



MALAYSIAN MARITIME ENFORCEMENT AGENCY

DAMAGE CONTROL : MMEA'S ISSUES & CHALLENGES



BY: COMMANDER MUHAMMAD ZULKARNAIN BIN ABDULLAH
EXECUTIVE OFFICER
OFFSHORE PATROL VESSEL 1





- **Graduated from University of Technology Malaysia 2006**
- **Electrical and Instrument Engineer MISC Sdn Bhd (2006-2008)**
- **Joined Malaysian Maritime Enforcement Agency (2008)**
- **Engineering Officer of KM LANGKAWI (2009-2014)**
- **Commanding Officer of KM GEMIA (2015)**
- **Commanding Officer of Batu Pahat Maritime Base (2015 - 2018)**
- **Post Graduate - Master of Electrical Engineering (2018)**
- **Assistant Director Maritime Enforcement and Coordination Division (2018 - 2021)**
- **Executive Officer of Offshore Patrol Vessel 1 (2021 - now)**

SCOPE



01

MMEA's
Overview

02

SAR &
Emergency,
Crisis or War

03

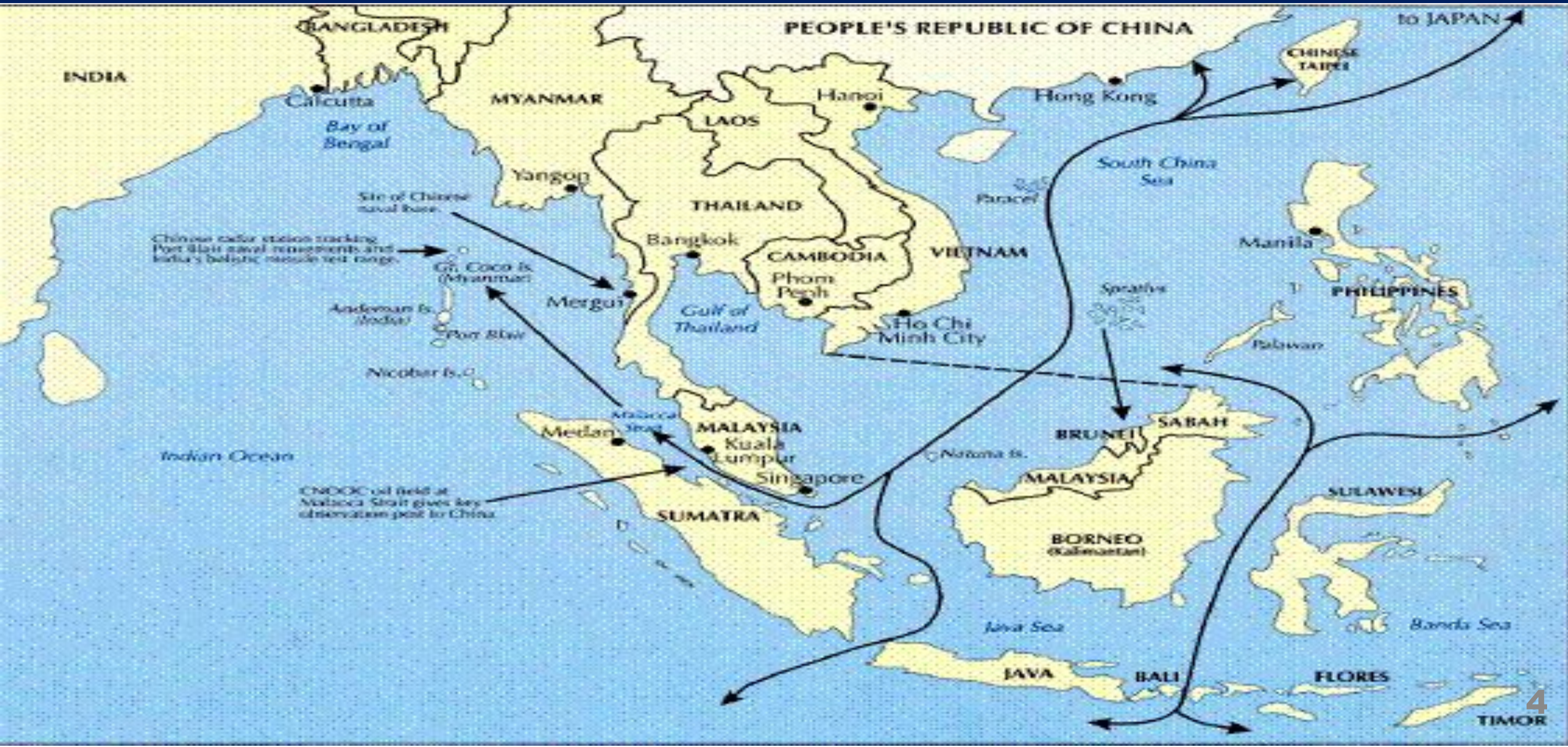
DCFF Issues &
Challenges

04

DCFF Way
Forward



Sea Line Of Communication (SLOC)





PETROLEUM AND GAS

- * 600,000 barrels crude oil per day
- * 2.1 billion cubic feet of gas per day
- * Petroleum & gas export value USD20 billion per year mainly from offshore





MALAYSIAN MARITIME ENFORCEMENT AGENCY
MINISTRY OF HOME AFFAIRS

Maritime Environment



FISHERIES

- 70% of fish consumptions caught at sea
- Fish production 2 million tons per year
- 80,000 fishermen

ISLAND & COASTAL TOURISM

- USD 4.4 billion per year



Piracy/ Sea Robbery



Illegal, Unreported And Unregulated (IUU) Fishing Activities



Kidnap For Ransom



Marine Pollution



Human Trafficking/ Smuggling Of Migrant



Intrusion Of Foreign Enforcement Agencies



Smuggling Drugs, Weapons And Contraband Items





MONITORING AND ENSURING THE EFFECTIVENESS MARITIME LAWS IMPLEMENTATION



MALAYSIAN MARITIME ENFORCEMENT AGENCY
MINISTRY OF HOME AFFAIRS

Before The Existance Of MMEA



NAVY



**MARINE
DEPT.**



FISHERIES



IMMIGRATION



**AIR
FORCE**



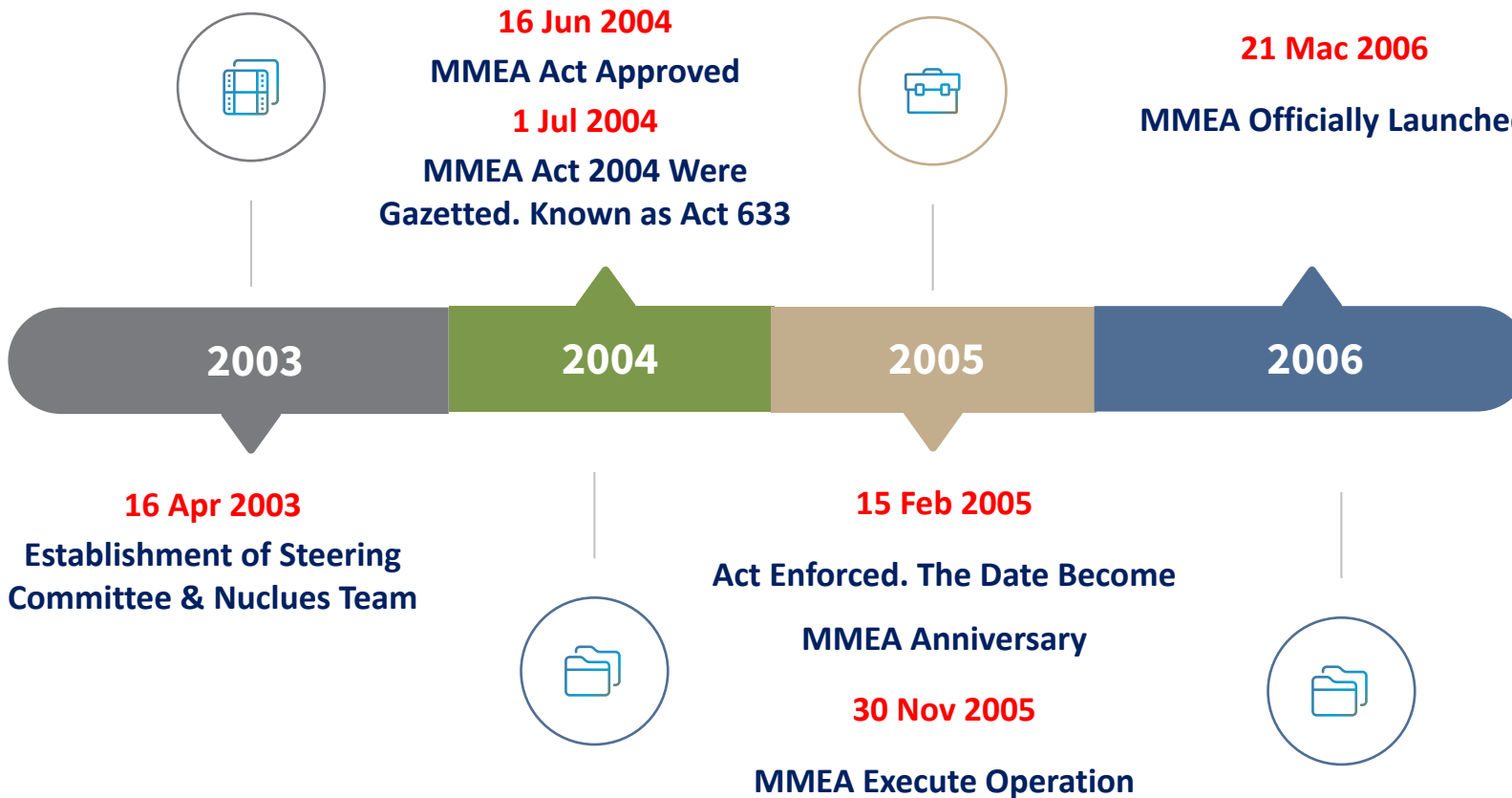
**MARINE
POLICE**

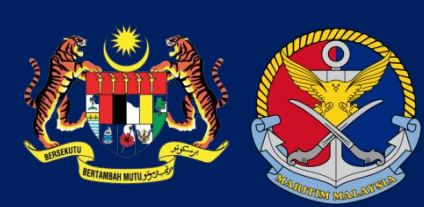


CUSTOM



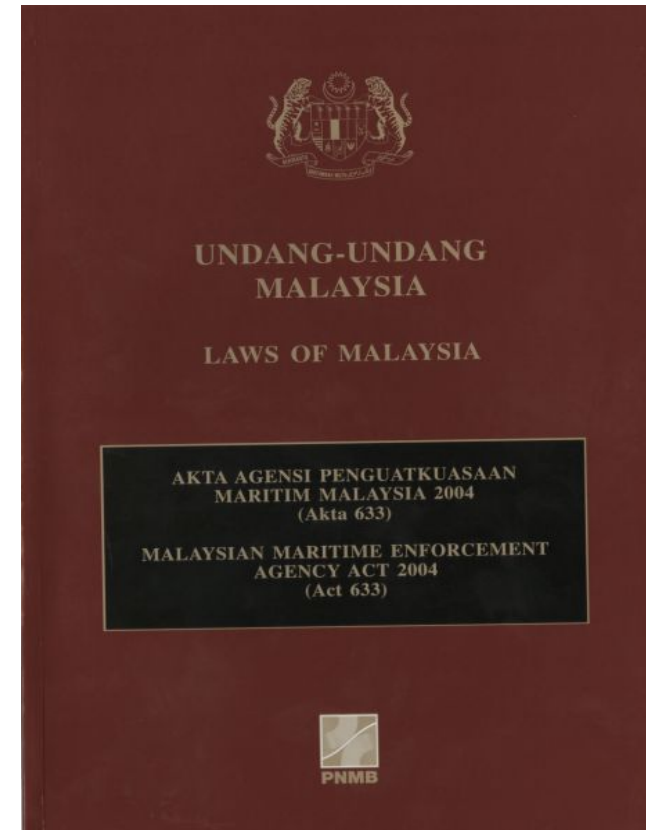
DOE





Establishment of MMEA Section 3(2)

"Agencies shall be subject to this Act, used in the Malaysian Maritime Zone to preserve law and order, maintain peace, well-being and security, prevent and detect crimes, arrest and prosecute offenders and gather security intelligence"





ADMIRAL MARITIME DATO' MOHD ZUBIL BIN MAT SOM
DIRECTOR GENERAL OF MMEA

MISION

To enforce laws, saving lives and properties at sea in order to ensure the safety and security of Malaysian Maritime Zone (MMZ)

VISION

To be one of the best maritime enforcement agencies in the world





MALAYSIAN MARITIME ENFORCEMENT AGENCY
MINISTRY OF HOME AFFAIRS

Core Business of MMEA



1. ENFORCEMENT
2. SEARCH AND RESCUE
**3. SOVEREIGNTY / WHITE HULL
DIPLOMACY**



IN MALAYSIAN MARITIME ZONE (MMZ)

(Section 6 of the MMEA Act 2004)



- ◆ To enforce law and order under any federal law;
- ◆ To perform maritime search and rescue;
- ◆ To prevent and suppress the commission of an offence;
- ◆ To carry out air and coastal surveillance;

- ◆ To provide platform services to any relevant agency;
- ◆ To establish and manage maritime institutions for training;
- ◆ To ensure maritime security and safety;
- ◆ To lend assistance in any criminal matters on request by a foreign State (Mutual Assistance Act 2002).



Function of

MMEA

(Section 6 of the MMEA Act 2004)

AT THE HIGH SEAS:

- ◆ Maritime Search And Rescue
- ◆ Controlling and preventing marine pollution
- ◆ Preventing and suppressing piracy
- ◆ Preventing and suppressing illicit traffic in narcotic drugs

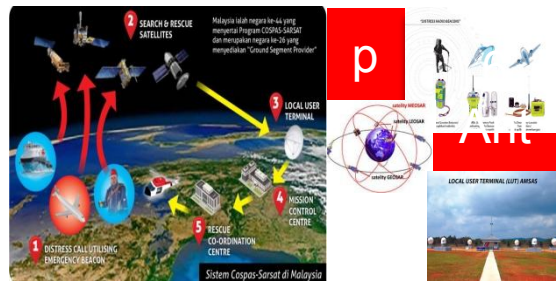




SHIPS



BOATS



SAR – CORPAS SARSAT

TYPES OF ASSETS	TOTAL
SHIPS	70
BOATS	193
AIR-BOAT	3
JET SKI	10
BOMBARDIER (CL 415)	2
AGUSTA (AW 139)	3
DAUPHIN (AS365N3)	3
RADAR – MAIN CONTROL CENTER	2
RADAR – AREA CONTROL CENTER	3
RADAR – REMOTE SENSOR SITE	14
SAR – COSPAS SARSAT	1
PERSONNELS OF MMEA	4,346



SWASLA RADAR



SPECIAL FORCES



CL 415 MP



AW 139



AS 365 N3

Beach - 20 nm



Boat Class
Endurance: 1-3 days
operation

20 - 50 nm



Small ship
Ship Length 20-39
meters
Endurance: 4 days to
8 days of operation

50 - 100 nm



Ship length 40-74
Meters
Endurance: 8 days to
10 days of operation

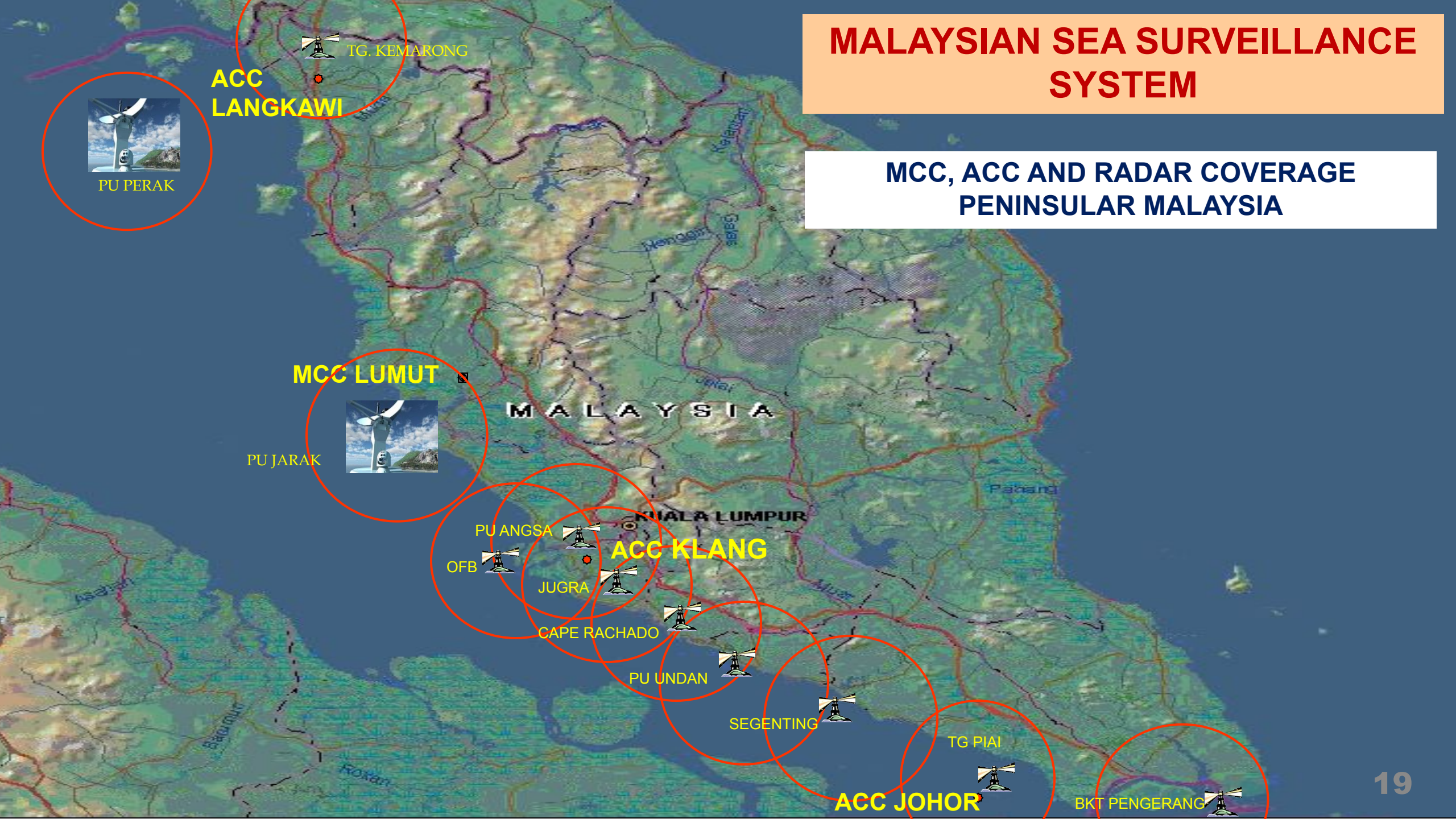
100 - 200 nm



Ship length 75
Meters & ABOVE
Endurance: 14 days
to 30 days of
operation

MALAYSIAN SEA SURVEILLANCE SYSTEM

MCC, ACC AND RADAR COVERAGE PENINSULAR MALAYSIA



ACC LANGKAWI

TG. KEMARONG



PU PERAK

MCC LUMUT



PU JARAK

MALAYSIA

ACC KLANG

PU ANGSA

OFB

JUGRA

CAPE RACHADO

PU UNDAN

SEGENTING

TG PIAI

ACC JOHOR

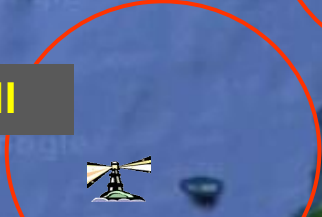
BKT PENERANG

MALAYSIAN SEA SURVEILLANCE SYSTEM

RSS BALAMBANGAN



RSS MANTANANI



SOUTH CHINA SEA

RSS GAYA



SULU SEA

NEXT PHASE



NEXT PHASE

**MCC
KOTA KINABALU**

**MCC, ACC AND RADAR COVERAGE
SABAH**



MALAYSIA MARITIME SEARCH & RESCUE (MSAR)

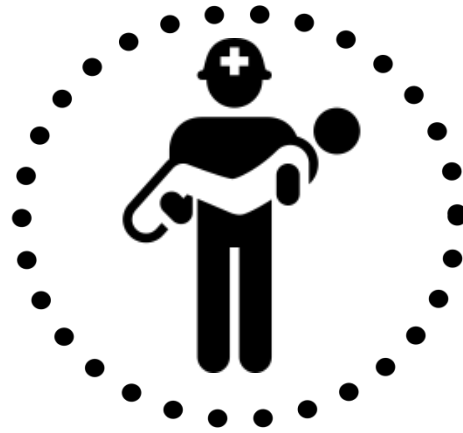


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MMEA SEARCH AND RESCUE (SAR)



**MERS 999
UPGRADE TO NEW
GENERATION 999**



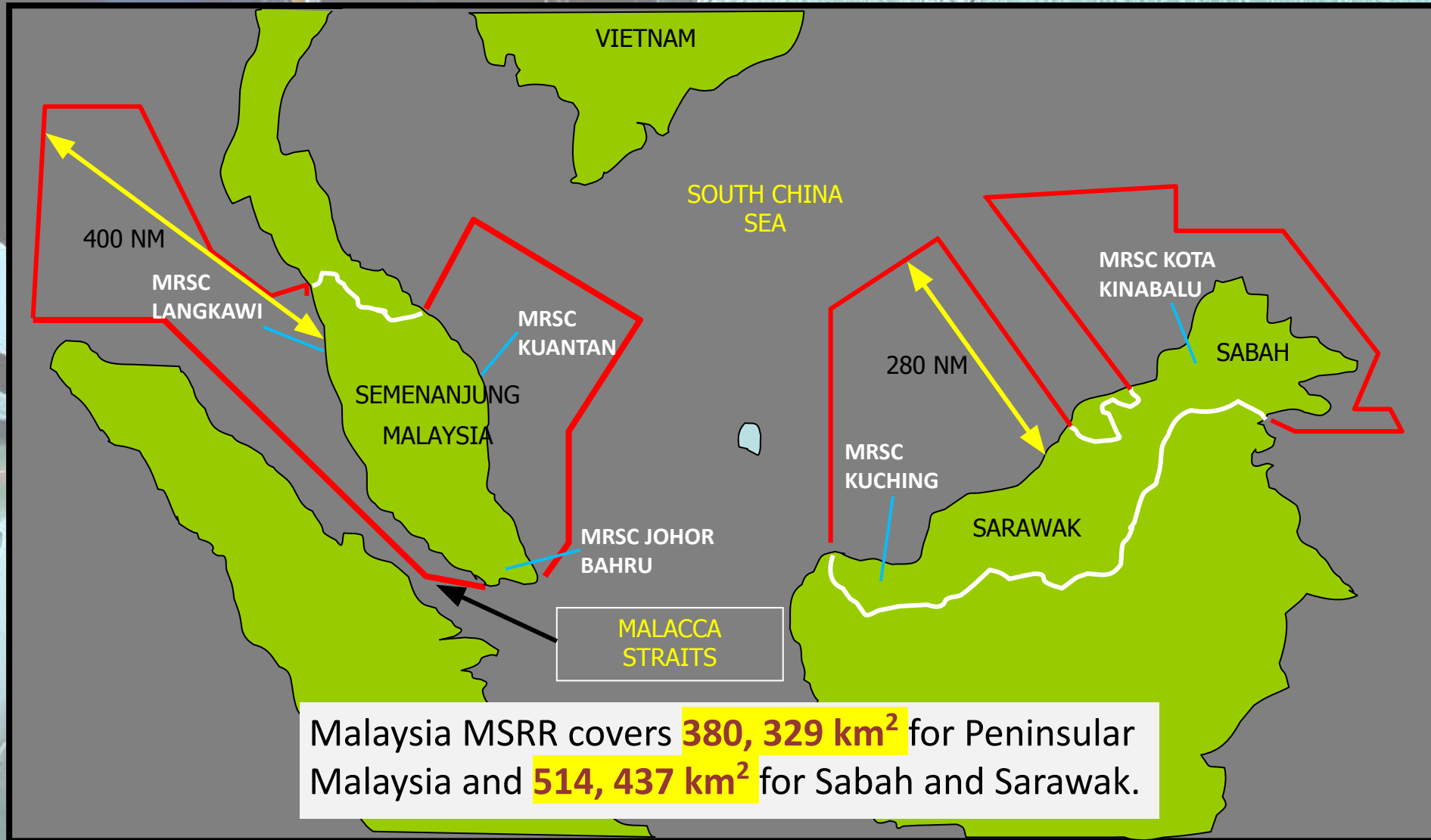
COSPAS-SARSAT



GMDSS



Malaysia Maritime Search & Rescue Region (MSRR)





INTER AGENCY COOPERATION

- MMEA-NAVY-RMP (NATIONAL TASK FORCE)/ESSCOM
- MMEA - MALAYSIAN ARMED FORCES
- MMEA - MACC
- MMEA – FISHERIES DEPT
- MMEA – ROYAL MALAYSIAN CUSTOM
- MMEA – IMMIGRATION DEPT
- MMEA – ROYAL MALAYSIAN POLICE



INTERNATIONAL COOPERATION

- US COAST GUARD
- JAPAN COAST GUARD
- AUSTRALIAN BORDER FORCE
- BAKAMLA INDONESIA
- SINGAPORE POLICE COAST GUARD
- THAI MECC/ MARINE POLICE
- PHILLIPINE COAST GUARD
- VIETNAM COAST GUARD
- INDIA COAST GUARD



MARITIME COMMUNITY ENGAGEMENT

- PETRONAS/BSN/TM
- FISHERMEN COMMUNITIES
- PRIVATE SECTORS PARTICIPATION EXHIBITION
- SAHABAT MARITIM - SINCE 2006
- MALAYSIAN SHIP OWNER ASSOCIATION

CAPACITY BUILDING

BILATERAL COOPERATION WITH INDONESIA :

- ❖ MALINDO General Border Committee.
- ❖ Maritime Planning Operation Team.
- ❖ Coordinated Maritime Border Patrol.
- ❖ Coordinated Search and Rescue in SAR MALINDO



BILATERAL COOPERATION WITH PHILIPPINES :

- ❖ Joint Commission Border Cooperation Meeting.
- ❖ Border Patrol Coordinating Group.
- ❖ Coordinated Maritime Border Patrol in PHIMAL series.



BILATERAL COOPERATION WITH BRUNEI :

- ❖ Joint Commission Meeting.
- ❖ Malaysia – Brunei Military Operation in MABRU series.

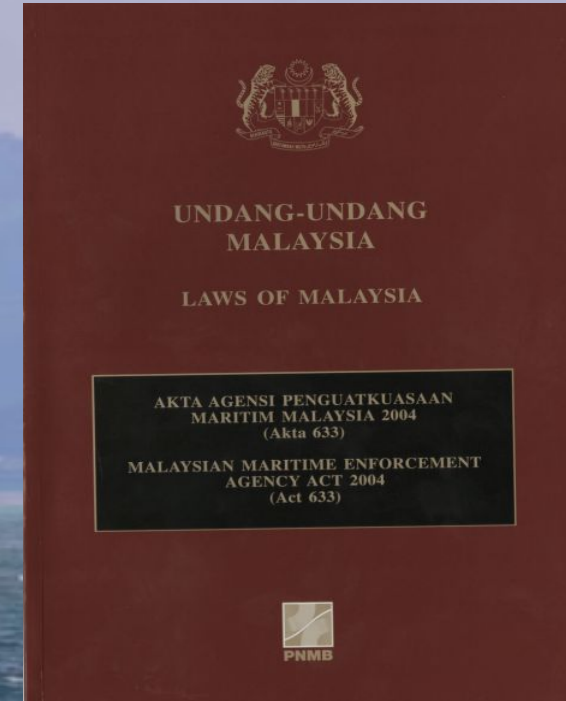
BILATERAL COOPERATION WITH SINGAPORE :

- ❖ Joint Commission Meeting.

BILATERAL COOPERATION WITH THAILAND :

- ❖ MALTHAI General Border Committee.
- ❖ Combined Naval Working Group.

EMERGENCY, CRISIS OR WAR (Section 17 (1) Of Act 633)



Agency or any part of agency as may be determined by the minister, shall be under general command and control of Armed Forces of Malaysia



Manpower

Machinery

Methhod





Various Background

Multi Skilling

Lack of Man POver & Expertise

Machinery Issues & Challenges



Old Asset

Lack of Budget



Communication

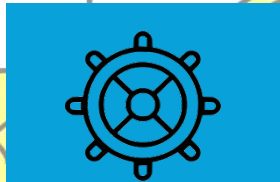
Policy

Future Need

MMEA's Damage Control Way Forward



MAN
Additional Man Power
Upskilling & Reskilling



MACHINERY
New Asset (OPV & Mother Ship)
C4ISR
UAV
Modern Technologies



METHODOLOGY
Strengthening Own Culture
Communication Improvement
Training

MARITIM MALAYSIA

ALTI

ALTI Transition Advanced



AIRCRAFT SPECIFICATIONS

Wingspan	3,000mm
Length	2,300mm
Maximum Take-off Weight (MTOW)	16.5kg
Maximum Operational Range [LoS] ¹	150km
Endurance up to ²	8hrs
Cruise Speed	40kts 76km/h 21m/s
Minimum Speed	35kts 65km/h 18m/s
VNE (Velocity Never Exceed)	58kts 108km/h 30m/s
Maximum Crosswind ²	19kts 36km/h 10m/s
Service Ceiling ³	13,000 ft AMSL
VTOL Propulsion	T-Motor / 18" Carbon
Fixed Wing Propulsion	ICE / 15" Carbon
Power Supply	LiPo / Li-Ion
Fuel	Unleaded Petrol with 2-Stroke 100% Synthetic Oil
Fuel Tank Capacity	3 Litres
Temperature Range	-5°C to +50°C

INCLUDED

- 1 x Transition Transport Case
- 1 x ALTI Transition Ready-to-Fly
- 1 x ALTI C² Command & Control Advanced
- 1 x Raptor Payload
- 1 x Spare VTOL Propellers [Pairs]
- 1 x Spare ICE Propeller
- 1 x Starter Motor
- 1 x Fuel Pump
- 1 x Battery Charger & Battery Leads
- 2 x Flight Pack
- 3 x ALTI Command & Control Battery
- 2 x Pump & Starter Batteries
- 1 x 2-Way Radio with Earpiece
- 1 x Battery Checker
- 1 x Ethernet Cable
- 1 x Tool Kit

TRANSPORT DIMENSIONS

Length : 1,740mm
Width : 1,040mm
Height : 550mm



RAPTOR PAYLOAD

SENSORS

EO : 1280 x 720 HD
Zoom : 40 x Optical / 2 x Digital
(80 x Continuous Zoom)
IR : 1280 x 720 HD
Zoom : 8 x Digital

KEY FEATURES

Object Tracking
Geo-Lock Target GPS Location
Realtime Video Stabilization
Realtime Navigation Information
Non-ITAR
Mission Planner Integration

DRI SPECIFICATIONS

Visible EO

Man (Size 1m)
Detect : 5,000m
Recognize : 3,000m
Identify : 1,500m
Vehicle (Size 2,3m)
Detect : 20,000m
Recognize : 5,000m
Identify : 3,000m

IR

Man (Size 1m)
Detect : 2,500m
Recognize : 600m
Identify : 320m
Vehicle (Size 2,3m)
Detect : 4,000m
Recognize : 1,700m
Identify : 850m



ALTI C² COMMAND & CONTROL ADVANCED

Groundside Link

Data Link : 2,4GHz
Power : 4W Silvus 4240E

Groundside Antenna

Silvus StreamCaster 4240E 2,4GHz
Tracking OS-PT 25
TBS Crossfire Control Link 868/915MHz
TBS Diamond Antenna 2,88dB Gain

Airside Link

Data Link : 2,4GHz
Power : 4W
Data Radio Ethernet-in-Ethernet-out

Airside Antenna

Silvus StreamCaster 4240E 2,4GHz
Omni, Half Wave Dipole Antennas 2,15 dBi Gain
TBS Crossfire Control Link 868/915MHz
Custom Build 1/4 Wave Dipole Antennas

Hardware

15,6" HD Monitors x 2
HDMI Out
External USB 3,0 Ports x 3
External LAN port
Active Cooling Fans x 2
RC Pilot Controller
External Keyboard & Mouse
Main AC Power 19V
Battery LiPo x 2

Dimensions & Weight

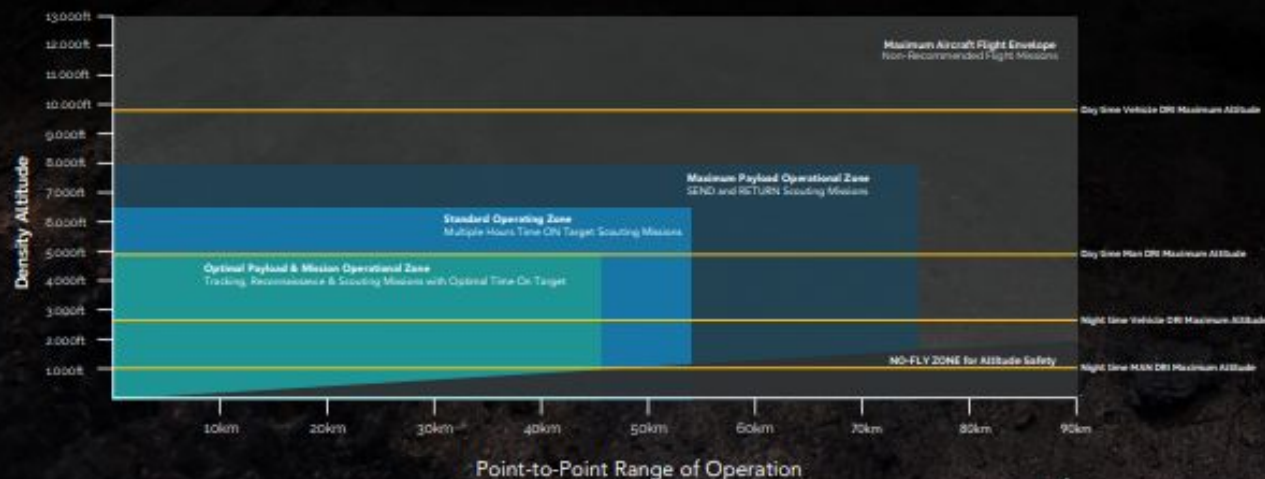
Tracking Antenna Case 1
Length : 1,530mm
Width : 360mm
Height : 310mm
Weight : 37kg

Tracking Antenna Case 2
Length : 840mm
Width : 840mm
Height : 560mm
Weight : 44kg



ALTI TRANSITION RECOMMENDED FLIGHT ENVELOPE

ALTI TRANSITION ADVANCED WITH RAPTOR PAYLOAD



Azimuth Envelopes







TERIMA KASIH

THANK YOU | شكرا جزيلاً | ありがとうございます | धन्यवाद **Cảm**
ơn rất nhiều | धन्यवाद | **භවභවතූණ** | 감사합니다



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APMM Putrajaya



msia
<https://www.mmea.gov.my>

MALAYSIAN MARITIME ENFORCEMENT AGENCY
(MMEA)

MALAYSIA COAST GUARD

When? Why? How? WHAT? WHERE? WHEN? What? HOW? Why? WHAT? Why? When? WHAT? WHEN? When? WHERE? Why? When? WHO? WHERE? WHAT? WHEN? What? WHERE? WHEN? What? WHERE? When? WHO? WHERE? What? HOW? HOW? WHERE? What? WHERE? When? What? WHERE? When? Why? HOW? Where? Where? WHERE? WHEN? What? WHERE? When? What? WHERE? When? Why? WHEN? HOW? WHAT? Why?

