

# AN OVERVIEW OF INDIA'S MARITIME SECURITY CHALLENGES



Part II

## MISCELLANEOUS THREATS

# **PROLIFERATION SECURITY**



**NORTH KOREAN VESSEL KU WUL SAN –KANDLA -2006**

➤ MV DA CUI YUN



- HONG KONG FLAGGED SHIP – BOUND FOR KARACHI
- DETAINED IN KANDLA
- FEB 2020
- AUTO CLAVE USED IN BALLISTIC MISSILE LAUNCH  
DECLARED AS INDUSTRIAL DRYER





**IRANIAN DHOW -BAROOKI- OFF KERALA -  
2015**





# MV WISDOM- OFF JUHU

## JUN 2011



# MV PAVIT -JULY 2011









LADY HAN







# RUSSIAN YACHT ENTERS MUMBAI – UNCHECKED



APRIL 2017





## BEIRUT EXPLOSION

AUGUST 2020

2750 TONS –AMMONIUM NITRATE

217 KILLED

7000 INJURED

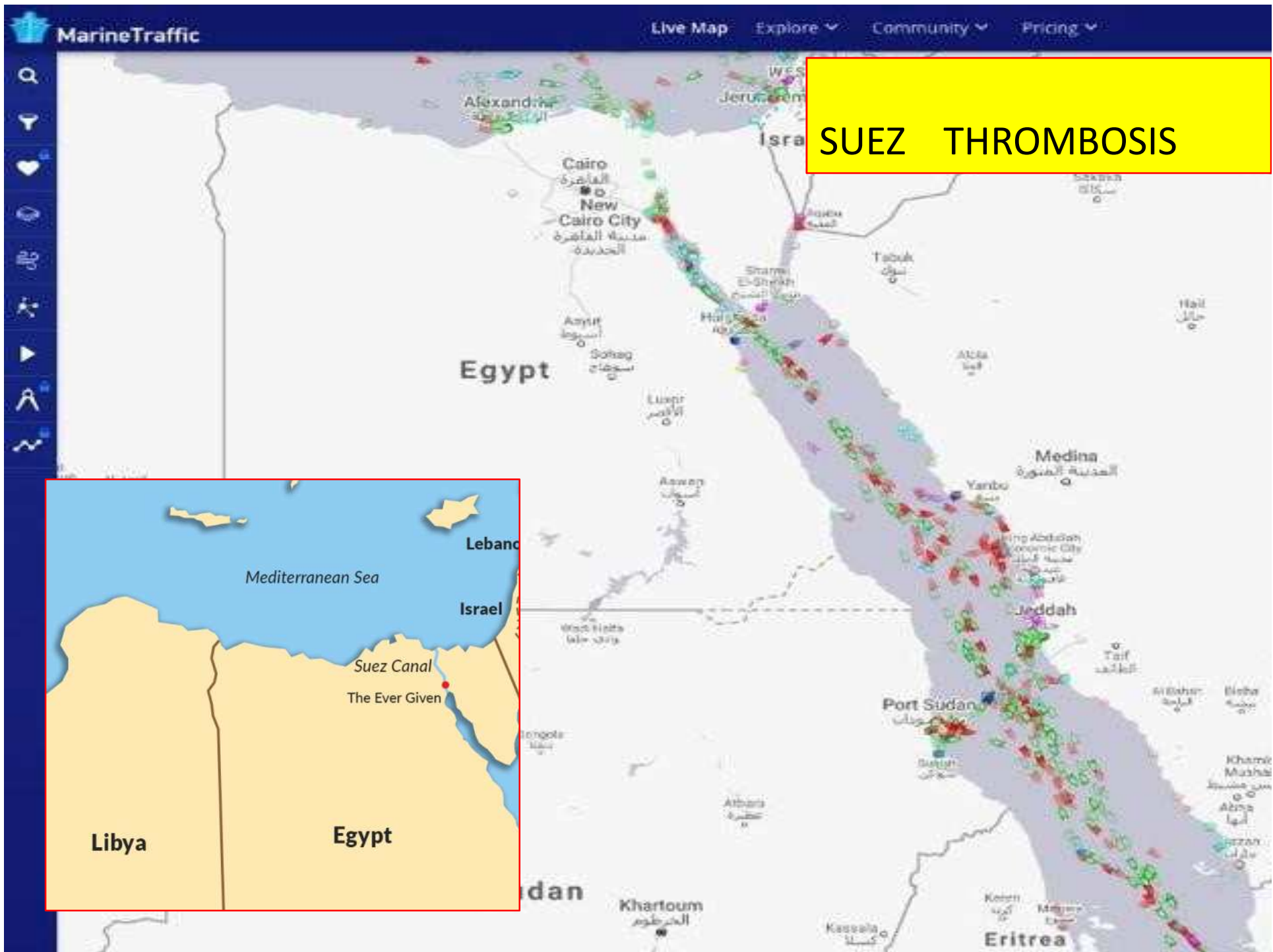
20 KM RADIUS AFFECTED



# AMMONIUM NITRATE

- **USED FOR MAKING FERTILIZERS**
- **KEEP LYING IN PORTS AND GODOWNS**
- **CAN EXPLODE WHEN HEATED**
- **MIXED WITH FUEL OIL BECOME EXPLOSIVE**
- **MEDIA REPORTS INDICATE AMMONIUM NITRATE LYING AT CHENNAI PORT WAS MOVED TO HYDERABAD AFTER BEIRUT EXPLOSION**





## SUEZ THROMBOSIS



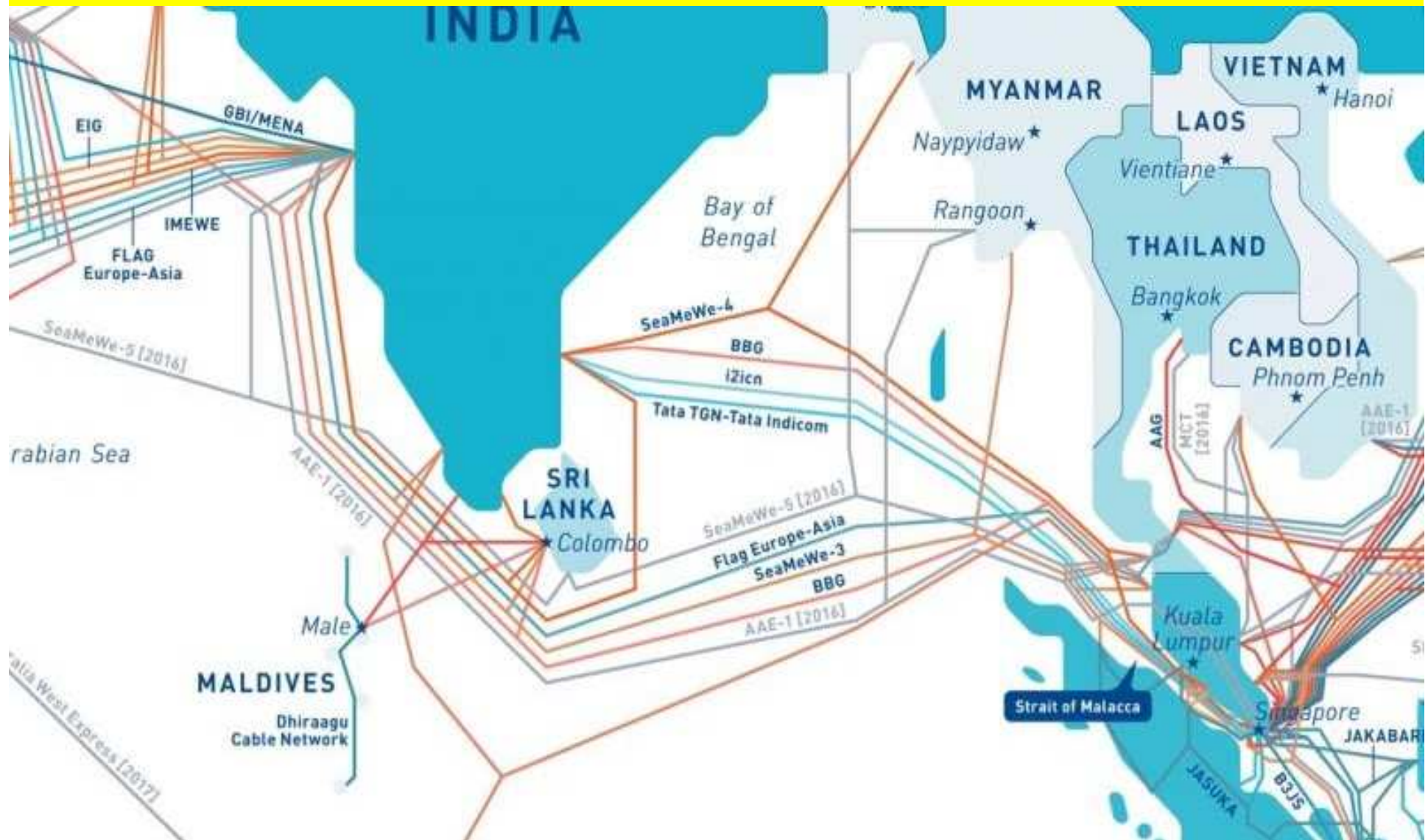
# SHIPS TO SAIL AROUND AFRICA

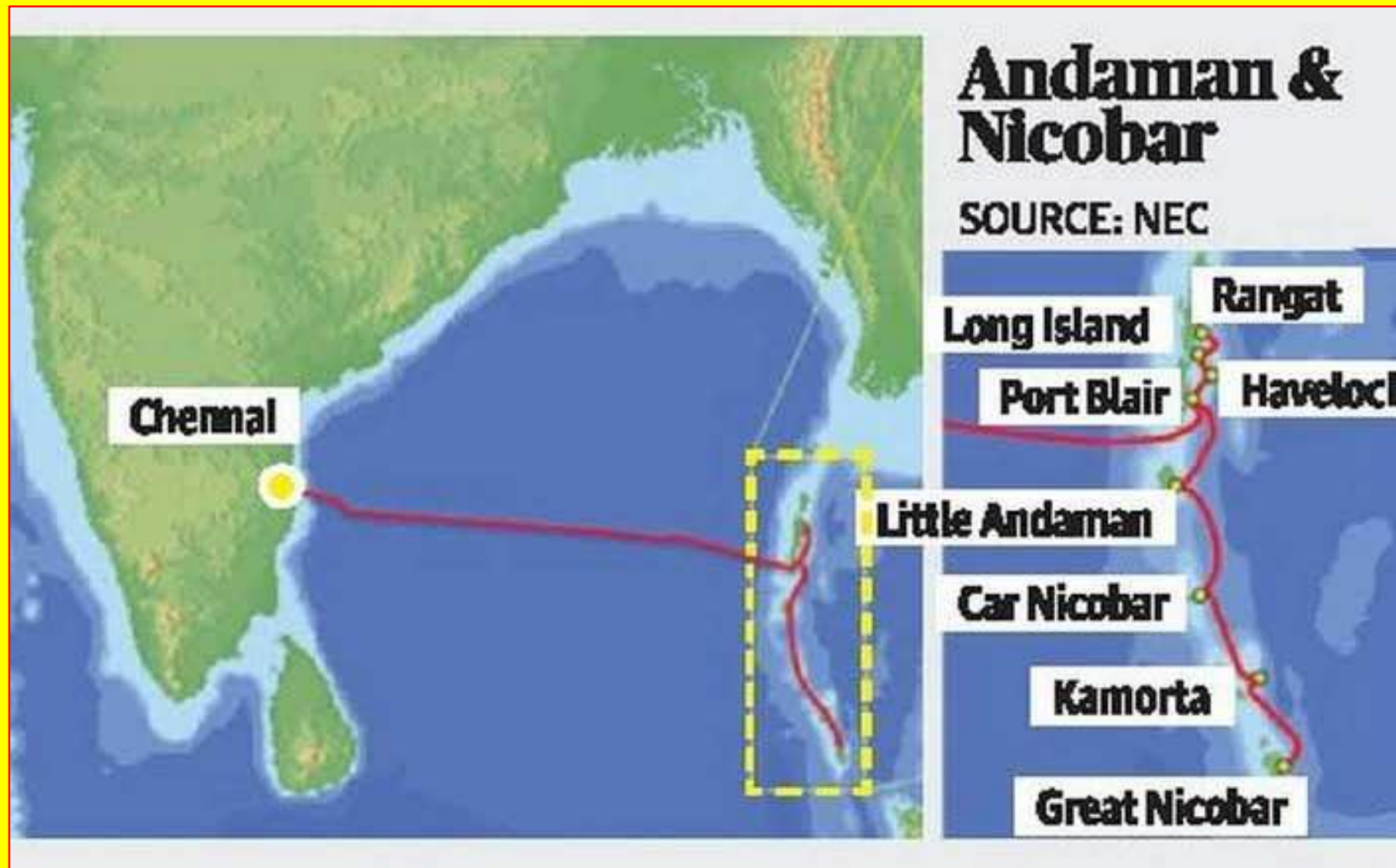
Due to backlog in the Suez Canal, ships may re-route





# SUBMARINE INTERNET CABLES







## **THREATS TO SUBMARINE CABLES**

- NATURAL DISASTER – EARTH QUAKE / TSUNAMI- TONGA
- SHIP'S ANCHOR FOULING
- FISHING VESSEL SNAGGING
- 
- SABOTAGE -ROGUE STATE
- TERRORISTS COULD ATTACK
- UNDERWATER DRONES
- TRAINED DOLPHINS COULD PLACE EXPLOSIVES

# MARITIME CYBER SECURITY

# MARITIME LOGISTICS CHAIN

- OWNERS
- SHIPPING COMPANIES
- SHIPPING AGENTS
- SHIP MANAGERS
- CHARTERERS
- CONTAINER STUFFING/ DE –STUFFING AGENTS
- STEVEDORES
- SHIP CHANDLERS
- SHIPS CREW ( MULTI –NATIONAL)
- PORT AUTHORITIES
- CUSTOMS



# MARITIME CYBER SECURITY

- PIRATE ATTACK SUPPORTED BY CYBER ATTACK
- GPS SPOOFING
- ELECTRONIC CHART SPOOFING
- AIS SPOOFING
- CHANGE LOADING SEQUENCE OF CONTAINERS
- MASKING OF CONTAINERS WITH CONTRABAND
- MAKE OIL & GAS RIGS NON-OPS



# VULNERABILITIES

# CRUISE LINERS



# CRUISE SHIPS

- KOCHI , MANGALORE ,MUMBAI ,KOLKOTTA ETC
- LARGE NO OF GUESTS & CREW : 3000 -5000
- FOREIGNERS OF VARIOUS NATIONALITIES
- PERFECT TARGET FOR TERRORISTS TO DRAW WORLD ATTENTION





# COASTAL ASSETS

- PORTS & HARBOURS - 12 MAJOR PORTS

## *REFINERIES AT PORTS*



- TANKERS, PORT OIL HANDLING FACILITIES AND REFINERIES AT PORTS
- NATIONAL OIL GRID
- ALL VULNERABLE





TANKER ALONGSIDE

## FLOATING BOMBS



TANKER AT SINGLE POINT MOORING (SPM)



LNG CARRIER

## OIL & GAS –STRATEGIC CARGO

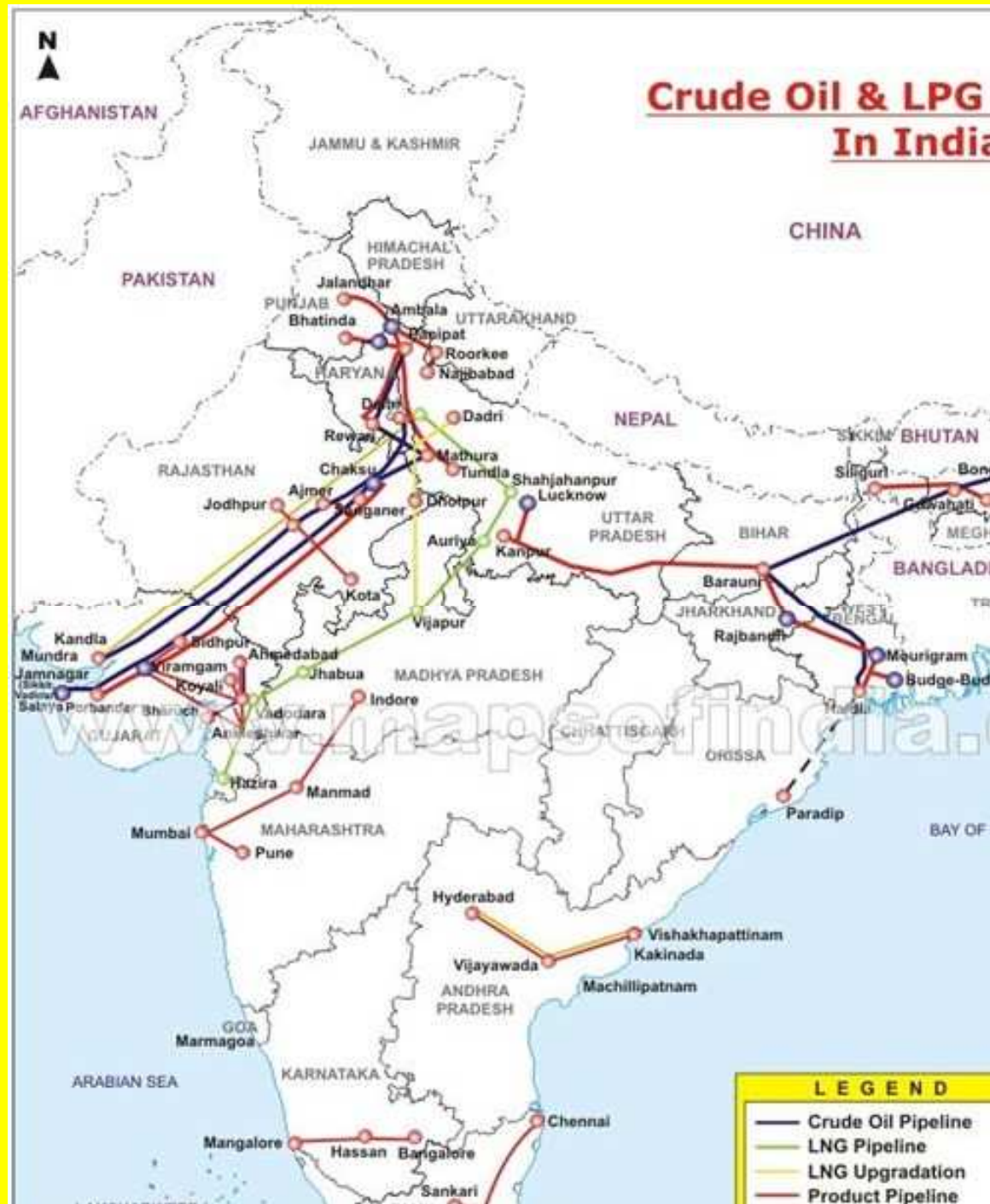
- TANKERS/LNG SHIPS
- FLOATING BOMBS
- CAN BE EXPLODED OR SUNK IN THE MOUTH OF NARROW HARBOURS LIKE KOCHI ,MANGALORE ETC TO CLOSE PORTS
- CAN THEMSELVES BE USED AS A WEAPON TO RAM A INFRASTRUCTURE – a la 9/11
- CARGO CAN CAUSE ENVIRONMENTAL DISASTER

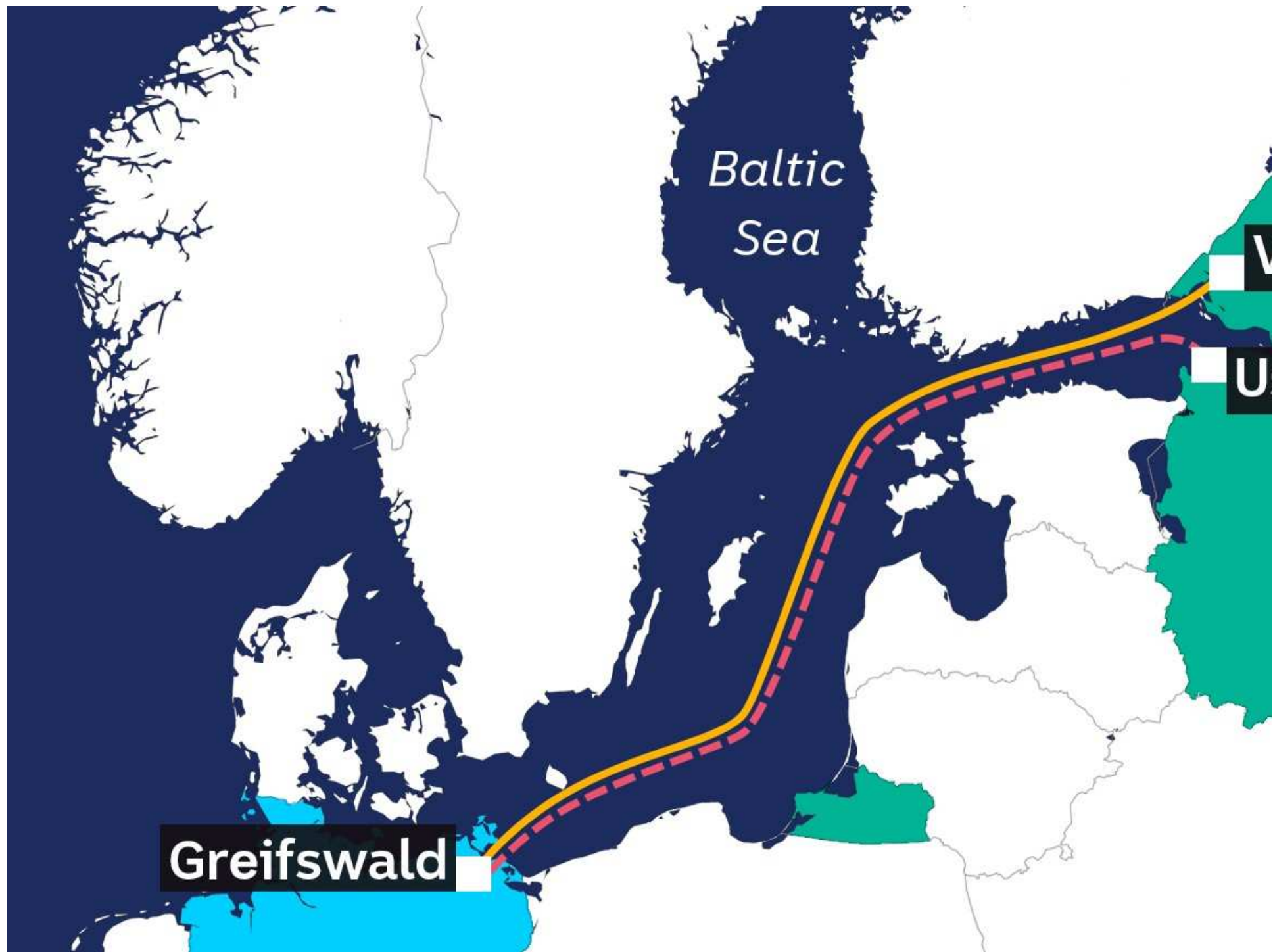


# THREATS TO OFF SHORE STRUCTURES

- EXPLOSIVES /LIMPET MINES ATTACHED TO LEGS OF RIGS
- **SMALL BOATS LOADED WITH EXPLOSIVES TO RAM THE RIGS**
- ENVIRONMENTAL DISASTER
- ECONOMIC DISASTER







# COASTAL ASSETS

## NUCLEAR PLANTS

- TARAPUR
- KAIGA
- KUNDAKULAM
- KALPAKKAM

## •THUMBA EQUATORIAL ROCKET LAUNCHING STATION (TERLS)

. SRIHARIKOTA- ANDHRA PRADESH

## •WHEELER ISLAND- ORISSA

## •INDUSTRIAL COMPLEXES- GULF OF KUTCH, GULF OF KHAMBAT

- SHIP BUILDING YARDS- MAZGAON DOCKS , KOCHI SHIYARD ETC
- NAVAL BASES & DOCKYARDS – MUMBAI , KARWAR ETC
- ❖ *NUCLEAR SUBMARINES*
- ❖ *AIRCRAFT CARRIERS*
- ❖ *OTHER SHIPS & SUBMARINES*



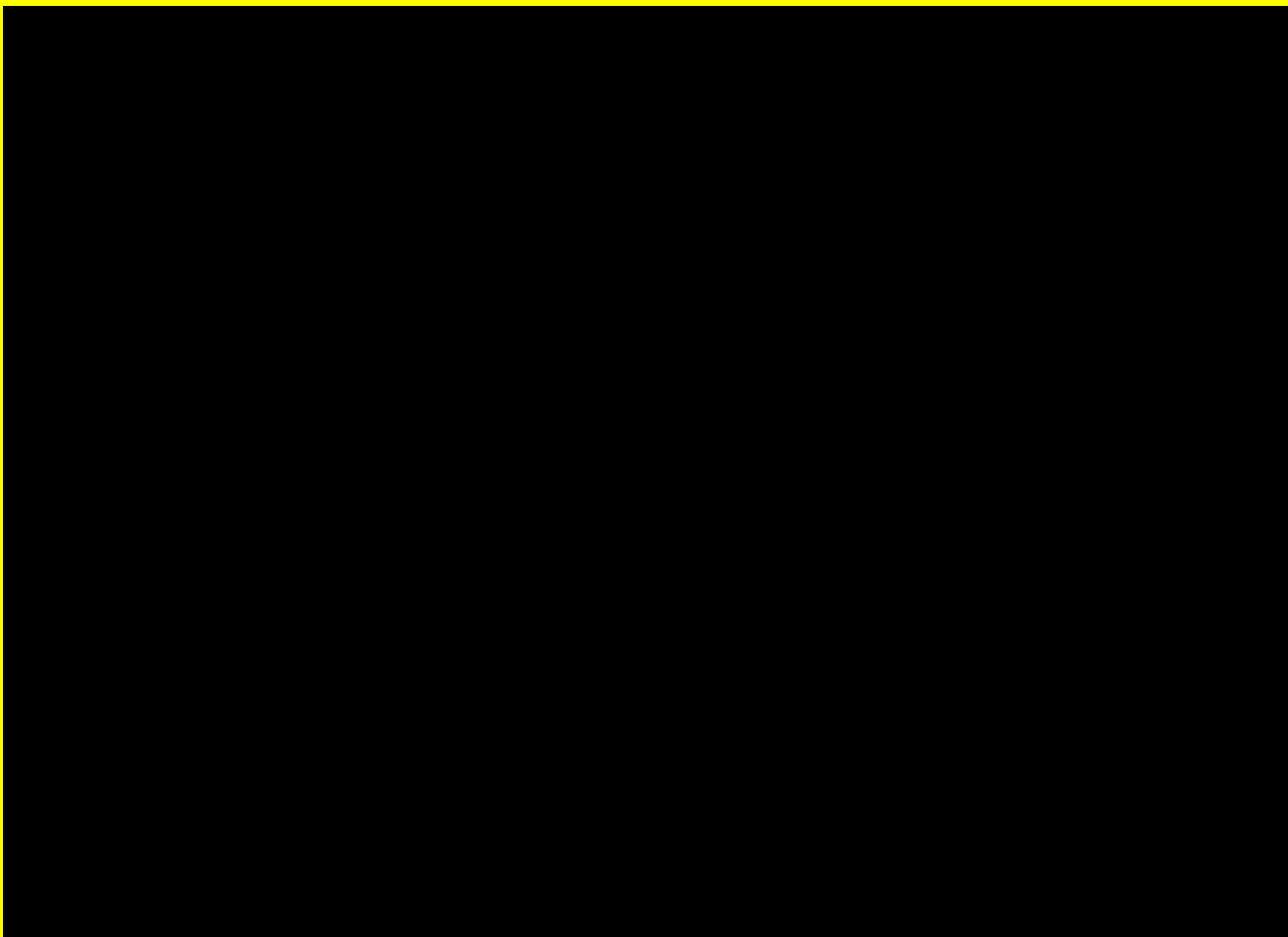
INS VIKRAMADITYA



## MINOR PORTS

- 200- INTERMEDIATE & MINOR PORTS
- 9 COASTAL STATES & 4 U/Ts
- STATE SUBJECT
- LACK OF OVERSIGHT
- HUB FOR NEFARIOUS ACTIVITIES
- MEDIA REPORTS QUOTING INTELLIGENCE BUREAU(IB)

# ENVIRONMENTAL





# OIL SPILL OFF CHENNAI







INDIA DESPATCHES –  
EQUIPMENT AND  
COAST GUARD TEAM

JAPANESE TANKER  
MV WAKASHIO

G



## MT NEW DIAMOND



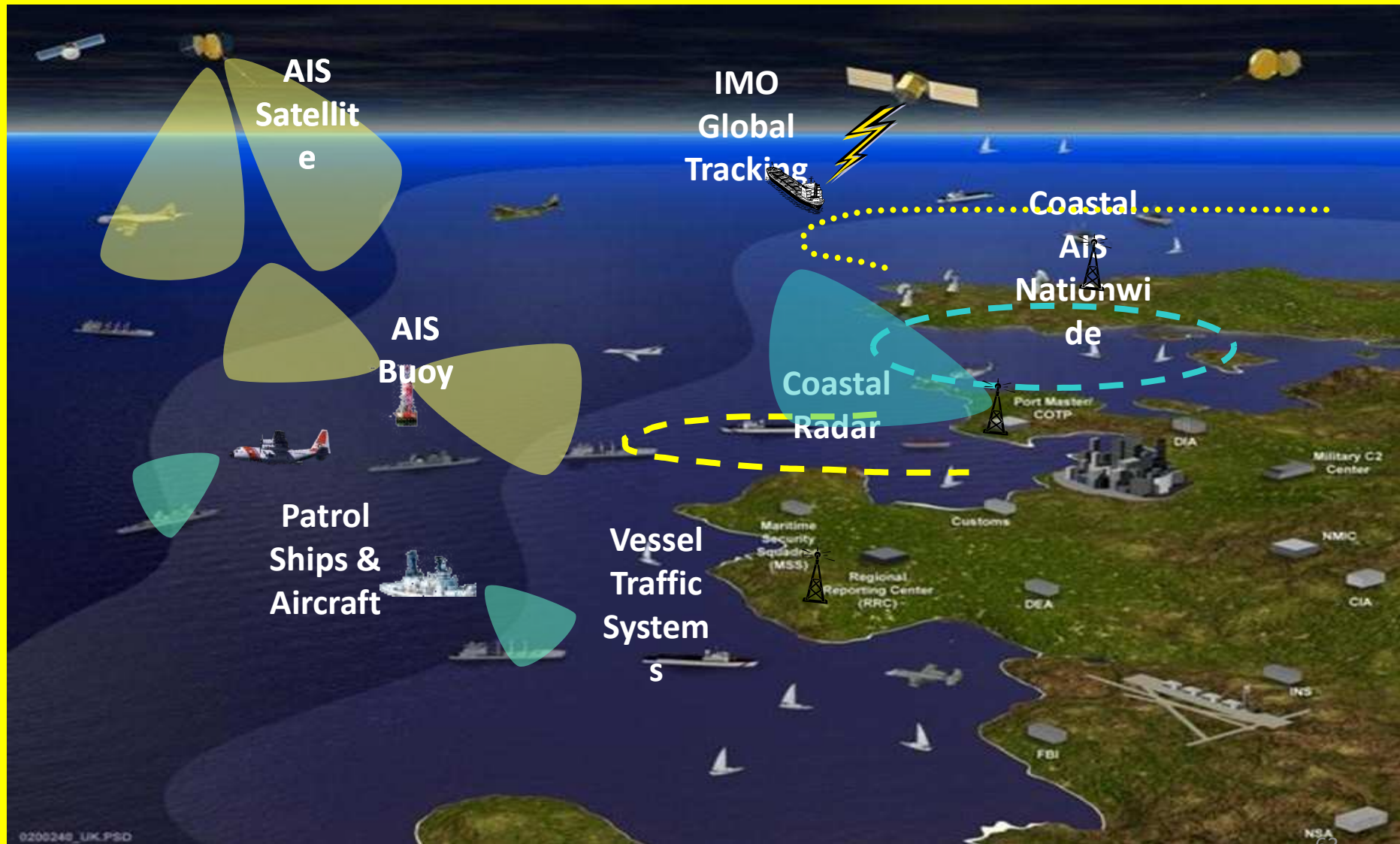
# MV EXPRESS PEARL





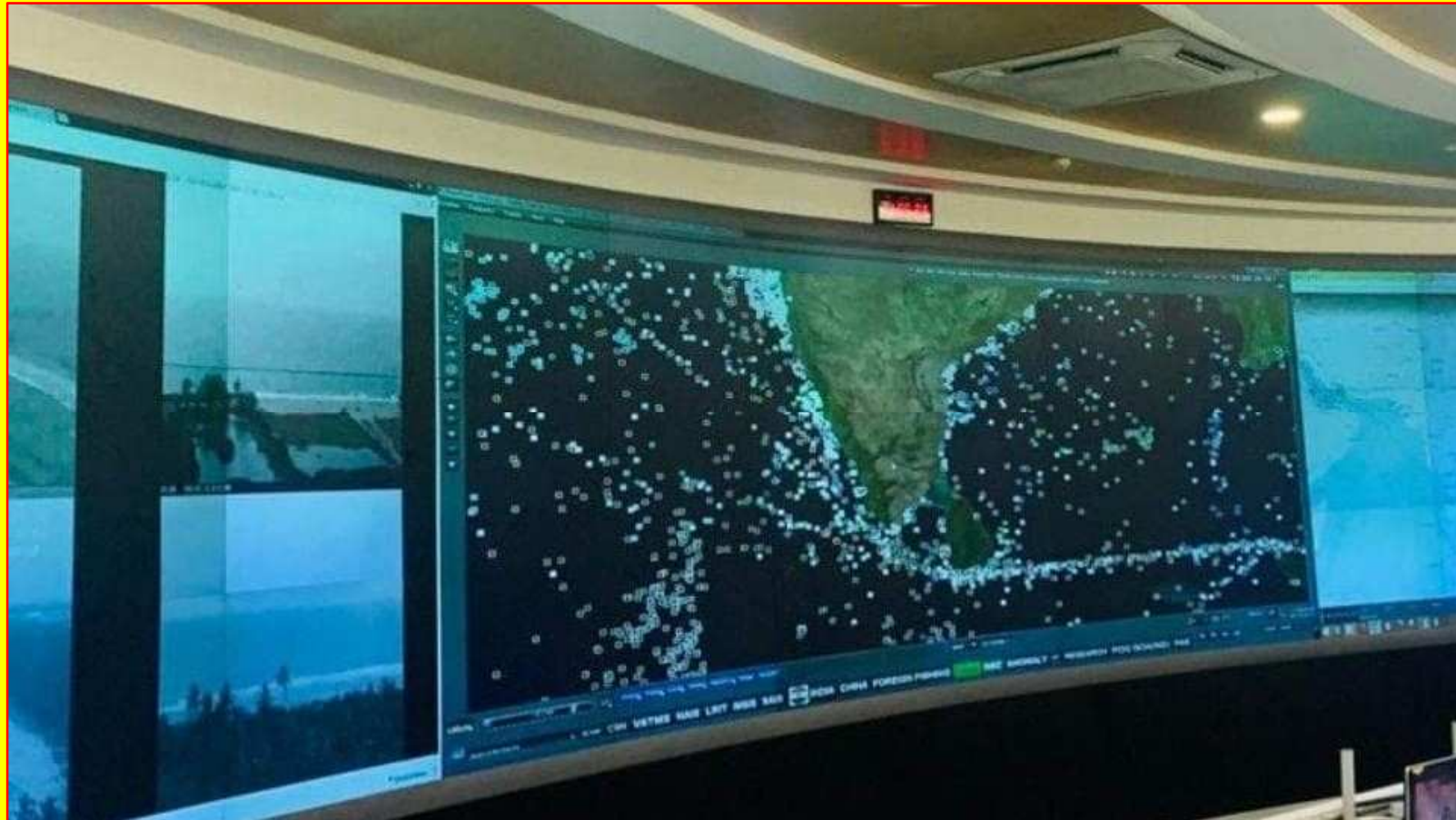
# DEFENSIVE /PROTECTIVE MEASURES

# ***MARITIME DOMAIN AWARENESS***





➤ **NATIONAL COMMAND , CONTROL, COMMUNICATION & INTELLIGENCE( NC3 I) FACILITY – GURGAON**



# NATIONAL COMMAND CONTROL COMMUNICATION INTELLIGENCE NETWORK



# RIKMINI-INDIAN NAVY COMMUNICATION SATELLITE



# MARITIME DOMAIN AWARENESS (MDA)



UAV



KA 31



P 8i BOEING



DORNIER

# MARITIME DOMAIN AWARENESS

## COASTAL SURVEILLANCE RADAR STATIONS

(74 )



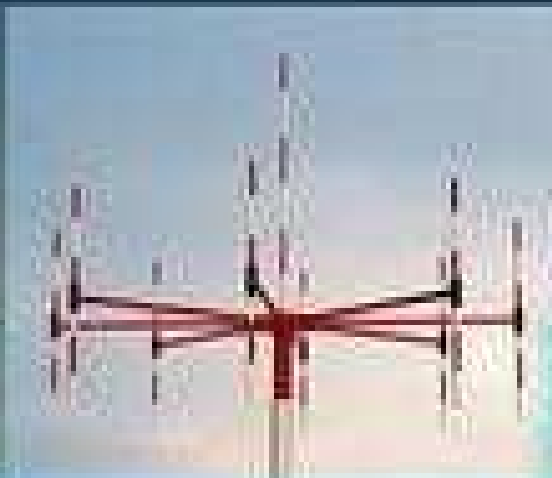
- NETWORK OF RADARS –
- SEYCHELLES (8) MAURITIUS(8) SRI LANKA(6)
- MALDIVES (10)
- MYANMAR, BANGLADESH



# VESSEL TRAFFIC MANAGEMENT



MARINE AIS



DIRECTION FINDER



RADAR

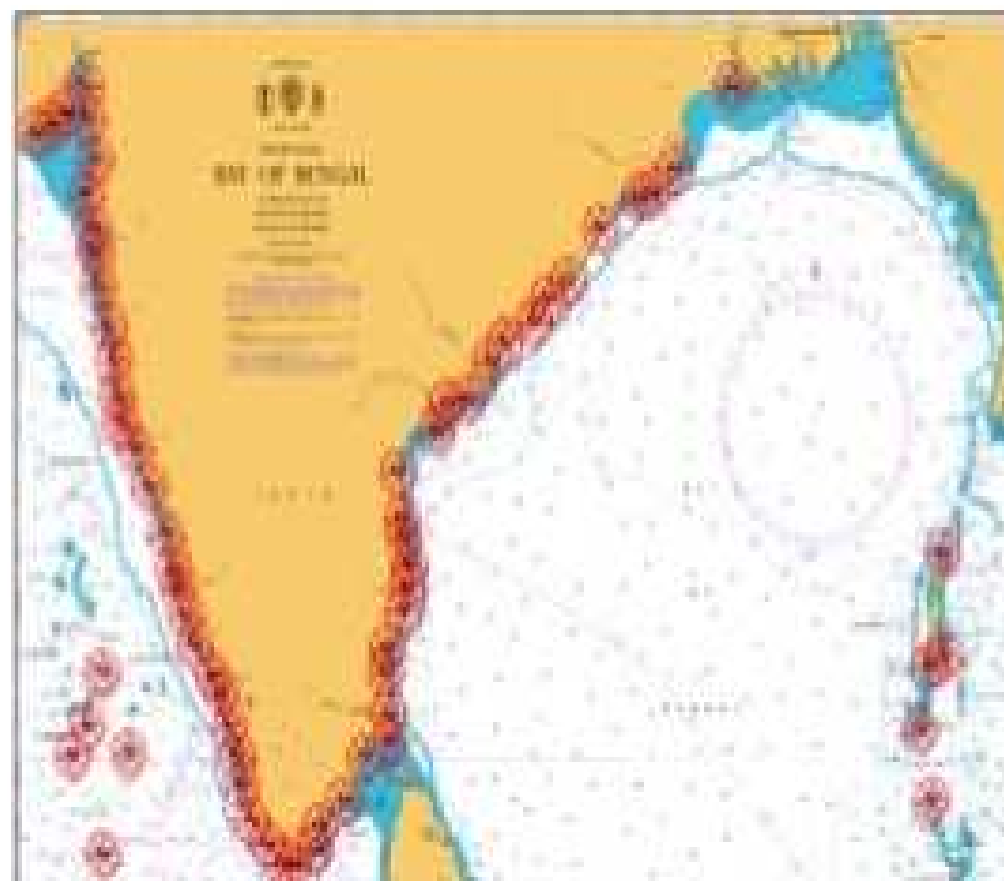


CAMERAS



CONTROL CENTRE

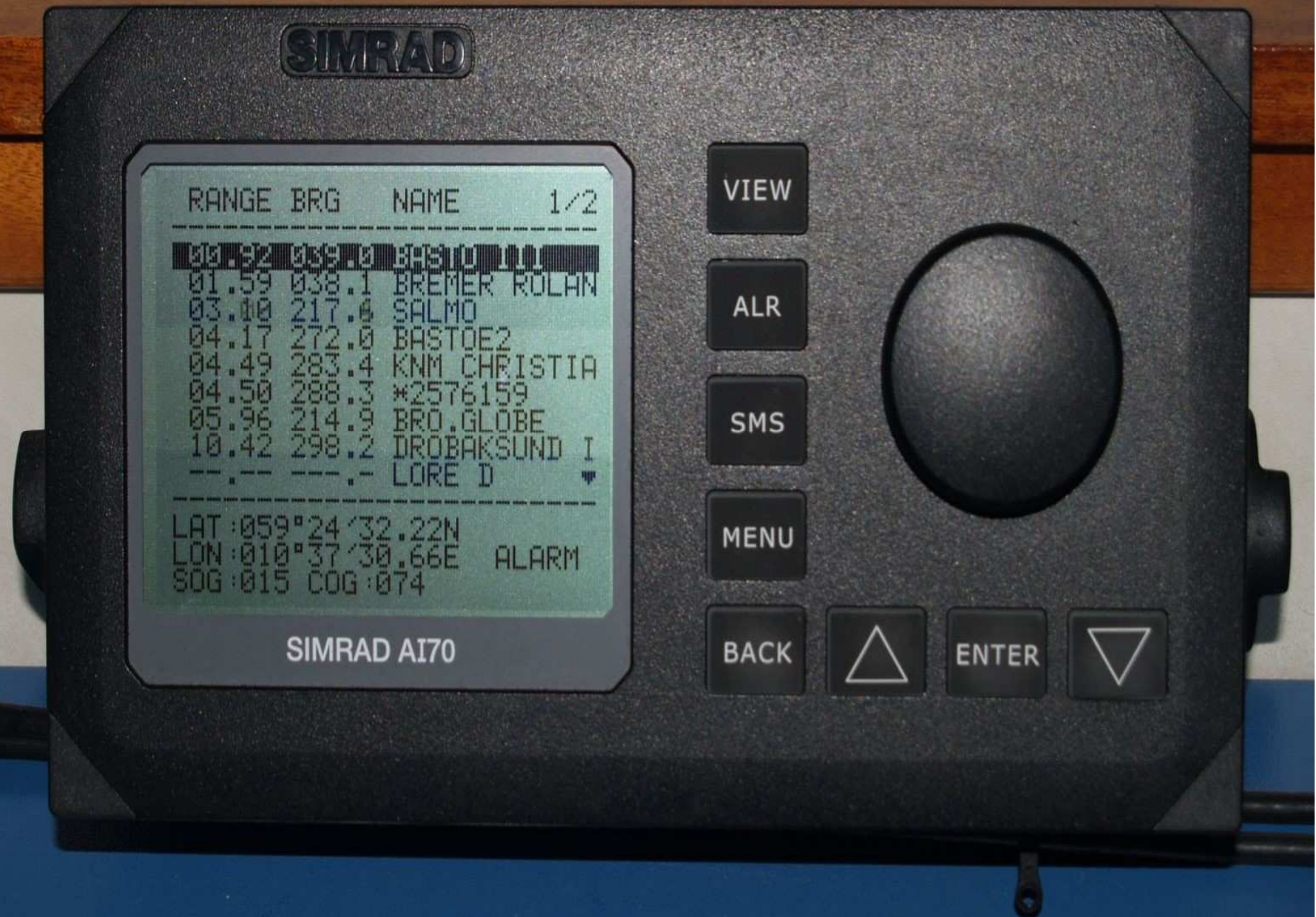
## NATIONAL AIS NETWORK COVERAGE



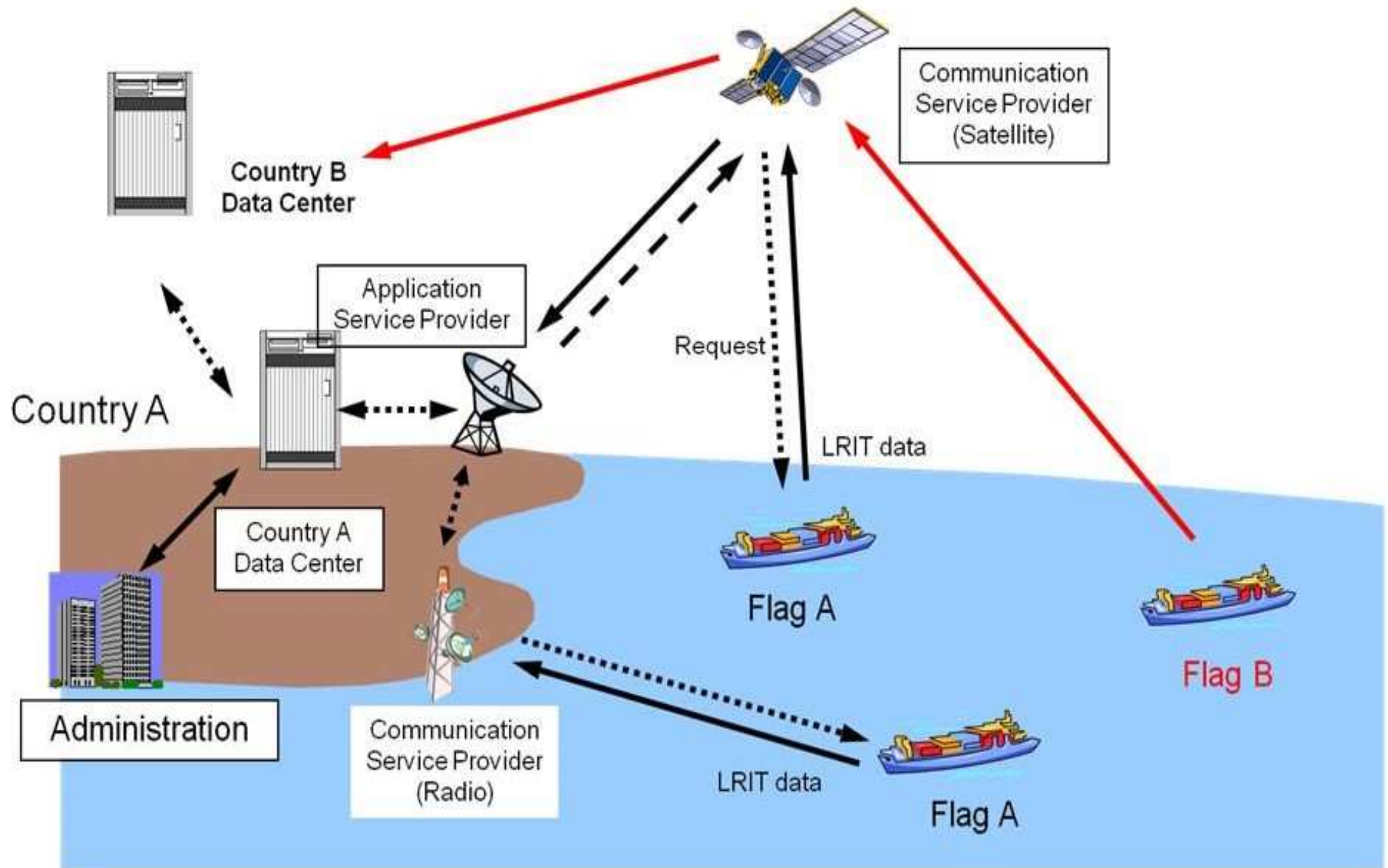
## TYPICAL NAIS DISPLAY



# AUTOMATIC IDENTIFICATION SYSTEM



## LRIT Configuration





# INTERNATIONAL SHIP AND PORT SECURITY CODE (ISPS)- POST 9/11

PORTS ARE THE INTERFACE BETWEEN SHIPS,CARGO & CREW AND  
FOREIGN SHORES

# INTERNATIONAL SHIP AND PORT SECURITY CODE( ISPS) – POST 9/11

- DESPITE CLAIMS, NO INDIAN PORT IS REALLY ISPS COMPLIANT
- PORTS LIKE MUMBAI CAN EASILY BE PENETRATED EVEN TODAY – 14 YEARS AFTER 26/11
- WATER FRONT SECURITY IS WEAK SPOT .
- CISF







VISHAKAPATNAM INNER HARBOUR

# CONTAINER SECURITY



CAN CARRY OVER 23000 CONTAINERS

# POST 9/11 -CONTAINER SECURITY

- CONTAINERS(20 FT, 40 FT ) -TROJAN HORSES  
( TERRORISTS, WEAPONS & EXPLOSIVES ETC )
- PAUCITY OF ADEQUATE X-RAY MACHINES
- 100% SCREENING IMPOSSIBLE
- TECHINT & HUMINT AT CONTAINER STUFFING/ DE-STUFFING CENTRES IS THE KEY.
- CUSTOMS PERSONNEL PLAY AN IMPORTANT ROLE .

# EXPLOSIVE SCRAP



➤ FROM IRAQ,IRAN ,AFGHANISTAN IN  
CONTAINERS FOR SMELTING IN DELHI.  
HARYANA,RAJASTHAN

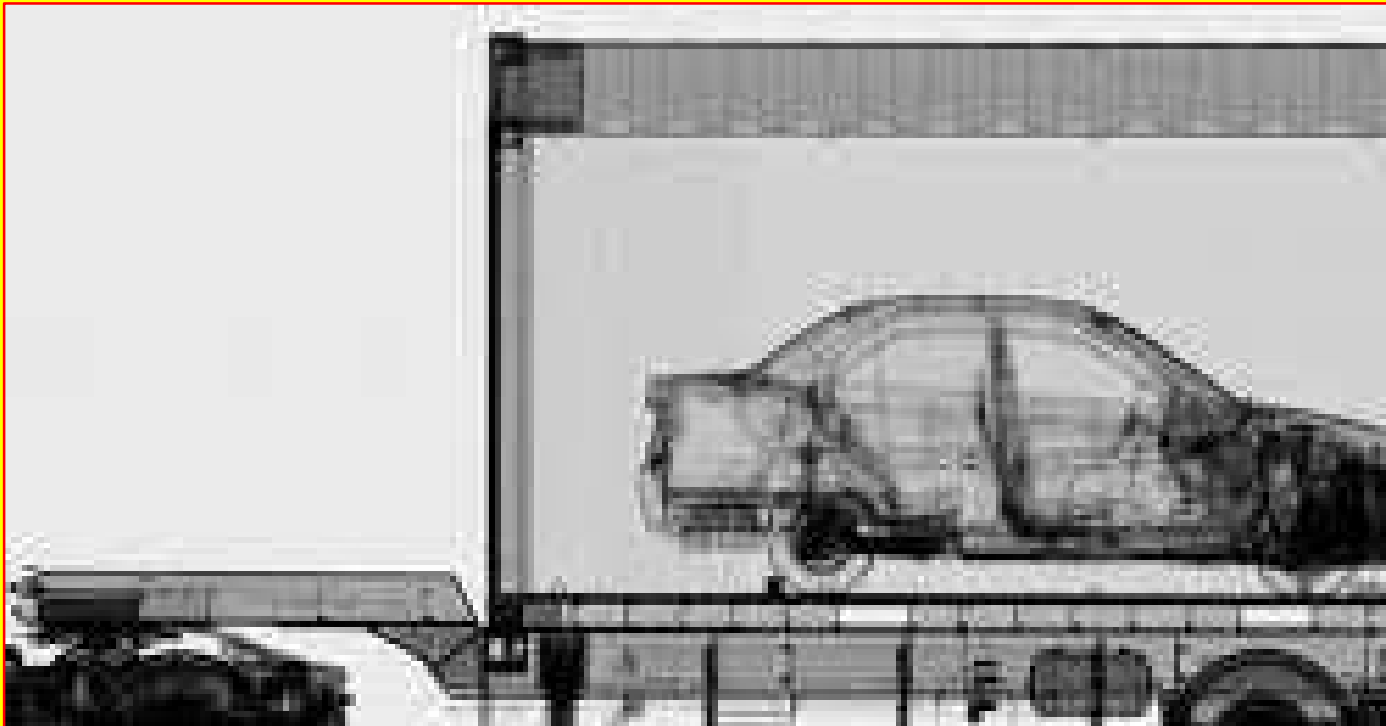
➤THERE WERE EXPLOSIONS FROM LIVE  
AMMUNITION





## IMPORT OF HAZARDOUS TRASH

- MEDICAL/BIO-WASTE
- NUCLEAR WASTE
- ELECTRONIC WASTE



## BLASTS IN CONTAINER SHIP –DUBAI





# SHAPING THE MARITIME DOMAIN

# MARITIME COOPERATION

- **70% OF EARTH'S SURFACE COVERED BY WATER**
- **SHEER SIZE AND EXPANSE OF THE SEA**
- **INADEQUACY OF ASSETS**
- **COST INTENSIVE**
- **TECHNOLOGY INTENSIVE**
- **NO NATION OR NAVY CAN GO IT ALONE**
- **BILATERAL –MULTI LATERAL APPROACH**

# MARITIME COOPERATION- NEIGHBOURS & FRIENDS

➤ OVER SEAS DEPLOYMENT ( OSD ) AND PORT VISITS OF OUR SHIPS

➤ JOINT EXERCISES –

➤ EEZ PATROL

➤ HUMANITARIAN ASSISTANCE & DISASTER RELIEF (HADR )

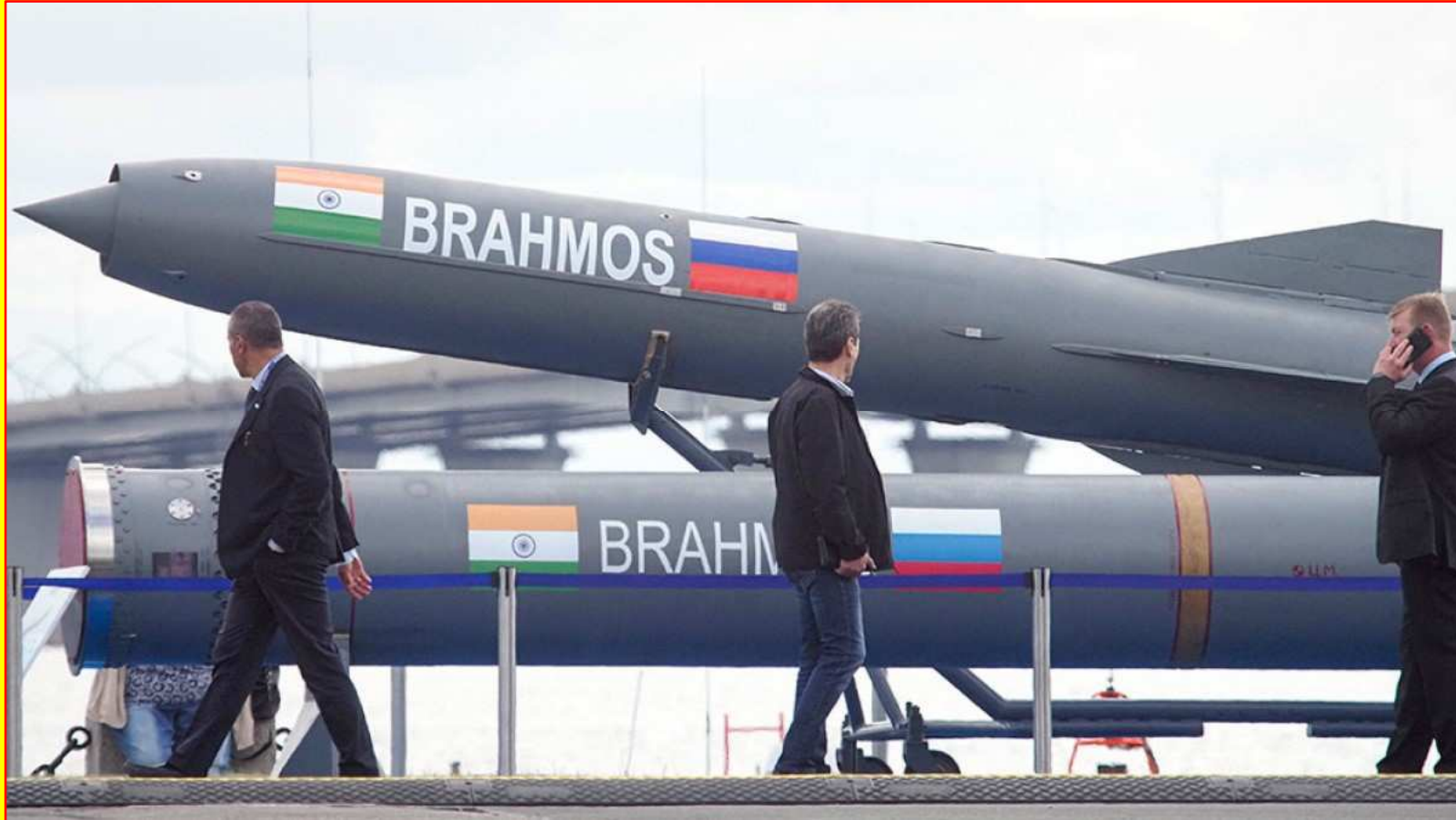
➤ NAVAL TRAINING

➤ CAPACITY & CAPABILITY BUILDING . Gifting /supply of:

▪ PATROL CRAFT , HELOs, FIXED WING AIRCRAFT

▪ SRI LANKA ,MALDIVES, SEYCHELLES , MAURITIUS , VIETNAM







# STRATEGIC AGREEMENTS

## UNITED STATES

### QUAD

- LOGISTICS EXCHANGE MEMORANDUM OF AGREEMENT (LEMOA) 2016
  - ACCESS TO DIEGO GARCIA ,GUAM ,DJIBOUTI
- COMMUNICATIONS COMPATIBILITY AND SECURITY AGREEMENT (COMCASA ) -2018
- MISTA- MARITIME INFORMATION SHARING TECHNICAL AGREEMENT
- BASIC EXCHANGE AND COOPERATION AGREEMENT ( BECA)- FOR GEOSPATIAL INFO
- 2+2 DIALOGUE

## JAPAN

### QUAD

- LOGISTIC SUPPLY AGREEMENT (LSA) -
- 2+2 DIALOGUE

## AUSTRALIA

### QUAD

- MARITIME LOGISTIC SUPPLY AGREEMENT (MLSA)
- 2+2 DIALOGUE

## **VIETNAM**

- PILLAR OF ACT EAST POLICY
- 12 PATROL CRAFT GIFTED RECENTLY
- BRAHMOS MISSILES

## **▪SINGAPORE**

- LOGISTIC SUPPLY AGEEMENT WITH INDIA
- IFC – GURGAON – INFO SHARING WITH IFC SINGAPORE

## JOINT EXERCISES

- MALABAR - INDIA US JAPAN AUSTRALIA
- AUSINDIA – AUSTRALIA
- JIMEX - JAPAN
- KONKAN - UK
- INDRA - RUSSIA
- VARUNA – FRANCE
- SIMBEX – SINGAPORE
- SLINEX- SRI LANKA
- NASEEM AL BAHAR – OMAN
- SAMUDRA SHAKTI -INDONESIA



## COORDINATED PATROL (CORPAT)

- THAILAND
- MYANMAR
- INDONESIA
- BANGLADESH

# COORDINATED PATROLS WITH INDONESIA



# PURPOSE OF JOINT EXERCISES

1. INDICATE INTENT AND CAPABILITY TO DETER
2. TO HONE PROFESSIONAL SKILLS
3. IMBIBE BEST PRACTICES
4. ENABLE INTER-OPERABILITY
5. ENHANCE SECURE COMMUNICATION BETWEEN FORCES
6. SHARING OF TECHNOLOGY IS A PRELUDE
7. ENHANCE MARITIME SECURITY
8. CONFIDENCE BUILDING MEASURES
9. SAR , HADR , ANTI PIRACY

# MISSION SAGAR



1. ASSISTANCE TO FIGHT COVID -19
2. 540 TONS OF MEDICINES AND FOOD MATERIAL- 5 ISLAND NATIONS
3. MEDICAL TEAMS

Source: National Maritime Foundation



## OP SAMUDRA SETHU

INS JALSHWA  
INS AIRAVAT  
INS SHARDUL  
INS MAGAR

POST COVID 19  
REPATRIATION -4000 INDIANS

MALDIVES  
BANDAR ABBAS –IRAN  
COLOMBO

23,000KM



# CONTEMPORARY MARITIME ISSUES

# PANDEMIC & SEA FARING

- LOCK DOWNS
- SHIPS NOT ALLOWED ENTRY
- SAILORS - CREW CHANGE
- PORT DISRUPTIONS
- CUSTOM CLEARANCES SLOWED DOWN
- SHIPPING DELAYS
- INDIAN SAILORS – NOT KEY WORKERS ? FOR VACCINES
- PRICES SHOT UP
- INSURANCES SHOT UP
- GLOBAL SUPPLY CHAIN AFFECTED
- FOOD SHORTAGES
- SHORTAGE OF CONTAINERS
- SHIPS - SENT TO SHIP BREAKING YARD







**UKRAINE FLAGSHIP SINKING  
BIG WIN FOR UKRAINE**

# BLACK SEA- RUSSIAN NAVY

SEA CONTROL OF NORTHERN BLACK SEA  
BLOCKADE OF UKRAINE COAST, ODESSA

TO PREVENT ANY REINFORCEMENTS OF WEAPONS,  
STORES AND PERSONNEL BY SEA,

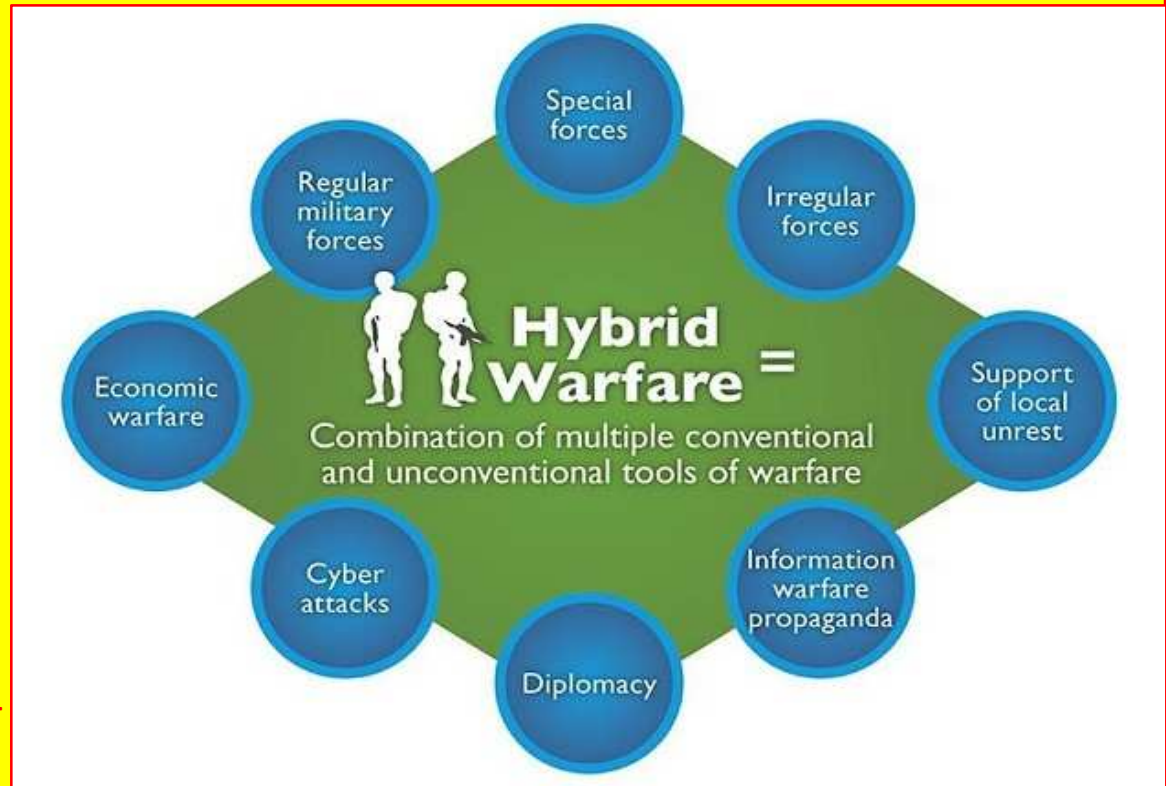
AMPHIBIOUS ASSAULT ON MARIOUPOL  
MARIOUPOL LINKS DONBAS TO CRIMEAN PENINSULA

NAVAL GUNFIRE ON SNAKE ISLAND NEAR ODESSA

RUSSIAN SHIPS & SUBMARINE FIRED LAND ATTACK MISSILES- KALIBR  
TO INFLUENCE LAND BATTLE, SUPPORT LAND PINCERS



- **NUCLEAR THREAT**
- **HYBRID NATURE OF WAR**
- POOR LOGISTICS
- POOR RUSSIAN FORCES MORALE
- INFO WARFARE
  - CYBER
  - PSY OPS
  - MIS INFORMATION
  - DISINFORMATION
  - DECEPTION
  - SOCIAL MEDIA CAMPAIGN



- **INTELLIGENCE – SUPPLIED BY WEST**
- **DRONE WARFARE**
- ATTACK ON MERCHANT SHIPS & AILORSS – GENEVA CONVENTION
- UKRAINE ATTACK ON SEVESTAPOL
- FOOD CHAIN DISRUPTION – WHEAT , CORN



# Locations of Chinese Military Drills

Shortly after U.S. House Speaker Nancy Pelosi's arrival in Taipei on Aug. 2, China announced plans to hold live-fire drills in six maritime areas near Taiwan. Pelosi is scheduled to conclude her visit on Aug. 3, while the Chinese military drills will take place Aug. 4-7.



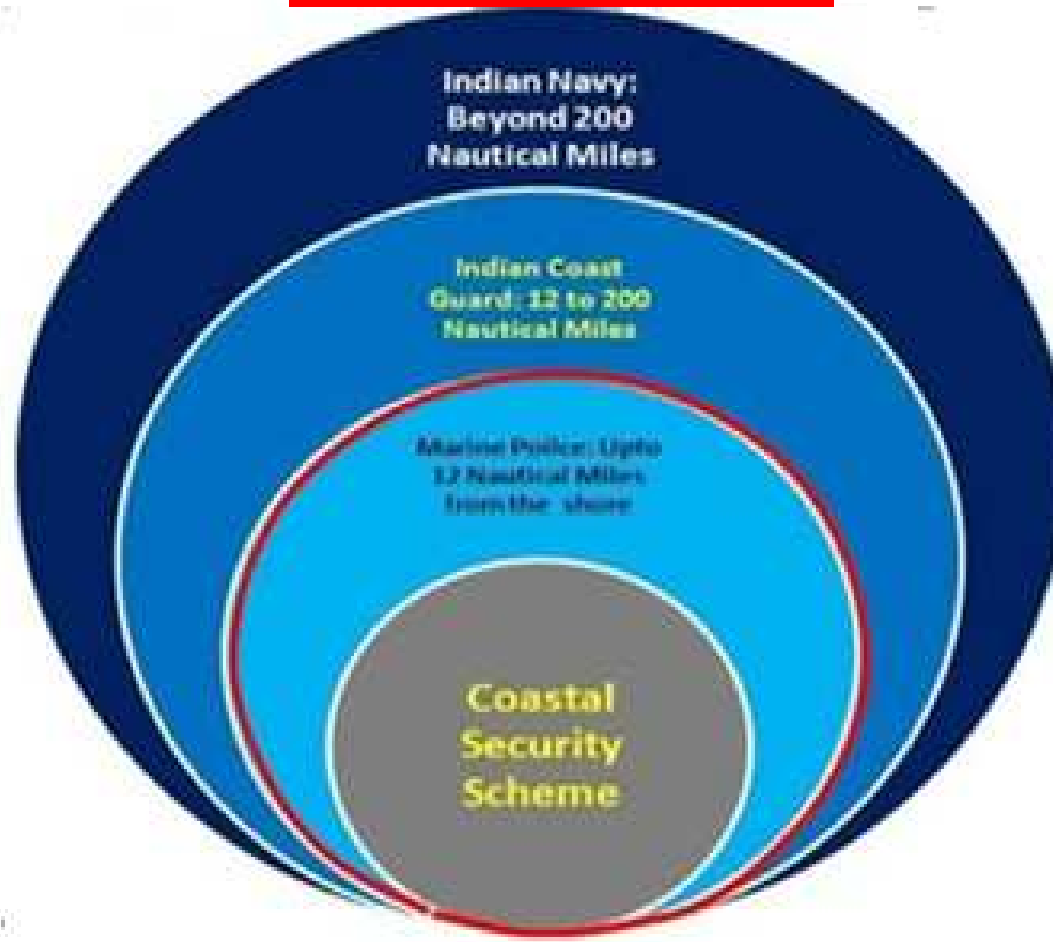
# MARITIME GOVERNANCE

# 3 TIER COASTAL SECURITY FRAME WORK

MARINE POLICE 0-12 NM  
(CURRENTLY TILL 5 NM)  
COAST GUARD 12-200 NM  
NAVY > 200 NM

HIGH SEAS  
INDIAN OCEAN REGION

## JURISDICTION AT SEA



**MARINE POLICE –LAST LINE OF DEFENCE**



INDIAN NAVY

INDIAN COAST GUARD



## MARINE POLICE



# STATE MARINE POLICE (SMP) -13 STATES/U-T

- EACH STATE HAS A DIFFERENT GEOGRAPHY
- BORDER STATES HAVE A DIFFERENT OPERATING ENVIRONMENT
- ALL 13 SMP HAVE DIFFERENT PROFICIENCY LEVELS
- NO SEAGOING CADRE
- SHORTAGE OF PERSONNEL AGAINST SANCTIONED STRENGTH
- NO DEDICATED STATE MARINE POLICE TRAINING CENTRE YET
- YOUNGER POLICEMEN - VERY ENTHUSIASTIC

- BUT TRAINING IMPARTED BY NAVY/ICG  
DISSIPATES FAST
- FREQUENT TRANSFERS
- 5T & 12 T BOATS CAN NOT OPERATE BEYOND  
SEA STATE 3
- TECHNICAL SUPPORT-AMC – INADEQUATE
- LACK OF JETTIES AND INFRA STRUCTURE

# MARINE POLICE

- **CAG** HAS PASSED STRICTURES AGAINST MARINE POLICE OF SOME STATES
- **MARINE POLICE** IS ONE OF THE MOST IMPORTANT OUTCOMES OF 26/11 RECAST
- THEY REQUIRE THE COMPLETE SUPPORT OF NAVY, ICG, SCIENTIFIC & INDUSTRIAL ORGANIZATIONS

# INDIAN CUSTOMS



➤ CUSTOMS ACT 1978

➤ THE NARCOTIC DRUGS AND PSYCHOTROPIC SUBSTANCES ACT 1985

# MARITIME STAKE HOLDERS

- MINISTRY OF DEFENCE(MOD)
- MINISTRY OF EXTERNAL AFFAIRS(MEA)
- MINISTRY OF PORTS , SHIPPING ,WW
- MINISTRY OF EARTH SCIENCES(MOES)
- MINISTRY OF HOME AFFAIRS(MHA)
- MINISTRY OF PETROLEUM & NATURAL GAS(MOP&NG)
- MINISTRY OF AGRICULTURE
- MINISTRY OF LAW
- INDIAN NAVY
- COAST GUARD
- MAJOR PORTS- 12
- NATIONAL HYDROGRAPHIC OFFICE
- DG SHIPPING
- DG HYDROCARBONS
- DGLL
- SHIP BUILDING YARDS
- CISF
- BSF
- INDIAN CUSTOMS
- R&AW, IB , INTELLIGENCE AGENCIES
- ONGC
- ISRO
- 9 MARITIME STATES& 4 U/Ts
- STATE MARINE POLICE
- INTERMEDIATE & MINOR PORTS
- STATE MARITIME BOARDS
- FISHERIES

# MARITIME GOVERNANCE

- ALL CREATED BEFORE MARITIME SECURITY GAINED CURRENT IMPORTANCE – AND OPTIMISED FOR LAND GOVERNANCE.
- LACK OF SYNERGY -COMPARTMENTALISATION/ LACK OF COORDINATION/ TURF WARS/ INDIVIDUAL SERVICE LOYALTIES
- MOST OF OUR CIVIL SERVANTS LACK MARITIME DOMAIN KNOWLEDGE
- LAND CENTRIC APPROACH TO MARITIME PROBLEMS

# OUR FEDERAL STRUCTURE

COASTAL STATES ARE THE CUTTING EDGE OF COASTAL SECURITY.

BUT NOT ALL STATES

- TAKE COASTAL SECURITY SERIOUSLY
  - OR APPRECIATE THE THREAT FROM THE SEA
  - OR UNDERSTAND THE MAGNITUDE OF THE PROBLEM.
- 
- SOME STATES FEEL COASTAL SECURITY IS CENTRE'S RESPONSIBILITY  
CITING LACK OF FUNDS –WHICH MAY NOT BE CORRECT
- 
- SOME STATES YET TO SET UP MARITIME BOARDS

# CONCLUSIONS-WAY AHEAD

- MARITIME COOPERATION IS THE WAY FORWARD
- HELP NEIGHBOURS IN CAPACITY & CAPABILITY BUILDING
- ENCOURAGE PRIVATE COMPANIES TO TAKE ON MARITIME INFRA PROJECTS ABROAD ESPECIALLY IN NEIGHBOURHOOD
- CURRENT GOVERNANCE STRUCTURE NEEDS TO BE REVAMPED TO INCLUDE MARITIME DOMAIN
- NEED FOR COASTAL SECURITY WILL GROW WITH IMPENDING **EXTENSION OF EEZ (200NM -350NM ) , SAGARMALA & BLUE ECONOMY**
- COASTAL SECURITY BILL 2013- PUT UP TO THE PARLIAMENT BY NAVY /CG NEEDS TO BE PASSED EARLY
- DOMESTIC ANTI PIRACY BILL - 2018 NEED TO BE PASSED EARLY
- **A SEPARATE CADRE OF SECURITY PROFESSIONALS IN THE CIVIL SERVICES IS REQUIRED**
- BETTER OPERATIONAL AND TACTICAL LEVEL MARITIME /COASTAL INTELLIGENCE REQUIRED . **HUMINT & TECHINT NEEDS IMPROVEMENT**

# CONCLUSION

- **COUNTER TERRORISM IN THE COUNTRY IS POLICE ORIENTED**
- **INDUCTION OF COAST GUARD AND NAVAL OFFICERS REQUIRED TO ADDRESS MARITIME TERRORISM**
- **MORE EMPHASIS ON MARITIME LAW .**
- **MARITIME COURTS NEEDED**
- **'NATIONAL MARITIME SECURITY COORDINATOR' APPOINTED**



FIRST INDIGENOUS CARRIER - IAC1 - INS VIKRANT – COMMISSIONED AT KOCHI IN SEPT 2022

MAY NOT BE A SECOND INDIGENOUS CARRIER -DUE LACK OF FUNDS



SHANGONG



- CHINA MAY EVENTUALLY HAVE 6- 10 CARRIERS
- NOT ALL REQUIRED FOR SOUTH CHINA SEA
- RECLAIMED SEVERAL ISLANDS IN THE PARACEL & SPRATELY GROUP COMPLETE WITH AIRFIELDS , FIGHTER AIRCRAFT , ANTI –SHIP MISSILES AND AIR DEFENCE SYSTEMS

CHINA – CARRIER GROUP –IOR / INDIAN OCEAN FLEET

# CONCLUSION

- CHINA AT OUR DOORSTEP
- CHINA – PAKISTAN COLLUSION
- INTERNAL SECURITY PROBLEM
- LESSONS OF PANDEMIC
- LESSONS OF RUSSIA UKRAINE WAR
- DEFENCE BUDGET < 2% NEEDS TO BE INCREASED

WISHING YOU FAIR WINDS AND CALM SEAS

MAY LORD VARUNA , THE LORD OF THE SEAS ,ALWAYS BE WITH YOU .



**THANK YOU**



## CONCLUSION

MARITIME CYBER THREAT WILL ONLY GROW WITH DIGITISATION

**BIGGEST ASYMMETRIC THREAT AT SEA –**

**-WITH OUT A SHOT BEING FIRED**

**- WITH OUT CROSSING BORDERS**

CAT & MOUSE GAME

### **HYBRID THREAT**

CYBER THREAT- MARITIME

INFORMATION WARFARE

ELECTRONIC WARFARE

NETWORK CENTRIC WARFARE

PROXY WAR

DRONE WARFARE

PSY-OPS

SOCIAL MEDIA CAMPAIGN

NO WAR DECLARED  
SPECIAL MILITARY OPS  
LAW OF ARMED CONFLICT  
BLOCKADE OF SEVASTOPOL AND KERCH STRAIT

TREATY OF MONTREUX 1936

ATTACK ON SHIPS AND SEA FARERS – GENEVA CONVENTION

GLOBAL SUPPLY CHAIN  
FOOD – WHEAT , CORN  
INSURANCE







## SOUTHERN HOT SPOT

SRILANKA ,MALDIVES

LAKSHWADEEP ,BHATKAL ,KASARGOD

