

Security challenges from the perspective of a small city state

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Singapore has enjoyed 42 years of peace and economic progress as an independent nation



- Key contributors to success:**
- A diversified and open economy plugged into the global marketplace
 - A strong commitment to defence and security (6% GDP)
 - Social and religious harmony

**But the
fundamentals
behind its security
challenges remain
basically
unchanged since
independence in
1965**



- 
- A satellite image of Singapore, showing its island geography with a complex network of waterways and reclaimed land. The city is densely packed with buildings and infrastructure, surrounded by greenery and water.
- No strategic depth
 - Small population
 - Limited space for military training

Singapore

- Area = 707 sq km (22% reclaimed)
- 42 km length; 23 km breadth
- Population = 4.3m (3.2m citizens)

New York City

- Area = 785 sq km
- Population = 8 million

A satellite image of a coastal city, likely Singapore, showing a large bay and surrounding land. The text "No strategic depth" is overlaid in yellow. The city is densely packed with buildings and green spaces, and the bay is a deep blue color. The surrounding land is a mix of green and brown, indicating a mix of forest and urban development.

No strategic depth

- **Persistent stand-off long range surveillance & early warning**
- **Robust air and island defence capabilities**
- **Protection of critical assets against surprise attack**
- **High operational readiness to respond quickly to threats**
- **Total Defence: civil, psychological, economic, social and military**

Small population

Conscript Armed Forces

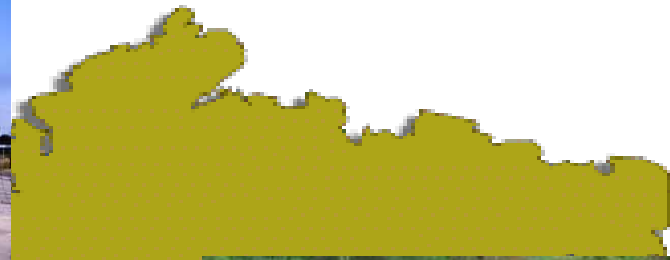
Two years of national service

300.000 when mobilised



Limited space for military training

Overseas Training





Our security challenges have become more complex



**The very elements that enable our success and prosperity
have become key vulnerabilities**



Changi Airport

**80 airlines with more than 4000 flights
connecting to more than 180 cities in 57 countries
35 million passenger and
214 thousand aircraft movements in 2006**

**The very elements that enable our success and prosperity
have become key vulnerabilities**



**60 thousand vehicles pass
through the causeway each
day**

8.94 million tourists arrivals

The very elements that enable our success and prosperity
have become key vulnerabilities

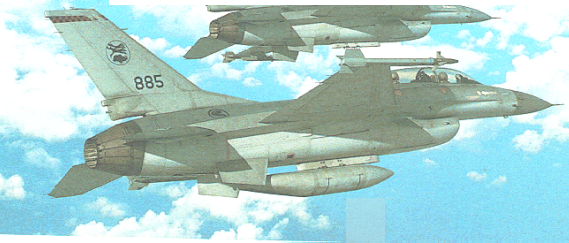


Singapore Port

200 shipping lines with links to 600
ports in 120 countries
140,000 vessels call annually
24 million containers (TEU) Or 6% of
global container throughput handled
in 2006

SINGAPORE ARMED FORCES

While architected for deterrence and the defence of Singapore, the SAF has found itself deployed for various operations other than war



Peace Support Operations

- Singapore is committed to the UN and its mission in maintaining international peace and security
- 1500 SAF peacekeepers sent to various missions since 1989
- Operating out of traditional areas
 - East Timor
 - Middle East: Iraq and Afghanistan

Participation in UN PSO

UN Mission	Date	Role(s) in Mission
UNTAG, Namibia	Oct to Nov 89	Election Supervisors
Ops Nightingale	Jan to Mar 91	Medical Team
UNIKOM, Iraq-Kuwait	Apr 91 to Mar 03	Military Observers
UNAVEM II, Angola	Jul 91 to Dec 92	Military Observers
UNTAC, Cambodia	May to Jun 93	Helicopter Detachment, Election Supervisors
UNOMSA, South Africa	Apr to May 94	Election Supervisors
UN HQ – DPKO, New York	Nov 95 to Present	Appointments in DPKO
UNSCOM (UN Special Commission in Iraq)	Jun 96	Member of UN Special Commission Inspection Team
MINUGUA, Guatemala	Feb to May 97	Medical Team
UNSMMA, Afghanistan	May 97 to May 98	UN Military Adviser
International Force for East Timor (INTERFET)	20 Sept 99 to Feb 00	Medical Team, Military Liaison Teams
UN Transitional Administration in East Timor (UNTAET)	Feb 00 to May 02	UNTAET HQ Staff, Medical teams and Peacekeeping troops
UN Mission in Ethiopia and Eritrea (UNMEE)	May 00 to Jul 03	Military Observers
UN Mission of Support in East Timor (UNMISSET)	May 02 to 22 Oct 03	Force Commander, UNMISSET HQ staff, Peacekeeping troops and Helicopter detachment 3 SAF PKF HQ Staff remain till May 04

Timor Leste

- **INTERFET**

- 4- men Liaison Team
- 3 x LST for 2 months each
- 1 x C130 for two weeks
- 26- personnel Medical Team
- 40 police personnel
- Cumulative total of 373 personnel involved

- **UNTAET**

- 4 x PKO HQ staff,
- 3 x 61-men Platoon Task Force in Western Sector
- 9 x 21-men Medical Team
- 40 x Police Personnel

- **UNMISSET**

- May 02 onwards - Over 250 personnel
- Force Comdr UNMISSET- PKF
- Staff Planners at PKF HQ

- Helicopter Detachment - 4 x UHHH

- Infantry Company



OEF / OIF



LST



KC-135



C-130

- **Landing Ship Tank (LST)**

- Monitor vessels to and from ports in Iraq
- Compliant boarding operations
- Health and comfort support to detained vessels
- Platform support for helicopter operations
- Guardship duties

- **KC-135**

- Air-to-air refuelling

- **C130**

- Strategic lift for personnel and cargo
- Aeromedevac

Indian Ocean Tsunami



- Field Hospital
- Liaison Element
- MATC

- Utapao
• Liaison Element

- 2 Chinooks
- 2 Super Pumas



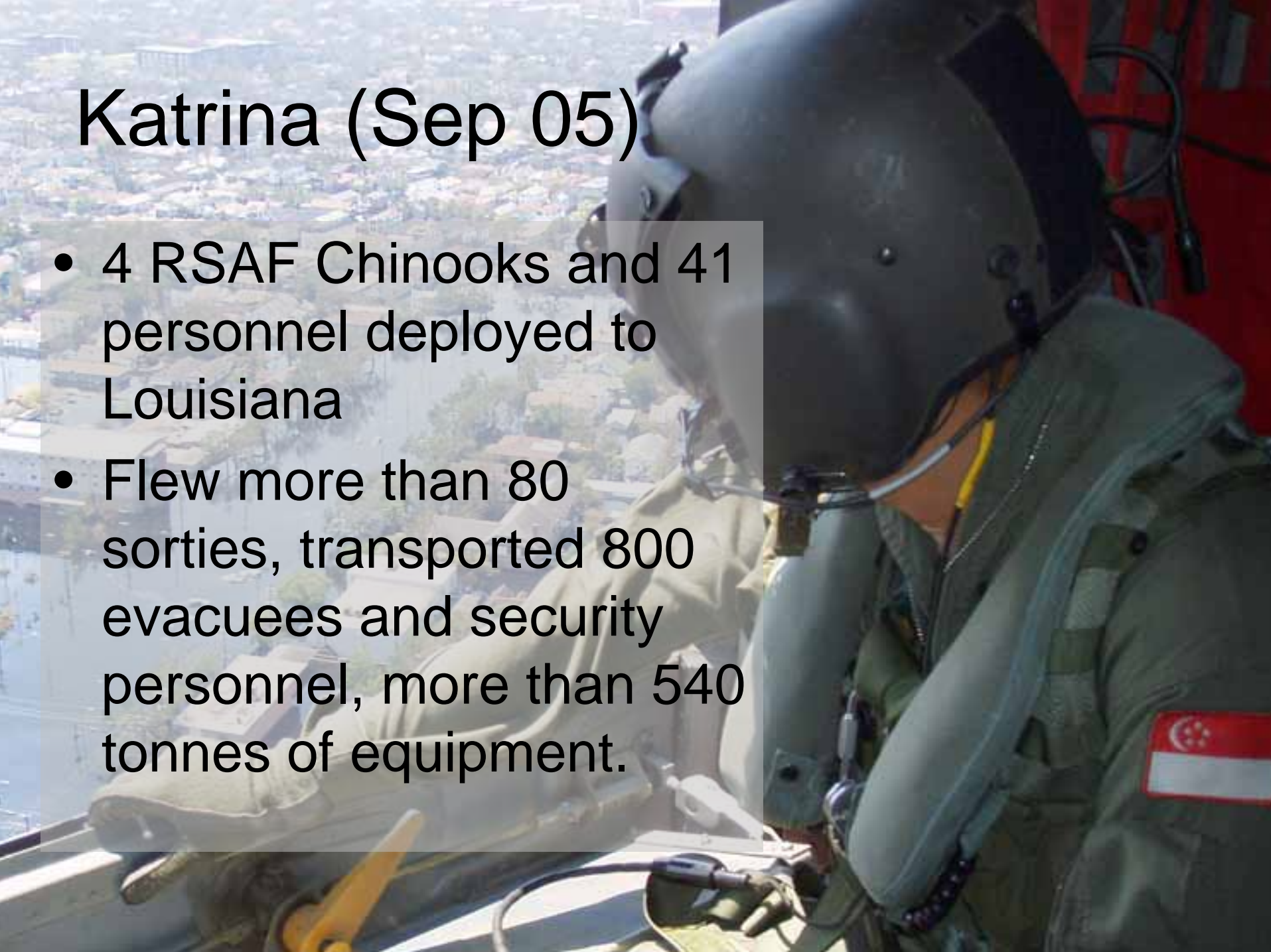
- 3 LST
- 2 Super Pumas
- Field Hospital
- Engineers
- Support Staff

- Theatre HQ
- 6 Chinooks

- 6 C-130s
- 2 Fokker-50s
- Regional Coord Centre

Katrina (Sep 05)

- 4 RSAF Chinooks and 41 personnel deployed to Louisiana
- Flew more than 80 sorties, transported 800 evacuees and security personnel, more than 540 tonnes of equipment.



Yogyakarta Earthquake

(27 May 06)

- Medical detachment deployed
 - TNI Field Hospital in Plered, Bantul
 - Bantul District Hospital
- US\$250,000 worth of humanitarian supplies (approx 24 tons)
 - 750 tentages
 - 4,200 blankets
 - 400 cot beds
 - 1,300 sleeping bags
 - Medical supplies



Provincial Reconstructive Team

Bamiyan, Afghanistan

- Part of New Zealand Reconstruction Team
- Set up of dental clinic & training of locals in dentistry and basic healthcare
- Bridge construction and repair work

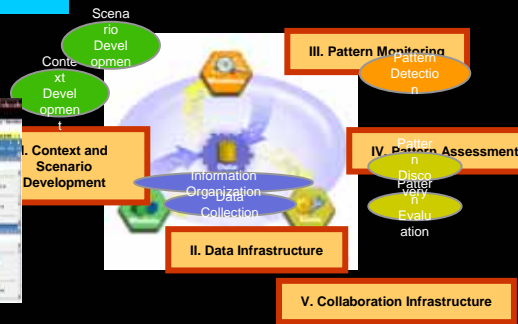
Support for Homeland Security



Consequence Assessment

Maritime C3 and Coastal Surveillance

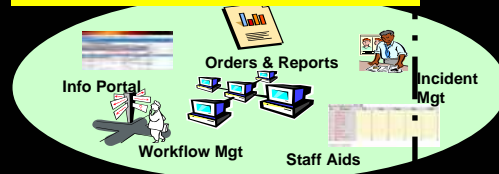
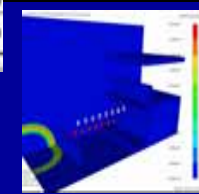
Police/SCDF C3



Explosive Testing

Crisis Information Management

**Risk Assessment
Horizon Scanning**



Infrastructure Hardening



An aerial satellite image of a coastal city, likely San Francisco, showing the city's layout, the bay, and surrounding land. The city is densely packed with buildings and infrastructure, and the bay is a prominent feature. The surrounding land is a mix of urban and natural areas.

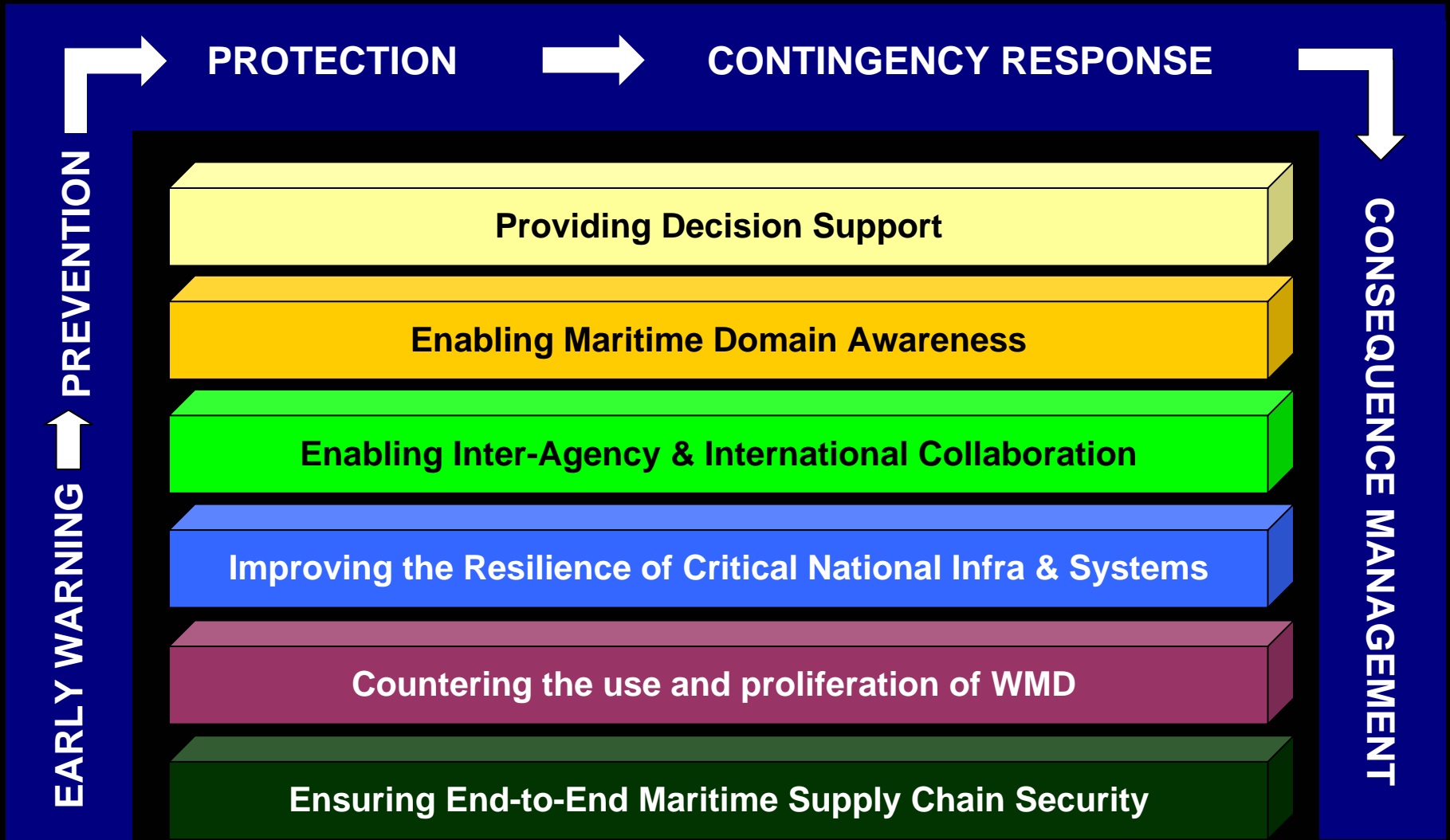
Maritime Security

....is a complex multi-dimensional challenge



Half of the world's oil and almost one-third of the world's trade

Technology support in

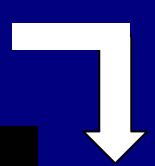


EARLY WARNING → PREVENTION

PROTECTION



CONTINGENCY RESPONSE



CONSEQUENCE MANAGEMENT

Providing Decision Support



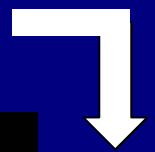
- Vulnerability and risk assessments of critical infrastructure

EARLY WARNING → **PREVENTION**

PROTECTION



CONTINGENCY RESPONSE



CONSEQUENCE MANAGEMENT

Enabling Maritime Domain Awareness



Video mosaic

PROTECTION

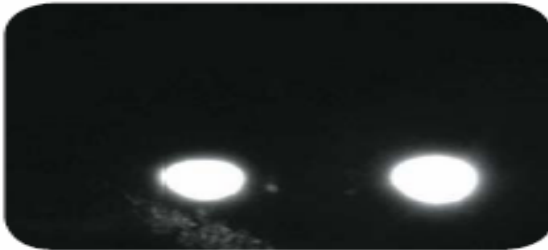
CONTINGENCY RESPONSE

Enabling Maritime Domain Awareness

Passive mode

Distance 750 m

Laser on



Distance 1.4 km

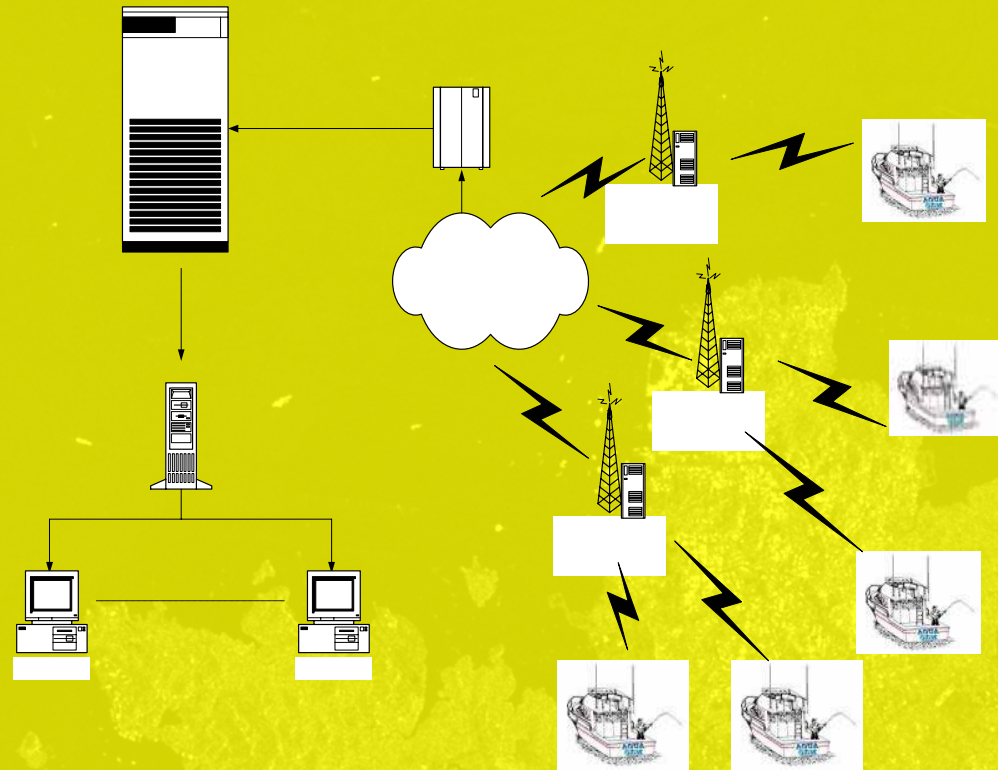


Active imaging

EARLY WARNING → PREVENTION

CONSEQUENCE MANAGEMENT

Harbour Craft Transponder System



Enabling Inter-Agency & International Collaboration



Common operating picture – port, coastguard & naval systems



Enabling Inter-Agency & International Collaboration

- Promote interoperability with international forces

CHANGI C2 CENTRE

Enhancing Resilience of Critical National Infra & Systems



Enhancing Resilience of Critical National Infra & Systems



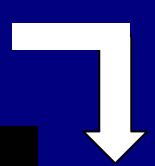
Explosive effects testing

EARLY WARNING → **PREVENTION**

PROTECTION

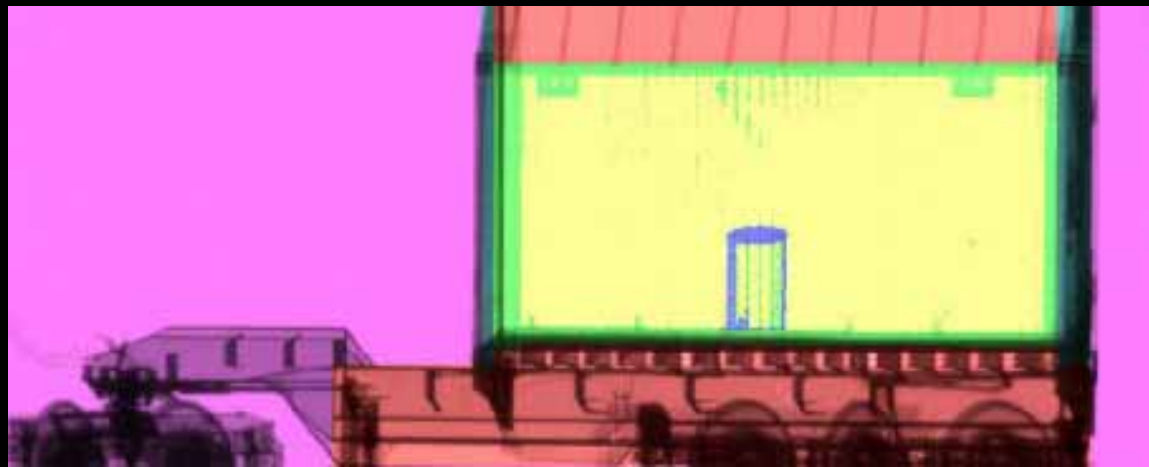


CONTINGENCY RESPONSE



CONSEQUENCE MANAGEMENT

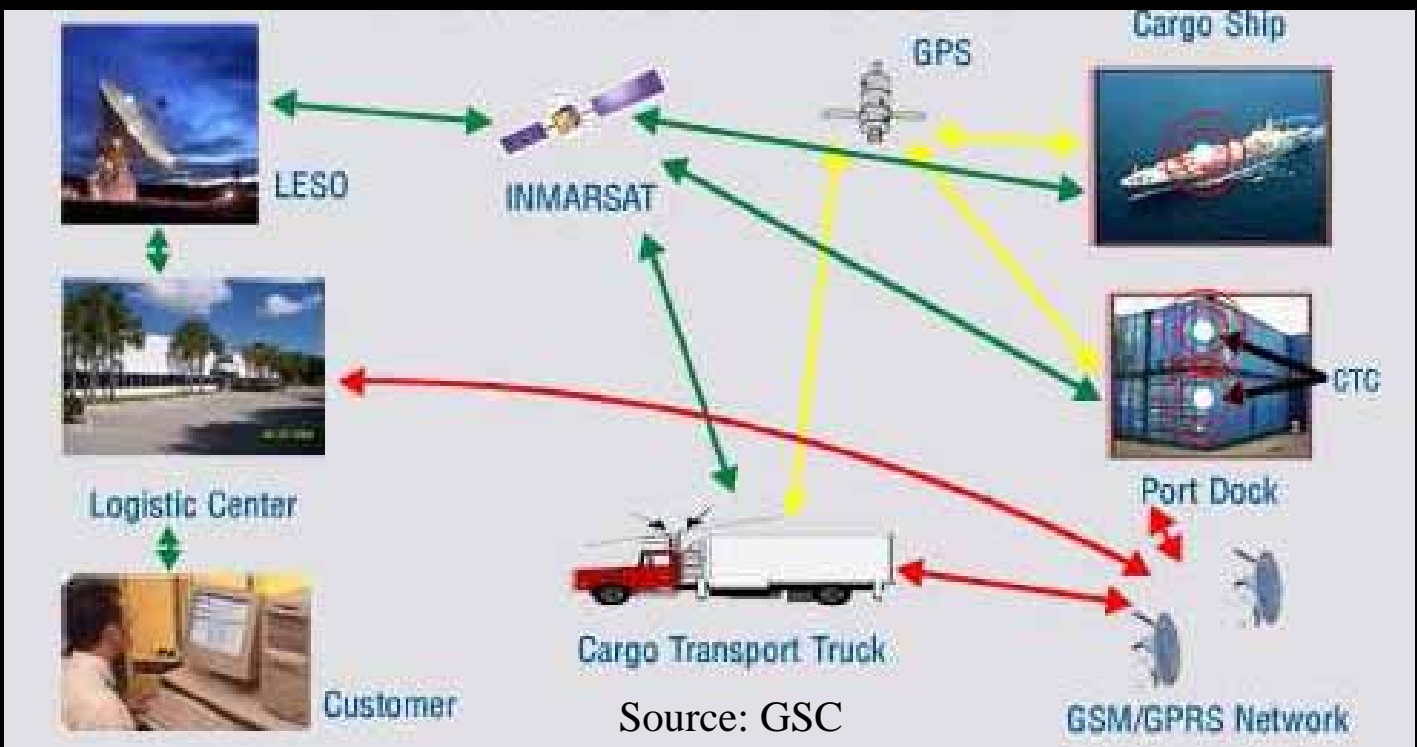
Countering the use and proliferation of WMD



PROTECTION

CONTINGENCY RESPONSE

Ensuring End-to-End Maritime Supply Chain Security

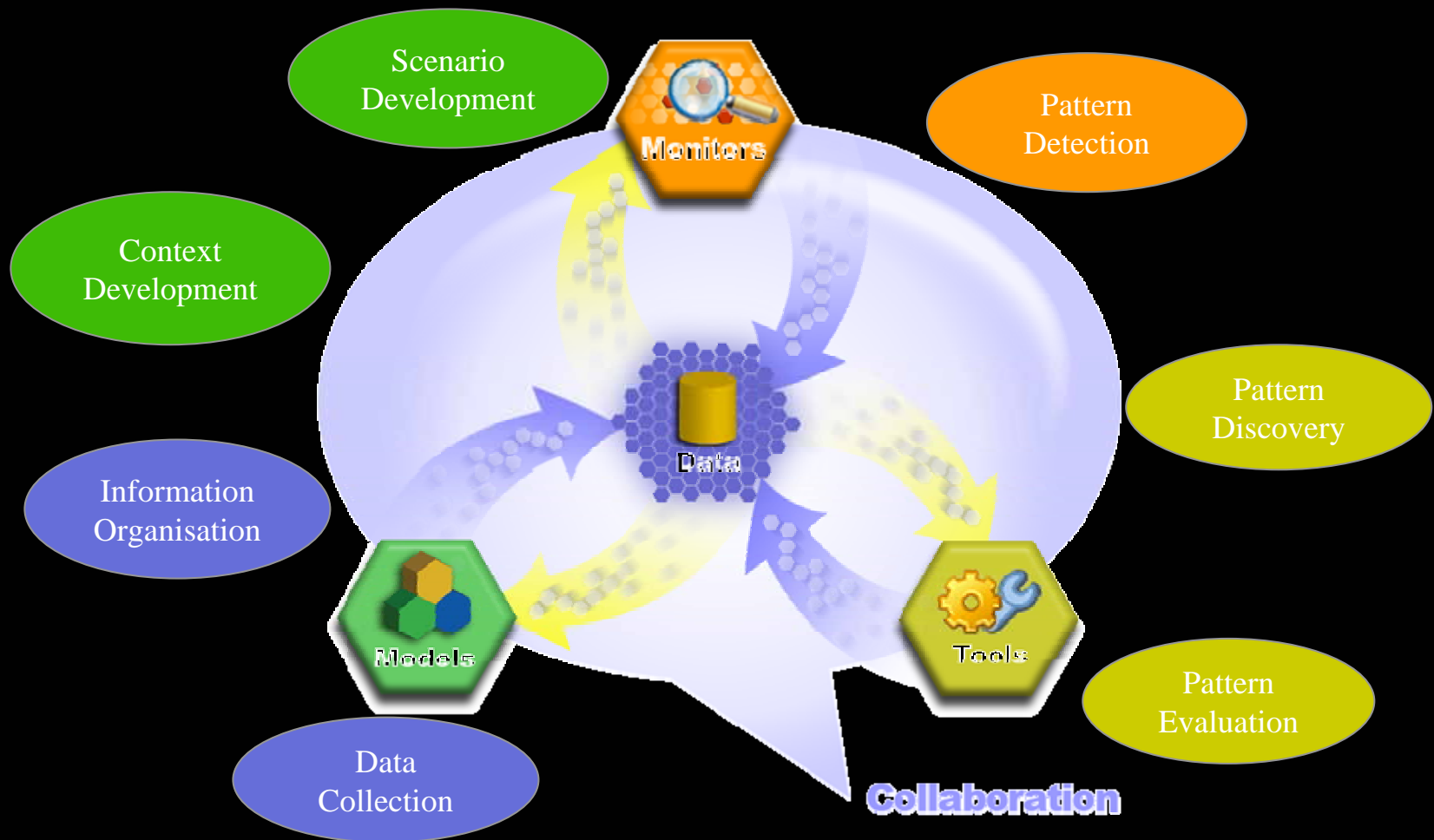


Source: GSC

EARLY WARNING → PREVENTION

CONSEQUENCE MANAGEMENT

Risk Assessment & Horizon Scanning (RAHS)



International collaboration



FPDA (Five Power Defence Arrangements)



INDO-SIN Co-ordinated Patrols (ISCP)



Malacca Strait Patrols

- Malacca Strait Sea Patrols (MSSP)
- Eyes in the Sky (EiS)



Exercise Deep Sabre 05




- Singapore-hosted, first PSI exercise in Southeast Asia.
- Distinct Features:
 - Table Top Exercise (TTX)
 - Maritime Interdiction Operations
 - Combined Co-ordination Centre
 - Port Search Phase
 - Exercise Debrief Session



CMA JCTD with PACOM

Overview



Layers

Maps Base

Grid Lines

Tracks

Tracks Labels

Speed Vectors

Track Details

TN AA504

Identity Unknown

Platform CABLE LAYI

Source P

Position 011546N 1032324E

Course 000°

Speed

Bearing

Range

Nationality

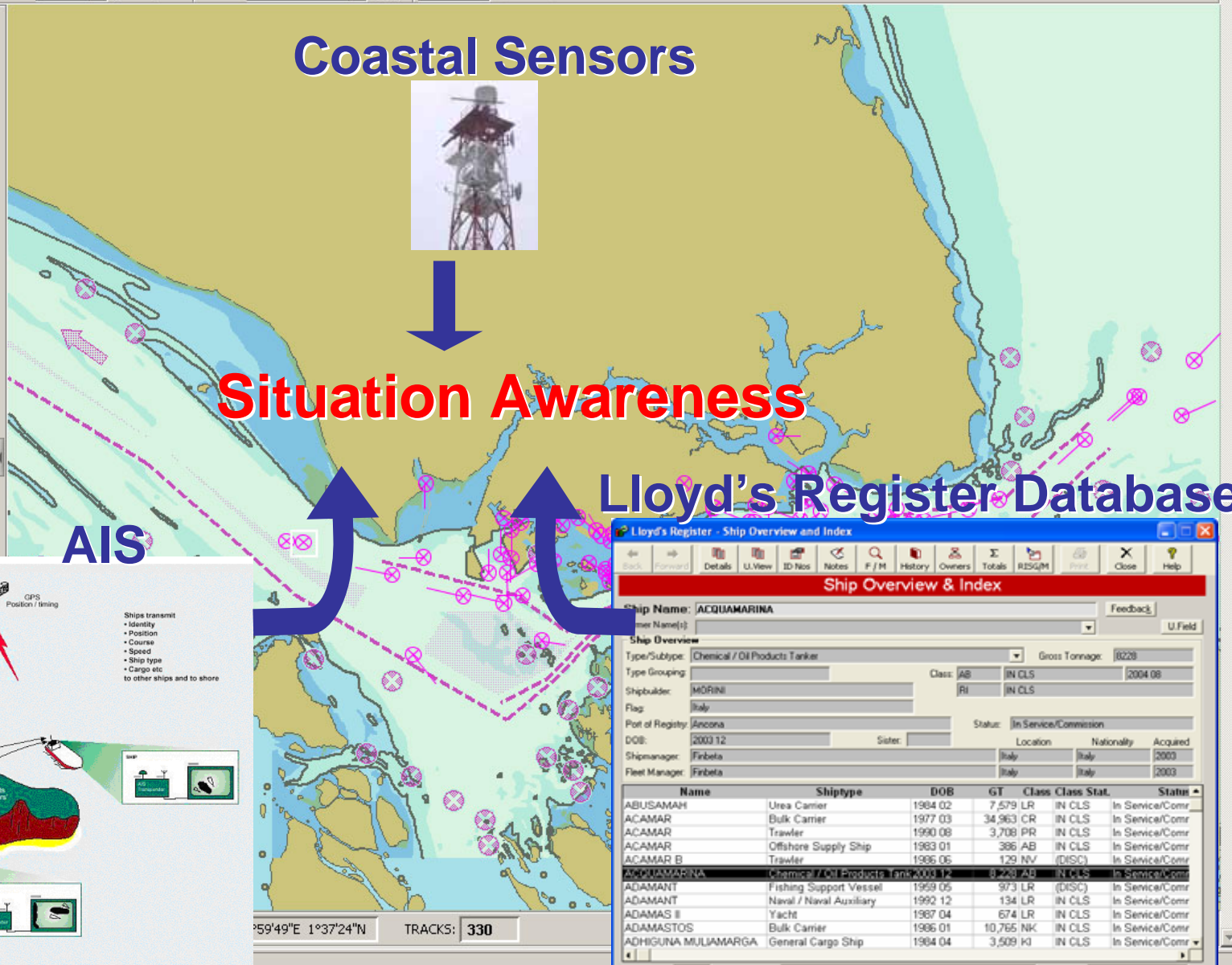
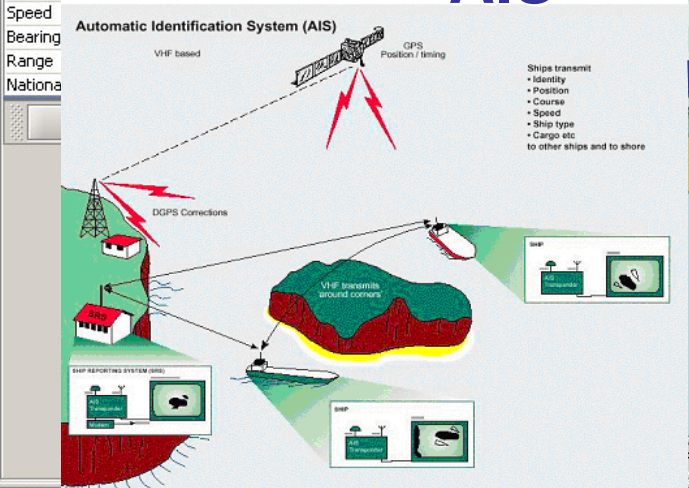
Coastal Sensors



Situation Awareness

Lloyd's Register Database

AIS



Lloyd's Register - Ship Overview and Index

Ship Overview & Index

Ship Name: ACQUAMARINA

Ship Overview

Type/Subtype: Chemical / Oil Products Tanker

Type Grouping: Class: AB IN CLS 2004 08

Shipbuilder: MORINI IN CLS

Flag: Italy

Port of Registry: Ancona Status: In Service/Commission

DOB: 2003 12

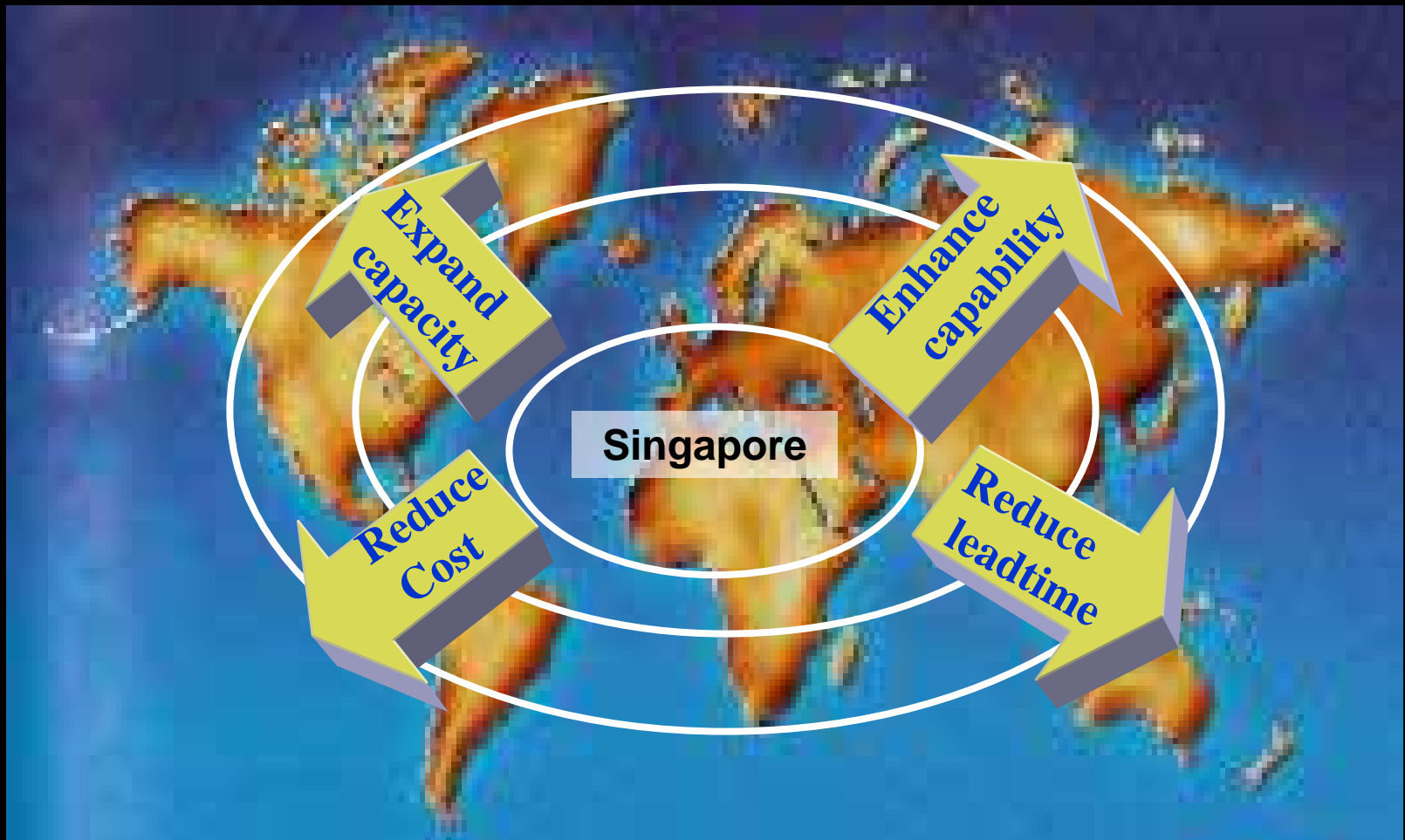
Shipmanager: Finbeta Location: Italy Nationality: Italy Acquired: 2003

Fleet Manager: Finbeta Location: Italy Nationality: Italy Acquired: 2003

Name	Shiptype	DOB	GT	Class	Class Stat.	Status
ABUSAMAH	Urea Carrier	1984 02	7,579 LR	IN CLS	In Service/Comr	
ACAMAR	Bulk Carrier	1977 03	34,963 CR	IN CLS	In Service/Comr	
ACAMAR	Trawler	1990 08	3,708 PR	IN CLS	In Service/Comr	
ACAMAR	Offshore Supply Ship	1983 01	386 AB	IN CLS	In Service/Comr	
ACAMAR B	Trawler	1986 06	129 NV	(DISC)	In Service/Comr	
ACQUAMARINA	Chemical / Oil Products Tanker	2003 12	8,228 AB	IN CLS	In Service/Comr	
ADAMANT	Fishing Support Vessel	1959 05	973 LR	(DISC)	In Service/Comr	
ADAMANT	Naval / Naval Auxiliary	1992 12	134 LR	IN CLS	In Service/Comr	
ADAMAS II	Yacht	1987 04	674 LR	IN CLS	In Service/Comr	
ADAMASTOS	Bulk Carrier	1986 01	10,765 NK	IN CLS	In Service/Comr	
ADHIGUNA MULIAMARGA	General Cargo Ship	1984 04	3,509 KI	IN CLS	In Service/Comr	

No. of Ships: 1251 Search Criteria: New Query Sort Order

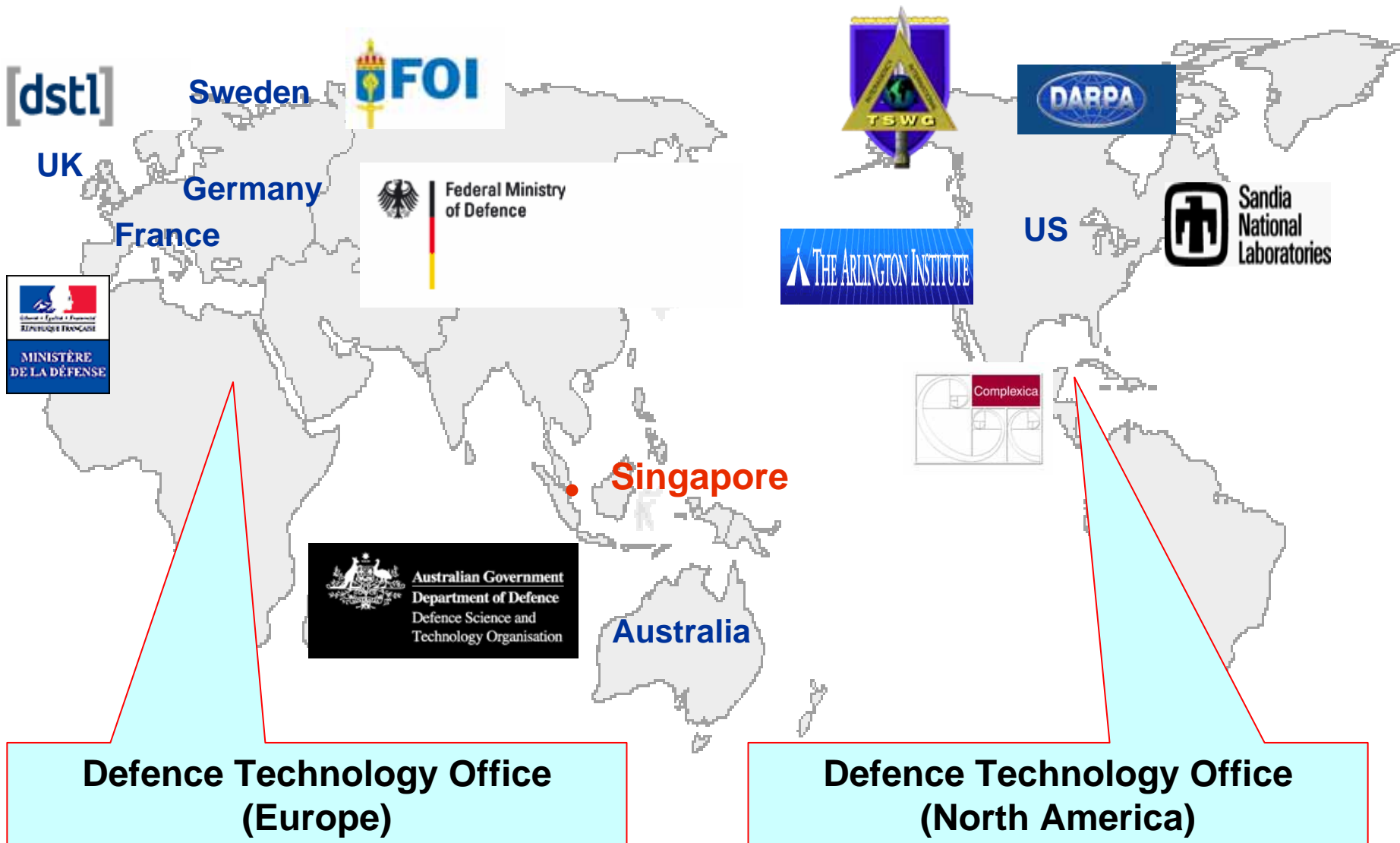
Technology Collaboration



Our S&T Partners



International Collaboration



Conclusion

- Singapore takes a systems level approach with technology as an enabler to meet the complex security challenges we face today
- Singapore participates in and seeks international collaboration to meet these challenges

Thank You