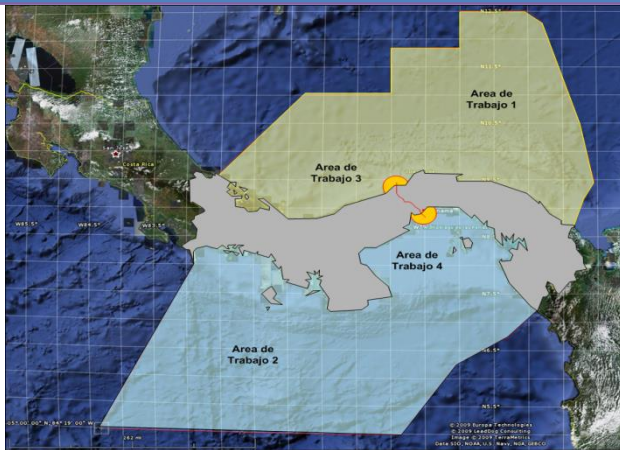




THE PANAMA MARITIME AUTHORITY

REPUBLIC OF PANAMA

INFORMATION PACKAGE ON UPCOMING PROJECTS



VTS: Vessel Traffic Service



LRIT: Long-range Identification and Tracking

January 2016

ESTIMATED SCHEDULING OF TENDERING

In a continuous effort to maintaining the highest standards of safety for both the marine fleet, which sails under the Panamanian Flag, and the ships that navigate in Panama's national waters, the Panama Maritime Authority is considering a number of projects, whose achievement will ensure the maritime safety. The estimated period for the execution of these upcoming projects is the biennium 2016-2017

The current administration, led by Mr. Juan Carlos Varela (president of the republic) holds these projects as flagship projects, due to the high impact that they have on the development of a strategic economic sector, such as the maritime sector. Their completion is part of a larger scheme that seeks transforming Panama into an international hub for the maritime commerce.

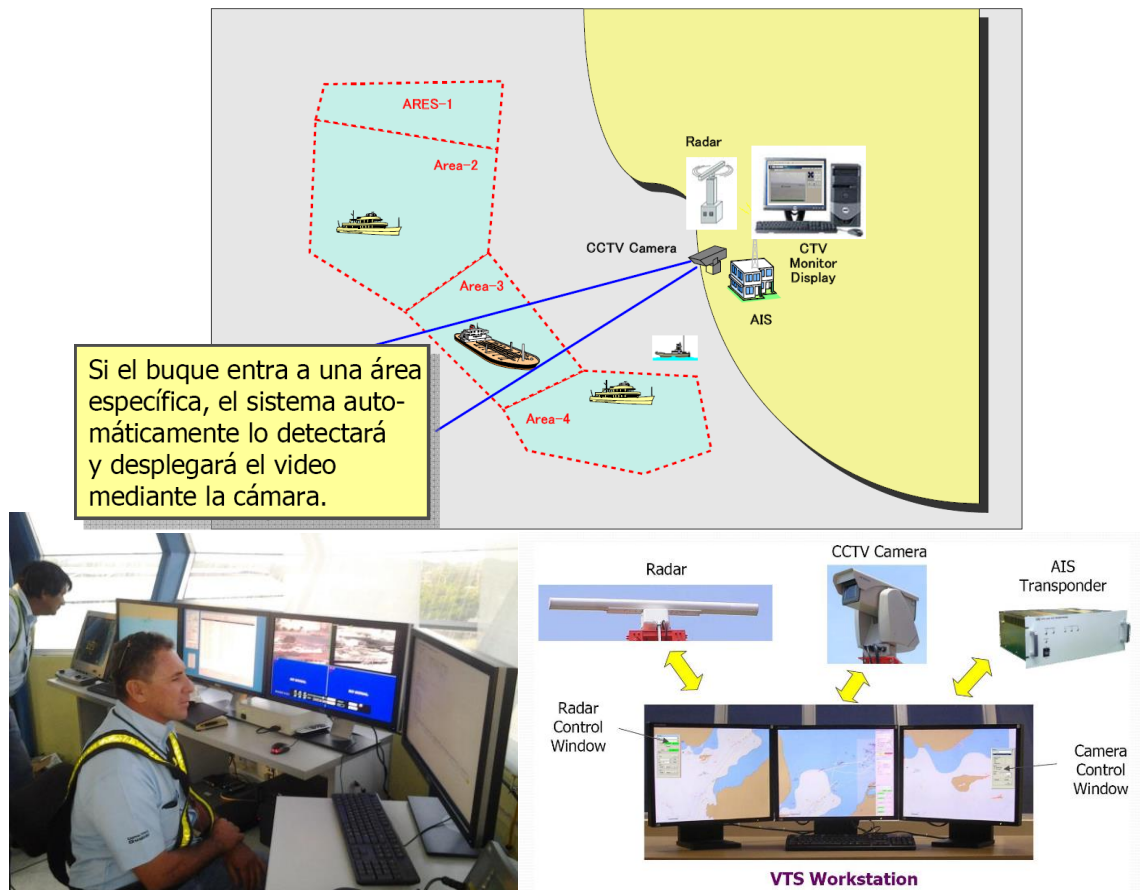
| Upcoming tendering | 2016 | 2017 |
|---|--|--|
| A VTS system for a Control Tower and a Monitoring Center of Vessel Traffic, in the Pacific and the Atlantic - Vessel Traffic Service (VTS) | <ol style="list-style-type: none"> 1. Preparation of the tender documentation (January -March) 2. Tendering (March - September). 3. Start of the studies (October-December) | <ol style="list-style-type: none"> 1. Implementation (January - December) |
| Provision and operation of the center for identification and monitoring of the ships from the Panamanian Registry and related services | <ol style="list-style-type: none"> 1. Tendering (February-July) 2. Implementation (August-December) | <ol style="list-style-type: none"> 1. Implementation (January - December) |

PROJECT 1

VTS system for a Control Tower and for a Monitoring Center of Vessel Traffic, in the Pacific and the Atlantic - Vessel Traffic Service (VTS)

KIND OF PROJECT

Technology infrastructure for the maritime safety



PROJECT COST

The total estimated cost of the project is PAB 17,250,000.00

PROJECT STRUCTURE

A **first tendering** will take place, which matches Stage 1 (*design, provision and implementing a control system of the vessel traffic in the Atlantic and the Pacific. For a total amount of PAB 10,000,000.00*)

- a. Civil engineering works (design and construction of 2 towers)
- b. Furnishing with technology and operational infrastructure
- c. System of vessel traffic and sensors

The **second tendering will be the Stage 2**, which comprises the inclusion of a Monitoring Center of the traffic of the Vessels of International Service that arrive at Bocas Del Toro and Chiriqui, for an amount of **PAB 2,270,000.00**

- a. Civil engineering works (design and construction of 2 towers)
- b. Furnishing with technology and operational infrastructure
- c. Inclusion of the vessel traffic system /sensors

The **third tendering**, which regards **Stage 3**, comprises its inclusion along the coast and maritime areas of the Atlantic and the Pacific, for an amount of **PAB 4,500,000.00**.

- a. Inclusion of the vessel traffic system /sensors

PROJECT SUMMARY

Stage 1: This stage comprises the assessment of the proposed physical location for the traffic control towers in the Pacific; they should span from Vacamonte, Balboa Anchorage, Pearl Islands and Panama Bay; they should also be able to display vessels of less than 10 m in length. For the Atlantic, the span must include Manzanillo Bay, Las Minas Bay and Punta Rincon.

The estimations for this Stage 1 is that the equipment must have a visual range that enables the visualization and monitoring of merchant vessels and service ships (by service ships, it is meant motor boats, barges, tugboats, among others). The oversight coverage must have a minimum scope of 10 nautical miles.

The design and construction of two (2) towers for the monitoring of vessel traffic must be able to receive and keep all the generated information, in order to control the vessel traffic and in order to processing, in real-time, the diverse situations that may be identified.

Stage 2 regards exclusively the ships of international service that arrive in the area of Chiriqui Grande, Almirante, Colon Island (Bocas Del Toro Province – in the Atlantic) and the area of Charco Azul and the anchorage area of Puerto Armuelles (Chiriqui Province – in the Pacific).

This stage comprises the analysis and assessment of the current and medium term traffic, aiming to determine if the monitoring of the vessel traffic requires a primary tower on-site or if the control and monitoring tower can keep track of the traffic, remotely. The viability of the physical location as well as the functionality of the traffic control towers also must be assessed, in order to see if they are needed in this area.

The estimations for this Stage 2 is that the equipment must have a visual range that enables the visualization and monitoring of service and merchant ships (by service ships, it is meant motor boats, barges, tugboats, among others).

The oversight coverage must have a minimum scope of 30 nautical miles. One should also assess if, due to the geographical features, one (1) or two (2) stations will be required.

Stage 3: This stage requires the analysis and design, in the rest of the coast, not covered by the oversight coverage of the stages 1 and 2 of the Monitoring System of Vessel Traffic. This stage also comprises the provision of equipment, configuring and installing of the sensors, network devices for the processing of the signal coming from the sensors and for the broadcasting of the data, servers for the Vessel Traffic Service. But also workstations for the monitoring center, screens, data processing software, operating systems independent from the Monitoring Towers, Communication Systems of type VHF, VHF DSC, HF DSC, Inmarsat, NAVTEX in the operational areas of the tower. The design, executing and adjustment to the communication network will be taken into account considering the possible location of the monitoring towers (an on-site visit is mandatory).

The estimates for this Stage 3 is that the equipment must have a visual range that enables the visualization and monitoring of service and merchant vessels (by service vessels, it is meant motor boats, barges, tugboats, among others). It must also include tracking radars to monitor smaller vessels.

The technical specifications required at this stage will depend on the design and the implemented technology, which will allow the visualization of the objects that are going to be monitored in real time.

Scheduled dates

Starting date:

The tendering of this project will take place in March 2016, approximately. The administrative process may take up to 6 months, which means that the project could start at the beginning of September (same year).

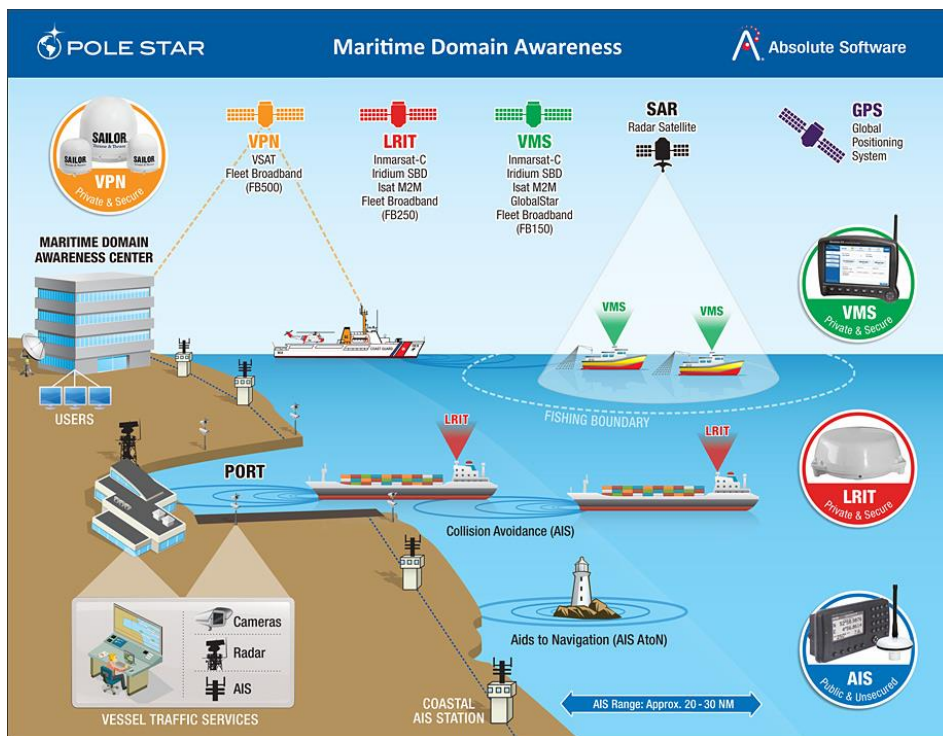
Ending date:

The completion of this first stage could take place in April 2018.

PROJECT 2
Equipping and monitoring the signal from the Vessels from the Panamanian Registry of Ships (LRIT)

Nature of the project

Project of long-range identification and tracking of Vessels



THE PROJECT COST

The total estimated cost of the project is PAB 12,500,000.00

PROJECT STRUCTURE

A single tendering will take place, which comprises the **Equipping and Operation** of the Center for the long-range identification and tracking of vessels in the Panama and other related services (LRIT).

PROJECT SUMMARY

According to SOLAS V19-1 and to the dispositions of MSC regarding the LRIT, it is a system for the long-range identification and tracking of vessels.

It consists of the onboard equipment for the broadcasting of the information (LRIT), the Communication Service Provider (CSP), the Application Service Provider (ASP), the LRIT Data Center (DC), the LRIT Data Distribution Plan (DDP), and the International Data Exchange (IDE). It also comprises an LRIT coordinator who acts on behalf of the contracting governments by examining and inspecting certain aspects that regard the functioning of the LRIT system.

Upon request, the search and rescue services provide the LRIT information to the contracting governments, which are entitled to receive the information through national and regional centers in ranging international cooperation of data.

Upon implementation of the LRIT, the PMA expects to cover some major topics, such as:

- Comply with all the requirements of the OMI regarding the LRIT system for the vessels of the Panamanian Registry. By regulation, they are subject to the implementation of a recognized Application Service Provider (ASP), and of the National Data Center (NDC) of the Republic of Panama. This also implies the recruiting, on behalf of the ASP, of the required Communication Service Providers (CSP). These requirements also comprise complying with the obligation of submitting the data center to a yearly performance auditing of the LRIT data center on behalf of the International Mobile Satellite Organization (IMSO)
- Establish identification and tracking routines that can be useful for the monitoring of the fleet of domestic services.
- Implementing a system of due diligence that allows a smooth and comprehensive checking of the background information of the vessels that join the registry

- Implementing a system of reviewing the background of the vessels, which allows port risk reduction through a smooth and comprehensive checking of the background information of the vessels that dock in Panamanian ports or take advantage of the port facilities offered by the Republic of Panamá
- Ensure compliance with the requirements regarding the yearly tests of the Ship Security Alert System (SSAS) International Ship and Port Facility Security Code (ISPS).

Scheduled dates

Starting date:

The tendering of this project will take place in February 2016. The administrative process may take up to 6 months.

Ending date:

The project will be in force of contract for 5 years, which indicated that it will end in 2021.