ROLTA MARITIME SAFETY & SECURITY

Integrated Maritime Solutions

ROLTA

HLS & MSS

India is poised to strengthen its coastal security and vigilance in the Maritime sector to safeguard our homeland from asymmetric threats. The National focus has grown manifold in recent times. To augment National security needs in, coherence with National Policy, Rolta offers state-of-the-art technology and solutions for Maritime Safety and Security (MSS) systems including Vessel Traffic Management Systems (VTMS), Coastal security and Critical Marine/Offshore Asset Protection. These products are carefully selected from the storehouse of our Joint Ventures partner, customized/ tailored for Indian environment from the operation and user point of view to achieve optimum performance.

Full capabilities to address new maritime challenges

New Maritime Environment

The vital role of maritime traffic in world trade has highlighted increased related risks and threats. Collisions in congested areas, fishing resources plundering, illegal immigration… as well as the emergence of terrorist attacks and new piracy methods could result in serious human and ecological disasters with severe economical consequences on the world economy. In response, new maritime regulations, policies and ambitious projects are introduced so that coastal states may ensure the safety and security of people, environment and assets.

New Maritime Safety and Security Challenges

In order to ensure their maritime safety and security missions, the various agencies and world navies must face four key challenges when looking for a maritime solution:

Consolidate the maritime domain

More and more missions (e.g. major disaster relief), involve multiple agencies and sources of information to create a continuum from safety to defense, (including environment and security) with situation handover to the most appropriate resource. Consequently, maritime solutions must be developed in a coherent way, to support cooperation between the different stakeholders, while preserving their existing maritime vision and responsibilities.

Define the operational solution

Successful implementation of a coherent, cooperative maritime safety & security solution hinges on a clear definition of operational needs, user environments and economic realities. Legacy systems and assets, existing organizations, roles and responsibilities, have to be factored into the solution from the outset.

Implement the operational solution

The choice of solution must be driven by identified operational needs, in order to provide the desired effects without unnecessary complexity and costs.

Anticipate change

To cope with constant change in the risk and threat environment, maritime safety & security systems must adapt quickly and deliver high availability to offer effective protection at all times.

An integrated response, the only way forward

Over the years, Rolta's Joint Venture (JV) Partners have developed the expertise to support its maritime customers world over in their various challenges with four domains of excellence:

An internationally recognized vision

Rolta supports the continuous management of maritime areas with solutions and services taking into account the multiple maritime stakeholders, secured and selective information exchange ensures data integrity on a need-to-know-basis, and facilitates the cooperation between the different agencies, for increased mission efficiency.

Operational expertise to define customer solutions

Our team comprises of maritime experts (Navy, Coast Guards…), previously experienced on Maritime Safety and Security Operations in various countries including India. This team has developed a mature Concept of Operations approach to understand the needs of each customer and offer the most appropriate solution.

Modular maritime solutions

Our maritime solution portfolio is based on Land, Coastal, Surface and Airborne capabilities for optimum coverage, fast situation analysis and efficient response. Module selection (form storehouse of Rolta's JV partners or third party supplier) is based on customer operational requirements to offer the most competitive solutions. Notable highlights of solution offered are open architectures and standards combined with innovative technologies such as Selective Information Dissemination, Web Technologies, Service Oriented Architecture… to integrate existing customer legacies and ensure interoperability with external systems and databases.

Collaborative approach

Value-added relationships with local industry partners are key to sustainable solutions. Rolta has a worldwide presence and a strong track record on multi-partner projects spanning the entire value chain from needs analysis to through-life support. Through this collaborative approach, Rolta offers the world-class technology needed to guarantee system availability and adaptability and meet the security and sovereignty requirements of each customer.

SERVICES

SYSTEMS

COMMUNICATIONS

SENSORS

ROLTA

Intelligent maritime solutions for continuous management of maritime areas

SAFETY   ENVIRONMENT   SECURITY

Exclusive Economic Zone

Shipping Lane **2**

Search and Rescue **2**

Territorial Waters **3**

Harbour Protection **1**

Offshore Platform Protection **1**

Trafficking Prevention **1**

Fisheries Control **3**

Costal Police **3**

- **Radar Video**
- **Advanced Clutter Filtering**
- **Real Data Fusion**
- **Multi Hypothesis Tracking**
- **Multi Sensor Data Fusion**
- **Unique Customization for Specific Environments**
- **Integration with Legacy System**
- **User Regulated Access**
- **Modular and Scalable**
- **IMO and ISPS Code Compliant**

1 Critical Asset Protection

MISSIONS

Protect people, goods and assets:
- Harbours
- Oil & Gas infrastructures (off-shore platforms, FPSO…)
- Vessels
- Naval bases
- Other critical infrastructures

CHALLENGES
- Land and waterside open areas
- Scattered facilities and responsibilities
- Complex flow of people, goods and vessels
- Minimise impact on economic activity

CUSTOMER BENEFITS
- Integrated solutions from detection to response
- Comprehensive protection: underwater, surface, land, airside
- Correlation with intelligence data
- Information management to support the man in the loop
- ISPS compliance
- No disruption of economic activity
- Increased operational efficiency
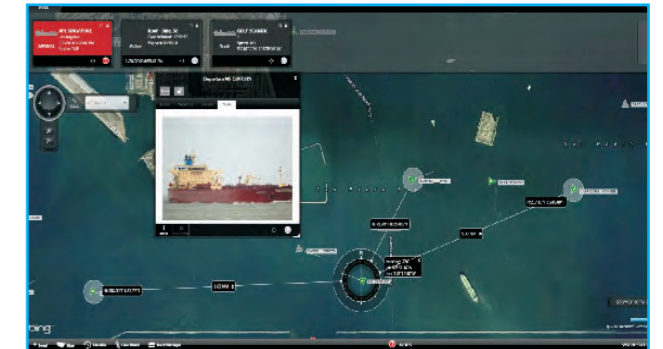

2 Maritime Traffic Safety

MISSIONS
- Ensure the safety of people, goods and vessels from port of departure to final destination
- Maritime traffic management
- Collision prevention and response
- Pollution prevention and response
- Search And Rescue

CHALLENGES
- Increasing maritime traffic
- Numerous events to monitor
- Interactions with multiple resources and agencies

CUSTOMER BENEFITS

- Integrated Vessel Traffic Service solutions
- Navigational risk detection to support operators
- Mission planning tools with multiple stakeholders
- Improved resource allocation for greater efficiency and cost savings

3 Maritime Surveillance

MISSIONS

Protect interests in Exclusive Economic Zones (EEZ), temitorial waters, rivers and lakes against:
- Resource plundering
- Smuggling
- Liegal immigration
- Piracy
- Terrorism

CHALLENGES

- Large and unrestricted navigational areas
- Small and non cooperative objects taking advantage of dense maritime activity to conceal their actions
- Need for increased detection notice
- Interactions with multiple resources and agencies
- Complex legal aspects

CUSTOMER BENEFITS

- Integrated solutions from detection to response Comprehensive Maritime Operational Picture based on networks of sensor sites and centres (local, regional….)
- Full coverage with wide choice of platforms coastal, airborne, satellite…) depending on operational requirements
- Correlation with intelligence data
- Abnormal behavior detection to support operators
- Integration of assets (patrol boats, helicopters, aircrafts…) Improved resource allocation for greater efficiency and cost savings

ROLTA

Intelligent maritime solutions for continuous management of maritime areas

The Backbone – Automatic Identification System (AIS)

AIS is the mariner's most significant development in navigation safety since the introduction of radar. The system was originally developed as a collision avoidance tool to enable commercial vessels to 'see' each other more clearly in all conditions and improve the helmsman's information about his surrounding environment. AIS does this by continuously transmitting a vessels identity, position, speed and course, along with other relevant information to all other AIS equipped vessels within range. Combined with a shore station, this system also offers port authorities and maritime safety bodies the ability to manage maritime traffic and reduce the hazards of marine navigation.
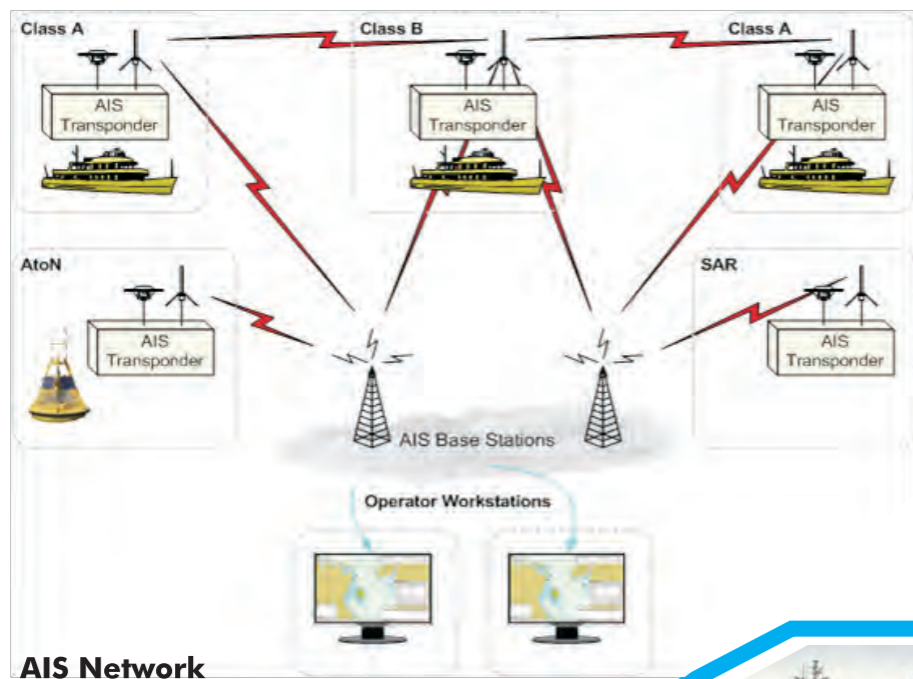
Due to the great safety benefits offered by AIS, this technology was made compulsory throughout the world in 2002 for all passenger ferries and vessels over 300 gross tonnes. An AIS transponder determines its own position, speed and course using a built in GPS receiver. This information is combined with other important navigation information & automatically communicated between AIS equipped vessels without any user interaction.

AIS transponders on other vessels and coast stations receive this information and use it to build up a live graphical display of traffic in the area. The transponder can be connected to many types of chart plotter or PC charting software using a standard interface protocol. AIS does not require a radar, but can offer similar capabilities and even enhance a radar image if a radar has already been fitted to the vessel.

The range of coverage of the system is similar to a VHF radio. The system also has the advantage that VHF radio signals will travel around bends and over islands giving better coverage than radar or enhancing a radar picture when used together.
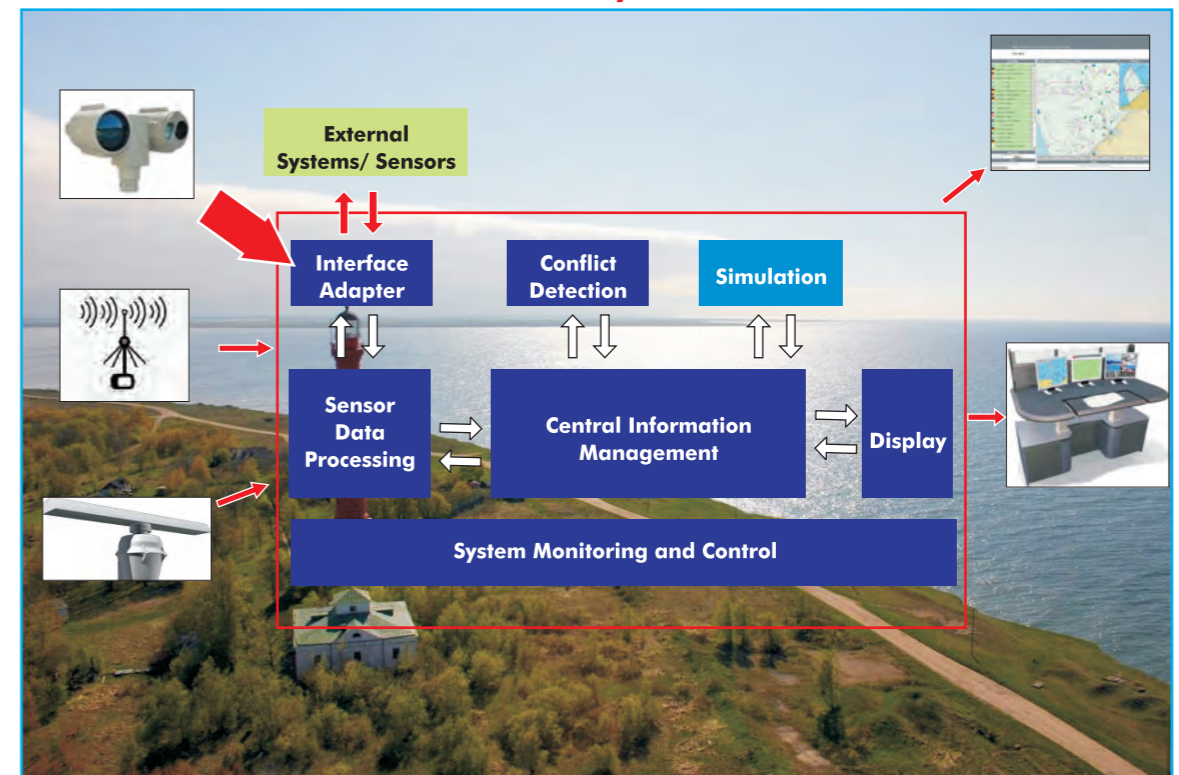
Benefits of AIS

- AIS provides a range of benefits including collision avoidance for personal safety of mariners, vessel identification for port authorities and homeland security, and vessel to vessel identification for leisure and commercial applications.

- AIS data can be overlaid onto radar to provide a combined view, and can also provide safety critical data with the ability to 'see around corners' where radar may have limited functionality.

Coastal/ Offshore Surveillance Solutions Overview

National Maritime Operation Centre Regional Control Centre Local Control Centre

Awareness & Coordination

External Systems

IT&C (LAN, WAN)
Radio-link   Fiber-optic   Existing system

Communication backbone

Coastal Stations

VTMS Information System Overview

External Systems/ Sensors

Interface Adapter   Conflict Detection   Simulation

Sensor Data Processing   Central Information Management   Display

System Monitoring and Control

AIS Network

Class A   Class B   Class A

AIS Transponder   AIS Transponder   AIS Transponder

AtoN   SAR

AIS Transponder   AIS Transponder

AIS Base Stations

Operator Workstations

ROLTA

Rolta India Ltd

Rolta is an Indian multinational organization that has executed projects in over 40 countries. Rolta serves these markets by providing innovative Enterprise Geospatial & Defense Solutions (EGDS), Enterprise Design & Operations Solutions (EDOS) and Enterprise Information Technology Solutions (EITS).

Rolta provides comprehensive Engineering, Procurement and Construction Management (EPCM) services to meet turnkey project requirements of power, oil, gas and petrochemical sectors. Rolta provides state-of-the-art solutions for C4ISTAR information systems, Military Communications, Digital Soldier, and Vehicle Systems, covering the entire "sensor to shooter" chain, and sophisticated Homeland Security Solutions based on its own intellectual property, including technologies acquired from world leaders, and by leveraging its partnerships with leading defense and security companies.

Rolta, headquartered in Mumbai, employs over 4000 professionals with countrywide infrastructure and international subsidiaries across the globe. The Company has benchmarked its quality processes against the world's best quality standards. Rolta is accredited with the prestigious ISO 9001:2008, the standard for Quality Management System; BSI ISO/IEC 27001:2005 certification, the ultimate benchmark for information security; the BSI ISO/IEC 20000-1:2005 IT Service Management Standard, and the Company has been assessed at CMM level 5.

Forbes Global has ranked Rolta amongst the "Best 200 under a Billion" for four times in six years. Rolta has been included in the S&P Global Challengers List™ 2008, by Standard & Poor's. This List identifies 300 mid-sized companies worldwide that have shown the highest growth characteristics along dimensions encompassing intrinsic and extrinsic growth. Rolta has been ranked at the 2nd position as a preferred employer and at the 4th position in overall ranking in the 2010 DATAQUEST survey of Best Employers in the IT sector.

The Company is listed on the Bombay Stock Exchange and National Stock Exchange in cash and F&O segment, and forms part of various indices on BSE/NSE. The Company's GDRs are listed on the Main Board of London Stock Exchange and its FCCBs are listed on the Singapore Stock Exchange

ISO 9001 : 2008
C E R T I F I E D

CMM LEVEL 5

Holds Certificate No: **ITMS 538804**
ISO/IEC 20000-1:2005

Holds Certificate No: **IS 535637**
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Innovative Technology for Insightful Impact