



## VMS: Providing Safety And Regulatory Compliance For Mexican Fishing Vessels

Under the United Nations' International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU), member countries agreed to introduce legislation requiring vessels with inboard motors greater than 80 horsepower (HP) to include a satellite tracking system. For Mexico, the regulation affected more than 1,100 boats that operate in the Pacific Ocean, as well as 950 boats that fish in the Gulf of Mexico, Gulf of California and Caribbean Sea.

## The Customer Challenge

The National Commission on Aquaculture and Fisheries (CONAPESCA) is the Mexican government agency responsible for managing, coordinating and developing policies regarding the sustainable use and exploitation of fisheries and aquatic resources. It not only monitors both commercial and recreational fishing activities to ensure compliance for all concessions, permits and authorizations, it also promotes and advocates conservation measures in the framework of regional fisheries management organizations (RFMOs) including the Inter-American Tropical Tuna Commission (IATTC) and the International Commission for the Conservation of Atlantic Tunas (ICCAT).

To comply with the regulations, CONAPESCA needed a centralized Vessel Monitoring System (VMS) solution that was easy to use, simple to install and that would:

- Transmit the exact location of vessels within 500 meters along with date and time periodically and in real-time
- Transmit route taken as well as the fishing zone that vessels were operating in
- Maintain an accurate account of the operation of registered fishing vessels
- Prevent access to restricted areas including secured areas (oil platforms) and ecological zones such as coral reefs
- Collect information that can be used as evidence to issue sanctions to vessels caught operating in restricted areas (illegal fishing sanctions)
- Be tamper-proof, fully automatic and operational at all times, regardless of environmental conditions
- Improve the management of fisheries resources
- Safeguard life at sea in accordance with international conventions, and streamline rescue efforts
- Improve the amount of information available for technical and scientific fisheries research

## The Solution

CONAPESCA turned to Astrum Satelital, an integrator specializing in satellite tracking and data transmission solutions for mobile assets, to develop a VMS solution that would meet its requirements.

At the control center, Astrum's VMS solution offers many features for the regulator including the ability to define geofences with rules of operation for national and international maritime waters. It is also able to generate and process notifications for emergency situations when vessels enter, exit or are fishing in restricted areas, among others.

On the vessel, an environmentally sealed IDP-690 tracking terminal uses bi-directional satellite service to provide communication at sea. The terminal enclosure provides protection against the elements (UV rays, dust, and salinity) and is submersible up to one metre.



---

### ORBCOMM'S IDP-690

The tracking device sends reports to the control center every hour with position, date, time, speed and course. It also offers the control center the ability to poll the location of the vessel at any time for monitoring.

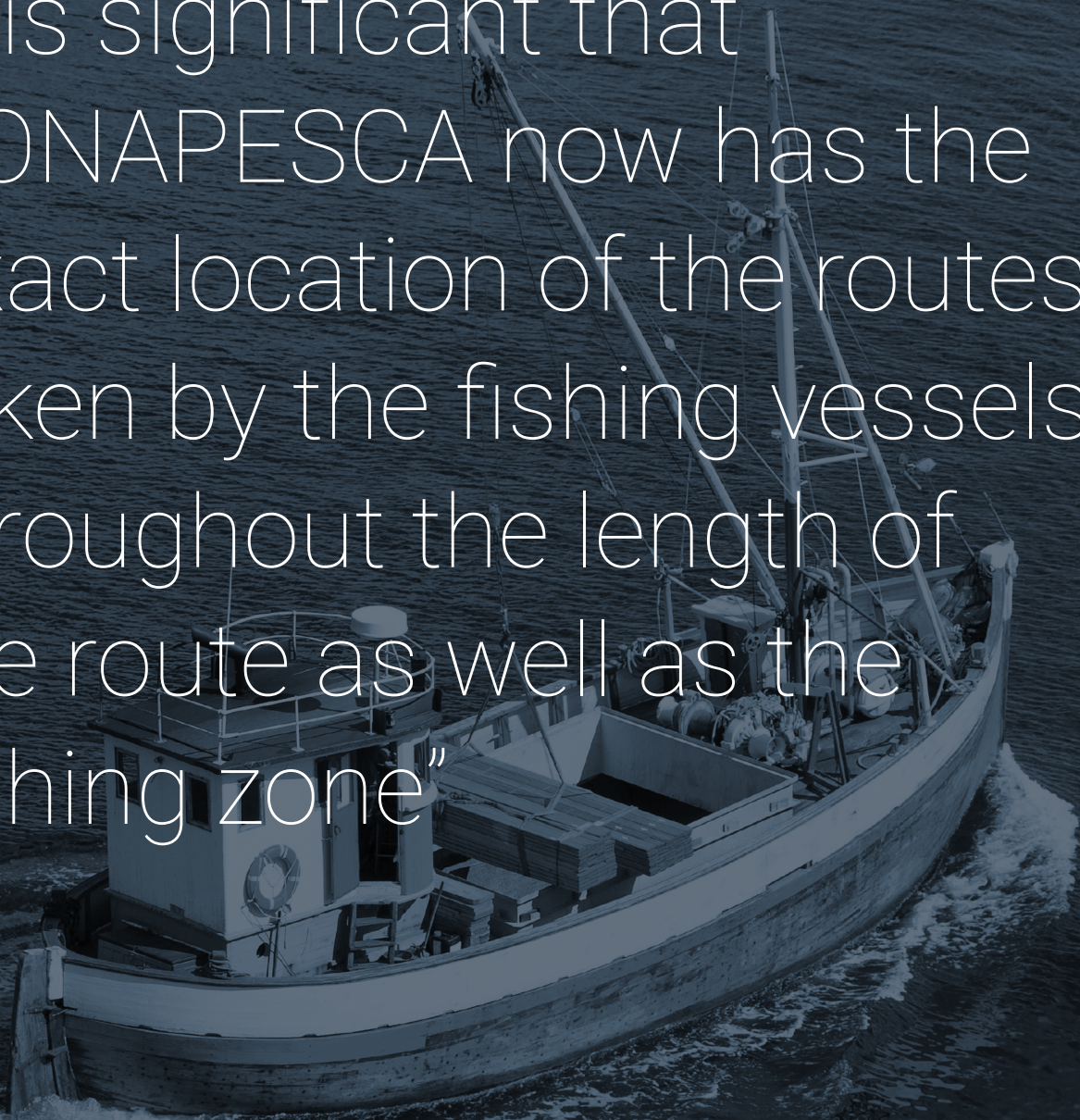
In addition to position reports, the tracking terminal sends notifications to the control center when it is connected or disconnected from its power source. It can also be used to send free and canned text messages as well as fishing reports.

The in-cab helm panel within the vessel displays the communication status with the external satellite terminal through LEDs. The panel also has a panic button, as well as a way to provide visual and audible alarms for when the vessel enters forbidden zones.

With Astrum's solution, CONAPESCA and its RFMOs are able to:

- Maintain an electronic nautical mapping system with delimitations of the maritime waters

“It is significant that CONAPESCA now has the exact location of the routes taken by the fishing vessels throughout the length of the route as well as the fishing zone”





- Define and monitor geofences with defined rules of operation
- Broadcast notifications for emergency, area restrictions, fishing in a restricted zone, proximity, connection/ disconnection of device, I/O to port
- Track vessels that are in the water and disconnected or not transmitting their location

### The Outcome

“It is significant that CONAPESCA now has the exact location of the routes taken by the fishing vessels throughout the length of the route as well as the fishing zone,” said Federico Sepúlveda, Astrum’s Maritime Director. The integrated satellite terminals and communication capabilities combined with Astrum’s VMS solution enable target monitoring of “suspect” vessels that are likely to commit offenses. “It also improves the data for scientific fisheries research”, said Sepúlveda.

Substantial savings have been achieved through smarter operations. Now that data is organized, work redundancy

has been eliminated and the regulator can immediately detect irregular situations and vessels that are committing offenses. In addition, the government is able to identify vessels that are not operational which allows the channelling of financial support only to vessels that are active.

With the success to date, the 2015 budget includes the initiative to upgrade the generic distress alert with specific classification alerts like vessel sinking, sickness on board, and mechanical or electrical failure. This will allow the Coast Guard to deploy the appropriate personnel and equipment in a timely and efficient manner.

### About Astrum Satelital

Established in 1976, Astrum Satelital is the leading service provider of mobile asset tracking and satellite communications services for the terrestrial and maritime industries in Mexico. It is currently authorized to use MSAT and Inmarsat satellite frequencies for satellite communications. More information at [www.astrum.com.mx/quienes-somos](http://www.astrum.com.mx/quienes-somos).