Palau National Communications Corporation
One Airport Road P.O. Box 99
Koror, PW   96940
Tel: (680) 587-9000
Fax: (680) 587-1888
Email: pncc@pnccpalau.com
Web: www.pnccpalau.com

RFP No. RFP-25-002
Opening Date: May 16, 2025
Closing Date: May 31, 2025

REQUEST FOR PROPOSALS (RFP)
Competitive Negotiated Contract

Short Message Service Center (SMSC) Solution

Palau National Communications Corporation (PNCC) is seeking proposals from qualified vendors to provide a robust, scalable, and feature-rich Short Message Service Center (SMSC) solution. The objective is to support high-volume SMS transmission, ensure reliable message delivery, and integrate seamlessly with other network infrastructure.

Interested individual persons as well as natural and legal entities may obtain more detailed information and/or specifications regarding this RFP by contacting and requesting the same from the PNCC Chief Technical Officer, Mr. Hung-Wei Tomas Tseng, at +680-587-9000 or via email at hwtseng@pnccpalau.com.

Timeline:

- Bidding Period: May 16, 2025 – May 31, 2025
- Closing Date: May 31, 2025 at 10:00 a.m., Palau time.
- Opening Date: June 02, 2025 at 11:00 a.m., Palau time.

All offers must be submitted by no later than 10:00 AM Palau time on Saturday, May 31, 2025.
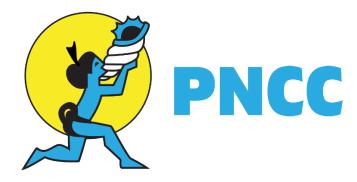
Basic Conditions and Terms:

- All offers will be opened, evaluated, discussed, and awarded pursuant to the PNCC *Procurement Policy and Regulations* and any modifications thereof or other conditions set forth in the RFP itself. By submitting an offer pursuant to this RFP, the individual person or legal entity submitting the offer acknowledges and agrees that the PNCC *Procurement Policy and Regulations* and the conditions set forth in the RFP is binding upon them.

- Pursuant to Section VII of PNCC *Procurement Policy and Regulations* this RFP may be canceled or postponed and any proposals submitted may be rejected at any time before award when such action is determined in writing by the PNCC CEO in his discretion to be in the best interests of PNCC.

- All costs incurred by an offeror in preparing and submitting an offer to the RFP will be the sole responsibility of the offeror.
- An offeror is solely responsible for conducting its own due diligence regarding the RFP.

We look forward to receiving your offers and thank you for your interest in this opportunity.

Sincerely,

Simon M. Fraser
Chief Executive Officer
Palau National Communications Corporation

Request for Proposals
RFP-25-002
Short Message Service Center (SMSC) Solution

Issued by:
Palau National Communications Corporation
One Airport Road P.O. Box 99
Koror, PW 96940
Tel: (680) 587-9000
Email: pncc@pnccpalau.com
Web: www.pnccpalau.com

Submission Deadline: 10:00 AM Local (Koror) Time
May 31, 2025

Submission Place: PALAU NATIONAL COMMUNICATIONS CORPORATION
PROCUREMENT OFFICE
ATTN: MS. TEONGEL NGIRKELAU
PO BOX 99
KOROR, PW 96940
PHONE: +680-587-9000
EMAIL: pncc.rfp@pnccpalau.com

All proposals shall be clearly marked and received prior to the time and date specified above. Proposals received after said time and date shall not be accepted.

1. BACKGROUND INFORMATION

1.1. PNCC OVERVIEW

The Palau National Communications Corporation (PNCC) is the leading provider of telecommunications services in the Republic of Palau. With a deep-rooted commitment to fostering connectivity, PNCC has been a cornerstone of the local community since its establishment in 1982. PNCC offers a comprehensive suite of telecommunications services – including LTE mobile data and voice, high-speed broadband internet, landline telephone services, direct-to-device satellite service, digital television, and VHF radio – serving every region of our vibrant island nation. PNCC has consistently focused on innovation and quality, inspired by our mission to connect all of Palau with world-class telecommunications services. Understanding the uniqueness of Palau's geography, economy, and culture, PNCC has customized solutions for our islands, maintaining the highest standards of quality and reliability.

With an unwavering dedication to our mission, a profound understanding of our unique community, and an enduring commitment to progress and innovation, PNCC stands at the forefront of Palau's digital future. Together, we are working to build a world where distance is no barrier, where information flows freely, and where every voice can be heard. At PNCC, we don't just connect devices, we connect lives, shaping the future of our beautiful archipelago while keeping us connected to our rich past.

2. COMPANY QUALIFICATIONS

Please provide the following information about your company, as well as any proposed subcontractors:

2.1 Company Overview and History
- Brief Overview: Provide a concise summary of your company, including your core business areas, mission, and vision.
- History: Outline the history of your company, highlighting key milestones, such as:
  - Year of establishment.
  - Major expansions or innovations.
  - Significant partnerships or collaborations.
  - Noteworthy projects or achievements.
- Global Network Capabilities: Describe your company's global network presence and capabilities, including:
  - Geographic regions served.
  - Key technologies and services offered.
  - Infrastructure assets, such as data centers, network nodes, and satellite connections.
  - Any certifications or accreditations relevant to your network capabilities.

2.2 Relevant Past Performance

- Project Examples: Provide as many examples as possible but not more than six (6) relevant and verifiable past project references that demonstrate your experience and expertise in mobile network infrastructure (and specifically for the project component(s) in your proposal), including the following information:
  - Project name.
  - Project description, description of goods/services provided, and relevance to this project.
  - Client name and contact information (where permitted).
  - Period of contract.
  - Dollar amount of contract (where permitted).
  - Objectives and outcomes.
  - Technologies and methodologies used.
  - Challenges faced and how they were overcome.
  - Status and comments.
- Performance Metrics: Share metrics or KPIs that highlight the success of these projects, such as:
  - Network uptime and reliability.
  - Customer satisfaction scores.
  - Performance improvements achieved.
- Client Testimonials: Include testimonials or references from previous clients that attest to your company's capabilities and performance.

2.3 Financial Information

- Annual Report and Audited Financial Statements: If available, provide your latest annual report and audited financial statements.
- Credit Rating: Share your company's credit rating from recognized agencies, if applicable.
- Revenue Growth: Outline your revenue growth since inception, including:
  - Year-by-year revenue figures.
  - Major factors contributing to revenue growth.
- Capital Expenditures (CapEx): Detail your capital expenditures, focusing on investments in network infrastructure and technology.
- Selling, General, and Administrative Expenses (SG&A): Provide information on your SG&A expenses, highlighting trends and cost-management strategies.
- Financial Backing: Explain your financial backing, such as:
  - Venture capital or private equity investments.
  - Strategic business partners.
  - Any other significant sources of funding.
- Long-Term Financial Viability: Provide information that demonstrates your company's financial stability and long-term viability, such as:
  - Cash reserves.
  - Profit margins.
  - Debt-to-equity ratio.
- Current Restructuring or Future Plans: Confirm whether your company is currently undergoing any restructuring or foresees any acquisitions, mergers, or divestitures

within the next year.
2.4 Additional Information
- Market Position: Describe your market position and competitive advantages in the mobile network infrastructure sector.
- Innovation and R&D: Highlight your investments in research and development, including any recent innovations or technologies you have developed.
- Sustainability Initiatives: Provide information on your sustainability and corporate social responsibility (CSR) initiatives, if any.

3. PROPOSAL EVALUATION CRITERIA, SCORING & METHODOLOGY

3.1 PROPOSAL EVALUATION METHODOLOGY & AWARD PROCESS

PNCC will review all proposals submitted in response to this RFP in a fair and transparent manner, with the goal of finding best-in-class solutions from fully committed suppliers. Each proposal will receive a technical score and will be ranked against other proposals. PNCC will use these rankings as a guideline for selecting companies for further negotiation and determining the best overall solution for its Short Message Service Center (SMSC) Solution.

PNCC reserves the right to determine, at its sole discretion, which Offeror or combination of Offerors represents the overall best value for the project, and to make contract awards accordingly. PNCC reserves the right to withdraw the entire project or any project components from award consideration if PNCC determines that it is in its best interest to do so. PNCC may, at its discretion, request additional information or an interview with any Offerors to clarify any aspects of its proposal.

In the interest of ensuring the best possible outcome for PNCC and the Republic of Palau, PNCC reserves the following rights in the evaluation of proposals and award of contracts for this project:

3.1.1 Negotiation Rights:
- Broad Negotiation Authority: PNCC reserves the right to negotiate separately with any Offeror or source in any manner necessary to serve the best interests of PNCC and its customers in the Republic of Palau. This includes engaging in discussions with multiple Offerors to gather comprehensive information that will inform PNCC's decision.
- Utilization of Information: The information obtained through these negotiations will be instrumental in determining the proposal(s) that align most closely with PNCC's strategic goals and the technological and service needs of the Republic of Palau.

3.1.2 Evaluation of Competency and Responsibility:
- Offeror Competency: PNCC will thoroughly assess the competency and responsibility of Offerors and their proposed subcontractors, if any, before awarding any contract. This evaluation will include reviewing their past performance, technical expertise, financial stability, and their ability to deliver on project commitments.
- Subcontractor Scrutiny: The qualifications and reliability of any proposed

subcontractors will also be considered to ensure that all parties involved in the project can meet PNCC's standards for quality and performance.

3.1.3   Judgement-Based Award:
- Best Judgement Criterion: PNCC will make the award based on its best judgement as to which proposal(s) best meet PNCC's objectives for a Short Message Service Center (SMSC) Solution. This decision will consider various factors, including but not limited to technical capability, cost-effectiveness, innovation, and alignment with PNCC's strategic vision.

3.1.4   Contract Negotiation Flexibility:
- Terms and Conditions: PNCC reserves the right to negotiate the terms and conditions of project contracts, including but not limited to the statement of work, contract price, delivery schedules, and performance metrics. The goal is to ensure that all contractual elements meet PNCC's requirements and objectives for the project.
- Mutual Agreement: These negotiations will aim to reach mutually beneficial agreements that ensure project success while addressing the needs and constraints of both PNCC and the Offeror.

3.1.5   Modifications to RFP:
- Plan and Specification Changes: PNCC may make changes or corrections to plans, specifications, or quantities outlined in the RFP as deemed necessary or desirable during the RFP and contract award process. Such modifications will be communicated to all Offerors in a timely manner.
- Offeror's Responsibility: It is the Offeror's responsibility to monitor the RFP for any updates or amendments throughout the RFP and subsequent processes. Offerors should ensure they are responsive to changes and incorporate them into their proposals as required.

3.1.6   Additional Reserved Rights:
- Proposal Rejection: PNCC reserves the right to reject any or all proposals received without obligation or liability to any Offeror.
- Further Clarifications: PNCC may seek additional information or clarifications from Offerors at any stage of the evaluation process to ensure a thorough understanding of each proposal.
- Award in Part or Whole: PNCC reserves the right to award contracts in part or in whole, depending on what best meets the needs and objectives of the project.
- Post-Award Changes: PNCC reserves the right to negotiate changes to the awarded contract(s) post-award, should unforeseen circumstances arise that impact project scope or execution.

By reserving these rights, PNCC aims to ensure a fair, transparent, and flexible evaluation process that ultimately results in the selection of one or more partners capable of delivering a world-class, reliable, and future-proof mobile network for the Republic of Palau.

3.2   TECHNICAL PROPOSAL EVALUATION CRITERIA AND SCORING

To ensure that PNCC selects the most capable and suitable partner(s) for the Short Message Service Center (SMSC) Solution, we have established the following set of technical proposal evaluation criteria and scoring. These criteria are designed to assess various aspects of the proposals, ensuring that the chosen solution(s) meets our technical, operational, and strategic objectives. Offerors are encouraged to address each criterion in detail in their proposals. PNCC's proposal evaluation committee will evaluate each project component separately and score them according to the evaluation criteria listed below. Please note that these scores will be used to support the broader proposal evaluation and contract award process and will not necessarily determine the final contract award(s).

Proposal Evaluation Categories and Details	Max Points

1. Technology Solution Proposal
    • Overall Quality of the Proposed Solution
       o Performance
          - Demonstrated Reliability
          - Performance Metrics
          - Scalability
       o Features
          - Support for Basic and Enhanced Services
          - Innovative Design
          - Cybersecurity
          - Environmental & Sustainability
    • Upgradeability
       o Futureproofing
       o Modularity
    • Compliance with Relevant Industry Standards, Legal and Regulatory Frameworks
       o Industry Standards
       o Licenses and Certifications
       o Legal and Regulatory Compliance
	50

2. Services Support Proposal
    • Quality and Quantity of Proposed On-Site Support
    • Skills and Experience of On-Site Support Staff
    • Quality and Availability of On-Call Technical Support
    • On-the-Job Training Plans for PNCC employees
    • Warranties and Guarantees Offered
	30

3. Company Qualifications
    • Financial Stability
    • Experience Deploying Relevant Project Components
    • Strength of Past Performance References and Testimonials
	20

3.3   COST PROPOSAL EVALUATIONS

After evaluating, scoring, and ranking the technical proposals, the top ranked proposals will be short-listed and reviewed for cost. PNCC will review the short-listed cost proposals for completeness, consistency, reasonableness, cost-effectiveness, and value. PNCC will also apply a total cost of ownership (TCO) analysis to the short-listed cost proposals, taking into consideration the full lifecycle costs of the proposed solutions, rather than focusing solely on initial price, when making best value determinations. One of PNCC's goals for the project is to reduce operational costs as much as possible. Accordingly, PNCC encourages Offerors to propose their best possible TCO price, with an emphasis on lowering operational costs to the greatest extent possible.

All technical evaluation factors, other than cost or price, when combined, are significantly more important than cost or price. However, as the technical merit of the proposals becomes more equal, cost or price may become a determining factor. Ultimately, PNCC will use both the technical and cost evaluations, as well as any additional information gathered during the interview and negotiation stage, to determine the best value when making vendor selection and contract award decisions.

4.   PROPOSAL SUBMISSION GUIDELINES

All proposals submitted in response to this RFP must adhere to the following guidelines:

4.1 **Proposal Submission Deadline**: All proposals must be submitted before 10:00 am local (Koror) time, May 31st, 2025.

4.2 **Proposal Submission Format**: Proposals must be submitted exclusively in electronic form via email to pncc.rfp@pnccpalau.com. Proposals must be submitted in an easily readable format (preferably PDF). Proposals must be submitted in two separate volumes: (1) a Technical Proposal and (2) a Cost Proposal. Offerors may attach additional files if necessary to supplement the information provided in the Technical Proposal and/or the Cost Proposal; however, any such additional attachments must be noted within the Technical Proposal and/or the Cost Proposal, as relevant. Offerors shall not use file hosting services or external links for electronic submission. The maximum attachment size is 50MB, so if the files are larger than 50MB, please send multiple emails.

4.3 **Proposal Language**: All proposal documents must be prepared and submitted in English, and only English.

4.4 **Currency**: Cost Proposals must show all prices and price breakdowns in U.S. dollars.

4.5 **Company Contact Information**: Proposals must include the following company contact information:

Company Name:	
Physical Address:	
Tax ID Number:	
Sales Representative Name:	
Sales Telephone:	
Sales Email:	
Technical Representative Name:	
Tech Telephone:	
Tech Email:	

5.   <u>TERMS AND CONDITIONS</u>

5.1 **Confidentiality**: Any material that is to be considered as confidential in nature must be clearly marked as such, on every page, and will be treated as confidential by PNCC to the extent permitted by law. Note, by submitting a proposal, the Offeror authorizes PNCC to provide the proposal to Widelity, Inc. to aide in the technical evaluation of proposals, including sections marked confidential.

5.2 **Proposal Costs**: Offerors are responsible for all costs associated with the preparation and submission of a proposal. In addition, such costs may not be charged back to PNCC as part of a contract agreement resulting from this RFP.

5.3 **Modifications or Withdrawals**: Prior to the time and date specified as the RFP deadline, responses to this RFP may be modified or withdrawn. Withdrawn proposals may be re-submitted up to the time and date specified as the RFP submission deadline, provided that the response is consistent with the instructions in this RFP. Any modification to a proposal submitted after such deadline may result in the disqualification of the proposal in PNCC's sole discretion.

5.4 **Validity of Proposals**: Proposals must remain valid in all respects for a minimum period of one hundred twenty (120) days after the RFP submission deadline.

5.5 **Right to Select**: PNCC reserves the right to select and negotiate with those companies it judges as having submitted a competitive proposal and to terminate negotiations at any time without incurring any liability to any Offeror. PNCC also reserves the right to select one or more preferred Offerors and/or consortia to best support its business units. By submitting a proposal, Offerors waive any right to claim damages of any nature whatsoever based on the selection process, final selection, and any communications associated with the selection.

5.6 **No Obligation**: PNCC is under no obligation to procure or contract for the services described in this RFP or Offeror's response to this RFP.

5.7 **Funding Source**: This project is being supported, in whole or in part, by federal award number CPFFN0198 awarded to the Republic of Palau by the U.S. Department of the Treasury (U.S. Treasury).

5.8 **Funding Source Requirements**: All funds disbursed under the above referenced funding award will be subject to the requirements of the Capital Projects Fund (CPF) Statute, the CPF Guidance, any other guidance issued by the U.S. Treasury regarding the CPF, and all other laws and regulations of the United States as are applicable to the operation of the CPF program. Moreover, award funds may not be used to procure or obtain any covered telecommunication and video surveillance services or equipment as described in 2 C.F.R. § 200.216, including covered telecommunication and video surveillance services or equipment provided or produced by entities owned or controlled by the People's Republic of China and telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities).

Response Sheet

PROPRIETARY
This document contains proprietary information that can only be used
by person or persons with written permission to do so from PNCC

Confidential

Confidential C3

Instructions

This document is part of PNCC's RFQ for Messaging Services Platform.

The prices must be indicated in **'United States Dollars'** (US$), including all taxes from the country of origin. All applicable Import Duties levied by the Republic of Palau, including Palau Goods & Services Tax (PGST) will be paid by PNCC.
Please note that given volumes, if any, are indicative and PNCC does not commit to quantities to be ordered.

The Bidder warrants that:
 - The Products and Services will be quoted in accordance with the Technical Specifications and the answers to the Statement of Compliance 'SoC'.
 - Any and all items or costs of any kind that are not mentioned in the Response Sheet below will be at the Bidder's expenses afterwards.

The Bidder is requested to give all prices on the relevant sheets and tables in this document only. (Any other commercial document will not be considered.)

The Bidder is requested to fill in its compliance to each of the technical domains into these SoC only.
The Bidder is requested to provide supporting documentation and references as attachment to these SoC.

The following response format is required:
Critical Requirements (CRQ): Compliant (C) or Non Compliant (NC)
Major Requirements (MRQ): Compliant (C) or Partially Compliant (PC) or Non Compliant (NC)
Normal Requirements (REQ): Compliant (C) or Partially Compliant (PC) or Non Compliant (NC)
Information Request (IRQ): Compliant (C) with reference to documentation or Non Compliant (NC)

CRQ - Critical Requirement
Critical requirements are the most important requirements regarding the functionality of the solution or the qualification of the Bidder and are essential for proper functioning and a future proof development path. Compliance is a must and no alternatives are permitted.
Non-compliance to a CRQ of the tender can result in an exclusion from further evaluation.
MRQ - Major Requirement
These requirements are important for the functionality of the building blocks or components of the solution and therefore will be treated with high priority. The Bidder has to provide a compliance statement for each MRQ requirement in the compliance list.
REQ - Normal Requirement
These requirements are requested to meet the certain functionality depending on the methods and approach to be utilized by the Bidder. The Bidder has to provide a compliance statement for each REQ requirement in the compliance list.
IRQ - Information Request

The Bidder is called to explain and describe their own approach or methodology for this purpose. The Bidder shall provide the reference to the supporting document in 'Column G'. For each IRQ the supporting document has to be provided in .zip format with file name corresponds to the question ID number (column A).

Compliant or C

This indicates full compliance with the requirement as described in the RFP. This category applies where the Bidder's solution is fully compliant with the requested functional and/or system requirements and the Bidder is able to deliver the relevant solutions/platforms/components/etc. within the timeframe stipulated in the RFP.

The solution shall be explained in sufficient detail and supported by the Bidder's standard product documentation and/or references for evaluation (column Answer / Reference Document). "Compliant" statements that cannot be verified will be considered "Non Compliant" or "NC".

If the Bidder replies to a requirement with "Compliant (C)" no additional comments are allowed (column Comment). In case of comments the answer will be deemed non compliant (NC)

Partially Compliant or PC

This indicates partial compliance with the requirements as described in the RFP. This category applies where the Bidder is or will be able to provide only part of the relevant solutions/platforms/components/etc. within the timeframe stipulated in the RFP.

In that case, the Bidder shall describe the extent of functionality to which the requirement can be supported and what part of the requirement can be fulfilled.

In addition, the Bidder shall provide information if, how, and when C status will be reached in 'SoC explanation' column as follows:

- "Blank": The Bidder will not provide the missing part of the relevant solutions/platforms/components;
- "<= 6m": The Bidder will provide the missing part of the relevant solutions/platforms/components within 6 months after the start of deployment indicated in PNCC roadmap;

- "> 6m": The Bidder will provide the missing part of the relevant solutions/platforms/components more than 6 months after the start of deployment indicated in PNCC roadmap;

- "provide": "Ready for Rollout"
- "On the roadmap": The Bidder will provide the missing part of the relevant solutions/platforms/components which are already part of its product/solution roadmap.
- "With new development": The Bidder will provide the missing part of the relevant solutions/platforms/components as new development into its product/solution roadmap.
- "Customization": The Bidder will provide the missing part of the relevant solutions/platforms/components as PNCC specific adaptation/customization.

Non Compliant or NC

This indicates non-compliance with the requirement as described in the RFQ. An explanation shall be provided by the Bidder in sufficient detail for evaluation and will notate such things as partial compliance, timeframes to compliance, and alternatives.

Structure

Response Sheet Structure	
General	Platform deployment requirements
SMSC Requirements	Requirements for SMSC
SMSF Requirements	Requirements for SMSF (5G)
Security	Security Requirements
Testbed	Testbed Requirements

General

No.	Priority Flag	Requirement	SoC	Comment	Answer / Reference Document
		Common			

1	MRQ	The Bidder shall provide a "Solution Description" which describes
		    - The overall architecture of the proposed solution
		    - The logical breakdown of the solution into elements and functions with product names
		    - Interfaces and protocols
		    - Project Plan (design, implementation, testing, etc)
		    - etc			

2	REQ	Provide the implementation milestones:
		    - PO reception = T0
		    - HLD delivery = T0 + X weeks
		    - ...
		    - Ready-for- Acceptance (RfA) = T0 + X weeks
		    - Provisional Acceptance (PAC) = T0 + X weeks
		    - Final Acceptance (FAC) = T0 + X weeks			

3	REQ	Provide the payment milestones:
		
		    - HLD delivery: X %
		    - … : X %
		    - RfA: X %
		    - PAC: X %
		    - FAC: X %			

4	MRQ	Please provide the explanation of the offered license model.			
5	REQ	The HLD will be created and delivered to PNCC by the Bidder.			
6	REQ	The LLD will be created and delivered to PNCC by the Bidder.			
7	MRQ	The warranty is 24 months, starting as of successful go-live date.			
8	REQ	The Bidder shall include all project management and planning services. Bidder shall provide clear RACI model. (RACI shall take into consideration the hardware deployment model, using own or PNCC infrastructure.)			

9	REQ	The Bidder shall offer implementation services (installation, configuration, integration, migration and acceptance testing).			
10	REQ	Project Management: The supplier should define a RACI taking into account the following interactions : - Project Implementation - Operations - Upgrade / Update - Incident Management			
		Open Standards, API and Multivendor Environment			
11	REQ	Deployed platform shall support upgrade to the latest 3GPP, ETSI and GSMA specifications.			
		Product			
12	REQ	Messaging solution shall permit creation of messaging solution for hosting different MVNO, by creating separate instance or by setting-up the tenant within same instance. Please describe your solution capabilities.			
13	IRQ	It shall be possible for PNCC to adapt the messaging logic to new business requirements. The supplier shall clearly define to what extent such adaptations are possible without the need of a change request. Configurability and options for scripting (service control environment) may be considered a significant advantage.			
14	REQ	The platform shall provide SOAP / REST over HTTP/HTTPS interface for PNCC for the provisioning according to the PNCC specification. (Please see provided provisioning specification.)			
15	REQ	Web portal shall support supports multi-service unified operation and maintenance function, for the rights management, equipment management, service configuration, alarm management, performance statistics, etc. The user shall be able to perform unified management to the multiple services by logging in one system, and can, according to the rights, restrict that one user can only manage the specified services and use the specified functions, etc. The look and feel of user interfaces shall be customizable (logos, colour schemes etc.).			
16	REQ	The platform shall provide API for maintenance purpose, providing same functionalities as in the WEB GUI.			
17	REQ	Contextual on-line help must be available at user interface level. In particular, the meaning of each parameter in configuration panels must be explained. The messaging service platform provides an easy to use graphical user interface (GUI) which will allow access to all of the major operation and maintenance tasks. And in the maintenance GUI, it includes the help button which gives a detailed explanation for the operation.			
18	REQ	The platform shall provide a graphical user interface to all system administration and configuration tasks. This may include a graphical editor for specifying service logic (service control environment). The web portal shall provide device topology showing all the network elements and relations between them. When device information is added, modified or deleted, the device topology is updated synchronously.			

19	REQ	The Messaging Services Platform shall have load protection mechanisms in case the traffic received on interfaces exceeds the physical capacity of the hardware. It shall be possible to fix thresholds per each individual network interface. The supplier shall describe how the platform behaves if limits are reached (call gapping, filtering etc.) and how this situation is notified to the platform operator (SNMP traps, alarms etc.).			
20	REQ	Platform services shall have an availability rate of 99.99%. PNCC considers the platform available as long as it continues to fulfil all functional and non-functional requirements (performance, in particular) of the present RFP.			
21	REQ	Activation of a new system configuration shall cause no delays or interruptions to real-time operations. This also includes changes in rating logic configuration.			
22	REQ	Step-by-step system backup and restore procedures shall be defined.			
		Administration/Operation			
23	REQ	The Messaging Platform shall support system administration functionalities, including but not limited to: - Creation, deletion, modification of configuration; - ESME management; - Activation of configuration; - Produce report about manual configuration adjustments; - Definition and execution of database queries to generate usage statistics; - Health monitoring of the solution and execution of appropriate recovery procedures; - Manage diameter and IP interface configurations; - Preventive maintenance of the solution by means of regular system and database backups; - Execution of backup and recovery procedures			
24	REQ	Messaging platform shall integrate and send alarms to PNCC OSS platform.			
25	REQ	Messaging platform shall enable PNCC Helpdesk to perform activities for assisting PNCC customer in the event of customer queries and complaints regarding their usage of messaging services. Messaging service information shall be available for the Helpdesk directly after the messaging event and the platform shall provide functionalities, including but not limited to: - Use a WEB interface to the solution that displays the event log of the customer; - View configuration of messaging service; - View the state of messaging service; - View status of one specific message for one subscriber; - Log actions of Helpdesk user.			
26	REQ	Messaging platform shall provide reporting capabilities. Please provide the description of reporting capabilities.			
27	CRQ	The SMSC platform must support CI/CD deployment model as well a fully automated software lifecycle management.			

SMSC Requirements

	Response Sheet				
No.	**Priority Flag**	**Requirement**	**SoC**	**Comment**	**Reference document**
		SMSC			
1	CRQ	The Messaging platform shall support SMS home routing and include SMS-router functionality.			
2	MRQ	The Messaging platform shall support TCAP handshake as described in 3GPP TS 33.200.			

3	MRQ	The Messaging platform shall support "SMS firewall" functionalities for anti-fraud functionality for preventing Spamming, Flooding, Faking, Spoofing, including but not limited to:
		
		    - Multi-layer screening capabilities (SCCP/MAP) based on multiple criteria (tp-oa / pid / IMSI / MSISDN / SMSC / GTs).
		    - Anti-Spoofing for SMS MO and SMS MT.
		    - Anti-spam functionalities, with triggers based on a number/string in SMS content, a regexp match of SMS content, A-number.
		    - Anti-spam functionalities, shall support configuration of whitelist and blacklist.
		    - Anti-spam shall support message content scanning feature whereby PNCC shall be able to configure the filtering mechanism in the system, including keyword, scanning period, etc.
		    - Anti-spam functionalities, with 'Similar Content Screening' feature, i.e. support blocking repetitive content if it is 100% match, as well as 90%, or 80% match
		    - Anti-spam shall support scanning messages which have different coding scheme.
		    - Home router functionality, allowing blocking of MT SMS request without prior SRIforSM.
		
		All SMS Firewall actions shall be logged for PNCC processing.			

4	MRQ	The Messaging platform shall support connection to the SMS-GMSC/MSC/MME/SMSF via MAP interface as specified in 3GPP TS 29.002.			
5	MRQ	The Messaging platform shall support connection to the MME/SMSF via Diameter as specified for reference point SGd defined in 3GPP TS 29.338.			
6	MRQ	The Messaging platform shall support connection to the HSS via Diameter as specified for reference point S6c defined in 3GPP TS 29.338.			

7	CRQ	SMSC shall support following characteristics (per default, for PNCC): - Configurable Default validity period. - Communication with MSC by SIGTRAN, SS7. - Communication with a MNP - DB using either SIGTRAN/SOAP/SQL/LDAP/ENUM. - Multiple standard character set support (GSM 03.38, 3GPP 23.038). - Message standard class support (GSM 03.39, 3GPP 23.038). - Concatenated Short message support. - Flows: MOMT, MOAT, AOMT, AOAT. - SMPP 3.4/HTTP/HTTPS protocol support for connecting ESME. - SMS retry, by retry scheme and by retry profile. - SMS Buffering. - Alert procedure support. - Status Report. - SMS Priority. - Reply path. - Multiple language. - Number Blacklisting. - Address Translation for calling number or called number, it can also support translation per different case, like MO case, AO case or MO case, etc. - Alphanumeric Originator Address Function. - Flexible routing possibilities (e.g. specific routing depending on B-number). - Basic Parameter check to reject or accept message per calling MSISDN number, calling IMSI number, originator MSC address, PID, DCS.			
8	MRQ	SMSC shall give the system operator the ability to flexibly modify throughput limits per each interconnected ESME account.			
9	MRQ	SMSC shall have throttling feature per Application based on a combination of rules such as rate, maximum num of messages per day, time of day etc.			
10	REQ	SMSC shall also give the system operator the ability to clear a specific queue (for a single subscriber, or an Application, or a foreign SMSC) to prevent unwanted deliveries.			
11	MRQ	SMSC shall support hosting of different subscriber groups, each with own IMSI range.			
12	MRQ	SMSC shall support hosting of different subscriber groups, each provided with specific configuration, including but not limited to: - Specific Default Validity-Period. - Specific Priority for stored messages. - Specific Message Validity period. - Specific Throughput in message/second. - Specific configuration for dedicated Short-Codes. - Specific configuration with ESME Accounts. - Specific configuration for communication with MSC by SIGTRAN. - Specific CDRs output files and output frequency.			
13	MRQ	SMSC setup pricing shall include migration of all existing messaging flows and interfaces.			

No.	Priority Flag	Requirement			
14	MRQ	SMSC supports diameter prepaid (DCCA) with standard AVPs supported. SMSC functions as a diameter server node as specified in RFC6733.			
15	MRQ	For concatenated SMS (SMS-MO or SMS-MTAO), the SMSC shall by configuration be able to send a CCR request for the entire concatenated message or to send CCR request for each segment.			
16	MRQ	SMSC platform shall have the feature of "Home Routing" compliant to 3GPP TR 23.840. The function "MNP lookup" based on IMSI must work together with the "Home Routing".			
17	REQ	The system shall be able to overwrite the "Original Originator Address" for some ESME.			
18	REQ	SMSC has message archive capability, with file retention required 30 Days or greater.			
19	REQ	SMSC can store the message log on SMSC for 14 Days or greater.			

SMSF Requirements

Response Sheet					
No.	**Priority Flag**	**Requirement**	**SoC**	**Comment**	**Reference document**
1	MRQ	SMSF network element shall be compliant with 3GPP Release 17 specification.			
2	IRQ	Supplier shall describe any SMSF limitation or deviation from the standard, and in that case shall describe the functionality in detail. This shall include the advantage/disadvantage of Supplier's solution and the potential interworking issues in multivendor environment.			
3	IRQ	The Supplier shall describe the SMSF solution evolution roadmap, including architecture, functionalities, interfaces, protocols, parameters, standardized specifications and compliance.			
4	IRQ	The Supplier shall describe in detail the SMSF architecture.			
5	IRQ	The Supplier shall describe in detail the supported basic and optional SMSF features and send the SMSF feature description.			
6	IRQ	Supplier shall state the SMSF requirements and recommendations towards an IP network providing connectivity to the proposed solution. This includes but not limited to calculation of bandwidth between network nodes.			
7	CRQ	SMSF shall support the SMS over NAS non-roaming and roaming architecture sas described in 3GPP TS 23.501			
8	IRQ	Supplier shall describe the SMSF IP addressing scheme for all logical interfaces. Please state how many IPs are required and if the number of IP address need to grow based on dimensioning.			
9	CRQ	Supplier's SMSF shall support relaying the SM from UE toward SMS-GMSC/IWMSC/SMS-Router and vice versa.			
10	MRQ	Supplier's SMSF shall generate SMS related CDR.			
11	REQ	The SMSF shall have the option to be co-located with SMSC platform.			

12	MRQ	Supplier's SMSF shall support interaction with AMF.			
13	CRQ	SMSF shall support the following reference point: N20 towards AMF			
14	CRQ	SMSF shall support the following reference point: N21 towards UDM			
15	MRQ	SMSF shall expose the services as defined in 3GPP TS 23.502, including Nsmsf_SMService allowing AMF to authorize SMS and activate SMS for the served user on SMSF.			
16	CRQ	Supplier's SMSF shall support the SMS over NAS procedures as defined in 3GPP TS23.502 clause 4.13.3.			
17	MRQ	SMSF shall support connection to the SMS-GMSC/IWMSC/SMS Router via MAP interface.			
18	MRQ	SMSF shall support connection to the SMS-GMSC/IWMSC/SMS Router via Diameter.			
19	MRQ	SMSF shall support UDM discovery and selection procedure as defined in 3GPP TS 23.501			
20	MRQ	SMSF shall support service Registration, Update and Deregistration as specified in clause 4.17 of 3GPP TS 23.502			
21	MRQ	SMSF shall support mutually authenticated TLS and HTTPS.			
22	IRQ	The Supplier shall provide details on overload control features supported by the SMSF			

Testbed

	Response Sheet				
No.	**Priority flag**	**Requirement**	**SoC**	**Comment**	**Answer / Reference Document**
1	REQ	The testbed environment shall be included in the quotation.			
2	REQ	Test environment shall be part of provided infrastructure and shall be integrated to PNCC test environment.			
3	REQ	The proposed test environment shall contain the components required for testing the business process, upgrade procedures and resiliency mechanisms. The Bidder shall provide test software and necessary tools, at no additional license costs.			
4	IRQ	The Bidder shall present in a high level approach, their proposed Testbed implementation.			
5	REQ	The Bidder shall provide the detailed requirements (resources, IP plan, etc) for Testbed.			
6	REQ	Bidder must provide a completely pre-tested and pre-integrated SW package for Testbed.			
7	REQ	The Bidder shall provide Test Lab Guide documentation containing information such as deployment topology, components, supported features, access information, and user guide.			
8	REQ	The supplier shall propose a test bed for testing use cases including, but not limited to: - testing of a new commercial product; - testing of new messaging flows; - validation of new software releases or patches; - execution of system and database restore procedures (e.g. to test the backup media) - load balancing tests (assess platform behaviour in case of high load) - failure tests (assess platform behaviour in case of part of its components are not available) It is not required that the test environment supports the full traffic.			
9	REQ	The test platform shall support the same data model that the primary platform. It shall be possible to copy the full product database from the production platform to the test platform. The process shall be automated via tool. It shall be possible to copy a subset from primary platform to test platform.			