CANAL DE PANAMÁ

Request for Information (RFI) for a Strategic Analysis of Radar Coverage and Deployment to Enhance Maritime Navigation Safety

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1. Background

The Panama Canal is one of the world's most significant engineering projects, having a profound global impact on maritime trade. It is approximately 80 kilometers long between the Atlantic and Pacific Oceans. This waterway was cut through one of narrowest saddles of the isthmus that joins North and South America.

The Canal reduces maritime distances, transit times, and vessel costs by facilitating the transportation of goods between primary production and consumption centers. Because of this, The Canal influences the global transportation system by providing alternative routes between countries, allowing them to seek more competitive ways to trade across regions.

The Canal accounts for approximately 5% of global maritime trade, with around 14,000 vessels transit this important waterway each year. Nearly 85% of total transits are Panamax vessels, while the remainder are Neopanamax vessels, the largest the Canal can accommodate. Neopanamax vessels transit through the third set of locks, which includes two three-level locks and the expansion of the access channels on the Atlantic and Pacific sides.

This market research aims to improve planning, reaction capacity, decision-making, risk mitigation, and resources allocation to ensure safe vessel movement.

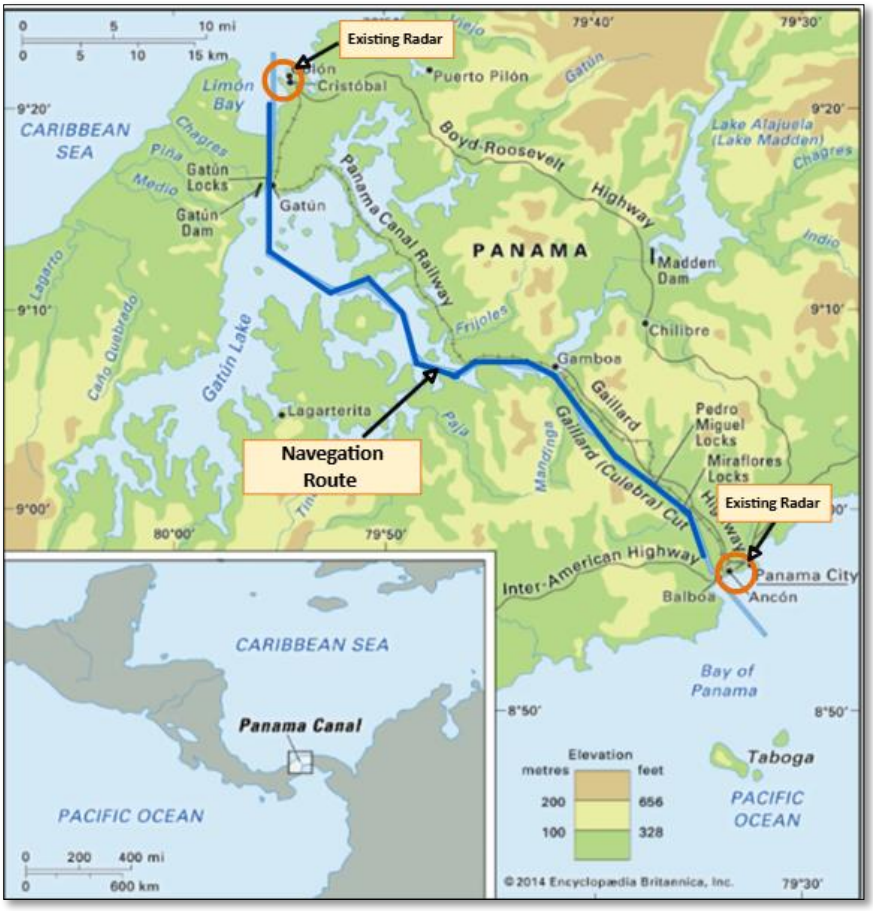
2. Scope

This Request for Information (RFI) is issued to gather information on potential services and alternatives that can achieve the following objectives by utilizing a radar system.

The Panama Canal currently has strategically located radar at the entrance, where the navigation route begins, for both the Pacific and Atlantic Oceans, supporting the safe navigation of vessels passing through it.

This project involves the planning, design, procurement, installation, integration, and commissioning of new radar systems along the Panama Canal navigation route. The goal is to strengthen surveillance and vessel traffic control capabilities, enhance operational safety, optimize vessel traffic management, and ensure continuous and efficient surveillance at strategic points along the Canal. The following outlines the main components of the project scope:

1. Technical and coverage studies.
2. Selection and installation of new radar systems.
3. Integration with existing systems and new software.
4. Operational and functional enhancements.
5. Training and knowledge transfer.
6. Sustainability and maintenance.



Panama Canal's navigation route

3. Radar Requirements

a) Supply and Installation of Equipment

- Ability to detect small targets (approx. 3 meters) at short and long distances with great clarity, allowing them to distinguish between multiple nearby targets (Small open boats, small speedboats, small fishing vessels, small sailing boats).
- Support towers, antennas, and energy systems (UPS, generators). Built with materials resistant to weather and the marine environment (salt, humidity, heat).
- Communication infrastructure.
- Central radar monitoring stations.
- Radars should also be designed and installed to eliminate to the maximum extent possible, false echoes caused by side lobes or reflections from nearby structures.

- Confirmation that proposed systems comply with: International maritime standards (IMO, IALA, VTS guidelines, SOLAS, etc.), environmental regulations and cybersecurity standards.

b) System Integration

- Radar must be able to integrate with existing navigation and sensor systems maintained by the Panama Canal (CCTV, AIS, weather stations, etc.).
- Interface with the existing Vessel Traffic Service (VTS).
- Configuration of guard zones, automatic alerts, data logging, and target tracking.
- They must be modular and scalable, allowing for software updates or integration with new sensors.

c) Software

- Installation and configuration of radar control and monitoring software.
- Supply of required operational licenses and maintenance agreements.
- It should be capable of detecting approximately **4,000 AIS targets and 500 ARP targets.**
- The software must have high availability and redundancy to ensure its operation.
- Recording and playback of data (ship transit, weather data, activated alarms, suspicious movements).
- Software must include access control and user profiles, data encryption, secure updates and protection against malware and unauthorized remote access.

The implementation of this project is seeking to:

1. Enhance agility in detection, response capacity, proactive decision-making, and risk mitigation during the planning and execution of vessel movements, enabling better control of operational inefficiencies resulting from operational variability (services, transit movements, etc.).
2. Enhance the safety and effectiveness of Panama Canal operations, during vessel transit and port pilotage.
3. Multiple alternatives to identify and monitor environmental protected areas and other high-value natural resources in Panama Canal waters.
4. Operation in adverse weather conditions.
5. Operate continuously with minimal maintenance and high durability.

4. Considerations

1. Participants shall conduct a technical evaluation and feasibility study to analyze the site installation, perform radar coverage simulations, and assess potential interference.
2. ACP has telecommunications towers along the Panama Canal's navigation route, which may be used for radar installation.
3. Based on the study, the participants shall evaluate the feasibility of establishing new sites along the Panamá Canal's navigation route to ensure complete coverage of the area.
4. Participants will be responsible for constructing and supplying all necessary infrastructure for radar installation at the new sites. In these cases, ACP will only provide physical space.
5. ACP will supply all telecommunications infrastructure for both new and existing sites. However, it will only provide a power supply only for existing sites, that are connected to a non-solar power source.
6. Participants are responsible for conducting a comprehensive requirement analysis, starting from the requirements specified in this document. This entails a thorough evaluation of ACP's needs and objectives to ensure a deep and shared understanding of what must be achieved. The provider shall collaborate closely with ACP's stakeholders to refine and expand upon these initial requirements, identifying any additional needs or adjustments necessary to tailor the solution effectively to ACP's operational context and strategic goals.
7. Participants shall provide a technical training plan for ACP personnel and shall also develop and deliver manuals, operational procedures, and maintenance protocols to ensure proper system operation and sustainability.
8. Participants shall provide a monetary estimate for the work detailing the cost of the activities and the timeframe within which they can complete it. The ACP and the participants shall reach an agreement on the final scope.
9. Participants must define warranty periods for equipment, post-installation support services, and Service Level Agreements (SLAs) for response times and system uptime in their proposals.
10. Participants must identify potential risks associated with installation, integration, and operation and propose mitigation measures for those risks.
11. All information provided must be submitted in either Spanish or English. By submitting the information, you confirm that you have a complete understanding, acceptance, and agreement with the terms and conditions outlined in this RFI.

5. Company Profile

The company profile shall contain the following:

- **Company Background:** Brief history of the company, website, business divisions, years in business and customer base.
- **Areas of expertise:** List areas of expertise, number of years providing services in these areas, solutions for vertical industries.
- **Location and global:** Address of your main office or headquarters, regional offices, or subsidiaries, as well as your partner network worldwide, including specific presence in Panama and the Americas.
- **Successful Projects:** Description of services implemented by your clients comparable to the ones requested in this RFI.
- **Point of contact for this RFI:** Name, title / position, telephone, e-mail

6. General Terms

- All data (written, verbal, audiovisual, analyses, reports, or any other information) prepared and delivered by the participant to the ACP or provided by the ACP to the proposer shall be the exclusive property of the ACP. All such data shall be considered confidential and may not be disclosed or used in any manner by the proposer for purposes other than the execution of this market research. The proposer may not commercialize or otherwise dispose of this data in any capacity without the prior written authorization of the ACP.

- This is a Request for Information (RFI), not a request for a quotation or order. No costs may be charged to ACP for any reason. This document will not be interpreted as a request or authorization to carry out work on behalf of the ACP. Any work carried out by a supplier will be at their own discretion and expense. This RFI does not represent a commitment to purchase or lease. Submission of a response constitutes acknowledgment that the provider has read and agrees to be bound by such terms.

- The ACP does not provide any legal or tax advice; therefore, each participating company must obtain before submitting any proposal the necessary legal or tax counsel required to comply with the services offered.

- **Point of Contact:** For any clarification regarding the market research, please get in touch with contact: Elvis Sanjur directly at: email: easanjur@pancanal.com.

- **Deadline:** Interested firms must ensure that all the information requested through this application is delivered before: **15/08/2025**