



COAST GUARD PERSPECTIVE ON COASTAL SURVEILLANCE RESPONSE SYSTEMS AND PLATFORMS



BY

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DOMAIN COMPLEXITIES



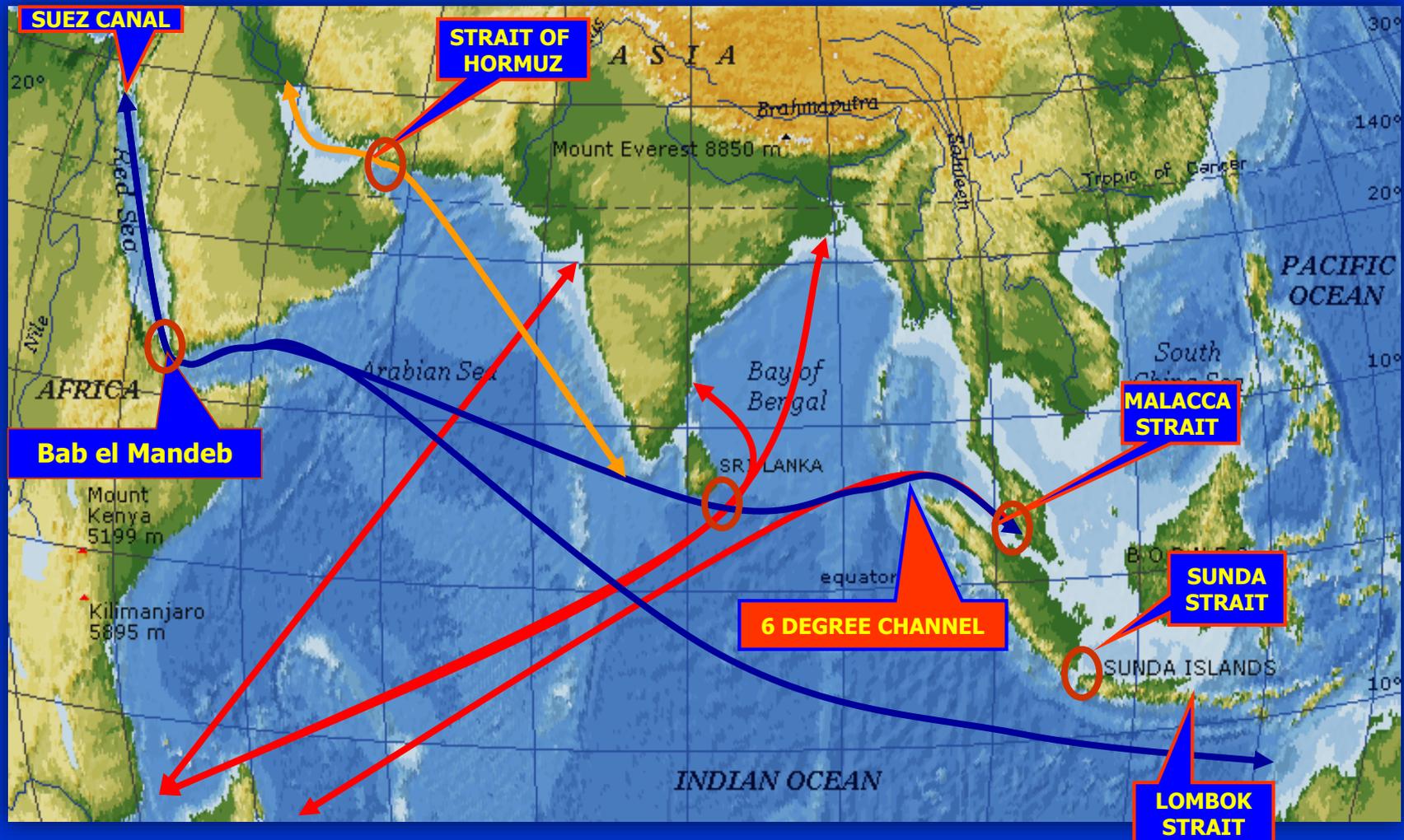
- **Complex** and **Dynamic** Maritime Environment
- World's **fifth largest** coastline - **7516 km**
- **1382** mostly uninhabited islands
- Vast Exclusive Economic Zone of **2.01 million sq kms**
- **13 Coastal States & UTs** - at Vanguard of Development

DOMAIN COMPLEXITIES

- Exponential growth of coastal population and infrastructure
- VA's & VP's
 - ✓ Ports
 - ✓ Industrial units
 - ✓ Military installations
 - ✓ Oil refineries
 - ✓ Nuclear power plants



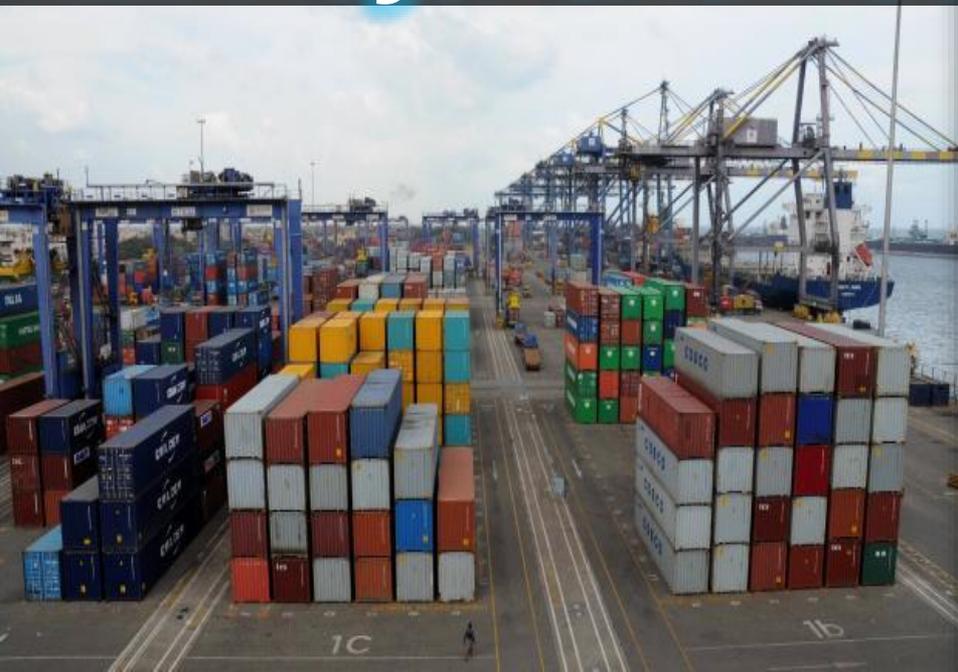
DOMAIN COMPLEXITIES



Over 100,000 ships transit close to our shores every year



12 Major and 200 Non-major Ports



COMMERCIAL SHIPPING

.... also a threat owing to access to mainland



SAGARMALA PROJECT



- To modernize Indian Ports and Development of coastline through
 - ✓ Coastal Economic Zone (CEZ)
 - ✓ New Ports
 - ✓ New Fishing harbours



VULNERABLE TO THREATS

REQUIRE ENHANCED SURVEILLANCE



FISHING

- **Third largest** in the world in Fishing
- **Second largest** in the world in aquaculture
- Almost **2.5 lakh** registered fishing boats
- Critical **national assets**
- Yet they pose **a live threat** as witnessed in Dec 2008



SURVEILLANCE AND THE CHALLENGE

- **Coastal Surveillance** - not just technology to defend valuable assets
- **Challenge** is prevention of access to hinterland by all types of anti-nationals / nefarious elements

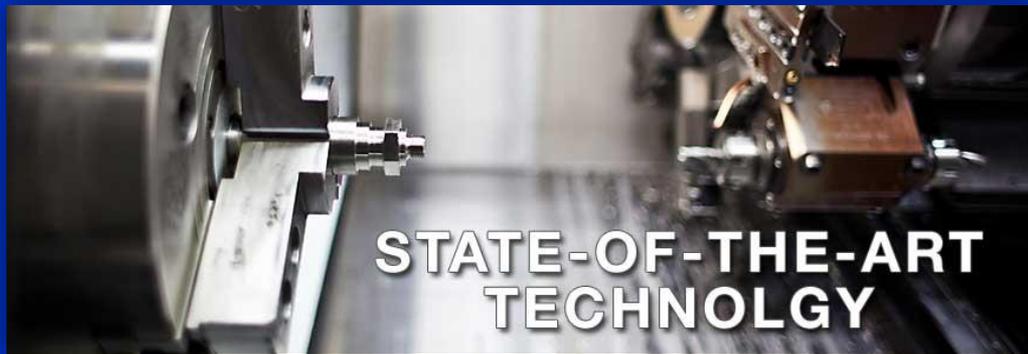


INDIAN COAST GUARD

- Playing a significant role in the maritime domain
 - ✓ Humanitarian Tasks viz. Search & Rescue and Pollution Response
 - ✓ Maritime Law Enforcement
- Responsible for coordination of Coastal Security in Territorial Waters
 - ✓ With large number of Central and State agencies



RESPONSE SYSTEMS AND PLATFORMS



ROBUST



RESPONSE SYSTEMS

- Driven by its **operational philosophy**
- **Combination of** Physical & Electronic Surveillance efforts utilized to optimize results
- **Physical Surveillance** undertaken by Surface / Air assets



COASTAL SURVEILLANCE NETWORK

- Encompasses modern surveillance gadgets
 - ✓ Radars
 - ✓ Electro Optic Sensors
 - ✓ VHF sets
 - ✓ Met equipment
 - ✓ AIS
 - ✓ Marine Small Target Trackers



HUB AND SPOKE



COAST GUARD

MARINE POLICE



Marine Police Stations work in Hub & Spoke concept with Indian Coast Guard under Coastal Security Scheme (CSS)

FISHERMEN - 'EYES & EARS'



Community Interaction Programmes

FORCE MULTIPLIERS

- Combination of High Endurance & High Speed surface platforms
 - ✓ for sustained deployment and rapid response
- Force-multipliers
 - ✓ **Interceptor Boats** - Quick reaction assets
 - ✓ **Hovercraft (ACVs)** - For shallow water operations



MODERNIZATION AND AUGUMENTATION

- ICG undergoing **rapid modernization** and steadily augmenting force levels **for effective surveillance** and **optimum coverage**
- Future acquisitions
 - ✓ **Multi Mission Maritime Aircraft (MMMA)**
 - ✓ **Twin Engine Helicopters**
 - ✓ **State-of-the art surface platforms with modern sensors**



THE WAY AHEAD

FOOD FOR THOUGHT !!!

- Majority of equipment onboard surface & air platforms of **foreign origin**
- CSN also equipped with sensors / equipment from **foreign OEMs**

WHY IS IT SO ?



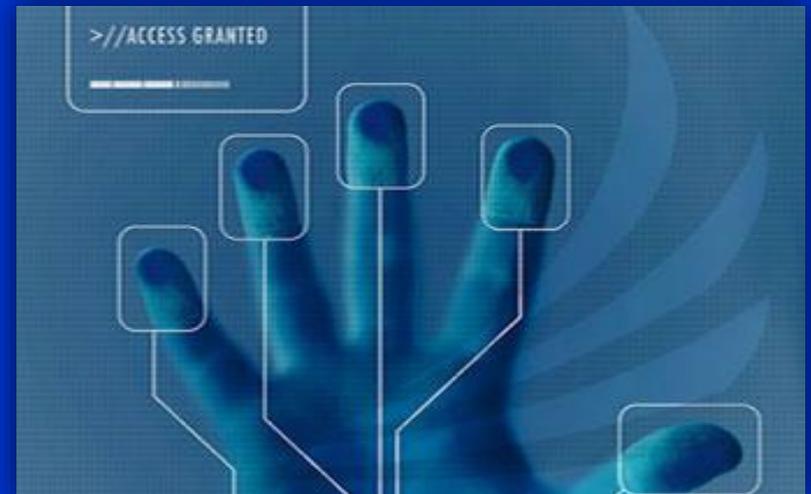
TRACKING AND IDENTIFICATION SYSTEMS

- Monitoring Control and Surveillance (MCS) of large fishing fleet - A grey area
- Vessels < 20 m length not fitted with any Tracking and Identification system
- Development of Indigenous Transponders which are affordable & tamper-proof will strengthen Coastal Security



MONITORING LANDING CENTRES

- Lack of **continuous monitoring** of numerous fish landing Centers
 - **A lacuna**
- Needs to be overcome using technology
 - ✓ **Radio Frequency Identification Devices (RFID)**
 - ✓ **Electro-optic & Biometric Sensors**



UNMANNED PLATFORMS

- Deployment of un-manned **surface craft** and aerial vehicles provide for
 - ✓ **Swift launch**
 - ✓ **Effective surveillance for a prolonged duration**
 - ✓ **Interdiction**
- Developing such unmanned platforms **indigenously** would be 'win-win' situation



DIGITAL DATA BANK & DATA HANDLING

- Creation of **digital Data Bank** of all types of vessels plying in Indian waters - **Need of the Hour**
- This would enable **quick processing**, **better assimilation** and **quick retrieval of data**, which in turn would optimize operational efficiency
- Indian companies can provide a viable solution
- Processing of **over-flooded raw data** and **corroboration** with data bank in **shortest possible time** is **paramount** , needs special focus





CONCLUSION

'MAKE NOW' AND 'MAKE IN INDIA'

- A well-knit Coastal Security Mechanism comprising of
 - ✓ Satellite based surveillance system
 - ✓ Chain of Static Sensors
 - ✓ Tracking system for small crafts operating at sea
 - ✓ Surface & air assets with high detection capability
- Will provide a **robust security system** capable of neutralizing anti-national elements



Thank you

