



**NATIONAL MARITIME SAFETY AUTHORITY  
INFORMATION & COMMUNICATION TECHNOLOGY DEPARTMENT**

## **Terms of Reference (ToR)**

**NMSA MARITIME MONITORING SYSTEMS  
NETWORK, INFRASTRUCTURE AND SYSTEMS AUDIT**

# **1 BACK GROUND**

Papua New Guinea (PNG) is a member state of the International Maritime Organization (IMO) whose key responsibilities are to provide machinery for cooperation among Governments in the field of governmental regulation and practices relating to technical matters of all kinds affecting shipping engaged in international trade; to encourage and facilitate the general adoption of the highest practicable standards in matters concerning maritime safety, efficiency of navigation and prevention and control of marine pollution from ships".

The National Maritime Safety Authority (NMSA) was established by an Act of Parliament in 2003. NMSA is the autonomous statutory authority responsible for all maritime safety needs of the general public, especially those in isolated coastal communities, the maritime industries and their customers. Its purpose is to regulate the maritime safety standards, coordinate Search and Rescue operations and control marine pollution in PNG waters. NMSA also fulfills Papua New Guinea's obligations under international conventions through implementation of national and international maritime laws.

To ensure efficient and effective maritime administration NMSA has embarked on projects to improve its operations in delivering its mandated responsibilities. In doing so, NMSA will be conducting an audit of its Maritime Monitoring Systems (MMS) which include; Automatic Identification System (AIS), Coastal Monitoring System (CMS) and Tide Gauge System networks and infrastructure.

Apart from the NMSA corporate LAN/WAN NMSA also has three other Maritime Monitoring Networks whose maintenance has been outsourced to third-party service providers. These networks have a total of 12 sites with installations of infrastructure and systems in different locations. There are infrastructure and systems that are currently working and running from these locations with servers located here at the Head Office in Port Moresby, NCD.

The three networks to be included in the Audit scope are:

## **1. Automatic Identification System (AIS)**

NMSA has installed at 5 AIS base stations in 2009 at 5 different locations as part of a plan to have a comprehensive AIS network in coastal PNG to improve maritime safety and security monitoring. This is terrestrial AIS using VHF signals from Ship-To-Shore. The 5 sites included; Paga Point (Port Moresby), Mt Lunamen (Lae), Toma (Rabaul), Hanseman (Madang) and Top Town (VHF Hut - Alotau). Data transmitted from these stations was viewed using the ICAN Horizon viewer at each NMSA office in the respective centres.

## **2. Coastal Monitoring Stations (CMS)**

The CMS is also a terrestrial AIS tracking system with stations at 3 remote and strategic locations in Papua New Guinea include; the first on Jomard Island in Milne Bay Province, the second on Tuam Island in Morobe Province, in the Vitiaz Strait and the third at Cpe St. George at the South Eastern tip of the main island of New Ireland.

However, installations for the CMS locations also include other equipment for CCTV surveillance, weather transmitters, Rada scanners as well as AIS VHF antennas.

### **3. Radar Tide Gauge (RTG) System**

In 2012, NMSA installed a total four (4) Radar Tide Gauge Stations in Port Moresby, Alotau, Lae and Kimbe. All data received is fed back to the MRCC via Digicel network. The RTG collects data relating to Wind, Temperature, Wave Heights, Tides every 1 minute. This data is stored in the data server located within the MRCC. The RTG data is received using the GEONICA software imported from Spain.

The Authority is inviting suitably qualified companies to express their interest to conduct an Audit of the AIS, CMS and Tide Gauge networks, systems and infrastructure.

## **2 TASK DESCRIPTION**

This project will be accomplished in phases as per the requirements of the Finance and Administration Department.

Project/Task:	To engage suitably qualified companies to conduct an Audit of the AIS, CMS and Tide Gauge networks, systems and infrastructure at NMSA.
Executing Agent:	National Maritime Safety Authority (NMSA)
Implementing Body:	ICT and NSS Departments
Project Sponsor:	General Manager/CEO – National Maritime Safety Authority
Project Location:	NMSA Head Office, Level 2 Pacific MMI Building, Port Moresby
Closing Date for Bid:	COB 25 <sup>th</sup> August 2017
Commencement Date:	To be determined
Project Duration:	Two (2) Months

## **3 AUDIT OBJECTIVE**

To provide substantive expert technical ICT advice and support to ensure that the AIS, CMS and Tide Gauge networks and systems are implemented with leading-edge technology and infrastructure to support the delivery of the mandated responsibilities of NMSA in accordance with best practices and international standards.

The audit will be performed to achieve specific objectives of this audit include:

- To determine the adequacy and appropriateness of AIS, CMS and Tide Gauge infrastructure and systems which are critical for the success of Vessel monitoring, functioning of NavAids equipment and monitoring of weather and tides.
- To determine the preparedness and suitability of AIS, CMS and Tide Gauge infrastructure and systems in preparation for ICT WAN Integration project as per the ICT 2017 work plan.
- To determine the appropriateness and improve control, visibility and management of all the networks;
- To determine the appropriateness of security controls across the networks;
- To determine the functionality of the infrastructure and systems;

- To ensure the accuracy and usefulness of data captured in all these networks and systems; and
- To determine the appropriateness of data management controls for data collected from these systems; data processing, analysis and dissemination to appropriate stakeholders.

#### **4 SCOPE OF AUDIT**

The selected service provider will be responsible to undertake an assessment of the existing network and infrastructure including its systems and provide specialist advice on the networks and requirements, scope of works and services required achieving the expected outputs, whilst satisfying the relevant IMO, IALA, SOLAS requirements. The scope of work shall include but not be limited to the following:

1. Assess and review the associated documentation for the three networks and determine the appropriateness and relevance of the documentation including, policies, procedures, technical specifications, manuals, plans, etc.
2. Undertake an assessment of the sites; the networks, infrastructure and systems; to determine the functions or purposes of the network and to determine the appropriateness of the technology and equipment installed or used. Review the objectives of the networks, research similar concepts globally to understand standards, conduct site visits and stakeholder meetings to understand the purposes, target audience and expected outcomes.
3. Determine Network and other requirements as follows:
  - Based on the existing setup and site assessment propose a Network Design concept and high level integration design. Refine the concept based on stakeholder comments.
  - Map out detailed network design for optimal service delivery inclusive of proposed integrated network design from an operational level incorporating both functional and non-functional requirements, hardware and software for the fulfilment of the objectives.
  - Define requirements inclusive of scope of work, detailed Terms of Reference for ICT Infrastructure, Bill of Materials to build out the recommended integrated network including all technical specifications for software and hardware proposed as well as all other requirements to bring the proposed integrated WAN to a state of readiness from an ICT standpoint and to maintain, manage and upgrade the system in future.
4. Assess the data captured in the respective systems and determine appropriate uses of the data for stakeholders in the industry.
5. Assist with the Selection of firm to undertake the work and provide Oversight. Participate in the evaluation process for the selection of a suitable firm to undertake the necessary work, select, procure and install the necessary hardware and software. Provide oversight in the selection, installation and commissioning of the network and ICT equipment for the integrated network.

## **5 WORK SCHEDULE**

A detailed road map for the Audit must be submitted along with the proposal, which will be used as progress assessment tool.

## **6 DELIVERABLES**

- Audit Working Papers
- Draft Audit Report
- Existing network design and draft of proposed improvements if any and proposed integrated network
- Final Audit Report including recommendations for improvement and integration of networks to NMSA WAN.

## **7 RESPONSIBILITY**

NMSA

- Shall ensure audit working papers are reviewed and feedback is provided within review period;
- Shall maintain the delay register and notify the service provider of all delays in writing;
- Shall appoint the point of contact or project focal person (s);
- Inform the stakeholders and arrange joint sessions with consultants.

Service provider

- Shall ensure timely delivery of deliverables;
- Shall provide the Network Design of recommended integrated network;
- Shall appoint the point of focal person or lead Auditor for communication purposes; and
- Shall assist in selecting a service provider for the Network Integration Project.

## **8 ELIGIBILITY CRITERIA**

The service provider

- should be primarily an IT Company with experience in ICT Network design, implementation and audit.
- must be fully committed to undertake this Audit in accordance with the scope of work defined and any instructions issued by the CEO and the Board, where necessary.
- will maintain professional independence throughout the duration of the Audit engagement.
- must be registered, as required by the provisions of the Companies Act 1997, must be in compliance with the guidelines of the Companies Regulations 1998, the Investment Promotion Act and the Internal Revenue Commission.
- should have successfully completed at least three projects of similar nature in past five years with vast experience in IT and Communication network design and installations. (The details of such jobs should be furnished.)
- Service provider must prove their qualifications concerning the following criteria:
  - Ability to fulfil and abide by the terms and specifications;
  - The service provider must have technically qualified, skilled and competent personnel with appropriate certifications that may be of relevance and necessary to be able to

perform the engagement. Copies of certifications and CVs can be provided to support EOI; and

- Experiences in similar projects are relevant and the service provider must be able to demonstrate these experiences and provide evidence of similar.
- Service provider shall not be under a declaration of ineligibility for corrupt and fraudulent practices issued by the Government of PNG (GoPNG)/Provincial Governments / Regulatory agencies.
- NMSA reserves the right to carry out the capability assessment of the service Provider and its decision in this regard shall be final & binding to all.
- Upon award of contract, the successful Service provider shall sign an agreement with NMSA within **7** days.

## **9 PAYMENT SCHEDULE**

The payment terms of the project will be as follows:

- 30% for mobilisation after signing of contract
- 20% upon delivery of audit working papers for discussion
- 20% upon delivery of draft audit report
- 30% upon delivery of final audit report

## **10 CONTRACTUAL TERMS AND CONDITIONS**

Terms and conditions are requirements that are binding upon the service provider awarded the contract and form a part of all contract documents. They communicate NMSA's expectations in regards to the supplier's performance in connection with any NMSA ICT Department purchase.

- a) **Negligence:** The service provider will be responsible for any mishap during the Audit which may occur due to negligence on the part of the service provider.
- b) **Insurance:** The service provider must show proof of General Liability, Professional Liability and Property Damage insurance. This insurance must be adequate to cover claims for damages caused by the supplier(s) and must remain in force throughout the duration of the project.
- c) **Termination:** The performance of work under this order may be terminated in whole or in part by the NMSA ICT Department in accordance with this provision. Termination of work hereunder shall be effected to the Auditor with a "notice of Termination" specifying the extent to which performance of work under the order is terminated and the date upon which such termination becomes effective.
- d) **Invoices and Payments**
  - The Service provider shall submit separate invoices as per payment schedule. Invoices must also indicate respective payment schedule description.
  - Invoices are Mailed to:

**Attn: Mrs Lena Korugl**, ICT Manager, National Maritime Safety Authority, Level 2 Defens Haus, P.O Box 668, **PORT MORESBY**, NCD