseline scope and price, licensed for contracted capacity, and demonstrable/verifiable.
PC	Partially compliant; gap/remedy/timeline stated
NC	Not compliant
AL	Alternative compliance achieving the same business outcome, subject to BT acceptance
OOTB	Standard product capability
CFG	Standard configuration/parameterisation
CUS	Custom development, included and warranted
3P	Named third-party product under prime responsibility
RMP	Roadmap; cannot satisfy a MUST

0.3 Terminology and Target Architecture Principles

- Authoritative target-state charging platform: the new OCS/CHF and associated rating/balance functions.
- Policy control: PCRF/PCF remains a distinct, tightly integrated policy-control function; policy is not treated as a substitute for charging.
- Enterprise Analytics & AI Platform: BT's future enterprise-wide analytics/AI destination. The CBSS Integrated MIS/BI & Analytics capability is the primary operational, management and executive analytics platform for the initial operating years and shall expose governed decoded data/events without restrictive dependency.

- BT environments shall include Production, applicable DR, Pre-Production/Staging, SIT/Integration Test, UAT, Training and Performance/Load Test, with Sandbox/API Test as required. Logical consolidation or time-sharing may be proposed where adequate isolation, capacity and test availability are demonstrated and accepted by BT; no required testing purpose may be omitted. Each environment shall be fully disclosed, sized, licensed and supported for its intended purpose throughout Warranty and applicable AMC periods. Supplier development precedes controlled promotion through BT testing/UAT and staging into Production.
- DR strategy: DR-1 Backup & Recovery = M (mandatory baseline); DR-2 Critical Systems/Nodes DR = M (mandatory baseline); DR-3 Full-Fledged DR = S (recommended, separately priced option).
- Roaming settlement terms: TAP (Transferred Account Procedure, TAP 3.12), RAP (Returned Account Procedure), NRTRDE (Near Real Time Roaming Data Exchange), HUR (High Usage Report), BCE (GSMA Billing and Charging Evolution - readiness only in this procurement), DCH/FCH (data/financial clearing house), IOT/DIOT (inter-operator tariff / discounted IOT), SDR (Special Drawing Rights).
- Numbering terms: MSISDN (subscriber number), IMSI (subscriber identity), ICCID (SIM serial), EID (eSIM identifier), hidden number (the real number behind a premium, short-code or toll-free number), quarantine (cool-off period before a released number can be reused).
- Service terms: BT Fiber = wireline leased line, sold prepaid and postpaid; BT AirFiber = wireless 4G/5G fixed-wireless access (FWA), sold prepaid and postpaid. Current mobile core is 5G NSA; 5G SA is a readiness capability.

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PART A - NOTICE, INSTRUCTIONS AND EVALUATION

1. INVITATION AND NOTICE

Bhutan Telecom Limited (BT) invites proposals from qualified telecommunications solution vendors for the supply, implementation, migration and lifecycle support of a modern, open and future-ready Converged Business Support System covering the complete customer, product, order, charging, billing, payment, fulfilment, partner and revenue-assurance lifecycle across mobile, fixed, broadband, FWA, enterprise, IoT and emerging digital/network services.

Procurement intent: The solution shall be vendor-neutral, modular and standards-based, but delivered under one accountable prime contractor. The procurement is not a request for a like-for-like replacement: BT seeks a foundation for converged charging, digital BSS, enterprise growth, multi-tenancy, network API monetisation and long-term operating efficiency.

2. PROCUREMENT TIMETABLE AND COMMUNICATIONS

Milestone	Requirement
Intent to bid	6th October 2026 by 4.00 PM BST, GMT+6
Clarification questions	13th October 2026 by 4.00 PM BST
Pre-bid conference	15th October 2026 at 2.30 PM BST, (Online)
BT consolidated response	22nd October 2026 by 4.00 PM BST
Bid submission	10th November 2026 by 11:30 AM BST
Technical evaluation, demonstrations and reference validation	Indicative: November 2026 - February 2027
Contract signature / PO (target)	No later than 31st March 2027, to preserve the nine-month implementation window to Go-Live
Parallel operation	November-December 2027
Production Go-Live / GA	1 January 2028

All communications shall be written and routed through BT's designated procurement contact. Oral statements do not amend the RFP. All addenda form part of the RFP.

3. INSTRUCTIONS TO BIDDERS

- Envelope 1: Eligibility/Bid Security; Envelope 2: Technical Proposal with no pricing; Envelope 3: Financial Proposal.
- Compliance and evidence registers shall be submitted in native editable spreadsheet format using BT-issued templates. Generic brochures do not replace row-level compliance or the required evidence reference. Supporting evidence shall be navigable through the Evidence Register.

- Every requirement response shall state Compliance Code, Delivery Mode, Product/Module, Release/Version, Evidence Reference, Dependency, Gap/Remedy (if any), Licence/Price Reference and whether demonstration is available.
- All assumptions, exclusions, dependencies and capacity limits shall be frozen at bid stage. Undeclared dependencies become the Supplier's responsibility at no additional cost.
- A requirement cannot be marked FC if the capability is roadmap, optional, separately priced outside the baseline, requires future procurement, or depends on an unpriced third-party module.
- All interfaces necessary for committed functions shall be included. Endpoint/payload finalisation during HLD/LLD is normal implementation work, not a CR.
- Bidder may submit against one or more permitted Functional Groups and/or the complete end-to-end scope. Each submission shall include the prescribed standalone group price and, where multiple groups are offered, the corresponding combined price/discount. The grouping is a submission and evaluation construct only and does not predetermine BT's final contracting arrangement.

4. ELIGIBILITY AND QUALIFICATION

ID	Criterion	Minimum / Evidence
EXP-001	Bidder/OEM shall have at least two (2) live production references for the proposed or substantially equivalent convergent BSS product stack; at least one reference shall have been in production for at least twelve (12) months.	Mandatory eligibility
EXP-002	At least one reference should be of comparable operational scale, approximately 500,000 subscribers/services or higher; where below this level, bidder shall provide production evidence and sizing/scalability proof demonstrating capacity for BT.	Mandatory eligibility / scalability proof
EXP-003	Reference deployments shall collectively demonstrate charging, billing, CRM/order, catalogue, integration/migration and operational support relevant to the proposed scope.	Mandatory eligibility
EXP-004	Bidder shall disclose legal status, ownership/OEM relationship, audited financial capacity, litigation, debarment, beneficial ownership, consortium/subcontractors and product support horizon.	Mandatory eligibility
EXP-005	Core product support horizon shall extend at least ten (10) years from Go-Live or bidder shall provide an acceptable lifecycle/upgrade commitment without forced re-licensing.	Mandatory eligibility
EXP-006	ISO 27001 certification held by the prime bidder or the OEM, with a certified scope covering the offered product and/or support services, valid at bid submission.	Mandatory eligibility
EXP-007	Local presence in Bhutan (office or contracted local partner) for implementation and 24x7 support, with named local resources.	Mandatory eligibility
EXP-008	Audited financial statements for the last three (3) financial years.	Mandatory eligibility

5. EVALUATION METHODOLOGY

5.1 Evaluation Sequence

BT shall evaluate bids through controlled stages. A bidder must first satisfy eligibility and all applicable Mandatory Pass/Fail (MPF) requirements. Only technically qualified bids shall proceed to financial/TCO evaluation. Clarifications may be used to resolve ambiguity in accordance with the tender conditions but shall not be used to permit a bidder to materially improve or alter its bid after submission.

- Stage 1 - Eligibility, completeness and applicable MPF assessment.
- Stage 2 - Detailed technical evaluation using the prescribed requirement, evidence, architecture, implementation and capacity schedules.
- Stage 3 - Mandatory demonstrations, reference validation and clarification, where required; verified findings may re-score the affected technical requirements.
- Stage 4 - Technical qualification. Minimum Technical Qualifying Score: 85.00%.
- Stage 5 - Financial and 8-Year Lifecycle TCO evaluation for technically qualified bids only.
- Stage 6 - Final evaluated score using Technical 60% + Financial/TCO 40%, followed by award determination in accordance with the RFP and applicable procurement rules.

5.2 Technical Evaluation Categories and Weights

Technical Evaluation Area	Weight
Functional Compliance	35%
Architecture, Integration, Security & Future Readiness	25%
Implementation, Migration, Testing & Operations	20%
Performance, Capacity, Availability, DR & Supportability	10%
Experience, References & Team	10%
Total Technical Score	100%

Each category shall be normalized against the maximum score applicable to the bidder's offered scope. A bidder shall not receive credit for requirements outside its permitted offered scope merely to increase its normalized score.

5.3 Requirement-Level Scoring Factors

For requirements evaluated through the MRCATM, the normalized row score shall be calculated as:

Row Score = Compliance Factor x Delivery-Mode Factor x Priority Weight

The following factors shall be used unless BT formally amends them through an addendum:

Compliance Response	Factor
FC - Fully Compliant	1.00
AL - Alternative compliant approach accepted by BT	0.90
PC - Partially Compliant	0.50
NC - Non-Compliant	0.00
RMP - Roadmap/future delivery for an M requirement	0.00
Delivery Mode	**Factor**

Compliance Response	Factor
OOTB - Released out-of-the-box functionality	1.00
CFG - Configuration	0.95
CUS - Included customization/development	0.80
3P - Third-party dependency/component	0.75
RMP - Roadmap/future delivery	0.00
Priority	**Weight**
M - Must	1.00
S - Should	0.60
C - Could	0.30

For an AL response, BT shall determine whether the proposed alternative is genuinely equivalent or superior in meeting the business outcome and whether the associated delivery mode, dependency, licensing, lifecycle and acceptance obligations are acceptable. BT may reclassify an unsupported AL response as PC or NC.

5.4 Normalization and Technical Qualification

Within each technical category, the bidder's obtained weighted row points shall be divided by the maximum weighted points applicable to that bidder's offered scope and multiplied by 100. The resulting category percentage shall then be multiplied by the category weight in Section 5.2. The five weighted category scores shall be summed to produce the Technical Score out of 100.

Technical Score = Sum of (Normalized Category Score X Category Weight)

A bidder must achieve a Technical Score of at least 85.00% to proceed to financial evaluation. Scores shall be calculated to at least four decimal places internally and presented to two decimal places. A score below 85.00% before presentation rounding shall not be rounded upward to meet the qualifying threshold.

BT shall separately monitor M, S and C compliance. A high aggregate score shall not compensate for an unresolved material NC against an M requirement that is essential to core production functionality, security, regulatory compliance, financial integrity, migration, integration, operational acceptance or another critical business outcome. Such a gap may render the bid technically unacceptable even where the aggregate score reaches 85.00%, subject to the tender conditions and evaluation committee determination.

5.5 Evidence, Demonstration and Verification

Bidder declarations are subject to BT verification. Evidence strength is a validation control and is not an additional numerical multiplier unless expressly stated in the evaluation workbook. FC without adequate evidence may be clarified, downgraded or re-scored. Failure of a mandatory demonstration, reference check, benchmark, interface proof, sizing validation or other prescribed verification may re-score the affected requirement(s). Documentary evidence, demonstration evidence, test evidence, reconciliation evidence, certification evidence and acceptance evidence shall be traceable through Annexes AG, AH and AL.

Security evaluation clarification: security controls designated MPF are pass/fail. Other Mandatory security requirements remain part of technical evaluation and contractual compliance and, where applicable, must pass security verification/acceptance before Production Acceptance and Final Acceptance. Security evidence and testing do not create a separate hidden scoring multiplier.

Clarification shall not be used to introduce a capability, licence, product, dependency, commercial inclusion or delivery commitment that was absent from the submitted bid where doing so would constitute a material bid modification.

5.6 Financial and 8-Year Lifecycle TCO Evaluation

Financial evaluation shall use the Evaluated 8-Year Lifecycle TCO for the evaluated scope, including all mandatory acquisition, implementation, infrastructure, software and licence costs; selected mandatory DR scope; migration and integration; Year-1 warranty obligations; Support Years 2-8 / AMC Years 1-7; OEM/third-party recurring costs; mandatory capacity and licence growth; and any other mandatory lifecycle cost identified under the Commercial Schedules. BT may apply the RFP's commercial-omission and TCO-normalization provisions to ensure like-for-like comparison.

Financial Score = 100 x (Lowest Evaluated TCO / Bidder Evaluated TCO)

The bidder with the lowest Evaluated TCO among technically qualified bids receives a Financial Score of 100.00. Other technically qualified bids receive a proportionately lower Financial Score. Financial scores shall be presented to two decimal places.

5.7 Final Evaluated Score

Final Evaluated Score = (Technical Score x 60%) + (Financial Score x 40%)

The Final Evaluated Score shall be used as the principal quantitative comparison, subject to all pass/fail conditions, procurement rules, clarifications, contractual/commercial acceptability, modular-scope rules and BT's reserved rights stated in this RFP. The quantitative score does not waive any mandatory requirement or contractual condition.

5.8 Modular Submission and Combination Evaluation

For a permitted modular submission, technical scoring shall be normalized only against the requirements and evaluation points applicable to the offered Functional Group(s)/combination. BT shall not directly compare unnormalized raw points from offers having different scopes. Where BT evaluates a permissible combination of bids, BT may construct the relevant combined technical coverage, interface/accountability position and Evaluated TCO in accordance with the RFP, while avoiding duplicate shared costs and identifying any integration, licence, infrastructure or lifecycle gaps. Any combination remains subject to complete mandatory scope coverage and acceptable end-to-end accountability.

5.9 Illustrative Calculation - Evaluation Guide

The following example is illustrative only and does not represent an actual bidder or predetermined evaluation outcome.

Technical Area	Normalized Score	Weight	Weighted Score
Functional Compliance	88.00	35%	30.80
Architecture / Integration / Security / Future Readiness	84.00	25%	21.00
Implementation / Migration / Testing / Operations	82.00	20%	16.40
Performance / Capacity / Availability / DR / Support	90.00	10%	9.00

Technical Area	Normalized Score	Weight	Weighted Score
Experience / References / Team	86.00	10%	8.60
Technical Score		100%	85.80

In this example, the Technical Score is 85.80%, so the bidder passes the 85.00% technical threshold. If its Evaluated TCO is USD 12.0 million and the lowest Evaluated TCO among technically qualified bids is USD 10.0 million, its Financial Score is 100 x 10/12 = 83.33. Its Final Evaluated Score is therefore (85.80 x 60%) + (83.33 x 40%) = 84.81.

Example requirement-row calculation: an M requirement declared FC and delivered through CFG scores 1.00 x 0.95 x 1.00 = 0.95 out of a maximum 1.00 for that row. An S requirement declared FC/OOTB scores 1.00 x 1.00 x 0.60 = 0.60 out of a maximum 0.60. Category normalization ensures that the different M/S/C weights influence evaluation without distorting the percentage denominator.

6. AWARD AND CONTRACTING

- BT reserves the right, subject to the procurement conditions and evaluated outcome, to contract the complete scope or an appropriate combination of Functional Groups/options. Nothing in this RFP shall be interpreted as a commitment to any particular contracting structure.
- For any scope contracted to a bidder, that bidder remains fully accountable for its products, OEMs, subcontractors, interfaces and committed cross-group obligations. Where BT designates an Integration Lead for the overall programme, such designation does not relieve any contracted supplier of its own obligations.
- No OEM exclusion, licensing term or subcontractor limitation may reduce the Prime's contractual obligations to BT.
- BT may require PoC/demo/reference validation before award and may verify claims directly with customer references.

Reference validation: BT may contact nominated reference customers directly, request documentary confirmation or conduct remote reference sessions. Site visits may be requested where justified but are not a universal mandatory condition unless stated in the tender notice/addendum. Any material discrepancy between the bid and verified reference information may affect the relevant evaluation result.

PART B - BUSINESS CONTEXT, OBJECTIVES AND SCOPE

7. CURRENT ENVIRONMENT

Domain	Current context
Mobile core / IMS	Ericsson environment; 2G/3G/4G/5G NSA with geographically separated core sites.
Voice/SMS/PAYG charging	Ericsson IN; to coexist during migration and then migrate to target OCS/CHF.
Data charging / policy	Tayana application/platform provides data charging and data policy control. Allot is used for DPI functionality only. Controlled coexistence, migration and target-state integration/retirement treatment are required.

Domain	Current context
Billing/CRM	Existing legacy BSCS-based billing/CRM platform with separate VAS, portal and payment platforms; detailed versions, modules, interfaces and volumes are listed in Annex F.
Voucher/eLoad	Existing BT eLoad/eRecharge retained; integration mandatory. Physical voucher lifecycle in new CBSS.
Payments	BT intends to own the Payment Integration Middleware and connect banks/MFS/RMA rails directly. Current rails include B-Ngul (BT mobile money), B-Wallet (bank-linked wallet), bank/payment apps, BT counters, eLoad dealers, vouchers and salary standing instructions (Annex Z).
Analytics	CBSS Integrated MIS/BI & Analytics is the primary operational, management and executive analytics capability for the initial operating years. Governed data/events shall remain openly exposable to BT's future Enterprise Analytics & AI Platform.
Network evolution	5G SA, IPv6, network slicing, CAMARA/network APIs, IoT and enterprise services are target capabilities. 3G shutdown is in progress in phases; the legacy DSL base is being migrated.
Existing Tayana AAA	Currently used for the legacy DSL/PPPoE subscriber base. Continuity is mandatory, but BT does not prescribe permanent retention. Bidder shall propose and price the most suitable retain/integrate, replace/migrate, or equivalent standards-based access-control approach. AAA, existing network/controller capability, a service-control/provisioning gateway or another technically suitable mechanism may be used where applicable, subject to successful E2E acceptance and lifecycle support.
Existing USSD Gateway	Retain; integration is MUST.
USSI / IMS interaction	Mandatory integration with IMS/USSI for 4G/5G/IMS service interaction; bidder to include all CBSS-side interfaces, APIs/adapters, configuration, licences, testing and integration, with core dependencies explicitly declared.
SMSC / Email	SMSC, A2P/SMSC gateway and email platforms are retained and integrated; bulk SMS, A2P and (where commercially active) cell broadcast shall be monetised in the CBSS.
ERP / GL	Integrate with BT ERP/GL; solution shall support reconciliation and accounting outputs.
Contact Centre / IVR	Integrate with existing/current and future contact-centre solution.
Ticketing	Existing capability is inadequate; a new ticketing system is a baseline CBSS deliverable and shall integrate with CRM/contact centre/field teams/ITSM.
Hardware scope	Include required switch and firewall. A router is not required unless the bidder demonstrates a technical need and prices it transparently.
Roaming / interconnect	International roaming is live for postpaid (Must); prepaid roaming is a readiness item. Settlement uses TAP/RAP/NRTRDE/HUR through a clearing house; GSMA BCE is readiness only. Domestic and international interconnect are settled bilaterally.
Value-added	CRBT (B-Tunes), missed-call alert, SMS keyword services, USSD services, BT AI

Domain	Current context
services	Data Plan partner platform and other VAS platforms are retained and integrated; their subscriptions are charged and settled in the CBSS.
Digital channels	myBT app, online service request portal, bill receipt portal, tourist SIM/eSIM booking portal, CRBT portal and AI plan portal exist today; replace/retain decisions per channel are in Annex F.
eSIM	Consumer and tourist eSIM are in service; SM-DP+ integration is mandatory.
Enterprise and digital services	Live and to be catalogued, ordered and billed in the CBSS: BT Fiber (wireline leased line; prepaid and postpaid), BT AirFiber (4G/5G FWA; prepaid and postpaid), DSL (prepaid and postpaid), P2P (national and international), IPVPN, IP transit, fixed line (including toll-free and PBX/PRI), IP telephony, premium/toll-free numbers, contact-centre services, web/email hosting and email services, .bt domains (prepaid and postpaid), Security-as-a-Service, IoT and Tier III data-centre services.
Hosting / .bt ccTLD registry	The .bt ccTLD domain registry platform, hosting control panel and mail platform are retained and integrated. .bt domain registration, renewal, transfer, DNS/forwarding updates and expiry shall be fully automated from the CBSS (PRV-M018).

8. BUSINESS DRIVERS AND TARGET ARCHITECTURE

- One logically converged rating and charging framework for Voice, SMS and Data, with OCS/CHF as the authoritative target-state charging/rating platform.
- One authoritative commercial catalogue driving product, pricing, order, charging/billing and fulfilment mappings.
- Open, modular, API-first and event-driven architecture using TM Forum, 3GPP, CAMARA and other applicable standards.
- Configuration-led operations with controlled versioning, approval, effective dating, promotion and rollback.
- End-to-end multi-tenancy across commercial BSS, charging, policy, OSS, reporting, API, security and operations.
- Independent revenue assurance and fraud controls with source-to-target reconciliation.
- Future service extensibility so BT can introduce new commercial services using existing supported constructs without mandatory vendor CRs.
- Comprehensive auditability, data lineage, correlation IDs and no competing masters.

8.1 Architecture Accountability Principles

Principle	Requirement
Authoritative system per domain	Bidder shall nominate a single master/system of record for customer, catalogue, order, service/resource, identifier, balance/quota, policy, usage, invoice/AR, finance and assurance cases.
No competing masters	Caches/projections cannot become independent competing sources of truth.

Principle	Requirement
End-to-end correlation	Relevant transactions shall carry persistent correlation IDs across API, event, order, provisioning, payment, charging, billing and assurance flows.
Controlled publication	Product/configuration changes shall be approved, versioned, future-dated where needed, published to dependent systems and verified; rollback shall be supported.
Prime accountability	OEM/product boundaries do not create gaps in integration, testing, migration, security or support.
Failure contracts	Each critical interface/component shall document timeout, retry, idempotency, duplicate protection, degraded mode, rollback/compensation, recovery and reconciliation.

8.2 Charging Target State

Mandatory target: The target state is a single logically converged rating and charging framework for Voice, SMS and Data. OCS/CHF is the authoritative rating/charging and balance platform. PCRF/PCF remains a separate but tightly integrated policy-control function. Transitional coexistence with Ericsson IN and Tayana is permitted only as part of a controlled migration plan.

9. SCOPE AND BOUNDARIES

Capability	Treatment	Commercial position
Billing & Accounts Receivable	Supply new	Base
Converged Charging OCS/CHF/OFCS	Supply new	Base
PCRF/PCF	Supply new	Base
Mediation	Supply new	Base
CRM/KYC/Customer & Order/Case	Supply new	Base
Enterprise Product/Service Catalogue	Supply new	Base
Enterprise CPQ & Contract Lifecycle	Supply new	Base
Unified Provisioning & Service Orchestration	Supply new	Base
Service/Resource Inventory	Supply new	Base
Number/Identifier management (MSISDN, IMSI, ICCID, eSIM, special numbers)	Supply new	Base
Roaming (TAP/RAP/NRTRDE/HUR; GSMA BCE readiness), Interconnect, Wholesale and IoT wholesale	Supply new	Base
Payment Integration Middleware	Supply new	Base

Capability	Treatment	Commercial position
Physical Voucher + eLoad/eRecharge integration	Supply new + integrate	Base
Self-Care App/Web + Dealer/Partner channels	Supply new	Base
Campaign/CVM, Loyalty & Rewards	Supply new	Base
PRM/Dealer/Commission	Supply new	Base
Fraud & Revenue Assurance	Supply new	Base
MIS/BI & Dynamic Reporting	Supply new	Base
VAS subscription and partner content monetisation (CRBT, MCA, AI/content bundles)	Supply new + integrate	Base
Enterprise messaging monetisation (Bulk SMS, A2P/SMSC gateway, cell broadcast)	Supply new + integrate	Base
Special numbers (premium, toll-free, short codes)	Supply new	Base
Hosting, .bt domain (ccTLD registry integration and automation) and data-centre services	Supply new + integrate	Base
Enterprise ICT consumption services (Security-as-a-Service, IP transit, IP telephony, email services, IoT)	Supply new	Base
Tourist SIM/eSIM and travel eSIM	Supply new + integrate	Base
Mobile money / wallet (B-Ngul, B-Wallet) integration	Retain + integrate	Base
Multi-Tenancy/MVNO/MVNE/BSSaaS	Native multi-tenant foundation and GMC readiness are baseline MUST capabilities. Future external MVNO/MVNE/BSSaaS commercial activation beyond GMC remains future-readiness/separately priced, with full licence, capacity and hardware implications disclosed.	M for multi-tenant foundation/GMC; S for future external MVNO/MVNE/BSSaaS activation
CAMARA/Network Capability APIs & monetisation	Supply/enable initial scope	Base
Enterprise Analytics & AI integration	Integrate/expose governed data	Base
Dedicated BSS security/firewall controls	Supply as required	Base
Broadband AAA / Subscriber Access	Retain/integrate or	Base; continuity and

Capability	Treatment	Commercial position
Control	replace/migrate; bidder-proposed outcome-based approach	automation mandatory
Ticketing / Case / Field Progress Management	Supply new / integrate	Base

9.1 Lifecycle Environments - Cost-Optimised Model

The Supplier shall perform development, configuration, unit testing and supplier-side system/integration testing in its own environment at its own cost. A dedicated BT Development/Configuration environment is excluded from the mandatory BT-hosted baseline. Any optional BT-hosted development environment shall be separately identified and priced and shall not be a condition for delivery or support. Production data shall not be copied to the Supplier environment; only BT-approved masked/anonymized or synthetic data may be used. Secure controlled promotion, version comparison, maker-checker approval, automated testing and rollback into BT test and production environments remain mandatory. BT environments shall include Production, applicable DR, Pre-Production/Staging, SIT/Integration Test, UAT, Training and Performance/Load Test, with Sandbox/API Test as required. Logical consolidation or time-sharing may be proposed where adequate isolation, capacity and test availability are demonstrated and accepted by BT; no required testing purpose may be omitted. Each environment shall be fully disclosed, sized, licensed and supported for its intended purpose throughout Warranty and applicable AMC periods. Supplier development precedes controlled promotion through BT testing/UAT and staging into Production. Permanent UAT shall use masked/anonymized data and remain available for regression, upgrades, patches, security remediation and change testing without separate charge. Performance/load testing shall substantiate production sizing.

Environment	Purpose	Requirement
Production	Live service	Fully sized for contracted capacity and five-year growth
DR	Business continuity	Mandatory DR-1 and DR-2; DR-3 separately priced option
Pre-Production / Staging	Release validation and controlled promotion	Required purpose; logical consolidation subject to BT acceptance
SIT / Integration Test	System and cross-group interface testing	Required purpose; representative interfaces and failure tests
UAT	Formal BT business and E2E acceptance	Permanent and supported during Warranty and AMC
Training	Practical role-based training	Required and isolated from live service
Performance / Load Test	Sizing, throughput, concurrency and failover validation	Required; substantiate production capacity
Sandbox / API Test	Partner/API onboarding and test	As required with isolation and controlled access

The Supplier shall perform development, configuration, unit testing and supplier-side system/integration testing in its own environment at its own cost. A dedicated BT Development/Configuration environment is excluded from the mandatory BT-hosted baseline. Any optional BT-hosted development environment shall be separately identified and priced and shall not be a condition for delivery or support. Production data shall not be copied to the Supplier environment; only BT-approved masked/anonymized or synthetic data may be used. Secure controlled promotion, version comparison, maker-checker approval, automated testing and rollback into BT test and production environments remain mandatory.

10. MODULAR SUBMISSION FRAMEWORK AND ACCOUNTABILITY

BT seeks the complete end-to-end CBSS outcome defined by this RFP. To preserve commercial and implementation flexibility, the scope is organised into Functional Groups for submission, evaluation, pricing and responsibility mapping. Bidders may respond to the permitted submission tracks. The Functional Groups collectively represent the whole RFP; they are not separate or competing requirement baselines.

Required architecture pack	Minimum content
System-of-Record Matrix	Domain, authoritative system, replicas, synchronization, conflict resolution
Component Responsibility Matrix	Function, product/OEM, accountable party, included/not included price reference
Interface Register	Source/target, protocol/version, purpose, volume/TPS, security, HA, idempotency, error handling, owner, licence
Event/API Register	API/event name, standard/version, schema, producer/consumer, security, throttling, metering, lifecycle
Failure/Degraded-Mode Matrix	Failure condition, surviving capability, customer impact, transaction treatment, recovery/reconciliation
Tenant Capability Matrix	Isolation, licensing, performance, admin, reporting, logs, backup per component
Migration Reconciliation Matrix	Source/target counts, totals, rejects, exceptions, variance, sign-off

PART C - REQUIREMENTS

10.1 Functional Grouping

The complete CBSS scope is organised into the following three coherent Functional Groups. The grouping establishes clear responsibility boundaries while preserving the single end-to-end architecture, common standards, data ownership, security, migration and acceptance framework.

Group	Title	Primary scope

Group	Title	Primary scope
A	Converged Charging & Policy	OCS/CHF, converged rating and balances, prepaid/hybrid real-time monetization, PCRF/PCF, charging gateways/functions, charging-side recharge/voucher integration, policy/charging controls and charging-side network API monetization, VAS/content subscription charging and roaming real-time controls.
B	Billing, Revenue & Partner Monetization	Postpaid billing, AR, collections/dunning, payments and financial reconciliation, billing mediation/usage management, roaming/interconnect/wholesale settlement, revenue assurance/fraud, partner financial settlement and ERP/GL-facing monetization; roaming settlement covers TAP/RAP/NRTRDE/HUR with GSMA BCE readiness, IOT/discount agreements, multi-currency/SDR and IoT wholesale models. Primary ownership of the COMMON Integrated MIS/BI & Analytics platform; governed feeds required from all tracks.
C	Customer, Commerce & Fulfilment	CRM/Customer 360/KYC, authoritative Enterprise Product Catalogue, CPQ/contracts, customer/service order management, provisioning/orchestration, inventory/number/SIM/eSIM, self-care/channels/case management, campaign/CVM, device/EMI and tenant/GMC commercial administration, number/SIM/special-number inventory and enterprise/digital service products.

Common and Cross-Group requirements apply to every relevant submission. These include architecture, security, infrastructure, sizing, environments, backup/DR, observability, integration/API/event governance, data governance, migration, testing, training, support, GMC readiness, licensing transparency and exit/transition obligations.

10.2 Submission Tracks

A bidder may submit for any permitted track below, provided it satisfies all requirements mapped to that track and all applicable Common/Cross-Group requirements. A bidder is not required to offer every track.

Track	Scope	Submission requirement
T-A	Group A	Standalone technical and commercial response for Group A.
T-B	Group B	Standalone technical and commercial response for Group B.
T-C	Group C	Standalone technical and commercial response for Group C.
T-AB	Groups A+B	Integrated A+B response plus transparent standalone A and B price breakdown and combination discount.
T-BC	Groups B+C	Integrated B+C response plus transparent standalone B and C price breakdown and combination discount.
T-AC	Groups A+C	Permitted where bidder demonstrates a coherent architecture and all B-facing interfaces; standalone A and C breakdown required.
T-ABC	Complete CBSS	End-to-end response covering Groups A+B+C, with transparent A/B/C breakdown and any combination discount.

BT may evaluate standalone and combined submissions using the same requirement baseline and may consider the evaluated technical, commercial, integration, lifecycle and delivery implications of the relevant combination. The RFP does not state or imply that BT intends to use more than one supplier.

10.3 Fixed System-of-Record and Functional Boundaries

Information / Control Domain	Authoritative ownership
Customer / Party / Customer Account profile	Group C
Commercial Product / Offer Catalogue	Group C - single authoritative commercial catalogue
Customer Order / Service Order orchestration	Group C
Service / Resource Inventory and identifiers	Group C
MSISDN/IMSI/ICCID/special-number inventory, reservations and lifecycle	Group C
Roaming partner registry, IOT/discount agreements and exchange rates	Group B
Real-time Rating / Wallet / Balance / Quota	Group A
Policy Control	Group A
Billing Account / Bill / Invoice / AR / Collections	Group B
Payment financial status / settlement / reconciliation	Group B
Roaming / Interconnect / Wholesale financial settlement	Group B
Revenue Assurance / Fraud case ownership	Group B, with independent source and target data feeds
Enterprise Analytics & AI repository	BT external platform receiving governed feeds from all relevant groups
Actual network/service technical state	Applicable Network/OSS/Controller/NE; Group C maintains governed desired/service state and reconciliation view

No bidder may establish a competing master for a domain assigned above. Group-specific caches, projections or technical configuration repositories are permitted only where synchronized, governed and non-authoritative. The Group C commercial catalogue shall govern product/offer intent; Groups A and B may maintain the technical charging/billing configuration required to execute that intent.

10.4 Cross-Group Integration and Accountability

Every bidder shall include, within its proposed scope and price, all northbound/southbound APIs, events, adapters, mapping, security, retry/idempotency, reconciliation, monitoring and test support necessary for the published cross-group architecture. No bidder may rely on the statement that another supplier must integrate to its product as a means of excluding its own interface obligations.

Boundary	Minimum contractual interaction
C -> A	Canonical customer/service context and governed commercial-product publication to charging: Product/Offer ID, version/effective date, charging/rating mapping, eligibility, activation/suspension/termination state, rollback and publication reconciliation.
C -> B	Canonical customer/account/contract/order context and governed commercial-product publication to billing: Product/Offer ID, version/effective date, billing mapping, Service

Boundary	Minimum contractual interaction
	Effective/Billing Start-End dates, rollback and publication reconciliation.
A -> B	Formal rated-usage/chargeable-event contract including source usage/event ID, canonical account/service IDs, charging result, amount/unit, tariff/rule version, correlation ID, duplicate/idempotency semantics, acknowledgement, replay and reconciliation.
B -> C	Bills/payments/customer-visible financial data plus formal entitlement events for dunning/restoration, reason, effective time, target service(s), exception/override context and correlation ID. Group C executes/coordinates network action and verifies actual state.
All -> Common	Identity, API/event governance, correlation IDs, observability, SIEM, audit, Enterprise Analytics & AI feeds, migration and E2E testing.
C -> Network/OSS	Service entitlement and desired-state execution through bidder-proposed AAA, BNG/BRAS, PE/router, NMS/EMS, SDN/controller, provisioning gateway, API or equivalent mechanism; execute, verify actual state, reconcile, recover/fallout and audit.
Common/C -> A -> B	CAMARA/network API consumer/product context, consent/authorization, metering, charging result, billing/settlement, analytics and end-to-end reconciliation; no duplicated authoritative metering or monetization state.

BT shall maintain Architecture Authority and final acceptance authority. Where appropriate, BT may designate one contracted supplier as Integration Lead for programme-level HLD coordination, interface registry, release coordination, cross-supplier defect orchestration, E2E test coordination and cutover coordination. Such designation shall not transfer another supplier's contractual responsibility.

The COMMON API Management, Integration and Event Platform shall be coordinated by the designated Integration Lead. It shall provide shared API gateway/management, integration/orchestration and event/message services, security, observability, interface governance and E2E reconciliation. Every track remains accountable for its endpoints, adapters, event production/consumption, authoritative states, error handling and agreed interface tests. Annex AE shall allocate platform and interface ownership and Annex AF shall identify shared costs once, with no responsibility or licensing gaps.

10.5 Phasing Is Independent of Functional Grouping

Implementation phases and Functional Groups are separate constructs. BT may sequence capabilities based on investment, dependency and operational readiness without changing their functional ownership. A Functional Group shall not be interpreted as a deployment phase, and a deployment phase may contain capabilities from more than one Functional Group.

10.6 Requirement Hierarchy and Contractual Traceability

BT shall maintain one authoritative requirement baseline throughout procurement and delivery. Functional grouping is an award/submission construct only and shall not dilute, aggregate away or replace the detailed module-level requirements in this RFP. The mandatory hierarchy is: Submission Group → Module → Sub-module → Detailed Requirement ID → Bidder Compliance/Evidence → Acceptance Method/Test ID → Acceptance Evidence → Final Closure.

Each detailed Requirement ID is a discrete contractual obligation unless the RFP expressly states otherwise. A bidder shall not claim compliance only at Group or Module level. Every requirement applicable to the offered submission track shall receive an individual compliance response and evidence reference.

10.7 Module Structure within Submission Groups

Module	Module Title	Scope / Boundary
COMMON	Programme-wide architecture and assurance	Architecture; integration/API/event governance; Integrated MIS/BI & Analytics; security/privacy; observability/operations; infrastructure/network; performance/capacity; backup/DR; migration/testing; GMC/multi-tenancy controls; data/AI governance; training/support/exit/commercial dependencies.
A1	Converged Charging / OCS-CHF	Authoritative real-time/offline charging, session control and charging continuity.
A2	Rating, Tariff, Balance, Wallet & Quota	Rating rules, balances, shared wallets, quota/non-quota, boosters, FUP, plan stacking, balance transfer, VAS/content subscriptions and tariff lifecycle.
A3	PCRF/PCF & Policy Control	4G/5G policy, QoS, spending-limit and charging-policy synchronization.
A4	Charging Interfaces & Network Integration	CAMEL/CAP, Diameter, Nchf/SBI, IMS/USSI/USSD, charging gateway/routing and charging-side network integration, with explicit component ownership and failure semantics.
A5	Prepaid/Hybrid & Recharge Monetization	Prepaid/hybrid lifecycle, first activation, recharge-triggered offers, denomination-based validity, recharge/eLoad/voucher charging-side functions and channel bonuses; prepaid roaming readiness.
A6	Network API / CAMARA Monetization	Charging/metering/monetization for initial network capability APIs.
B1	Billing & Bill Calculation	Postpaid/convergent billing, cycles, proration, invoice calculation and rerating/rebilling.
B2	Billing Account, AR, Collections & Dunning	Billing accounts, receivables, deposits, collections, dunning, adjustments and credit controls.
B3	Payments & Financial Reconciliation	Payment middleware, reversals, settlement reconciliation, EMI payment and financial controls.
B4	Enterprise Mediation & Usage Processing	Enterprise usage mediation: batch/online/streaming ingestion, normalization, deduplication, enrichment, replay and reconciliation. Charging-specific gateway/session mediation remains in Group A where required.
B5	Roaming, Interconnect, Wholesale & Partner Settlement	Roaming (TAP/RAP/NRTRDE/HUR; GSMA BCE readiness), clearing-house exchange, IOT/DIOT and discount agreements, multi-currency/SDR, IoT wholesale models, interconnect/wholesale rating, settlement, disputes and partner financial settlement.
B6	Revenue Assurance & Fraud	Independent RA/fraud ingestion, controls, cases, revenue-at-risk and recovery.

Module	Module Title	Scope / Boundary
B7	ERP/GL & Revenue Reporting	Financial integration, posting/reconciliation and revenue/billing reporting.
C1	CRM / Customer 360 / KYC	Party/customer/account, KYC/NDI, hierarchy, lifecycle, consent and case context.
C2	Enterprise Product/Service Catalogue	Authoritative commercial catalogue, lifecycle/publication/versioning and governed Product-CFS-RFS-Resource relationships.
C3	CPQ, Contracts & Device Financing	Enterprise quoting, contracts, commercial terms, equipment/EMI and promotions.
C4	Customer & Service Order Management	Order capture, decomposition, orchestration, jeopardy, fallout and acceptance.
C5	Provisioning & Service Orchestration	Unified provisioning and service entitlement execution, adapters, retries, closed-loop verification, desired-vs-actual state reconciliation and fallout recovery; technology-neutral network enforcement.
C6	Inventory, Number, SIM & eSIM	Service/resource inventory; MSISDN/IMSI/ICCID/eSIM inventory, block reservation, pairing, churn/quarantine/recycle, special numbers and number retention.
C7	Digital Channels, Self-Care, Case & Notifications	Self-care app/web with role-based customer and dealer/partner login, SMS keyword/USSD/IVR self-care, CSR workbench, chatbot, case/ticketing, notifications and channel continuity.
C8	Partner/Dealer & Commission Management	Partner hierarchy, channel inventory, commissions, statements and disputes.
C9	Campaign, CVM, Loyalty & Customer Lifecycle	Campaigns, journeys, loyalty and rewards, contests, technology-sunset campaigns and governed AI-assisted business processes.
C10	Enterprise Messaging, Special Numbers, Hosting & Data Centre Services	Bulk SMS, A2P/SMSC, cell broadcast, premium/toll-free/short codes, contact-centre services, hosting, .bt domain automation with the ccTLD registry, data-centre and enterprise ICT consumption services (Section 12.19).

Where a requirement supports more than one module/group, it shall retain one immutable Requirement ID and one primary contractual owner. Related groups/interfaces shall be identified in the Master Requirements, Compliance and Acceptance Traceability Matrix rather than duplicating the requirement.

10.8 Master Requirements, Compliance and Acceptance Traceability Matrix

BT shall issue and maintain a Master Requirements, Compliance and Acceptance Traceability Matrix (MRCATM) as the authoritative traceability register. The bidder shall complete all applicable fields for its

offered track(s). The final clarified matrix, including accepted remedies and exceptions, shall form part of the contractual baseline.

Requirement ID	Group	Module / Sub-module	Priority / MPF	Bidder Compliance & Delivery	Product / Version / Evidence	Dependency / Gap / Remedy	Licence / Price Ref	Acceptance Method / Test ID	Acceptance Evidence / Status
CHG-Mxxx	A	A1 / [sub-module]	M / No	FC / OOTB	[product/version/page]	[dependency or Nil]	[included /ref]	T,D / UAT-A1-xxx	[during delivery]

Minimum rule: FC without the specified product/module, offered release/version and verifiable evidence reference may be treated as unsupported and may be subjected to clarification, demonstration or revised compliance assessment. Roadmap capability cannot satisfy an M requirement.

10.9 Requirement ID Governance and Change Control

Requirement IDs are immutable project identifiers. The same ID shall be used in the RFP, bidder response, clarification, contract schedule, HLD/LLD, configuration/design records, test cases, defects, UAT/E2E evidence, acceptance records and AMC change history. If wording is formally changed, the approved change shall be version-controlled against the same ID unless BT explicitly creates a new requirement. Priority changes shall follow the RFP traceability convention and be recorded in the Requirement ID Traceability Register.

No requirement may be considered closed merely because a module or E2E scenario has passed. Closure requires the acceptance evidence specified for that requirement and resolution of any linked defect, gap, exception or remediation action.

10.10 Compliance-to-Contract Freeze and Gap Remediation

The final bidder compliance response shall be contractually frozen at award. A capability declared FC and included in baseline scope/licence/price shall not subsequently be reclassified as chargeable customization, optional licence, additional connector or change request. Any BT-accepted PC or AL item shall have a documented gap, agreed remedy, owner, milestone, price impact (if any) and acceptance test. NC to an M requirement is not acceptable unless BT has expressly amended or waived the requirement through the procurement process.

11. MANDATORY PASS/FAIL REQUIREMENTS

ID	Mandatory Requirement
MPF-01	Single logical converged real-time and offline charging framework for prepaid, postpaid and hybrid Voice/SMS/Data; OCS/CHF authoritative target-state rating/balance platform.
MPF-02	5G SA CHF/Nchf capability available in the offered released product version, with explicit 3GPP release and service-operation evidence. 5G SA commissioning is not required at Go-Live; later activation shall not require platform replacement or subscriber migration.
MPF-03	PCRF and 5G PCF capability, distinct from but tightly integrated with charging, supporting applicable 4G/5G policy and spending-limit interfaces.

ID	Mandatory Requirement
MPF-04	Controlled coexistence and migration from Ericsson IN and Tayana data charging/policy, with explicit treatment of Allot DPI and Tayana DSL AAA, duplicate-charging prevention, balance/tariff reconciliation and rollback.
MPF-05	Complete hardware/infrastructure and all third-party software/licensing necessary for committed scope, with no hidden dependencies.
MPF-06	No separately chargeable API/connector/adapter/interface fee for committed functions and listed integrations.
MPF-07	All subscriber PII, KYC, charging/billing records, CDRs and other regulated production data, including backups, logs, telemetry and diagnostics, shall reside and be processed in Bhutan. Overseas hosting, replication, analytics processing and remote-support access to such data require BT prior written approval and declared safeguards. This does not prohibit legitimate international roaming, interconnect, clearing-house and partner settlement exchanges necessary for contracted services, subject to BT-approved purpose, minimum necessary data, secure transfer, access controls, auditability and applicable regulatory requirements. Such exchanges shall not permit general offshore hosting or unrestricted replication.
MPF-08	Zero unexplained financial/balance variance at migration and defined transaction-level reconciliation.
MPF-09	Native end-to-end multi-tenancy; roadmap/optional modules cannot satisfy this requirement.
MPF-10	Enterprise Product Catalogue, B2B CPQ, Fraud/RA, Payment Middleware and required security controls included in baseline, not deferred as optional.
MPF-11	CAMARA/network capability exposure included in initial delivery with at least the BT-prioritised API set and monetisation integration.
MPF-12	Supplier environment -> BT testing/UAT and staging -> Production lifecycle model supported with complete licensing and controlled configuration promotion.
MPF-13	DR Scenario 1 backup/recovery baseline and DR Scenario 2 critical-systems DR included; Scenario 3 full DR separately priced.
MPF-14	No CR for defects, non-compliance, omissions, committed functionality, security remediation or normal discovery/detailing of listed integrations.
MPF-15	No FC claim for roadmap, optional, excluded, future-procurement or unpriced third-party capability.
MPF-16	Secure data migration; clear-text processing only where technically unavoidable and BT-approved in controlled environments.
MPF-17	Two full migration rehearsals plus final migration/cutover and rollback readiness.
MPF-18	Requirement-to-test traceability and comprehensive E2E acceptance testing, including revenue, migration, failover, security and operational readiness.
MPF-19	Prime contractor accepts end-to-end accountability for OEMs, integration, sizing, performance, migration, testing and support.

ID	Mandatory Requirement
MPF-20	All assumptions, dependencies, exclusions, licence limits and capacity constraints declared at bid stage; undeclared items included at no additional cost.

12. FUNCTIONAL REQUIREMENTS

The following requirements are minimum baseline capabilities. Annex G shall contain the same IDs with bidder response fields. "GUI" means an authorized business/operations administration interface and does not permit direct database changes as a normal operating method.

12.1 Billing, Accounts Receivable and Collections

ID	Requirement	Pri
BIL-M001	Convergent billing for mobile, fixed, broadband, FWA, enterprise, IoT, digital, wholesale and future services using common customer/account/product constructs.	M
BIL-M002	Support recurring, one-time, usage, event, subscription, consumption and hybrid charging constructs.	M
BIL-M003	Flexible bill cycles (weekly, half-monthly, monthly, bi-monthly, quarterly, half-yearly, yearly; start day 1-28), bill groups, on-demand/interim/final bills, bill preview, test bill and rule-based sample billing via GUI and API, controlled rerun/rebill and versioning.	M
BIL-M004	Proration for activation, suspension, safe custody, upgrade/downgrade, termination, contract start/end and backdated effective dates.	M
BIL-M005	Service Effective Date, Billing Start/End and Contract Start/End tracked independently and used to control entitlement and charging.	M
BIL-M006	Prevent automated invoicing beyond contract/billing end date unless explicitly authorised.	M
BIL-M007	Multiple billing accounts and enterprise hierarchy with parent/subsidiary/branch/department/cost-centre/service allocation.	M
BIL-M008	Consolidated, split, hierarchy and cost-centre invoices with itemisation to service/usage level.	M
BIL-M009	Invoice-to-CDR/event drill-down with traceability to source event, tariff/rule version and rating outcome.	M
BIL-M010	Maker-checker controls for bill-run release, adjustments, refunds, write-offs and high-risk financial actions.	M
BIL-M011	Credits, debits (single and batch file), refunds (including batch and to bank account), reversals, chargebacks, deposits, unapplied cash, account-to-account credit transfer and write-off (single and batch) posted to dedicated GL codes.	M
BIL-M012	Multiple OTC/miscellaneous line items per invoice without arbitrary hard limit; at least five convenient line items in one transaction.	M
BIL-M013	Tax engine configurable for Bhutan requirements, exemptions, effective dating, multi-tax groups and audit.	M

ID	Requirement	Pri
BIL-M014	English and Dzongkha/Unicode-ready invoice/receipt templates; configurable layouts and notifications.	M
BIL-M015	Multiple payment allocation rules, partial payments, advance payments, auto-debit and payment-plan support.	M
BIL-M016	Configurable dunning plans with AND/OR combinations across overdue invoice count, amount, ageing, grace, customer category, product/service, credit/risk and exceptions; dunning actions (SMS/email notice, barring, suspension, termination); red list exclusions; non-dunning dates (holidays); temporary/permanent manual exclusion; and bulk dunning/recovery by file.	M
BIL-M017	Prepaid fixed/broadband automatic suspend/disconnect at validity expiry and reconnect after payment/recharge.	M
BIL-M018	Postpaid automatic suspend/disconnect after configurable unpaid-invoice count, amount and ageing criteria, with automatic reconnect upon settlement. The rule shall be configurable per product, service and customer category without code change (for example two or three unpaid bills). Current BT baseline for all postpaid services (mobile, fixed, BT Fiber, BT AirFiber, special numbers) is suspension after two unpaid bills.	M
BIL-M019	Manual override with reason, maker-checker and audit for dunning and reconnection.	M
BIL-M020	Promise-to-pay, instalment arrangements for overdue invoices, safe custody/vacation suspension and controlled reduced-charge treatment.	M
BIL-M021	Bill-shock thresholds and configurable alerts/actions.	M
BIL-M022	Billing run for full contracted base completed within BT target window; bidder states benchmark evidence.	M
BIL-M023	Retroactive re-rating/rebilling with controlled financial audit and impact analysis.	M
BIL-M024	GL/ERP accounting mappings, accounting-period control and reconciliation.	M
BIL-M025	Revenue recognition/deferred revenue treatment where applicable and configurable.	M
BIL-M026	Billing Account, Invoice, Accounts Receivable and Payment financial states shall have explicit authoritative ownership, state transitions and reconciliation rules; no competing financial masters are permitted.	M
BIL-M027	Dunning/restoration decisions shall emit governed entitlement events to Group C/Service Orchestration with reason, effective time, target service(s), exception/override context and correlation ID; Billing shall not rely on ungoverned direct network commands.	M
BIL-M028	Accounting period controls shall support controlled open/soft-close/hard-close/reopen states, back-dated posting rules, maker-checker approval, complete audit and sub-ledger-to-GL reconciliation.	M
BIL-M029	Bill-run restart/recovery after application, database, infrastructure or DR interruption shall be deterministic and idempotent, with no duplicate/missing invoices or financial	M

ID	Requirement	Pri
	postings and with restart-point/reconciliation evidence.	
BIL-M030	Production Acceptance shall require zero unexplained material financial variance across bill, invoice, AR, payment, settlement and GL control totals for the agreed acceptance period.	M
BIL-M031	Device/equipment EMI financial handoff shall be explicit: Group C owns device/commercial/contract lifecycle; Group B owns installment receivable, payment allocation, arrears/default, early settlement, accounting and financial reconciliation.	M
BIL-M032	BTN shall be the primary operational and billing currency. Multi-currency customer billing: price, quote, invoice and receipt in BTN and foreign currencies (at minimum USD, and INR where applicable), effective-dated exchange rates (precision up to 8 decimals) with source and approval, tariff precision up to 6 decimals, rounding rules, payment in invoice currency, multi-currency AR and FX gain/loss posting to GL.	M
BIL-M033	Annual and multi-period subscriptions (web/email hosting, domains, domain forwarding, IP address annual charge, annual AI/content plans, special-number contracts and similar) with advance billing, configurable renewal reminders, automatic renewal, written-notice termination periods (e.g., 30 days), grace/expiry handling and deferred revenue treatment.	M
BIL-M034	Rental-to-credit constructs: a recurring rental may be fully or partly converted into a usage allowance or credit (e.g., fixed-line monthly rental returned as talk time), with configurable carry-forward, expiry and proration of the credit.	M
BIL-M035	Postpaid usage overage and in-cycle add-ons: per-unit overage beyond plan quota (e.g., per-MB broadband overage), in-cycle boosters valid to cycle end, and plan changes with proration and no automatic upgrade unless configured.	M
BIL-M036	Deposits, surety and guarantor-backed credit: security deposits by service/product, guarantor/surety-backed credit limits, deposit interest where applicable, deposit offset on surrender/termination and refund workflow with maker-checker.	M
BIL-M037	Configurable late-payment interest/surcharge by product/contract/customer category, exempt customer classes (e.g., VIP/government), waiver/adjustment under maker-checker and audit.	M
BIL-M038	Prepaid and postpaid tax treatment: configurable point of taxation for prepaid (at voucher/eLoad sale, recharge, plan purchase or consumption), recharge tax (fixed or percentage), tax-inclusive/exclusive, multiple taxes, tax-on-tax, exemptions, tax-inclusive quota computation (current GST 5%), and GST reporting support for the Department of Revenue and Customs.	M
BIL-M039	Infrastructure and facility billing: data-centre rack/cage (single/three-phase), power (fixed or metered), cross-connects, VPS and managed services, pole/duct/tower sharing and other infrastructure leasing, with contract-based recurring charges, escalation clauses and usage/metered components.	M

ID	Requirement	Pri
BIL-M040	Enterprise aggregated eligibility and central billing: head office and branches may aggregate services to meet a minimum plan threshold (e.g., total bandwidth >= 20 Mbps with each connection >= 5 Mbps), with eligibility validation across the group and single-account central invoicing.	M
BIL-M041	Chargeable service requests (out-of-cycle bill, itemised call-detail statement, reconnection, shifting, ownership change, SIM replacement and similar) priced from the catalogue and billed automatically; summary and itemised bills in PDF, CSV, TXT and print (PCL) formats.	M
BIL-M042	Consumption/metered billing for enterprise and ICT services (data centre, Security-as-a-Service, IPVPN, IP transit, cloud/hosting): usage aggregation, tiered pricing, overage, minimum commitments, SLA-linked commercial terms, and 95th-percentile burstable bandwidth billing with pre-threshold notification.	M
BIL-M043	Minimum invoice threshold: invoices below a configurable amount are not generated and the balance rolls to the next cycle.	M
BIL-M044	Bill presentation controls: multiple invoice formats by segment, bill medium (SMS/email/paper) subscription, called-number masking, rule-based marketing messages and configurable bill suppression rules.	M
BIL-M045	Payment void with supervisor approval and reason; disputed amounts held from collection and dunning during investigation; outcome posted with audit.	M

12.2 Convergent Charging, OCS/CHF/OFCS and Balance Management

ID	Requirement	Pri
CHG-M001	Single logical rating engine and balance model serving prepaid, postpaid, hybrid and corporate subscribers across Voice, SMS, Data and supported digital services.	M
CHG-M002	Online and offline charging shall use the same governed tariff/rating definitions or demonstrably synchronized authoritative definitions.	M
CHG-M003	5G CHF/Nchf capability available in the offered released product version with supported service operations and release/version evidence. BT currently operates 5G NSA; commissioning of 5G SA charging is not required at Go-Live, and activation later shall not require platform replacement, subscriber migration or re-licensing beyond declared prices.	M
CHG-M004	Legacy CAMEL/CAP, Diameter Gy/Ro/Rf and applicable service-based interfaces supported for migration/coexistence.	M
CHG-M005	Monetary and non-monetary balances, buckets, free units, expiry, rollover, sharing, gifting, transfer and priority consumption.	M
CHG-M006	Shared/family/enterprise/group wallets with sponsor/member rules and priority.	M
CHG-M007	Quota-controlled and non-quota/event-based charging, including accumulated/batch/event models.	M
CHG-M008	Time, zone, destination, volume, duration, event, tier, threshold, application/context and customer attributes usable in rating.	M

ID	Requirement	Pri
CHG-M009	Reverse rating, zero rating, sponsored data (enterprise/OTT sponsor packages with sponsor limits and notifications), promotional charging and application-specific bundles.	M
CHG-M010	Fair-usage and speed-booster constructs integrated with policy.	M
CHG-M011	Postpaid roaming charging across voice, SMS, data and VoLTE, including roaming packs by country/zone/partner, configurable markup over IOT, thresholds, spending caps and bill-shock controls (see CHG-M037). Prepaid roaming is a readiness item under CHG-S002.	M
CHG-M012	Real-time credit/spending limit control for prepaid/postpaid/hybrid as applicable.	M
CHG-M013	Configurable charging fail-open/fail-closed/emergency/bypass behaviour by service/customer/risk/failure type with full audit and later reconciliation.	M
CHG-M014	Parallel/shadow/mirror charging validation during migration without double charging, with automated variance analysis by subscriber/event/tariff/balance.	M
CHG-M015	Charging session continuity across node failure; no duplicate debit, lost reservation, uncontrolled free usage or unnecessary session termination.	M
CHG-M016	Product/tariff simulation before publication, showing expected charge and balance impact for test scenarios.	M
CHG-M017	GUI-controlled tariff, charging rule, calendar, threshold, discount and balance configuration with versioning and rollback.	M
CHG-M018	Network API monetisation via transaction/event/volume/time/QoS/subscription/tier/quota/overage pricing models.	M
CHG-M019	Publish rated CDR/EDR and charging events with correlation IDs and delivery/reconciliation controls.	M
CHG-M020	Dynamic/Smart quota and configurable quota size to optimise signalling while preserving charging integrity.	M
CHG-M021	Bidder shall provide 5G CHF functional decomposition and released-version evidence for applicable Nchf/SBI service operations (rating, balance/quota, spending-limit interaction, charging data and failure handling). This is a product-capability and readiness requirement; 5G SA commissioning is not part of Go-Live scope.	M
CHG-M022	Bidder shall identify ownership and architecture for charging gateway, Diameter/SBI routing, session affinity/state and protocol interworking functions, including HA, scaling, licensing, observability and failure behavior; no responsibility gap may be deferred to another supplier.	M
CHG-M023	Active charging sessions, reservations, pending debits/refunds and in-flight charging transactions shall have a defined coexistence/cutover/migration treatment that prevents duplicate debit, lost reservation, uncontrolled free usage or avoidable session termination.	M

ID	Requirement	Pri
CHG-M024	Group A shall publish rated usage/chargeable events to Group B under a governed contract carrying source event ID, canonical service/account IDs, charging outcome, amount/unit, tariff/rule version, correlation ID and duplicate/replay/reconciliation semantics.	M
CHG-M025	Charging-side roaming architecture shall define home/visited usage handling, real-time controls, roaming bundles/thresholds, offline records, mediation/settlement handoff, failure treatment and end-to-end reconciliation.	M
CHG-M026	Charging reconciliation shall provide control totals and drill-down across network request/event, reservation, debit/refund/finalization, rated output and downstream delivery, with zero unexplained material variance at acceptance.	M
CHG-M027	Recharge-triggered offer activation: a recharge whose amount matches a configured plan price shall activate that plan instead of crediting main balance, configurable per channel (voucher, eLoad, bank/MFS app, B-Ngul/B-Wallet, self-care), with eligibility checks, fallback to main balance, notification and full audit.	M
CHG-M028	Denomination-based validity and prepaid lifecycle: validity by recharge denomination or amount range (separately for vouchers and eLoad); validity formulas (old expiry + extension; current date + extension; maximum of the two; current date + extension when suspended); maximum account validity and maximum balance limit; named lifecycle states Idle (provisioned, activated on first call/recharge) -> Active -> Barred (one-way) -> Suspended -> Pool/terminated, with configurable durations, automatic transitions, reactivation on recharge and export of Pool numbers for churn under INV-M015.	M
CHG-M029	Tariff constructs used in BT products: multiple time-of-day bands including late-night bands, weekend-only and "n-weekend" validity, holiday calendars, configurable charging pulses/increments (e.g., 15-second units, 10 KB increments), first-unit flat charges (e.g., flat charge up to 50 KB then per KB), on-net/off-net/fixed/international band tables (including satellite and special bands) and pay-per-use fallback after plan exhaustion.	M
CHG-M030	Subscriber-to-subscriber balance transfer and gifting: configurable minimum/maximum amount, transfer fee, minimum residual balance, validity granted to receiver, daily/monthly limits, PIN/USSD/app initiation, reversal rules and fraud limits; data/bundle gifting where offered.	M
CHG-M031	Plan stacking and consumption rules: multiple concurrent base packs and add-ons, add-ons that do not extend base validity, bandwidth-additive stacking where different denominations add bandwidth with independent expiry while the same denomination extends validity (e.g., prepaid BT Fiber), maximum concurrent active offers, and per-plan FUP speed after quota exhaustion.	M
CHG-M032	Eligibility-list and time-window zero-rating: eligibility driven by externally supplied lists (e.g., Ministry of Education student whitelist), and application/URL/SNI-based zero-rating or restriction active only within a configured time window (e.g., 07:00-18:00), synchronized with PCRF/PCF and DPI.	M

ID	Requirement	Pri
CHG-M033	VAS, digital and recurring subscription charging: daily/weekly/monthly/annual recurring subscriptions (e.g., CRBT daily fee), floating rental dates after suspension, retry after failed rental, collection of rental arrears when configured, rental priority over reserved session balance, partial/grace charging, suspension after configurable failures, per-content/event charges, double opt-in/opt-out and partner revenue-share attributes.	M
CHG-M034	Partner content bundles (e.g., BT AI Data Plan): bundle third-party digital services with data allowances, deliver activation codes/entitlements by SMS/API, support annual plans with monthly allowance refresh and synchronize entitlement with the partner. Cancellation: monthly plans stop at period end without refund; annual plans follow a configurable rule (no refund with access to period end, or pro-rata refund of unused full months to main balance with approval); remaining refreshes stop, access is revoked at the end date, the partner is notified and partner settlement is adjusted (including clawback), and the customer receives confirmation.	M
CHG-M035	Channel- and payment-method-based bonuses: percentage or fixed bonus on recharge or payment by channel or payment method (e.g., bonus on B-Ngul recharge), with caps, eligibility, expiry, funding source and reporting.	M
CHG-M036	Toll-free and reverse charging: calls/SMS to toll-free or reverse-charged special numbers are free to the originator and charged to the number owner's account per hidden number, with owner usage statements and fraud thresholds.	M
CHG-M037	Postpaid outbound roaming controls: roaming activation/deactivation (assisted and self-care), roaming deposit and credit limit, welcome and price SMS, per-country/zone packs, configurable markup over IOT per partner/service, data usage caps with notifications at configurable thresholds, service barring on cap, and SMS/USSD notifications while roaming.	M
CHG-M038	Location-bound (geo-fenced) services: fixed-wireless/AirFiber subscriptions bound to an installation location (cell/TAC/area), with usage outside the permitted area blocked or charged as configured, and a controlled relocation workflow with relocation fee and re-binding.	M
CHG-M039	Tourist and time-limited SIM products: fixed SIM/account life (e.g., one month), unlimited data packs with FUP, pre-loaded talk-time, automatic expiry and return of the number to quarantine under INV-M016.	M
CHG-M040	First activation: configurable activation modes (first call, first recharge, IVR/API), immediate first-rental deduction, preferred-language selection, welcome message by customer class/package, and first-activation awards by class of service, time, channel and location.	M
CHG-M041	Free and forbidden numbers: calls/SMS to configured free numbers (emergency, customer care, recharge IVR) are always allowed regardless of balance or barring state; calls to forbidden numbers are always released; fixed-price special-number tariffs.	M
CHG-M042	Friends & Family: multiple F&F groups, configurable member limits and restrictions (e.g., no international numbers), on-net/off-net members, group-specific tariffs/discounts, recurring and change fees, and self-care management.	M

ID	Requirement	Pri
CHG-M043	Allowance and tariff constructs: stepped and tiered allowances on consumption thresholds, cross-product discounts, bonus with independent expiry and add/extend rules, bonus/free-unit redemption, and best-tariff selection across eligible plans where configured.	M
CHG-M044	Data product constructs: prorated mid-cycle data package upgrade, device/IMEI-specific bundles, redirection to a top-up page on balance exhaustion, turbo/speed packages linked to QoS and volume, and tethering identification via rating groups where the network supports it.	M
CHG-M045	Direct Carrier Billing and digital content charging with content-provider integration, refunds and partner settlement.	M
CHG-S001	Advance credit/emergency loan (airtime, data and bundles, configurable) with eligibility rules, service fee, loan blacklist, automatic recovery on next recharge/transfer and exposure limits. Priced as an option with the price held for the full contract term; activation at BT discretion.	S
CHG-S002	Prepaid roaming readiness: real-time prepaid roaming charging (CAMEL/Diameter as applicable), balance checks while roaming and prepaid roaming packs, activatable without architecture replacement; priced as an option with the price held for the contract term.	S
CHG-S003	Home Zone / location-based tariffs: zones defined by cell lists or areas, subscriber- or package-level zones, zone change fees, notifications and system-level special zones; priced as an option.	S
CHG-S004	Virtual currency/points balance usable for services with configurable conversion rates; priced as an option.	S

12.3 PCRF/PCF and Policy Control

ID	Requirement	Pri
POL-M001	PCRF for 4G/EPC (and 5G NSA) in production at Go-Live, integrated with applicable SPR/UDR subscriber repositories; PCF for 5G SA available in the offered released product family as readiness, activatable later without platform replacement or subscriber migration.	M
POL-M002	Policy decisions based on subscriber, service, application, location, roaming, quota, device and network context.	M
POL-M003	Applicable Gx/Sy and N7/N28 spending-limit/policy interactions supported.	M
POL-M004	Real-time policy response to charging/balance thresholds, quota exhaustion, boosters and service lifecycle events.	M
POL-M005	QoS/QCI/5QI, APN/DNN, roaming, enterprise bandwidth and slice-aware policy support as applicable.	M
POL-M006	Fair-use, throttling, group/cascading throttling and temporary speed booster policies.	M

ID	Requirement	Pri
POL-M007	Policy rules configurable through GUI with conditions, actions, priority, versioning and effective dates.	M
POL-M008	Where technically feasible and appropriate, reuse/integrate the existing Allot DPI infrastructure (procured in 2026) for DPI functions. Replacement, bypass or non-use is permitted only with technical, operational and commercial justification and transparent incremental TCO; Allot shall not be treated as the incumbent PCRF/PCF.	M
POL-M009	Policy/charging synchronization shall prevent contradictory quota/policy states and shall reconcile after failures.	M
POL-M010	Policy enforcement for BT product constructs: geo-fence/location binding for fixed-wireless services, time-window and eligibility-list zero-rating, bandwidth-additive stacking and per-plan post-quota speeds shall be enforced through PCRF/PCF, DPI and/or access-network controls with closed-loop verification.	M

12.4 Mediation and Usage/Event Processing

ID	Requirement	Pri
MED-M001	Batch/file, near-real-time/online and streaming/event-based mediation.	M
MED-M002	Decode, validate, normalize, enrich, correlate, deduplicate, aggregate and route records.	M
MED-M003	Sequence controls, late-event handling, reject queues, replay/reprocessing and delivery acknowledgements.	M
MED-M004	Canonical event schema with source, subscriber/account, service, partner, location, rating and correlation attributes.	M
MED-M005	Route governed decoded feeds to billing, RA/Fraud, roaming/interconnect, MIS and Enterprise Analytics & AI Platform.	M
MED-M006	No artificial restriction on source formats/adapters required for the contracted inventory.	M
MED-M007	Source-to-target record counts and financial/control-total reconciliation with missing/duplicate/rejected status.	M
MED-M008	Enterprise mediation in Group B shall be distinguished from charging-specific gateway/session/protocol mediation in Group A. Each record/event shall have one authoritative processing path and ownership; duplicate authoritative mediation stacks are not acceptable.	M
MED-M009	The bidder shall document A-to-B handoff points, raw versus rated record ownership, replay authority, deduplication key, sequence handling, late-event treatment and source-to-target control totals across the mediation boundary.	M

ID	Requirement	Pri
MED-M010	Roaming mediation: collect, validate and route TAP, RAP, NRTRDE and HUR records/files for inbound and outbound roaming, including VoLTE/IMS roaming records, to charging, wholesale settlement, RA/Fraud and MIS; BCE records only when BCE is activated under RWI-S001.	M
MED-M011	Mediation for enterprise and value-added platforms: SMSC/A2P gateway and bulk SMS (including delivery reports), cell broadcast, contact-centre/IVR, toll-free/premium numbers, CRBT/VAS platforms, USSD, data-centre metering and partner platforms, as listed in Annex F.	M

12.5 Roaming, Interconnect and Wholesale

ID	Requirement	Pri
RWI-M001	TAP 3.12, RAP, NRTRDE and HUR processing for inbound and outbound roaming, with configurable clearing-house (DCH/FCH) boundaries. GSMA BCE is a readiness item under RWI-S001.	M
RWI-M002	Inbound/outbound roaming retail and wholesale rating/settlement, including multi-currency tariff management (partner currency, SDR and BTN), effective-dated exchange rates, currency conversion at the rate date agreed per partner/clearing house, and financial settlement with FX gain/loss posting to GL.	M
RWI-M003	National and international interconnect rating and settlement.	M
RWI-M004	Partner agreement/rate versioning, effective dating, dispute handling and settlement audit.	M
RWI-M005	End-to-end roaming reconciliation from network usage/CDR through charging, mediation, TAP/NRTRDE/HUR, clearing-house exchange, retail billing and wholesale settlement, with control totals per partner, service and period.	M
RWI-M006	Detect missing, duplicate, rejected, late and inconsistent roaming/interconnect records, per partner and per period, with RAP/dispute generation, ageing and closure tracking.	M
RWI-M007	IOT/DIOT tariffs per partner, country/network, service and technology in the agreed currency or SDR, with time bands, charging increments/rounding, minimum charges, commitments and effective dating, maintained through GUI with maker-checker and full version history.	M
RWI-M008	Dynamic non-volume wholesale rating models natively within the wholesale engine, such as flat-rate subscription tiers, per-active-SIM monthly fees and active-SIM-count milestones, to enable scalable enterprise IoT/M2M roaming agreements.	M
RWI-M009	Clearing-house integration for data and financial clearing (DCH/FCH), including file/API exchange, validation reports, RAP generation and processing, and financial settlement statements; BT's current clearing arrangements shall be confirmed in Annex F.	M

ID	Requirement	Pri
RWI-M010	Roaming agreement and partner registry: partner operators, networks (TADIG/MCC-MNC), launched services and technologies per partner (2G/3G/4G, VoLTE, CAMEL, SMS, data), launch/termination dates, IR.21 and IR.85 network/reference data, contacts and agreement documents, with effective dating and audit.	M
RWI-M011	VoLTE/IMS roaming charging and settlement records, including charging-record correlation for IMS roaming. 5G roaming is a readiness item under RWI-S001.	M
RWI-M012	Travel/partner eSIM programmes: support outbound travel eSIM and partner-operated eSIM offers (e.g., the eTraveller partnership), with partner onboarding, wholesale pricing, revenue share, usage/settlement reconciliation and partner statements.	M
RWI-S001	GSMA BCE and 5G roaming readiness: the architecture shall support adding BCE agreement, usage and settlement flows per roaming partner (in parallel with TAP during transition), and 5G/VoNR roaming charging and settlement, without platform replacement. Activation is priced as an option with the price held for the contract term. No BCE acceptance test is required at Go-Live.	S

12.6 CRM, KYC, Customer, Order and Case Management

ID	Requirement	Pri
CRM-M001	Customer 360 across profile, accounts, subscriptions, services, balances, bills, payments, orders, cases, interactions, contracts and notifications.	M
CRM-M002	Individual, family, enterprise, government, partner and hosted-tenant customer models.	M
CRM-M003	Capture Once, Verify and Reuse for identity/KYC and customer data.	M
CRM-M004	Configurable onboarding with Bhutan NDI/eKYC integration and alternative KYC methods where NDI is unavailable or not applicable. KYC and addresses are not limited to Bhutanese citizens, residents or Bhutanese addresses (see CRM-M019 and CRM-M020).	M
CRM-M005	Customer hierarchy with payer, owner, user, beneficiary and authorised-contact roles.	M
CRM-M006	Lifecycle journeys for onboarding (with number selection), add/change, SIM/eSIM change with MSISDN retained, safe custody, suspend/resume, relocation, ownership/account transfer, prepaid-postpaid migration, and voluntary/involuntary termination. Termination triggers the number churn, quarantine and recycle process under INV-M015 to INV-M017.	M
CRM-M007	Cross-channel transaction continuity: quote/basket/application/order can start in one channel and continue in another subject to security and consent.	M
CRM-M008	Case/trouble-ticket creation, categorisation, SLA, escalation, master/child cases, notes and outage linkage.	M
CRM-M009	Customer communication preference/consent management and full audit.	M

ID	Requirement	Pri
CRM-M010	Credit profile, spending/credit limits and tenant/customer risk attributes.	M
CRM-M011	Enterprise lead/opportunity/quote/account journey integrated with CPQ.	M
CRM-M012	Customer history search/filter across all lifecycle transactions.	M
CRM-M013	Foreign-national and tourist customers: passport-based KYC, employer assurance for non-Bhutanese SIM holders, work-permit expiry handling under CRM-M021, integration with the online tourist SIM booking portal where used, and fixed SIM life for tourist products under CHG-M039.	M
CRM-M014	Guarantor/surety and employer relationships: guarantor/surety role linked to credit limit and deposits, employer relationship for EMI eligibility (MOU employers) and employer assurance, with document capture and expiry.	M
CRM-M015	Closed User Group (CUG) and business VPN groups: create enterprise/community groups, add/remove members, group administrators, hierarchical groups, short-number dialling plans, cross-group and super-group relationships, in-group/out-of-group tariffs and self-care for group administrators.	M
CRM-M016	Supplementary services and service requests: CLIR, subscriber-controlled call barring, call forwarding, call-detail request, claim-missing (lost SIM) state, one-way/two-way temporary suspension, service shifting/relocation, reconnection, ownership change, SIM replacement, service surrender and similar requests as catalogued, chargeable with SLA and audit.	M
CRM-M017	Technology-sunset and plan-retirement migrations: identify customers on retiring technologies or plans (e.g., 3G, legacy DSL, retired postpaid leased-line plans), run notices and campaigns, create bulk device/SIM swap and plan-migration orders, apply notice periods and track completion with audit.	M
CRM-M018	Digitised customer forms: every current BT service form listed in Annex F shall be available as a digital journey (assisted and self-care) using e-KYC/NDI, digital document upload and e-signature/acceptance, with paper-form fallback only where BT approves.	M
CRM-M019	KYC for all customer types with configurable identity document types, each with validation, expiry and attachments: Bhutanese - CID and Bhutan NDI; foreign nationals - passport, work permit/special residence permit, diplomatic/UN ID and other documents permitted by BT policy; organisations - trade/business licence, foreign company registration and government/agency letters. Non-resident Bhutanese and foreign enterprises shall be supported.	M
CRM-M020	International address model: Bhutan format (dzongkhag, gewog/thromde, village/locality, house/flat, landmark, postal code) and international format (ISO 3166 country, state/province, city, street lines, postal/ZIP code) with country-specific validation; address roles (residential, billing, installation/service, correspondence; permanent/temporary); foreign billing address with local service address; international phone numbers; invoices/notifications to foreign addresses; search/reporting by country and dzongkhag; address history.	M

ID	Requirement	Pri
CRM-M021	Work-permit expiry for non-Bhutanese subscribers: the work-permit expiry date captured at KYC drives configurable SMS reminders (e.g., 30, 15 and 7 days before expiry) asking the customer to update the document. If the document is not updated by expiry (plus any configured grace), the subscription is churned and the number moves to quarantine under INV-M015/INV-M016. An update through self-care, counter or dealer login restores the normal lifecycle. Expired-document registers shall be reportable to BT and BICMA.	M
CRM-S001	Unified customer identity across BT telecom services and BT digital financial services (e.g., B-Ngul) with consent and privacy boundaries.	S

12.7 Enterprise Product Catalogue, CPQ, Contracts and Device Financing

ID	Requirement	Pri
CAT-M001	Enterprise catalogue is authoritative commercial source of truth across mobile, fixed, FWA, fibre, enterprise, IoT, digital, partner and network API products.	M
CAT-M002	Product-Service-Resource/CFS/RFS mappings aligned to industry information models.	M
CAT-M003	Commercial terms include recurring, non-recurring, usage, commitment, deposit, penalty, discount, promotional and consumption constructs.	M
CAT-M004	Eligibility/compatibility/dependency/prohibition rules based on customer, segment, location, technology, device, channel, credit, tenant and partner.	M
CAT-M005	Open and closed bundles with min/max choice groups and reusable components.	M
CAT-M006	Offer lifecycle states Draft, Test, Release, Suspend and Retired; approval, scheduled/future-dated publication, withdrawal, grandfathering, replacement and retirement; offer locking while under configuration; configuration synchronization from test to production without re-keying.	M
CAT-M007	Versioning and rollback for product, offer, price, specification and business rules; allowance rollover (fixed or percentage, with own expiry, optionally blocked when rental fails); auto-renewal; automatic package upgrade on threshold; late CDRs rated with the price version valid at usage time.	M
CAT-M008	Configuration change sets/release packages grouping catalogue, pricing, rating, workflow and notification changes with approval and rollback.	M
CAT-M009	Effective-dated price change without forcing creation of duplicate commercial products solely because price changes.	M
CAT-M010	Dynamic/rule-based pricing by customer segment, channel, geography, contract, campaign, tenant or other authorized attributes.	M
CAT-M011	Product/rating simulation before publication with expected charge/balance/result.	M
CAT-M012	Enterprise CPQ: configure, price, quote, approvals, revisions, negotiated terms, validity, contract and order conversion.	M

ID	Requirement	Pri
CAT-M013	Contract lifecycle with start/end, commitment, renewal, penalty, early closure and acceptance.	M
CAT-M014	Device/equipment financing: outright and EMI for handsets, routers, ONTs, CPE, media converters, Wi-Fi, tablets/accessories and other equipment.	M
CAT-M015	EMI 12/24 months and configurable tenures; down payment, interest/zero-interest, subsidies/freebies, penalties, pre-closure/early settlement and installment schedule.	M
CAT-M016	Serial/IMEI/ICCID/resource linkage, device and equipment inventory, promotion eligibility and online installment payment.	M
CAT-M017	Partner/reseller offers and federated catalogue support with revenue-share/commission metadata.	M
CAT-M018	New commercial service using existing supported constructs shall be configurable without mandatory vendor software customization/CR.	M
CAT-M019	Duplicate/near-duplicate product validation during creation.	M
CAT-M020	The authoritative commercial catalogue shall maintain governed relationships from Commercial Product/Offer to Customer-Facing Service (CFS), Resource-Facing Service (RFS) and required resource/network realization, without making technical inventory the commercial master.	M
CAT-M021	Publication from the authoritative catalogue to charging, billing and fulfilment shall carry immutable product/offer identity, version, effective date, mapping/configuration package, dependency status, acknowledgement and reconciliation, with controlled rollback.	M
CAT-M022	Special-number products: premium (3/4/6-digit) numbers, toll-free, short codes and hidden-number mapping products with monthly and toll-free fees, one-year auto-renewing contracts with written-notice termination, eligibility (hidden number must be postpaid or fixed line) and geographic availability rules.	M
CAT-M023	Device financing extensions: EMI eligibility restricted to employers with a BT MOU, repayment by salary standing instruction, recovery of outstanding balance from service benefits on exit, pre-booking with non-refundable prepayment, cashback, and device-bundled free data for a defined period.	M
CAT-M024	Tourist, travel and time-limited product constructs (SIM and eSIM), with passport eligibility, fixed SIM life, channel restrictions (counter, distributor, online booking) and dealer commission attributes.	M
CAT-M025	Enterprise and digital service products shall be catalogued with their pricing structures: bulk SMS one-time packs, A2P slab contracts, cell broadcast per area, contact-centre services, web/email hosting, .bt domain registration/renewal/transfer/forwarding (national and international pricing, prepaid and postpaid), data-centre services, Security-as-a-Service, IP transit, IP telephony, email services, P2P (national/international), IPVPN, PBX/PRI, IoT, and prepaid/postpaid BT Fiber (leased line) and BT AirFiber.	M

ID	Requirement	Pri
CAT-S002	Slice-as-a-Service and SATCOM-as-a-Service commercial packaging readiness (QoS/SLA tiers, validity, quota, slice/5QI mapping).	S
CAT-S003	Make-your-own (DIY) packages where customers compose voice/SMS/data content.	S

12.8 Customer Order, Service Order and Fulfilment

ID	Requirement	Pri
ORD-M001	Catalogue-driven customer order establishment, validation, enrichment, decomposition and orchestration.	M
ORD-M002	Separate customer-order and service-order lifecycle with governed commercial-to-technical contract.	M
ORD-M003	Service order decomposition into CFS/RFS/resource actions based on catalogue/service definitions.	M
ORD-M004	Serviceability/feasibility and capacity checks before an order is committed, plus reservation of resources (MSISDN, IMSI/SIM, eSIM profile, IP, port, circuit) with a soft hold during checkout, timeout/auto-release, and concurrency locking so the same number can't be assigned twice.	M
ORD-M005	Order tracking with unique order/sub-order IDs and persistent end-to-end correlation ID.	M
ORD-M006	In-flight order change control and versioning to avoid inconsistent states.	M
ORD-M007	Order SLA and jeopardy/fallout detection.	M
ORD-M008	Configurable retry, timeout, rollback, compensation and manual intervention.	M
ORD-M009	Fallout queue showing failed step, reason, logs, completed state and recovery action.	M
ORD-M010	Order completion only after defined verification and technical state update; sending a request alone is not completion.	M
ORD-M011	Bulk and partner-initiated orders with role-based controls and audit.	M
ORD-M012	Enterprise service acceptance/BAST workflow with document/e-signature integration and acceptance date.	M
ORD-M013	Shipment/logistics status integration for equipment/CPE orders and order lifecycle updates.	M
ORD-M014	Enterprise/fixed service orders shall support technical feasibility and capacity/resource checks before commitment where applicable, with reservation/hold, expiry/release and conflict handling for scarce resources.	M
ORD-M015	Order/service orchestration shall distinguish commercial entitlement, desired service state and verified actual network state; unresolved divergence shall create controlled fallout/reconciliation rather than silent completion.	M

ID	Requirement	Pri
ORD-M016	Online applications with feasibility and acceptance for BT AirFiber, BT Fiber (leased line), P2P/IPVPN, BTNIC Internet, hosting, .bt domains and data-centre services (and other BT services), including document upload, feasibility/survey tasks, quotation, customer acceptance and installation scheduling.	M
ORD-M017	Prepaid/postpaid conversion orders in both directions for mobile, BT Fiber and AirFiber, with minimum-plan checks, balance/deposit/outstanding settlement, number retention and effective-date control.	M
ORD-M018	Workforce/field-service integration for installation, activation, repair and relocation: work-order creation, appointment/dispatch, assignment/status exchange, completion evidence and closure updates with BT existing or future WFM/FSM platform.	M

12.9 Unified Provisioning and Service Orchestration

ID	Requirement	Pri
PRV-M001	Unified provisioning/orchestration across mobile, fixed, broadband, FWA, fibre, IP, enterprise, data-centre, security and future services in Day-1 catalogue.	M
PRV-M002	Reusable southbound adapter framework supporting REST/SOAP/TMF/NETCONF/YANG/SNMP/file/message/controlled command according to endpoint capability.	M
PRV-M003	Synchronous and asynchronous provisioning.	M
PRV-M004	Priority, queue, throttling, concurrency, retry and expiry controls per target.	M
PRV-M005	Closed-loop provisioning: request, execute, verify, reconcile intended vs actual state, recover/compensate, complete.	M
PRV-M006	Scheduled and on-demand discovery and network reconciliation where endpoint supports it.	M
PRV-M007	No hard-coded target-specific logic in commercial channels; adapter differences isolated behind integration/orchestration layer.	M
PRV-M008	Bulk provisioning and controlled operational GUI for restart/terminate/retry/fallout.	M
PRV-M009	BT currently uses Tayana AAA for the legacy DSL/PPPoE base. Service continuity is mandatory, but permanent retention is not prescribed. The bidder shall propose and price a technically and commercially optimized retain/integrate, replace/migrate, or equivalent standards-based approach. The solution may use AAA, an existing network/controller capability, a provisioning/service-control gateway or another suitable mechanism where applicable, provided migration/continuity, security, interoperability, closed-loop verification and lifecycle support are demonstrated.	M
PRV-M010	Service Entitlement & Network Enforcement shall support configurable activate/suspend/restrict/disconnect/reconnect/restore/terminate actions for BT Fiber (leased line), DSL, BT AirFiber and other applicable services based on	M

ID	Requirement	Pri
	prepaid validity, postpaid dunning, contract status, safe custody, administrative action and other configurable business events. Enforcement may use AAA, BNG/BRAS, PE/router, NMS/EMS, SDN/controller, gateway/API or equivalent bidder-proposed mechanism. Execution shall be closed-loop: request -> execute -> verify actual state -> reconcile/update -> notify, with retry, idempotency, timeout, rollback/compensation, fallout and audit.	
PRV-M011	Any new gateway/controller/adapter/component required to achieve service entitlement or network enforcement shall be explicitly included in architecture, BOM, licences, sizing, HA/DR, implementation, support and evaluated TCO; no mandatory dependency may be deferred to post-award discovery.	M
PRV-M012	Bidder shall disclose at bid stage the proposed integration mechanism and dependencies for applicable BNG/BRAS, GPON/OLT, PE/MPLS, AAA, EMS/NMS/SDN/controller and other service-control platforms, including protocol/API, required network-side changes, third-party licence, security, throughput and responsibility.	M
PRV-M013	Supplementary services and VAS provisioning: CLIR, call barring, call forwarding, CUG, VoLTE, CRBT, missed-call alert and other VAS to HLR/HSS/UDM, IMS and VAS platforms, closed-loop verified.	M
PRV-M014	Special-number provisioning: automatic mapping/unmapping of premium, toll-free and short-code numbers to hidden numbers on the switch/IMS/IN, replacing manual counter-to-core-to-billing hand-offs.	M
PRV-M015	Bandwidth change provisioning: automatic network re-provisioning when stacked or changed bandwidth offers start or expire (BNG/BRAS/PE/OLT/FWA), with verification of actual speed profile.	M
PRV-M016	Hosting and email provisioning integration (hosting control panel, mail platform) where APIs exist, otherwise governed task-based fulfilment with SLA and closure evidence; .bt domain lifecycle automation with the ccTLD registry under PRV-M018.	M
PRV-M017	AAA capabilities (supplied or integrated): RADIUS/Diameter authentication and authorization, service/profile assignment, start/interim/stop accounting, simultaneous-session control, tenant/realm awareness, reconciliation and audit.	M
PRV-M018	ISP domain automation with the .bt ccTLD registry: end-to-end automated .bt domain lifecycle through EPP (RFC 5730-5734) or the registry API, covering availability check, registration, renewal/auto-renewal, transfer in/out with authorization codes, registrant/contact updates, nameserver/DNS and forwarding updates, lock/unlock, and expiry -> grace -> redemption -> deletion; for national and international (USD) customers, prepaid and postpaid; driven by catalogue orders and payment status without manual registry keying; daily reconciliation of registry records against CBSS subscriptions and billing with discrepancy handling; secure credential storage and full audit.	M

12.10 Service/Resource Inventory, Numbering and eSIM

ID	Requirement	Pri
INV-M001	Authoritative technical inventory for agreed physical/logical resources and service instances.	M
INV-M002	Track sites, equipment, ports, links, logical circuits, addressing, topology, capacity, reservation and assignment where in scope.	M
INV-M003	Identifier lifecycle management for MSISDN, IMSI, ICCID, eSIM profiles (EID/ICCID), IP addresses and other governed identifiers. Covers pool/range definition, single and bulk block reservation, assignment, activation, suspension, churn release, configurable quarantine, reclaim, recycle, retirement and barring. The status model, allowed transitions, and full per-identifier history (who, when, why, which order) are configurable.	M
INV-M004	Inventory-to-network discovery/reconciliation with discrepancy management and controlled correction.	M
INV-M005	Commercial catalogue remains authoritative for offers; inventory is authoritative for technical state/resources.	M
INV-M006	eSIM/RSP integration (SM-DP+) with full lifecycle for eSIM profiles: profile inventory, download/activation, device change, deletion, and paired MSISDN/IMSI state kept in sync with the physical SIM inventory rules.	M
INV-M007	Service inventory shall maintain desired/expected service state and reconcile it with actual technical state obtained from applicable network/OSS/controller sources, with timestamp, source, discrepancy reason and controlled correction workflow.	M
INV-M008	IMSI, MSISDN and ICCID block/range reservation: bulk reservation of contiguous or non-contiguous blocks for dealers/distributors, enterprise customers, tenants (BT/GMC), campaigns, SIM production batches and internal/test use. Each reservation shall record owner, reason, approver (maker-checker), creation date and expiry, and shall support auto-release on expiry, partial release, transfer between owners and conflict prevention, with full audit.	M
INV-M009	Number inventory: authoritative master of every BT and GMC MSISDN range and of fixed-line, PBX/DID and service-number ranges, with per-number status (available, reserved, blocked, assigned, active, suspended, quarantine, recyclable, retired/barred) and full audit history.	M
INV-M010	IMSI inventory: IMSI series/ranges per HLR/HSS/UDM and per tenant, with status and history. Ki/OPc and other secret keys shall never be stored or displayed in clear text in BSS and shall be handled only through secure transport keys or the HSM/AuC process.	M
INV-M011	SIM/ICCID inventory: bulk load of SIM vendor output files (ICCID, IMSI, PIN/PUK, encrypted keys) with format and duplicate validation, batch/lot tracking, warehouse-to-branch-to-dealer stock transfer, damaged/lost/stolen status and stock counts by location.	M

ID	Requirement	Pri
INV-M012	MSISDN-IMSI pairing: support pre-pairing (at SIM production) and dynamic pairing (at point of sale). SIM swap keeps the MSISDN and re-pairs it to the new IMSI; the old IMSI moves to a configurable status (retired or recyclable). Pairing shall be consistent across OCS, PCRF/PCF, HLR/HSS/UDM and IMS.	M
INV-M013	Number categories: configurable golden/vanity/premium tiers based on digit-pattern rules (repeating digits, sequences and similar), each priced through the Product Catalogue, optionally hidden from general sale and released only with approval.	M
INV-M014	Number search and selection in all sales channels (shop, dealer, self-care, app, web): pattern search, random pick, category filter and a soft hold with timeout during checkout.	M
INV-M015	Churn-driven release: configurable rules that move numbers out of active use automatically, covering prepaid inactivity (no recharge/usage for a configured period), validity expiry plus grace, postpaid voluntary termination and involuntary termination after dunning, with pre-disconnection customer notifications and audit.	M
INV-M016	Quarantine/cool-off: configurable period by number category, tenant and churn reason (e.g., longer for golden numbers, which return to the premium pool). No number may be assigned during quarantine. The former owner may reclaim the number within quarantine after KYC verification.	M
INV-M017	Clean recycle: before re-release, verify and remove all residual state: OCS balances/buckets, PCRF/PCF profiles, HLR/HSS/UDM/IMS/VoLTE data, VAS subscriptions, CRBT, call forwarding, voicemail, eLoad/dealer links, CAMARA consents and notification settings. The previous owner's data shall be archived under the retention policy and never shown to the new owner. Each recycled number shall retain checklist evidence.	M
INV-M018	Number/SIM network consistency reconciliation: scheduled and on-demand comparison of MSISDN/IMSI status between inventory and HLR/HSS/UDM, OCS, PCRF/PCF and IMS, producing a discrepancy report (e.g., active in HSS but available in inventory) with controlled correction.	M
INV-M019	Stock monitoring: low-stock thresholds and alerts per pool, tenant, category and dealer; reservation ageing; utilisation, churn-release, quarantine and recycle reporting fed to MIS/BI.	M
INV-M020	Tenant segregation: separate number and SIM pools for BT and GMC, with controlled, approved transfer of ranges or blocks between tenants.	M
INV-M021	Regulatory numbering: track number ranges allocated by BICMA and produce utilisation and allocation reports in the required format.	M
INV-M022	Bulk inventory operations: bulk reserve, release, status change, category change and import/export through GUI and file, with maker-checker approval, validation preview, rollback and full audit.	M
INV-M023	Inventory APIs: expose number/SIM inventory, pools and reservations through standard APIs (TMF639 Resource Inventory, TMF685 Resource Pool Management or equivalent); the bidder shall state exact versions and conformance.	M

ID	Requirement	Pri
INV-M024	Special-number inventory: a separate managed pool for 3-, 4- and 6-digit premium numbers, service/USSD/SMS short codes and toll-free numbers, recording category, permitted regions (e.g., 6-digit numbers only in designated dzongkhags), status, owner, linked hidden number(s) and full history. Internal BT short codes (e.g., 1600, 123, *170#, 3333) shall be protected from sale.	M
INV-M025	Hidden-number mapping: map a premium/short/toll-free number to one or more hidden postpaid or fixed-line numbers, with change of hidden number, time-of-day or overflow routing where the network supports it, and automatic provisioning under PRV-M014.	M
INV-M026	Special-number lifecycle: leased (BT retains ownership), transfer only with approval, suspension according to the configurable dunning rule in BIL-M018 (current baseline two unpaid bills), termination followed by a configurable cool-off, then return to the premium pool; special numbers shall never be released into the ordinary number pool.	M
INV-M027	Number/SIM retention product: a paid retention service with configurable annual fee and maximum period during which the number is protected from churn and recycling; on expiry the number moves to quarantine automatically.	M
INV-S001	Golden/fancy mobile number sale methods per tier: fixed price, application/approval, or auction/bidding with reserve price, bid window and award workflow.	S
INV-S002	Mobile number portability readiness: ported-in/ported-out status, donor/recipient handling, central-database integration and routing-number (RN) handling in rating if MNP is mandated in Bhutan.	S

12.11 Payments, Voucher and eLoad/eRecharge

ID	Requirement	Pri
PAY-M001	BT-owned Payment Integration Middleware with canonical payment event model and partner abstraction, supporting transition from aggregator-based integrations to direct and/or selectively aggregated integrations without redesign of core billing.	M
PAY-M002	Integrate banks, MFS, RMA switch/rails, cards and other approved channels without point-to-point duplication in core BSS.	M
PAY-M003	Idempotency, duplicate protection, retry, timeout, reversal, compensation, circuit breaker, DLQ and manual exception handling.	M
PAY-M004	Per-service/service-ID segregation where a common external payment option is used.	M
PAY-M005	Payment authorization/status/reversal/settlement reconciliation and full audit.	M
PAY-M006	Online payment of device/EMI installments and allocation to installment schedule.	M
PAY-M007	Retain/integrate BT eLoad/eRecharge for electronic recharge; reconcile source request to OCS balance credit.	M

ID	Requirement	Pri
PAY-M008	Physical voucher/ePIN lifecycle: secure random PIN generation (nobody can view generated PINs), strong encryption (AES-256 or equivalent), printer decryption tool per printing vendor, batch/serial tracking, activation and locking by serial/batch, E-PIN allocation and rollback for POS, distribution, redemption, suspension, expiry, full history and reconciliation.	M
PAY-M009	Payment reconciliation, at least daily and automated, shall support bank/MFS/card/other rail settlement files or APIs, transaction-to-settlement matching, fees, reversals, refunds, chargebacks, unmatched items, suspense handling, ageing, reprocessing and financial control totals.	M
PAY-M010	Payment rails in scope (details in Annex Z): BT mobile money (B-Ngul), bank-linked wallet (B-Wallet), bank and payment apps currently used for BT recharge/bill payment (including MBoB, mPAY, TPAY, BDBL ePay and other approved apps), RMA switch/rails, cards, BT counters (cash/cheque), eLoad dealers, vouchers and salary standing instructions.	M
PAY-M011	B-Ngul and B-Wallet shall be retained and integrated (or migrated where BT approves) for recharge, bill payment, P2P, cash-in/cash-out at BT counters and bank transfers, with end-to-end reconciliation to OCS/AR and settlement.	M
PAY-M012	Online receipts and tax invoices: customers can download payment receipts and tax invoices by self-service (replacing the current receipt portal) with authenticity verification.	M
PAY-M013	Payroll/standing-instruction payments: file-based or API employer/bank deduction schedules for EMI and other instalments, with remittance matching, exceptions and arrears handling.	M
PAY-M014	Counter cash management: cashier sessions, till opening/closing, cash and cheque receipting, cheque bounce/reversal, bank deposit reconciliation and cashier-level audit.	M
PAY-M015	Recharge fraud control: subscribers entering a wrong voucher PIN a configurable number of times are placed in recharge-blacklist state until released, with notification and audit.	M
PAY-M016	Automatic recharge: periodic or low-balance-triggered recharge from a registered bank/MFS account or card, with consent, limits and notifications.	M
PAY-M017	Direct debit/auto-pay: generate bank debit files before due date, load bank response files, settle accounts automatically, keep direct-debit logs; bank/agency payment files with automatic matching and unallocated-payment handling.	M

12.12 Self-Care, Channels and Notifications

ID	Requirement	Pri
CHN-M001	Responsive self-care mobile app and web portal using same governed business APIs/rules as assisted channels.	M

ID	Requirement	Pri
CHN-M002	Dealer/agent/partner channel delivered through the same self-care mobile app and web portal using role-based dealer/partner login (no separate dealer application required), with role-specific visibility and functions per CHN-M014, and POS integration where used.	M
CHN-M003	Balance, usage, bill, payment, order, service, case and contract visibility according to permissions, including near-real-time itemised usage, bundle consumption, recent chargeable events and running expenditure.	M
CHN-M004	Central notification service supporting SMS, flash SMS, email, push and integration to WhatsApp/other approved channels.	M
CHN-M005	Templates, language, priority, trigger/schedule, retry, fallback, delivery status and customer preferences.	M
CHN-M006	Contact-centre/IVR/AI-agent integration through controlled APIs, including CTI screen-pop and customer identification, customer context and interaction hand-off.	M
CHN-M007	A new ticketing/case capability is a baseline deliverable and shall integrate with CRM, contact centre, field teams and ITSM/processes; it shall support categorisation, SLA, priority, assignment, escalation, master/child/outage cases, status/history and audit.	M
CHN-M008	Existing USSD Gateway shall be retained and integrated for applicable customer/service journeys.	M
CHN-M009	Actionable notifications where supported, with secure deep link or action context.	M
CHN-M010	USSI/IMS integration is mandatory. The proposed CBSS shall support and integrate IMS/USSI-based service interaction required for 4G/5G/IMS services, including all CBSS-side interfaces, APIs/adapters, configuration, licences, testing and integration. Dependencies on IMS/core-network functionality shall be explicitly identified in the Responsibility and Dependency Matrices.	M
CHN-M011	Existing digital channels shall be replaced or integrated as decided in Annex F, at minimum: myBT app, online service request portal, bill receipt portal, tourist SIM booking portal, CRBT portal and AI plan portal. Replaced channels shall retain at least their current functions and migrate registered users without forced re-registration.	M
CHN-M012	SMS keyword and short-code self-care (e.g., broadband 2929, transfer registration 158, student 3333), IVR self-service (e.g., 123) and USSD menus (e.g., *170#, *127#, *130#, *111#, *555#) shall continue on the new platform with configurable keywords, menus and responses.	M
CHN-M013	Chatbot/virtual agent integration for self-care and contact centre using governed business APIs, with human hand-off and audit.	M

ID	Requirement	Pri
CHN-M014	Dealer/partner functions within the self-care app and web portal via role-based login (distributor, dealer, retailer, enterprise partner): customer onboarding with e-KYC/NDI and document capture, SIM/eSIM activation, number selection from the dealer's reserved blocks, SIM/voucher stock view, stock requests/transfers/returns, eLoad float balance and top-up requests, recharge sales, commissions and statements with disputes, targets and dashboards, notifications, offline capture with later sync where connectivity is poor, device binding, MFA/PIN and full audit.	M
CHN-M015	Notification controls: up to at least five balance/credit thresholds per subscriber, customer-defined thresholds, quiet hours and holiday suppression for offline notifications, automatic SMS splitting, paced sending for mass expiry/reminder events to protect SMSC capacity, low-balance warning tone where the network supports it, and GUI-editable SMS/USSD templates in multiple languages.	M
CHN-M016	Unified CSR/agent workbench with 360-degree customer context and controlled order, payment, ticket and service actions.	M
CHN-M017	Display of all active BT services with the customer including subscriptions, promotions, start/expiry dates, and other relevant live details.	
CHN-C001	Government-to-Citizen (G2C) readiness for future authorised bill presentment, payment and notification integration with GovTech platforms.	C

12.13 Partner Relationship, Dealer and Commission Management

ID	Requirement	Pri
PRM-M001	Partner master for dealers, distributors, retailers, content/OTT/IoT providers, enterprise partners, MVNOs and other ecosystem entities.	M
PRM-M002	Partner hierarchy, contract, entitlement, product/catalogue visibility and self-care.	M
PRM-M003	Configurable commissions, incentives, revenue share, settlement and payout approval.	M
PRM-M004	Channel inventory/resource/device requests and transfer workflows.	M
PRM-M005	Partner statement/invoice/reconciliation and dispute support.	M
PRM-M006	Commission rules GUI-configurable without code and effective-dated.	M
PRM-M007	eLoad and SIM distribution hierarchy: distributor-dealer-retailer (including tourist SIM dealers), dealer float/stock, dealer-to-dealer transfer, commissions, KYC and performance reporting.	M
PRM-M008	Content/VAS/eSIM partner settlement: revenue share and settlement for CRBT/VAS, AI/content partners and travel eSIM partners, with partner statements, disputes and GL posting.	M

12.14 Revenue Assurance and Fraud Management

ID	Requirement	Pri
RAF-M001	Independent RA/Fraud capability ingesting source and target records across usage, charging, billing, provisioning, payment, partner and finance domains.	M
RAF-M002	Streaming/API/file ingestion with data-quality checks for sequence, completeness, duplicate, schema, timestamp and expected volume.	M
RAF-M003	RA controls for source-to-mediation, rated-to-billed, active-not-billed, billed-not-active, recharge-to-balance, payment-to-AR, billing-to-GL, roaming/interconnect and partner settlement.	M
RAF-M004	Fraud controls for recharge/payment abuse, IRSF, international spikes, premium-rate abuse, SIM-box/bypass, CLI manipulation, SIM swap, account takeover, roaming anomalies, device concentration and promotion abuse.	M
RAF-M005	Case management with prioritization by exposure, confidence, urgency, recurrence and customer impact.	M
RAF-M006	Track revenue at risk, prevented loss and recovered value.	M
RAF-M007	Rule/model changes separately governed from production systems being validated.	M
RAF-M008	ML model inventory, validation, drift monitoring, explainability and approval where ML is used.	M
RAF-M011	RA/Fraud controls shall independently ingest and compare source/network, charging, mediation, billing, payment and settlement evidence as applicable; assurance shall not depend solely on downstream Billing outputs or a single vendor-derived record stream.	M
RAF-M009	Roaming and interconnect fraud and assurance: NRTRDE/HUR-based high-usage monitoring, IRSF, bypass/SIM-box, roaming usage without TAP records, interconnect traffic-to-invoice controls, and IOT discount-agreement assurance.	M
RAF-M010	Messaging and special-number fraud and assurance: A2P grey-route and SIM-farm SMS, sender-ID abuse, toll-free/premium-number abuse, balance-transfer and bonus abuse, and bulk-SMS/A2P volume-to-invoice reconciliation.	M
RAF-M012	Fraud and RA rule set (configurable thresholds and actions, real-time/near-real-time/batch): high-velocity recharge, rapid balance depletion, SIM-box/bypass, multi-SIM/device anomaly, international call spike, premium-rate abuse, roaming anomaly, account takeover/login anomaly, credit-limit breach, FWA/CPE location anomaly, IoT geo/device anomaly, duplicate payment, reversal after activation, high-value/cumulative payment anomaly, identity reuse/synthetic customer, promotion/bonus abuse, CDR loss/gap, rated-vs-billed variance, payment-vs-ledger variance and partner settlement variance; daily reconciliations for bank/MFS-to-ledger, network-to-mediation, mediation-to-rating, rating-to-billing, billing-to-GL and roaming/interconnect settlement.	M

12.15 MIS/BI, Reporting and Enterprise Analytics & AI Integration

ID	Requirement	Pri
MIS-M001	The CBSS shall include a comprehensive Integrated MIS, Business Intelligence and Analytics capability as a mandatory baseline capability supporting operational, business, management and executive reporting without dependency on a separate enterprise BI platform for routine analytics during the initial operating years.	M
MIS-M002	Support all BT mandated operational, financial, customer, charging, billing, roaming, partner, assurance and management reports/KPIs, including BT existing Daily Report metrics, without artificial functional restriction.	M
MIS-M003	Provide at least 13 months of online analytical history and support Day-on-Day, Week-on-Week, MoM, QoQ, YoY, MTD, YTD, rolling 7/30-day and rolling 12/13-month analysis plus configurable custom periods.	M
MIS-M004	Provide authorized self-service ad-hoc report and dashboard creation with field/measure selection, calculated measures, multidimensional filters, groupings, pivoting, sorting, drill-down, drill-through, visualization, save/share, scheduling and export without vendor coding for routine reporting.	M
MIS-M005	No artificial licence/design restriction on number of reports, report fields, filters, dashboards, scheduled reports, KPI definitions or authorized users unless a technically justified limit is explicitly declared, sized and priced.	M
MIS-M006	Support scheduled and on-demand distribution/export to Excel (.xlsx), CSV and PDF where applicable, plus governed API/data feeds; failed scheduled jobs shall be visible/alerted.	M
MIS-M007	Reporting and analytical workloads shall not materially degrade production charging or transactional workloads. Bidder shall provide a sized isolation/replication/analytical-store architecture, concurrency assumptions and measurable response-time targets.	M
MIS-M008	Expose governed decoded CDRs, usage/rated/charging events, customer, product, service, order, inventory, billing, payment, campaign, partner and relevant audit data to BT's future Enterprise Analytics & AI Platform through documented non-restrictive APIs, events and/or batch feeds.	M
MIS-M009	Provide a complete business data dictionary, KPI catalogue, schema/version documentation, source-of-record mapping, lineage, sensitivity classification and refresh/latency documentation for reportable data.	M
MIS-M010	Provide role-based operational, management and executive dashboards with KPI cards, tables, charts, trends, comparison, filters, drill-down/drill-through, saved views and configurable refresh.	M
MIS-M011	Support multidimensional analysis across applicable combinations of time, customer/account, segment, prepaid/postpaid/hybrid, consumer/enterprise, product/offer/service, channel/dealer, geography, payment method, billing cycle, technology, usage type, roaming, partner, tenant, enterprise hierarchy, order status and campaign.	M

ID	Requirement	Pri
MIS-M012	Provide a governed telecom KPI catalogue covering at minimum subscriber/customer, acquisition/churn, usage, revenue, ARPU, billing, AR/ageing, collections, payments, product, order/fulfilment, enterprise, channel/dealer, roaming/interconnect, RA/Fraud and service-lifecycle measures. KPI definitions/formulae shall be versioned and auditable.	M
MIS-M013	Customer 360 analytics shall combine authorized customer profile, products/services, balances, usage, bills, payments, AR, orders, cases, contracts, devices, campaigns and service status with relevant historical trends.	M
MIS-M014	Revenue analytics shall distinguish and reconcile, as applicable, billed, unbilled, collected, outstanding, adjusted, refunded and written-off amounts and permit analysis by product, customer/segment, service, channel, geography and time.	M
MIS-M015	Authorized users shall be able to define governed calculated measures/KPIs, with formula, naming, ownership, versioning, approval and access control.	M
MIS-M016	Support configurable KPI/exception thresholds and alerts for material deviations such as revenue drop, payment/recharge failure, reconciliation backlog, provisioning failure, AR/dunning threshold, SLA breach and processing backlog.	M
MIS-M017	Provide reporting classes with appropriate refresh latency: near-real-time operational dashboards for critical flows, periodic management analytics, and batch/period-close reporting. Bidder shall declare and meet refresh/latency targets.	M
MIS-M018	Provide report/dashboard RBAC, row/data-level security where applicable, tenant isolation, sensitive-field masking, controlled export and audit of access/export/administrative changes.	M
MIS-M019	Provide embedded/contextual analytics within relevant charging, billing, CRM, order, payment, CVM, RA/Fraud and operations modules, in addition to a central cross-domain MIS/BI portal.	M
MIS-M020	Predictive churn analytics shall be baseline production capability, producing customer/subscriber churn propensity or risk segmentation with explainable drivers, configurable thresholds, history, governance and actionable outputs for authorized business processes.	M
MIS-M021	Next-Best-Offer/Next-Best-Action (NBO/NBA) shall be baseline production capability using governed customer, product, usage, eligibility, consent and contextual data to generate explainable recommendations that can be actioned through campaigns/channels with outcome tracking.	M
MIS-M022	Anomaly detection shall be baseline production capability for configurable relevant domains such as revenue, usage, charging, billing, payments, orders and operational KPIs, with explainable alert/context, thresholds or model controls, case/action integration and audit trail.	M
MIS-M023	AI/ML analytics used for churn, NBO/NBA and anomaly detection shall include model/version governance, access control, monitoring, explainability appropriate to use, human review/override where business action is consequential, and configurable retraining/recalibration or documented operational process.	M

ID	Requirement	Pri
MIS-M024	All software, AI/ML components, third-party/OEM products, licences, model-serving/inference entitlements, data stores, infrastructure and implementation required for baseline MIS/BI/Analytics shall be included in the baseline solution.	M
MIS-M025	Bidder shall disclose BI/Analytics licensing metrics and ceilings including, where applicable, named/concurrent users, reports, dashboards, data volume, storage, compute, model execution/inference, API calls and tenants. Baseline sizing shall not depend on undisclosed per-report/per-dashboard/per-KPI charges.	M
MIS-M026	Data beyond the 13-month online analytical period shall be archived for at least ten (10) years for CDRs/rated events, invoices, payments, adjustments, KYC records and audit logs, retrievable within 48 hours through a governed archive/reporting mechanism, with configurable retention per data class (MIS-M030). Bidders shall size and price the ten-year archive.	M
MIS-M027	For selected executive and financial KPIs, the solution shall support traceability from dashboard value through aggregation/transformation to authoritative source transactions/events, subject to access controls.	M
MIS-M028	Number, SIM and special-number analytics: stock, utilisation, reservations, churn releases, quarantine and recycle counts, retention and special-number revenue.	M
MIS-M029	Regulatory and statutory reporting catalogue: BICMA (subscribers, traffic, QoS-related billing data, numbering, roaming), RMA, RAA and Department of Revenue and Customs (GST) reports, effective-dated and auditable.	M
MIS-M030	Retention by data class: configurable online (minimum 13 months for year-on-year comparison) and archive (minimum 10 years) periods per data class (CDRs/rated events, invoices, payments, adjustments, KYC, audit/security logs, operational logs), with retrieval SLA, legal hold and governed deletion.	M
MIS-M031	The report catalogue in Annex X (H001-H064) is the mandatory minimum set of standard reports/dashboards.	M

The CBSS Integrated MIS/BI & Analytics capability is a Common mandatory capability spanning Groups A, B and C. It shall serve as BT's primary operational, business, management and executive reporting/analytics capability during the initial operating years, while preserving governed and non-restrictive data portability to BT's future Enterprise Analytics & AI Platform. Domain reporting remains embedded in the relevant functional modules, while cross-domain dashboards, KPI governance, self-service analytics, predictive churn, NBO/NBA and anomaly detection shall operate coherently across the solution. Detailed contractual requirements are defined in the MIS requirement matrix and acceptance scenarios. Bidder report/dashboard responses shall be catalogued in Annex X using the prescribed purpose, user-role, source-of-truth, refresh/data-latency and drill-capability fields. Track B has primary delivery and operational ownership of the COMMON Integrated MIS/BI & Analytics platform. Tracks A and C remain responsible for their domain reporting and timely, governed data/event feeds, reconciliation and integration. Allocation shall not duplicate shared licences or costs or leave any offered track without applicable reporting and analytics obligations.

12.16 Multi-Tenancy, MVNO/MVNE and BSS-as-a-Service

ID	Requirement	Pri

ID	Requirement	Pri
TEN-M001	Multi-tenancy means legally/operationally distinct tenants, not merely customer segments.	M
TEN-M002	Tenant context persists across API, event, database operation, report, log, backup and administrative action.	M
TEN-M003	Tenant-specific customer data, catalogue, pricing, charging, policy, billing, channels, reporting and delegated administration.	M
TEN-M004	Isolation across application, database/data partitions, cache, message/event, API, logs, backup, credentials and admin.	M
TEN-M005	Tenant-aware routing, rate limits, quotas and performance controls.	M
TEN-M006	Positive and cross-tenant negative security tests required.	M
TEN-M007	Tenant lifecycle: create, configure, onboard, monitor, suspend, migrate, export and terminate/delete according to policy.	M
TEN-M008	BT super-administrator oversight; delegated tenant administrators cannot access other tenant/platform-admin scope.	M
TEN-M009	Bidder declares supported tenancy models (pooled/shared, dedicated/silo and hybrid), maximum tested tenant scale, per-tenant and aggregate performance limits, per-component tenant/MVNO licence bands and expansion costs; any hard limit is explicit.	M
TEN-M010	GMC readiness: the Day-1 CBSS architecture shall support GMC as a separate logical tenant/brand/business unit on the same common CBSS platform without requiring a separate BSS technology stack. Appropriate logical segregation shall cover customer, catalogue, charging, billing, channels, reporting, APIs, administration and data.	M
TEN-M011	GMC and tenant licensing transparency: (a) pooled/transferable aggregate capacity model where supported and (b) separate GMC licensing alternative, plus firm/capped incremental tenant price bands for at least Tenant 2, Tenants 3-5 and Tenants 6-10 through the contract/AMC term. Tenant-enablement, subscriber/service capacity, common platform/module, third-party and implementation charges shall be separately identified.	M
TEN-M012	Licence portability/fungibility: bidder shall state whether contracted subscriber/service capacity can be allocated or transferred between BT and GMC while aggregate licensed capacity is unchanged, including restrictions, minimum blocks, transfer frequency, fees, reversibility and AMC/DR implications.	M
TEN-M013	GMC capacity and expansion: GMC shall use common infrastructure while aggregate capacity/headroom is sufficient. Bidder shall disclose thresholds at which incremental compute, storage, network, database, licence or third-party capacity is required and separately price representative GMC expansion bands including zero net-new/redistributed capacity and incremental growth.	M
TEN-M014	GMC DR shall follow the same baseline DR strategy as BT: backup/recovery plus critical-system/node DR. Full-fledged DR remains a separately priced recommended option for the overall CBSS; GMC may subsequently adopt	M

ID	Requirement	Pri
	enhanced/separate DR if required. Production and DR licence rights/constraints for GMC shall be explicitly disclosed.	
TEN-S001	Platform architecture should demonstrate released multi-tenancy/MVNO/MVNE/BSSaaS readiness across applicable domains. Actual tenant/MVNO production onboarding, tenant-specific licences/capacity and launch implementation are separately priced future options unless activated by BT.	S
TEN-S002	Future external MVNO/MVNE/BSSaaS commercial activation beyond GMC shall be supported without core architecture replacement. Bidder shall provide future tenant/unit-price schedules and disclose incremental tenant, subscriber, module, infrastructure, third-party, implementation and AMC costs.	S
TEN-M015	For GMC and each supported tenant model, bidder shall disclose Track A/B/C production and DR licence implications, tenant-enablement versus subscriber/service capacity, common-module reuse, third-party licences, infrastructure thresholds and any restrictions on pooled/transferable capacity.	M

12.17 CAMARA / Network Capability Exposure and API Monetization

ID	Requirement	Pri
NAX-M001	CAMARA/network capability exposure is part of initial delivery, not a future-priced-only concept.	M
NAX-M002	Provide API inventory with CAMARA API name, version, implementation status, underlying network capability and dependency.	M
NAX-M003	Initial priority APIs shall include Number Verification, SIM Swap, Device Location/Location Verification, Device Status and Quality on Demand where network support exists; bidder shall state any dependency/roadmap clearly.	M
NAX-M004	Secure API exposure with OAuth2/OIDC or applicable standard, consent, authorization, rate limits, quota, audit and abuse protection.	M
NAX-M005	Developer/partner onboarding, subscription/package management, API keys/credentials and sandbox/testing capability using BT UAT/Training environments or approved isolated Sandbox partitions.	M
NAX-M006	API metering and monetization integrated to OCS/CHF/Billing/Partner Settlement.	M
NAX-M007	Support transaction/event/volume/time/QoS/subscription/tier/quota/overage pricing.	M
NAX-M008	API usage analytics, SLA, error/latency metrics and reconciliation between metering, charging and invoicing.	M
NAX-M009	Versioning and backward-compatible API lifecycle/deprecation policy.	M
NAX-M010	Network capability exposure/API management is a common/cross-domain capability; Group A owns charging/metering integration where real-time monetization applies, Group B owns invoicing/AR/partner financial settlement	M

ID	Requirement	Pri
	where applicable, and Group C provides governed customer/product/partner context. Bidder shall avoid duplicate authoritative metering or monetization state.	

12.18 Campaign, CVM, Loyalty and AI-Assisted Business Processes

ID	Requirement	Pri
CVM-M001	Campaign lifecycle: plan, segment, design, approve, schedule, execute, monitor and evaluate.	M
CVM-M002	Multi-channel campaigns and customer journey orchestration.	M
CVM-M003	Integration with Enterprise Analytics & AI Platform for segmentation/model scores and campaign outcomes.	M
CVM-M004	A/B testing, control groups and campaign ROI/conversion measurement.	M
CVM-M005	Customer consent/preference and exclusion lists applied consistently.	M
CVM-M006	Predictive churn and Next-Best-Offer/Next-Best-Action are baseline integrated capabilities of Campaign & CVM, consuming MIS-M020 and MIS-M021 outputs.	M
CVM-M007	Loyalty and rewards: points earn on recharge, bill payment, tenure and campaigns; tiers; redemption into bundles, devices, bill credit or partner rewards; expiry; fraud controls; and loyalty liability accounting to GL.	M
CVM-M008	Contest and reward mechanics: recharge- or purchase-triggered entries, eligibility windows, draws/selection with audit, automatic prize fulfilment (e.g., plan activation) and notification.	M
CVM-M009	Technology-sunset, retention and win-back campaigns linked to CRM-M017, including device/SIM upgrade offers and tracking.	M
CVM-S001	Cross-sell/upsell, channel-preference and other propensity models beyond the mandatory baseline analytics (predictive churn and NBO/NBA are mandatory under CVM-M006, MIS-M020 and MIS-M021) may be native or integrated.	S
CVM-S002	AI-assisted dunning optimisation may recommend risk segment, channel/time and prioritisation but shall not replace deterministic rules or human override.	S

12.19 Enterprise Messaging, Special Numbers, Hosting and Data Centre Services

ID	Requirement	Pri
ESV-M001	Bulk SMS (one-time): minimum charge covering an initial SMS quantity, tiered per-SMS pricing above it, whole-network flat-rate broadcast, prepayment, submission by portal/API/file, content approval, scheduling and delivery reporting.	M
ESV-M002	A2P/SMSC gateway contracts: monthly slab commitments with tiered overage rates, sender-ID registration and whitelisting, throughput limits, delivery-report-based charging where contracted, enterprise postpaid billing and usage statements.	M

ID	Requirement	Pri
ESV-M003	Cell broadcast commercial service (where BT operates it commercially): per-area (dzongkhag) pricing, scheduling, approval and billing; public-warning broadcasts shall be non-billable and prioritised.	M
ESV-M004	Premium, toll-free and short-code enterprise services delivered through INV-M024 to INV-M026, CAT-M022, CHG-M036 and PRV-M014, including enterprise usage statements.	M
ESV-M005	Contact-centre-as-a-service billing: seats/agents, IVR minutes, call recording/storage, toll-free and outbound usage, with contract-based pricing.	M
ESV-M006	Web hosting, email hosting and .bt domain services: plan catalogue, annual billing, national and international (USD) pricing, domain forwarding, renewal reminders, grace, expiry, suspension and deletion lifecycle, fully automated with the .bt ccTLD registry under PRV-M018.	M
ESV-M007	Data-centre services: rack/cage/power/cross-connect/VPS/managed services ordering, contract and billing under BIL-M039, including SLA reporting.	M
ESV-M008	Enterprise connectivity SLA management: service-level targets per contract for leased line, P2P/IPVPN, Internet and data-centre services, with measured availability and automatic SLA rebates/credits on invoices.	M

13. NON-FUNCTIONAL REQUIREMENTS

13.1 Architecture and Design

ID	Requirement	Pri
ARC-M001	Modular, loosely coupled architecture with independently scalable/deployable services.	M
ARC-M002	Cloud-native/container-ready on BT on-premises private cloud; declarative deployment/IaC where applicable.	M
ARC-M003	API-first; UI functions use documented secured APIs or equivalent governed service contracts.	M
ARC-M004	Event-driven integration through durable broker/event platform; no undocumented database coupling.	M
ARC-M005	Horizontal scale-out without architectural redesign; bidder states scale increments and bottlenecks.	M
ARC-M006	Authoritative data model and no competing masters.	M
ARC-M007	Configuration over customization; business rules externalized.	M
ARC-M008	Backward-compatible API and event schema versioning/deprecation policy.	M
ARC-M009	IPv4/IPv6 dual-stack support across application, API, management and integrations, with IPv6 security controls (firewalling, ACLs, monitoring, vulnerability management, logging) equivalent to IPv4.	M

ID	Requirement	Pri
ARC-M010	No EOL/EOS OS/database/middleware/framework/library at go-live; SBOM and lifecycle matrix supplied.	M
ARC-M011	Portable data/export formats and documented schemas to reduce lock-in.	M
ARC-M012	Documented capacity model linking Annex E business volumes to infrastructure and licences.	M
ARC-M013	Configuration promotion across Supplier environment -> BT testing/UAT and staging -> Production with approval, version history, rollback and minimal manual re-keying.	M
ARC-M014	Rolling/blue-green/canary upgrades, patches and backward-compatible database/schema evolution with zero or minimal downtime and tested rollback; any planned interruption declared by component with duration and mitigation.	M
ARC-M015	English shall be the mandatory/default language. Dzongkha shall be optional/future-ready through language packs/configuration without core-code change and shall not inflate baseline cost.	M
ARC-M016	The bidder shall include all network switching and routing infrastructure required for a complete, resilient and supportable CBSS deployment. Essential network switch/router capacity shall be mandatory baseline scope; existing BT infrastructure may be reused only where explicitly validated for compatibility, capacity, resilience and lifecycle.	M
ARC-M017	Bidder shall submit a cross-track contract catalogue covering C->A/B product publication, A->B rated usage, B->C entitlement/restoration, payment/AR status, service activation context, CAMARA monetization and reconciliation, including schema/version, ownership, latency, retry, idempotency and acceptance test.	M
ARC-M018	Dual-core continuity: the solution shall operate with BT's two geographically separated Ericsson core sites, maintaining charging/policy session and state continuity, failover and coexistence without duplicate or lost charging.	M
ARC-S001	Roadmap readiness: high-scale IoT/M2M charging, NTN/satellite access charging and policy, and 5G-Advanced/6G evolution of charging, policy, mediation, catalogue and APIs.	S

13.2 Availability, Resilience and Performance

ID	Requirement	Pri
AVL-M001	Charging/OCS/CHF critical path target availability >=99.99% monthly excluding approved maintenance.	M
AVL-M002	Core BSS target availability >=99.9% monthly.	M
AVL-M003	No single point of failure in production critical path.	M
AVL-M004	N+1 or better component resilience as justified by architecture.	M

ID	Requirement	Pri
AVL-M005	Document failure-mode and effects analysis and component-level HA matrix.	M
AVL-M006	Automatic failover for single-node/service failures where technically appropriate.	M
AVL-M007	Graceful degradation/load shedding with priority for charging, payment and critical customer functions and no loss of financial events.	M
AVL-M008	Split-brain prevention/quorum/data consistency documented for stateful services.	M
AVL-M009	Charging session continuity and transaction idempotency through node/component failover.	M
AVL-M010	p50/p95/p99 latency, sustained/peak TPS and concurrency measured under normal and failover conditions.	M

13.3 Capacity and Performance Engineering

Performance engineering shall cover both component-level metrics and end-to-end business elapsed time. Sizing shall include interactive users, workflow/orchestration concurrency, BI/reporting concurrency, batch/bill windows, HA/failover, growth headroom and all infrastructure/licensing necessary to meet the committed P95/P99 and throughput targets within the declared workload envelope.

ID	Requirement	Pri
PRF-M001	Bidder sizing shall cover Year-1 through Year-5 growth, peak/BH traffic, concurrency, CDR/event volumes, API TPS, recharge/payment TPS, bill windows, reporting concurrency, migration and failover.	M
PRF-M002	Bidder shall declare all sizing assumptions before bid closure; unstated assumptions cannot later justify additional cost.	M
PRF-M003	Capacity includes node-failure and mandatory critical-DR failure headroom.	M
PRF-M004	State maximum tested capacity, licensed capacity, expansion unit and expansion price per component.	M
PRF-M005	No hidden CPU/core/container/instance/API/session/TPS/subscriber licence metric.	M
PRF-M006	Performance tests use production-like workload mix and include long-duration soak and backlog recovery.	M
PRF-M007	Bid-stage capacity/licensing disclosure shall state per-component engineered load, supplied capacity, tested maximum, licensed ceiling, expansion trigger/unit, incremental hardware/software/third-party requirement and unit price for charging TPS/sessions, mediation EPS, billing volumes, API TPS, tenants and other material metrics.	M

13.4 Backup, Disaster Recovery and Business Continuity Strategy

BT DR Strategy: BT requires a cost-optimised three-tier approach. Scenario 1 and Scenario 2 are mandatory. Scenario 3 is a separately priced recommended enhancement. All scenarios shall be designed using a common criticality model so BT can compare resilience and cost.

Scenario	Status	Minimum Requirement	Pricing
DR-1: Backup & Recovery Baseline	MANDATORY	Automated encrypted backups, integrity validation, point-in-time/selective restore, off-system/offline or immutable protection where appropriate, restore drills and documented recovery. Backup compute/storage/network/security resources shall be designed for later reuse in DR where technically feasible. Bidder shall state reusable components, reuse percentage/value, prerequisites and unavoidable stranded cost.	Included in base price; separately itemised.
DR-2: Critical Systems DR	MUST HAVE	Bidder shall identify and design the critical systems/nodes required to maintain essential service and revenue continuity, at minimum considering OCS/CHF/charging gateway/balance/rating, PCRF/PCF where service-affecting, payment/recharge critical path, integration/event backbone and other objectively critical dependencies. Non-critical domains may operate in controlled degraded mode with documented recovery.	Included as mandatory scope; component-level cost separately identified.
DR-3: Recommended Full-Fledged DR	RECOMMENDED / OPTIONAL FOR AWARD	Production-equivalent or appropriately scaled DR for the full CBSS stack, including applications, data, integrations, security and operations, with component-specific RPO/RTO and failover/failback. Bidder may propose active-active or active-standby based on best engineering/TCO.	Separate option with complete BOM, licences, services, inter-site requirements, AMC and validity/escalation protection.

13.4.1 Detailed DR Requirements

ID	Requirement	Pri
DR-M001	Submit service criticality matrix and recovery sequence/dependencies for all components.	M
DR-M002	Submit component-level RPO/RTO, replication method, failover/failback, capacity during failure and manual/automatic decision points.	M
DR-M003	Scenario 2 critical-node selection shall be justified by revenue/customer/service impact, not vendor convenience.	M

ID	Requirement	Pri
DR-M004	Document controlled degraded-mode behavior for components not protected under Scenario 2.	M
DR-M005	Backup restore and DR failover/failback drills shall be executed during acceptance and periodically during AMC.	M
DR-M006	No DR option shall require avoidable replacement of Scenario-1 backup resources that were contractually designated reusable.	M
DR-M007	Licensing shall permit required DR operation without emergency licence purchase.	M
DR-M008	DNS, routing, firewall, certificates, IAM/PAM, secrets and external dependencies included in recovery runbook.	M
DR-M009	Backups fully automated and policy-based (no dependence on manual operator action), encrypted, integrity-validated, immutable/ransomware-resilient for critical data, monitored with failure alerts, with restore drills at least quarterly proving RTO/RPO.	M

13.5 Security, Privacy and Data Sovereignty

ID	Requirement	Pri
SEC-M001	Zero-trust aligned identity/access with SSO/federation, MFA, RBAC/ABAC, least privilege and segregation of duties.	M
SEC-M002	PAM/JIT or equivalent controlled privileged access, named accounts, session logging and approval.	M
SEC-M003	TLS 1.2/1.3 and strong encryption at rest; mTLS where appropriate.	M
SEC-M004	Central key/certificate lifecycle management and rotation.	M
SEC-M005	Secure SDLC, SAST/DAST/dependency/container scanning and vulnerability remediation.	M
SEC-M006	Software Bill of Materials for all supplied software and third-party libraries.	M
SEC-M007	Dedicated BSS security zones/firewall controls with HA where required; complete port/protocol matrix.	M
SEC-M008	Central logs, tamper-evident audit, SIEM integration and forensic readiness.	M
SEC-M009	Remote support through BT-approved bastion/PAM; time-bound access; no unmanaged production-data copies.	M

ID	Requirement	Pri
SEC-M010	All subscriber PII, KYC, charging/billing records, CDRs and other regulated production data, including backups, logs, telemetry and diagnostics, shall reside and be processed in Bhutan. Overseas hosting, replication, analytics processing and remote-support access to such data require BT prior written approval and declared safeguards. This does not prohibit legitimate international roaming, interconnect, clearing-house and partner settlement exchanges necessary for contracted services, subject to BT-approved purpose, minimum necessary data, secure transfer, access controls, auditability and applicable regulatory requirements. Such exchanges shall not permit general offshore hosting or unrestricted replication.	M
SEC-M011	Tenant security isolation across data/cache/events/API/logs/backups/credentials/admin.	M
SEC-M012	Annual penetration testing during AMC and remediation within agreed severity SLA.	M
SEC-M013	End-to-end CBSS security enforcement is mandatory, including segmentation, north-south and east-west protection, API and management-plane security, access control, logging and SIEM integration. A dedicated physical firewall appliance is not mandatory where the bidder demonstrates equivalent or superior protection through virtual/distributed/cloud-native/host-based controls or a combination thereof. If the bidder requires a physical NGFW to meet the mandatory security outcome, it shall be included in baseline scope and price. A Security Architecture and Control Matrix shall identify control points, mechanism, component, HA, sizing, licence and ownership. Firewall operations, administration and maintenance (rule changes, configuration backup/restore, firmware/software upgrades, patches, vulnerability remediation, licence/subscription renewal, HA support and monitoring) are included throughout warranty and AMC without separate charge.	M
SEC-M014	Lawful-intercept and regulatory data-feed hooks applicable to the BSS scope, without replacing or bypassing network-domain lawful-interception functions.	M
SEC-M015	Certifications and standards: ISO 27001 (see EXP-006), ISO 27701 or equivalent privacy controls, SOC 2 Type II where available, and PCI DSS compliance for card-payment components.	M
SEC-M016	Advanced security controls: tamper-evident/WORM audit logging, forensic readiness and chain of custody, container/image scanning, software supply-chain and subcontractor security, and secure data destruction at decommissioning.	M
SEC-M017	Independent penetration test before Go-Live and at least annually, with critical/high findings remediated within the agreed SLA at no additional cost.	M
SEC-S001	Crypto-agility and post-quantum cryptography migration roadmap covering algorithms, protocols and key/certificate lifecycle.	S

13.6 Observability, Operations and Lifecycle

ID	Requirement	Pri

ID	Requirement	Pri
OPS-M001	Central operational view for service health, alarms, performance, logs, traces, capacity, backups, certificates, security events and release status; alarm severity aligned with ITU-T X.733 (critical, major, minor, warning, indeterminate, cleared) with correlation, acknowledgement and escalation, and northbound integration to BT NMS/OSS/SIEM.	M
OPS-M002	Export metrics/logs/traces to BT monitoring/SIEM using documented interfaces.	M
OPS-M003	Capacity thresholds and forecast/alerting.	M
OPS-M004	Automated restart/self-healing for suitable stateless workloads with safeguards for stateful/financial services.	M
OPS-M005	Configuration/audit changes timestamped with user, old/new value, approval and effective time.	M
OPS-M006	SLOs/SLIs and error-budget reporting for critical services.	M
OPS-M007	DevSecOps/CI-CD for application, configuration and integration changes: version control, automated functional/regression tests, SAST/SCA/dependency and secret scanning, vulnerability gates, signed artifacts, approval gates, controlled promotion, deployment audit and automated rollback, with segregation of duties and knowledge transfer to BT.	M
OPS-S001	AI-Ops may be proposed for anomaly detection/ticket routing but shall not create opaque autonomous changes without governance.	S

13.7 AI/ML Governance

ID	Requirement	Pri
AIG-M001	AI features shall have defined use case, data source, human oversight, model/version inventory and measurable acceptance method.	M
AIG-M002	No BT data may train shared/public models without explicit written approval.	M
AIG-M003	Disclose model/provider hosting location, retention, prompts/data flows and isolation.	M
AIG-M004	Provide audit of AI recommendation/action and human override where AI affects customer/financial outcomes.	M
AIG-M005	Monitor model drift/performance for ML-based fraud, campaign or prediction use cases.	M
AIG-M006	Avoid universal fixed accuracy claims where not meaningful; define test dataset and business acceptance metric per use case.	M
AIG-M007	AI/ML roadmap of at least 24 months covering fraud, collections, anomaly detection, operations assistance and Dzongkha-language customer-service use cases, with support for BT-selected or bring-your-own models where technically feasible.	M

13.8 User Experience, Terminology, Validation, Branding and Process Efficiency

The following common requirements apply across all applicable CBSS business applications, portals, operational screens, reports and workflows. They are intended to provide a coherent BT user experience, high data quality, minimum-touch execution and measurable performance without forcing identical native layouts for specialist OEM technical consoles.

ID	Requirement	Pri
UX-M001	One Business Concept - One Defined Name: the Supplier shall apply a governed and consistent business terminology and naming convention across CRM, catalogue, CPQ, charging, billing, payments, orders, provisioning, inventory, case management, dealer/partner, self-care, MIS/BI, administration, APIs/events, reports, exports, notifications, audit records, training and documentation. Different names may be used only where they represent genuinely different concepts and are documented.	M
UX-M002	The Supplier shall establish, obtain BT approval for, maintain and hand over a CBSS Business Terminology, Data & User Interface Standards Catalogue covering business term, definition, entity, screen/field label, description, data type, format, mandatory/conditional/optional/read-only status, allowed values, validation rule, example/sample value, contextual help, error behaviour, authoritative source, API/event mapping and report/BI mapping, as applicable.	M
UX-M003	Applicable data-entry screens shall provide persistent field labels and, where useful, examples/sample attributes, placeholders, tooltips or contextual guidance showing what users are expected to enter. Placeholder text shall not be the sole means of identifying a field.	M
UX-M004	Screen-level and authoritative server/service-side validation shall enforce mandatory fields, formats, ranges, lengths, enumerations, uniqueness, referential integrity, conditional mandatory rules, cross-field/business-rule consistency and relevant telecom identifiers. Invalid data shall be rejected before it can create inconsistent downstream state.	M
UX-M005	Validation and business errors shall identify the affected field/transaction, explain the problem in actionable language and, where appropriate, indicate corrective action and a traceable transaction/correlation reference. Generic or unexplained error codes alone are not acceptable for normal business-user errors.	M
UX-M006	Common actions, lifecycle statuses, date/time formats, currency/number precision, units of measure and other recurring presentation conventions shall be governed and used consistently across applicable modules. Commercial, desired-service and actual-network states shall remain separately identifiable where they represent different states.	M
UX-M007	Information already captured and validated shall be reused and propagated through downstream processes and interfaces without unnecessary re-entry. The solution shall minimize duplicate data capture and maintain authoritative-source and synchronization rules.	M
UX-M008	Authorized BT administrators shall be able to maintain reasonable business-configurable labels, descriptions, contextual help, examples, reference/drop-down values, templates and configurable validation/business rules without source-code change, subject to RBAC, audit and maker-checker controls where applicable.	M

ID	Requirement	Pri
UX-M009	Applicable customer-facing, dealer/partner-facing and BT business-user interfaces, documents and communications shall implement BT-approved branding and digital-experience guidelines, including applicable logo, colour palette, typography, icons, terminology, templates and visual treatment. Agreed baseline branding shall be included without separate customization or licence charge.	M
UX-M010	Branding shall be configurable for applicable channels and outputs. Multi-tenant/GMC capability shall support tenant-specific branding/white-labelling with strict tenant isolation. Specialist OEM infrastructure/technical consoles may retain native appearance where re-skinning is not technically appropriate, provided this does not compromise the coherent CBSS business-user experience.	M
UX-M011	End-to-end business and service fulfilment shall be designed for minimum-touch and straight-through processing. Standard journeys shall minimize unnecessary screens, clicks/actions, manual hand-offs, repeated data entry and intermediate approvals. Once prerequisite data, validations and approvals are satisfied, eligible downstream activities shall proceed automatically without avoidable delay or artificial batch dependency.	M
UX-M012	For critical service journeys the bidder shall document and commit end-to-end elapsed-time targets, including normal, P95 and P99 where applicable, measured from the business trigger to verified completion. Measures shall include representative onboarding/activation, recharge, booster, suspension, reconnection/restoration, product/service change, payment posting and report/dashboard generation.	M
UX-M013	The Supplier shall provide all compute, memory, storage, database, middleware, reporting/analytics capacity, software, licences, subscriptions, third-party components and other resources necessary to meet committed process, concurrency, capacity and response-time requirements throughout the contracted sizing envelope, including HA/failover and agreed growth headroom.	M
UX-M014	Standard dashboards, drill-down/drill-through, standard reports, ad-hoc reports, multidimensional analysis, scheduled reports and exports shall meet declared response/completion-time targets under representative concurrent workload. Reporting and analytics shall not materially degrade charging, billing, CRM, order, provisioning, payment or other production transaction processing.	M
UX-M015	The Supplier shall provide searchable user guidance and role-based user/admin documentation aligned with the production terminology and screens. Complex forms/processes shall provide contextual help, sample attributes and process guidance sufficient for trained BT users to complete routine tasks without vendor assistance.	M

14. INTEGRATION, API AND DATA REQUIREMENTS

ID	Requirement	Pri
INT-M001	Prime shall maintain one controlled Interface Register and one Event/API Register.	M
INT-M002	Every interface shall document owner, consumer, purpose, protocol, version, payload, security, volume, latency, availability, idempotency, error behavior, monitoring, test, lifecycle and licence.	M
INT-M003	Known target system and business function in the RFP means integration is included even if endpoint/payload details are finalized later.	M
INT-M004	Bidder is responsible for CBSS-side adapters, mapping, protocol transformation, orchestration, retry, reconciliation, monitoring, security and licensing.	M
INT-M005	Changes to retained BT systems shall be minimized and cannot be assumed unless explicitly declared in the bid.	M
INT-M006	Event-driven pub/sub shall be supported for customer, order, service, payment, recharge, balance threshold, invoice, campaign and other appropriate lifecycle events.	M
INT-M007	Event schemas shall be versioned and governed, with consumers insulated from breaking changes.	M
INT-M008	Business-critical interface accounting shall reconcile sent, accepted, rejected, retried, duplicate, timed-out, pending and outstanding transactions.	M
INT-M009	Persistent correlation IDs shall be propagated across cross-domain transactions.	M
INT-M010	TM Forum Open APIs shall be used, including at minimum TMF620 Product Catalog, TMF622 Product Ordering, TMF629 Customer, TMF637 Product Inventory, TMF639 Resource Inventory, TMF666 Account, TMF678 Customer Bill, TMF621 Trouble Ticket, TMF702 Resource Activation and TMF648 Quote (or current successor versions). The bidder shall state the exact API, version and conformance for each.	M
INT-M011	All APIs shall be documented using OpenAPI/Swagger or the applicable standard, and all events shall be documented with their schemas.	M
INT-M012	Direct production database integration shall not be permitted except for expressly approved read-only or controlled use cases.	M
INT-M013	APIs shall support rate limiting, authentication and authorization, audit, monitoring and backward compatibility.	M
INT-M014	The integration inventory in Annex F (current systems, platforms and partners, including roaming clearing house, SM-DP+, B-Ngul/B-Wallet, VAS/CRBT, SMSC/A2P, CBC, USSD, IVR/contact centre, ERP, payment apps and portals) is the minimum included integration scope; omissions discovered later are not change requests.	M

15. DELIVERY, MIGRATION, TESTING AND ACCEPTANCE

- The Supplier shall perform development, configuration, unit testing and supplier-side system/integration testing in its own environment at its own cost. A dedicated BT Development/Configuration environment is excluded from the mandatory BT-hosted baseline. Any optional BT-hosted development environment shall be separately identified and priced and shall not be a condition for delivery or support. Production data shall not be copied to the Supplier environment;

only BT-approved masked/anonymized or synthetic data may be used. Secure controlled promotion, version comparison, maker-checker approval, automated testing and rollback into BT test and production environments remain mandatory. BT environments shall include Production, applicable DR, Pre-Production/Staging, SIT/Integration Test, UAT, Training and Performance/Load Test, with Sandbox/API Test as required. Logical consolidation or time-sharing may be proposed where adequate isolation, capacity and test availability are demonstrated and accepted by BT; no required testing purpose may be omitted. Each environment shall be fully disclosed, sized, licensed and supported for its intended purpose throughout Warranty and applicable AMC periods. Supplier development precedes controlled promotion through BT testing/UAT and staging into Production.

- Two mock migrations are mandatory. The second shall be production-scale or near-full-volume dress rehearsal where technically practical.
- Project governance: weekly written status, RAID register, Steering Committee at least bi-weekly during critical periods, formal BT phase-gate approvals (design, build/configuration, migration rehearsal, testing, cutover readiness, Production Acceptance) and a traceable decision/action log.
- Parallel charging/billing validation and revenue reconciliation shall precede final cutover.
- Acceptance shall follow four distinct contractual events: (i) Go-Live, when the solution enters production use; (ii) Production Acceptance, issued by BT after the defined production-readiness and go-live acceptance criteria are satisfied; (iii) Stabilization/Hypercare, covering the first three post-Go-Live bill runs / approximately three months with enhanced support and reconciliation; and (iv) Final Acceptance, issued after successful stabilization, satisfaction of contractual defect thresholds, completion of required documentation and knowledge transfer, and closure or formal acceptance of residual obligations. These terms shall be used consistently throughout the RFP and Contract.

15.1 Migration and Coexistence

ID	Requirement	Pri
MIG-M001	Discover/profile all migration sources, schemas, volumes, data quality, dependencies and history.	M
MIG-M002	Submit Data Migration Matrix: domain/source/target/history/transform/reconciliation/treatment/owner, covering at minimum Ericsson IN, Tayana/Allot, legacy BSCS/BCRM, SMSC, CRM data, .bt domain registry data, payment systems and number/SIM inventory; parallel run shall report daily controls for subscriber counts, balance snapshots, rated charge totals, CDR/event counts, invoice and tax totals, payments, reversals/refunds, roaming/interconnect, catalogue synchronization and provisioning states.	M
MIG-M003	BT owns source data and approves cleansing rules; vendor performs profiling, mapping, transformation, loading, reconciliation and exception reporting.	M
MIG-M004	Sensitive migration data protected in transit and at rest; temporary cleartext only if unavoidable and BT-approved.	M
MIG-M005	Define treatment for open/non-terminal transactions: open orders, payments, disputes, dunning cases, provisioning requests, active sessions and tickets.	M
MIG-M006	Mock Migration 1 proves mechanics and identifies defects.	M
MIG-M007	Mock Migration 2/dress rehearsal uses production-scale/near-full data, freezes procedures and validates cutover timing/rollback.	M

ID	Requirement	Pri
MIG-M008	Parallel run reconciles daily charging, billing, payment, provisioning and revenue outcomes.	M
MIG-M009	Balance-to-balance parity at subscriber/bucket/aggregate level with zero unexplained variance.	M
MIG-M010	Bill-to-bill and product/rating parity for agreed representative/full cycles.	M
MIG-M011	Rollback checkpoints, delta capture, traffic/channel reversal, decision authority and maximum rollback time documented.	M
MIG-M012	Legacy decommission only after accepted financial, balance, provisioning and operational criteria.	M
MIG-M013	Charging migration plan shall explicitly address active sessions, reservations, pending debits/refunds, shared balances, quota/policy state and in-flight events at cutover, including freeze/delta strategy, rollback and reconciliation.	M
MIG-M014	Number/SIM inventory migration: migrate the full MSISDN, IMSI, ICCID and special-number inventory from legacy systems, including status, pairing, reservations, quarantine end dates, categories and hidden-number mappings, reconciled to zero unexplained variance against HLR/HSS and OCS at cutover.	M
MIG-M015	Roaming and interconnect migration: partner registry, IOT/DIOT tariffs, discount agreements, open TAP/RAP files, disputes, accruals and settlement balances, with cutover by settlement period.	M
MIG-M016	Commercial-state migration: VAS subscriptions (e.g., CRBT), loyalty/bonus balances, retention subscriptions, EMI schedules, deposits/surety, annual subscriptions, .bt domain records (registrant, contacts, nameservers, expiry/renewal dates) reconciled to the ccTLD registry, hosting renewals, CUGs and special-number contracts.	M
MIG-M017	Digital channel user migration: registered self-care/app users, preferences and consents migrated without forced re-registration.	M

15.2 End-to-End Test and Acceptance Framework

Acceptance shall also measure process efficiency and usability for representative critical journeys, including manual steps, repeated data entry, hand-offs, end-to-end elapsed time, screen/field validation, terminology consistency, contextual guidance and branding. Performance evidence shall include the declared workload, concurrency, P95/P99 where applicable, infrastructure/licence configuration and observed results.

ID	Requirement	Pri
TST-M001	Requirement-to-test traceability from every Priority-M requirement to test evidence or justified design inspection.	M
TST-M002	Factory/product verification of standard and configured functions.	M
TST-M003	Supplier-stage and BT SIT system/integration tests for APIs, events, files, negative cases, retries, compensation, reconciliation and audit.	M

ID	Requirement	Pri
TST-M004	Interoperability testing with Ericsson core/IMS/IN (both geographically separated cores), Tayana data charging/policy, Allot DPI, Tayana DSL AAA, eLoad, SMSC/SMPP, USSD, NDI/eKYC, RMA and payment rails, ERP, SIEM/NMS, workforce/field-service, contact centre, .bt ccTLD registry and other contracted endpoints, over IPv4 and IPv6, including node/site failover, legacy rollback and reconciliation after failover.	M
TST-M005	Formal UAT covering end-to-end business journeys, usability, finance, operations, tenants and regulatory reporting.	M
TST-M006	Performance/load/soak tests under peak, sustained and failover conditions, including batch/bill windows and queue recovery.	M
TST-M007	HA tests for node/service/network failures and charging-session continuity.	M
TST-M008	DR Scenario 2 failover/failback and degraded-mode tests; backup/restore tests for Scenario 1.	M
TST-M009	Security tests: IAM/MFA/PAM, TLS, vulnerability, penetration, firewall, audit, tenant isolation, data location.	M
TST-M010	Migration rehearsal tests with full reconciliation and rollback.	M
TST-M011	Operational readiness: runbooks, monitoring, support access, backups, DR, training, known errors and escalation.	M
TST-M012	No open Severity-1 and no unresolved Severity-2 affecting critical flow at Production Acceptance.	M
TST-M013	No material financial/revenue discrepancy at Production Acceptance.	M
TST-M014	Negative/degraded-mode acceptance shall cover timeout, duplicate, out-of-order/late event, partial downstream failure, queue backlog, dependency unavailability, split/isolated component, retry/replay and recovery without financial/event loss.	M
TST-M015	Cross-track interface acceptance shall prove bidirectional traceability and reconciliation for C->A/B product publication, A->B rated usage, B->C entitlement/restoration, payment/AR status and service/network actual-state verification.	M
TST-M016	Acceptance shall include zero unexplained material variance for agreed charging, billing, payment, settlement and provisioning/network-state control totals, with documented tolerance only where explicitly approved by BT.	M
TST-M017	Every applicable M requirement shall be delivered, configured, licensed, integrated and demonstrably usable before final acceptance; product capability that is merely available but not configured/integrated/licensed for BT shall not be considered delivered.	M
TST-M018	Supplier shall maintain a Functional Delivery Catalogue mapping Requirement ID -> business function -> configuration/integration -> test scenario -> expected result -> evidence -> acceptance status.	M

ID	Requirement	Pri
TST-M019	Acceptance shall use three layers: component/technical verification, module-level functional acceptance, and cross-domain end-to-end business acceptance. Passing an E2E journey shall not by itself close unverified detailed M requirements.	M
TST-M020	Every critical business journey shall include applicable positive and negative/failure-state tests. Negative tests shall validate error handling, retry/replay, idempotency, compensation/rollback, audit, reconciliation, recovery and final consistent state, not only error messages.	M
TST-M021	Mandatory idempotency test: resubmit an identical critical transaction using the same idempotency/correlation identifier and prove single financial/service impact, consistent duplicate response/handling, preserved audit trail and reconciliation. At minimum payment or recharge shall be tested, and the control shall also be validated for other applicable critical interfaces.	M
TST-M022	Negative tests shall include, where applicable: duplicate/late/out-of-order/missing usage events; duplicate payment/recharge/refund/order; malformed/invalid/missing API data; authentication/authorization failure; insufficient balance; invalid/expired product or contract; dependency timeout/unavailability; partial provisioning; queue/backlog; concurrency conflict; session reservation leak; bill-run interruption; migration rejection; node/DB/network failure; DR switchover; failed retry/reversal/refund; and recovery after restoration.	M
TST-M023	Supplier shall provide BT Golden Test Packs with controlled customer/product/tariff/usage/payment/input data and pre-agreed expected charging, billing, balance, financial and service-state results for representative prepaid, postpaid, hybrid, fixed broadband, leased-line, enterprise, roaming and device-financing journeys.	M
TST-M024	BT administrators shall execute selected configuration-independence acceptance tests for product, tariff, discount, dunning rule, notification, eligibility, billing cycle, OTC, campaign, bundle/booster, KPI/report and workflow configuration through supported administrative interfaces, including approval/effective-date/publish/rollback where applicable.	M
TST-M025	Formal acceptance gates shall cover design, configuration/component readiness, technical verification, functional UAT, E2E UAT, migration rehearsal, production readiness, go-live/provisional acceptance and stabilization/final acceptance. Entry/exit criteria and evidence shall be agreed before execution.	M
TST-M026	No M requirement may be deferred beyond contractual acceptance because it can be enabled, configured, customized, licensed, developed or integrated later, unless BT explicitly approves the deferral through formal contractual change/acceptance governance.	M
TST-M027	Operational acceptance shall verify that trained BT personnel can perform routine monitoring, alarm/log investigation, user/RBAC administration, backup/restore, report/dashboard administration, configuration promotion, certificate/interface troubleshooting, failed-transaction replay and agreed DR/failover procedures.	M

ID	Requirement	Pri
TST-M028	Factory Acceptance Testing and Site Acceptance Testing; the supplier provides test tools, scripts, simulators and test data and supports repeat testing after defect correction at no additional cost.	M

Acceptance shall be requirement-driven and evidence-based. The Supplier shall prove delivery at component/technical, module-functional and cross-domain E2E levels. All applicable M requirements shall be configured, licensed, integrated and usable by BT before final acceptance. Critical journeys shall include positive and negative/failure-state coverage, including idempotency, retry/replay, compensation/rollback, reconciliation and recovery. Product capability that exists only in documentation or is left unconfigured, unlicensed or deferred shall not constitute delivery.

15.3 Mandatory End-to-End Scripted Test Scenarios

ID	Scenario
E2E-01	Prepaid mobile onboarding: KYC -> catalogue eligibility -> order -> provisioning -> OCS balance -> first usage -> CDR -> customer view.
E2E-02	Postpaid mobile onboarding -> credit limit -> provisioning -> usage -> bill -> payment -> GL posting.
E2E-03	Hybrid customer with shared voice/SMS/data balance and postpaid overage.
E2E-04	New product design -> approval -> simulation -> publish -> synchronized charging/billing/OSS mappings -> channel sale.
E2E-05	Future-dated price change without duplicate product creation; grandfather old customer and activate new price for new customer.
E2E-06	Family/shared wallet with priority consumption, gifting/transfer and balance-threshold notification.
E2E-07	FUP plan: high speed -> quota depletion -> PCRF/PCF throttle -> booster -> restore QoS.
E2E-08	5G SA readiness demonstration (not a Go-Live acceptance test): Nchf charging flow with PCF spending-limit interaction and rated event output shown in the offered product release.
E2E-09	Shadow/mirror charging comparison against incumbent without double debit; variance report.
E2E-10	Charging node failure mid-session: session continuity, no duplicate/lost charge, correct balance.
E2E-11	Controlled charging fail-open/fail-closed scenario and later reconciliation.
E2E-12	Enterprise CPQ: lead -> configure multi-service quote -> approval -> contract -> order -> provisioning -> acceptance -> invoice.
E2E-13	Device/ONT/router sale on 12/24-month EMI with down payment, serial/IMEI, installment payment and early closure.
E2E-14	Shipment/logistics update drives equipment order status and customer notification.
E2E-15	BT Fiber prepaid validity expiry -> automatic suspend -> payment -> automatic reconnect.
E2E-16	Postpaid dunning using the configured rule (current baseline: two unpaid bills) with amount threshold, ageing and exception customer; reconfigure to three unpaid bills without code change; reconnect after payment.
E2E-17	Contract expiry prevents invoice beyond end date; renewal reactivates billing correctly.

ID	Scenario
E2E-18	Multiple OTC/misc charges on one invoice with tax, approval and receipt.
E2E-19	Payment retry/timeout/duplicate and reversal with idempotency and end-to-end reconciliation.
E2E-20	eLoad recharge and reversal from source through middleware to OCS balance and financial reconciliation.
E2E-21	Physical voucher generation/distribution/redemption/expiry/reconciliation.
E2E-22	Roaming: usage -> charging/mediation -> NRTRDE/HUR/TAP -> retail bill -> TAP wholesale settlement via clearing house -> RAP/dispute -> reconciliation.
E2E-23	Interconnect partner rate change, settlement, dispute and GL reconciliation.
E2E-24	Order fallout: downstream failure -> retry -> compensation/manual recovery -> no inconsistent state.
E2E-25	Service inventory reconciliation detects network discrepancy and controlled correction.
E2E-26	Cross-channel continuity: self-care basket/quote continued by contact-centre/retail agent.
E2E-27	CAMARA Number Verification API: partner onboarding -> consent/auth -> call -> metering -> charge -> invoice/settlement.
E2E-28	CAMARA Quality on Demand: request -> network action -> usage/metering -> charging -> SLA/analytics.
E2E-29	Create second tenant/MVNO with isolated catalogue, users, charging/billing, reports and branding.
E2E-30	Cross-tenant negative test proving data/API/log/report isolation.
E2E-31	Business user creates ad-hoc MIS report with >15 fields, filters, drill-down, export and schedule, proving no artificial report limits.
E2E-32	Decoded CDR/event feed delivered to Enterprise Analytics & AI Platform with schema/lineage/correlation.
E2E-33	Fraud: simulated SIM-box/IRSF/recharge abuse -> alert -> case -> approved action -> closure/recovered value.
E2E-34	RA: source event exists but missing downstream -> control detects leakage and traces source-to-target.
E2E-35	Migration balance parity across individual/shared buckets with zero unexplained variance.
E2E-36	Bill-to-bill parallel run and detailed invoice variance reconciliation.
E2E-37	Open order/payment/dispute treatment during cutover and post-cutover reconciliation.
E2E-38	Backup restore of critical database/application data with measured RPO/RTO and integrity validation.
E2E-39	Critical-systems DR failover (Scenario 2): charging/payment/integration continue; noncritical domains degrade as designed; failback/reconcile.
E2E-40	Security: privileged access through PAM/JIT; session audit; rejected unauthorized cross-tenant action.

ID	Scenario
E2E-41	Configuration promotion Supplier environment -> BT testing/UAT and staging -> Production with maker-checker, version comparison and rollback.
E2E-42	Software upgrade/patch in UAT then controlled production rollout with rollback and observability.
E2E-43	Overload/backpressure: preserve charging/payment critical functions; queues recover without event loss.
E2E-44	Bilingual/Dzongkha invoice/receipt/notification rendering and search/export.
E2E-45	AI-assisted dunning recommendation with human override and auditable decision path.
E2E-46	Campaign A/B test with consent/exclusion rules, response tracking and feed back to analytics.
E2E-47	Enterprise service BAST/e-signature acceptance sets Service Effective/Billing Start Date.
E2E-48	Service ownership/account transfer with charges split correctly before/after transfer date.
E2E-49	Safe custody suspend/reduced charges/resume and proration.
E2E-50	End-to-end correlation trace from customer order through provisioning, charging/billing, payment and RA case.
E2E-51	BT Fiber (leased line) prepaid validity expiry -> entitlement event -> bidder-proposed network enforcement -> verified suspension -> recharge/payment -> verified automatic restoration -> reconciliation/notification.
E2E-52	BT Fiber (leased line) postpaid dunning threshold -> entitlement event -> network suspension -> payment/AR clearance -> verified automatic restoration, including exception/override and audit.
E2E-53	Catalogue publication contract: create/future-date product -> publish versioned charging/billing/fulfilment mappings -> acknowledge/reconcile -> rollback one downstream publication safely.
E2E-54	A-to-B rated-event contract: duplicate/replay/out-of-order event handling with source ID, tariff version and correlation preserved and zero unexplained billing variance.
E2E-55	Charging cutover with active session/reservation: migrate/coexist/rollback without duplicate debit, lost reservation or uncontrolled free usage.
E2E-56	Bill-run interruption and restart under node/DR failure: deterministic resume/recovery, no duplicate/missing invoices/postings and reconciled control totals.
E2E-57	GMC tenant E2E on shared platform: isolated customer/product -> order -> charging -> usage -> billing -> payment -> report/API/RBAC, with documented pooled/separate licensing and DR treatment.
E2E-58	CAMARA monetization E2E: partner/customer context -> consent/auth -> API use -> authoritative metering -> charging -> billing/settlement -> analytics/reconciliation without duplicate monetization state.
E2E-59	Concept/Product-to-Cash: create and approve product -> configure

ID	Scenario
	charging/billing/fulfilment -> future-date publish -> channel sale -> order/provision -> usage -> charge -> bill -> payment -> report -> price version/grandfather -> controlled product retirement.
E2E-60	Mandatory idempotency: submit the same payment/recharge transaction twice with the same idempotency/correlation key -> process once -> no duplicate balance/AR/service impact -> consistent response -> audit and reconciliation prove single effect.
E2E-61	Negative API/interface pack: malformed payload, missing mandatory field, authentication failure, authorization failure, timeout, retry, duplicate, rate-limit/backpressure and downstream 5xx/unavailability -> controlled recovery with no duplicate/lost business effect.
E2E-62	Negative charging pack: insufficient balance, duplicate/late/out-of-order usage event, OCS/CHF timeout, active reservation/session interruption and retry/replay -> correct final balance, no duplicate debit/free usage and reconciled events.
E2E-63	Negative billing/payment pack: duplicate payment, partial payment, reversal/refund failure, late usage, rerating/rebilling and interrupted bill run -> deterministic recovery, correct AR/invoice/payment state and reconciled control totals.
E2E-64	Negative fulfilment pack: invalid product combination, expired contract, resource unavailable, partial downstream provisioning failure, timeout and retry/compensation -> no orphan/inconsistent service state and verified recovery.
E2E-65	BT Golden Test Pack: execute pre-agreed prepaid/postpaid/hybrid/fixed/enterprise datasets and compare expected versus actual tariff, charge, balance, bill, payment and service-state outcomes with zero unexplained material variance.
E2E-66	BT administrator self-configuration: authorized BT user creates/changes selected product/tariff/discount/dunning/notification/report configuration -> maker-checker -> effective-date publish -> verify outcome -> rollback, without vendor code/DB/CLI intervention.
E2E-67	Executive BI dashboard: cross-domain KPIs for revenue, subscribers, ARPU, collections, outstanding AR, churn, orders and service activation -> period comparison -> multidimensional filter -> drill-down/drill-through to authorized supporting records.
E2E-68	BI self-service: BT user creates and publishes an ad-hoc report/dashboard with >20 fields/measures, multiple dimensions/filters, calculated KPI, drill-down, schedule and Excel export without vendor development.
E2E-69	BI financial/revenue reconciliation and lineage: selected executive revenue/collection KPI -> aggregate -> source bill/payment/rated event -> authoritative source; control total reconciles with zero unexplained material variance.
E2E-70	BI performance/isolation: concurrent dashboards, scheduled reports and complex ad-hoc analysis at agreed load while critical charging/payment/order transactions meet agreed performance targets.
E2E-71	Predictive churn: ingest governed customer/usage/billing/service history -> generate churn risk/propensity and explainable drivers -> threshold/segment -> authorized campaign/action -> outcome feedback and audit/model-version trace.
E2E-72	NBO/NBA: eligible customer context -> generate explainable offer/action -> apply product

ID	Scenario
	eligibility/consent/exclusion -> present through selected channel/campaign -> accept/reject -> fulfil where accepted -> capture outcome for analytics.
E2E-73	Anomaly detection: introduce agreed abnormal pattern in revenue/usage/charging/billing/payment/order KPI -> detect and contextualize anomaly -> alert/case/action -> authorized acknowledgement/closure -> audit and outcome evidence.
E2E-74	BI security and tenant isolation: unauthorized role denied restricted dashboard/export; sensitive fields masked as configured; Tenant A cannot query/report/export Tenant B data; access/export actions audited.
E2E-75	Historical and trend analytics: execute MoM, QoQ, YoY, YTD and rolling-period analysis across minimum 13-month online history with consistent KPI definitions and acceptable response time.
E2E-76	Minimum-touch service fulfilment: execute representative customer/order/service activation from validated submission through decomposition, provisioning, actual-state verification, inventory/CRM update and notification; measure manual steps, repeated data entry, hand-offs and end-to-end elapsed time against the approved process design and committed target.
E2E-77	Recharge and restoration latency: successful payment/recharge -> balance/AR update -> entitlement decision -> network/service restoration -> actual-state verification -> customer notification; validate normal and P95/P99 completion time and no unnecessary batch/manual delay.
E2E-78	Reporting performance under production-like load: execute standard dashboard, drill-down, complex 13+ month multidimensional analysis, scheduled report and large Excel export concurrently with representative charging/order/payment workload; verify committed response times and no material transaction degradation.
E2E-79	Terminology and field-governance consistency: verify selected common business concepts, labels, statuses, formats, examples/help and authoritative definitions across at least CRM, order, billing, self-care/portal and MIS/BI, including documented API/report mapping.
E2E-80	Data-entry validation: test mandatory, conditional-mandatory, format, range, cross-field, duplicate/uniqueness and invalid-reference cases; verify actionable error guidance, no inconsistent downstream record and auditable correction.
E2E-81	BT administrator UX configuration: authorized BT administrator changes an approved configurable label/help text/example/reference value or business validation setting through supported configuration, publishes it under governance and verifies audit/rollback without source-code change.
E2E-82	BT branding and tenant branding: demonstrate agreed BT branding across representative business-user/customer/partner screens, dashboard/report, invoice/document and notification; verify authorized branding configuration and tenant-specific branding isolation where multi-tenancy applies.
E2E-83	Contextual user guidance: trained BT user completes a representative complex business form/process using embedded field definitions, sample attributes and user guidance; verify terminology matches production documentation and no vendor intervention is required for routine execution.

ID	Scenario
E2E-84	MSISDN full lifecycle: reserve a block -> assign at sale -> activate -> prepaid inactivity churn -> quarantine -> reclaim attempt by former owner -> quarantine expiry -> clean recycle -> reassign to a new customer; prove no residual state in OCS/PCRF/HLR/HSS/IMS and inventory matches network.
E2E-85	SIM stock chain using dealer login in the self-care app: load SIM vendor file -> reject duplicates -> transfer warehouse -> branch -> distributor -> dealer -> reserve MSISDN block to dealer -> dealer sells with KYC and dynamic pairing -> low-stock alert -> dealer-to-dealer transfer -> damaged SIM return -> expired reservation auto-release -> commission on dealer statement.
E2E-86	SIM swap/replacement: customer requests SIM replacement (lost/damaged/upgrade) -> KYC verification -> new ICCID/IMSI paired to the same MSISDN -> HLR/HSS, OCS, PCRF/PCF and IMS updated with balances, bundles and services retained -> old IMSI moved to its configured status -> SIM-swap event published for fraud controls and CAMARA SIM Swap API -> customer notification
E2E-87	Negative numbering pack: two channels attempt the same number concurrently (only one succeeds - ORD-M004, INV-M014, TST-M022); assign a quarantined number (rejected - INV-M016); use an expired reservation (rejected - INV-M008); recycle with residual OCS balance/VAS (blocked - INV-M017); number active in HSS but available in inventory (detected and corrected - INV-M018).
E2E-88	Toll number full lifecycle: search premium/short-code pool -> region rule check (6-digit only in permitted areas) -> hidden number validated as postpaid or fixed line (prepaid rejected) -> approval and one-year contract -> automatic mapping on switch/IMS -> toll-free call free to caller and billed to owner per hidden number -> unpaid bills reach the configured dunning rule (baseline two) -> suspension -> payment -> automatic restoration -> termination with 30-day notice -> cool-off -> number returns to premium pool.
E2E-89	Multi-currency IOT settlement on TAP: partner A settled in USD and partner B in SDR -> TAP usage rated at IOT -> exchange rate at the agreed rate date -> clearing-house invoice -> FX gain/loss posted to GL -> reconciliation.
E2E-90	Postpaid outbound roaming: activation -> deposit/credit check -> welcome and price SMS -> usage rated with configured markup -> roaming pack -> threshold notifications -> cap reached -> service barred -> NRTRDE/HUR high-usage alert -> TAP reconciliation -> roaming charges on the bill.
E2E-91	IoT wholesale roaming: flat-rate tier and active-SIM-count milestone agreement -> monthly accrual -> milestone crossed -> re-rate -> partner statement -> true-up -> GL.
E2E-92	IOT discount agreement: commitment/tiered discount -> monthly accruals -> year-end true-up -> settlement -> assurance check against RAF-M009.
E2E-93	Prepaid mobile BT constructs: recharge exact plan amount activates plan -> denomination-based validity applied -> time-band voice and first-unit data charging -> plan exhaustion falls back to pay-per-use -> balance transfer with fee and receiver validity -> GST-inclusive quota correct.
E2E-94	Prepaid BT Fiber stacking: recharge 5 Mbps then 10 Mbps -> 15 Mbps provisioned with independent expiries -> same-denomination recharge extends validity only -> third concurrent

ID	Scenario
	offer rejected -> expiry with no grace -> verified network change at each step.
E2E-95	AirFiber/FWA: order -> location binding -> two base packs active -> quota exhausted -> per-plan FUP speed -> add-on without validity extension -> usage outside geo-fence blocked -> relocation with fee and re-binding.
E2E-96	VAS daily subscription (CRBT): subscribe with double opt-in -> daily renewal -> insufficient balance -> retry/grace -> suspension -> recharge -> resume -> tone gift -> monthly partner statement showing net revenue (after failed charges, refunds and tax) at the agreed share, payout via ERP and dispute handling.
E2E-97	Partner content bundle: purchase annual AI/content plan -> activation code delivered -> monthly data refresh -> customer cancels in month 4 -> configured refund rule applied -> refreshes stop -> access revoked at end date -> partner entitlement cancelled and settlement adjusted -> confirmation SMS.
E2E-98	Multi-currency: international customer domain order priced in USD -> invoice in USD -> payment -> FX gain/loss -> GL; annual renewal reminder -> auto-renewal -> deferred revenue release.
E2E-99	Enterprise messaging: bulk SMS one-time pack (minimum + tier) and A2P slab contract with overage -> sender-ID check -> delivery reports -> invoice -> RA volume-to-invoice reconciliation.
E2E-100	Student package: eligibility list upload -> eligible subscriber zero-rated on approved sites within the time window -> charged/blocked outside window -> ineligible subscriber charged normally.
E2E-101	Loyalty and bonus: points earned on recharge and bill payment -> tier change -> redemption to bundle -> expiry -> liability posting; B-Ngul recharge receives configured channel bonus.
E2E-102	EMI via employer: MOU employer eligibility -> pre-booking with non-refundable deposit -> device sale with cashback and bundled data -> payroll deduction file -> missed deduction arrears -> exit recovery from benefits.
E2E-103	Technology sunset: identify 3G-only customers -> notices -> bulk SIM/device swap and plan migration orders -> completion tracking; forced plan migration with notice period and audit.
E2E-104	Dealer login in the self-care app: MFA login -> stock and float view -> onboard customer with e-KYC/NDI -> select number from dealer reserved block -> activate SIM -> eLoad recharge sale -> stock and float reduce -> commission visible -> stock request approved by distributor -> transfer received -> commission dispute raised and resolved.
E2E-105	Mixed customer types: foreign national with work permit, Indian permanent address and Thimphu service address onboarded; international enterprise with foreign USD billing address buys hosting and is invoiced in USD; Bhutanese citizen onboarded via CID/NDI; all three correct in Customer 360, invoice and reports by country/dzongkhag.
E2E-106	Work-permit expiry: non-Bhutanese prepaid subscriber registered on a work permit -> SMS reminders at configured days before expiry -> customer updates permit via counter/self-care -> lifecycle continues; second run: no update -> churn at expiry (plus grace) -> number to quarantine -> expired-document register updated.

ID	Scenario
E2E-107	Offline charging: Diameter Rf/offline records collected, correlated, deduplicated and reconciled to billing.
E2E-108	Assisted channels: USSD, IVR, CSR workbench and POS journeys use consistent customer/product/order data and complete correctly.
E2E-109	Roaming reference data: IR.21/IR.85 partner data update is effective-dated, governed and applied to rating and settlement.
E2E-110	Archive retrieval: retrieve 9-year-old CDRs and invoices from archive within 48 hours and reconcile to originally billed amounts.
E2E-111	IPv6: application, API, OAM and integration interfaces operate over IPv6/dual-stack with equivalent security controls.
E2E-112	CI/CD: change promoted Supplier environment -> BT testing/UAT and staging -> Production with automated tests and security gates, then rolled back.
E2E-113	Dedicated BSS firewall: HA/stateful failover, segmentation, logging to SIEM and representative policy enforcement.
E2E-114	AAA: RADIUS/Diameter authentication, authorization, interim/start-stop accounting and simultaneous-session control.
E2E-115	Dual-core: failure of one Ericsson core site with charging/policy session continuity, no duplicate or lost charging, and reconciliation after failback.
E2E-116	Field service: installation order creates WFM work order -> appointment -> completion evidence -> order closes and billing starts.
E2E-117	Free numbers: subscriber with zero balance and one-way barring can still call emergency and customer-care numbers; forbidden number is released.
E2E-118	Burstable billing: enterprise bandwidth usage sampled over the cycle -> 95th-percentile computed -> pre-threshold notification -> invoice reconciles to source.
E2E-119	.bt domain automation: international customer orders a .bt domain in USD -> availability check -> payment -> automatic registry registration via EPP/API -> nameserver update -> renewal reminder -> auto-renewal -> non-renewal -> grace -> redemption -> deletion; registry and billing reconcile daily.

15.4 Requirements-to-Acceptance Traceability

The supplier shall maintain bidirectional traceability between each Requirement ID and one or more verification/acceptance activities. One test may validate multiple requirements, and one requirement may require multiple test methods; however, every applicable M requirement shall have at least one defined acceptance method and evidence record before final acceptance.

Acceptance methods shall be coded as follows: T = Functional/UAT Test; D = Demonstration; I = Inspection; R = Document/Design Review; C = Certification/Independent Evidence; P = Performance/Load/Soak Test; S = Security Test. Multiple codes may apply to one requirement.

Verification Level	Primary Purpose	Typical Requirements	Evidence / Gate
L1 Product	Prove technical,	APIs/protocols, security, HA,	Design review, product

Verification Level	Primary Purpose	Typical Requirements	Evidence / Gate
/ Technical Verification	protocol, architecture and NFR compliance.	backup, logging, TPS/latency, interface behavior.	evidence, technical test, performance/security result.
L2 Functional UAT	Validate module/business functionality with BT users and operations.	Charging rules, billing, CRM, catalogue, order, payment, reports, workflows.	Approved UAT script, expected/actual result, evidence and sign-off.
L3 End-to-End Business Acceptance	Validate complete business journeys across modules/groups and retained/external systems.	Catalogue→order→provision→charge→usage→bill→pay→report; migration/DR journeys.	E2E script, cross-system evidence, reconciliation, defect closure and BT acceptance.

Test case identifiers shall reference the relevant module where practical (for example UAT-A1-xxx, UAT-B1-xxx, UAT-C2-xxx and E2E-xxx). Defects shall link to both the test and affected Requirement ID(s), e.g., DEF-0176 → UAT-A1-023 → CHG-M023.

15.5 Requirement Closure and Acceptance Register

The supplier shall maintain a live Requirement Closure Register derived from the MRCATM. Minimum status values shall include Not Started, Designed, Configured/Developed, Ready for Test, Passed, Failed/Open Defect, Accepted with Agreed Action, and Closed. Final Acceptance requires closure of all applicable M requirements subject only to explicitly approved residual items under the contractual acceptance process.

16. TRAINING, DOCUMENTATION AND KNOWLEDGE TRANSFER

- Training shall include, at minimum: (a) one ten (10)-day technical/administration training programme covering platform, charging, policy, billing, catalogue, order/provisioning, integration/API, database/platform operations, security, backup/DR and troubleshooting; and (b) two non-parallel five (5)-day business/operations training batches before Go-Live covering customer care, product/catalogue, billing/collections, payments, dealer/partner, reporting and operational workflows. Role-based specialist training, train-the-trainer, knowledge-transfer competency assessment and advanced OEM engineering sessions shall supplement these minimums.
- Practical laboratories shall use the BT Training/UAT environments, with shadowing, reverse-shadowing and competency validation.
- Train-the-trainer programme and role-based training for administrators, operations, business configuration, finance/billing, CRM, security and developer/API users.
- HLD, LLD, as-built, BOM/licence/dependency inventory, configuration workbooks, API/event/interface docs, migration/test evidence, security hardening, operations/DR runbooks and training material are mandatory deliverables.
- BT administrators shall be able to perform routine configuration/reporting/operations without voiding warranty.
- The CBSS Business Terminology, Data & User Interface Standards Catalogue, screen/field validation catalogue, contextual-help content, approved branding/theme configuration and representative process-flow/user guides are mandatory as-built handover deliverables and shall remain synchronized with the production solution.

17. WARRANTY, HYPERCARE AND AMC

- Year 1 shall be a full twelve (12)-month Warranty commencing from Production Acceptance. No AMC, maintenance or support fee shall be charged during the Warranty year. Hypercare forms part of, and shall not reduce, the twelve-month Warranty period.
- Hypercare shall cover the first three post-Go-Live bill runs / approximately the first three months of Warranty, including intensive technical and functional support, daily operational/reconciliation review and formal sign-off of each of the first three billing cycles. Hypercare shall not shorten Warranty and may be extended at no cost where vendor-attributable exit criteria remain unmet.
- Following Warranty, bidder shall quote seven (7) consecutive AMC years separately (AMC Year 1 through AMC Year 7, corresponding to lifecycle Support Years 2 through 8) as firm annual ceiling prices, with all required OEM/third-party support included and clearly identified. BT may call off AMC independently each year and is not obliged to purchase all years. AMC shall cover corrective, preventive and adaptive maintenance, patches, security remediation, minor/major supported upgrades, platform compatibility, hardware support, DR drills, performance/capacity review, documentation currency, regression suite and agreed refresher/new-joiner training.

AMC commencement clarification: No AMC charge shall accrue during the twelve-month Warranty Period. Following expiry of Warranty, each post-warranty AMC/support period shall commence only in accordance with the Contract and BT's applicable annual authorization/call-off. Expiry of Warranty does not extinguish the Supplier's obligation to correct defects, non-conformities or unresolved actions attributable to the contracted baseline.

- All third-party maintenance needed for the contracted solution is included/declared and price protected.
- Each approved Change Request carries a 12-month warranty from its acceptance date at no AMC charge; thereafter AMC applies only to the AMC-eligible CR value at the same percentage/rate as the main solution for the corresponding AMC year.
- Where Go-Live is delayed for reasons formally accepted by BT, the full Warranty and subsequent AMC periods shift accordingly without additional charge or price escalation, without prejudice to contractual remedies for Supplier-attributable delay.
- AMC includes Annual Software Upgrade Services (SWUS), version/release upgrades, patches and remediation of findings from BT Minimum Cybersecurity Compliance assessments, vulnerability assessments and security reviews relating to the contracted scope, with no separate charge.
- Dedicated BSS firewall operations, administration and maintenance are included in Warranty and AMC (SEC-M013).

18. SLA AND SUPPORT

Severity	Example	Response / Restore target
P1	Service/revenue-critical outage or material charging/payment failure	Acknowledge <= 30 min / restore or workaround <= 4 h; RCA and permanent-fix plan
P2	Major degradation or critical function unavailable with workaround	Acknowledge <= 2 h / restore or workaround <= 24 h

Severity	Example	Response / Restore target
P3	Non-critical defect/degradation	Acknowledge <= 8 business h / resolve <= 10 business days (bidder may offer better in Annex S)
P4	Minor/cosmetic/enhancement	Acknowledge <= 2 business days / next planned release

The final SLA shall distinguish response, service restoration and permanent resolution. Chronic recurrence, missed SLA, availability failure and security patch breach shall attract service credits/liquidated damages as defined in the contract.

Minimum SLA framework. Bidders shall complete Annex S using the following minimum service-level framework. More stringent committed values may be offered, but no bidder may weaken an RFP minimum through an assumption or narrative response. Incident response, service restoration/workaround and permanent resolution shall be separately measured. Acceptance-test defect SLAs remain distinct from production incident SLAs.

Service / Measure	Minimum Requirement / Treatment
Real-time Charging / OCS-CHF availability	>=99.99% monthly, excluding only BT-approved maintenance and agreed exclusions
Core CBSS services availability	>=99.90% monthly unless a higher requirement is stated elsewhere
P1 production incident	Acknowledge <=30 min; continuous engagement; restore/workaround target <=4 h; RCA and permanent-fix plan after restoration
P2 production incident	Acknowledge <=2 h; restore/workaround target <=24 h; permanent resolution tracked to agreed target
P3 / P4 incidents	P3: acknowledge <= 8 business hours, resolve <= 10 business days; P4: acknowledge <= 2 business days, next planned release (Section 18 severity table); better values may be committed in Annex S
Incident notification to BT	P1: initial notice <= 1 h, hourly updates, final RCA <= 48 h after resolution; P2: <= 4 h, updates every 4 h, RCA <= 7 days; P3: <= 24 h, daily, RCA <= 14 days; P4: <= 72 h, as agreed, <= 30 days
Support model	24x7 support for critical production services with named escalation matrix, local/on-site support plan in Bhutan and OEM escalation path
Measurement	Service-side monitoring plus independent/BT-observable evidence; monthly reporting; planned maintenance separately identified
Chronic / repeat breach	Root-cause analysis, corrective action plan and contractual service-credit/LD treatment under the Master Agreement
Security remediation	Critical/high vulnerabilities and emergency security fixes subject to agreed risk-based remediation SLA; exceptions require BT approval

Service / Measure	Minimum Requirement / Treatment
Reporting	Monthly SLA pack: availability, incidents, response/restoration/resolution, performance, breaches, RCA/CAPA, capacity and trends

19. EXIT AND TRANSITION-OUT

- Complete export of BT data/configuration/catalogue/rating/workflow/interface artefacts in documented portable formats.
- Knowledge transfer and reasonable transition assistance to BT or replacement vendor.
- As part of the baseline contracted exit obligations, and without additional licence or data-extraction charges, the supplier shall provide BT with complete export of BT-owned data; applicable schemas and data dictionaries; current configurations; product catalogue and tariff/rating rules; workflow/configuration definitions; interface and API specifications; licence and entitlement inventory; current technical and operational documentation; open defect/incident register; agreed BT-specific custom source code/scripts where contractually applicable; and reasonable knowledge transfer. Only transition services demonstrably beyond this baseline may be separately charged using the agreed contractual rate card.
- No licence or technical mechanism may block read/export of BT data after termination.
- Source-code escrow for agreed components: deposit of source code, build instructions, dependencies, schemas and documentation; release triggers (insolvency, discontinuance, unremedied support failure, EOL without supported migration); periodic deposit verification and buildability validation; no feature/API lockout after Warranty/AMC lapse beyond expressly agreed upgrade entitlements.

20. REGULATORY, STATUTORY AND AUDIT REPORTING

- BICMA, RMA, RAA and applicable Bhutanese statutory/audit requirements supported through configurable reports/interfaces.
- Read-only audit access with complete transaction lineage and tamper-evident audit.
- Dzongkha/Unicode support as required for customer-facing outputs.
- Tax and regulatory configuration shall be effective-dated and auditable.
- BICMA numbering allocation/utilisation, roaming and subscriber/traffic reporting; Department of Revenue and Customs GST returns; RMA payment-system reporting where applicable (see MIS-M029, INV-M021).
- Customer protection obligations for roaming price transparency, bill-shock notification and pre-disconnection notices shall be configurable per regulator guidance.

21. ASSUMPTIONS AND DEPENDENCIES

Bid-stage freeze: The bidder shall submit one consolidated Assumptions, Dependencies and Exclusions Register. Any condition not explicitly declared and accepted at bid/contract stage shall not later reduce the Supplier's obligations or create a chargeable change.

- BT will provide reasonable access to incumbent systems, documentation, SMEs and agreed test endpoints.

- The Prime is responsible for converting known business/integration requirements into a complete technical design.
- Where source-data quality is poor, the Vendor shall identify and quantify issues and propose cleansing/remediation rules; BT remains data owner and approves corrections.
- Third-party delays outside Prime control may affect schedule only where the dependency was explicitly declared and actively managed; they do not remove design/integration responsibility for the Prime's side.

22. COMMERCIAL REQUIREMENTS AND TOTAL COST OF OWNERSHIP

Bidders shall use one declared currency consistently throughout the lifecycle TCO, module allocations and combination pricing. Where OEM quotations use another currency, convert them into the declared bid currency and disclose the fixed exchange-rate assumption and source/date. Any BT evaluation conversion shall use a common basis communicated to all bidders; amounts in different currencies shall not be added without conversion.

Cost element	Requirement
Software/licences	All baseline capability, Production and required BT test environments, mandatory DR-2 and required third-party licences.
Infrastructure	Complete BOM and sizing; if BT procures infrastructure locally, Supplier still owns sizing/compatibility/performance accountability.
Implementation	Design, configuration, integration, migration, testing, training, cutover, documentation and hypercare.
DR-1	Included and itemised; state reusable value toward later DR.
DR-2	Mandatory, included in offered solution and separately itemised.
DR-3	Recommended full DR option; separately priced with BOM/licences/services/AMC and price validity.
Growth	Year-1 to Year-5 licence/capacity increments and unit prices.
AMC	Seven-year AMC schedule after the one-year warranty period; quote AMC Year 1 through AMC Year 7 separately, with all required third-party support included and clearly identified. No AMC/maintenance/support fee shall apply during the warranty year.
CR rate card	Role/man-day rates, with standard evaluation contingency to expose lifecycle cost.
Currency/tax	Prices may be quoted in BTN and/or USD; INR is accepted/preferred for Indian bidders/supplies where applicable. Taxes shall follow prevailing Bhutan law and RFP tax instructions.
Router	Router shall not be included unless technically required and separately justified/priced; required switch and firewall are baseline hardware scope.
Integrated MIS/BI & Analytics	Mandatory baseline scope. Include all dashboards, self-service BI, KPI/data governance, predictive churn, NBO/NBA, anomaly detection, required AI/ML components, data stores, licences, infrastructure and implementation. Provide transparent cost attribution for evaluation; this is not an optional module.
BI/Analytics	State all licence metrics/ceilings and included entitlements: users, concurrency,

Cost element	Requirement
licensing disclosure	reports/dashboards, data/storage/compute, model training/retraining, model execution/inference, API calls, tenants and third-party/OEM support. No undisclosed per-report/per-dashboard/per-KPI charge.
Future analytics/AI options	Separately price only capabilities beyond the mandatory baseline, such as general-purpose GenAI analytics assistants, autonomous decisioning/operations and other optional advanced AI use cases.

- No hidden interface/API/connectors.
- All capacity/licence metrics must be explicit: subscriber, TPS, session, API call, CPU/core, container, instance, tenant or other metric.
- Omitted/TBD mandatory items may be added to evaluated TCO at BT estimate while Supplier remains obligated to deliver.
- AMC shall be invoiced quarterly in arrears, subject to SLA performance and applicable service credits.
- CR rate card shall state onsite/offsite daily rates, minimum billing unit, weekend/holiday rates, travel/per diem and annual escalation cap for at least: Project Manager, Solution Architect, Billing/Charging SME, PCRF/PCF SME, CRM/Order SME, Integration/API Engineer, Data Migration Specialist, DBA, DevOps/Cloud Engineer, Security Specialist, Test Engineer, BI/Reporting Consultant, Trainer and Developer/Configurator, valid through the full contract term.
- Technology Dependency & Licensing Matrix shall show component, vendor, version, purpose, metric, quantity, HA/DR, support term, upgrade/EOL/EOS and recurring cost.

22.1 Modular Pricing and Combination Schedule

The Financial Proposal shall provide standalone and combined pricing corresponding to every submission track offered. Combination pricing shall not obscure the standalone cost of any Functional Group. All prices shall use the same scope assumptions, sizing baseline, warranty/AMC treatment and commercial validity.

Price Schedule	Bidder response
Group A standalone	Mandatory if A is offered
Group B standalone	Mandatory if B is offered
Group C standalone	Mandatory if C is offered
A+B combined	Mandatory if T-AB or T-ABC is offered; show combination discount separately
B+C combined	Mandatory if T-BC or T-ABC is offered; show combination discount separately
A+C combined	Required if T-AC is offered
A+B+C end-to-end	Mandatory if T-ABC is offered

For each applicable group/combination, separately identify software/licences, third-party/OEM licences, hardware/infrastructure, implementation, migration, interfaces/integration, testing, DR, GMC implications, training, Year-1 warranty, AMC/support Years 2-8, OEM/third-party recurring support and future capacity expansion. All support-related commercial costs shall be stated only in the Commercial

Proposal and lifecycle TCO schedules. No published cross-group interface may attract an undisclosed post-award connector/API charge.

All resources required to achieve committed end-to-end process and reporting performance within the declared sizing envelope - including compute, memory, storage, database/analytics capacity, middleware, software, licences, subscriptions and third-party components - shall be included in the baseline commercial offer. Supplier under-sizing within the contracted workload envelope shall be remediated without additional licence/infrastructure charge to BT.

22.2 Payment Milestones

Milestone	%	Conditions for payment
Mobilization	30%	Contract effectiveness, accepted Performance Security and Advance Payment Guarantee covering 100% of the advance.
UAT and Pre-Production Acceptance	30%	BT UAT sign-off; required functional, integration, security and performance tests; migration and reconciliation evidence; no acceptance-blocking defects.
Production Go-Live and Production Acceptance	30%	Successful cutover, migration/reconciliation, production criteria satisfied and BT Production Acceptance certificate. Go-Live alone does not constitute acceptance.
Final Acceptance	10%	Successful three-month stabilization/hypercare and three consecutive reconciled monthly postpaid bill runs; contractual defect closure; documentation and knowledge transfer; BT Final Acceptance certificate.

Each milestone requires the applicable BT approval/certificate and supporting evidence; invoice submission alone does not establish entitlement. Warranty is twelve months from Production Acceptance and includes Hypercare; seven separately quoted annual AMC periods follow Warranty. These milestone percentages total 100% of the applicable implementation contract price; annual AMC payments follow the agreed annual call-off and Contract schedule.

23. CONTRACT PRINCIPLES

- Turnkey prime accountability and no responsibility gaps.
- Configuration/customization definitions and CR boundaries incorporated into contract.
- Mandatory requirements and accepted clarifications prevail over vendor standard terms.
- Security remediation, defects, omissions, committed functions and necessary integration are not CRs.
- Key personnel replacement only with BT approval and equal-or-better capability.
- Data/IP/escrow/exit rights sufficient for BT operational continuity.
- The contractual IP framework shall distinguish Supplier/OEM Background IP from BT-specific deliverables, configurations, integrations, scripts and custom developments. Nothing in the RFP requires transfer of ownership of a supplier's pre-existing core commercial product IP; however, BT shall receive the licences, usage rights, documentation, source/escrow rights where agreed, and transition rights necessary to operate, support and transition the contracted solution without unreasonable vendor lock-in.

24. BT ASSUMPTIONS

- BT will provide facility space, power/cooling and inter-site connectivity unless explicitly included by bidder.
- BT will coordinate access to incumbent vendors and external payment/network partners.
- BT will nominate empowered workstream owners and acceptance authorities.
- BT will confirm current system versions and interface endpoint details through Annex F and formal clarifications. Annex E contains BT service baselines and available workload inputs; bidders shall disclose all missing/ambiguous workload assumptions and supporting sizing calculations. Any BT-issued clarification/addendum shall apply equally to all bidders.

25. FINAL SUBMISSION CHECKLIST

Submission Volume / Instrument	Status
Volume 1 - Executive & Bidder Profile	Mandatory
Volume 2 - Technical Solution	Mandatory
Volume 3 - Compliance & Traceability Workbook (BT template; native Excel)	Mandatory
Volume 4 - Integration, Migration & Implementation	Mandatory
Volume 5 - Infrastructure, Software, Licensing & Capacity	Mandatory
Volume 6 - Commercial Proposal & Lifecycle TCO (BT template; native Excel)	Mandatory; commercially controlled
Volume 7 - Evidence Repository + Evidence Register (BT template; native Excel)	Mandatory
Assumptions, Dependencies, Deviations & Exclusions Register	Mandatory; consolidated register only

SUBMISSION COMPLETENESS CHECKLIST

Controlled Tender Decision	Current RFP Basis	Applicability
Technical qualification / final weighting	85.00% minimum technical qualification; 60% Technical + 40% Financial/TCO final weighting	Current RFP basis
Implementation / GA	9 months; parallel operation Nov-Dec 2027; GA 1 Jan 2028	Current RFP basis
Eligibility	>=2 production references; >=1 live >=12 months; ~500k comparable scale or scalability proof	Current RFP basis
Broadband AAA continuity	Legacy DSL/PPPoE AAA continuity mandatory; permanent Tayana retention no longer prescribed. Bidder may retain/integrate, replace/migrate or propose equivalent standards-based access-control mechanism	Current RFP basis

Controlled Tender Decision	Current RFP Basis	Applicability
	subject to BT acceptance.	
USSD / USSI	USSD and USSI/IMS integration MUST	Current RFP basis
Ticketing	New ticketing baseline deliverable	Current RFP basis
Language	English mandatory/default; Dzongkha optional/future-ready without baseline cost inflation	Current RFP basis
Hardware	Required switch + firewall included; router only if justified	Current RFP basis
Training	10-day technical + two non-parallel 5-day business batches before Go-Live	Current RFP basis
Currency	BTN/USD; INR accepted/preferred where applicable	Current RFP basis
Roaming settlement	TAP 3.12/RAP/NRTRDE/HUR Must; GSMA BCE and prepaid roaming readiness; multi-currency/SDR	Current RFP basis
5G SA	Released-product capability with evidence; commissioning not required at Go-Live	Current RFP basis
Data retention	13 months online; 10-year archive	Current RFP basis
Data residency	All subscriber PII, KYC, charging/billing records, CDRs and other regulated production data, including backups, logs, telemetry and diagnostics, shall reside and be processed in Bhutan. Overseas hosting, replication, analytics processing and remote-support access to such data require BT prior written approval and declared safeguards. This does not prohibit legitimate international roaming, interconnect, clearing-house and partner settlement exchanges necessary for contracted services, subject to BT-approved purpose, minimum necessary data, secure transfer, access controls, auditability and applicable regulatory requirements. Such exchanges shall not permit general offshore hosting or unrestricted replication.	Current RFP basis
Annex E workload values	Service baselines and available workload inputs in Annex E; declared bidder assumptions for missing/ambiguous values; common BT clarifications apply to all bidders	Current RFP basis
Environments	Supplier-hosted development at Supplier cost; BT Production, DR, Staging, SIT, UAT, Training, Performance and applicable Sandbox	Current RFP basis
DR	DR-1 Backup & Recovery = M (mandatory baseline); DR-2 Critical Systems/Nodes DR = M (mandatory baseline);	Current RFP basis

Controlled Tender Decision	Current RFP Basis	Applicability
	DR-3 Full-Fledged DR = S (recommended, separately priced option).	
CAMARA	Initial delivery / monetisation chain	Current RFP basis
Support horizon	Year 1 Warranty + 7 separately quoted AMC years	Current RFP basis
Requirement IDs	M/S/C-coded IDs and traceability register	Current RFP basis
Multi-tenancy/MVNO/BSSaaS	Multi-tenant foundation and GMC readiness MUST; future external MVNO/MVNE/BSSaaS commercial activation SHOULD/future-priced.	Current RFP basis

25.1 Prescribed Bid Submission Package

BT shall evaluate one ordered submission package. The bidder shall not create a proliferation of independent documents where the same information can be provided in the prescribed volume or BT workbook. Supporting material is evidence only and shall not substitute for completion of mandatory BT schedules.

Volume 1 - Executive & Bidder Profile

Executive summary; offered submission track(s); bidder, OEM, consortium/subcontractor structure; eligibility; corporate profile; comparable references; key declarations and signed forms.

Volume 2 - Technical Solution

One coherent technical proposal covering overall solution architecture, A/B/C functional architecture, deployment/environments, HA/DR, security, data/analytics, integration architecture, migration/coexistence architecture, product/OEM composition and principal design assumptions. Separate repetitive architecture documents are not required at bid stage.

Volume 3 - Compliance & Traceability Workbook

The issued workbook contains the 525 main requirements, 20 MPFs, 951 Annex AN parity rows and 119 E2E scenarios. Bidders shall answer every applicable row using the original identifiers. Info parity rows require the requested information and are not scored as M/S/C requirements. For overlapping main/parity rows, preserve both identifiers and cross-reference the common response/evidence; BT shall avoid duplicate evaluation credit for the same capability. The E2E register records verification and acceptance commitments rather than a separate set of scored functionality.

BT-issued native Excel workbook and primary technical evaluation instrument. It shall preserve immutable Requirement IDs and capture compliance, delivery mode, product/module/version, evidence reference, dependency, exception/remedy, licence inclusion, price reference, demo and acceptance/E2E mapping. The bidder shall not replace or restructure the workbook.

Volume 4 - Integration, Migration & Implementation

Consolidated response covering implementation approach and schedule, integration/API/event approach, migration and reconciliation, testing/acceptance approach, cutover/rollback, training/knowledge transfer, governance, staffing and operational handover. Detailed execution runbooks and detailed test scripts are

post-award deliverables. It shall include a signed delivery feasibility statement confirming the nine-month implementation, November-December 2027 parallel run and 1 January 2028 Go-Live, with critical path, dependencies, risks and mitigation.

Volume 5 - Infrastructure, Software, Licensing & Capacity

One controlled technical volume/workbook containing separate schedules for: (5A) Hardware/Infrastructure BOM; (5B) Software & Licence BOM; (5C) Third-Party/OEM Components; (5D) Capacity & Sizing; (5E) Environment/Deployment Allocation; (5F) Licence Entitlement & Expansion; and (5G) technical support/lifecycle entitlement. Common Component IDs shall link functionality, software, licence, infrastructure, capacity, DR and support. Commercial prices shall be stated in Volume 6.

Volume 6 - Commercial Proposal & Lifecycle TCO

BT-issued commercial workbook containing commercial summary, hardware/infrastructure pricing, software/licence pricing, implementation/integration/migration, training, Year-1 warranty, AMC/support Years 2-8, OEM/third-party recurring costs, capacity/licence expansion, GMC/tenant/MVNO expansion, optional/future capabilities, CR/professional-service rates and 8-year lifecycle TCO. Support costs shall be shown year-by-year and shall identify bidder, OEM, third-party, subscription and renewal elements without double charging.

Volume 7 - Evidence Repository

The bidder shall submit the BT Evidence Register.xlsx plus a controlled evidence repository. Evidence shall be grouped into a small number of searchable, bookmarked PDF volumes in ascending Evidence ID sequence rather than hundreds of individual files or one excessively large undifferentiated PDF.

25.2 Modular Submission Checklist

Submission control	Requirement
Prescribed structure	Bidder shall use the BT-issued volume order, workbooks and schedules. Bidder-created formats shall not replace mandatory BT templates.
Scope declaration	Identify T-A/T-B/T-C/T-AB/T-BC/T-AC/T-ABC track(s) offered.
Requirement response	Respond to all requirements mapped to offered group(s) plus all applicable Common/Cross-Group requirements in the BT Compliance & Traceability Workbook.
Evidence reference	Every evidence-backed claim shall cite a unique EVID-xxxx reference linked to the Evidence Register and exact file/section/page. Generic brochure references are insufficient.
Assumptions / deviations	All assumptions, dependencies, deviations and exclusions shall appear in one consolidated register. Undisclosed qualifications shall not reduce mandatory scope.
Commercial separation	All prices, including AMC/support, OEM/third-party recurring charges and lifecycle costs, shall be stated in Volume 6. Technical volumes shall contain entitlement/scope but no commercial prices unless BT expressly requests otherwise.
Post-award deliverables	Detailed HLD/LLD, detailed ICDs, migration/cutover runbooks, detailed test scripts and as-built documents are post-award deliverables; bid-stage responses shall provide sufficient architecture, approach, evidence and commitments for

Submission control	Requirement
	evaluation.

25.3 Authoritative Tender Documents and Editable Response Templates

BT shall issue the RFP, Draft Master Agreement and prescribed schedule instructions in PDF as the authoritative tender documents. Where BT also provides an editable workbook or template, the editable file is provided solely to facilitate structured bidder response and evaluation. The BT-issued PDF shall prevail for the prescribed structure, instructions, definitions and requirements in the event of inconsistency.

Bidders shall not alter, delete, rename, reorder, hide or otherwise modify prescribed worksheets, Requirement IDs, Component IDs, fields, formulas, classifications, validation lists or instructions, except in cells expressly designated for bidder input. Hidden sheets, rows or columns, external workbook links and unapproved macros are prohibited unless expressly requested by BT.

For critical completed schedules designated by BT, including compliance, commercial/TCO, contractual deviations and other material registers, the bidder shall submit both (i) the native editable workbook and (ii) an identical signed PDF export. The signed PDF shall constitute the formal submitted record; the native workbook shall be used for evaluation and analysis. Any discrepancy shall be subject to BT clarification and shall not entitle the bidder to alter the substance of its bid.

Narrative technical responses, architecture descriptions, implementation/migration approaches and supporting evidence shall be submitted in searchable PDF unless BT expressly prescribes another format. Structured data shall be provided in the applicable BT-issued workbook.

25.4 Draft Master Agreement and Contract Deviations

BT will issue the Draft Master Implementation, Software Licence, Support and Maintenance Agreement as part of the tender package. Bidders shall review the draft agreement as part of their bid and shall identify every requested contractual qualification exclusively in the BT-issued Contract Deviations Register. Contract terms not expressly identified in that register shall be deemed accepted for bid-evaluation purposes, subject to applicable procurement requirements and the final executed agreement.

The Contract Deviations Register shall be issued as an authoritative PDF reference and an editable Excel response template. Bidder standard terms, click-wrap terms, licence terms, OEM terms or other attachments shall not override the RFP or Draft Master Agreement unless the relevant deviation is expressly disclosed and accepted by BT. No accepted contractual deviation shall have contractual effect unless reflected in the executed agreement or an incorporated contract schedule, Special Condition or signed amendment. A contractual qualification stated only in a technical proposal, commercial proposal, assumptions/exceptions register, covering letter or other bid document shall not substitute for disclosure in the Contract Deviations Register.

The final Contract shall establish an unambiguous order of precedence. As a minimum principle, the signed Agreement and Special Conditions, formal amendments/addenda, BT RFP and formal clarifications, final accepted Requirements & Compliance Schedule, accepted contractual deviations as incorporated into the Contract, final Commercial/TCO Schedule, approved architecture/BOM/licensing

and implementation/acceptance/SLA schedules, and the accepted supplier technical proposal shall be reconciled so that bidder assumptions or standard terms cannot silently override an explicit BT requirement.

The final executed agreement shall incorporate, as applicable, the RFP and addenda, accepted bidder response, accepted clarifications, accepted deviations, final compliance baseline, BOM/licensing and capacity schedules, commercial/TCO schedules, implementation and acceptance schedules, SLA/support obligations and other agreed contract schedules. Unsuccessful bidders shall have no entitlement to the successful bidder's confidential commercial or negotiated contract schedules except to the extent disclosure is required by applicable law or procurement rules.

25.5 Submission Version Control and File Integrity

Every prescribed response file shall retain the BT template name/version reference and include the bidder name and submission version in the filename. The bidder is responsible for ensuring that PDF and native-file versions are complete, readable, virus-free and internally consistent. BT may reject or seek clarification on corrupted, structurally altered or materially inconsistent response files in accordance with the applicable procurement rules. A version-label or administrative mismatch alone shall not constitute grounds for rejection unless it materially affects completeness, integrity, comparability or evaluation; material alteration, corruption, omission or unauthorized restructuring may be treated in accordance with the applicable procurement rules and tender conditions.

26. BIDDER DECLARATION

The Bidder confirms that it has reviewed the complete RFP and annexes; all mandatory functionality, interfaces, licences, dependencies, infrastructure and services necessary for the committed solution are included or explicitly declared; the response is accurate and evidence-backed; and no undisclosed qualification will be introduced after award. Any declared exclusion, assumption, dependency, technical/commercial exception or contractual deviation shall be cross-referenced to the applicable BT-prescribed register and, where relevant, the corresponding Requirement ID in the compliance/traceability matrix. Narrative disclosure alone shall not replace completion of the prescribed register or matrix.

Authorised Signatory	Entry
Name	
Designation	
Company	
Signature/Seal	
Date	

PART D - ANNEXURES

Annex Index

Annex governance: Annex AG (MRCATM) is the primary requirements traceability structure. Annex AL is the authoritative evidence index referenced by AG and AH. Annex AH defines verification and acceptance

methods, while Annex AB maps demonstration and end-to-end acceptance scenarios. Technical/commercial exceptions are governed through the BT-issued Annex AC Technical & Commercial Exceptions Register; contractual/legal deviations are governed only through the separate Contract Deviations Register. Annex AE is the authoritative structured Cross-Group Interface Responsibility Matrix; narrative architecture responses shall explain the interface approach and reference Annex AE rather than maintain a competing interface register. Commercial rules and lifecycle TCO are governed through Annex V, with detailed modular price lines in Annex AF. All applicable annexes shall preserve traceability to Requirement IDs and, where relevant, Component IDs, Evidence IDs, Test IDs and Price Line IDs.

Annex	Title
A	Standard Forms & Declarations
B	Corporate & Financial Information
C	Reference & Experience Schedule
D	Scope Decision Confirmation
E	Sizing & Workload Data Sheet
F	Current System & Integration Inventory
G	Functional Compliance Matrix
H	Non-Functional Compliance Matrix
I	Standards / TM Forum / 3GPP / CAMARA Conformance Matrix
J	Security, Privacy & Compliance Questionnaire
K	Infrastructure / Hardware BOM, Sizing & Environment Schedule
L	Software, Licence, Entitlement & Technology Dependency Inventory
M	Third-Party Dependency & Responsibility Schedule
N	Architecture Accountability Pack
O	Implementation Plan, WBS, Staffing & CVs
P	Integration, Coexistence & Interface Test Plan
Q	Data Migration & Reconciliation Plan
R	Backup & DR Options Response
S	Technical Support, SLA & Lifecycle Response (no prices)
T	Training & Documentation Plan
U	Warranty & AMC Technical Scope (commercial costs in Annex V/AF)
V	Commercial Price Schedules / 8-Year Lifecycle TCO
W	RAID / Assumptions / Dependencies / Exclusions Register
X	MIS/BI Report Catalogue
Y	Roaming/Interconnect/Wholesale Matrix

Annex	Title
Z	Payment Integration & Partner Rail Matrix
AA	Multi-Tenancy / MVNO / MVNE / BSSaaS Matrix
AB	End-to-End Acceptance Tests & Demonstration Scenarios
AC	Technical & Commercial Exceptions Register
AD	Functional Group & Requirement Packaging / Mapping
AE	Cross-Group Interface Responsibility Matrix (Authoritative Structured Register)
AF	Modular Commercial Price Schedule
AG	Master Requirements, Compliance & Acceptance Traceability Matrix (MRCATM)
AH	Requirement Verification & Acceptance Method Matrix
AI	Requirement Gap, Remediation & Closure Register
AJ	Target Architecture Principles & Responsibility Boundaries
AK	Business Terminology, Data, UI/UX, Validation & Branding Standards Catalogue
AL	Evidence Register & Evidence Submission Matrix
AM	Clarification Query Register
AN	Detailed Functional Parity Matrix (RFI Annex O and Annex Q)

ANNEX AG - MASTER REQUIREMENTS, COMPLIANCE AND ACCEPTANCE TRACEABILITY MATRIX (MRCATM)

This annex is the authoritative tender-to-acceptance traceability structure and the primary requirements compliance instrument for the procurement. The electronic compliance workbook issued by BT shall contain the full row-level matrix. The matrix shall preserve every Requirement ID and map it to Group, Module/Sub-module, priority, bidder compliance, delivery mode, product/module/version, evidence reference, dependency/gap/remedy, Component ID, licence/BOM reference, Price Line ID, verification/acceptance method, Demo/E2E/Test ID and final closure status. All applicable annexes and bidder schedules shall feed into, or be cross-referenced from, this structure; narrative interpretation shall not override the applicable Requirement ID.

Domain	Primary Group	Module Mapping	Req. Count	ID Range / Note
BIL - Billing, AR & Collections	B	B1/B2/B7	45	BIL-M001 ... BIL-M045
CHG - Convergent Charging & Balances	A	A1/A2/A4/A5	49	CHG-M001 ... CHG-M045; CHG-S001, CHG-S002, CHG-S003, CHG-S004
POL - PCRF/PCF &	A	A3	10	POL-M001 ... POL-M010

Domain	Primary Group	Module Mapping	Req. Count	ID Range / Note
Policy				
MED - Mediation & Usage	B	B4	11	MED-M001 ... MED-M011
RWI - Roaming, Interconnect & Wholesale	B	B5	13	RWI-M001 ... RWI-M012; RWI-S001
CRM - CRM, KYC & Case	C	C1	22	CRM-M001 ... CRM-M021; CRM-S001
CAT - Catalogue, CPQ & Device Financing	C	C2/C3	27	CAT-M001 ... CAT-M025; CAT-S002, CAT-S003
ORD - Order Management	C	C4	18	ORD-M001 ... ORD-M018
PRV - Provisioning & Orchestration	C	C5	18	PRV-M001 ... PRV-M018
INV - Inventory, Number, SIM & eSIM	C	C6	29	INV-M001 ... INV-M027; INV-S001, INV-S002
PAY - Payments, Voucher & eLoad	B	B3	17	PAY-M001 ... PAY-M017
CHN - Channels & Notifications	C	C7	17	CHN-M001 ... CHN-M016; CHN-C001
PRM - Partner & Commission	C	C8	8	PRM-M001 ... PRM-M008
RAF - Revenue Assurance & Fraud	B	B6	12	RAF-M001 ... RAF-M012
MIS - MIS/BI & Analytics	COMMON/CROSS	COMMON; Track B primary owner	31	MIS-M001 ... MIS-M031
TEN - Multi-Tenancy / GMC	C	C / COMMON	17	TEN-M001 ... TEN-M015; TEN-S001, TEN-S002
NAX - CAMARA / Network APIs	COMMON/CROSS	A6 / COMMON	10	NAX-M001 ... NAX-M010
CVM - Campaign, CVM & Loyalty	C	C9	11	CVM-M001 ... CVM-M009; CVM-S001, CVM-S002
ESV - Enterprise Messaging,	C	C10	8	ESV-M001 ... ESV-M008

Domain	Primary Group	Module Mapping	Req. Count	ID Range / Note
Special Numbers, Hosting & DC				
ARC - Architecture	COMMON	COMMON	19	ARC-M001 ... ARC-M018; ARC-S001
AVL - Availability & Resilience	COMMON	COMMON	10	AVL-M001 ... AVL-M010
PRF - Capacity & Performance	COMMON	COMMON	7	PRF-M001 ... PRF-M007
DR - Backup & DR	COMMON	COMMON	9	DR-M001 ... DR-M009
SEC - Security & Privacy	COMMON	COMMON	18	SEC-M001 ... SEC-M017; SEC-S001
OPS - Observability & Operations	COMMON	COMMON	8	OPS-M001 ... OPS-M007; OPS-S001
AIG - AI/ML Governance	COMMON	COMMON	7	AIG-M001 ... AIG-M007
UX - UX, Terminology & Branding	COMMON	COMMON	15	UX-M001 ... UX-M015
INT - Integration, API & Data	COMMON/CROSS	COMMON	14	INT-M001 ... INT-M014
MIG - Migration & Coexistence	COMMON/CROSS	COMMON	17	MIG-M001 ... MIG-M017
TST - Testing & Acceptance	COMMON/CROSS	COMMON	28	TST-M001 ... TST-M028
MPF - Mandatory Pass/Fail	COMMON	Section 11	20	MPF-01 ... MPF-20
EXP - Eligibility	COMMON	Section 4	8	EXP-001 ... EXP-008
E2E - E2E Acceptance Scenarios	COMMON/CROSS	Section 15.3 / Annex AB	119	E2E-01 ... E2E-119
AN - RFI detailed parity rows (Annex AN)	A / B / C / COMMON	Per Annex AN mapping	951	O01-001 ... O17-013; Q-001 ... Q-048
Total requirement IDs in RFP body (excluding E2E and Annex AN)			553	Derived from the RFP body tables of this issue.

The detailed electronic matrix shall not duplicate a requirement simply because it is cross-group. It shall identify Primary Group/Module and Related Group(s)/Interface(s). Cross-group interface obligations shall additionally reference Annex AE. The BT-issued Annex AE workbook is the authoritative structured interface responsibility register. Narrative architecture material shall describe the approach, sequence, ownership model and design rationale, and shall reference the applicable Annex AE Interface ID(s) instead of creating a separate competing interface inventory.

ANNEX AH - REQUIREMENT VERIFICATION AND ACCEPTANCE METHOD MATRIX

BT and the supplier shall finalize the verification method for every applicable requirement during the requirements/test planning stage, without weakening the contractual requirement. The following codes shall be used consistently. The matrix shall distinguish documentary/design evidence, demonstration evidence, executable test evidence, reconciliation evidence, certification/independent evidence and formal BT acceptance sign-off. Each verification row shall reference the applicable Requirement ID(s), Evidence ID(s) from Annex AL and Test/Demo/E2E ID(s) where applicable.

Code	Method	Use
T	Functional/UAT Test	Business or operational behavior validated through an executable test.
D	Demonstration	Controlled demonstration of released/configured capability.
I	Inspection	Inspection of configuration, inventory, documentation or delivered item.
R	Document/Design Review	HLD/LLD, architecture, sizing, runbook or evidence review.
C	Certification / Independent Evidence	Certificate, independent audit or formal conformance evidence where applicable.
P	Performance Test	Load, soak, TPS, latency, concurrency, failover or capacity validation.
S	Security Test	Vulnerability, penetration, access-control, hardening or security-control validation.

ANNEX AI - REQUIREMENT GAP, REMEDIATION AND CLOSURE REGISTER

All accepted PC/AL responses, implementation gaps, test failures and approved residual actions shall be tracked against Requirement IDs. No item may disappear through aggregation at module or submission-track level. Each remediation item shall identify accountable owner, target date, commercial/cost responsibility, linked defect/test/evidence references and BT closure authority. Closure shall require objective evidence and BT approval; unresolved mandatory gaps remain supplier obligations unless formally varied through the Contract.

Requirement ID	Gap / Exception	Agreed Remedy	Owner	Milestone	Cost Impact	Test ID	Defect ID	Target Date	Closure / BT Approval
[●]	[●]	[●]	[●]	[●]	[●]	[●]	[●]	[●]	[●]

ANNEX E - SIZING & WORKLOAD DATA SHEET (Minimum fields)

All bidders shall use the current and five-year service baselines and workload inputs below. Five-year values are design points and shall not be replaced by lower bidder estimates. Where values are incomplete, ambiguous or absent, the bidder shall state and justify its assumptions, units, peak/busy-hour factors, concurrency, record sizes, growth profile and sizing model in Annex E. BT may confirm these by clarification/addendum for a common evaluation basis. Missing data shall not permit omission of mandatory functionality or an undisclosed licence/capacity cap. Planning services retain their requirement priority and commercial treatment; a sizing row alone does not make future activation mandatory.

BT subscriber and service sizing baselines

Service or business line	Current count	Five-year design count	Current source
Prepaid mobile	550,000	700,000	SPS
Postpaid mobile	10,000	20,000	BSCS
Fixed line (FXL, Tollfree, PBX/PRI)	10,000	10,000	BSCS
Prepaid Wireline leased line / BT Fiber	6728	40,000	BSCS
Postpaid Wireline leased line / BT Fiber	1009	20,000	BSCS
Prepaid Wireless (FWA)/ BT AirFiber	9000	60,000	Tayana
Postpaid Wireless (FWA)/ BT AirFiber	19	10,000	Not provided
Prepaid DSL	171	1,000	BSCS
Postpaid DSL	92	1,000	BSCS
IP Transit Retail	8	200	BSCS
Point-to-Point (National & International)	201	3,000	BSCS
IoT subscriptions	10,652	100,000	BSCS
Bulk SMS services	45	5000	VAS and BSCS
Security as a service	Not provided	20,000	Not provided
IPVPN Connectivity	172	500	BSCS
Data Centre services (VPS, Colocation, Managed Services, SaS, PaaS etc.)	23	500	BSCS
Contact Centre services	10	50	BSCS
Prepaid Domain Registrations	538	5,000	BSCS
Postpaid Domain Registrations	140	2,000	BSCS
Interconnect Business	8	20	BSCS

Service or business line	Current count	Five-year design count	Current source
International Roaming Business	308	500	BSCS
Slice-as-a-Service customers (Planning)	Not provided	10,000	Not provided
SATCOM-as-Service (Planning Scenario)	Not provided	5000	Not provided
Network Capabilities-as-a-Service (Planning)	Not provided	100	Not provided
Enterprise CPQ & metered/consumption billing customers (Planning scenario)	Not provided	200	Not provided
IP Telephony	1	20	Not provided
Electronic Mail Services	Not provided	20	Not provided

Available workload inputs

Workload metric	Current input	Five-year input or qualification
Peak Voice charging transactions per second (TPS)	100	Bidder assumption required
Peak SMS charging TPS	200	400
Peak Data charging TPS / sessions	40	Bidder assumption required
Total peak converged charging TPS	Bidder assumption required	Bidder assumption required
Peak concurrent data sessions	38	Bidder assumption required
CDR / EDR / usage records per day	12820	Bidder assumption required
Roaming / interconnect records per month	1500	Bidder assumption required
Recharge transactions	174 per day average; 291 peak as supplied	Peak unit and five-year estimate to be confirmed; bidder shall state assumptions

The supplied data charging/session, concurrent-session, CDR/EDR and roaming-record values shall be validated for units, coverage and aggregation period. They are not a licence to under-size the complete network. Bidders shall reconcile them against the service population and disclose any alternative assumption for BT clarification. Provide Year 1 through Year 5 quantities and demonstrate N+1 and mandatory DR-2 failure operation, with declared 20–30% engineering headroom. Headroom is additional to growth and shall not be achieved by reducing the BT design point.

The licensing schedule shall identify each product/component, OEM, release, metric, quantity, capacity band, users/concurrency, TPS/sessions, storage, API/event volumes, tenant entitlement, environment allocation, HA/DR/failover rights, growth increments, term, renewal and support. Include database, OS, virtualization/container platform, API gateway/ESB/broker, load balancer, backup/archive, monitoring, security and reporting/BI dependencies. All licences and resources needed for the mandatory workload, environments, interfaces and support horizon shall be included and mapped to Annex K/L/M, Annex AG and commercial/TCO lines. Supplier under-sizing or omitted dependencies within the contracted envelope shall be remedied at no additional cost to BT. Optional BT development shall be shown separately.

Category	BT/Bidder data to state
Subscribers/Services	Active subscribers/services by LoB; Year-1 to Year-5 growth
Charging	Busy-hour and peak TPS by voice/SMS/data/5G; concurrent sessions; quota update profile
Usage/Mediation	CDR/EDR per day and peak hour; average/max record size; late/reject profile
Digital/API	Concurrent sessions; API TPS; CAMARA API transaction volumes
Payments/Recharge	Peak and sustained TPS; reconciliation volume
Orders/Provisioning	Daily/peak orders and provisioning TPS; bulk operations
Billing	Billing accounts; invoices/cycle; bill window; itemisation volume
Reporting	Concurrent users; large report volumes; scheduled jobs; 13-month online storage
Tenants	Initial and Year-5 tenant/MVNO count and per-tenant scale assumptions
Migration	Source record counts, data size, history, cutover window
Growth/Failure	N+1, DR-2 site/component failure and 20-30% engineering headroom assumptions

ANNEX F - CURRENT SYSTEM & INTEGRATION INVENTORY (Minimum content)

The following current systems, platforms and partners form the minimum integration and migration scope. BT will confirm versions, interfaces and volumes by addendum; the treatment column is binding unless BT amends it.

System / platform / partner	Treatment	Version / volume
Ericsson IN (voice/SMS/PAYG charging)	Coexist, then migrate to target OCS/CHF	[BT to confirm version/volumes]
Tayana data charging/policy (UPCC/PCRF)	Coexist, then migrate to target OCS/CHF and PCRF/PCF	[BT to confirm]
Tayana AAA (DSL/PPPoE)	Retain/integrate or replace per PRV-M009	[BT to confirm]
Allot DPI (procured 2026)	Reuse/integrate per POL-M008	[BT to confirm]
BSCS-based billing/CRM	Replace and migrate	[BT to confirm]
USSD gateway	Retain and integrate	[BT to confirm]

System / platform / partner	Treatment	Version / volume
SMSC, A2P/SMSC gateway, bulk SMS	Retain and integrate; monetise in CBSS	[BT to confirm]
Cell broadcast centre	Integrate if commercially active	[BT to confirm status]
eLoad/eRecharge platform and dealer network	Retain and integrate	[BT to confirm]
B-Ngul (mobile money) and B-Wallet	Retain and integrate	[BT to confirm]
CRBT (B-Tunes), missed-call alert and other VAS	Retain and integrate	[BT to confirm]
BT AI Data Plan partner platform	Integrate	[BT to confirm]
eSIM SM-DP+ and travel eSIM partner	Integrate	[BT to confirm]
Roaming clearing house (TAP/RAP/NRTRDE/HUR; BCE when activated)	Integrate	[BT to confirm provider]
Interconnect partners (domestic and international)	Integrate	[BT to confirm]
myBT app; online service request portal; bill receipt portal; tourist SIM booking portal; CRBT portal; AI plan portal; tax statement portal	Replace or retain per channel (CHN-M011)	[BT to confirm per channel]
Contact centre / IVR (1600) / chatbot	Integrate	[BT to confirm]
ERP/GL	Integrate	[BT to confirm]
Hosting control panel and mail platform	Integrate per PRV-M016	[BT to confirm]
.bt ccTLD domain registry	Integrate and automate per PRV-M018 (EPP or registry API)	[BT to confirm platform, version and EPP/API support]
Workforce/field-service management platform	Integrate per ORD-M018	[BT to confirm]
Bhutan NDI	Integrate per CRM-M004/CRM-M019	[BT to confirm]
Current service forms (new SIM, SIM replacement, tourist SIM, CUG, CLIR, call barring, call details, retention, ownership change, surrender, reconnection, surety, employer assurance, EMI, AirFiber, BT Fiber, P2P, BTNIC, domain/web/mail hosting, bulk SMS, dealer registration, toll-free and others)	Digitise per CRM-M018	[BT to issue form list]

ANNEX N - ARCHITECTURE ACCOUNTABILITY PACK

The bidder shall provide the Architecture Accountability Pack as controlled narrative plus diagrams/matrices. It shall include the prescribed N-1 to N-10 artefacts, applicable NFR mapping, interface/event ownership, system-of-record boundaries, security/trust boundaries, HA/DR topology, deployment/environment allocation, capacity/licensing dependencies, migration/coexistence boundaries and end-to-end accountability. Drawings shall identify products/modules, interfaces, protocols, authoritative data/state owners, responsibility boundaries and material third-party dependencies.

- N-1 System-of-Record/Data Ownership Matrix
- N-2 Component Responsibility/RACI Matrix
- N-3 Interface Register
- N-4 Event/API Register
- N-5 Failure and Controlled Degraded-Mode Matrix
- N-6 Tenant Capability/Isolation Matrix
- N-7 Product Publication and Configuration Governance Flow
- N-8 Charging Target-State / Coexistence / Migration Diagram
- N-9 Technology Dependency & Licensing Matrix cross-reference
- N-10 Capacity/Scale-out Model

ANNEX R - BACKUP, RECOVERY & DR RESPONSE

Response is mandatory. DR-1 Backup & Recovery = M (mandatory baseline); DR-2 Critical Systems/Nodes DR = M (mandatory baseline); DR-3 Full-Fledged DR = S (recommended, separately priced option). The bidder shall clearly identify scope, topology, RPO/RTO, capacity during failure, failover/failback method, licence implications, test method and commercial reference for each level.

Field	DR-1 Backup	DR-2 Critical Systems	DR-3 Recommended Full DR
Mandatory status	Mandatory	Mandatory / Must Have	Recommended option
Included systems	Backup/recovery stack	List critical nodes/systems	Full CBSS / bidder recommendation
RPO / RTO	State	State by component	State by component
Capacity during failure	Recovery basis	State % and degraded mode	State %
Reuse of DR-1 resources	State reusable assets/value	Show reuse	Show reuse
BOM/licences	Itemise	Itemise	Itemise
Implementation services	Include	Include	Separate option
AMC/support impact	State	State	State
Failover/failback test	Restore drill	Mandatory	Mandatory if selected

Field	DR-1 Backup	DR-2 Critical Systems	DR-3 Recommended Full DR
Price validity / escalation	Contractual	Contractual	Contractual option protection
DR-3 price validity period and escalation cap	[Bidder]	[Bidder]	[Bidder]
Data consistency / split-brain controls	[Bidder]	[Bidder]	[Bidder]
DR test frequency	[Bidder]	[Bidder]	[Bidder]
Tenant data/configuration recovery treatment	[Bidder]	[Bidder]	[Bidder]

ANNEX X - MIS/BI REPORT, DASHBOARD & ANALYTICS CATALOGUE

Bidder shall complete the MIS/BI catalogue for each mandatory standard report, dashboard, KPI pack and material analytics output. Each item shall state at minimum: Report/Dashboard ID; purpose/business question; intended user role/audience; source-of-truth system(s)/data domain(s); refresh frequency and maximum data latency; reporting frequency/schedule where applicable; principal dimensions/filters; drill-down/drill-through capability; export/output formats; retention/history requirement; security/role restrictions; applicable Requirement ID(s); and acceptance/E2E reference. Ad-hoc/self-service analytics shall identify governed datasets, semantic/KPI definitions and permitted drill dimensions. The catalogue shall cross-reference Annex AG and Annex AH and shall not create a separate source of requirements.

Minimum mandatory report/dashboard catalogue (MIS-M031). Bidders shall state refresh, format (dashboard/PDF/XLSX/CSV), source of truth and availability for each item.

Report ID	Area	Minimum report / dashboard
H001	Executive	Revenue by LoB
H002	Executive	Subscriber growth
H003	Executive	ARPU trends
H004	Executive	Churn
H005	Executive	Collections
H006	Finance/Billing	Daily/monthly revenue
H007	Finance/Billing	AR ageing
H008	Finance/Billing	Unbilled usage
H009	Finance/Billing	Bill run summary
H010	Finance/Billing	Collections efficiency
H011	Finance/Billing	Dunning
H012	Finance/Billing	Adjustments

Report ID	Area	Minimum report / dashboard
H013	Finance/Billing	Tax liability
H014	Finance/Billing	Revenue assurance
H015	Subscriber/CRM	Active base
H016	Subscriber/CRM	Activations
H017	Subscriber/CRM	Lifecycle
H018	Subscriber/CRM	Terminations
H019	Subscriber/CRM	Plan mix
H020	Subscriber/CRM	Tickets/SLA
H021	Charging/Usage	Voice/SMS/data volumes
H022	Charging/Usage	PAYG
H023	Charging/Usage	Quota exhaustion
H024	Charging/Usage	Rating errors
H025	Charging/Usage	Roaming usage
H026	Charging/Usage	5G usage
H027	Payments	Payment summary
H028	Payments	Channel performance
H029	Payments	Reconciliation matched/unmatched
H030	Payments	Failed payments
H031	Payments	Settlements
H032	Payments	Refunds
H033	Payments	Idempotency
H034	Payments	Dead-letter queue
H035	Payments	Reversals
H036	Products/Services	Product performance
H037	Products/Services	Bundles
H038	Products/Services	IoT
H039	Products/Services	BT AirFiber (FWA)
H040	Products/Services	BT Fiber (leased line)/VPN
H041	Products/Services	Domains
H042	Products/Services	Equipment/EMI
H043	Roaming/Interconnect	Traffic
H044	Roaming/Interconnect	Revenue/cost
H045	Roaming/Interconnect	Partner settlement

Report ID	Area	Minimum report / dashboard
H046	Roaming/Interconnect	Disputes
H047	Roaming/Interconnect	Invoice reconciliation
H048	Operations	System/API health
H049	Operations	Jobs
H050	Operations	Errors
H051	Operations	Audit logs
H052	Operations	Database growth
H053	Operations	DR tests
H054	Multi-Tenancy	Tenant operations/capacity/SLA
H055	Multi-Tenancy	Tenant revenue/wholesale settlement
H056	Enterprise	CPQ pipeline/quote conversion/approval
H057	Enterprise	Consumption/metered billing and commitment utilisation
H058	5G/TechCo	Slice-as-a-Service customers, usage and revenue
H059	API Monetization	Network API consumers, calls, SLA and revenue
H060	Data Analytics	Data export/stream health, latency, completeness and backfill
H061	AI/ML	Model/use-case performance and governance
H062	Regulatory	BICMA regulatory reporting pack
H063	Data Governance	Data-quality, lineage and reconciliation
H064	Data Retention	Online/archive retention, retrieval and backfill status

ANNEX Y - ROAMING, INTERCONNECT & WHOLESALE MATRIX (Minimum fields)

Area	Minimum fields / content
Partner registry	Partner, TADIG/MCC-MNC, country, technologies and services launched (2G/3G/4G/5G, VoLTE, CAMEL, SMS, data), inbound/outbound, launch/termination dates, IR.21 data
Settlement mode	TAP 3.12 per partner (Must); BCE readiness flag and future migration date; clearing house
Tariffs	IOT/DIOT per service, technology and time band; currency or SDR; increments/rounding; minimum charges; effective dates
Discount agreements	Model (balanced/unbalanced, flat, tiered, commitment, all-you-can-eat), thresholds, accrual and true-up method
IoT wholesale	Flat-rate tiers, per-active-SIM fees, SIM-count milestones, reporting
Retail roaming	Prepaid/postpaid eligibility, markup over IOT, packs by country/zone, caps and notifications, deposits

Area	Minimum fields / content
Files and records	TAP, RAP, NRTRDE and HUR record types handled (BCE when activated), validation rules, deadlines
Interconnect	Partners, routes/destinations, rates, time bands, invoicing cycle, dispute process
Reconciliation and assurance	Control totals, RA/fraud controls, reports
Bidder response	Compliance, product/module/version, evidence ID for every row

ANNEX Z - PAYMENT INTEGRATION & PARTNER RAIL MATRIX (Minimum content)

Rail / channel	Transactions in scope
B-Ngul (BT mobile money)	Recharge, bill payment, P2P, cash-in/out, bank transfer; bonus rules
B-Wallet (bank-linked)	Recharge, bill payment, transfers
Bank and payment apps (including MBoB, mPAY, TPAY, BDBL ePay and other approved apps)	Recharge (eLoad path), bill payment, enterprise/fiber payments
RMA switch/rails and cards	Online payments, settlement
BT counters	Cash and cheque, receipts, deposits
eLoad dealers and vouchers	Recharge and dealer float
Salary standing instruction	EMI and instalment deductions
Fields per rail	Protocol/API, transaction types, reversal/refund, settlement file and timing, fees, reconciliation keys, volumes, security, owner

ANNEX AB - END-TO-END ACCEPTANCE MATRIX

Bidder shall reproduce all Section 15.3 scenarios, including mandatory positive, negative/failure-state, idempotency, BI/Analytics and AI acceptance scenarios, in a test matrix with Requirement IDs, Preconditions, Test Data, Steps, Expected Result, Expected Financial/Service State where applicable, Recovery/Reconciliation Checks, Evidence, Environment, Owner, Result and Defect Reference. BT may add or refine test data without changing the underlying contracted requirement. Every scenario shall cross-reference the applicable Annex AG Requirement ID(s) and Annex AH verification/acceptance method(s), with Evidence ID(s) from Annex AL where evidence is required. Demonstration success does not replace contractual UAT/acceptance unless expressly designated by BT.

ANNEX AC - TECHNICAL & COMMERCIAL EXCEPTIONS REGISTER

Annex AC records technical, functional, architecture, implementation, dependency, scope and commercial exceptions/assumptions only and shall be completed in the separate BT-issued Annex AC Technical & Commercial Exceptions Register workbook. It is not the Contract Deviations Register. Contractual or legal qualifications to the Draft Master Agreement shall be disclosed exclusively through the separate BT-issued Contract Deviations Register. An item recorded only in Annex AC shall not constitute a contractual deviation. Each Annex AC entry shall reference the applicable Requirement ID(s), affected module/component/price line where relevant, impact, proposed remedy, commercial/schedule effect and related compliance response. Where no technical/commercial exception is proposed, the bidder shall state NIL in the register in accordance with its instructions.

ANNEX AD - FUNCTIONAL GROUP & REQUIREMENT PACKAGING / MAPPING

This annex is a packaging and traceability aid only. It maps requirements to Functional Groups and submission packages and does not create, amend, duplicate or override requirements, priority, compliance status, acceptance criteria or contractual scope. Annex AG remains the governing requirement traceability structure. COMMON and COMMON/CROSS requirements apply to every relevant offered scope.

Requirement ID	Functional Group	Notes
BIL-M001	B	
BIL-M002	B	
BIL-M003	B	
BIL-M004	B	
BIL-M005	B	
BIL-M006	B	
BIL-M007	B	
BIL-M008	B	
BIL-M009	B	
BIL-M010	B	
BIL-M011	B	
BIL-M012	B	
BIL-M013	B	
BIL-M014	B	
BIL-M015	B	
BIL-M016	B	
BIL-M017	B	
BIL-M018	B	
BIL-M019	B	
BIL-M020	B	

Requirement ID	Functional Group	Notes
BIL-M021	B	
BIL-M022	B	
BIL-M023	B	
BIL-M024	B	
BIL-M025	B	
CHG-M001	A	
CHG-M002	A	
CHG-M003	A	
CHG-M004	A	
CHG-M005	A	
CHG-M006	A	
CHG-M007	A	
CHG-M008	A	
CHG-M009	A	
CHG-M010	A	
CHG-M011	A	
CHG-M012	A	
CHG-M013	A	
CHG-M014	A	
CHG-M015	A	
CHG-M016	A	
CHG-M017	A	
CHG-M018	A	
CHG-M019	A	
CHG-M020	A	
POL-M001	A	
POL-M002	A	
POL-M003	A	
POL-M004	A	
POL-M005	A	
POL-M006	A	
POL-M007	A	
POL-M008	A	Group A policy; DPI reuse per POL-M008.
POL-M009	A	

Requirement ID	Functional Group	Notes
POL-M010	A	Apply applicable cross-group interfaces and E2E Acceptance mappings.
MED-M001	B	Enterprise/billing mediation primary in B; charging-specific real-time gateway functions remain within A and interface contract.
MED-M002	B	Enterprise/billing mediation primary in B; charging-specific real-time gateway functions remain within A and interface contract.
MED-M003	B	Enterprise/billing mediation primary in B; charging-specific real-time gateway functions remain within A and interface contract.
MED-M004	B	Enterprise/billing mediation primary in B; charging-specific real-time gateway functions remain within A and interface contract.
MED-M005	B	Enterprise/billing mediation primary in B; charging-specific real-time gateway functions remain within A and interface contract.
MED-M006	B	Enterprise/billing mediation primary in B; charging-specific real-time gateway functions remain within A and interface contract.
MED-M007	B	Enterprise/billing mediation primary in B; charging-specific real-time gateway functions remain within A and interface contract.
RWI-M001	B	
RWI-M002	B	
RWI-M003	B	
RWI-M004	B	
RWI-M005	B	
RWI-M006	B	
RWI-M007	B	Roaming/interconnect/wholesale primary in B; charging-side roaming controls in A (CHG-M011, CHG-M037); see Annex Y.
RWI-M008	B	Roaming/interconnect/wholesale primary in B; charging-side roaming controls in A (CHG-M011, CHG-M037); see Annex Y.
RWI-M009	B	Roaming/interconnect/wholesale primary in B; charging-side roaming controls in A; see Annex Y.
RWI-M010	B	Roaming/interconnect/wholesale primary in B; charging-side roaming controls in A (CHG-

Requirement ID	Functional Group	Notes
		M011, CHG-M037); see Annex Y.
RWI-M011	B	Roaming/interconnect/wholesale primary in B; charging-side roaming controls in A (CHG-M011, CHG-M037); see Annex Y.
RWI-M012	B	Roaming/interconnect/wholesale primary in B; charging-side roaming controls in A (CHG-M011, CHG-M037); see Annex Y.
RWI-S001	B	Roaming/interconnect/wholesale primary in B; charging-side roaming controls in A (CHG-M011, CHG-M037); see Annex Y.
CRM-M001	C	
CRM-M002	C	
CRM-M003	C	
CRM-M004	C	
CRM-M005	C	
CRM-M006	C	
CRM-M007	C	
CRM-M008	C	
CRM-M009	C	
CRM-M010	C	
CRM-M011	C	
CRM-M012	C	
CRM-M013	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CRM-M014	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CRM-M015	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CRM-M016	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CRM-M017	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CRM-M018	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CRM-M019	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CRM-M020	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.

Requirement ID	Functional Group	Notes
CRM-M021	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CRM-S001	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CAT-M001	C	
CAT-M002	C	
CAT-M003	C	
CAT-M004	C	
CAT-M005	C	
CAT-M006	C	
CAT-M007	C	
CAT-M008	C	
CAT-M009	C	
CAT-M010	C	
CAT-M011	C	
CAT-M012	C	
CAT-M013	C	
CAT-M014	C	
CAT-M015	C	
CAT-M016	C	
CAT-M017	C	
CAT-M018	C	
CAT-M019	C	
ORD-M001	C	
ORD-M002	C	
ORD-M003	C	
ORD-M004	C	
ORD-M005	C	
ORD-M006	C	
ORD-M007	C	
ORD-M008	C	
ORD-M009	C	
ORD-M010	C	
ORD-M011	C	
ORD-M012	C	

Requirement ID	Functional Group	Notes
ORD-M013	C	
PRV-M001	C	
PRV-M002	C	
PRV-M003	C	
PRV-M004	C	
PRV-M005	C	
PRV-M006	C	
PRV-M007	C	
PRV-M008	C	
PRV-M009	C	
PRV-M010	C	
INV-M001	C	
INV-M002	C	
INV-M003	C	
INV-M004	C	
INV-M005	C	
INV-M006	C	
PAY-M001	B	
PAY-M002	B	
PAY-M003	B	
PAY-M004	B	
PAY-M005	B	
PAY-M006	B	
PAY-M007	B	
PAY-M008	B	
CHN-M001	C	
CHN-M002	C	
CHN-M003	C	
CHN-M004	C	
CHN-M005	C	
CHN-M006	C	
CHN-M007	C	
CHN-M008	C	
CHN-M009	C	

Requirement ID	Functional Group	Notes
CHN-M010	C	
CHN-M011	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CHN-M012	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CHN-M013	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CHN-M014	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CHN-M015	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CHN-M016	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CHN-C001	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
PRM-M001	C	Commercial/partner administration primary in C; financial settlement/revenue-share execution interfaces to B.
PRM-M002	C	Commercial/partner administration primary in C; financial settlement/revenue-share execution interfaces to B.
PRM-M003	C	Commercial/partner administration primary in C; financial settlement/revenue-share execution interfaces to B.
PRM-M004	C	Commercial/partner administration primary in C; financial settlement/revenue-share execution interfaces to B.
PRM-M005	C	Commercial/partner administration primary in C; financial settlement/revenue-share execution interfaces to B.
PRM-M006	C	Commercial/partner administration primary in C; financial settlement/revenue-share execution interfaces to B.
PRM-M007	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
PRM-M008	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
RAF-M001	B	
RAF-M002	B	
RAF-M003	B	

Requirement ID	Functional Group	Notes
RAF-M004	B	
RAF-M005	B	
RAF-M006	B	
RAF-M007	B	
RAF-M008	B	
MIS-M001	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIS-M002	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIS-M003	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIS-M004	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIS-M005	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIS-M006	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIS-M007	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIS-M008	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIS-M009	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
TEN-M001	C	Tenant/GMC commercial administration primary in C; tenant context/isolation must persist through A, B and Common controls.
TEN-M002	C	Tenant/GMC commercial administration primary in C; tenant context/isolation must persist through A, B and Common controls.
TEN-M003	C	Tenant/GMC commercial administration primary in C; tenant context/isolation must persist through A, B and Common controls.
TEN-M004	C	Tenant/GMC commercial administration primary in C; tenant context/isolation must persist through A, B and Common controls.
TEN-M005	C	Tenant/GMC commercial administration primary in C; tenant context/isolation must persist through A, B and Common controls.
TEN-M006	C	Tenant/GMC commercial administration primary in C; tenant context/isolation must

Requirement ID	Functional Group	Notes
		persist through A, B and Common controls.
TEN-M007	C	Tenant/GMC commercial administration primary in C; tenant context/isolation must persist through A, B and Common controls.
TEN-M008	C	Tenant/GMC commercial administration primary in C; tenant context/isolation must persist through A, B and Common controls.
TEN-M009	C	Tenant/GMC commercial administration primary in C; tenant context/isolation must persist through A, B and Common controls.
TEN-M010	C	Tenant/GMC commercial administration primary in C; tenant context/isolation must persist through A, B and Common controls.
TEN-M011	C	Tenant/GMC commercial administration primary in C; tenant context/isolation must persist through A, B and Common controls.
TEN-M012	C	Tenant/GMC commercial administration primary in C; tenant context/isolation must persist through A, B and Common controls.
TEN-M013	C	Tenant/GMC commercial administration primary in C; tenant context/isolation must persist through A, B and Common controls.
TEN-M014	C	Tenant/GMC commercial administration primary in C; tenant context/isolation must persist through A, B and Common controls.
TEN-S001	C	Tenant/GMC commercial administration primary in C; tenant context/isolation must persist through A, B and Common controls.
TEN-S002	C	Tenant/GMC commercial administration primary in C; tenant context/isolation must persist through A, B and Common controls.
NAX-M001	COMMON/CROSS	Common exposure/governance; charging monetization interfaces to A, billing/settlement to B, partner/customer administration to C.
NAX-M002	COMMON/CROSS	Common exposure/governance; charging monetization interfaces to A, billing/settlement to B, partner/customer administration to C.
NAX-M003	COMMON/CROSS	Common exposure/governance; charging monetization interfaces to A, billing/settlement to B, partner/customer administration to C.
NAX-M004	COMMON/CROSS	Common exposure/governance; charging

Requirement ID	Functional Group	Notes
		monetization interfaces to A, billing/settlement to B, partner/customer administration to C.
NAX-M005	COMMON/CROSS	Common exposure/governance; charging monetization interfaces to A, billing/settlement to B, partner/customer administration to C.
NAX-M006	COMMON/CROSS	Common exposure/governance; charging monetization interfaces to A, billing/settlement to B, partner/customer administration to C.
NAX-M007	COMMON/CROSS	Common exposure/governance; charging monetization interfaces to A, billing/settlement to B, partner/customer administration to C.
NAX-M008	COMMON/CROSS	Common exposure/governance; charging monetization interfaces to A, billing/settlement to B, partner/customer administration to C.
NAX-M009	COMMON/CROSS	Common exposure/governance; charging monetization interfaces to A, billing/settlement to B, partner/customer administration to C.
CVM-M001	C	
CVM-M002	C	
CVM-M003	C	
CVM-M004	C	
CVM-M005	C	
CVM-M006	C	Campaign & CVM; predictive churn and Next-Best-Offer/Next-Best-Action are baseline integrated capabilities.
CVM-S001	C	Campaign & CVM; cross-sell/upsell and channel-preference models beyond the mandatory baseline may be native or integrated.
CVM-S002	C	
CVM-M007	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CVM-M008	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CVM-M009	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
ARC-M001	COMMON	Applies to every relevant offered group and end-to-end combination.
ARC-M002	COMMON	Applies to every relevant offered group and end-to-end combination.

Requirement ID	Functional Group	Notes
ARC-M003	COMMON	Applies to every relevant offered group and end-to-end combination.
ARC-M004	COMMON	Applies to every relevant offered group and end-to-end combination.
ARC-M005	COMMON	Applies to every relevant offered group and end-to-end combination.
ARC-M006	COMMON	Applies to every relevant offered group and end-to-end combination.
ARC-M007	COMMON	Applies to every relevant offered group and end-to-end combination.
ARC-M008	COMMON	Applies to every relevant offered group and end-to-end combination.
ARC-M009	COMMON	Applies to every relevant offered group and end-to-end combination.
ARC-M010	COMMON	Applies to every relevant offered group and end-to-end combination.
ARC-M011	COMMON	Applies to every relevant offered group and end-to-end combination.
ARC-M012	COMMON	Applies to every relevant offered group and end-to-end combination.
ARC-M013	COMMON	Applies to every relevant offered group and end-to-end combination.
ARC-M014	COMMON	Applies to every relevant offered group and end-to-end combination.
ARC-M015	COMMON	Applies to every relevant offered group and end-to-end combination.
ARC-M016	COMMON	Applies to every relevant offered group and end-to-end combination.
AVL-M001	COMMON	Applies to every relevant offered group and end-to-end combination.
AVL-M002	COMMON	Applies to every relevant offered group and end-to-end combination.
AVL-M003	COMMON	Applies to every relevant offered group and end-to-end combination.
AVL-M004	COMMON	Applies to every relevant offered group and end-to-end combination.
AVL-M005	COMMON	Applies to every relevant offered group and end-to-end combination.
AVL-M006	COMMON	Applies to every relevant offered group and

Requirement ID	Functional Group	Notes
		end-to-end combination.
AVL-M007	COMMON	Applies to every relevant offered group and end-to-end combination.
AVL-M008	COMMON	Applies to every relevant offered group and end-to-end combination.
AVL-M009	COMMON	Applies to every relevant offered group and end-to-end combination.
AVL-M010	COMMON	Applies to every relevant offered group and end-to-end combination.
PRF-M001	COMMON	Applies to every relevant offered group and end-to-end combination.
PRF-M002	COMMON	Applies to every relevant offered group and end-to-end combination.
PRF-M003	COMMON	Applies to every relevant offered group and end-to-end combination.
PRF-M004	COMMON	Applies to every relevant offered group and end-to-end combination.
PRF-M005	COMMON	Applies to every relevant offered group and end-to-end combination.
PRF-M006	COMMON	Applies to every relevant offered group and end-to-end combination.
DR-M001	COMMON	Applies to every relevant offered group and end-to-end combination.
DR-M002	COMMON	Applies to every relevant offered group and end-to-end combination.
DR-M003	COMMON	Applies to every relevant offered group and end-to-end combination.
DR-M004	COMMON	Applies to every relevant offered group and end-to-end combination.
DR-M005	COMMON	Applies to every relevant offered group and end-to-end combination.
DR-M006	COMMON	Applies to every relevant offered group and end-to-end combination.
DR-M007	COMMON	Applies to every relevant offered group and end-to-end combination.
DR-M008	COMMON	Applies to every relevant offered group and end-to-end combination.
DR-M009	COMMON	Applies to every relevant offered group and end-to-end combination.

Requirement ID	Functional Group	Notes
SEC-M001	COMMON	Applies to every relevant offered group and end-to-end combination.
SEC-M002	COMMON	Applies to every relevant offered group and end-to-end combination.
SEC-M003	COMMON	Applies to every relevant offered group and end-to-end combination.
SEC-M004	COMMON	Applies to every relevant offered group and end-to-end combination.
SEC-M005	COMMON	Applies to every relevant offered group and end-to-end combination.
SEC-M006	COMMON	Applies to every relevant offered group and end-to-end combination.
SEC-M007	COMMON	Applies to every relevant offered group and end-to-end combination.
SEC-M008	COMMON	Applies to every relevant offered group and end-to-end combination.
SEC-M009	COMMON	Applies to every relevant offered group and end-to-end combination.
SEC-M010	COMMON	Applies to every relevant offered group and end-to-end combination.
SEC-M011	COMMON	Applies to every relevant offered group and end-to-end combination.
SEC-M012	COMMON	Applies to every relevant offered group and end-to-end combination.
SEC-M013	COMMON	Applies to every relevant offered group and end-to-end combination.
SEC-M014	COMMON	Applies to every relevant offered group and end-to-end combination.
SEC-M015	COMMON	Applies to every relevant offered group and end-to-end combination.
SEC-M016	COMMON	Applies to every relevant offered group and end-to-end combination.
SEC-M017	COMMON	Applies to every relevant offered group and end-to-end combination.
SEC-S001	COMMON	Applies to every relevant offered group and end-to-end combination.
OPS-M001	COMMON	Applies to every relevant offered group and end-to-end combination.
OPS-M002	COMMON	Applies to every relevant offered group and

Requirement ID	Functional Group	Notes
		end-to-end combination.
OPS-M003	COMMON	Applies to every relevant offered group and end-to-end combination.
OPS-M004	COMMON	Applies to every relevant offered group and end-to-end combination.
OPS-M005	COMMON	Applies to every relevant offered group and end-to-end combination.
OPS-M006	COMMON	Applies to every relevant offered group and end-to-end combination.
OPS-S001	COMMON	Applies to every relevant offered group and end-to-end combination.
OPS-M007	COMMON	Applies to every relevant offered group and end-to-end combination.
AIG-M001	COMMON	Applies to every relevant offered group and end-to-end combination.
AIG-M002	COMMON	Applies to every relevant offered group and end-to-end combination.
AIG-M003	COMMON	Applies to every relevant offered group and end-to-end combination.
AIG-M004	COMMON	Applies to every relevant offered group and end-to-end combination.
AIG-M005	COMMON	Applies to every relevant offered group and end-to-end combination.
AIG-M006	COMMON	Applies to every relevant offered group and end-to-end combination.
AIG-M007	COMMON	Applies to every relevant offered group and end-to-end combination.
INT-M001	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
INT-M002	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
INT-M003	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
INT-M004	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
INT-M005	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
INT-M006	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.

Requirement ID	Functional Group	Notes
INT-M007	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
INT-M008	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
INT-M009	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
INT-M010	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
INT-M011	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
INT-M012	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
INT-M013	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
INT-M014	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIG-M001	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIG-M002	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIG-M003	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIG-M004	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIG-M005	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIG-M006	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIG-M007	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIG-M008	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIG-M009	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIG-M010	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIG-M011	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIG-M012	COMMON/CROSS	Applies to every relevant offered group and

Requirement ID	Functional Group	Notes
		end-to-end combination.
TST-M001	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
TST-M002	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
TST-M003	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
TST-M004	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
TST-M005	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
TST-M006	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
TST-M007	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
TST-M008	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
TST-M009	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
TST-M010	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
TST-M011	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
TST-M012	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
TST-M013	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
BIL-M026	B	Apply applicable cross-group interfaces and E2E Acceptance mappings.
BIL-M027	B	Apply applicable cross-group interfaces and E2E Acceptance mappings.
BIL-M028	B	Apply applicable cross-group interfaces and E2E Acceptance mappings.
BIL-M029	B	Apply applicable cross-group interfaces and E2E Acceptance mappings.
BIL-M030	B	Apply applicable cross-group interfaces and E2E Acceptance mappings.
BIL-M031	B	Apply applicable cross-group interfaces and E2E Acceptance mappings.

Requirement ID	Functional Group	Notes
BIL-M032	B	Apply applicable cross-group interfaces and E2E Acceptance mappings.
BIL-M033	B	Apply applicable cross-group interfaces and E2E Acceptance mappings.
BIL-M034	B	Apply applicable cross-group interfaces and E2E Acceptance mappings.
BIL-M035	B	Apply applicable cross-group interfaces and E2E Acceptance mappings.
BIL-M036	B	Apply applicable cross-group interfaces and E2E Acceptance mappings.
BIL-M037	B	Apply applicable cross-group interfaces and E2E Acceptance mappings.
BIL-M038	B	Apply applicable cross-group interfaces and E2E Acceptance mappings.
BIL-M039	B	Apply applicable cross-group interfaces and E2E Acceptance mappings.
BIL-M040	B	Apply applicable cross-group interfaces and E2E Acceptance mappings.
BIL-M041	B	Apply applicable cross-group interfaces and E2E Acceptance mappings.
BIL-M042	B	Apply applicable cross-group interfaces and E2E Acceptance mappings.
BIL-M043	B	Apply applicable cross-group interfaces and E2E Acceptance mappings.
BIL-M044	B	Apply applicable cross-group interfaces and E2E Acceptance mappings.
BIL-M045	B	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CHG-M021	A	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CHG-M022	A	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CHG-M023	A	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CHG-M024	A	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CHG-M025	A	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CHG-M026	A	Apply applicable cross-group interfaces and

Requirement ID	Functional Group	Notes
		E2E Acceptance mappings.
CHG-M027	A	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CHG-M028	A	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CHG-M029	A	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CHG-M030	A	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CHG-M031	A	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CHG-M032	A	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CHG-M033	A	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CHG-M034	A	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CHG-M035	A	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CHG-M036	A	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CHG-M037	A	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CHG-M038	A	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CHG-M039	A	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CHG-S001	A	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CHG-M040	A	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CHG-M041	A	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CHG-M042	A	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CHG-M043	A	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CHG-M044	A	Apply applicable cross-group interfaces and E2E Acceptance mappings.

Requirement ID	Functional Group	Notes
CHG-M045	A	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CHG-S002	A	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CHG-S003	A	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CHG-S004	A	Apply applicable cross-group interfaces and E2E Acceptance mappings.
MED-M008	B	Apply applicable cross-group interfaces and E2E Acceptance mappings.
MED-M009	B	Apply applicable cross-group interfaces and E2E Acceptance mappings.
MED-M010	B	Apply applicable cross-group interfaces and E2E Acceptance mappings.
MED-M011	B	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CAT-M020	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CAT-M021	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CAT-M022	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CAT-M023	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CAT-M024	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CAT-M025	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CAT-S002	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
CAT-S003	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
ORD-M014	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
ORD-M015	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
ORD-M016	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
ORD-M017	C	Apply applicable cross-group interfaces and

Requirement ID	Functional Group	Notes
		E2E Acceptance mappings.
ORD-M018	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
PRV-M011	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
PRV-M012	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
PRV-M013	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
PRV-M014	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
PRV-M015	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
PRV-M016	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
PRV-M017	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
PRV-M018	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
INV-M007	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
INV-M008	C	Number/SIM inventory primary in C; network sync via PRV; churn triggers from A/B.
INV-M009	C	Number/SIM inventory primary in C; network sync via PRV; churn triggers from A/B.
INV-M010	C	Number/SIM inventory primary in C; network sync via PRV; churn triggers from A/B.
INV-M011	C	Number/SIM inventory primary in C; network sync via PRV; churn triggers from A/B.
INV-M012	C	Number/SIM inventory primary in C; network sync via PRV; churn triggers from A/B.
INV-M013	C	Number/SIM inventory primary in C; network sync via PRV; churn triggers from A/B.
INV-M014	C	Number/SIM inventory primary in C; network sync via PRV; churn triggers from A/B.
INV-M015	C	Number/SIM inventory primary in C; network sync via PRV; churn triggers from A/B.
INV-M016	C	Number/SIM inventory primary in C; network sync via PRV; churn triggers from A/B.

Requirement ID	Functional Group	Notes
INV-M017	C	Number/SIM inventory primary in C; network sync via PRV; churn triggers from A/B.
INV-M018	C	Number/SIM inventory primary in C; network sync via PRV; churn triggers from A/B.
INV-M019	C	Number/SIM inventory primary in C; network sync via PRV; churn triggers from A/B.
INV-M020	C	Number/SIM inventory primary in C; network sync via PRV; churn triggers from A/B.
INV-M021	C	Number/SIM inventory primary in C; network sync via PRV; churn triggers from A/B.
INV-M022	C	Number/SIM inventory primary in C; network sync via PRV; churn triggers from A/B.
INV-M023	C	Number/SIM inventory primary in C; network sync via PRV; churn triggers from A/B.
INV-M024	C	Number/SIM inventory primary in C; network sync via PRV; churn triggers from A/B.
INV-M025	C	Number/SIM inventory primary in C; network sync via PRV; churn triggers from A/B.
INV-M026	C	Number/SIM inventory primary in C; network sync via PRV; churn triggers from A/B.
INV-M027	C	Number/SIM inventory primary in C; network sync via PRV; churn triggers from A/B.
INV-S001	C	Number/SIM inventory primary in C; network sync via PRV; churn triggers from A/B.
INV-S002	C	Number/SIM inventory primary in C; network sync via PRV; churn triggers from A/B.
PAY-M009	B	Apply applicable cross-group interfaces and E2E Acceptance mappings.
PAY-M010	B	Payment financial status primary in B; see Annex Z.
PAY-M011	B	Payment financial status primary in B; see Annex Z.
PAY-M012	B	Payment financial status primary in B; see Annex Z.
PAY-M013	B	Payment financial status primary in B; see Annex Z.
PAY-M014	B	Payment financial status primary in B; see Annex Z.
PAY-M015	B	Apply applicable cross-group interfaces and

Requirement ID	Functional Group	Notes
		E2E Acceptance mappings.
PAY-M016	B	Apply applicable cross-group interfaces and E2E Acceptance mappings.
PAY-M017	B	Apply applicable cross-group interfaces and E2E Acceptance mappings.
RAF-M011	B	Apply applicable cross-group interfaces and E2E Acceptance mappings.
RAF-M009	B	Apply applicable cross-group interfaces and E2E Acceptance mappings.
RAF-M010	B	Apply applicable cross-group interfaces and E2E Acceptance mappings.
RAF-M012	B	Apply applicable cross-group interfaces and E2E Acceptance mappings.
TEN-M015	C	Apply applicable cross-group interfaces and E2E Acceptance mappings.
NAX-M010	COMMON/CROSS	Apply applicable cross-group interfaces and E2E Acceptance mappings.
ARC-M017	COMMON	Apply applicable cross-group interfaces and E2E Acceptance mappings.
ARC-M018	COMMON	Applies to every relevant offered group and end-to-end combination.
ARC-S001	COMMON	Applies to every relevant offered group and end-to-end combination.
PRF-M007	COMMON	Apply applicable cross-group interfaces and E2E Acceptance mappings.
MIG-M013	COMMON/CROSS	Apply applicable cross-group interfaces and E2E Acceptance mappings.
MIG-M014	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIG-M015	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIG-M016	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIG-M017	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
TST-M014	COMMON/CROSS	Apply applicable cross-group interfaces and E2E Acceptance mappings.
TST-M015	COMMON/CROSS	Apply applicable cross-group interfaces and E2E Acceptance mappings.

Requirement ID	Functional Group	Notes
TST-M016	COMMON/CROSS	Apply applicable cross-group interfaces and E2E Acceptance mappings.
MIS-M010	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIS-M011	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIS-M012	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIS-M013	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIS-M014	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIS-M015	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIS-M016	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIS-M017	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIS-M018	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIS-M019	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIS-M020	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIS-M021	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIS-M022	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIS-M023	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIS-M024	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIS-M025	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIS-M026	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIS-M027	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIS-M028	COMMON/CROSS	Applies to every relevant offered group and

Requirement ID	Functional Group	Notes
		end-to-end combination.
MIS-M029	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIS-M030	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
MIS-M031	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
TST-M017	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
TST-M018	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
TST-M019	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
TST-M020	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
TST-M021	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
TST-M022	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
TST-M023	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
TST-M024	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
TST-M025	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
TST-M026	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
TST-M027	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
TST-M028	COMMON/CROSS	Applies to every relevant offered group and end-to-end combination.
UX-M001	COMMON	Common UX/terminology/validation/branding/process-efficiency requirement.
UX-M002	COMMON	Common UX/terminology/validation/branding/process-efficiency requirement.
UX-M003	COMMON	Common UX/terminology/validation/branding/process-efficiency requirement.

Requirement ID	Functional Group	Notes
UX-M004	COMMON	Common UX/terminology/validation/branding/process-efficiency requirement.
UX-M005	COMMON	Common UX/terminology/validation/branding/process-efficiency requirement.
UX-M006	COMMON	Common UX/terminology/validation/branding/process-efficiency requirement.
UX-M007	COMMON	Common UX/terminology/validation/branding/process-efficiency requirement.
UX-M008	COMMON	Common UX/terminology/validation/branding/process-efficiency requirement.
UX-M009	COMMON	Common UX/terminology/validation/branding/process-efficiency requirement.
UX-M010	COMMON	Common UX/terminology/validation/branding/process-efficiency requirement.
UX-M011	COMMON	Common UX/terminology/validation/branding/process-efficiency requirement.
UX-M012	COMMON	Common UX/terminology/validation/branding/process-efficiency requirement.
UX-M013	COMMON	Common UX/terminology/validation/branding/process-efficiency requirement.
UX-M014	COMMON	Common UX/terminology/validation/branding/process-efficiency requirement.
UX-M015	COMMON	Common UX/terminology/validation/branding/process-efficiency requirement.
ESV-M001	C	Commercial/order primary in C; charging in A and billing/settlement in B.
ESV-M002	C	Commercial/order primary in C; charging in A and billing/settlement in B.
ESV-M003	C	Commercial/order primary in C; charging in A

Requirement ID	Functional Group	Notes
		and billing/settlement in B.
ESV-M004	C	Commercial/order primary in C; charging in A and billing/settlement in B.
ESV-M005	C	Commercial/order primary in C; charging in A and billing/settlement in B.
ESV-M006	C	Commercial/order primary in C; charging in A and billing/settlement in B.
ESV-M007	C	Commercial/order primary in C; charging in A and billing/settlement in B.
ESV-M008	C	Commercial/order primary in C; charging in A and billing/settlement in B.

ANNEX AE - CROSS-GROUP INTERFACE RESPONSIBILITY MATRIX

Bidder shall complete one row per cross-group interface relevant to its offered scope. No blank ownership fields are permitted. Each interface shall identify accountable supplier/party, source and destination ownership, authoritative data/state owner, included-scope status, dependency, contracting party where third-party involvement exists, Component ID, Price Line ID and acceptance/E2E reference. Interface or ownership fields shall not be left blank.

Interface ID	Source Group/System	Destination Group/System	Business Purpose	Authoritative Data Owner	API/Event/Protocol	Bidder Responsibility	Dependency	Included Price Ref	E2E Test Ref
IF-01	C (Catalogue)	A / B	Product/offer publication to charging and billing	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]
IF-02	A (OCS/CHF)	B	Rated usage/chargeable events	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]
IF-03	B	C	Dunning/restoration entitlement events	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]
IF-04	C (Orchestration)	HLR/HSS/UDM, IMS, IN, PCRF/PCF	Subscriber, supplementary service and VAS provisioning	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]

Interface ID	Source Group/System	Destination Group/System	Business Purpose	Authoritative Data Owner	API/Event/Protocol	Bidder Responsibility	Dependency	Included Price Ref	E2E Test Ref
IF-05	C (Inventory)	HLR/HSS/UDM, OCS, PCRF/PCF, IMS	MSISDN/IMSI state reconciliation	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]
IF-06	C (Inventory)	SM-DP+	eSIM profile lifecycle	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]
IF-07	C (Inventory)	Switch/IMS/IN	Special-number (premium/toll-free/short-code) mapping	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]
IF-08	Network (MSC/SGSN/PGW/SMF/IMS)	A	Online charging (CAMEL/CAP, Diameter Gy/Ro, Nchf) incl. roaming	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]
IF-09	Network/mediation	B (Mediation)	Offline records, TAP/RAP/NRTRDE/HUR, VAS/SMSC/IVR/CBC records	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]
IF-10	B (Roaming)	Clearing house (DCH/FCH)	TAP/RAP/NRTRDE/HUR exchange and financial clearing (BCE when activated)	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]
IF-11	B (Roaming)	A / C	Roaming partner registry, IOT and markup data for retail	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]

Interface ID	Source Group/System	Destination Group/System	Business Purpose	Authoritative Data Owner	API/Event/Protocol	Bidder Responsibility	Dependency	Included Price Ref	E2E Test Ref
			roaming						
IF-12	Payment middleware (B)	Banks, RMA, B-Ngul, B-Wallet, payment apps, cards	Payments, recharges, reversals, settlement files	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]
IF-13	eLoad / vouchers	A / B	Recharge, reversal, dealer float and reconciliation	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]
IF-14	A	USSD gateway / IMS-USSI	Balance, purchase, transfer and self-care menus	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]
IF-15	C (Channels)	SMSC / A2P gateway / email	Notifications, keyword self-care, bulk/A2P messaging	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]
IF-16	A / C	VAS platforms (CRBT, MCA, AI/content partners)	Subscription entitlement and renewal sync	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]
IF-17	B	ERP/GL	Postings, AR, FX, accruals and reconciliations	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]
IF-18	C	Contact centre / IVR / chatbot	Customer context and interaction hand-off	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]
IF-	C	Bhutan	Identity	[Bidde	[Bidder]	[Bidde	[Bidd	[Bid	[Bi

Interface ID	Source Group/System	Destination Group/System	Business Purpose	Authoritative Data Owner	API/Event/Protocol	Bidder Responsibility	Dependency	Included Price Ref	E2E Test Ref
19		NDI / e-KYC	verification	r]		r]	er]	der]	dder]
IF-20	C (Orchestration)	AAA / BNG/BRAS / OLT / PE / FWA controllers	Fixed/FWA entitlement, bandwidth and geo-fence enforcement	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]
IF-21	C	Hosting control panel, mail platform	Hosting and email provisioning	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]
IF-22	All	SIEM / NMS / ITSM	Security events, alarms and incidents	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]
IF-23	All	Enterprise Analytics & AI Platform	Governed data/event feeds	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]
IF-24	Common	CAMARA/API partners	Network API exposure, metering and settlement	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]
IF-25	C (Channels)	Tourist SIM/eSIM booking portal	Bookings, passport KYC and eSIM QR delivery	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]
IF-26	C (Orchestration)	.bt ccTLD registry (EPP/API)	Domain lifecycle automation and daily reconciliation	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]
IF-	C (Orders)	Workfor	Work orders,	[Bidde	[Bidder]	[Bidde	[Bidd	[Bid	[Bi

Interface ID	Source Group/System	Destination Group/System	Business Purpose	Authoritative Data Owner	API/Event/Protocol	Bidder Responsibility	Dependency	Included Price Ref	E2E Test Ref
27		ce/field-service platform	appointments, completion	r]		r]	er]	der]	dder]
IF-28	Common	Regulatory / lawful-intercept feeds	Regulatory data feeds and LI hooks (BSS scope)	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]	[Bidder]

The interfaces listed above are the BT minimum set; bidders shall add all further interfaces required by their architecture. Fields marked [Bidder] are completed by the bidder.

ANNEX AF - MODULAR COMMERCIAL PRICE SCHEDULE

Annex AF is the detailed modular pricing schedule supporting the commercial and 8-year lifecycle TCO framework in Annex V. Every priced item shall map to a Requirement ID, Component ID or clearly identified scope element; orphan price lines are not permitted. All mandatory software, licences, infrastructure, implementation, integration, migration, training, warranty, support/AMC, OEM/third-party recurring charges and mandatory lifecycle costs shall be included and traceable. In the event of inconsistency, the BT-issued commercial instructions and the final accepted commercial baseline incorporated into the Contract shall govern.

Track / Element	Software & Licences	Hardware	Implementation & Migration	Integration	DR	Warranty	AMC Y1-Y7	GMC / Expansion	Total
T-A / Group A	[●]	[●]	[●]	[●]	[●]	Included	[●]	[●]	[●]
T-B / Group B	[●]	[●]	[●]	[●]	[●]	Included	[●]	[●]	[●]
T-C / Group C	[●]	[●]	[●]	[●]	[●]	Included	[●]	[●]	[●]
T-AB	[●]	[●]	[●]	[●]	[●]	Included	[●]	[●]	[●]
T-BC	[●]	[●]	[●]	[●]	[●]	Included	[●]	[●]	[●]
T-AC (if offered)	[●]	[●]	[●]	[●]	[●]	Included	[●]	[●]	[●]

Track / Element	Software & Licences	Hardware	Implementation & Migration	Integration	DR	Warranty	AMC Y1-Y7	GMC / Expansion	Total
T-ABC	[●]	[●]	[●]	[●]	[●]	Included	[●]	[●]	[●]

END OF CORE RFP BODY - ANNEX AJ FOLLOWS

ANNEX AJ - TARGET ARCHITECTURE PRINCIPLES & RESPONSIBILITY BOUNDARIES

Purpose: establish the controlling vendor-neutral end-to-end architecture boundary derived from the reconciled Track A, Track B and Track C reference HLDs. This annex does not prescribe vendor products or deployment topology. The bidder shall submit its own solution HLD/LLD demonstrating compliance with these ownership, interface, state, failure, licensing and acceptance principles.

- Track C owns authoritative customer/party context, commercial product/offer catalogue, customer/service order intent and governed desired service state. Track A owns authoritative real-time rating, wallet/balance/quota and policy-control state. Track B owns authoritative billing account, invoice, AR, payment financial status and settlement state. Applicable Network/OSS/controller systems remain authoritative for actual technical network/service state.
- Cross-track contracts are mandatory contractual interfaces: C->A/B product publication; A->B rated usage/chargeable events; B->C dunning/restoration entitlement; B->C/A payment/AR status where applicable; C->A/B service activation/effective-date context; CAMARA/network API monetization; and cross-domain reconciliation/assurance.
- Service entitlement and network enforcement shall be outcome-based and technology-neutral. The bidder may use AAA, existing network/controller functions, gateway/API or another suitable mechanism. Any required component, licence, network-side change or third-party dependency shall be declared and priced at bid stage.
- Bidder HLD shall include system-of-record matrix, component responsibility matrix, interface/event register, Product-CFS-RFS-Resource model, service-state model, HA/DR topology, capacity/licensing model, security zones, migration/coexistence design, failure/degraded-mode matrix, GMC/tenant model and E2E sequence diagrams.
- The final clarified compliance matrix and accepted bidder HLD/LLD shall not weaken the RFP. Where a bidder proposes an alternative architecture, it shall demonstrate equal or better business outcome, interoperability, lifecycle support, security, operability and TCO, subject to BT acceptance. Architecture boundary statements, interface ownership and alternative-design qualifications shall be consistent with Annex AG, Annex AE and the prescribed exception/deviation mechanisms; architecture narrative shall not create an undisclosed deviation.

ANNEX AK - BUSINESS TERMINOLOGY, DATA, UI/UX, VALIDATION & BRANDING STANDARDS CATALOGUE

The Supplier shall maintain this catalogue from design through acceptance and handover. It is a binding standards catalogue for applicable BT business-facing, customer-facing, partner/dealer and operational solution elements, and shall provide the governed cross-module reference for business terminology,

screen/field semantics, validation, examples/help, status/action conventions, branding and mappings to APIs/events and MIS/BI. Bidder materials and proposed configurable UIs shall conform to the catalogue where applicable. Low-level OEM administration consoles may retain native conventions where justified, provided this does not compromise required terminology, security, operability, integration or acceptance. The catalogue shall be configuration-controlled and updated whenever an approved change affects the production solution.

Business Term / Field	Definition / Entity	UI Label & Help	Format / Validation	M/O/C/RO	Example	Source / Mapping	Branding / UX Notes
Service Effective Date	Date from which service entitlement becomes effective	Service Effective Date; contextual definition displayed	Date; governed cross-field rules	M/C	01/01/2028	Commercial service entity; API/report mapping to be documented	Use approved BT terminology and standard date convention
MSISDN	Subscriber telephone number	Mobile Number	975 + 8 digits; unique per active subscription	M	975 17xxxxxx	Number inventory (INV)	Use "Mobile Number" in customer channels
IMSI	SIM subscriber identity	IMSI	15 digits; restricted display	M/RO	402 11 xxxxxxxxx	Number/SIM inventory	Mask in customer channels
ICCID	SIM card serial number	SIM Serial Number	19-20 digits; Luhn check	M	8997511...	SIM inventory	Printed on SIM card
Quarantine end date	Date a released number becomes reusable	Available From	Date; system-derived	RO	01/04/2028	INV-M016	Visible to authorised staff only
Hidden number	Real number behind a premium/short/toll-free number	Linked Number	Valid postpaid or fixed number	M	975 2xxxxxx	INV-M025	
Settlement mode	TAP (current) or BCE (future, when	Settlement Mode	TAP / BCE; effective-	M	TAP	RWI-M001, RWI-	

Business Term / Field	Definition / Entity	UI Label & Help	Format / Validation	M/O/C/RO	Example	Source / Mapping	Branding / UX Notes
	activated) per roaming partner		dated			S001	
BT Fiber	Wireline leased-line service, prepaid or postpaid	BT Fiber	Product family	M	BT Fiber 20 Mbps	Catalogue	Do not label as a separate "leased line" product
BT AirFiber	Wireless 4G/5G FWA service, prepaid or postpaid	BT AirFiber	Product family	M	BT AirFiber 5G 2999	Catalogue	
ID document type	Identity document used for KYC	ID Type	CID, NDI, passport, work permit, trade licence, etc.	M	Work permit	CRM-M019	
ID expiry date	Expiry of the KYC document	ID Valid Until	Date; mandatory for work permit	C	31/12/2027	CRM-M019, CRM-M021	Drives work-permit reminders/churn
Address country	Country of an address (ISO 3166)	Country	ISO alpha-2	M	BT / IN	CRM-M020	
Dzongkhag / gewog / thromde	Bhutan administrative location	Dzongkhag, Gewog/Thromde	Reference list	C	Thimphu	CRM-M020	Mandatory when country = BT
Address role	Purpose of the address	Address Type	Residential, billing, installation, correspondence	M	Billing	CRM-M020	

ANNEX AL - EVIDENCE REGISTER & EVIDENCE SUBMISSION MATRIX

The BT-issued Evidence Register.xlsx is mandatory and shall be the authoritative evidence index for bid-stage evidence. Annex AG and Annex AH shall reference applicable Evidence IDs from this register rather

than creating parallel evidence numbering. Evidence shall be classified as Mandatory Evidence (ME), Conditional Evidence (CE) or Supporting Evidence (SE). CE becomes mandatory when the stated condition applies. Supporting Evidence may substantiate a claim but shall not be used to circumvent prescribed response fields or submission limits.

Each evidence entry shall include at minimum: Evidence ID (EVID-xxxx), Requirement ID(s), evidence requirement, classification, evidence type, bidder evidence status, exact evidence filename/volume, section/page, product/module/version, OEM/third party, validity/expiry where applicable, evidence strength (E3/E2/E1/E0) and bidder remarks. One evidence item may support multiple Requirement IDs; unnecessary duplication is prohibited.

Mandatory evidence shall be risk-based and concentrated on eligibility/MPF items, critical architecture, 5G CHF/Nchf, PCRF/PCF, multi-tenancy, performance/capacity, security, HA/DR, migration, major integrations/APIs, MIS/BI and mandatory AI/ML capabilities, relevant certifications, references, OEM/third-party authorization, product lifecycle and licence entitlement. Routine configurable functionality may be evidenced through compliance declaration, product/version reference and committed demonstration/UAT unless a stronger evidence class is explicitly required.

Evidence repository packaging: use a small number of searchable/bookmarked PDFs, normally grouped as Corporate/Eligibility/References; Product/Functional; Architecture/Integration; Performance/Capacity/HA/DR; Security/Compliance; OEM/Third-Party/Licensing; Implementation/Migration/Support; and Additional Supporting Evidence. Within each PDF, evidence shall follow ascending EVID sequence. The Evidence Register shall state exact page/section references. BT may accept equivalent logical grouping where navigation remains unambiguous.

Evidence quality codes: E3 = independently verifiable/production/reference/certification/benchmark evidence; E2 = official OEM/product/release/manual evidence; E1 = bidder-generated evidence such as solution description/configuration screenshot; E0 = assertion/no evidence. Evidence strength does not by itself determine compliance; BT will assess relevance, applicability to the offered release, authenticity and demonstrability.

A screenshot or bidder-created presentation shall not, by itself, be treated as sufficient proof for material architecture, performance, security, interoperability, certification or production-reference claims where stronger evidence is reasonably available. FC claims without the evidence specifically required by the RFP may be clarified, demonstrated, downgraded or treated in accordance with the evaluation rules.

ANNEX AM - CLARIFICATION QUERY REGISTER

All bidder clarification questions shall be submitted using the BT-issued Clarification Query Register (query ID, RFP section, Requirement ID, question, bidder reference, BT response, addendum reference). BT responses published in the register form part of the tender documents.

ANNEX AN - DETAILED FUNCTIONAL PARITY MATRIX (RFI ANNEX O AND ANNEX Q)

This annex carries the detailed Billing, Charging, Mediation, PCRF/PCF, AAA and Provisioning requirement inventory from the RFI (Annex O and Annex Q) into the RFP baseline. Bidders shall respond to every row in the BT compliance workbook with compliance code, delivery mode and evidence. Rows keep their RFI identifiers. Where a row overlaps a Section 12-15 requirement, the stricter wording applies. Priority: M = Must; S = readiness/priced option; Info = evaluation information only. Group mapping: O01/O02 COMMON; O03 C (with A for balances/accounts); O04 A; O05 B; O06 C; O07 B; O09-O15 A; O17 C; Q-xxx C.

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
O01 -001	High Availability	The solution design will incorporate component and functional resilience to eliminate all single points of failures (SPOFs). All modules must be configured redundantly, including active-active mode, active-standby mode, or N+1 load-sharing mode. This requirement must be documented and agreed upon with the customer before inclusion in the design.	M	Carried from RFI
O01 -002	High Availability	The solution must support a static overload protect mechanism to configure a static threshold of traffic that can be accepted within a specific interval and the overload part. The fixed threshold will be discarded.	M	Carried from RFI
O01 -003	High Availability	The solution must support a dynamic protection mechanism and handle overload situations from internal and external interfaces according to the system's real-time running status and performance (response time). The system shall guarantee full working under heavy load conditions and have control mechanisms to avoid system overload and service failure.	M	Carried from RFI
O01 -004	High Availability	The bidder is required to propose a geographical disaster recovery solution that spans across two sites, ensuring synchronous data replication between the two sites.	M	Modified: DR per Section 13.4 strategy; synchronous replication only where the selected DR option requires it.
O01 -005	High Availability	The proposed solution needs to support full distributed cluster and load-sharing capabilities.	M	Carried from RFI
O01 -006	High Availability	Solution Supports the decoupling data from applications, applications deployed in distributed clusters instead of dual host.	M	Carried from RFI
O01 -007	High Availability	The online charging gateway should use a memory database instead of on-disk database.	M	Carried from RFI
O01 -008	High Availability	The solution should support auto migration between charging points for the balance of charging point.	M	Carried from RFI
O01 -009	High Availability	The solution architecture should be fully distributed, so there shall be no single-point failure for any node in the system.	M	Carried from RFI
O01 -010	High Availability	The solution should support a self-healing mechanism so that when any single node issue happens, system can restart or trigger necessary actions to recover the node automatically.	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
O01 -011	High Availability	When a fault node is detected, the solution shall block that node immediately so no more traffic will be routed to the faulty node and support failover to another serving node.	M	Carried from RFI
O01 -012	High Availability	The solution should support multiple-layer traffic control to ensure system availability. At least the following control points should be supported:; Control at load balance layer for HTTP requests.; Control at distributed service framework for internal API communication.; Control at API openness platform for external API requests.; Control at distributed data access layer for database requests.	M	Carried from RFI
O01 -013	High Availability	Gray Release or Canary Release should be supported to reduce the risk of introducing a new software version in production by slowly rolling out the change to a small subset of users before rolling it out to the entire infrastructure.	M	Carried from RFI
O01 -014	High Availability	High Availability and full geographically redundant Disaster Recovery architecture:; 99.999% for the real-time charging and billing component.; 99.99% Availability or better for all other components.; Fast second site failover on real-time call control and charging with a guarantee of not impacting the customer experience.	M	Carried from RFI
O01 -015	Geographical Redundancy	The proposed solution should support all active geographical disaster redundancy (GDR) solutions; the site number can be 2 or more. Sites provide services to customers simultaneously, and Recovery Time Objective (RTO) of < 10 seconds.	M	Carried from RFI
O01 -016	Geographical Redundancy	For all active geographical disaster redundancy (GDR) solutions, please mention the deployment detail of the production site and disaster site.	M	Carried from RFI
O01 -017	Geographical Redundancy	The solution shall describe how the data is replicated between sites and maintained consistency.	M	Carried from RFI
O01 -018	Geographical Redundancy	The bidder shall provide a GDR operation & management function to manage and monitor all the activities and strategies related to GDR	M	Carried from RFI
O01 -019	Geographical Redundancy	If a fault is produced in the primary site, the secondary site must continue operating for 100% of the network's full services.	M	Carried from RFI
O01 -020	Geographical Redundancy	The GDR solution should support partial system failover from one site to another. For example, a sub-system in one site fails and will be failover to another site with only this sub- system.	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
O01-021	Geographical Redundancy	The bidder shall clearly state the conditions under which the failover would happen.	M	Carried from RFI
O01-022	Geographical Redundancy	High availability, geographical redundancy & disaster recovery (with minimal fail-over time) must be covered in the solution design. The solution design must incorporate component and functional resilience to eliminate any single point of failure (SPOF).	M	Carried from RFI
O01-023	Security	The solution must include a suitable protection system in IT systems, ensuring the following:; Application layer security.; System layer security.; Network & Infrastructure layer security.; Physical layer security.; Management layer security.	M	Carried from RFI
O01-024	Security	The system shall maintain security-related historical information (e.g. user activity logs) for at least seven days.	M	Carried from RFI
O01-025	Security	The solution must include network equipment to control the access towards/from the system nodes, defining the pertinent security domain.	M	Carried from RFI
O01-026	Security	The system shall separate subscriber traffic against operation and maintenance (O&M) traffic.	M	Carried from RFI
O01-027	Security	Secure remote access implemented; if remote access is required or sensitive data is transported, SSH must be used.	M	Carried from RFI
O01-028	Security	The solution must be capable of recording and reporting if it is affected by denial-of-service attacks, intrusions, spoofing, and man in the middle or others.	M	Carried from RFI
O01-029	Security	The solution must include the SINGLE SIGN-ON concept.	M	Carried from RFI
O01-030	Security	The system shall be installed with the latest and enhanced security software patches.	M	Carried from RFI
O01-031	Security	The system shall provide hardening of the operating system and software.	M	Carried from RFI
O01-032	Security	The system GUI shall support integration with the LDAP server (or equivalent). The LDAP server manages users and roles and authenticates usernames and passwords used during GUI logins.	M	Carried from RFI
O01-033	Security	The Software platforms and its supporting OS should be hardened as per the system hardening recommendations of the Vendor and best practices. New devices that are installed or configured need to be security hardened from a configuration perspective as per the standard best practices or	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		vendor recommendation. Vendor should provide configuration hardening practices/guidelines for the provided application.		
O01 -034	Security	Insecure Ports should not be allowed.	M	Carried from RFI
O01 -035	Security	Super-user and default accounts should be disabled (user accounts will be given the necessary privileges).	M	Carried from RFI
O01 -036	Security	A role-based access schema should be in place, and solution supports creating user groups based on the technical/functional roles.	M	Carried from RFI
O01 -037	Security	Users should be assigned as members of the group and assign permissions to groups to only those that are necessary.	M	Carried from RFI
O01 -038	Security	User identities should be unique and be mapped to well- defined technical roles in the system based on the functional job roles.	M	Carried from RFI
O01 -039	Security	User accounts fields should be descriptive.	M	Carried from RFI
O01 -040	Security	Segregation of duties:; Ability to access sensitive business- related information, data and reports limited to business users.; Ability to change configuration limited to administrators.; Ability to review and approve configuration changes limited to system owner.	M	Carried from RFI
O01 -041	Security	Authentication and Authorization shall be done for every access request made by the user.	M	Carried from RFI
O01 -042	Security	Advanced authentication methods such as MFA should be enabled on all components through integration with the Identity Management, such as Active Directory or Azure AD.	M	Carried from RFI
O01 -043	Security	The system must validate the user logon information only on completion of all input login data. After a rejected logon attempt, the logon procedures must terminate.	M	Carried from RFI
O01 -044	Security	Only authenticated access should be allowed over system APIs. The APIs should support the necessary authentication and authorization for integration with APIs with other systems.	M	Carried from RFI
O01 -045	Security	The solution should support password policy mechanism, in addition to the option of being integrated with central user/credentials source such as MS Azure Active Directory (SSO).	M	Carried from RFI
O01 -046	Security	The solution shall have the ability to force periodic password changes.	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
O01-047	Security	The Solution shall have the ability to set the number of failed log-in attempts before locking out the user.	M	Carried from RFI
O01-048	Security	The Solution shall have the ability to set the lockout period before the user can reattempt log-in.	M	Carried from RFI
O01-049	Security	The Solution shall have the ability for any user to change their own password.	M	Carried from RFI
O01-050	Security	The Solution shall have the ability to inhibit any user from using any last 'n' passwords.	M	Carried from RFI
O01-051	Security	The Solution shall have the ability to define password rules, e.g. minimum number of characters, capitals, alphas and numeric.	M	Carried from RFI
O01-052	Security	The Solution shall have the Ability to encrypt passwords so that they cannot be viewed.	M	Carried from RFI
O01-053	Security	The Solution shall have the Ability for the systems administrator to reset passwords to a default, but logging and alerting should be available to track this activity.	M	Carried from RFI
O01-054	Security	Servers should be hosted in a secure DMZ/VLAN for critical systems and isolated from Internet access and other less secure network segments such as user networks, Internet access.	M	Carried from RFI
O01-055	Security	Traffic to other network VLANs/segments should be controlled through a firewall.	M	Carried from RFI
O01-056	Security	Systems components such as the Applications, DB and Storage servers should be in designated VLANs and communication between the servers should be only over the permitted ports.	M	Carried from RFI
O01-057	Security	A list of the permitted ports should be documented and maintained for reference. Traffic on any other ports should not be allowed.	M	Carried from RFI
O01-058	Security	Audit trails and logs should be considered as part of the overall design architecture.	M	Carried from RFI
O01-059	Security	Security fixes and upgrades should be done on a periodic basis, if security patches are available and in compliance with the patch management policy and procedures of Operator.	M	Carried from RFI
O01-060	Security	A secure remote console for all hardware (e.g. HPE iLO) must be available, such as SSH.	M	Carried from RFI
O01-061	Security	The system shall allow an administrator to allocate different access levels for both an individual user and a user group. A level of access shall be configurable.	M	Carried from RFI
O01-062	Security	The system must be able to handle user access conflicts. For example, two users attempting to modify the same data simultaneously.	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
O01-063	Security	The system shall allow an administrator to restrict an access to the system based on a client IP address.	M	Carried from RFI
O01-064	Security	The system shall support multiple concurrent users.	M	Carried from RFI
O01-065	Security	A user shall be grouped to a user group.	M	Carried from RFI
O01-066	Security	The system shall allow an administrator to monitor active users and force an individual user to logout.	M	Carried from RFI
O01-067	Security	The system shall log a log user login/logout and a user activity in real-time into a "user log".	M	Carried from RFI
O01-068	Security	A user activity log shall include date/time, a user account, and IP address of a user client, a detail of commands or activities.	M	Carried from RFI
O01-069	Security	A user log shall be started each day (at midnight) and the current log closed and kept for future use. The naming of the logs shall identify the date to which the log refers.	M	Carried from RFI
O01-070	Security	The access mechanism shall support encrypted protocol.	M	Carried from RFI
O01-071	Security	Security and Privacy; Compliance with GDPR (General Data Protection Regulation) "privacy by design" principles.; Integration with Active Directory for single sign-on.; Role- based permissions.; Compliance with PCI-DSS security principles.	M	Carried from RFI
O01-072	Backup & Recovery	The bidder is expected to supply a comprehensive, centralized backup solution that covers all nodes that are part of the system. Availability of this solution is mandatory.	M	Carried from RFI
O01-073	Backup & Recovery	Each system that holds data to backup, must have an available and exclusively dedicated backup communication port or adapter for access to the backup LAN and SAN to integrate in LAN or SAN-based backup architecture.	M	Carried from RFI
O01-074	Backup & Recovery	Backup data containing customer or security-related data shall be stored encrypted and access to the encryption key shall be restricted.	M	Carried from RFI
O01-075	Backup & Recovery	It must be possible to make a complete system backup online. The backup cannot affect the service.	M	Carried from RFI
O01-076	Backup & Recovery	The system shall be capable of making a backup automatically.	M	Carried from RFI
O01-077	Backup & Recovery	The version of the system backup shall be easily obtained. The operator shall be able to designate one among the available copies for a reload. Under normal circumstances, the backup copy used in a	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		reload will automatically be the latest version.		
O01-078	Cloud-Native	The proposed solution shall adopt the micro-services design pattern, with the solution broken down into logical smaller components.	M	Carried from RFI
O01-079	Cloud-Native	The bidder should explain how they have applied this design pattern, including the following points:; A full list of the supported micro-services.; Explain the key functions provided by each of these services.; An explanation of how the micro-services are managed (including how new instances are configured and brought into use).; An explanation of any tools used.	M	Carried from RFI
O01-080	Cloud-Native	The proposed solution shall provide flexibility in the way micro-services are deployed. This should include the following:; Each micro-service shall be able to scale independently.; The micro-services applied to an event shall be able to be varied by configuration.; The location of the micro-service is deployed to shall be able to be varied by configuration (e.g. to allow deployment of some micro- services to the edge to allow for 5G use cases).	M	Carried from RFI
O01-081	Cloud-Native	Instead of a centralized service bus, a distributed service framework should communicate between components to ensure high performance and through put. The distributed service framework should be embedded in each element to scale together.	M	Carried from RFI
O01-082	Cloud-Native	A unified PaaS platform should be included to provide all the standard services like middleware, service framework, message queue. The PaaS also handles the integration with the infrastructure layer to ensure hardware transparency to the software layer.	M	Carried from RFI
O01-083	Cloud-Native	The proposed solution shall support the requirements defined in the ETSI NFV.	M	Carried from RFI
O01-084	Cloud-Native	The proposed solution shall have the capability to be deployed on bare metal.	M	Carried from RFI
O01-085	Cloud-Native	Applications/VNFs must not fail if a single virtual resource fails and must not lead to loss of critical data.	M	Carried from RFI
O01-086	Cloud-Native	The provided solution should comply with the ETSI NFV Framework.	M	Carried from RFI
O01-087	Cloud-Native	The NFV framework shall support an interface to decouple the VNF-associated software instances from the underlying infrastructure.	M	Carried from RFI
O01-088	Cloud-Native	The NFV framework shall be able to provide the necessary mechanisms to allow virtualized network	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		functions to be scaled with SLA requirements. Different mechanisms shall be supported: including both on-demand scaling and automatic scaling.		
O01 -089	Cloud-Native	The cloud capabilities of the proposed solution need to support rule-based elastic scaling automatically according to the KPIs related to the utilization of VM resources and traffic.	M	Carried from RFI
O01 -090	Cloud-Native	The proposed solution is preferred to be cloud-native and support key cloud features like scale out, scale in, grey release, and others.	M	Carried from RFI
O01 -091	Cloud-Native	The bidder shall adopt an agile methodology for the delivery of software.	M	Carried from RFI
O01 -092	Cloud-Native	The bidder should explain how they apply this methodology, including a clear view of the tools used. Where proprietary tools are used, the bidder should explain their use, including their benefits industry-standard tools. This explanation should cover tools for managing requirements, configuration, automated build, packaging, testing and deployment as part of a continuous integration / continuous deployment (CI/CD) pipeline.	M	Carried from RFI
O01 -093	NFV	The proposed solution should support data accessing and payment relationship establishment across multiple sites; for example, corporate pay for members must be supported even if corporate and members belong to different sites.	M	Carried from RFI
O01 -094	NFV	To support cloud deployment for databases, the proposed solution should support databases other than Oracle.	M	Carried from RFI
O01 -095	NFV	The NFV framework shall be able to provide the necessary mechanisms to allow virtualized network functions to be scaled with SLA requirements. Different mechanisms shall be supported: including both on-demand scaling and automatic scaling.	M	Carried from RFI
O01 -096	NFV	The proposed solution should have a unified API Gateway which supports RESTful / Webservice APIs though a central gateway, and at least includes:; API Lifecycle Management.; Authentication and Authorization.; API Customization & Orchestration.; Traffic Prioritization Management.; Tools for Onsite Investigation, API Development, API Testing, and API Monitoring	M	Carried from RFI
O01 -097	NFV	The proposed solution should support smooth upgrading from current version to 5G SA charging and there should be no need for migration.	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
O01 -098	Microservice Architecture	The proposed solution needs to support Containerization for both application and database and as well service design must be based on Microservice Architecture.	M	Carried from RFI
O01 -099	Microservice Architecture	Please specify the container Platform used by proposed solution.	M	Carried from RFI
O01 -100	Microservice Architecture	Solution must support service scaling for containerize deployment.	M	Carried from RFI
O01 -101	Microservice Architecture	Instead of being monolithic, the solution should be fully decoupled and built with self-contained components. The components expose APIs to communicate with each other. And new components with new APIs can be easily added to bring in new capabilities.	M	Carried from RFI
O01 -102	Microservice Architecture	Instead of a centralized service bus, a distributed service framework should communicate between components to ensure high performance and through put. The distributed service framework should be embedded in each component to scale together.	M	Carried from RFI
O01 -103	Microservice Architecture	A distributed data access layer should be used to ensure the high performance of data access and data layer scalability. Data shredding should be supported to ensure the performance and cost for large volume data which can be managed through horizontal scaling.	M	Carried from RFI
O01 -104	Microservice Architecture	A unified PaaS platform should be included to provide all the common services like middleware, service framework, message queue. The PaaS also handles the integration with infrastructure layer to ensure the hardware transparency to software layer.	M	Carried from RFI
O01 -105	Fault Management	Alarms shall be generated when a predefined (user configurable) threshold has been reached for certain system/application measurements/parameters. Where there are threshold alarms e.g. a processor load, a user must be able to set multiple separate onset and abatement thresholds. Depending on the time of day, these should be variable, and each onset threshold can have a different alarm severity.	M	Carried from RFI
O01 -106	Fault Management	There must also be a 'clear' event generated, which cancels the alarm generated when the initial alarm threshold was exceeded. The alarm and abatement threshold must not be of the same value.	M	Carried from RFI
O01 -107	Fault Management	The system can report and manage alarms and events in real- time.	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
O01-108	Fault Management	The system shall allow an operator to set a threshold for interesting alarms.	M	Carried from RFI
O01-109	Fault Management	The system shall allow an operation to disable and enable alarms.	M	Carried from RFI
O01-110	Fault Management	A graphical display shall show states of currents alarms occurring with objects on a view. An icon shall show a color of the highest severity alarm.	M	Carried from RFI
O01-111	Fault Management	The system shall allow an operator to query historical alarms and generate reports in many formats such as PDF or Excel or CSV.	M	Carried from RFI
O01-112	Fault Management	The system shall perform fault management functions locally or remotely, using command line and graphical user interfaces.	M	Carried from RFI
O01-113	Fault Management	The system shall log alarms and events as either a daily event log or a record in a database.	M	Carried from RFI
O01-114	Fault Management	An event log shall be started each day (at midnight) and the current log closed and kept for future use. The naming of the logs shall identify the date to which the log refers.	M	Carried from RFI
O01-115	Fault Management	All events and alarms shall be time stamped at point of origin. This is critical to enable accurate investigation of problems.	M	Carried from RFI
O01-116	Fault Management	Alarms and event shall be constructed based on the format described in ITU-T X.733 and in a readable plain text.	M	Carried from RFI
O01-117	Fault Management	The system shall be able to forward alarms and events to the external Network Management System.	M	Carried from RFI
O01-118	Fault Management	The system shall allow an operator to filter alarms from multiple points of view. A filter for generating on the system and forwarding to the external system shall be able to be independent.	M	Carried from RFI
O01-119	Fault Management	Alarm Severity Levels: The EMS alarm severity levels shall comply with ITU-T Rec. X.733. Each alarm shall be assigned one of the following severity levels if this has not already been done by the source element:; Critical; Major; Minor; Warning; Cleared Indeterminate	M	Carried from RFI
O01-120	Fault Management	The EMS shall be able to alter the reported severity of individual alarms as they enter the system.	M	Carried from RFI
O01-121	Fault Management	The username should be entered against each alarm acknowledged or cancelled along with the date and time.	M	Carried from RFI
O01-122	Fault Management	Printing / Exporting Alarm Data: It must possible to print and export alarm data from the alarm monitor /	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		history applications.		
O01 -123	Fault Management	Through the EMS the operator must be able to perform searches on alarm history. The alarm history application shall allow for flexible searches of the alarm data and shall include the filters in any combination.	M	Carried from RFI
O01 -124	Fault Management	Alarms must be colored according to alarm severity.	M	Carried from RFI
O01 -125	Fault Management	The alarm monitor must have an optional audible alert.	M	Carried from RFI
O01 -126	Performance Management	The system shall have standard reports, in addition to user defined reports.	M	Carried from RFI
O01 -127	Performance Management	The system must provide a mechanism for viewing element's currently set measurement intervals/reporting periods.	M	Carried from RFI
O01 -128	Performance Management	The system must provide the facility to configure measurement parameters on element via a GUI application.	M	Carried from RFI
O01 -129	Performance Management	It shall be possible for an external system to collect performance data automatically.	M	Carried from RFI
O01 -130	Performance Management	The system shall measure performance statistics from network element in real-time or near real-time.	M	Carried from RFI
O01 -131	Performance Management	In near real-time, an acceptable period for statistics collection shall be configurable per measurement/task.	M	Carried from RFI
O01 -132	Performance Management	It shall be possible to view the performance measurement counters directly on the system.	M	Carried from RFI
O01 -133	Performance Management	The system shall store statistics and performance data for the managed element in a database for at least 30 days and this period shall be configurable.	M	Carried from RFI
O01 -134	Performance Management	The system should support to balance the database capacity and performance.	M	Carried from RFI
O01 -135	O&M	The GUI shall allow a system administrator to create graphical views of the network. These views shall contain icons representing network elements.	M	Carried from RFI
O01 -136	O&M	The system shall allow an administrator to add new element types.	M	Carried from RFI
O01 -137	O&M	It must be possible to nest the views to allow a user to drill down to subsystem level.	M	Carried from RFI
O01 -138	O&M	In cloud native architecture the nodes are massive, so software deployment should be managed automatically. The platform should be able to manage the versions of software releases, design the deployment topology, and run the deployment task	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		automatically.		
O01 -139	O&M	The solution should support the scale in/out of the components automatically to maximize the utilization of resources. The scaling can be triggered automatically based on predefined rules with certain KPIs. The KPIs could be resources KPIs like the usage rate of memory&CPU.	M	Carried from RFI
O01 -140	O&M	The solution should follow stateless design principle to ensure scalability. The business logic processing nodes should be stateless so in case any node fails, other nodes can take over the task and the data will not loss.	M	Carried from RFI
O01 -141	O&M	A unified log management should be provided to collect all the logs from distributed node servers. A high-performance search function should be provided to check the logs.	M	Carried from RFI
O01 -148	Data Sovereignty	All subscriber PII, KYC data, charging/billing records, CDRs and other regulated production data shall reside at rest within Bhutan unless BT expressly approves otherwise in writing. Vendor shall disclose all cross-border data flows.	M	Carried from RFI
O01 -149	Regulatory Compliance	Support applicable BICMA and Bhutan regulatory requirements affecting CBSS, including subscriber/KYC, reporting, retention and applicable regulatory interface obligations.	M	Carried from RFI
O01 -150	Data Retention	Support configurable hot/nearline/archive retention tiers; size and price at least three-year readily accessible analytical retention and seven-year archival scenario with retrieval/backfill.	M	Carried from RFI
O01 -151	Architecture/NFR	All applicable application, API, management/OAM and integration interfaces shall support IPv6 and IPv4/IPv6 dual-stack operation. Any unsupported component shall be explicitly declared with roadmap.	M	Carried from RFI
O01 -152	DevSecOps	The solution lifecycle shall support version control, automated build/package, functional/regression testing, SAST/SCA/dependency and secret scanning, approval gates, controlled promotion, deployment audit and rollback.	M	Carried from RFI
O01 -153	Lifecycle Management	Representative application upgrades and backward-compatible database/schema changes shall support zero or minimal service interruption using rolling, blue-green, canary or equivalent methods with tested rollback.	M	Carried from RFI
O01	Operations	A centralized operations console or integrated toolset	M	Carried

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
-154		shall provide configuration/deployment status, health, performance, alarms/events, troubleshooting, capacity and upgrade/patch visibility with governed access.		from RFI
O02 -001	Convergence	Fully convergent rating, charging engines.	M	Carried from RFI
O02 -002	Convergence	The system must support multi-tenancy and provide full convergent, supporting converged services across B2C and B2B models, Fixed-Mobile Convergence (FMC), IoT, and other integrated business applications. The system must have a Full Cloud Native architecture and layered design for maximum flexibility and scalability. The solution shall comprise (but not limit to) the following modules: - a unified data model for all B2C subscribers (Prepaid, Postpaid and Hybird), B2B subscribers, and IoT subscribers. - a unified database type for all the sub systems. - a unified Product Catalog for all subscribers. - a unified online rating component responsible for the real time Rating&Charging for all services and all subscribers. - a unified billing component responsible for the Invoicing&Accounts Receivable&Debt Collection&General Ledger for all services and all postpaid subscribers.	M	Carried from RFI
O02 -003	Architecture	The solution must employ a modular, layered design for maximum flexibility and extensibility.	M	Carried from RFI
O02 -004	Architecture	The bidder should describe how its modularized architecture presents high-level business-oriented services over technical/protocol-oriented services.	M	Carried from RFI
O02 -005	Architecture	The bidder shall support service standards where appropriate. The bidder should explain what service standards have been applied in the exposure of services.	M	Carried from RFI
O02 -006	Architecture	The bidder should ensure services present self-contained, transactional semantics (atomic, consistent, isolated and durable) over conversational, stateful interactions so that they can be recomposed as elements of future orchestrations.	M	Carried from RFI
O02 -007	Architecture	The bidder should describe its application decoupled with data. Application is session-less and stateless to ensure seamless switch of application servers without service interruption.	M	Carried from RFI
O02 -008	Architecture	Bidder should describe the proposed solution's recommended E2E deployment-related hardware/software.	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
O02-009	Architecture	Bidder should describe the recommended server ability for the proposed solution.	M	Carried from RFI
O02-010	Architecture	System should support changing subscriber MSISDN without impacting its status.	M	Carried from RFI
O02-011	Architecture	The solution should be designed in a way to limit the integrated systems' ability to affect the performance of both the solution components and their associated resources.	M	Carried from RFI
O02-012	Integration	The system shall support interfaces with different network elements (e.g. call/session control for voice, SMS, GPRS, and UMTS) on a real-time basis. A complete list of all supported and delivered logical interfaces (reference points) shall be provided. Note: Please describe each logical interface (reference points) in detail.	M	Carried from RFI
O02-013	Integration	The solution must be 3GPP compliant for 3GPP charging and billing Series (including 3GPP TS 32.240, 32.296 and 32.299).	M	Carried from RFI
O02-014	Integration	The system shall support SMPP versions 3.3 and 3.4 for SMS notifications.	M	Carried from RFI
O02-015	Integration	The bidder is requested to state its compliance against IETF RFC 3588 Diameter Base protocol specification. Please state any unsupported optional and mandatory features.	M	Carried from RFI
O02-016	Integration	DCCA (Diameter Credit-Control Application) has to be supported on all diameter-based charging interfaces. The bidder is requested to state its compliance against IETF RFC 4006 DCCA specification. Please state any not supported optional and mandatory features.	M	Carried from RFI
O02-017	Integration	The system shall support USSD via MAP integration with HLR.	M	Carried from RFI
O02-018	Integration	The bidder shall support the following SIP-related specifications:; IETF RFC 2543; IETF RFC 2976; IETF RFC 3261; IETF RFC 3262; IETF RFC 3264; IETF RFC 3311; IETF RFC 3326; IETF RFC 2327	M	Carried from RFI
O02-019	Integration	The system shall support a sFTP interface to handle bulk input to charge offline usage. Input should be: 'Usage data: Voice, Data bearer and Events (e.g. CDR generated by the MSCs, SMS, MMS, content).	M	Carried from RFI
O02-020	Integration	The system should link to the application server directly after the DNS (FQDN) translation for the file collection.	M	Carried from RFI
O02	Integration	The system shall be capable of handling IPv6	M	Carried

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
-021		addresses contained in Call Data Records		from RFI
O02 -022	Integration	The system shall be capable of handling IPv6 addresses contained in all Diameter messages (e.g. Diameter AVPs)	M	Carried from RFI
O02 -023	Integration	The System shall implement and support CAMEL Ph1	M	Carried from RFI
O02 -024	Integration	The system shall support CAP2 procedures defined and state compliance to - 3GPP TS 03.78 V7.8.0 (2002-06) Customized Applications for Mobile network Enhanced Logic (CAMEL) Phase 2; Stage 2 (Release 1998)	M	Carried from RFI
O02 -025	Integration	The System shall be able to support 3GPP CAMEL phase 3 (CAP3) procedures defined and state compliance to - 3GPP TS 23.078 V5.01.1 (2004-04) Customized Applications for Mobile network Enhanced Logic (CAMEL) Phase 3 - Stage 2 (Release 4).	M	Carried from RFI
O02 -026	Integration	The System shall be able to support all CAP4 procedures defined state compliancy to - 3GPP TS 29.078 5.10.0 (2009- 09) Customized Applications for Mobile network Enhanced Logic (CAMEL) Phase 4; CAMEL Application Part (CAP) specification (Release 5).	M	Carried from RFI
O02 -027	Integration	The bidder is requested to state its compliancy against 3GPP TS 32.251 9.3.0 'Packet Switched (PS) domain charging'. Please state any not supported optional and mandatory features.	M	Carried from RFI
O02 -028	Integration	The bidder must state its compliance against 3GPP TS 32.274 9.0.0 'Short Message Service (SMS) charging. Please state any not supported optional and mandatory features.	M	Carried from RFI
O02 -029	Integration	The bidder must state its compliance against 3GPP TS 32.270 9.0.0 'Multimedia Messaging Service (MMS) charging'. Please state any not supported optional and mandatory features.	M	Carried from RFI
O02 -030	Integration	The bidder shall state the support of the enhanced policy architecture as foreseen in 3GPP TS 29.219. In particular, the bidder shall state whether a direct interface from the system to the Policy domain is provided or planned and which protocol is recommended.	M	Carried from RFI
O02 -031	Integration	The bidder should support the SBI interface and with comply the following standards: • The bidder should support the SBI interface and with comply the	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		following standards:; 3GPP TS 29.500:" Technical Realization of Service Based Architecture".; 3GPP TS 29.501: "5G System; Principles and Guidelines for Services Definition; Stage 3".; 3GPP TS 32.240:" Charging architecture and principles".; 3GPP TS 32.255:" 5G data connectivity domain charging".; 3GPP TS 32.290:" 5G system; Services, operations and procedures of charging using Service Based Interface (SBI)".; 3GPP TS 32.291: "5G system, charging service; Stage 3".		
O02 -032	Software Applications	The bidder shall provide a list of software, either self-made or from 3rd party, that is mandatory for operation. All the licenses of the SW used for correct operation purposes shall be included.	M	Carried from RFI
O02 -033	Software Applications	The solution must include a software structure with a modular design enabling flexibility, robustness and easy testing.	M	Carried from RFI
O02 -034	Networking	The system shall support different network domains and sufficient NICs for per server to segregate the network traffic among the usage type such as:; Service traffic (include two planes: active and standby).; Management and administration of traffic.; Maintenance and support traffic.; Data backup transaction.; Disaster redundancy transaction.	M	Carried from RFI
O02 -035	Database	The System must use a proven, latest and industry-grade Relational Database Management System.	M	Carried from RFI
O02 -036	Database	The Database must support mechanisms enabling the capacity to conduct data synchronization in real-time. The database preferably be deployed on containers with the distributed mode of the nodes located geographically in different places. Please describe the procedure.	M	Carried from RFI
O02 -037	Database	Bidder should describe its recommended Database for the proposed solution.	M	Carried from RFI
O02 -038	Database	The bidder needs to specify what database software used in proposed solution, include on-disk database and in-memory database software solutions.	M	Carried from RFI
O02 -039	Operating System	The operating system of the solution must be a mainstream OS system. OS should be Linux or UNIX.	M	Carried from RFI
O02 -040	TMF	The bidder shall state its compliancy with TM Forum Frameworks and provide certificates, if any: TM Forum Applications Framework (TAM). TM Forum Information Framework (SID) Suite. TM Forum Business Process Framework (eTOM) Suite. The	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		number of TMF-compliant APIs.		
O02-041	5G SA Evolution	The system can upgrade to support 5G SA smoothly without migration. (Reference should be provided if commited to support to upgrade)	M	Carried from RFI
O02-042	Roadmap	The solution should support or have in their roadmap to supportTidal Scheduling Automation. AI-based predict traffic flow trends, do scaling-out or scaling-in according to the trend automatically.	M	Carried from RFI
O02-043	Interface	The system must allow local/on-site operations teams to extend AVPs of DCC/SBI messages via the O&M GUI. For example, operators should be able to configure special ratings based on terminal type without requiring lengthy patches.	M	Carried from RFI
O02-044	MQ Support	The system must support containerized Kafka components (producer and broker), and the interface parameters of Kafka streams must be configurable. The system must support to generate real-time consumption records and send out via Kafka messages after the real-time fee deduction finished.	M	Carried from RFI
O02-045	High Availability	The solution's architecture must include redundancy and fault-tolerance features to ensure 7x24 operation, 99.9999% availability for critical components.	M	Carried from RFI
O02-046	High Availability	The solution must support active geographical disaster redundancy (GDR) with at least two sites with minimum RTO RPO.	M	Carried from RFI
O02-047	High Availability	The system should support online subscriber balancing. The solution should support auto subscriber migration between different charging points to achieve better system performance and maximization of infrastructure resources. In live system, there are different subscribers in several DB nodes. Sometimes, one of the DB node is in high-usage meanwhile the others are almost idle. The solution should be able to balance the subscribers in real time without downtime	M	Carried from RFI
O02-048	High Availability	The system should support online upgrade with zero downtime to ensure service continuity and avoid revenue loss.	M	Carried from RFI
O02-049	Openness	Digital 2B services (e.g., Network Slicing, Cloud, and Connectivity) are expected to drive future growth. These services require Co-Billing functionality, enabling carriers to collect partner fees from consumers and share revenue with multiple parties.	M	Carried from RFI
O02	Openness	To support future growth driven by new digital 2B	M	Carried

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
-050		services (e.g., Network Slicing, Cloud, and Connectivity), the billing solution must enable seamless integration of 2B/2C convergent charging capabilities. The system must feature open access for digital 2B services, allowing on-site configuration, and ensure new services can be launched within a 10-day timeframe. The solution must prioritize flexibility, scalability, and efficiency to align with the carrier's evolving business objectives.		from RFI
O02 -056	TM Forum ODA	Architecture shall align where applicable with TM Forum Open Digital Architecture principles, open APIs, domain- based modularity and independent lifecycle management; Vendor shall identify deviations/proprietary dependencies.	M	Carried from RFI
O02 -057	Domain Independence	Billing, Charging/OCS/CHF, Policy, CRM/Order, Catalogue, Provisioning and Mediation shall have clearly defined integration boundaries and support independent scaling/upgrade/replacement where technically feasible.	M	Carried from RFI
O02 -058	Enterprise Data Governance	Define authoritative systems of record, ownership, canonical/common data models, lineage, quality, synchronization and reconciliation for customer, account, product, service/resource, charging, billing, payment and usage data.	M	Carried from RFI
O02 -059	Architecture	The Vendor shall describe DevSecOps/CI-CD toolchain ownership, segregation of duties, environment promotion model and transfer of operational knowledge to BT.	M	Carried from RFI
O02 -060	Integration	The solution architecture shall support integration with centralized number/identifier management and workforce/field-service platforms without point-to-point hard coupling.	M	Carried from RFI
O03 -001	Data Model	The system should support the SID (Shared Information Data Model) as a unified reference data model to provide a single set of terms for business objects in telecommunications. Including major concepts: Concept of customer: The customer is the legal entity who has subscription relationship with the telecom operator.	M	Carried from RFI
O03 -002	Data Model	Attributes of the customer (including but not limited to: name, ID, title, gender, contact address, birthday, accounts, subscriptions) can be managed by the business operator.	M	Carried from RFI
O03 -003	Data Model	Customer could be an individual (typically a person) or group (typically a family or company with	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		hierarchical organizations).		
O03 -004	Data Model	The system should support the SID (Shared Information Data Model) as a unified reference data model to provide a single set of terms for business objects in telecommunications. Including major concepts: Concept of subscriber: Subscriber is an instance of service subscription subscribed by a customer.	M	Carried from RFI
O03 -005	Data Model	Attributes of subscriber (include but not limited to: subscriber ID (e.g. (MS)-ISDN or URI, product subscription) can be managed by the business operator.	M	Carried from RFI
O03 -006	Data Model	Multiple instances of service subscriptions (or subscribers) should be supported for a customer.	M	Carried from RFI
O03 -007	Data Model	The system should support the SID (Shared Information Data Model) as a unified reference data model to provide a single set of terms for business objects in telecommunications. Including major concepts: Concept of Account: Account is the monetary data entity associated with the customer and is responsible for settling or aggregating charges.	M	Carried from RFI
O03 -008	Data Model	The solution shall offer Account with a Prepaid payment type, i.e. an account with a balance.	M	Carried from RFI
O03 -009	Data Model	The solution shall offer Account with a Postpaid payment type, i.e. an account with a credit limit.	M	Carried from RFI
O03 -010	Data Model	Besides the balance or credit limit contained in an account, the solution must support multiple sub-accounts attached to account, which could be assigned statically or dynamically.	M	Carried from RFI
O03 -011	Data Model	The proposed solution shall support prepaid subscribers (whose default account is a prepaid account) and postpaid subscribers (whose default account is a postpaid account) in single rating engine and the subscriber profile database. The following shall be supported:; Unified data model.; Unified Product Catalog for prepaid and postpaid.; Unified system for easy Friends and Family (FNF) / Closed user group (CUG) Management.	M	Carried from RFI
O03 -012	Data Model	Flexible accounting relationships must be established between subscribers and accounts. Specifically, every subscriber should have a default account, while any subscriber can use any account to pay for services.	M	Carried from RFI
O03 -013	Data Model	Bidder shall elaborate its data model of customer, subscriber and account structure and indicate any	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		deviation from the requirements.		
O03-014	Data Model	The proposed solution should support hierarchical customers (e.g. the company). The system should support up to 5 levels of the customer hierarchy.	M	Carried from RFI
O03-015	Data Model	The account structure of the individual customer and group customer in the hierarchy shall be the same.	M	Carried from RFI
O03-016	Data Model	The system should define an offer as a set of services (e.g. voice/data/SMS/MMS/content) associated with price plans.	M	Carried from RFI
O03-017	Data Model	The customer/subscriber/account/offer/product data model shall be unified in the system, which is adopted by all functions (online charging, offline charging, billing).	M	Carried from RFI
O03-018	Data Model	The solution should support customer management based on the integration with CRM via Webservice interfaces.	M	Carried from RFI
O03-019	Data Model	An individual customer profile should at least comprise the following attributes:; Customer name, gender, ID number, address, birthday …; Subscriber profiles, products subscriptions; Accounts profiles	M	Carried from RFI
O03-020	Data Model	It shall be possible to extend the customer profile by adding new attributes without changing the code.	M	Carried from RFI
O03-021	Data Model	A GUI-based operation tool shall be provided for operators to create/modify/delete customer profiles.	M	Carried from RFI
O03-022	Data Model	A subscriber profile should at least comprise the following attributes:; Subscriber number (e.g. MSISDN, URI).; Product subscriptions.; Default account.	M	Carried from RFI
O03-023	Data Model Management	A GUI-based operation tool shall be provided for operators to create/modify/delete subscriber profiles.	M	Carried from RFI
O03-024	Data Model	The system shall be able to accept different numbers of identifiers for a subscriber/account. The following set of network side identifiers must be supported as a minimum:; MSISDN; ISDN-Number; URI	M	Carried from RFI
O03-025	Balance Transfer	It shall be possible for a subscriber to change its default balance, i.e. transfer from prepaid to postpaid and vice versa.	M	Carried from RFI
O03-026	Subscriber Paymen ttypes	The solution should support prepaid, postpaid and hybrid subscriber.	M	Carried from RFI
O03-027	Subscriber Payment types	The solution should support switch from prepaid/ hybrid to postpaid, or postpaid to prepaid/ hybrid.	M	Carried from RFI
O03-028	Prepaid lifecycle	The system should support lifecycle management of prepaid subscriber. The status should support:; Idle	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		(provisioned but not activated); Active; Barred; Suspended; Pool		
O03 -029	Prepaid lifecycle	Subscribers shall be created with idle state until the first call.	M	Carried from RFI
O03 -030	Prepaid lifecycle	When the subscriber makes the first call, system shall activate the subscriber automatically. The subscriber enters into the Active state.	M	Carried from RFI
O03 -031	Prepaid lifecycle	If the subscriber in idle state is not activated for a defined period, the subscriber shall be transited to Pool state directly.	M	Carried from RFI
O03 -032	Prepaid lifecycle	For a subscriber in Active state, upon the expiry of the validity period of the active state, the subscriber shall enter barred state.	M	Carried from RFI
O03 -033	Prepaid lifecycle	Upon the expiry of the validity period of the barred state of the default account, the subscriber shall enter Suspended state automatically.	M	Carried from RFI
O03 -034	Prepaid lifecycle	Upon the expiry of the validity period of the Suspended state of the default account, the subscriber shall enter Pool state automatically.	M	Carried from RFI
O03 -035	Prepaid lifecycle	It shall be possible for a prepaid subscriber in Barred or Suspended state to transit to Active state when he makes a successful recharge.	M	Carried from RFI
O03 -036	Prepaid lifecycle	The recharge made by the subscriber should extend the validity period of the Active state. Please refer to the recharge requirements.	M	Carried from RFI
O03 -037	Prepaid lifecycle	The system shall export the subscribers in Pool state into a file and transfer it to CRM to initiate deregistering.	M	Carried from RFI
O03 -038	postpaid lifecycle	The following life cycle states should be supported for postpaid subscribers:; Pending; Active; Barred; Suspended; Deactivate	M	Carried from RFI
O03 -039	postpaid lifecycle	When the subscriber is activated, the subscriber is transited to Active state.	M	Carried from RFI
O03 -040	postpaid lifecycle	For hybrid subscribers, Operator will determine whether the prepaid or postpaid mode is more likely to be used. Operator will determine whether hybrid subscriber states are the same as prepaid or postpaid subscribers.	M	Carried from RFI
O03 -041	postpaid lifecycle	The subscriber shall be able to claim missing of SIM card and enter the "Claim Missing" state, during which the claimed SIM card can't be used.	M	Carried from RFI
O03 -042	postpaid lifecycle	A subscriber can apply for suspending the service temporarily (frozen state). Suspension is classified into one-way suspension and two-way suspension.	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		The permission for answering calls or receiving short messages should be configurable.		
O03 -043	recharge Fraud	The system shall put subscriber into a blacklist state if they had input wrong PIN continuously for greater than or equal to a configurable number. The subscriber can't make a recharge before being released from the state.	M	Carried from RFI
O03 -044	Group management	The solution should support group management based on the integration with CRM via online interfaces (webservice or restful).	M	Carried from RFI
O03 -045	Group management	The group should be organized in hierarchical architecture. The solution shall support up to five layers.	M	Carried from RFI
O03 -046	Group management	A subscriber can be added to one group as group member for sharing group account, but only can join one group.	M	Carried from RFI
O03 -047	Group management	Bidder shall clarify limitations for the number of groups, group members and customers in the proposed system.	M	Carried from RFI
O03 -048	Group management	It shall be possible to distribute the group members of one group on several rating nodes, i.e. the solution shall not impose the limitation to host all the group members in the same node.	M	Carried from RFI
O03 -049	Group management	The group administrator can set the monthly consumption limit for each group customer. The total consumption limit allocated to the direct low-level group customers cannot exceed the consumption limit of the group customer.	M	Carried from RFI
O03 -050	Group management	The consumption limit is a monetary limit and service independent.	M	Carried from RFI
O03 -051	Group management	Group member can share the account of the group he belongs to. That means the company pays for the group member. The following sharing modes supported include:; Consumption limit: The network operator can set the monthly limit for the group member. For example, the total monthly monetary limit of the group member 2 in branch 1 is $100. That means the member can consume $100 at most in one month from this account. After the $100 is used up, the group member has to pay the service charges in the month using their al account.; Based on service type: Service types supported include local call, toll call, international call, data and RBT.; Based on time schema: For example, the charges generated during 8:00-18:00 in the workday are paid by sub-	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		group1, while the group member pays charges generated in other time segment.; A combination of service type and time schema.; Unlimited: That means the group member can share the group's account as much as possible until the monthly consumption limit of the group is used up.		
O03 -052	FMC	The system shall support Fixed Mobile Convergence (FMC).	M	Carried from RFI
O03 -053	Account Management	The solution shall support setting the maximum balance of a prepaid account.	M	Carried from RFI
O03 -054	Account Management	The solution shall support to set the maximum credit limit of a postpaid account if proposed solution provides rating function for postpaid subscriber	M	Carried from RFI
O03 -055	Account Management	The account can have multiple sub-accounts besides its main monetary balance or credit limit.	M	Carried from RFI
O03 -056	Account Management	The sub-accounts could be monetary (e.g. promotional credit reward).	M	Carried from RFI
O03 -057	Account Management	The system should be able to set up the accounts' applicability criteria (or accounting rules). The requirements can be based on such parameters as usage/event type, time schema, and customer/subscriber attributes.	M	Carried from RFI
O03 -058	Account Management	The system shall allow multiple subscribers, whether within the same customer or not to utilize an account. Multiple reservations are allowed to be held on the shared account simultaneously.	M	Carried from RFI
O03 -059	Account Management	The solution shall allow a subscriber use multiple accounts (the accounts don't have to belong to the same customer) to pay their charges based on the configurable payment rules. The payment rules shall include but not limited to:; Usage/event type; Time schema; Maximum usable amount	M	Carried from RFI
O03 -060	Account deduction Priority	The solution shall support Fee Deduction Priority: Priority must be set up among accounts to define the charging precedence if multiple accounts (including sub-accounts) are eligible for paying one charge.	M	Carried from RFI
O03 -061	Account Adjustment	The solution should provide a operation GUI for operation team to add or modify monetary account or free unit amount.	M	Carried from RFI
O03 -062	Account Adjustment	The solution must support account adjustment from the third party. Detailed Log must be recorded for an account adjustment.	M	Carried from RFI
O03 -063	Prepaid lifecycle	The solution must provide the flexibility to define subscriber Validity Period Extended Based on the	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		Consumption		
O03-064	Prepaid lifecycle	The solution shall provide the flexibility to set the validity period limit after recharge	M	Carried from RFI
O03-065	Notification	The solution must support the definition of at least 5 thresholds against account's main balance/credit at subscriber level. When the threshold is reached, it will trigger system notifications to the end user, e.g. notification of low balance/credit to prompt recharge or payment.	M	Carried from RFI
O03-066	Balance Transfer	The solution must support transferring money from prepaid to postpaid in the main account and vice versa.	M	Carried from RFI
O03-067	Community	Flexible customer and account hierarchy should be supported for enterprise customers. The solution should support a maximum of eight community layers.	M	Carried from RFI
O03-068	Community	The subscriber group should be supported. Subscribers in the same group can enjoy shared free unit package, or discounted tariff for callings within the group. The group should also support hierarchy mode to handle complex large enterprise scenarios.	M	Carried from RFI
O03-069	Community	The group should support to setting the member payment relationship with below method: 1- Who consumes 2- Day and time 3- Service type 4- Spending limit 5-Location	M	Carried from RFI
O03-070	Share bundle	The solution should support the group share bundle management with below capabilities: 1-Family Group Management 2-Entrusted Payment Relationship and priority	M	Carried from RFI
O03-071	Billing Discount	The solution should support different type and level billing discount by offering: 1-Subscriber level 2-Account Level 3- Group Level 4- Commitment discount 5-Ceiling Discount 6- Customer level discount	M	Carried from RFI
O03-072	Package	The solution should support to configure Offer rental cycle type (Daily, Weekly, Monthly, Quarterly, Semi-annually, Annually).	M	Carried from RFI
O03-073	Package	The solution should support proration at subscription time and unsubscription time.	M	Carried from RFI
O03-074	Share bundle	The solution support to define group sharing pool, when the subscriber joins in family group	M	Carried from RFI
O03-075	Share bundle	The solution should limit the sharing rule when the subscriber agrees to share the subscriber public resource to the family group.	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
O04 -001	General	The solution shall provide the ability to rate all services in real-time. This shall include not only session based e.g. voice/data but also transaction based, e.g. SMS/MMS/content. The solution shall be capable of real-time charge not only mobile originate transaction, but also mobile terminate transaction (if any).	M	Carried from RFI
O04 -002	General	The solution shall have the single rating engine for on- line and off-line charging.	M	Carried from RFI
O04 -003	General	The solution shall support rating/charging of concurrent event. Each event may happen on different network interface. For example: voice call, GPRS download, and SMS from the same subscribers at the same period.	M	Carried from RFI
O04 -004	General	The solution should support Real-time charging for any call type (voice, SMS, MMS, Data) Real-time charging for any call type including Content charging shall be available.	M	Carried from RFI
O04 -005	General	The system shall reservation rating mechanism, thus the system must perform real time rating before the call to perform the reservation and real time rating after the call-in to resolve / capture the reservation balance.	M	Carried from RFI
O04 -006	General	The system has to support Reverse-rating in Real-time, with all the rating parameters supported in this manner.	M	Carried from RFI
O04 -007	General	The solution needs to have the ability to distinguish between corporate and consumer subscribers, allowing Operator to apply different business roles based on these classifications.	M	Carried from RFI
O04 -008	Rating	The system must support different granularities of the main rating units, e.g. for time unit definition second, minute, hour, day, or any period. The used granularity shall be configurable for each rate type.	M	Carried from RFI
O04 -009	Rating	The system shall configure all rating units (seconds, minutes, hours, days, kb, MB, events) and conversion rule between any 2 rating units.	M	Carried from RFI
O04 -010	Rating	For usage charging, the following modes and the combination of them should be supported: 1. Flat rate e.g. 10 cents/minute for on-net voice call 2. Fixed fee e.g. every voice call will be charged basic fee such as 20 cents 3. Stepped rate e.g. first 5 minutes call is rated at $x/minute. If the call continues for another 5 minutes then the current 5 minutes is rated at $/minute. If the call continues	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		beyond 10 minutes, the following call will be rated at $z/minute. 4. Times span rate. E.g. 15 cents / minute for peak time and 10 cents / minute for off- peak time. 5. Personalized rate, the tariff is defined based on customer's attributes or service features e.g.: tariff based on customer's on-net age.		
O04-011	Rating	For discount charging, the following modes and the combination of them should be supported: 1. Flat discount, e.g. 5% applied on the usage charge. 2. Stepped Discount, e.g. 5% applied on a charge from 0 - 10minutes, 7% from 11 minutes - 15minutes and 10% onwards.	M	Carried from RFI
O04-012	Rating	For Periodic charge, the following cycle type should be supported: 1. Bill cycle 2. Daily/X days 3. Week 4. Month	M	Carried from RFI
O04-013	Rating	For Periodic charge, the system should support the following corresponding features: 1. Scattered Settlement Date. That is, for monthly settlement, the settlement date can be settled on any date of a month. 2. Floating Settlement Date. This means a subscriber's rent date may change when the subscriber's status is changed. For example, a subscriber's monthly rent day is the first day of a month, but they entered the Suspended state at April 5 because its balance is exhaust, so it will fail to rent at May 1. When the subscriber recharges at May 12, they will enter the Active state, and their next monthly rent day will be June 12 but not June 1. 3. Retry to Settle After Failed. If settlement for a subscriber fails, it will be recorded and retry to settle again later. 4. Settlement with Arrears. The system can charge the history recurring fee which has not been charged due to insufficient balance.	M	Carried from RFI
O04-014	Rating	Pro-rating of recurring monthly charges as an option: In the case of activation in the middle of the billing period, it needs to be configurable per product whether the charge is prorated, charged the full amount or not charged to the customer.	M	Carried from RFI
O04-015	Rating	Pro-rating of recurring monthly charges as an option: In the case of termination in the middle of the billing period, it needs to be configurable per product whether the charge is prorated, charged the full amount or not charged to the customer.	M	Carried from RFI
O04-016	Rating	Pro-rating of recurring monthly charges as an option: When changing a product in the middle of the billing	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		period, it needs to be configurable per product whether the charge is prorated, charged the full amount or not charged to the customer.		
O04-017	Rating	Pro-rating of recurring monthly charges as an option: In the case of terminating a product immediately, it needs to be configurable per product whether the charge is prorated, whether refund the money back to subscriber.	M	Carried from RFI
O04-018	Rating	In case of pro-rating, it shall be configurable whether the periodical allowance included in the product should be pro-rated or not, e.g. if the monthly charge of a product is $10 and pro-rated with 50%, then the monthly allowance of 100 SMS shall be pro-rated as 50 too.	M	Carried from RFI
O04-019	Rating	If the subscriber's balance is insufficient, the system shall support Periodic charge failed or charge to negative balance by configuration.	M	Carried from RFI
O04-020	Rating	Periodic charge may or may not be applied to subscriber if the status is suspended.	M	Carried from RFI
O04-021	Rating	The system shall support None-recurring package, which only be charged one time and the package will be deactivated after validity.	M	Carried from RFI
O04-022	Rating	Allowance price plan is used to award bonus to the subscriber according to the allowance rule defined in the allowance plan. For allowance charge, the following 2 modes should be supported: 1. Stepped Allowance Set, e.g. At the end of the product bill cycle, if the total consumption fee of a subscriber is between $10 and $20, he/she can get 10 pieces of free on-net short messages. If the total consumption fee of a subscriber is between $20 and $50, he/she can get 20 pieces of free on-net short message. If the total consumption fee of a subscriber exceeds 50$, they can get 5 minutes free on- net local call. 2. Tiered Allowance Set, e.g. At the end of the product bill cycle, if the total consumption fee of the subscriber is between $10 and $20, he/she can get 10 pieces of free on-net short messages. If the total consumption fee of the subscriber is between $20 and $50, he/she can get 20 pieces of free on-net short message plus 10 pieces of free on-net short message. If the total consumption fee of the subscriber is larger than $50, he/she can get 5 minutes free on-net local call plus 20 + 10 pieces free on-net short messages.	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
O04-023	Rating	In case for a specific service type in the bundle tariff plan no tariff can be found, the tariff from the main product's tariff plan is applied.	M	Carried from RFI
O04-024	Rating	The rating engine supports rating for services that are free of charge based on defined business rules. For example, the customer is given the first X minutes, kB's for free.	M	Carried from RFI
O04-025	Rating	The rating engine shall rate based on chosen destination and the destination network (Operator Dependent Rating). E.g. different rates will be applied when terminating to connection of other operators.	M	Carried from RFI
O04-026	Rating	The rating engine supports applying the same price plan(s) for a group of operators from/to which different services like voice, data usage is originated/destined, e.g. operator define same roaming tariff for North America operator.	M	Carried from RFI
O04-027	Rating	The rating engine should support matching for the best subscriber-level tariff plan. The charges for the services the subscriber used are calculated several times, using the contracted rate plan and all the alternative rate plans or alternative service subscriptions defined for that subscriber. The best option, the lowest charge, is picked out from all those charges.	M	Carried from RFI
O04-028	Rating	The AVP of the DCC message can be extended by operation & management GUI. The AVP can be used as charging factor in the tariff definition.	M	Carried from RFI
O04-029	Rating	The subscriber attribute can be be extended by operation & management GUI. The attributes can be used as charging factor in the tariff definition.	M	Carried from RFI
O04-030	Rating	The fields of the CDR can be extended by operation & management GUI. Such as new added AVPs and subscriber attributes etc.	M	Carried from RFI
O04-031	Rating	The free resource type or account type can be extended by operation & management GUI.	M	Carried from RFI
O04-032	Rating	The solution should support sponsor package and apply to large-scale sharing when CSP promotes to the large OTT enterprise, such as Facebook, YouTube.	M	Carried from RFI
O04-033	Rating	The solution should share and synchronize the charging information to the external system, please describe the information scope and synchronize mechanism.	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
O04-034	Rating	To improve the user experience, the solution should provide real-time CDR queries. For example, subscribers can query their consumption record immediately.	M	Carried from RFI
O04-035	Rating	The solution should notify when the information that should be notified to the customer is changed. Such as the Offering Expiration, Resource Expiration.	M	Carried from RFI
O04-036	Rating	Proposed solution should have mechanism to allow Account to Share by Simultaneous Sessions.	M	Carried from RFI
O04-037	Discount	Discount applies to certain domains of charges: usage, Recurring Subscription, One-time (Non-Recurring).	M	Carried from RFI
O04-038	Discount	Discount applies to more traffic types (e.g. Voice and Video calls, or APN1 and APN2).	M	Carried from RFI
O04-039	Discount	Discount applies to specific destinations (e.g. on-net, off-net, apn1, apn2, a specific number).	M	Carried from RFI
O04-040	Discount	Discount applies to a specific Recurring Subscription (RC) (e.g. Call forwarding monthly fee).	M	Carried from RFI
O04-041	Discount	Discount applies to a specific period of the day.	M	Carried from RFI
O04-042	Discount	Discount applies to a specific destination group (e.g. All calls to Europe)	M	Carried from RFI
O04-043	Discount	The system must support at least the definition of 5 steps, on the Stepped Discount type definition.	M	Carried from RFI
O04-044	Discount	Usage Based Discounts, applied based on accumulated usage, must be supported on the system.	M	Carried from RFI
O04-045	Discount	The system shall provide the capability to prioritize or suppose multiple discount plans that are applicable simultaneously. For prioritization the plan with highest priority will be applied; for suppose each additional discount calculation is performed on the net result of the previous calculation.	M	Carried from RFI
O04-046	Taxtion	The system must be able to provide output of price calculation for gross amount, net amount, tax amount and tax rate used for calculation and recorded in CDR.	M	Carried from RFI
O04-047	Taxtion	It shall be possible to define taxation rules and tax rates by various parameters (e.g. service type).	M	Carried from RFI
O04-048	Taxtion	If the consumption amount of a voice call is $10 and the tax rate is 10% then the subscriber will be deducted $11 ($10 consumer fee plus $1 tax).	M	Carried from RFI
O04-049	Number Normalization	The supplier shall explain the number normalization schemes internal to the system.	M	Carried from RFI
O04	Accumulators	The system shall support accumulators. The	M	Carried

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
-050		accumulator shall support currency-based accumulator, non-currency accumulator, and event-based accumulator. Please explain how the proposed system supports this concept.		from RFI
O04 -051	Accumulators	It shall be flexible to define the non-monetary units attached to the accumulator, such as usage or any other definable unit types, (e.g. minutes, SMSs, MMSs, Content type A; B, Volume).	M	Carried from RFI
O04 -052	Accumulators	The monetary accumulator shall be configurable to use the smallest currency unit available, e.g. Euro Cent for Euro or Pence for Pound. This is necessary for customers to be charged in gross mode.	M	Carried from RFI
O04 -053	Accumulators	The solution shall support the accumulation of usage to type of accumulator(s) categorized by; Tariff zone (e.g. LAC, CGI, IDD countries); Time band (e.g. time of day, peak, off-peak); Network operator (e.g. on-net, off-net); Service type: voice/SMS/MMS/data service/content service; A combination of any of the above	M	Carried from RFI
O04 -054	Accumulators	It must be possible to define a period for accumulator and periodic accumulator is reset based on the following criteria:; Daily (every day); X days; Weekly (every week); Monthly (every month); Bi-Monthly (every two month); Quarterly (every three months); Semester (every six months); Yearly	M	Carried from RFI
O04 -055	Accumulators	It must be possible to support the incrementing of an accumulator in real-time.	M	Carried from RFI
O04 -056	Accumulators	It must be possible to set a validity start date to an accumulator at a system level.	M	Carried from RFI
O04 -057	Accumulators	It must be possible to set a validity end date to an accumulator at a system level.	M	Carried from RFI
O04 -058	Accumulators	The system shall use accumulators to enable Discounts and Promotions. Please refer to the Discounts and Promotions requirements for details.	M	Carried from RFI
O04 -059	Accumulators	The system must support defining threshold levels and actions for accumulator. The actions can be notification or promotions. Please detail the actions supported.	M	Carried from RFI
O04 -060	Accumulators	The accumulator can be extended by operation & management GUI.	M	Carried from RFI
O04 -061	Promotions	The solution shall support real time or periodical promotions to enable Operator's marketing team/system admin team to design and implement award plans that encourage subscriber usage and	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		increase customer loyalty.		
O04-062	Promotions	The real time promotions can be triggered in charging process when subscriber accumulated usage of one time or specified period reach the threshold e.g. if subscriber's usage in one month exceed 200 minutes, then 50 minutes will be awarded. So, in one call if the original usage plus the current call duration reach the threshold, the bonus will be awarded to subscriber, and in next call the bonus can be used immediately.	M	Carried from RFI
O04-063	Promotions	The real time promotions can be triggered in charging process when subscriber accumulated usage of one time or specified period reach the threshold e.g. if subscriber's usage in one month exceed 200 minutes, then remained month voice call can be 10% discount. So, in one call if the original usage plus the current call duration reach the threshold, the discount will be applied to subscriber in next call.	M	Carried from RFI
O04-064	Promotions	The solution shall enable fast, easy and efficient building of promotions. The solution shall support promotions based on customer demographics and other profile criteria.	M	Carried from RFI
O04-065	Promotions	The solution shall allow Operator's marketing team/system admin team to define bonus awards in currency, events (e.g., SMS, local calls), or charge units (e.g., seconds, bytes). The solution shall provide the GUI based application for configuration purposes.	M	Carried from RFI
O04-066	Promotions	The promotions can be preferential tariff.	M	Carried from RFI
O04-067	Promotions	The system must support the independent validity period for each bonus type.	M	Carried from RFI
O04-068	Promotions	The real time promotions can be triggered when subscriber recharge or payment.	M	Carried from RFI
O04-069	Promotions	The solution shall support flexible recharge or payments-based promotions (e.g., promotions given based on recharge value and subscriber service packages, cumulative recharge, date time).	M	Carried from RFI
O04-070	Promotions	The recharge promotions can be awarded to balance account based on percentage of recharge amount.	M	Carried from RFI
O04-071	Promotions	The solution shall support the cross-product discounts (e.g., Discount of Voice call based on frequent uses of SMS)	M	Carried from RFI
O04	Promotions	The solution shall support deferred award,	M	Carried

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
-072		independent expiration for each award. When bonus is re-earned, it can be added to existing bonus balance and the expiry can be shifted or can be created as a new bonus. Bonus accounts can have different accounting rules or use the same as the main account.		from RFI
O04 -073	Promotions	If the bonus is created as a new bonus, the validity can be following type:; Bill cycle. That means the bonus will affect in current bill cycle; One month. The bonus will affect in one month. For example, the bonus is created in 1st Jan, the expired date will be 1st Feb; X months; One day. The bonus only effect in current day; Weekly, the bonus only effect in current week.; Specified date time. the bonus will be set an expired date time by input; X days	M	Carried from RFI
O04 -074	Promotions	If the bonus can be added to existing bonus, the following process shall be supported:; Bonus amount is increased and is set as the new bonus expired datetime; Bonus amount is increased and is set as the bigger expired datetime; Bonus amount is increased and the expired time unchanged"	M	Carried from RFI
O04 -075	Promotions	The solution shall support free unit granting or discount/rebate based on usage at a specific URL. For example:; Free 100MB of data if login to Facebook.; Enjoy 50% discount when customer visits specified sites.	M	Carried from RFI
O04 -076	Promotions	The System must support discounts based on consumption over time period (i.e. the Discount Plan tracks usage over several months until 1000 minutes is reached and a fixed award is given).	M	Carried from RFI
O04 -077	Promotions	The system should support multiple thresholds. For example, operator can set two thresholds for monthly voice call usage, if subscriber monthly voice call usage reach 100 minutes then will be awarded 20 free minutes for next month; and if subscriber monthly voice call usage reach 200 minutes then will be awarded 50 free minutes for next month.	M	Carried from RFI
O04 -078	Promotions	The system should support the bonus based on various conditions (including but not limited to: holiday, birthday, on-net age, accumulator value, one-time call duration, balance).	M	Carried from RFI
O04 -079	Promotions	First activation bonus which can attract new subscriber, the bonus can be awarded based on activation date, channel and primary offering.	M	Carried from RFI
O04 -080	Promotions	The solution must support a bonus structure whereby a subscriber can be allocated X dollars that	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		can be used for any service they are currently subscribed to. For example: MMS, SMS, GPRS, Voice. Limiting event and voice destinations to on-net numbers must be possible only. This bonus is only applicable while the subscriber is attached to their own HPLMN. It shall be possible to assign this bonus to a subscriber.		
O04-081	Promotions	The solution can create voice, data bundles of all sizes, chargeable or free of charge, which can be awarded individually.	M	Carried from RFI
O04-082	Promotions	The solution should allow subscribers to redeem a free unit for other types to improve subscriber experience. For example:; Redeem free units for bonus.; Redeem bonuses for free units.; Redeem bonuses for bonuses.; Redeem free units for free units.	M	Carried from RFI
O04-083	Promotions	The solution can assign the application scenario and tariff to the specific bonus.	M	Carried from RFI
O04-084	Charging	The solution shall define accounting rule for multiple account type, the charge can be deducted from multiple sub-accounts could be monetary, e.g. promotional credit reward, or non-monetary like time/volume/items/content.	M	Carried from RFI
O04-085	Charging	The solution shall be configurable with any combination of the following domain attributes on which accounts to apply the charges (Recurring, Non-Recurring and Rated event).; Calendar datetime attributes; Network event attributes; Subscriber attributes; Product attributes	M	Carried from RFI
O04-086	Charging	The system shall allow multiple subscribers whether within the same customer or not to utilize an account. Multiple reservations are allowed to be held on the shared account simultaneously.	M	Carried from RFI
O04-087	Charging	The system shall allow a subscriber to use multiple accounts (the accounts don't have to belong to the same customer) to pay his/her charges based on the configurable accounting rules. The accounting rules shall include but not limited to:; Usage / event type; Time schema; Maximum usable amount"	M	Carried from RFI
O04-088	Charging	Priority must be set up among accounts to define the accounting precedence if multiple accounts (including sub-accounts) are eligible to pay the charges.	M	Carried from RFI
O04-089	Charging	During a call, the switch between multiple accounts happens, the call shouldn't be cut off, and the switch take effect immediately in the duration of the call.	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
O04 -090	Charging	Operator shall be able to configure which balances are used, and in what order they are used. For instance, free minutes shall be used before purchased minutes.	M	Carried from RFI
O04 -091	Charging	Operator shall be able to limit the use of a balance to a specific activity (for example: SMS, Voice, MMS, or only off-peak hours and for local use only).	M	Carried from RFI
O04 -092	Charging	For prepaid customers, the prepaid monthly fee cannot be charged to negative balance, if the prepaid balance has been used up, the monthly fee will be charged fail.	M	Carried from RFI
O04 -093	Charging	The solution shall have the ability to redirect certain charges (e.g. SMS only) of a prepaid/postpaid service to a principal prepaid/postpaid account	M	Carried from RFI
O04 -094	Charging	The solution shall have the ability to redirect certain charges (e.g. MMS only) of a postpaid service to utilize the prepaid main balance	M	Carried from RFI
O04 -095	Charging	The solution shall be able to redirect certain charges of a prepaid/postpaid service based on certain time of a day, and/or days of a week.	M	Carried from RFI
O04 -096	Charging	The solution shall be able to redirect certain charges of a prepaid / postpaid service after a certain usage threshold is hit. For example: The company gives certain allocation to the staff; if they have fully utilized it, they can continue using the mobile via prepaid reload.	M	Carried from RFI
O04 -097	Charging	The system shall have the ability to redirect access fee of postpaid account to another postpaid account, upon hitting of usage threshold. For example, split billing and commitment fee is paid by the company where the staff is paying the usages.	M	Carried from RFI
O04 -098	Charging	It shall be configurable if a subscriber can use his/her bonuses (e.g. SMS, debit, volume, time) even if his/her credit is zero or below a certain configurable amount. This functionality can apply to all subscribers. (Independent from tariff, segment) For example: A subscriber has 3 MB data bonus and has no credit. He creates a session and starts to use his bytes bonus.	M	Carried from RFI
O04 -099	Charging	A minimum balance amount is necessary for calling / receiving calls and for data. This amount can differ customer type and per service.	M	Carried from RFI
O04 -100	Charging	The solution supports setting a positive threshold (the maximum balance the customer is allowed to	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		have) for each customer.		
O04 -101	Charging	The system shall support group account and flexible charging rule for individual subscriber service, following capabilities shall be supported: Group member can share the account of his group. That means the company pays for the group member. The fee of member charge can be charged from group account based on the datetime, service type, and the total payment cannot exceed the month limit.	M	Carried from RFI
O04 -102	Charging	In-bundle data usage of individual subscirber eat out of the group data bundle based on first come, first serve.	M	Carried from RFI
O04 -103	Charging	Solution must be able to Split charges across all available customer accounts, for efficient utilization of remaining funds, if any particular account cannot pay the fees for charged for a one-off event like SMS/MMS.	M	Carried from RFI
O04 -104	Charging	Reservation mechanism can automatically adjust the reservation quota of all rating groups in a session, or all sessions in a subscriber group into small pieces, when the total free resource is insufficient. This ensures free resources can be fully used up.	M	Carried from RFI
O04 -105	Real Time Credit Control	The rating engine must support credit-limit monitoring for postpaid subscribers. When there is not enough balance of credit, a notification will be sent to the user and cut off service automatically.	M	Carried from RFI
O04 -106	Real Time Credit Control	Ability to support a flexible threshold limit and amount.	M	Carried from RFI
O04 -107	Real Time Credit Control	Ability to disconnect the service, if the user's usage of the service exceeds the maximum amount of threshold.	M	Carried from RFI
O04 -108	Real Time Credit Control	Ability to bar incoming or outgoing calls or combination upon reach of consumption limit.	M	Carried from RFI
O04 -109	Real Time Credit Control	The system provides the functionality to adjust the permanent credit limit as requested by the customer.	M	Carried from RFI
O04 -110	Real Time Credit Control	The system shall provide the functionality to adjust the temporary credit limit as requested by the customer.	M	Carried from RFI
O04 -111	Real Time Credit Control	It shall be able to schedule period for temporary credit limit. When the period expires, system will be back to the previous credit limit of each subscriber.	M	Carried from RFI
O04 -112	Real Time Credit Control	The system can assign multiple spending limit services to a subscriber / account. A minimum DRN (Data Roaming Notification) must be supported as a	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		special spending limit.		
O04 -113	Real Time Credit Control	The spending limit can be defined on:; Service usage volume; Charge fee (monetary unit); Flexible cycle	M	Carried from RFI
O04 -114	Real Time Credit Control	The system shall provide the interface that supports modifying individual spending limit related attributes. It shall be possible to modify:; The spending limit value, e.g. from 50 to 75 $ per month; The spending limit period, e.g. monthly interval starting on 1st of a month to monthly interval starting on 10th.	M	Carried from RFI
O04 -115	Real Time Credit Control	Solution must support to apply Temporary Consumption limit with specific Time Limit.	M	Carried from RFI
O04 -116	Offline Charging	The system shall support offline charging based on CDR.	M	Carried from RFI
O04 -117	Offline Charging	Offline charging shall have the same capability as online charging.	M	Carried from RFI
O04 -118	Offline Charging	The system shall integrate with multiple bidder mediation for CDR collection.	M	Carried from RFI
O04 -119	Offline Charging	The solution also can reprocess the CDR which are regarded as incorrect CDRs because errors have occurred; after being modified (if required), the CDRs can be rated again.	M	Carried from RFI
O04 -120	Voice and Video Charging	The solution shall support intra/inter voice/video call rating based on different tariffs.	M	Carried from RFI
O04 -121	Voice and Video Charging	The solution shall support IDD voice call rating and charging based on the destination number's operator and country.	M	Carried from RFI
O04 -122	Voice and Video Charging	The solution shall support international roaming call rating and charging based on visiting network and country.	M	Carried from RFI
O04 -123	Voice and Video Charging	The solution shall support Video call rating with special tariff.	M	Carried from RFI
O04 -124	Voice and Video Charging	The solution shall support comprehensive rating schemes for voice service based on time, location, subscriber usage, features, and other criteria (other party conditions like CUG and F&F). Its common rating capabilities should include flat rate, rank, fixed fee and combined schemes.	M	Carried from RFI
O04 -125	Voice and Video Charging	The proposed solution shall support the integration with VoLTE & VoWiFi/IMS over Ro/Capv2 (or better)	M	Carried from RFI
O04 -126	Content and VAS Charging	The solution shall support intra-net/inter-net SMS rating based on different tariffs.	M	Carried from RFI
O04 -127	Content and VAS Charging	The solution shall support international SMS rating and charging based on the destination number's	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		operator and country.		
O04 -128	Content and VAS Charging	The solution shall support international roaming SMS and charging based on visiting network and country.	M	Carried from RFI
O04 -129	Content and VAS Charging	The system shall support both IEC and ECUR charging mode for SMS.	M	Carried from RFI
O04 -130	Content and VAS Charging	The solution shall support charging by MO/MT. For charging by MO, if SMS delivery failure, the system shall refund the deducted fee from account exactly.	M	Carried from RFI
O04 -131	Content and VAS Charging	The solution shall support comprehensive rating schemes for SMS based event, location, subscriber usage, features, and other criteria (other party conditions like CUG and F&F). Its common rating capabilities should include flat rate, stepped, fixed fee and combined schemes.	M	Carried from RFI
O04 -132	Content and VAS Charging	The solution shall support intra-net/inter-net MMS rating based on different tariffs.	M	Carried from RFI
O04 -133	Content and VAS Charging	The solution shall support international MMS rating and charging based on the destination number's operator and country.	M	Carried from RFI
O04 -134	Content and VAS Charging	The solution shall support MMS charging based on MMS size. E.g. 0-100K: 1$, >=100k: 2$.	M	Carried from RFI
O04 -135	Content and VAS Charging	The system shall support IEC charging mode for MMS.	M	Carried from RFI
O04 -136	Content and VAS Charging	The solution shall support charging by MO/MT. For charging by delivery, if mms delivery failure, the system shall refund the deducted fee from account exactly.	M	Carried from RFI
O04 -137	Content and VAS Charging	The solution shall support comprehensive rating schemes for MMS based event, location, subscriber usage, features, and other criteria (other party conditions like CUG and F&F). Its common rating capabilities should include flat rate, stepped, fixed fee and combined schemes.	M	Carried from RFI
O04 -138	Content and VAS Charging	The charging platform must integrate with external content platforms to charge for content services. The external content platform provides tariff management and rating for the content services and send request to the charging platform with rated information for charging.	M	Carried from RFI
O04 -139	Content and VAS Charging	Describe the information flow between this charging platform and an external content management system. Provide details on the interfaces.	M	Carried from RFI
O04 -140	Data Charging and Policy Ctrl	The system shall support multiple network access for data service charging such as	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		GPRS/ADSL/WIFI/CDMA/LTE/ETTH/FTTx/5G NSA/5G SA & FWA.		
O04-141	Data Charging and Policy Ctrl	The system shall support standard Gy interface for data service charging by integrating with PCEF.	M	Carried from RFI
O04-142	Data Charging and Policy Ctrl	The system shall support integration with AAA by diameter for data service charging.	M	Carried from RFI
O04-143	Data Charging and Policy Ctrl	The system supports Real-time monitoring and session control for data service.	M	Carried from RFI
O04-144	Data Charging and Policy Ctrl	The system must support data charging by time or volume.	M	Carried from RFI
O04-145	Data Charging and Policy Ctrl	The system should support charging for data service based on the APN, different kinds of tariff plan can relate to separate APN.	M	Carried from RFI
O04-146	Data Charging and Policy Ctrl	The system should support MSCC capability for data service charging.	M	Carried from RFI
O04-147	Data Charging and Policy Ctrl	The system must be able to apply a roaming fee to data tariff. For example, the rate per minute for 3G traffic is $x, however there is an extra $y roaming fee charged for every minute used.	M	Carried from RFI
O04-148	Data Charging and Policy Ctrl	The system must support applying a one-off roaming fee to a data session. For example, a data session is set up, and $x is deducted from the subscriber account immediately. The rest of the data session is charged at the subscriber's average HOME data.	M	Carried from RFI
O04-149	Data Charging and Policy Ctrl	The system shall support data package upgrade, e.g. user A has one monthly package 2G/20$. Before the end of month, user's package volume has consumed. User A can upgrade the current package to 3G/26$. The additional monthly fee 6$ will be charged and the added volume amount = (3G-2G) * (remained days of month)/days of one month.	M	Carried from RFI
O04-150	Data Charging and Policy Ctrl	The system shall support Terminal-Based Policy and Charging, the volume of package can be limited to specify Terminal based on IMEI. For example, one data bundle is only for iPhone, another is for data card.	M	Carried from RFI
O04-151	Data Charging and Policy Ctrl	To avoid bill shock, the system ensures the data roaming consumption information is informed to subscribers and keeps credit limit under control, while subscribers roam in European Union. The system can set multiple usage thresholds. For example, when subscriber total data roaming usage reaches $50, then send notification, if the total usage reaches $60, the roaming data service will be cut off.	M	Modified: EU reference illustrative; applies to all roaming destinations.

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
O04 -152	Data Charging and Policy Ctrl	The system should support re-direct to specific URL (such as top-up web page) when balance is used up.	M	Carried from RFI
O04 -153	Data Charging and Policy Ctrl	The system shall support flexible bypass solution.	M	Carried from RFI
O04 -154	Data Charging and Policy Ctrl	The system should support to manage the PCC rule as a price plan under offering, to provide unified product catalogue function for Policy Charging Control	M	Carried from RFI
O04 -155	Data Charging and Policy Ctrl	The system should support integrating with PCRF via 3GPP Sy interface, to deliver PCC counter information to PCRF when requested policy counter request.	M	Carried from RFI
O04 -156	Data Charging and Policy Ctrl	The system should support notifying PCRF proactively to update the PCC rule via deliver PCC counter information to PCRF in case of Add-on package subscription.	M	Carried from RFI
O04 -157	Data Charging and Policy Ctrl	The system should Terminate Gy session when Sy session abnormal.	M	Carried from RFI
O04 -158	Data Charging and Policy Ctrl	For data charging service, the charging system should be able to indicate a granted quota dynamically generated and delivered to the GGSN through the Gy interface based on customer attributes, offering subscription or service attributes, or network speed.	M	Carried from RFI
O04 -159	Data Charging and Policy Ctrl	A smart quota indicates a quota dynamically generated and delivered to the GGSN/PGW/5G Core through the Gy/SBI interface. It can reduce the message exchange frequency between the GGSN/PGW/5G Core and charging system and improve the charging processing capability. The proposed solution should support Smart quota base on below factors:; Primary offerings; Flat rate offering; Rating Groups; Network Speed; Subscriber's Remaining account balance of specific account type; Subscriber's own Remaining free data volume of specific free unit type; Roaming type; Access network type; Remaining account balance of specific account type, including the account balances of subscriber's individual and account balances shared to this subscriber through the payment relationship interface.; Remaining free data volume of specific free unit type, including the free units of subscriber's individual and free units shared with this subscriber.; 5G NSA &SA QoS Information	M	Carried from RFI
O04 -160	Data Charging and Policy Ctrl	The system should allow subscribers to temporarily subscribe to the Turbo package to increase their	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		bandwidth.		
O04 -161	Data Charging and Policy Ctrl	Turbo package should relate with QoS and data volume. Such as the package with 3.5 GB and 4M bandwidth. Once subscribed to the package, the bandwidth will be increased to 4M, and after 3.5 GB data volume is used up, the bandwidth will be reduced to normal.	M	Carried from RFI
O04 -162	Make Your Own (MYO)	Proposed solution should integrate with CRM to provide the capability of defining and selling DIY packages for customers. They can select packages based on their consumption preferences.	S	Readiness / priced option
O04 -163	Make Your Own (MYO)	The package content may include Voice duration, SMS messages, data service volume.	S	Readiness / priced option
O04 -164	5G Support	System shall support extending changing factors to meet 5G business needs.	S	5G SA readiness
O04 -165	5G Support	System shall support QoS Charging	S	5G SA readiness
O04 -166	5G Support	System shall support dynamic Quota. It shall be possible to adjust the charging slice (including the quota, Validity-Time, Quota-Hold-Time, Quota-Consumption-Time, Volume-Quota-Threshold) based on the smart Quota Policy rules.	S	5G SA readiness
O04 -167	5G Support	The authorization amount of the session could vary depending on different policy factors via, 5G plan, eMBB plan, Main balance.	S	5G SA readiness
O04 -168	5G Support	System shall be truly convergent with one rating engine for both offline & online rating of 5G events.	M	Carried from RFI
O04 -169	5G Support	The system shall support share of a mobile device's Internet connection with other connected devices.	S	5G SA readiness
O04 -170	5G Support	The system shall support inbound roaming charging.	S	5G SA readiness
O04 -171	5G Support	The system shall support roaming QoS based charging.	S	5G SA readiness
O04 -172	5G Support	The system shall support charge based on presence reporting area (PRA).	S	5G SA readiness
O04 -173	5G Support	The system shall support 3GPP Packet switch Data off.	S	5G SA readiness
O04 -174	5G Support	The system shall support 5G slice based charging for individuals.	S	5G SA readiness
O04 -175	5G Support	The system shall support grant quota for each UPF.	S	5G SA readiness
O04 -176	5G Support	The system shall support non-blocking charging mode.	S	5G SA readiness

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
O04 -177	5G Support	The system shall support 4G&5G Interworking.	M	Carried from RFI
O04 -178	5G Support	The system shall support 5G 2C Enabler Offering.	S	5G SA readiness
O04 -179	5G Support	The system shall support 5G 2C Carefree Offering template.	S	5G SA readiness
O04 -180	5G Support	The system shall support 5G 2C Carefree with limited volume sharing Offering template.	S	5G SA readiness
O04 -181	5G Support	The solution shall support differential Rating with different pricing for upstream and downstream with 5G QOS offering Higher Speed.	S	5G SA readiness
O04 -182	5G Support	Solution must support flexible Pricing Model for 5G Dedicated Wireless Access (DWA)/FWA as an attractive substitute to FTTX.	S	5G SA readiness
O04 -183	5G Support	The CHF solution should support issuing an instruction to the SMF to suspend quota. management when certain conditions are met. Similarly, the SMF can request another. instruction to resume quota control.	S	5G SA readiness
O04 -184	5G Support	The CHF should support Data Charging Based on Time and Volume Simultaneously.	S	5G SA readiness
O04 -185	5G Support	The CHF should support Data Charging Based on 5G real time speed.	S	5G SA readiness
O04 -186	5G Support	The proposed solution shall support 5G bypass based on: Number segment; User MDB node; Service type	S	5G SA readiness
O04 -187	5G Support	The system shall also be capable to enable bypass functions based on service types and configure one or more of the following charging event types for triggering the bypass:; Nchf_ConvergedCharging data service event.; Nchf_SpendingLimitControl bandwidth control event.	S	5G SA readiness
O04 -188	5G Support	The proposed solution should be capable of defining charging rates or free resources for the specific areas. Subscribers can buy PRA (Presence Reporting Area) package or get some PRA packages for free. Moreover, suppose customer subscribe one PRA package, the PRA ID applicable for this package will be assigned. In that case, the subscriber can enjoy a preferential tariff or free resource when using data service in the specified area. Whether to enable the feature shall be configurable in system level.	S	5G SA readiness
O04 -189	5G Support	The system should be able to use different RGs (Rating groups) to distinguish tethering traffic from	S	5G SA readiness

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		self-owned terminals.		
O04-190	5G Support	The proposed solution shall support network Slice Based Charging, e.g. Charging by sNSSAI, Slice Based Quota Pool, Across Slice Quota, Slice Based Package. Bidder to list down all the possible options for network slice-based charging.	S	5G SA readiness
O04-191	5G Support	The proposed solution shall support multiple UPF's (User plane function). The system shall grant a quota for each UPF, meaning that the CHF manages the quota granted for each UPF and SMF (Session Management Function) manages and reports the quota consumption per UPF. Additionally, the system shall be able to handle Quota shared by UPFs (User plane function) which means that SMF manages the shared quota consumption per rating groups (RG) for multiple UPFs and reports the total quota consumed to Charging Function (CHF).	S	5G SA readiness
O04-192	5G Support	The proposed solution shall support 3GPP Rel-16 offline only charging service. The proposed solution shall support the following:; When there is no Protocol Data Unit (PDU) session charging method indicating "offline only" associated with a Protocol Data Unit (PDU) session, the converged charging service will be invoked by the Session Management Function (SMF) at the Protocol Data Unit (PDU) session establishment.; When a Protocol Data Unit (PDU) session charging method indicates "offline only" for a Protocol Data Unit (PDU) session, the offline charging method applies to all the PCC (Policy and Charging Control) Rules activated during the Protocol Data Unit (PDU) session. In this case, at the Protocol Data Unit (PDU) session establishment, the Session Management Function (SMF) can select between the converged or offline-only charging service based on Operator policy.	S	5G SA readiness
O04-193	5G Support	The proposed solution shall support 3GPP Rel-16 charging AMF in 5G standards. AMF (Access and Mobile Function) can obtain the following information: registration & Deregistration, Mobility and access connection (N2). The 5GS AMF is introduced as a new NF consumer of the Nchf_ConvergedCharging service and reports the charging information to CHF (Charging Function).	S	5G SA readiness
O04-194	5G Support	As the enhancement of non-3GPP access, the proposed solution must support the following	S	5G SA readiness

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		5WWC (5G Wireless Wireline Converged Core) scenario charging:; UE (User Equipment) Connects to 5G Core via Trusted Non-3GPP access.; 5G-RG connects to 5G Core via NR-RAN and W-5GAN.; FN-RG connects via W- 5GAN.		
O04 -195	5G Support	The proposed solution shall support the new network function CEF (Charging Enablement Function) for network slice usage charging. CEF to integrate with Network Slice Management Functions (NSMF) / Network Data and Analytics Function (NWDAF) for subscribes/unsubscribing the following performance and analytics information and report the charging information to CHF, to support the network slice usage charging.; Latency; Throughput; Service Experience statistics information; The number of PDU sessions; Registered Subscribers; Load-level information	S	5G SA readiness
O04 -196	5G Support	The proposed solution shall support the new network function CEF (Charging Enablement Function) or the CTF (Charging Trigger Function) in the Management Function (MnF) report the charging information which comprises the following operations to support Network Slice management charging in 5G System Network Slice Instance creation, modification and termination. Network Slice Instance activation and deactivation.	S	5G SA readiness
O04 -197	5G Support	The proposed solution shall support the Multi Access - PDU (MA PDU) session charging scenarios as below：; Support Multi Access-PDU (MA-PDU) sessions over one 3GPP access and one non-3GPP access. Support of untrusted, trusted non-3GPP accesses, wireline 5G access networks, and any access type over which an MA- PDU Session can be established. Support of Multi Access-PDU (MA-PDU) session over 3GPP/EPC access and wireline access as specified in TS 23.316."	S	5G SA readiness
O04 -198	5G Support	The proposed solution shall support the integration with VoLTE & VoWiFi/IMS over Ro/Capv2 and a new Http2 based interface for Voice charging as well as support for VoNR (Voice over 5G)	S	5G SA readiness
O04 -199	5G Support	The proposed solution shall support rating and charging by actual consumer bandwidth consumption. The system needs to calculate the actual speed based on the consumed traffic reported by the core network in a certain period. The period is	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		configurable, for example, 2 minutes or 5 minutes. The system calculates the actual speed based on the quota consumption time (QCT), the envelope reporting function, and the data traffic usage duration in each envelope reported by the core network.		
O04 -200	5G Support	The proposed solution shall support real-time burstable billing. It is required to design the package based on actual bandwidth consumption with a fixed monthly fee or pay as you use. The actual bandwidth consumption for enterprise shall be calculated with 95 percentiles rules:; The billing system should calculate periodically (e.g. every mins/hour) the actual navigation speed based on the consumptions reported from the network (used Units received in SBI requests). The collection period should be configurable and not impact the network performance.; At the end of the month or bill cycle, the billing system will abandon the top 5% (based on the 95th percentile rule.) bandwidth records and select the highest record as the charging factor.; Real-time bill shock notification before the 5% free buffer used up.	M	Carried from RFI
O04 -201	5G Support	The proposed solution shall support sponsored data charging function. Enterprise customers can purchase a sponsored data package, and the end user (consumer) can access the specified web/app for free. The charging system to configure the policy for example: maximum data consumption, configurable notifications to enterprise and end user, i.e. end-user first access notification, quota remaining notification.	M	Carried from RFI
O04 -202	5G Support	The proposed solution shall be able to add new attributes to SBI interfaces by configuration.	S	5G SA readiness
O04 -203	5G Support	The proposed solution should provide predefined use cases and offer template based on its global practice. The expected use case and offering templates amount should be no less than 30. Bidder should list the existing use cases and offer templates.	S	5G SA readiness
O04 -204	5G Support	The system shall be capable of supporting 5G SA or shall be able to upgrade to support the 5G SA ready version without migration. (Reference should be provided)	S	5G SA readiness
O04 -205	5G Support	The bidder should provide global 5G monetization use case and commercial reference. The following 5G features should be included or can support and provide the reference:; 5G Bypass and Rerating.;	S	5G SA readiness

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		PRA integration.; Slice charging.; multi UPF support.; Distinguish 4G/5G usage or service under the 5G NSA network.; Rating and charging by actual bandwidth consumption.; Real-time burstable billing, real bandwidth consumption for enterprise with 95 percentile rules.; Massive concurrent connection (>100K) charging and billing for mIOT scenario.; Sponsored data package for B2B2C. scenario, multi-cycle back date and future date for 5G 2B (enterprise private-line).; Support 5G multi-dimensional charging factors by configuration.		
O04 -206	Recharges and Voucher System	The system shall support the following voucher card recharging methods upon integration with different recharge channels:; USSD based recharge; IVR based recharge; SMS based recharge; Customer care recharge; Recharge from 3rd party	M	Carried from RFI
O04 -207	Recharges and Voucher System	The system shall support voucher card recharge, cash recharge or recharge from 3rd party system	M	Carried from RFI
O04 -208	Recharges and Voucher System	The system must support automatic recharge function (e.g. periodic, or if a balance is too low). The automatic recharge should integrate with 3rd system such as bank	M	Carried from RFI
O04 -209	Recharges and Voucher System	The system supports sending an acknowledgement message to inform the customer after recharging a balance or after cancellation of the recharge transaction	M	Carried from RFI
O04 -210	Recharges and Voucher System	The system supports to record the following attributes at the minimum based on the recharging transaction:; Time & date of recharge; Identifier code recharge type (for example from the Rabobank); Identifier of the recharger	M	Carried from RFI
O04 -211	Recharges and Voucher System	The system should support recharge promotion based on recharge amount, datetime schema, class of subscriber, recharge card batch, recharge trade type, on- net months of subscriber, account balance of subscriber, recharge in Weekday, recharge times, customer level and subscriber management state.	M	Carried from RFI
O04 -212	Recharges and Voucher System	The recharge promotions can be all kinds of free units such as free minutes, free SMS, fee volume, and promotional balance.	M	Carried from RFI
O04 -213	Recharges and Voucher System	The recharge promotions can be preferential product.	M	Carried from RFI
O04 -214	Recharges and Voucher System	The recharge promotions can be awarded to balance account based on percentage of recharge amount.	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
O04 -215	Recharges and Voucher System	The system supports fraud detection. If subscriber recharge failure multiple times due to wrong input card PIN continuously then set recharge black status the subscriber	M	Carried from RFI
O04 -216	Recharges and Voucher System	The system supports recharge Tax. The recharge tax can be calculated by a fixed amount or percentage of the recharge amount.	M	Carried from RFI
O04 -217	Recharges and Voucher System	The system must support the maximum balance limit. If sum of balance and recharge amount reach the limit, then the recharge will be rejected.	M	Carried from RFI
O04 -218	Recharges and Voucher System	The system shall support multiple validity calculations as following:; New Validity Date = Old validity date + Extended Validity Period.; New Validity Date = Current date + Extended Validity Period.; New Validity Date = Max (Old validity date, Current date + Extended Validity Period).	M	Carried from RFI
O04 -219	Recharges and Voucher System	When the subscriber is in Suspended or Disabled state, New Validity Date = Current date + Extended Validity Period.	M	Carried from RFI
O04 -220	Recharges and Voucher System	It shall be possible to use voucher (scratch) card for bill payments for postpaid customers.	M	Carried from RFI
O04 -221	Recharges and Voucher System	When the hybrid subscriber recharges using voucher (scratch) card via IVR, the system should prompt the subscriber to select the account to be recharged - the prepaid account (the main balance sub-account) or the postpaid account (credit sub-account). It is configurable whether to prompt the subscriber to select the account at the system level. If the function is disabled, the prepaid account will be recharged by default.	M	Carried from RFI
O04 -222	Recharges and Voucher System	The System (voucher management system) shall provide for both automated and manual tasks in the voucher generation processes.	M	Carried from RFI
O04 -223	Recharges and Voucher System	The System (voucher management system) shall track the voucher process execution and alert when process fails.	M	Carried from RFI
O04 -224	Recharges and Voucher System	The system supports recording the full voucher history, including changes in status and date/time.	M	Carried from RFI
O04 -225	Recharges and Voucher System	The system supports voucher activation by voucher card serial number only.	M	Carried from RFI
O04 -226	Recharges and Voucher System	The system supports voucher activation by voucher card batch number in batch mode.	M	Carried from RFI
O04 -227	Recharges and Voucher System	The system supports to lock voucher card via the following means:; Serial number, include serial	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		number segment.; Batch number		
O04 -228	Recharges and Voucher System	The system supports voucher activation from external system via the integration over the API provided by the system.	M	Carried from RFI
O04 -229	Recharges and Voucher System	The system supports query vouchers by voucher serial number.	M	Carried from RFI
O04 -230	Recharges and Voucher System	The system shall provide voucher card generation tool. The tool shall support high security, authentication, authorization, and logging.	M	Carried from RFI
O04 -231	Recharges and Voucher System	The system shall provide a decryption tool for the voucher card printing bidder to decrypt the card-making file. The tool with specific key will be sent to different voucher printing bidder.	M	Carried from RFI
O04 -232	Recharges and Voucher System	The System (voucher management system) shall randomly generate PINs and ensure that nobody can guess or see the generated PINs.	M	Carried from RFI
O04 -233	Recharges and Voucher System	Sensitive data such as PIN shall be encrypted with strong data encryption algorithm. The encryption algorithm should be equal or stronger than 3DES, AES 256, SHA256	M	Carried from RFI
O04 -234	Recharges and Voucher System	The system should support E-PIN function. The system should integrate with POS channels to support the following function:; Allocate E-PIN. Reservation an E- PIN from the system upon the request from POS channel; Rollback allocation of E-PIN	M	Carried from RFI
O04 -235	Recharges and Voucher System	The system should support encryption function during E-PIN allocation. Upon the request from POS channel, system should reserve a voucher card to return the E- PIN with encrypted data to POS channel. (The POS channel will decrypt the E-PIN and print the PIN for the end customer).	M	Carried from RFI
O04 -236	Recharges and Voucher System	The system should provide a decryption tool that can run on Linux/Windows machines to be consumed by printer/partners to decrypt vouchers files in structured (CSV), plain text format.	M	Carried from RFI
O04 -237	First Activation	Please state how many modes of first activation the system supported, such as any first call, recharge or IVR call.	M	Carried from RFI
O04 -238	First Activation	The system should support the activation from third party system while providing API to third party system.	M	Carried from RFI
O04 -239	First Activation	After successful activation, the system shall immediately trigger deducting the first monthly fee of	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		product ordered by subscriber.		
O04 -240	First Activation	During first activation, the preferred language can be selected.	M	Carried from RFI
O04 -241	First Activation	The system should support playing different welcome messages or send a special SMS/API according to different class of customer/package.	M	Carried from RFI
O04 -242	First Activation	The system supports first activation awards, based on class of service, time segment, activation mode, visiting location. The award can be the composition of the following resources:; Fund reward; Free call duration (local calls, toll calls, intra-network calls or inter-network calls); Free call times (local calls, toll calls, intra- network calls or inter-network calls); Free data duration or traffic; Free units; Rewarded product	M	Carried from RFI
O04 -243	First Activation	Ability to configure the validity of new subscribers, after activation, the validity of subscribers can be different.	M	Carried from RFI
O04 -244	Special Number	The system should support free call numbers, call to free numbers shall always be allowed despite of call balance (i.e. customer care, recharge IVR).	M	Carried from RFI
O04 -245	Special Number	The system should support forbidden numbers, calls to certain numbers shall always be released.	M	Carried from RFI
O04 -246	Special Number	System can define special numbers for Voice service, SMS and MMS.	M	Carried from RFI
O04 -247	Friends and Family	The system shall support Friends and family service, the service enable subscriber to enjoy preferential tariff or discounts when initiate a voice call, SMS, MMS to Friend and family number	M	Carried from RFI
O04 -248	Friends and Family	The family and friend numbers can be classified into multiple groups for example one group contains the number of family members, and another group contains the number of colleagues.	M	Carried from RFI
O04 -249	Friends and Family	The maximum amount of Friend and family number and groups shall be configurable.	M	Carried from RFI
O04 -250	Friends and Family	A family or friend group shall contain prepaid and postpaid subscribers. Users from other operators shall be selected as friends. A different rating price or discount on original rating price can be applied for calls to all Friend numbers. Also, a different rating price or discount on original rating price can be applied to each group.	M	Carried from RFI
O04 -251	Friends and Family	Limitation can be set for family and friend numbers configure e.g. the international numbers cannot be configured as FNF	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
O04 -252	Friends and Family	System shall charge recurring fee for FNF service and one-off fee for FNF number management, the recurring fee can be charged according to numbers amount.	M	Carried from RFI
O04 -253	Friends and Family	System shall provide self-service for FNF management such as FNF service subscription, FNF number modification and query.	M	Carried from RFI
O04 -254	Home Zone	The system shall provide configuration of home zone. A home zone is built by combining neighboring cells in the operator network. Home zones defined by a list of cell IDs.	S	Readiness / priced option
O04 -255	Home Zone	The system must include support for the home zone feature, allowing subscribers to designate a specific location as their home zone. Subscribers in the designated home zone(s) will be able to enjoy preferential tariffs.	S	Readiness / priced option
O04 -256	Home Zone	The subscriber can switch his/her home zones by IVR or any other channel. Alternatively, the home zone can be defined on the package level.	S	Readiness / priced option
O04 -257	Home Zone	The system should support charging for switching home zones.	S	Readiness / priced option
O04 -258	Home Zone	The subscriber can query his/her home zone through any channel.	S	Readiness / priced option
O04 -259	Home Zone	The system must support notification for visiting the Home Zone before the call is connected and end of the call.	S	Readiness / priced option
O04 -260	Home Zone	Home zone preferential tariff can be defined together with other rating factors, like time schema, package.	S	Readiness / priced option
O04 -261	Home Zone	The system shall be able define recurring fee for home zone service, which can be charged according to home zone amount.	S	Readiness / priced option
O04 -262	Home Zone	The system shall define special zones at system level, so all subscribers can enjoy preferential tariff in the specific zone.	S	Readiness / priced option
O04 -263	International Roaming	The system must provide solution for voice call international roaming in online (camel or diameter) and offline mode.	M	Carried from RFI
O04 -264	International Roaming	The system must provide the authority control for subscribers' Voice Call/MO SMS when international roaming.	M	Carried from RFI
O04	International	The system must provide SMS/USSD notifications	M	Carried

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
-265	Roaming	instead of Voice announcements during the international roaming call.		from RFI
O04 -266	International Roaming	The system must support UCB (USSD Call Back) international roaming solution.	M	Carried from RFI
O04 -267	International Roaming	The system must provide solution for SMS international roaming in online(diameter) and offline mode.	M	Carried from RFI
O04 -268	International Roaming	International Roaming MO SMS must be authenticated and charged; it should also support real-time.	M	Carried from RFI
O04 -269	International Roaming	The system must provide solution for GPRS international roaming in online(diameter) and offline mode.	M	Carried from RFI
O04 -270	International Roaming	International Roaming GPRS service must be authenticated and charged real-time.	M	Carried from RFI
O04 -271	International Roaming	The system should support charging International Roaming GPRS service by time or volume.	M	Carried from RFI
O04 -272	International Roaming	The system must provide solution for MMS international roaming in online(diameter) and offline mode.	M	Carried from RFI
O04 -273	International Roaming	International Roaming MMS service must be authenticated and charged real-time.	M	Carried from RFI
O04 -274	CUG	The solution should support define all kinds of CUG group (intra-group, inter-group, off/outside) and member manage(add member, delete member, query). Subscriber can select one or more to join.	M	Carried from RFI
O04 -275	CUG	The system should support Tariff discount for different CUG group. For example, call within CUG group will get x% discount; call outside CUG group will be charged normal rate. Could different between on net and off net.	M	Carried from RFI
O04 -276	VPN service	The solution should support VPN service which adopt hierarchical account structure. It enables the network operator to enable the corporation to pay for the members for network service. Please describe the hierarchy and how many hierarchies and subscribers for one VPN (Community) can be supported.	M	Carried from RFI
O04 -277	VPN service	The Solution should support VPN management including VPN Group Create/delete/modify, Group member add/delete/modify.	M	Carried from RFI
O04 -278	VPN service	The payment and resource share relationship between member and group shall be configured based on service type, time schema and also has the	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		limit control.		
O04 -279	VPN service	The solution shall define preferential tariff or discount for intra-Group/inter-Group call.	M	Carried from RFI
O04 -280	VPN service	The solution also can define Cross group. Cross-group service enables an HQ group customer to set up cross- group relationships with other group customers. All the group members of the group customer can enjoy a preferential tariff or discount for the voice call, SMS, MMS to or from the members belonging to the cross- group.	M	Carried from RFI
O04 -281	VPN service	The system shall enable each HQ group to have its numbering plan. Each group member in the community group can be allocated with a short number. Members in the same community group can dial the short numbers to call each other. The short number shall be defined according to predefined length and prefix.	M	Carried from RFI
O04 -282	VPN service	The solution shall support define super group which include multiple VPN group, any member of the VPN group in the super group can enjoy a preferential tariff or discount for the voice call, SMS, and MMS service to or from another member in different VPN Group.	M	Carried from RFI
O04 -283	MNP	The System shall be able to differentiate on-net and off- net voice calls for local and roaming usage so that different tariffs can be applied. The analysis of on-net and off-net voice calls can be done based on the Routing Number (RN) inserted in front of the B-party number by MSC/STP.	M	Carried from RFI
O04 -284	MNP	The System shall be able to differentiate on-net and off- net SMS local and roaming usage to apply different tariffs. The analysis of on-net and off-net SMS usage can be done based on the Routing Number (RN) inserted in front of the B-party number by SMSC.	M	Carried from RFI
O04 -285	MNP	The System shall be able to differentiate on-net and off- net MMS local and roaming usage to apply different tariffs. The analysis of on-net and off-net MMS usage can be done based on the Routing Number (RN) inserted in front of B-party number by MMSC.	M	Carried from RFI
O04 -286	MNP	The System shall be able to handle all special numbers such as Friends & Family (F&F), and Closed User Group (CUG) correctly even when the number is prefixed with the Routing Number (RN)	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		by the Network Element. For example, the F&F numbers are stored in international format +962791234567 while the B-party number sent from Network Element may or may not contain RN. The Charging & Billing Systems shall be able to analyze the B-party number appropriately and remove the RN before the number is analyzed for rating.		
O04 -287	Notifications	The system shall support abundant status notification as response to a customer-initiated action, Eg: On line notification : First Activation, Prompting low balance(before and after call connection), No balance, Successful recharge , Successful package subscription. Offline Notification : Life Cycle state Change, Subscriber validity expiry warning, package validity expiry warning ,Rental Settelment , Reward.	M	Carried from RFI
O04 -288	Notifications	The system must support real-time and off-line notification. For example: On line notification : First Activation, Prompting low balance(before and after call connection), No balance, Successful recharge , Successful package subscription. Offline Notification: Subscriber validity expiry warning, package validity expiry warning , Life cycle status change, Rental Settelment , Reward.	M	Carried from RFI
O04 -289	Notifications	The system must support automatically splitting SMS notification content if the notification text length reaches the limit (maximum defined in SMPP).	M	Carried from RFI
O04 -290	Notifications	The system should support the configuration of delivery time for offline notification. For example: if the time window is configured as “09:00 to 23:00”, all Offline Notification SMS generated from 23:00 to 09:00 will be delivered at 09:00 to 23:00. The system should support not sending offline SMS within a specific time span like national legal holidays.	M	Carried from RFI
O04 -291	Notifications	The system must support to customize notification content by operator. Customer attributes such as name, gender, balance, validity date & time, account/offering name can be used as the content parameters.	M	Carried from RFI
O04 -292	Notifications	The system must support multiple language of notification.	M	Carried from RFI
O04 -293	Notifications	The system must support notification of low/depletion balance and can set multiple notification thresholds (Max 5) with different notification content.	M	Carried from RFI
O04	Notifications	The system shall support accurate threshold	M	Carried

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
-294		notification. It allows customers to define the notification thresholds of Available free units/Consumption limit.		from RFI
O04 -295	Notifications	The system must support recharge notification. The contents can include the current recharge amount, balance after the recharge, validity period after the recharge, and free resources rewarded.	M	Carried from RFI
O04 -296	Notifications	The system must support notification of first activation.	M	Carried from RFI
O04 -297	Notifications	When account balances of subscribers are about to run out during calls, the system should play a warn tone to notify the subscribers.	M	Carried from RFI
O04 -298	Notifications	The system must support notification of state change of subscriber.	M	Carried from RFI
O04 -299	Notifications	The system must support reward notification.	M	Carried from RFI
O04 -300	Notifications	The system must support the notification of product effective date.	M	Carried from RFI
O04 -301	Notifications	The system must support the notification before x day of product expiry and on the expiry date of product.	M	Carried from RFI
O04 -302	Notifications	The system shall support notifications for balance and validity conditions such as low balance and pocket expiration notifications.	M	Carried from RFI
O04 -303	Notifications	The system shall support notifications for data roaming service when the total data cost of month reaches the limit such as $ 50.	M	Carried from RFI
O04 -304	Notifications	The system should provide the flexibility to edit all types of SMS and USSD notifications through a GUI interface.	M	Carried from RFI
O04 -305	Notifications	In case of mass package expiration/reminder before expiration (e.g. end of year), it shall be possible to manage the sending of SMS in such a way that it will not have impact on SMSC capacity - no huge SMS sending at the same second or even same minute.	M	Carried from RFI
O04 -306	Prepaid Balance Transfer	The system must support transferring balance/bonus/free unit between prepaid accounts (including sub-accounts) of same or different customers.	M	Carried from RFI
O04 -307	Prepaid Balance Transfer	The life cycle status of a subscriber who initiates a transfer request should be authenticated. whether the balance transfer function is available to subscribers is configurable at Brand level, product level or subscriber level. transfer in and transfer out can be	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		control separtely.		
O04 -308	Prepaid Balance Transfer	The operator can set the unit of currency (small or big unit of currency) to be used during transfer balance at system level.	M	Carried from RFI
O04 -309	Prepaid Balance Transfer	The life cycle validity period of transferee's account can be modified during transferring balance. The system shall support three calculation arithmetics as following: 1) New Validity Date = Old validity date + Extended Validity Period. 2) New Validity Date = Current date + Extended Validity Period. 3) New Validity Date = Max (Old validity date, Current date + Extended Validity Period)	M	Carried from RFI
O04 -310	Prepaid Balance Transfer	The operator can set the limit of minimum/maximum balance of the transferor before transferring, and minimum/maximum balance of the transferor after transferring.	M	Carried from RFI
O04 -311	Prepaid Balance Transfer	The operator can set the limit of minimum amount and maximum amount for each transfer.	M	Carried from RFI
O04 -312	Prepaid Balance Transfer	The operator can set the limit of the total amount one subscriber can transfer in every day or month	M	Carried from RFI
O04 -313	Prepaid Balance Transfer	The operator can set the maximum number of times a subscriber can do the transfer in every day or month.	M	Carried from RFI
O04 -314	Prepaid Balance Transfer	The system supports charging for balance transfers.	M	Carried from RFI
O04 -315	Prepaid Balance Transfer	Notification must be sent after successful balance transfer.	M	Carried from RFI
O04 -316	Prepaid Balance Transfer	The system must support subscribers to transfer balance by multiple channels, e.g. IVR/USSD/customer care, the system should provide interface to integrate with different channels.	M	Carried from RFI
O04 -317	Prepaid Balance Transfer	The system must support the transfer of free resource sub-accounts (of the same type) between different customers.	M	Carried from RFI
O04 -318	Prepaid Balance Transfer	Operator can configure extended validity period based on transfer amount.	M	Carried from RFI
O04 -319	Prepaid Balance Transfer	The system supports transfer resources between different subscribers, default the resource will be same type between transferor and transferee. The subscriber can be prepaid or postpaid subscriber.	M	Carried from RFI
O04 -320	Virtual Currency	Proposed solution should provide the virtual currency as a service charging method different from the currency account. The virtual currency can be used for payment in various services such as voice,	S	Readiness / priced option

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		SMS, and data services.		
O04-321	Virtual Currency	Subscribers can obtain the virtual currency during recharge, consumption, and recurring charging.	S	Readiness / priced option
O04-322	Virtual Currency	The system should support the configuration for the conversion rate with each kind of service. For example, when a subscriber uses voice service, virtual currency will be deducted 5units every 60 seconds. When the subscriber uses SMS, virtual currency will be deducted 1unit for a SMS. When the subscriber uses data service, virtual currency will be deducted 2units for every 1MB.	S	Readiness / priced option
O04-323	Virtual Currency	The system directly deducts the virtual currency balance based on configured usage rules.	S	Readiness / priced option
O04-324	Negative Balance	When a prepaid subscriber's account balance is insufficient, the subscriber can temporarily apply for a loan from the Operator to continue service use (for example, important calls or other telecom services).	S	Readiness / priced option
O04-325	Negative Balance	The subscriber must repay the loan by initiating recharge, account adjustment, or transfer.	S	Readiness / priced option
O04-326	Negative Balance	A prepaid subscriber who is allowed to enjoy the loan service must meet the following conditions:; The subscriber is in active state and not loan blacklisted.; The subscriber balance is less than the maximum limit.; The service activity period of the subscriber is more than the period limit.	S	Readiness / priced option
O04-327	Negative Balance	If the authentication fails, the subscriber can receive an SMS notification, and the loan is failed.	S	Readiness / priced option
O04-328	Negative Balance	After the subscriber gets the loan successfully, the subscriber can receive an SMS notification from Operator. The example of SMS content: You have successfully borrowed <LoanAmount>, and you must pay <RepayLoanAmount + RepayLoanPoundage> for the loan before <LoanGraceDate>. Your loan account balance is <Balance>, and the balance will be valid through <expDate>.	S	Readiness / priced option
O04-329	Negative Balance	Subscribers can enjoy the loan service only during configured periods defined by Operator. The system should provide required GUIs for configuring those periods. Operator can configure the service availability periods in the following ways:; The service	S	Readiness / priced option

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		request can be made during a specific month.; The service request can be made during any time only on defined weekdays.; The service request can be made during defined time of a particular weekday.; The service request can be made at any time on any day/days.		
O04-330	Negative Balance	Subscribers must repay the debt within the defined repayment grace period by topping up, transferring, or adjusting the balance. If the amount received through topping up, balance transfer or adjust balance is insufficient for repaying the complete debt, the system uses the complete amount for paying as much debt as possible and reduces the debt amount. After repaying all or part, the system records the loan log and notifies the subscriber through an SMS notification.	S	Readiness / priced option
O04-331	Negative Balance	If a subscriber has multiple loan debts and the amount received through top-up, balance transfer or balance adjustment is not sufficient, the system should repay the loan debt based on system configuration as follow, the system is based on the loan request time in ascending mode by default:; Based on the loan request time in ascending mode: loan first, repay.; Based on the loan debt priority in descending mode. If the loan debt priority values are equal, the system repays based on the debt amount in ascending mode. If the debt amount is equal, the system repays based on the loan request time in ascending mode.; Based on the debt amount in ascending mode. If the debt amount is equal, the system repays based on the loan request time in ascending mode.	S	Readiness / priced option
O04-332	Negative Balance	The system should support loan free units and repay using money.	S	Readiness / priced option
O04-333	Negative Balance	If a subscriber does not repay the complete debt amount before the repayment expiration date, the subscriber will become loan blacklisted. Once a subscriber enters into the loan blacklist state, the system should send a notification to the subscriber to remind the subscriber to repay the outstanding debt. If subscriber repays all complete debt amount, the subscriber will be out from the loan blacklist.	S	Readiness / priced option
O04-334	Negative Balance	The system shall support automatic loan in real time service flow. When a subscriber uses a real-time	S	Readiness / priced

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		service, the system should check whether the subscriber meets the conditions for automatically triggering the loan service if the balance is less than threshold.		option
O04 -335	Other Requirements	The proposed solution should support accurate data charging to improve customer experience for multiple session data sharing scenarios. For multiple data sessions or multiple rating groups in one data session, the reservation for one session can be occupied by another session which reports first during charging, this is first come first serve mode for multiple sessions.	M	Carried from RFI
O04 -336	Other Requirements	The system needs support real time monthly settlement. At the beginning of each bill cycle, the system will start the batch process for charging monthly rental fee and renew the recurring package automatically, so that the postpaid customers can use the new quota from the new cycle. If the postpaid subscriber starts to use the services at the beginning of bill cycle but before the monthly charging, system is able to trigger the month charging for this subscriber immediately, so that, charging the service from balance rather than package quota will be avoided.	M	Carried from RFI
O04 -337	Other Requirements	Accurate online notification should be supported for giving better customer experience for internet surfing. The notification should be triggered immediately when total usage reaches the predefined thresholds.	M	Carried from RFI
O04 -338	Other Requirements	The system should support real time data streaming(Kafka) for charging results, customer profile updating and transaction information.	M	Carried from RFI
O04 -339	Other Requirements	The system should support configuring the fields of real time data streaming message.	M	Carried from RFI
O04 -340	Other Requirements	The system should be able to adjust the granted amount in data service automatically based on following factors:; Subscriber primary offering; Rating group; Network speed; Access network type; Roaming type; Remaining Balance; Remaining free data volume	M	Carried from RFI
O04 -341	Other Requirements	During service usage, recurring charging can preempt the balance reserved for the service session for rental collection. For example, when a subscriber uses the data service, the system reserves a balance of 10, and another balance of 45 available. In this case, recurring	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		charging is triggered to collect a rental of 50. The available balance of 45 is insufficient for the rental. Therefore, the system preempts an amount of 5 from the balance reserved for the data service to complete rental collection.		
O04 -342	Other Requirements	The system must support automatic recharge function (e.g. periodic, or if a balance is too low). The automatic recharge should be based batch file or integrate with 3rd system such as bank	M	Carried from RFI
O04 -343	Other Requirements	Proposed solution should support historical rentals are recalculated if the subscription order is delayed or the historical rentals are renegotiated for 2B business. In the order delayed scenario, rentals can be collected based on the service provisioning time. In the re-negotiation scenario, recurring charge of past can be recalculated.	M	Carried from RFI
O04 -344	Other Requirements	The system shall support re-rating bypass based on specific conditions.	M	Carried from RFI
O04 -345	Other Requirements	Solution should support bypass for all network services including GSM, LTE and 5G.	M	Carried from RFI
O04 -346	Other Requirements	The solution should support flexible bypass based on AVPs in diameter charging process. For example, if a non-international roaming subscriber dials a number starting with 1008 and the call needs to be bypassed, you can set the MSC-Address AVP to start with the country code of the home country and the B-Number AVP to start with 1008. If the prefix of the MSC-Address AVP is 86 and the prefix of the B-Number AVP is 1008, the call is bypassed.	M	Carried from RFI
O04 -347	Other Requirements	Proposed solution should be able to extend attributes for Northbound web service/Restful interface, apply in Tariff Configuration and record the attribute into CDR.	M	Carried from RFI
O04 -348	Other Requirements	The system supports extending rating factors which from SBI or DCC parameter in onsite GUI configuration, apply in tariff configuration and record in CDR.	M	Carried from RFI
O04 -349	Offline Charging / OFCS	Support applicable OFCS functionality and Diameter Rf/offline charging interfaces where required, with correlation to converged charging/billing.	M	Carried from RFI
O04 -350	Offline Charging / OFCS	Offline records shall support completeness controls, deduplication, replay/reprocessing, traceability and reconciliation to prevent missing or duplicate billing.	M	Carried from RFI
O05	General	The system shall be able to support the following	M	Carried

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
-001		billing models:; Individual subscriber under one account and one customer; Multiple subscribers sharing one account under one customer, which can present all the billed amount of all these subscribers into one bill.; Group account, multiple members sharing group account.; It shall be possible to bill all the members within a customer's organization.		from RFI
O05 -002	General	The system shall support split Billing, according to the split rules setting for the specific payer party and charged party, the system shall bill the consumption amount to different accounts. The split rule can be configured based on fee type, payment limit, and effective time.	M	Carried from RFI
O05 -003	General	The system shall support flexible bill arrangement capability, enabling postpaid customers to arrange their fees to generate customized bills. For example, generating one bill statement for customer C which includes multiple subscribers, to check all the consumption fee from all these subscribers.	M	Carried from RFI
O05 -004	General	Besides invoice generation, the system shall support the generation of bill statement for any node of the family or group.	M	Carried from RFI
O05 -005	General	The system shall support invoices containing all charges made during a billing period, including the following items at a minimum:; Customer/Account/Subscriber Information o Customer Information (Gender, Birthday) o Account Information (Contact Information: Bill Address, Name, Title, Email) o Payment Information (Bank Card Number) o Credit Information o Preferred Language for the Bill; Charges o Previous Balance o Balance Forward Brought o New Charges/Current Bill o New Balance/Total Balance; Invoice Id; Bill Cycle Information o Bill Cycle ID o Open Date o End Date o Invoice Date o Due Date; Bill Information o Medium Type o Summary/Itemized consumption information; Subscribers under the Account; Primary offering Information; Customized Content; Aging information; Transactions of Account Receivable system; Free units usage related information	M	Carried from RFI
O05 -006	General	The system shall support bill on-demand, For example, generate the last invoice in contract termination cases.	M	Carried from RFI
O05	General	The system shall support predefined minimum	M	Carried

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
-007		threshold of the invoice amount as a criteria to generate the invoice. Invoices which charge amount is less than the predefined threshold shall not be generated, and the balance shall be rolled over to the next billing cycle.		from RFI
O05 -008	General	The system should support flexible bill cycle:; a month, two months, three months, half a year, a year, a week, or half a month.	M	Carried from RFI
O05 -009	General	The system shall support the start day at any day (1st day to 28th day) of the month for monthly bill cycle.	M	Carried from RFI
O05 -010	General	The system shall be able to create test bill samples manually, which enables the operator to verify the correctness of bill calculation for the specified account. The calculation result of fees of the fee types can be queried on GUI. The charge calculation of test bill is same with the normal bill run. But the final charge result will not be passed to Account Receivable for payment and arrearage management. The test bill result can be queried on interface with PDF format.	M	Carried from RFI
O05 -011	General	The system shall be able to support sample billing ability, the Billing system automatically performs test billing on the accounts that meet the pre-defined sampling rule at the time specified in the sample billing task. After sample billing, the Billing system sends the test billing result to personnel. The conditions of bill sampling should be provided based on:; Specified subscriber list; Specified offering list; Specified account list; Subscriber with Specify Status	M	Carried from RFI
O05 -012	General	Solution must support to create Test Billing Task through Both GUI and API	M	Carried from RFI
O05 -013	General	The system shall support the definition of billing discount plans at the corporate level for bill run processing. The solution shall support for discounts by aggregating the relevant consumption at each level.	M	Carried from RFI
O05 -014	General	The system shall support the billing discount on subscriber level, account level, and group level. The example as following: There is Account A1. There are 3 subscribers (S1, S2, S3) belong to A1. Account A1 purchases a discount billing offeirng, and the service usage of 3 subscribers will enjoy the discount.	M	Carried from RFI
O05 -015	General	The conditions of billing discount can include combinations of the following elements:; Properties of customer, such as birthday, occupation.; Properties	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		of subscriber, such as subscriber status.; Properties of account, such as payment method.; Usage expenditure of one service type, such as voice.; Total usage expenditure.		
O05-016	General	The system shall allow billing discount to be set up on entire invoice amounts, as well as on individual invoice items and their presentation on the invoice.; Min-usage: If a subscriber's expenditure doesn't reach the minimum reference value in one bill cycle, he will be charged with the minimum reference value.; Max-usage: If a subscriber's expenditure is greater than the maximum reference value in one bill cycle, he is to be charged with the maximum reference value and the rest of expenditure is free of charge.; Percentage discount: Subscribers can enjoy a discount such as 10% voice call expenditure, 20% SMS discount or 5% total usage expenditure and so on.	M	Carried from RFI
O05-017	General	The system shall provide the ability to set up flat amount/percentage billing discounts.	M	Carried from RFI
O05-018	General	To significantly reduce bill run time, the system shall employ techniques such as parallel processing in order to provide high-volume processing.	M	Carried from RFI
O05-019	General	The system shall have the ability to support billing tax. The tax configuration could be flexible. Such as: inclusive tax, exclusive tax, multiple types of taxes, tax-on-tax, tax exemption for a specific account.	M	Carried from RFI
O05-020	General	The bill run process should have multiple sub phases. Such as, prepare phase, calculation phase, confirmation phase, bill generation phase, etc. When the operator initiates the bill run, the system shall be able to allow the operator to roll back the bill run processing before bill confirmation.	M	Carried from RFI
O05-021	General	The system shall provide billing statistics showing the number of accounts, records and amount billed.	M	Carried from RFI
O05-022	General	The solution needs to have the ability to distinguish between corporate and consumer subscribers, allowing Operator to apply different business rule based on these classifications.	M	Carried from RFI
O05-023	Bill Formatting	The bill formatting system shall support producing multiple invoice formats and assigning formats to customers based on business rules and customer segments.	M	Carried from RFI
O05-024	Bill Formatting	The bill formatting system should be able to produce invoices in multiple bill medium such as SMS, Paper, and Email. It should support the subscription of bill	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		medium for each customer.		
O05-025	Bill Formatting	The bill formatting system shall enable different types of invoicing components to be distinguished (i.e., usage charges, recurring charges, one-time charges).	M	Carried from RFI
O05-026	Bill Formatting	The system shall support called number masking or conversion in the bill to protect privacy.	M	Carried from RFI
O05-027	Bill Formatting	The bill formatting system shall allow adding marketing message using a GUI and a rule base.	M	Carried from RFI
O05-028	Bill Formatting	The system should support generating summary and detailed itemized bills upon request of customer. The system also can charge customers for detailed itemized bills.	M	Carried from RFI
O05-029	Bill Formatting	The system shall support multiple formats of bills, including: PCL/PDF/TXT/CSV formats at least.	M	Carried from RFI
O05-030	Bill Formatting	The system should provide the ability to query and view bill content.	M	Carried from RFI
O05-031	Bill Formatting	The system should provide the ability to suppress the bill, the policy of suppression should be based on one or combination of the following conditions: 1) Status of the subscriber 2) Outstanding amout after the bill 3) New Charges after the bill	M	Carried from RFI
O05-032	Bill Formatting	The system shall support enterprise bills with the following information at least: 1) All members' consumption detail information and summary information in the enterprise bill. 2) Enterprise account related information.	M	Carried from RFI
O05-033	Accounts Receivable	The system should provide Account Receivable function. The Account Receivable will manage customer's debit charge, advance payment, deposit and other customer information, customer pay by cash, debit card, credit card.	M	Carried from RFI
O05-034	Accounts Receivable	Account Receivable need to provide web service API to external system (e.g. Payment Gateway, E-care). External system (e.g. Payment Gateway, E-care) also can send payment request to the system via the web service API	M	Carried from RFI
O05-035	Accounts Receivable	After payment has been successfully made, the operator can print a receipt for the payment. The receipt content mainly includes Payment Method used and Total Amount of the Payment Methods. The following information is also expected:; Receipt Number; Payment Date; Customer Code; Customer Name; Invoice Paid and Total Amount of the Invoices	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
O05-036	Accounts Receivable	When a customer complains about fees in his invoice, the system should support to operator can verify whether the fees are error and resolve it. During the verifying period, the fees should be pending and should not be collected or charged.	M	Carried from RFI
O05-037	Accounts Receivable	The solution shall enable the dispute of unbilled, billed amount.	M	Carried from RFI
O05-038	Accounts Receivable	The system shall support the deposit management, including the following items:; The customer shall pay deposit for some services, such as international roaming.; The deposit can be taken into the consideration of the credit control.; The deposit can be transferred to the advance payment when the deposit is cancelled.; The system shall calculate the interest of deposit amount when the deposit is released.; The system shall allow the interest rate configuration.; The system shall allow the configuration of the different interest rates for different cycles, such as day, week, month.	M	Carried from RFI
O05-039	Accounts Receivable	Void is the reverse action of payment. If there are some payment errors happened, e.g. input a wrong subscriber number, the operator can void the payment.	M	Carried from RFI
O05-040	Accounts Receivable	Void payment needs supervisor's authorization, asks the supervisor to approve the authorization. After approved, the operator submits the void, and the result will be given immediately, including success or failure, if failure, the result contains the reason.	M	Carried from RFI
O05-041	Accounts Receivable	Adjustment is used to adjust customer's bill charge or account balance. Including CR and DR:; CR means credit. It is to add the adjustment amount to the account.; DR means debit. It is to subtract the adjustment amount from the account.; Single adjustment should be supported, after it has been approved by financial department, Account Receivable will carry out adjustment operation.; Batch adjustment should be supported, adjustment for a batch of subscribers can be done simultaneously by loading an adjustment file.; The main adjustment information of each subscriber should include at least the information below: account code, adjustment amount, adjustment reason, adjustment direction and comment for the adjustment.	M	Carried from RFI
O05-042	Accounts Receivable	Transfer balance is to move money between two accounts. Following transfer scenarios should be	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		supported: 1) End user-initiated transfer request in business hall: Transfer can be done between different accounts of one customer and accounts of different customers. 2) External system / back- office initiate transfer request: External system (e.g. Ecare) can request for transfer, e.g. during postpaid/prepaid switchover, transfer between different accounts will be raised.		
O05 -043	Accounts Receivable	Refund should be supported to return the prepayment to postpaid subscribers when specific service requirements are met. For example, end user want to be deactivated, then the system can refund the prepayment to him. Also, batch refund ability must be supported.	M	Carried from RFI
O05 -044	Accounts Receivable	Write off is the function which processing bad debts for postpaid subscribers. System can add the indication to the bad debt items in account when the arrear has existed for a long time, but the arrear still left in the account.; The write off function should also support batch operation using the uploaded file.; After write off operation, the summary information of the bad debts should be displayed by journal of general ledger. Write off items will be shown with a special G/L code.	M	Carried from RFI
O05 -045	Accounts Receivable	Auto pay is automatic payment in which the carrier raises the payment request for the accounts who applied auto pay of Direct Debit. Before the due date of a bill cyle, the system should be able to create a file including total bill amount for each account who belongs to this bill cycle and has the payment mode of auto pay automatically. After bank has processed the auto pay file, the bank will send response file to the system. And the system will load the response file to settle the bill of related auto pay accounts automatically. The system should provide Direct Debit Logs for operator to query.	M	Carried from RFI
O05 -046	Accounts Receivable	The system supports batch process for the payment file provided by bank or other payment agency. The system will generate new financial transactions and update customer accounts balances according to the payment records from the file.	M	Carried from RFI
O05 -047	Accounts Receivable	In the payment flow, the system supports automatic matching to account or type of balance based on identifier in the input file, if cannot match the identifier, payment will be assigned to 'unallocated	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		payments'.		
O05-048	Accounts Receivable	The system should provide cash register functionality which is used to manage operators' cash income and expenses	M	Carried from RFI
O05-049	Accounts Receivable	The system supports to define specific types of customer or account which will never be charged for late fee (e.g. for VIP account)	M	Carried from RFI
O05-050	Accounts Receivable	When the user fails to pay the bill when exceed the due date time, the system charges additional fees according to the rules, which is usually called late payment. If a subscriber has not paid off the outstanding invoices by the end of a specified period, the carrier can collect late fee based on the carrier policy. The calculation rules of the late fee can be configured.	M	Carried from RFI
O05-051	Accounts Receivable	The solution should support payment reconciliation with the external payment gateway.	M	Carried from RFI
O05-052	Accounts Receivable	When a subscriber applies for refund through the bank account instead of in cash, the system can be connected to a bank or third-party payment gateway to automatically refund the applied amount to the bank account specified by the subscriber	M	Carried from RFI
O05-053	General Ledger	There should be GL system, which can include the date, description, and balance or total amount for each account. It is usually divided into at least seven main categories. These categories generally include assets, liabilities, owner's equity, revenue, expenses, gains and losses. The main categories of the general ledger may be further subdivided into sub ledgers to include additional details (such as cash, accounts receivable, and accounts payable) of such accounts.	M	Carried from RFI
O05-054	General Ledger	There are two types of account book: Journal and Ledger G/L classification items contain:; Asset: In the account receivable system the scope of assert is outstanding amount and all types of payment method such as direct debit, credit card, cash.; Liability: The scope of liability in the account receivable system is advance payment and deposit.; Income: In the account receivable system, the income scope is charged for using service or sale.	M	Carried from RFI
O05-055	General Ledger	G/L shall support the G/L codes based on the specific service charged by the Billing processes.	M	Carried from RFI
O05-056	General Ledger	The operator should be able to configure the mapping of G/L code according to transaction type and transaction parameters, for example:; The G/L	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		code of billing charge is defined by service type, Alternate GL Code is the mapping G/L code for negative billing charge.; The G/L code of adjustment is defined by direction of adjust and adjust reason.; The G/L payment code is defined by payment method and payment target.; The G/L refund code is defined by refund source and type.; The G/L code of transfer is defined by liability type and transfer direction (IN/OUT).; The G/L code of write off is defined by write off reason.		
O05 -057	Rerating	The system should provide the rerating feature for postpaid subscribers in case of wrong tariff configuration/wrong offering subscription.	M	Carried from RFI
O05 -058	Rerating	The solution shall select the CDR to be rerated based on the Service number, Account ID, Customer ID, Primary Package	M	Carried from RFI
O05 -059	Rerating	The solution shall select the CDR to be rerated based on the service type, such as voice, SMS, data.	M	Carried from RFI
O05 -060	Rerating	The solution shall select the CDR to be rerated based on the period.	M	Carried from RFI
O05 -061	Rerating	The solution shall select the CDR to be rerated based on the bill cycle type.	M	Carried from RFI
O05 -062	Debt Collection	Debt Collection shall be capable of automatically initiating dunning processes after due day if the customer does not pay the bill. The due day should be configurable at the bill cycle level. Different bill cycle type can be configured with different due day	M	Carried from RFI
O05 -063	Debt Collection	Debt Collection shall initiate dunning processes based on various parameters, such as customer type, payment method, outstanding amount, etc.	M	Carried from RFI
O05 -064	Debt Collection	Debt Collection shall support to configure different dunning plan for different group of customers.	M	Carried from RFI
O05 -065	Debt Collection	Within a dunning plan, multi and different dunning policys can be configured according the the dunning status. The dunning policy is defined with specific dunning action according to the passed days after due date (intervals in the event of non-payment afer due date)	M	Carried from RFI
O05 -066	Debt Collection	Debt Collection shall support following dunning actions: - Email Notification Send Email to notify the customer. - SMS Notification Send SMS to notify the customer. - Baring Bar all outgoing call. - Suspend Stop all services, include outgoing and incoming. - Termination Delete the customer from the system.	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
O05 -067	Debt Collection	Debt Collection should support to configure red list. The customer in the red list will be excluded from aumatic dunning	M	Carried from RFI
O05 -068	Debt Collection	Debt Collection should support to configure non-dunning date, such as specicial holiday. During non-dunning date, the dunning action will be paused	M	Carried from RFI
O05 -069	Debt Collection	Debt Collection shall enable manually excluding accounts or customers from the initiation of dunning plans for a variable number of days, as well as permanently.	M	Carried from RFI
O05 -070	Debt Collection	Debt Collection shall enable manually dunning customer and recovery from dunning actions through uploading a prepared file.	M	Carried from RFI
O05 -071	Debt Collection	Debt Collection shall allow manual changes to be made to a customer's dunning plan independent of any automated changes.	M	Carried from RFI
O05 -072	Debt Collection	The system shall allow the customer to pay the overdue invoice by arrangement, for example, pay 300 dollar invoice in the next 6 billing cycles, and pay 50 dollar each billing cycle. The system also shall allow the customer to pay the overdue invoice in the promised date in future, for example, pay 300 dollar invoice in 150 days later.	M	Carried from RFI
O05 -073	Currency / Localization	Support Bhutanese Ngultrum (BTN) as primary operational/billing currency and configurable multi-currency processing, exchange rates, rounding and settlement for roaming/interconnect/cross-border arrangements.	M	Carried from RFI
O05 -074	Invoice Localization	Support English and configurable Dzongkha/Unicode customer-facing invoice/statement presentation and templates as required by BT.	M	Carried from RFI
O06 -001	Product catalog	The solution must provide product catalogue function, which provides end to end configuration and management for offering, product, plan and tariff for:; Different subscriber segments, such as individual, family, cooperation; Different networks, such as GSM/WCDMA, LTE, IMS; Different services	M	Carried from RFI
O06 -002	Product catalog	The solution should provide flexibility during configuration. The product catalogue should support GUI and drag & drop based interface configuring offerings, products, tariffs, discounts and promotions.	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
O06 -003	Product catalog	The solution shall support version management for the offering.	M	Carried from RFI
O06 -004	Product catalog	The solution should support lifecycle management for the offering. The lifecycle status includes: 1-Draft 2- Test 3- Release 4- Suspend 5 Retired	M	Carried from RFI
O06 -005	Product catalog	The solution should support to configure policy cycle to control offering rental charge.	M	Carried from RFI
O06 -006	Product catalog	The solution should support to renew the items included in the offering, e.g. accumulator reset, allowance refill.	M	Carried from RFI
O06 -007	Package Management	The solution should be possible to define the price for an offering as: 1- Periodical fee charged at subscription day and every fixed period date (e.g. 1st of month or billing day) with or without prorated calculation. 2- Periodical fee charged on subscription day and on the same day every period after that. (e.g. 25th of every month) 3- Periodical fee can be defined with the following frequency but not limited to daily, weekly, monthly, quarterly or yearly, bill cycle 4 One-time activation fee	M	Carried from RFI
O06 -008	Product catalog	The solution shall allow to configure different recurring amount based on customer information, for example VIP customer the price will be X, other customer will charge Y.	M	Carried from RFI
O06 -009	Package Management	The solution should support to carry over any unused allowance defined in a product to the next validity period (rollover). And the rollover amount should be configured with fixed amount mode or percentage mode. And the expire time for the rollover amount should be configured.	M	Carried from RFI
O06 -010	Package Management	It shall be also possible to not roll over the unused allowance when the rental of the depended offering is not successfully collected.	M	Carried from RFI
O06 -011	Product catalog	The solution shall provide audit log tracking for changes made on the product catalogue, including user information, details of change made, date and time. The log shall be kept in a secure place. Manual changes to the transactions log shall be prohibited.	M	Carried from RFI
O06 -012	Basic Function	The solution shall be configurable to allow priority setting between offerings to address rating priority.	M	Carried from RFI
O06 -013	Product catalog	The solution shall be able to control the life cycle of a Offer configured by a subscriber according to the following statuses but not limited to:; Active; Inactive	M	Carried from RFI
O06	Product catalog	The solution should provide a marketing approach to	M	Carried

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
-014		configure a simple offer that can be fast TTM.		from RFI
O06 -015	Package Management	The solution must support Auto Renewal of Offer if no free unit is available.	M	Carried from RFI
O06 -016	Rating and Charging Function	The solution should support to automatically upgrade the package for a subscriber when the subscriber's package usage reaches the next threshold in the period	M	Carried from RFI
O06 -017	Product catalog	The solution shall support multiple types of units of measure to be used in the rating process. For example:; For voice: second, x-seconds, 1 minute.; For GPRS: bytes, Kbytes, Mbytes, seconds.	M	Carried from RFI
O06 -018	Product catalog	The solution shall have a user-friendly GUI to create and modify tariff, discount, and promotion plans.	M	Carried from RFI
O06 -019	Rating and Charging Function	The proposed solution should support to configure data rating policy based on various service information.	M	Carried from RFI
O06 -020	Product catalog	The solution should define various type of voice accmulator based on service attribute.	M	Carried from RFI
O06 -021	Rating and Charging Function	The solution should support fixed tariff for special number call. For example, each call is 1 dollar to a special number regardless of duration.	M	Carried from RFI
O06 -022	Basic Function	The solution shall support flexible rounding method during charing.	M	Carried from RFI
O06 -023	Basic Function	The solution shall provide flexibility of Accuracy configuration for the tariff plan, and maximum accuracy is 6 digits.	M	Carried from RFI
O06 -024	Product catalog	The solution must support percentage based flat discount (e.g. 5% applied on the total charge)	M	Carried from RFI
O06 -025	Basic Function	The solution must support to provide the flexibility of configuring accumulator-based discount/bonus plan,	M	Carried from RFI
O06 -026	Product catalog	The solution must support cross-product Discounts. These discounts are applied to one charge based on accumulation of charges of another type of usage.	M	Carried from RFI
O06 -027	Product catalog	The solution must provide the flexibility to conffigure various accumulators.	M	Carried from RFI
O06 -028	Product catalog	The solution should provide the flexibility to configure various bonus action.	M	Carried from RFI
O06 -029	Product catalog	The solution shold support to define new versions for the offering when the modification is needed and without having to create new product.	M	Carried from RFI
O06 -030	Product catalog	The solution should support to process late coming CDR's with previous price.	M	Carried from RFI
O06	Product catalog	The solution should support the following batch	M	Carried

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
-031		operation: 1-Batch offering new version 2-Batch offering version release		from RFI
O06 -032	Product catalog	The solution should support the batch offering copy operation.	M	Carried from RFI
O06 -033	Product catalog	The solution should support Configuration Synchronization function. The tested and analyzed price plans built and validated in the test environment can be used without modification in the production system.	M	Carried from RFI
O06 -034	Product catalog	The solution shall be able to support the export of offering into a file in readable format, the offering should be configured in the simple offering template.	M	Carried from RFI
O06 -035	Product catalog	The solution must support to configure vavious OTT offering to speed up the TTM.	M	Carried from RFI
O06 -036	Rating and Charging Function	The solution should support Direct Carrier Billing and Digital content services charging.	M	Carried from RFI
O06 -037	Product catalog	The solution can support the following offering configuration in unified product catalog system:; Individual, family and enterprise offer; Different service: fix line, mobile line.; Prepaid, postpaid and Hybrid	M	Carried from RFI
O06 -038	Basic Function	The solution should comply with standard data models, for example TMF SID data model.	M	Carried from RFI
O06 -039	Package Management	The solution should provide the capability of defining DIY packages for customers. They can select packages based on their consumption preferences.	S	Readiness / priced option
O06 -040	Basic Function	The tariff configuration should support multi-currency.	M	Carried from RFI
O06 -041	Basic Function	The solution should support that the maximal precision of currency exchange support 8 decimal points	M	Carried from RFI
O06 -042	Notification	The solution should support customer Defined Notification to inform themselves according to his actual situation	M	Carried from RFI
O06 -043	Notification	The solution should support delay for the offline notification.	M	Carried from RFI
O06 -044	Product catalog	The solution should support to locking mechanism when the offering/plan is under configuration.	M	Carried from RFI
O07 -001	General	Bidder shall provide a list with references where the solution is implemented. At least 20 reference sites in total, with at least one commercial site has a capacity larger than 2B CDR per day. Specify per reference:; Date of deployment; Capacity; Bidder of Core	Info	Evaluation information only; not contractual

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		Network		
O07-002	General	The proposed solution should support cluster or 1+1 for high availability and Ger-redundancy. The bidder should offer capacity of 4B CDR per day per production site (2 production sites).	Info	Evaluation information only; not contractual
O07-003	General	The proposed system should be easy and simplified to configure the new workflow with a friendly GUI.	M	Carried from RFI
O07-004	General	The proposed system should support the input/output file size control mechanism. For example, split large files into small sizes.	M	Carried from RFI
O07-005	Collection	The proposed system should collect CDR files from the network elements (i.e. MSC, SMSC, MMSC, and others) and make the data available for further business processing.	M	Carried from RFI
O07-006	Collection	The proposed system should connect with NEs through FTP/SFTP for data retrieving.	M	Carried from RFI
O07-007	Collection	The proposed system should define collection configuration. The NEs can be defined as data sources with the following attributes:; IP address; Username; Password; Remote directory; Processing mode of remote files after collection; Backup directory	M	Carried from RFI
O07-008	Collection	The proposed system should collect files in the root directory. The sub directories are disregarded. The recursive mode should also be supported in all sub directories recursively.	M	Carried from RFI
O07-009	Collection	The proposed system should handle the files in the following modes after files are collected from an NE.; Deletion; Backup; File renaming; No processing on a raw CDR after the collection	M	Carried from RFI
O07-010	Collection	The proposed system should support compress/decompress file in multiple formats in collection including .z, .zip and .gz file according to downstream/upstream system's capability. Also, it can invoke external script to trigger compress/decompress application to support other formats.	M	Carried from RFI
O07-011	Collection	The proposed system should support the following last-file collection policies to prevent collection files being written by NEs:; Not collecting the last file; Delaying the collection of the last file; The system can scan multiple levels of directories (if any) on an NE simultaneously.; The system supports the sorting of files to be collected by file name or modification	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		time and collects files in the sequence generated after sorting.; The system can report an alarm when files are stacked on an NE (the maximum number of stacked files is configurable) or when no file is available for a period of time (configurable) on an NE.		
O07 -012	Collection	The proposed system should set period parameter in the collection. The collection process can be scheduled in the following modes:; Every x seconds (x >= 60) between the start time and end time; Specified date and time, such as 10:00; Specified duration from the start time to the end time.	M	Carried from RFI
O07 -013	Collection	The system should support operators configure regular expressions to specify files and directories to be collected by Mediation.	M	Carried from RFI
O07 -014	Collection	The proposed system should recover collection link when the collection system may be disconnected from NEs. The recovery time can be set.	M	Carried from RFI
O07 -015	Collection	Backup files on the same server that we collect the files from on specific path.	M	Carried from RFI
O07 -016	Collection	The proposed system should support Prio-sorting collection (FIFO based on the file name) for example: CHARGINGCDR-HQOCC3-<PRIONO:1>- <PRIONO:2>-<PRIONO:3>.ber where original file name is CHARGINGCDR-HQOCC3-230601-0017-48945.ber	M	Carried from RFI
O07 -017	Decoding	The proposed system shall provide method to decode the CDR format, such as:; FixLen TXT; VarLen TXT; Key- Value; FixLen Binary; VarLen Binary; ASN.1; TLV; XML; Block; AMA	M	Carried from RFI
O07 -018	Decoding	The data processing rules can be easily extended through GUI tool.	M	Carried from RFI
O07 -019	Decoding	The proposed system should support using TAP3.9, TAP3.10, TAP 3.11, TAP3.12, CIBER 2.5, and NRTRDE2.1, as exchange data format with roaming partners for international roaming usage.	M	Carried from RFI
O07 -020	Decoding	The proposed system should decode a large file in batches or decode multiple small files simultaneously.	M	Carried from RFI
O07 -021	Decoding	System resources may be overly used if the Mediation reads all content of a large file for decoding. Instead, Mediation decodes the content in batches for better decoding performance.	M	Carried from RFI
O07 -022	Decoding	The proposed system should discard the corrupted CDR only and continue processing the rest of file.	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
O07 -023	Decoding	The proposed system should have the ability to decode the file and convert it to ascii format as is ,then archive it.	M	Carried from RFI
O07 -024	Decoding	The proposed system should process decoding exceptions in either of the following modes:; Entire-file exception processing; Partial exception processing	M	Carried from RFI
O07 -025	Validation	The proposed system should validate CDR at the record level. Rule scripts can support the following validation functions:; Value validity; Missing-field verification; Blank-field verification; Time validity verification; Long- call-duration CDR verification; Field length verification; IP address format verification; CDR sequence number verification; Verification of file header and trailer information	M	Carried from RFI
O07 -026	Validation	The proposed system should convert CDRs in a rule-based component. The rule script can be configured. The commonly used conversion logics include the following:; Field type conversion; Field enrichment; Field revising; Field deletion; Reference data query	M	Carried from RFI
O07 -027	Filtration	The system shall allow the user to configure filtration rules from GUI.	M	Carried from RFI
O07 -028	Filtration	The proposed system should filter CDRs on the filtering rule script. The rule script can be configured. The commonly used filter rules contain the following:; Uncompleted and abandoned calls.; Calls whose durations are within a specified minimum value.; Calls whose durations exceed a specified maximum value.; Calls from number A (configurable).; Calls to number B (configurable).; Tele- service type, the proposed system should process CDRs as: Save the CDRs to file; discard CDRs.; Other extended condition based on configurable rules.	M	Carried from RFI
O07 -029	Duplicate Checking	The system shall check duplication at xDR file level. The system shall ensure no duplicate files are moved downstream system for further processing.	M	Carried from RFI
O07 -030	Duplicate Checking	At such occurrence, system shall generate alert for operator, transfer such files into temporary location with appropriate naming convention.	M	Carried from RFI
O07 -031	Duplicate Checking	Due to time difference of the switches, same xDRs produced by different switches may have time difference. System shall have provision to configure for and detect such duplicate xDRs.	M	Carried from RFI
O07	Duplicate Checking	When duplicate is detected at records level, such	M	Carried

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
-032		records shall be stored separately while rest of the records inside the file should be continue the process normally. Appropriate error logs shall be generated and stored.		from RFI
O07-033	Duplicate Checking	The proposed system should check duplicated CDRs based on the key index fields to ensure accuracy. The duplication check duration and the key fields in a duplication check can be configured. The commonly duplication features:; Checking duplicated CDRs in one or more files; Checking fully duplicated CDRs; Configuring duplicate keys; DE duplicates CDRs in fuzzy mode; Could support clear the duplicated CDRs or configure the subsequent storing mechanism.	M	Carried from RFI
O07-034	Splitting, Combination&Correlat	The proposed system should divide one input CDR into multiple output CDRs based on split rules. For example, a CFW CDR can be split into a MOC CDR and a MTC CDR in sequence. The values of the fields in the output CDRs are the converted values of the fields in the input CDR.	M	Carried from RFI
O07-035	Splitting, Combination&Correlat	The proposed system should support configure split rules to specify how CDRs are split.	M	Carried from RFI
O07-036	Splitting, Combination&Correlat	The proposed system should combine the partial CDRs into one integrated CDR when a call lasts for a long time, or a charging parameter changes during a session.	M	Carried from RFI
O07-037	Splitting, Combination&Correlat	The proposed system should support flexible combination timeout policies when combination. The mode of outputting the bill after the timeout of the bill is reached includes the following options:; Output-Single: All overtime bills are forcibly merged into one bill record for output. Output- Multi: All overtime bill records are not merged and output directly.; Output-Multi: All overtime bill records are not merged and output directly.; Output-Partial:Sort the overtime bills, and merge the bills with consecutive serial numbers.	M	Carried from RFI
O07-038	Splitting, Combination&Correlat	Correlation refers to grouping or associating set of usage data together from different sources. It shall according to the BSS charging request applications which require data from different sources but need the information to be accessible from a single source. Correlation helps service partner not to double charge the subscriber for single usage.	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
O07-039	Splitting, Combination&Correlat	The following detail features are sought:; The system shall choose common fields to correlate usage data. These common fields shall depend upon the business rules defined through GUI interface or configuration files.; Usage data from each site/device shall be associated according to these key fields and shall combine into a single record representing usage from both sources.; If usage data records from related data sources are not available at the same time, the records shall be stored in temporary files until they are available or storage period exceeds the maximum holding time.	M	Carried from RFI
O07-040	Splitting, Combination&Correlat	The proposed system should support flexible correlation timeout policies when combination.Output mode used when the correlation times out.; MergeOut: All timeout CDRs are forcibly combined into one CDR for output. OrigCdrOut:; OrigCdrOut: All timeout CDRs are directly provided as output CDRs without correlation. The default value is MergeOut.	M	Carried from RFI
O07-041	Splitting, Combination&Correlat	The proposed system should correlate the CDRs generated on the different NEs involved in a call or a session as one CDR based on correlation rules.	M	Carried from RFI
O07-042	Splitting, Combination&Correlat	The proposed system should support correlate the CDRs in fuzzy mode.	M	Carried from RFI
O07-043	Distribution	The proposed system should upload the normalized CDR to the downstream processing systems according to pre- defined output format. For example, only billable CDRs need to be sent to retail Billing system, the settlement CDRs need to be sent to interconnect system, and all the data will be sent to Data Warehouse system.	M	Carried from RFI
O07-044	Distribution	The proposed system should support the NormalUpload mode,NormalUpload mode and Upload Error Block mode to choose whether to skip faulty downstream system when an upload error occurs and continue uploading files to the next downstream system.; NormalUpload is: When an error occurs, the ComUploading stores the files whose upload fails to a temporary directory, inserts the files to the file table, and continues uploading files to the next system.; Upload Skip Error is: When an error occurs, the ComUploading skips the system that encounters the error and continues uploading	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		files to the next system. The ComUploading does not execute any operation in the system that encounters the error.; Upload Error Block is: The program exits if the upload fails and deletes all uploaded files on all remote systems.		
O07 -045	Distribution	The proposed system should define output file name in the following formats:; Current processing time in the yyyymmddhhmiss format; Sequence number; Original filename from an NE; Merge of the above	M	Carried from RFI
O07 -046	Distribution	The proposed system should support multiple control modes for uploading files.; Clock: Files are uploaded at a specified time.; Cycle: Files are uploaded periodically.; Timespan: Files are uploaded in a specified period.	M	Carried from RFI
O07 -047	Distribution	The proposed system should support to use regular expressions to filter files to be distributed.	M	Carried from RFI
O07 -048	Distribution	The proposed system should support multiple modes of storing local files as follows:; Concentrate: All local files are stored in one directory in the Local File Backup Path parameter.; DispatchDate: Local files are stored by upload date. If a subdirectory exists in the source directory, the system creates a subdirectory in the directory named after the upload date and backs up local files in the created subdirectory; RelativePath: Local files are stored based on the directory structures of the source directory.	M	Carried from RFI
O07 -049	Distribution	The proposed system should support to indicate whether Service System is valid. This parameter controls whether CDRs are uploaded to the Service System by corresponding progress.	M	Carried from RFI
O07 -050	Distribution	Setting post-fix & prefix for the files when distributing to local disks to be collected by another collector or when distributing to the downstream system.	M	Carried from RFI
O07 -051	Business Rule Configuration	The Mediation Solution shall provide method to configure the procedure for processing the services, include:; Converts the CDR format; Filters the CDRs; Distributes the CDRs; Validate the CDRs; Eliminates the duplicated CDRs; Aggregate the CDRs; Correlate the CDRs	M	Carried from RFI
O07 -052	Business Rule Configuration	The Mediation Solution shall provide visual GUI interface for user to create a data flow using a template, such as collecting, CDR formatting and distribution. Operators can use these templates to	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		quickly configure services for sites.		
O07 -053	Business Rule Configuration	When configuring services flow for a site, operators can select a service configuration template and instantiate the template to complete the site service configuration.	M	Carried from RFI
O07 -054	Business Rule Configuration	The Mediation Solution shall provide visual GUI interface for user to configure parameters in Collection, CDR formatting and Distribution service flows, like collection source, destination, decoders, encoders and format rules in these service flows.	M	Carried from RFI
O07 -055	Business Rule Configuration	The modification of any parameters in the service flows shall take effect at once, but no need restarts the service flow.	M	Carried from RFI
O07 -056	Business Rule Configuration	The Mediation solution shall provide the function that tracing each step's process information in data flow for selected file with GUI interface.	M	Carried from RFI
O07 -057	Business Rule Configuration	The proposed system should support set different project and the access privilege that can be differentiate between different projects with super-user account, so that only the authorized user can access the project related data including reference data, error CDR reprocess job, monitor jobs and data flow configuration.	M	Carried from RFI
O07 -058	Business Rule Configuration	The proposed system should support the capability to debug the CDR processing flow, it is available to show the input and output files of each process node of the flow.	M	Carried from RFI
O07 -059	Business Rule Configuration	The proposed system should support version management, user can import/export/rollback the version of the configuration of the CDR processing flow and business rules.	M	Carried from RFI
O07 -060	Business Rule Configuration	The proposed system should be able to query reference data tables during the filtration process or inside the business logic	M	Carried from RFI
O08 -001	Project Deployment	The vendor should have 30 successful launched projects with online charging& billing system worldwide per year at last 3 years. Specify per reference: • Carrier name • Capacity • Date of deployment • Existing systems provided by which vendor • Core Network and CRM vendor	Info	Evaluation information only; not contractual
O08 -002	Success Cases	The vendor must have more than 10 success stories in APAC region of online charging& billing system.	Info	Evaluation information only; not contractual

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
O08-003	Local Presence	The vendor must have a local office if Bhutan with responsible personnel.	Info	Evaluation information only; not contractual
O08-004	Charging Cases	The vendor must have a contribution to the global 5G charging standards, and more than 10 5G SA charging cases.	Info	Evaluation information only; not contractual
O08-005	5G SA Capability	The system can upgrade to support 5G SA smoothly without migration. (Reference should be provided if committed to support to upgrade)	Info	Evaluation information only; not contractual
O09-001	PCRF/PCF	The Vendor shall indicate the compliance to convergent architecture.	M	Carried from RFI
O09-002	PCRF/PCF	The Vendor shall support PCRF and PCF convergence in software and hardware.	M	Carried from RFI
O09-003	PCRF/PCF	The Vendor shall support one convergence VNF(PCRF/PCF) be access agnostic with any combination mix of 2G/3G/4G/5G and Fix network.	M	Carried from RFI
O09-004	PCRF/PCF	The proposed solution shall include FE (Front end) and BE (Back end): - The FE role as PCRF and PCF which can process 2G/3G/4G/5G and Fix signaling and do policy decision. - The BE role as SPR and UDR which store and manage the 2G/3G/4G/5G and Fix user profiles	M	Carried from RFI
O09-005	PCRF/PCF	The proposed solution shall be convergent which can support 3/4/5G simultaneously.	M	Carried from RFI
O09-006	PCRF/PCF	The proposed solution shall support user share same profile on 2G/3G/4G/5G and fix network.	M	Carried from RFI
O09-007	PCRF/PCF	The proposed solution shall allow provisioning system call single API command manage 2/3/4/5G and fix user.	M	Carried from RFI
O09-008	PCRF/PCF	The proposed solution shall support existing 2/3/4G user upgrade to 5G SA without IMSI/IMSDN/Package change.	M	Carried from RFI
O09-009	PCRF/PCF	The proposed solution shall support converged policy for 2G/3G/4G/5G and fix network. End user can through one package enjoy convergence policy: - 5G user in 2G, 3G, 4G and 5G coverage have different policy. - 4G user in 2G, 3G, 4G and 5G coverage have different policy. - 2/4G user in 2G, 3G coverage has different policy.	M	Carried from RFI
O09	PCRF/PCF	The proposed solution shall support "single IP"	M	Carried

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
-010		feature that simplify interworking configuration. - All VMs in the VNF share the same logical interface IP to connect with the peer node. - Please indicate whether the following interfaces support single IP: Gx, Rx, Sy, N5, N7, N15, N28		from RFI
O09 -011	PCRF/PCF	The proposed solution shall support single IP access for signaling whatever the capacity.	M	Carried from RFI
O10 -001	PCRF/PCF	The proposed PCF VM/Module/process unit shall support N-way	M	Carried from RFI
O10 -002	PCRF/PCF	The proposed solution shall support highly reliable cloudified design with VM level redundancy mechanism, including 1+1 Active-standby, 1+1 Active-active, N-way load sharing.	M	Carried from RFI
O11 -001	PCRF/PCF	The proposed solution shall support 66M concurrent IP- CAN Sessions and 160M static subscribers of single node.	M	Carried from RFI
O11 -002	PCRF/PCF	The proposed solution shall support at least 200,000 TPS (Transaction per second) shall be supported.	M	Carried from RFI
O11 -003	PCRF/PCF	The proposed solution shall support 1 Global site and 4 Local sites working as one logic NE.	M	Carried from RFI
O11 -004	PCRF/PCF	The proposed solution shall support one logic networking 330M PDP,800M Subs and 1,000,000 TPS capacity through the Global-Local structure.	M	Carried from RFI
O12 -001	PCRF/PCF	The proposed solution reliability capability must larger than 99.999%	M	Carried from RFI
O12 -002	PCRF/PCF	The proposed solution shall avoid the service impact caused by single component failure, such as VM, blade, etc.	M	Carried from RFI
O12 -003	PCRF/PCF	The proposed solution shall support Disc Array Bypass. That means even if all the Disc Array are failed, the service cannot be interrupted.	M	Carried from RFI
O12 -004	PCRF/PCF	The proposed solution shall support geographic redundancy, the PCF/FE share support below modes: -1+1 Active- Standby -1+1 Active-Active - N* (1+1 Active-Standby) - N+M Load Sharing	M	Carried from RFI
O12 -005	PCRF/PCF	The proposed solution shall support geographic redundancy, the PCF/BE share support below modes: -1+1 Active- Standby -1+1+1 Active-Standby-Standby	M	Carried from RFI
O12 -006	PCRF/PCF	The proposed solution shall to ensure reliable data storage and efficient data reading and writing: -The solution shall synchronize all data in two or three geographic redundancy site BEs automatically. -The vendor shall state the replication mechanism within	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		the database for inter-site and intra-site replication (synchronous/asynchronous)		
O12-007	PCRF/PCF	The proposed solution shall support redundancy data backup to restore the data base when active and standby site is effected by dirty data.	M	Carried from RFI
O12-008	PCRF/PCF	The proposed UDR shall support Multi-Level Data Backup Mechanisms. The multi-level data backup is implemented as follows: -Level 1 backup: The subscriber data is stored in the memories of VMs. Multiple VMs constitute a cluster. All the VMs in a cluster store the same subscriber data. Each cluster consists of a master node and several slave nodes. The master node can modify and query data, whereas the slave nodes can only query data. The data stored in the master node is synchronized to the salve nodes in real time. -Level 2 backup: The subscriber data stored in the memories of VMs is backed up to the virtual memory in disk array. -Level 3 backup: The subscriber data stored in the memories of VMs is backed up to the 3rd party storage.	M	Carried from RFI
O12-009	PCRF/PCF	The proposed PCF/UDR shall support backup of system configuration data to local disk.	M	Carried from RFI
O12-010	PCRF/PCF	The proposed PCF/UDR shall support backup of subscriber data to local disk.	M	Carried from RFI
O12-011	PCRF/PCF	The proposed PCF/UDR shall support backup of policy data to local disk.	M	Carried from RFI
O12-012	PCRF/PCF	The proposed PCF/UDR shall support backup of provisioning commands log to local disk.	M	Carried from RFI
O12-013	PCRF/PCF	The proposed PCF/UDR shall support backup the database in db files periodically to local disk.	M	Carried from RFI
O12-014	PCRF/PCF	The proposed PCF/UDR shall support backup of system configuration to external backup system via FTP/SFTP interface.	M	Carried from RFI
O12-015	PCRF/PCF	The proposed PCF/UDR shall support backup of subscriber data to external backup system via FTP/SFTP interface.	M	Carried from RFI
O12-016	PCRF/PCF	The proposed PCF/UDR shall support backup of policy data to external backup system via FTP/SFTP interface.	M	Carried from RFI
O12-017	PCRF/PCF	The proposed PCF/UDR shall support backup of provisioning commands log to external backup system via FTP/SFTP interface.	M	Carried from RFI
O12-018	PCRF/PCF	The proposed PCF/UDR shall support backup the database in db files periodically to local disk.	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
O12-019	PCRF/PCF	The proposed PCF/UDR shall support automatic backup all the data. The backup period can be configured as hours/day/week/month.	M	Carried from RFI
O12-020	PCRF/PCF	The proposed PCF/UDR shall support manually backup all the data.	M	Carried from RFI
O12-021	PCRF/PCF	The proposed PCF/UDR shall support backups procedures has no any impact on system performance, capacity, logs and counters collection, signaling.	M	Carried from RFI
O12-022	PCRF/PCF	The proposed PCF/UDR shall support restore the database by assigned data type, such as policy data, provisioning delta data and dynamic data.	M	Carried from RFI
O12-023	PCRF/PCF	The proposed PCF/UDR shall support cross geo-redundancy data restore without service impact: - When all nodes in same site are fails, after recover, the node can automatically restores data from the geo-redundancy master node in the same cluster. - Allow operator manually restore node data from geo-redundancy master node in the same cluster.	M	Carried from RFI
O12-024	PCRF/PCF	The proposed PCF/UDR shall support corss geo-redundancy data restore without service impact: - When all nodes in same site are fails, after recover, the node can automatically restore data from the geo-redundancy master node in the same cluster. -Allow operator manually restore node data from geo-redundancy master node in the same cluster.	M	Carried from RFI
O12-025	PCRF/PCF	The proposed PCF/UDR shall support restore the database from VM Disks backup file.	M	Carried from RFI
O12-026	PCRF/PCF	The proposed PCF/UDR shall support restore the database from external backup system backup file via FTP/SFTP interface.	M	Carried from RFI
O12-027	PCRF/PCF	The proposed PCF/UDR shall support restore the database from specified backup files.	M	Carried from RFI
O12-028	PCRF/PCF	The proposed PCF/UDR shall support restore the database from specified time.	M	Carried from RFI
O12-029	PCRF/PCF	The proposed solution shall support session backup. The one PCRF/PCF breakout should not request session recall.	M	Carried from RFI
O12-030	PCRF/PCF	The proposed solution shall support backup Gx Session.	M	Carried from RFI
O12-031	PCRF/PCF	The proposed solution shall support backup Rx Session.	M	Carried from RFI
O12-032	PCRF/PCF	The proposed solution shall support backup Sy Session.	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
O12-033	PCRF/PCF	The proposed solution shall support backup Sd Session.	M	Carried from RFI
O12-034	PCRF/PCF	The proposed solution shall support backup N7 Session.	M	Carried from RFI
O12-035	PCRF/PCF	The proposed solution shall support backup N5 Session.	M	Carried from RFI
O12-036	PCRF/PCF	The proposed solution shall support backup N15 Session.	M	Carried from RFI
O12-037	PCRF/PCF	The proposed solution shall support backup N28 Session.	M	Carried from RFI
O12-038	PCRF/PCF	The proposed solution shall support backup N23 Session.	M	Carried from RFI
O12-039	PCRF/PCF	The proposed solution shall support sync all the backup session between geo-redundancy sites.	M	Carried from RFI
O12-040	PCRF/PCF	The proposed solution shall provide high reliability for VoLTE: -The proposed solution shall should be deployed in geography redundancy mode. -Even one PCRF/PCF was failure, another site can process new VoLTE sessions and existing VoLTE sessions normally. Please describe the procedure in details for these scenarios.	M	Carried from RFI
O12-041	PCRF/PCF	PCF support to upgrade without stop provision	M	Carried from RFI
O12-042	PCRF/PCF	PCF support to expand VM without stop provision	M	Carried from RFI
O12-043	PCRF/PCF	The proposed PCF and UDR shall support flow control mechanism. Please describe the detail flow control mechanism.	M	Carried from RFI
O12-044	PCRF/PCF	The proposed solution shall designed with the self-protection flow control function to ensure that the service runs stably and provides optimal service capability even in the case of overload: -The self-protection flow control can trigger by CPU Usage and message delay -The Diameter interface(e.g. Gx, Rx) support the self-protection flow control -The Diameter interface self-protection flow control start and end threshold shall be configurable -The HTTP interface(e.g. N7, N15) support the self-protection flow control -The HTTP interface self-protection flow control start and end threshold shall be configurable -The provisioning interface(SOAP) support the self-protection flow control -The provisioning interface self-protection flow control start and end threshold shall be configurable	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
O12-045	PCRF/PCF	The self-protection flow control function shall support drop message by service type. When flow control happened, the system discards messages based on their priorities in ascending order until it runs in the fully loaded state: -VoLTE session message have the highest priority than Data session message. -The messages priority sequence: termination/deregistration messages > update messages >registration/initialization messages.	M	Carried from RFI
O12-046	PCRF/PCF	The proposed solution shall support FE-BE Collaborated Flow Control. The FE can detect the BE load status, once the BE overload, the FE can reduce the number of requests sent to BE to reduce the load of the BE.	M	Carried from RFI
O12-047	PCRF/PCF	The proposed solution shall support office direction flow control: allow set max allow received message TPS for one or multiple PCEF/AF/TDF/DAR peer.	M	Carried from RFI
O13-001	PCRF/PCF	The content of SMS message shall be configurable.	M	Carried from RFI
O13-002	PCRF/PCF	The content of email shall be configurable.	M	Carried from RFI
O13-003	PCRF/PCF	The PCRF should support to specify the receiver of notifications in the share group.	M	Carried from RFI
O14-001	PCRF/PCF	The proposed PCF shall support Gx and N7 can trigger Sy to OCS, can make sure when PCRF evolution to PCF don't request OCS move to CHF.	M	Carried from RFI
O14-002	PCRF/PCF	The proposed PCF shall support Gx and N7 can trigger N28 to CHF. After OCS evolution to CHF, all the users can use the 5G SA interface.	M	Carried from RFI
O14-003	PCRF/PCF	It shall be possible to enforce policies based on subscriber spending limits. The CHF shall maintain policy counter(s) to track spending for a subscription. These policy counters must be available in the CHF prior to their use over the N28 interface.	M	Carried from RFI
O14-004	PCRF/PCF	The PCF shall request information regarding the subscriber's spending from the CHF, to be used as input for dynamic policy decisions for the subscriber, using subscriptions to spending limit reports. The CHF shall make information regarding the subscriber's spending available to the PCF using spending limit reports.	M	Carried from RFI
O15-001	PCRF/PCF	The proposed NSA PCRF/PCF solution shall support extended QoS to provide up to 20Gbps per	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		user capability.		
O15 -002	PCRF/PCF	The proposed NSA PCRF/PCF solution support: Determines whether a UE accesses a 4G network or 5G NSA network and provide different policy and charging for 4G and 5G NSA.	M	Carried from RFI
O15 -003	PCRF/PCF	Support to deliver the personal UE Logo for 4G/5G NSA)/AMF (5G SA) user	M	Carried from RFI
O15 -004	PCRF/PCF	The solution shall support quota sharing for all the users in the network when multiple PCF sites deploy.	M	Carried from RFI
O15 -005	PCRF/PCF	The solution should support at least 50,000 subscribers share one quota.	M	Carried from RFI
O16 -001	PCRF/PCF	The Vendor proposed solution should at least have more than 20 5G SA commercial case	Info	Evaluation information only; not contractual
O16 -002	PCRF/PCF	The Vendor proposed solution should at least have more than 50 cloud commercial case	Info	Evaluation information only; not contractual
O16 -003	PCRF/PCF	The Vendor proposed solution should have commercial case which one node servers for more than 66M PDP/120M subs delivery mode	Info	Evaluation information only; not contractual
O17 -001	AAA Architecture	Support centralized AAA capability and/or seamless integration with BT existing AAA infrastructure for applicable access domains.	M	Carried from RFI
O17 -002	Protocols	Support RADIUS and Diameter as applicable, including authentication, authorization and accounting flows. delivery mode	M	Carried from RFI
O17 -003	Authorization	Authorize service access using subscriber, product, entitlement, policy and service-profile information.	M	Carried from RFI
O17 -004	Accounting	Support session start/stop/update and interim accounting records with configurable intervals.	M	Carried from RFI
O17 -005	Session Control	Support simultaneous-session controls, session limits, timeout/retry and duplicate-record handling.	M	Carried from RFI
O17 -006	Profile Assignment	Support configurable authorization attributes and service/profile assignment.	M	Carried from RFI
O17 -007	Provisioning Integration	Integrate with unified Provisioning & Service Orchestration so activation, modification, suspension, resumption and termination are reflected consistently.	M	Carried from RFI
O17 -008	BSS Integration	Integrate with CRM/Order, Product Catalogue, OCS/Charging, PCRF/PCF, subscriber repositories and relevant access platforms.	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
O17-009	Reconciliation	Provide accounting reconciliation and exception handling between AAA and downstream delivery mode charging/billing/mediation as applicable.	M	Carried from RFI
O17-010	HA/Scalability	Provide HA, geo-redundancy where selected, capacity/TPS/session sizing, overload protection and failover behaviour.	M	Carried from RFI
O17-011	O&M	Provide centralized monitoring, alarms, logs, performance counters, audit trails and NMS/SIEM integration.	M	Carried from RFI
O17-012	Migration/Coexistence	Describe migration/coexistence approach with BT existing AAA and cutover/rollback method.	M	Carried from RFI
O17-013	Commercial	Clearly state whether AAA is supplied or existing BT AAA is retained; all required licences/integration/support costs shall be included in TCO.	M	Carried from RFI
Q-001	Provisioning	One centralized enterprise provisioning and service orchestration platform shall serve all applicable BT services; siloed target provisioning platforms are not acceptable unless technically unavoidable and explicitly approved by BT.	M	Carried from RFI
Q-002	Provisioning	Coverage shall include mobile, fixed-line, broadband/DSL, FWA/AirFiber, leased- line/BT Fiber, enterprise, IoT, IPVPN, domain, VAS and other contracted services.	M	Carried from RFI
Q-003	Provisioning	Support complete Order-to-Activate lifecycle from validated order receipt through decomposition, technical validation, orchestration, provisioning, activation confirmation and order completion.	M	Carried from RFI
Q-004	Provisioning	Support activation, modification, suspension, resumption, barring/unbarring, migration and deactivation/termination.	M	Carried from RFI
Q-005	Provisioning	Use Product & Service Catalogue technical mappings and service/resource information to translate commercial orders into technical actions.	M	Carried from RFI
Q-006	Provisioning	Provide configurable workflow orchestration, dependency/sequence management and parallel execution.	M	Carried from RFI
Q-007	Provisioning	Support synchronous and asynchronous interfaces, callbacks and status notifications.	M	Carried from RFI
Q-008	Provisioning	Provide configurable timeouts, automatic retry, backoff, idempotency and duplicate- request protection.	M	Carried from RFI
Q-009	Provisioning	Provide rollback/compensation for failed multi-step provisioning and prevent partial/inconsistent service	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		states.		
Q-010	Provisioning	Provide controlled manual-intervention queues for failed, pending and partially completed transactions.	M	Carried from RFI
Q-011	Provisioning	Support scheduled and on-demand reconciliation between intended BSS/OSS service state and actual network- provisioned state.	M	Carried from RFI
Q-012	Provisioning	Maintain end-to-end status visibility at order, service and individual provisioning- step level.	M	Carried from RFI
Q-013	Provisioning	Integrate with HLR/HSS/UDM, IMS, IN/OCS/CHF, PCRF/PCF, AAA/RADIUS, DPI and other applicable mobile/core network functions.	M	Carried from RFI
Q-014	Provisioning	Integrate with fixed/broadband/FWA/enterprise access platforms and applicable EMS/NMS/network elements.	M	Carried from RFI
Q-015	Provisioning	Integrate with CRM/Order Management, Product Catalogue, charging/billing, service/resource inventory and relevant BSS/OSS systems.	M	Carried from RFI
Q-016	Provisioning	All required provisioning APIs, connectors and adapters for contracted services shall be included in baseline cost/TCO without later per-endpoint or enablement charge.	M	Carried from RFI
Q-017	Provisioning	Architecture shall be extensible so new services/network targets can be added through reusable/configurable adapters/workflows without a separate provisioning platform.	M	Carried from RFI
Q-018	Provisioning	Support Straight-Through Processing (STP)/zero-touch provisioning for standard service orders.	M	Carried from RFI
Q-019	Provisioning	Support bulk provisioning and mass changes with validation, approval, throttling, progress monitoring and error handling.	M	Carried from RFI
Q-020	Provisioning	Support service/resource reservation, assignment and release where applicable.	M	Carried from RFI
Q-021	Provisioning	Provide configurable business rules, service mappings and workflow parameters manageable by authorized BT users without source-code changes.	M	Carried from RFI
Q-022	Provisioning	Provide maker-checker/approval controls for high-risk or mass provisioning changes.	S	Should (per RFI)
Q-023	Provisioning	Provide transaction correlation IDs, source order, target system, timestamps, request/response status, retries, errors, manual actions and outcome in audit trail.	M	Carried from RFI
Q-024	Provisioning	Provide centralized O&M dashboards, alarms, logs, performance counters and northbound NMS/SIEM integration.	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
Q-025	Provisioning	Provide HA with no single point of failure for production provisioning functions and state.	M	Carried from RFI
Q-026	Provisioning	Vendor shall state supported TPS, concurrent workflows, queue depth, expected activation time and benchmark evidence.	M	Carried from RFI
Q-027	Provisioning	Capacity design shall include current demand, five-year growth, failover headroom and selected DR option.	M	Carried from RFI
Q-028	Provisioning	Support graceful overload protection/backpressure and recovery after downstream network/system unavailability.	M	Carried from RFI
Q-029	Provisioning	Provide DR/failover design and testing consistent with selected DR option and Annex P.	M	Carried from RFI
Q-030	Provisioning	Provide migration/consolidation approach for provisioning functions currently distributed across existing systems, including coexistence and rollback.	M	Carried from RFI
Q-031	Provisioning	Provide reconciliation and migration evidence before decommissioning any legacy provisioning function.	M	Carried from RFI
Q-032	Provisioning	Support representative end-to-end provisioning test automation and reusable test stubs/mocks where applicable.	S	Should (per RFI)
Q-033	Provisioning	Provisioning configuration, workflows, adapters, schemas, runbooks and as-built documentation shall be delivered in editable form.	M	Carried from RFI
Q-034	Provisioning	Provide administrator/operations training and knowledge transfer enabling BT to manage routine provisioning workflows and mappings.	M	Carried from RFI
Q-035	Provisioning	Vendor shall identify any service/domain that cannot be provisioned through the unified platform and provide technical reason, dependency, integration approach and commercial impact.	M	Carried from RFI
Q-036	Provisioning	Vendor shall separately identify provisioning software/licence, hardware/infrastructure, implementation, integration/adapters and support/AMC cost while including all such cost in Overall Contract TCO.	M	Carried from RFI
Q-037	Provisioning	Provisioning defects, adapter defects and contracted workflow corrections shall not be treated as chargeable CRs.	M	Carried from RFI
Q-038	Provisioning	Routine configuration supported by standard provisioning tools shall not be treated as a chargeable CR.	M	Carried from RFI
Q-039	Provisioning	Provisioning platform shall support IPv4/IPv6 and secure API/interface authentication/authorization	M	Carried from RFI

RFI ID	Category	Requirement (carried verbatim from RFI Annex O / Annex Q)	Pri	BT disposition
		appropriate to each target.		
Q-040	Provisioning	Provisioning platform shall support audit retention, data protection and least- privilege/RBAC controls consistent with Annex C.	M	Carried from RFI
Q-041	Provisioning	Tenant-aware provisioning: each transaction shall carry tenant context and use tenant-specific identifiers, network profiles, workflows and target mappings while preventing cross-tenant provisioning errors.	M	Carried from RFI
Q-042	Provisioning	BT shall be able to define reusable common provisioning templates with controlled tenant-specific variations without separate provisioning platforms.	M	Carried from RFI
Q-043	Provisioning	Provisioning APIs/events/logs shall preserve tenant context for tracing, reconciliation and reporting.	M	Carried from RFI
Q-044	Provisioning	Provisioning capacity and performance shall be tested under concurrent multi- tenant workloads and tenant-specific overload conditions.	M	Carried from RFI
Q-045	Provisioning	Permanent Test/UAT environment shall support representative provisioning workflows, adapters, mocks/stubs and safe regression before Production promotion.	M	Carried from RFI
Q-046	Provisioning	New tenant/MVNO provisioning onboarding using standard configuration shall not be treated as bespoke customization where capability is included in the contracted platform.	M	Carried from RFI
Q-047	Provisioning	Provisioning shall integrate with the authoritative Number & Identifier Management capability to reserve/assign/release applicable numbers/identifiers and maintain synchronized lifecycle status.	M	Carried from RFI
Q-048	Provisioning	Provisioning/Order fulfilment shall integrate with BT workforce/field-service management where physical installation or field intervention is required, exchanging work-order and completion status.	M	Carried from RFI