

# **MARITIME SECURITY FOR VITAL SHIPPING LANES**

Prof. Renping Zhang  
Dalian Maritime University, China

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# **MARITIME SECURITY FOR VITAL SHIPPING LANES**

**1 Overview of maritime transport**

**2 Maritime security**

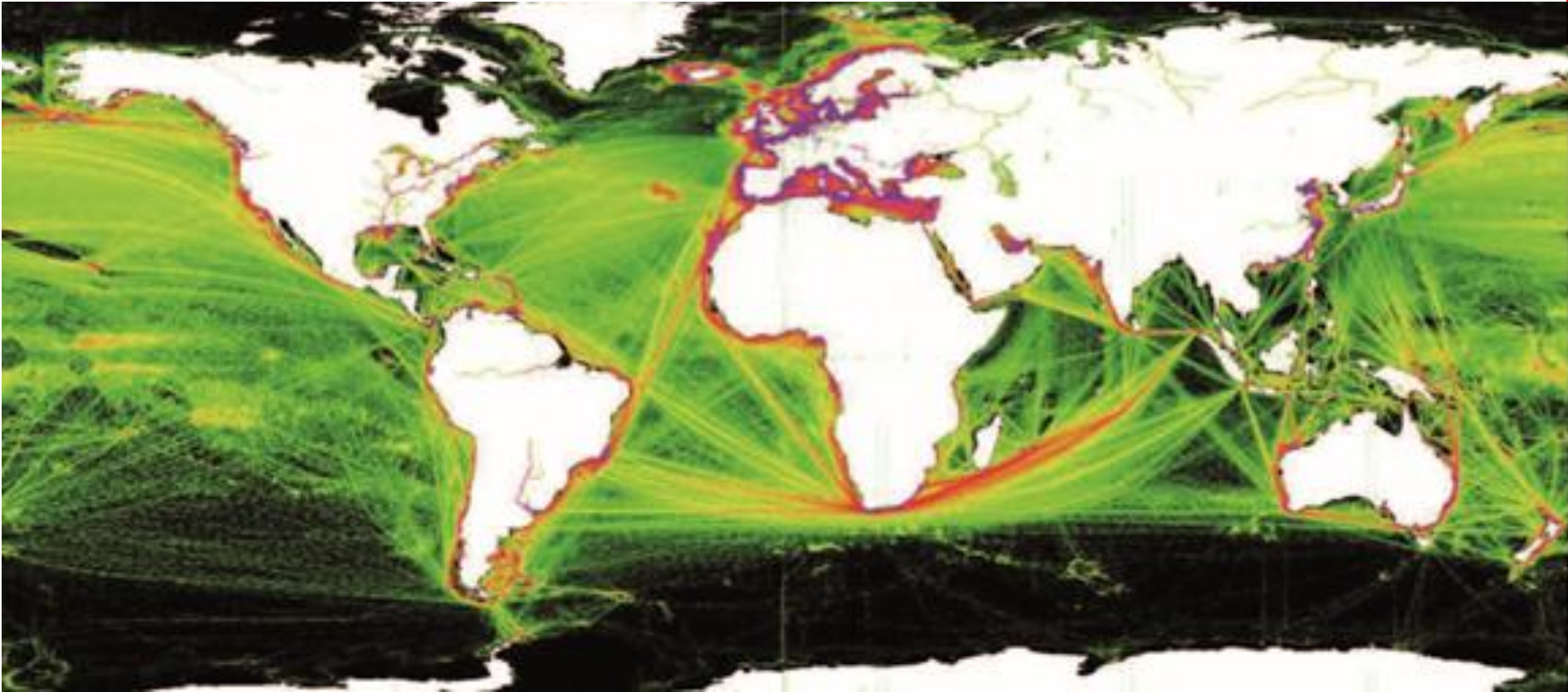
**3 Vital shipping lanes**

**4 South China Sea in Belt and Road**

# Maritime Security for Vital Shipping Lanes

## 1 Overview of Maritime Transport





Seaborne trade accounts for 90%  
of total world trade volume

## Maritime Security for Vital Shipping Lanes

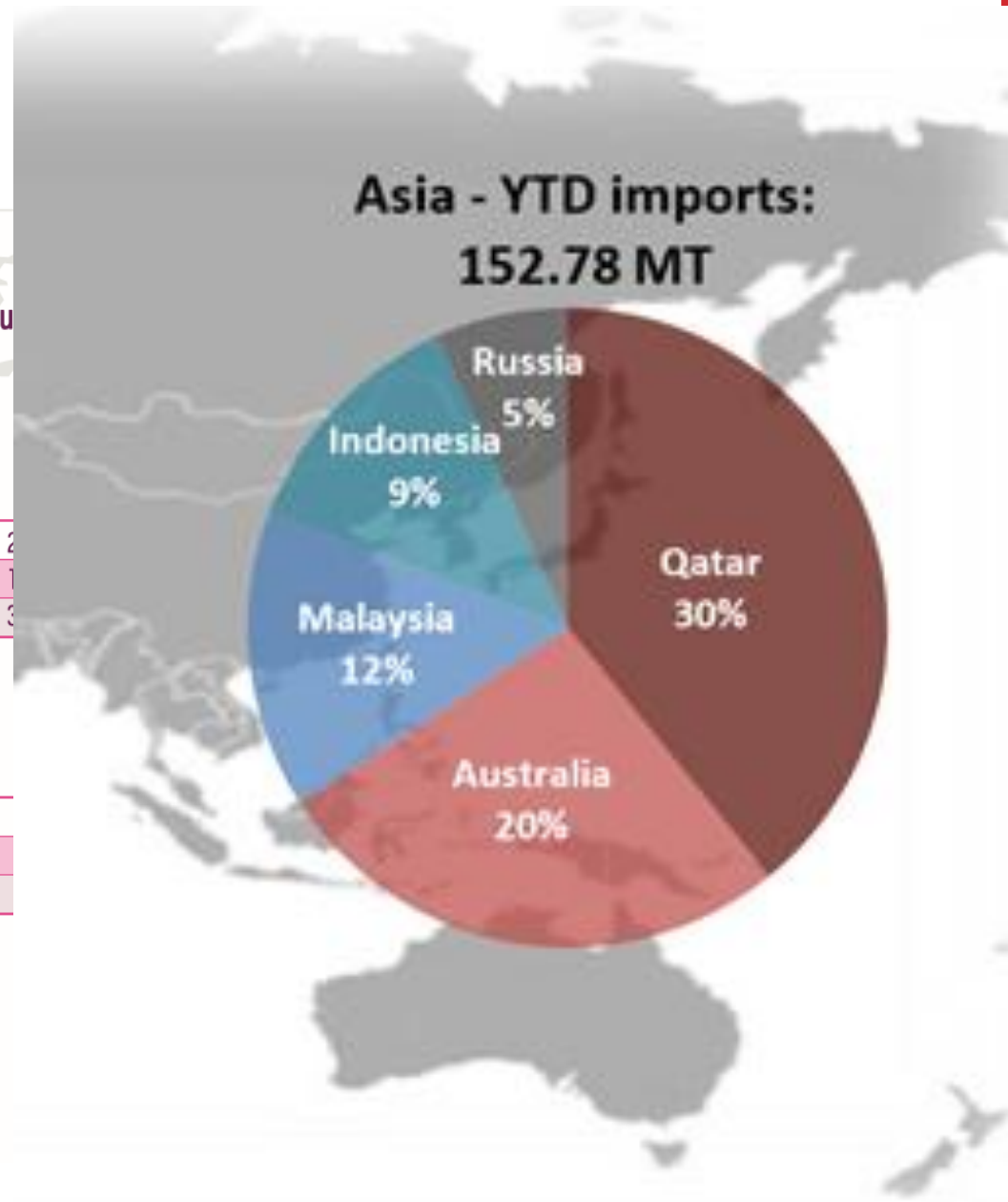
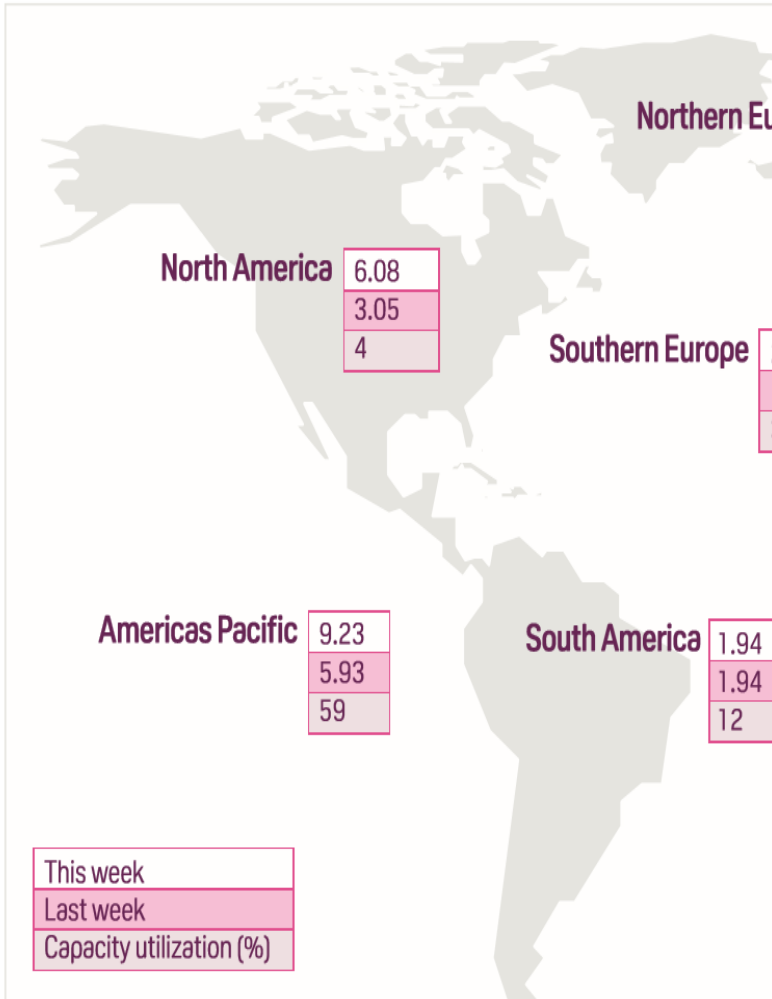


As 1 January 2016, world commercial fleet consisted of **90,917** vessels

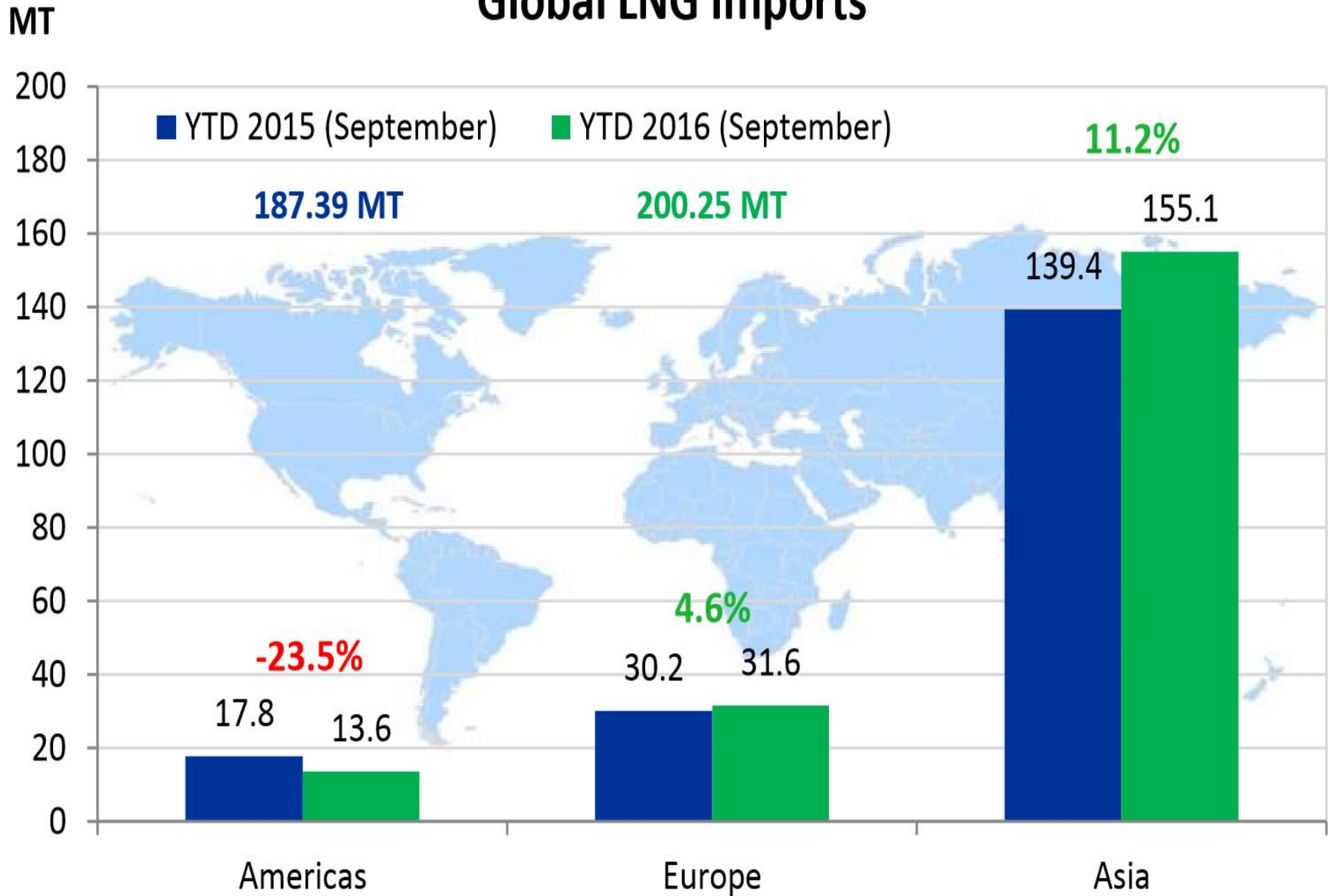
# Protection of vital shipping lanes is upmost for shipping, especially in the South China Sea



GLOBAL LNG IMPORTS (Bcf of gas)



# Global LNG Imports

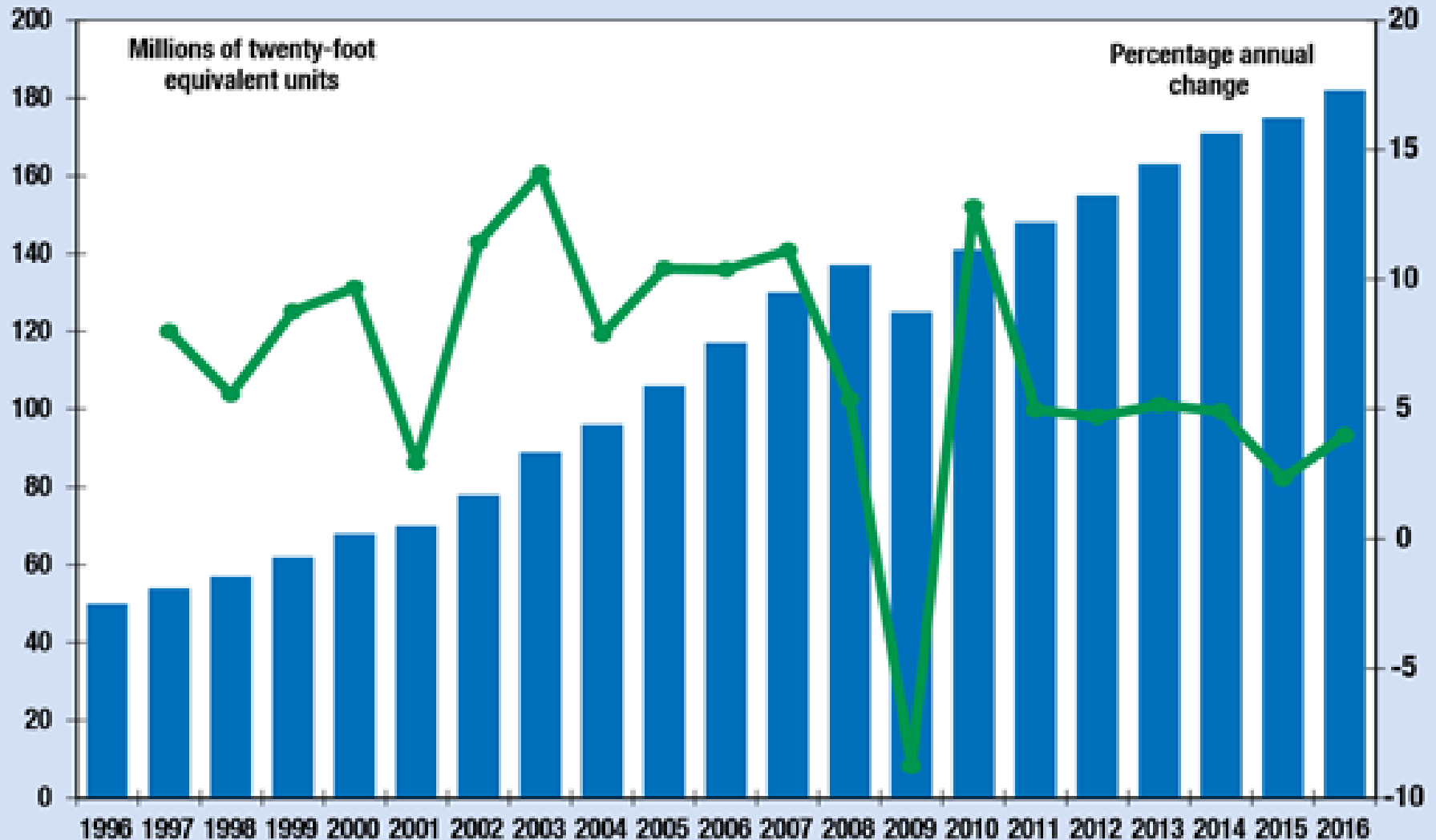




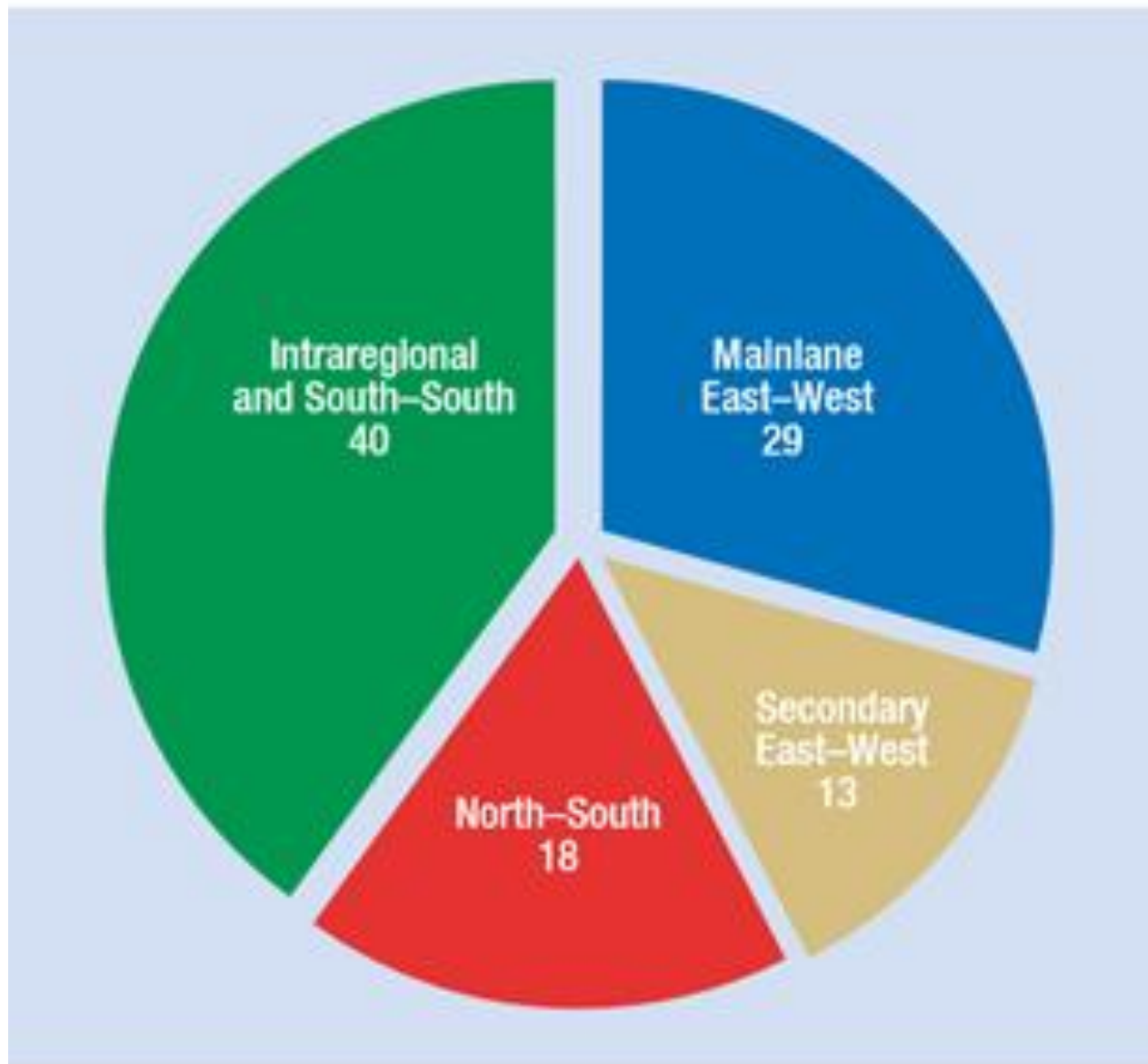
# GLOBAL CONTAINER TRADE



# GLOBAL CONTAINER TRADE



# GLOBAL CONTAINER TRADE BY ROUTE 2015



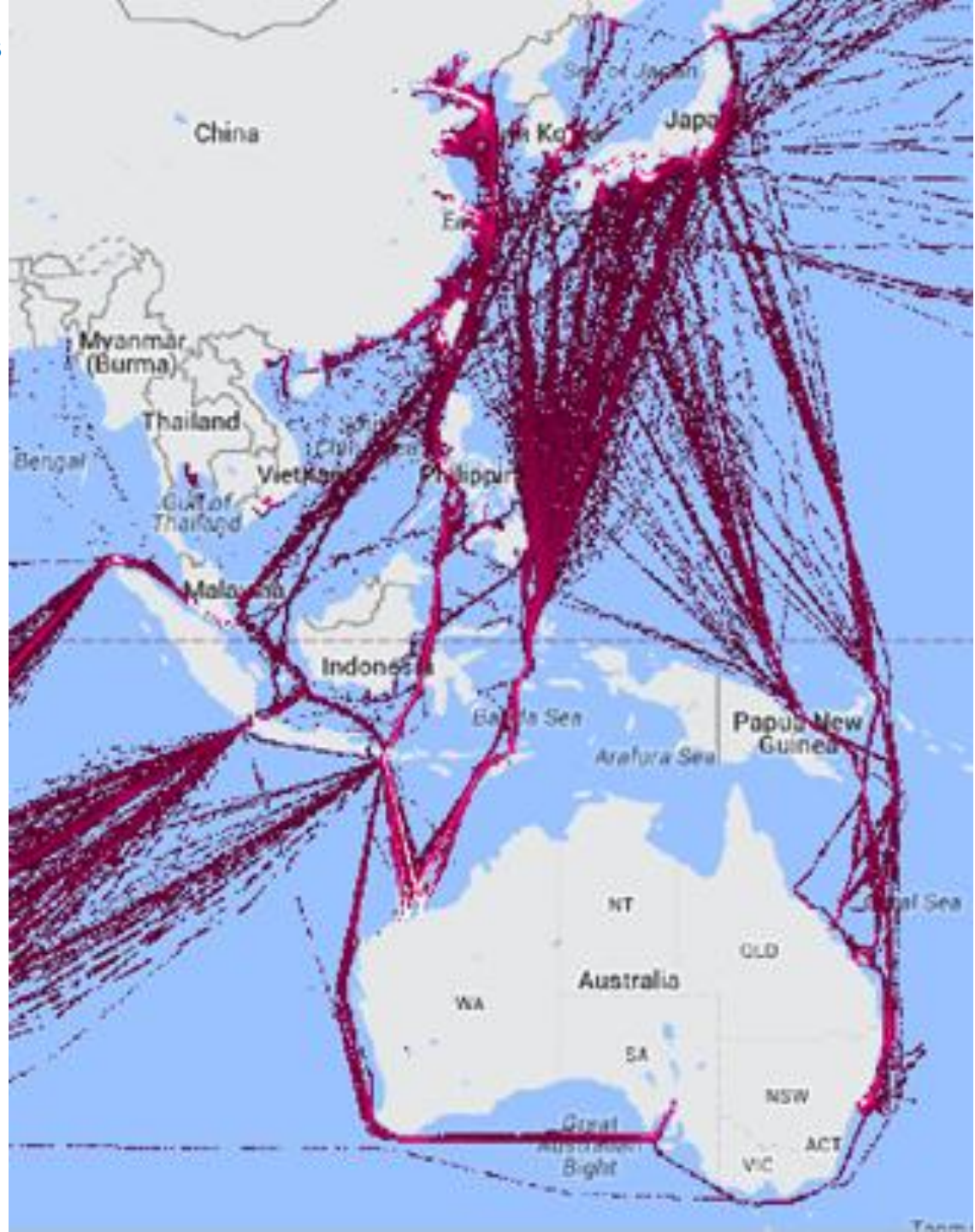


100,000 ships  
transit Malacca  
Strait every year,  
  
70-80 % for China

Source: Malaysian Minister of Transport Mr. YB  
Dato' Sri Liow Tiong Lai, 19 October 2016

50% of global fleet operate in SCS

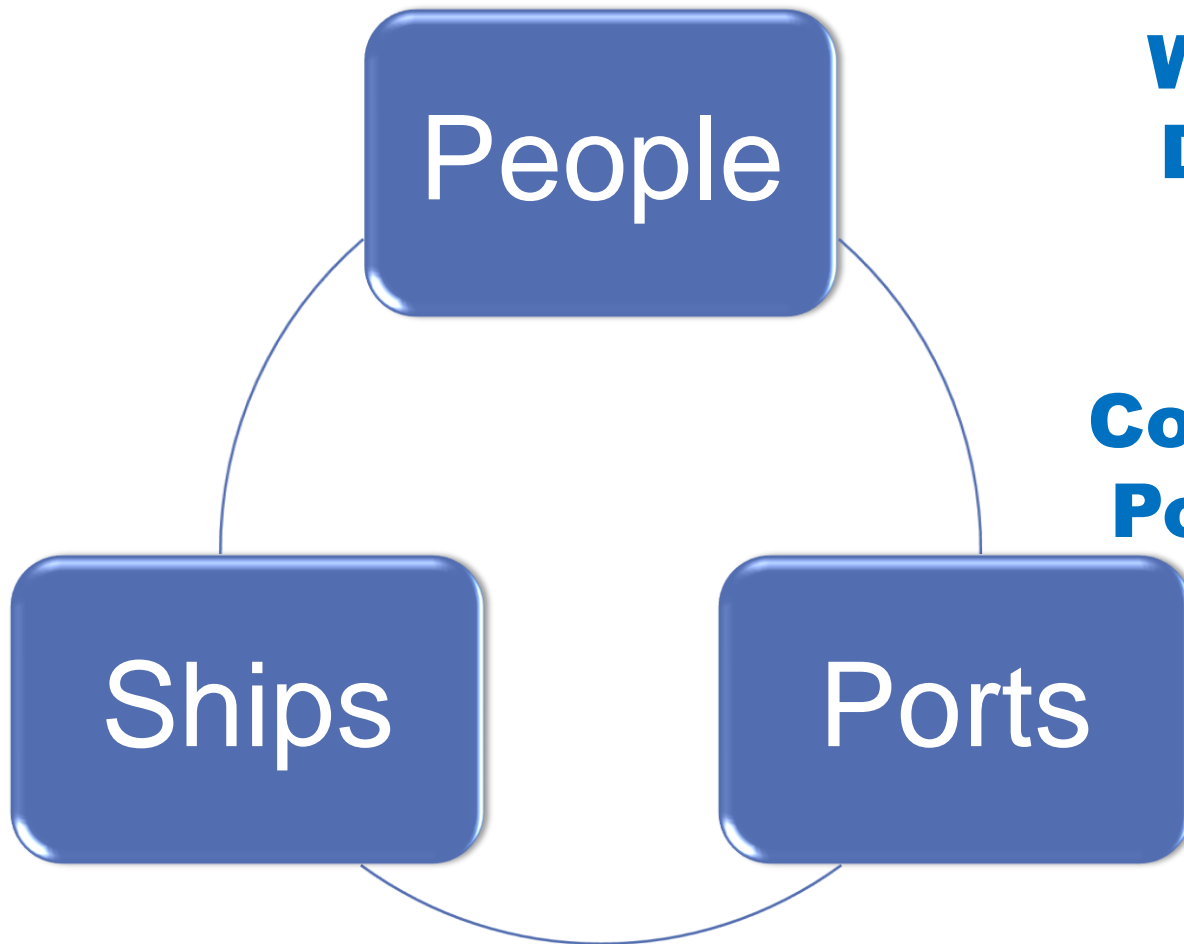
South China Sea remains highly shipping density and vital shipping routes.





**World Maritime  
Day Theme for  
2016**

The text 'World Maritime Day Theme for 2016' is centered within a blue, stylized frame that resembles a ship's hull or a large bracket. The text is in a bold, blue, sans-serif font.



## **World Maritime Day Theme for 2017**

**Connecting Ships,  
Ports and People**

# **World Maritime Day Theme for 2018**

**IMO 70 Heritage**

**Better Shipping for Better Future**



# 2 Maritime Security



# Risks to shipping exist in SCS

- Piracy and armed robbery
- Maritime cyber security

## Maritime piracy and armed robbery

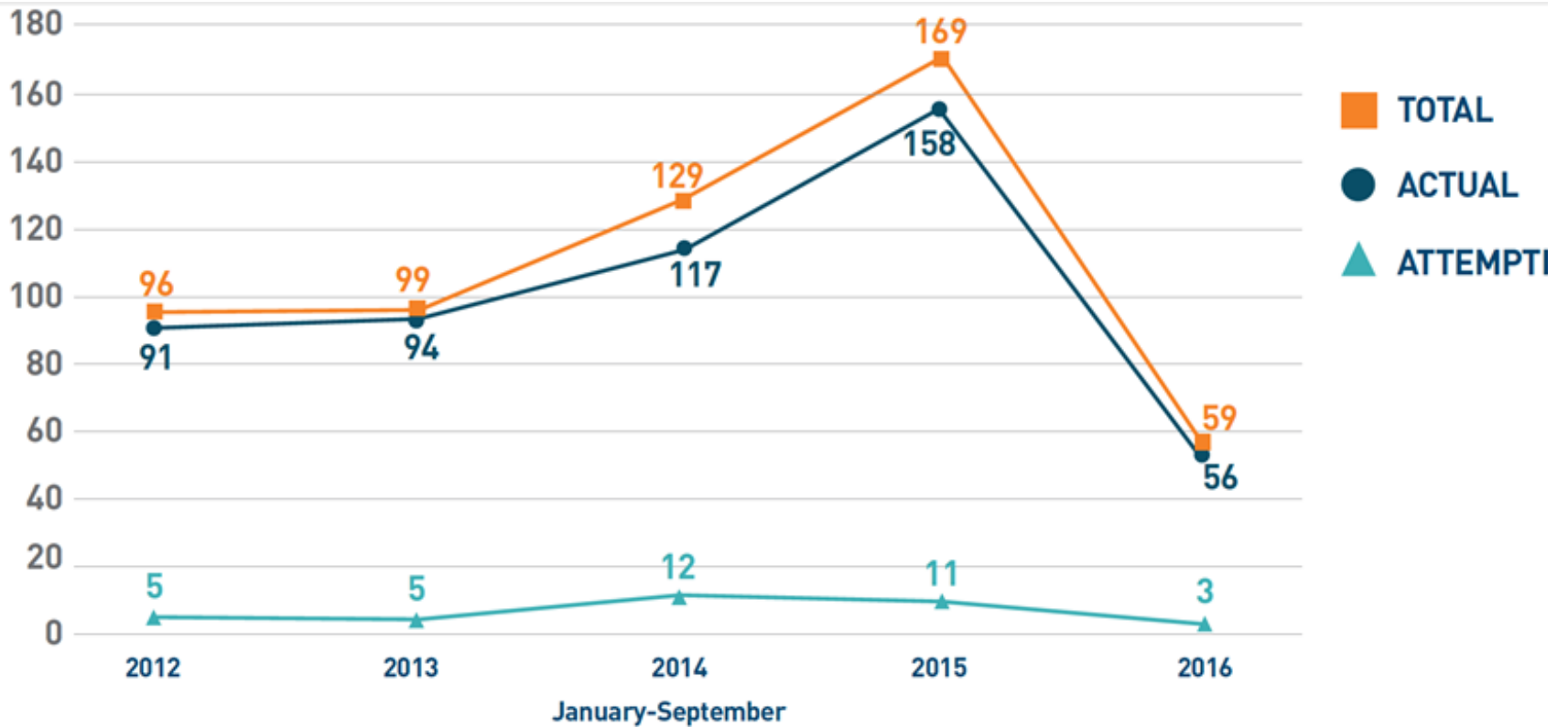


maritime piracy has evolved from a localised maritime transport concern into a global challenge, to affect regional economies, as well as global trade.

addressing the challenge of piracy requires strong cooperation at **political, economic, legal, diplomatic** and **military** levels, as well as collaboration between diverse **public** and **private sector stakeholders** across regions.



## Maritime Security for Vital Shipping Lanes



## Maritime Security for Vital Shipping Lanes

	January-September 2012		January-September 2013		January-September 2014		January-September 2015		January-September 2016	
	Actual	Attempted	Actual	Attempted	Actual	Attempted	Actual	Attempted	Actual	Attempted
<b>East Asia</b>										
China									3	
Sub Total									3	
<b>South Asia</b>										
Bangladesh	10		6		11		10		1	1
Bay of Bengal					2					
India	6	1	3		9	1	6		12	
Sub-Total	16	1	9		22	1	16		13	1
<b>Southeast Asia</b>										
Indian Ocean						1				
Indonesia	46	2	58	4	36	5	16	1	20	
Malaysia	7		6		3	1	3		5	
Philippines	3		5		3		5	1	6	
Singapore	1									
South China Sea	4		6		29	1	10	1	2	1
Straits of Malacca and Singapore	11	1	5		23	3	88	8	1	1
Thailand							1			
Vietnam	3	1	5	1	1		19		6	

Source: ReCAAP Report 2016

## South China Sea (SCS)

- 3 incidents in SCS during Jan-Sept 2016, one CAT 2 incident, one CAT 4 incident, one attempted incident
- CAT 2 incident involved AD Matsu, boarded by 6 perpetrators armed with a pistol and knives, crew tied and held, cash and watches taken



Map 3 - Location of incidents in SCS (January-September 2016)

# Time to address the elephant in the room





# Maritime Cyber Security

We are in an era of cyber-enabled ships, we deploy information and communications technology in shipping.



**Maritime cyber security** is defined as collection of tools, policies, security concepts, security safeguards, **guidelines**, risk management approaches, actions, training, **best practices**, assurance and technologies that can be used to protect

- **maritime cyber environment** and
- **maritime organisation** and
- **maritime stakeholder's assets.**

## Maritime big data:

- geographic distribution of infrastructure and maritime assets requires use of IT.
- increasing automation on board vessels
- energy sector is targeted for cyber intrusions.

# Big data in maritime sector

- Offshore exploration & production
- Maritime transport
- Marine and energy
- Refining & petrochemical

# Maritime cyber risks

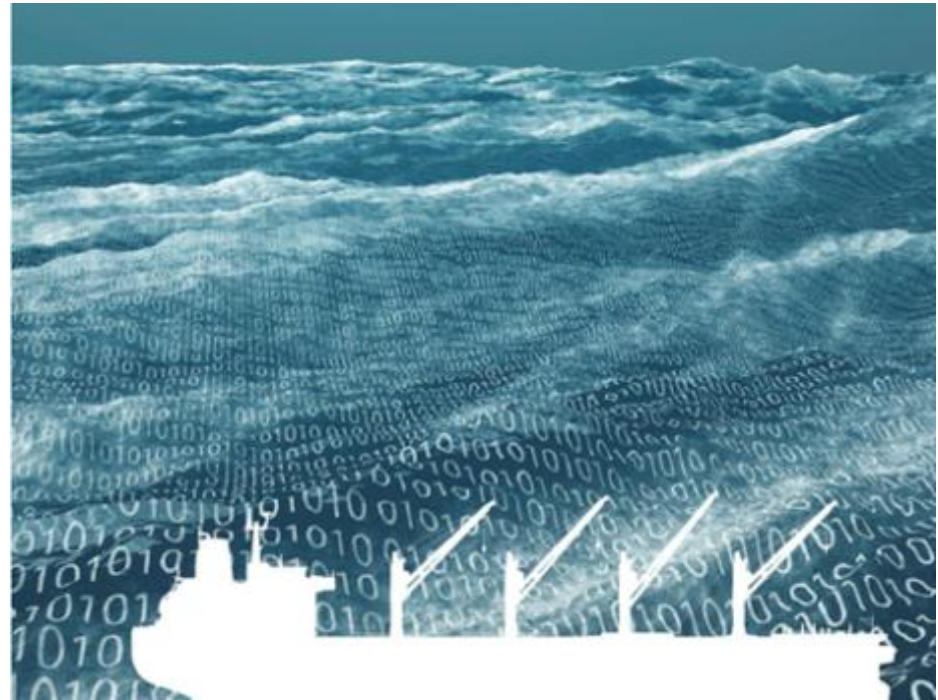
vessel traffic service  
(VTS)

GPS aided systems

ECDIS navigation  
systems

Smart ships

Unmanned ships



# Threats to maritime cyber security

- Hacker caused a **floating oil platform**, forcing temporary shutdown
- Pirates employ hackers to infiltrate a shipping company's **cyber systems** to identify vessels **with high valuable cargoes** and minimal on-board security which might lead to **hijacking**

To enhance maritime cyber security,

- regional States should work together, under IMO interim guidelines on maritime cyber risk management,
- maritime industry in the region is encouraged to develop a regional best practice, in reference to ISPS Code and ISM Code.

## Basic Capability Set

### Practices, Programs & Processes







IMO and maritime sectors recognize importance of Malacca/Singapore Straits and SCS for international navigation, are committed to ensuring navigational safety in the region, make efforts for safe transit of vessels through the Straits and SCS.



## Engagements of States

Malaysia continues with the regular engagement with MMEA HQ, Maritime Institute of Malaysia (MIMA), Malaysia Shipowners' Association (MASA), to explore cooperation and collaboration.

Indonesia makes efforts, ReCAAP-ISC explores opportunities to engage the BAKAMLA and the relevant authorities to enhance the operational level cooperation.



China makes great contribution to establish and maintain aids to navigation in SCS.



China MSA ships operate in SCS.

## Engagement of Maritime Industry

Thailand Maritime Enforcement Coordinating Centre (Thai-MECC) Maritime Security Conference, aimed at enhancing regional collaboration on maritime piracy in the Malacca Straits and the South China Sea.

Asian Shipowners Forum, ReCAAP-ISC delivered a presentation on piracy and armed robbery against ships in Asia, highlighting best practice.

# 4 South China Sea in Belt and Road



- China's Belt and Road Initiative has significant implications for seaborne trade,
- BRI aims to establish new trading routes, links and business opportunities by further connecting China, Asia, Europe, Africa and countries with economies in transition along five routes.
- Implementation process was initiated in 2015, and full implementation across all the countries involved is a long-term endeavour.

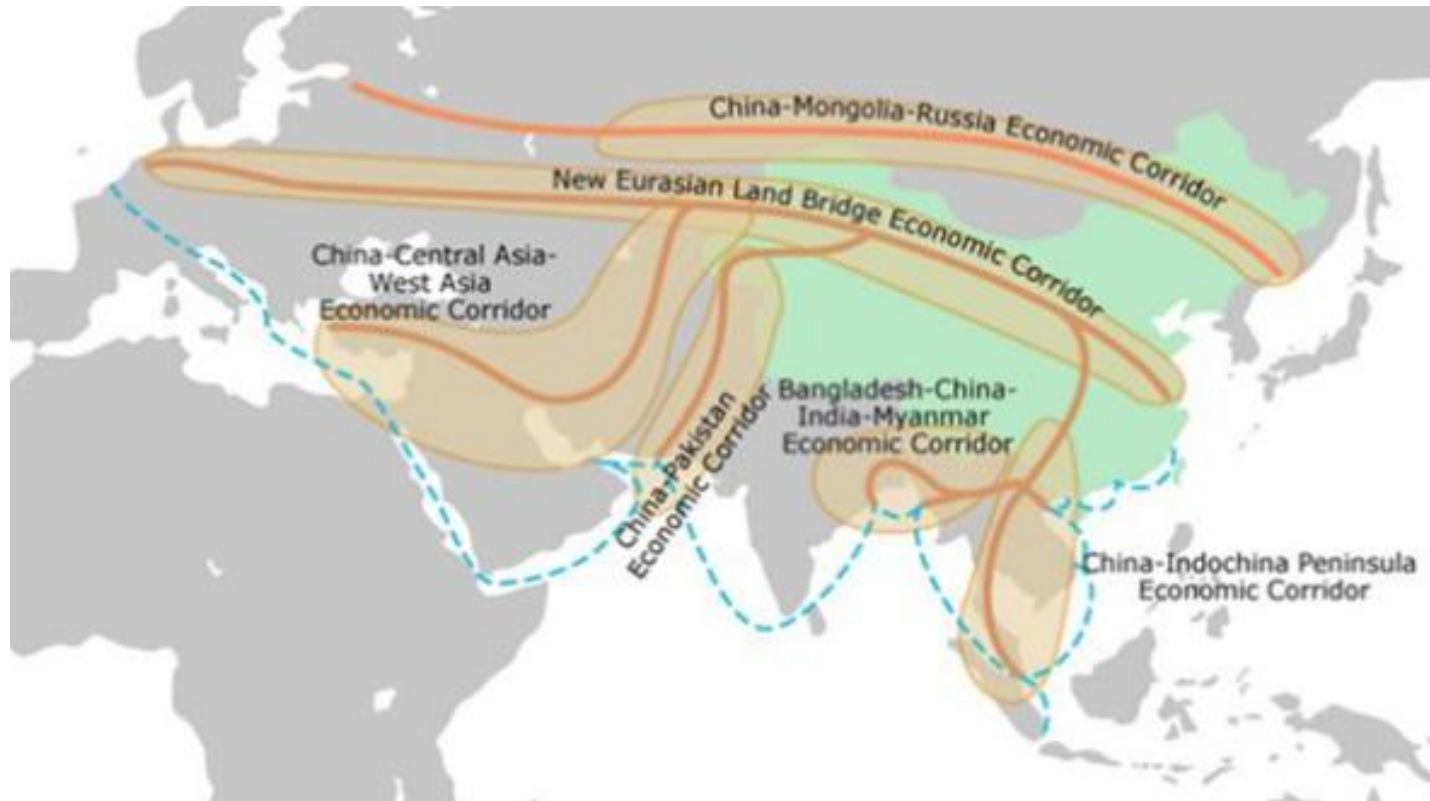
BRI envisages construction of trade and transport infrastructure network

involving 60 countries, 60 % of world's population and collective GDP equivalent to 33 % of the world's total





- Maritime transport focuses on linking China with Europe through South China Sea, Indian Ocean and southern Pacific Ocean
- Six international economic cooperation corridors have been identified.



BRI may help reduce transport costs, increase trade flows and open new markets to all involved countries, as well as promote the development of emerging industries

Another important expected contribution is to close the persistent infrastructure gap in developing regions, especially in transport.

Infrastructure investment needs for Asia are estimated at \$50 billion per year through 2020

- Success of BRI rests heavily on optimisation of transport infrastructure and services, including shipping and logistics,
- transport sector may benefit from the trade growth opportunities from reduced transport costs, greater market access and connectivity, and infrastructure and industrial development.
- Shipping may provide an additional boost to lift volumes and reverse the recent trends of weak demand and slowly growing trade, and help bring balance to the market,

<b>Table 1.8 One Belt, One Road Initiative: Projected infrastructure investments by China</b>	
<b>Bangladesh</b>	Studies for Bangladesh–China–India–Myanmar corridor; deepwater port, Payra
<b>Belarus</b>	Mining and processing infrastructure, Starobinskoye (\$1.4 billion); Sino-Belarus Industrial Park, Minsk (\$5 billion)
<b>Fiji</b>	Hydroelectric plant (\$158 million)
<b>Georgia</b>	International economic zone, Tbilisi (\$150 million); deepwater port, Anaklia (\$5 billion)
<b>India</b>	High-speed rail cooperation; industrial parks, Gujarat and Maharashtra
<b>Indonesia</b>	Jakarta–Bandung high-speed railway; coal mining and transport infrastructure, Papua and Kalimantan (\$6 billion); road and port infrastructure, Kalimantan (\$1.1 billion); ferronickel plant, Sulawesi (\$5.1 billion)
<b>Kazakhstan</b>	China–Kazakhstan oil pipeline; development of special economic zone Khorgos-East Gate at Kazakhstan–China border
<b>Kyrgyzstan</b>	China–Kyrgyzstan–Uzbekistan highway; China–Uzbekistan railway (\$2 billion); power grid upgrades, southern Kyrgyzs; power plant refurbishment, Bishkek; transport and logistics cooperation
<b>Lithuania</b>	Encouraging investment in joint railway and port projects; China Merchants Group letter of intent with port of Klaipeda
<b>Malaysia</b>	Malaysia–China Kuantan Industrial Park, including deepwater container port, steel and aluminium plants and palm oil refinery (\$3.4 billion)
<b>Myanmar</b>	Bangladesh–China–India–Myanmar transport network, including roads, railways, waterways and airports; Kyaukphyu–Kunming oil and gas pipelines; Myanmar–Yunnan optical cable

## Maritime Security for Vital Shipping Lanes

<b>Pakistan</b>	China–Pakistan economic corridor, roads and railway (\$46 billion); Lahore–Karachi highway; port upgrades, including airport, power plant and roads, Gwadar; coal mine and power plant, Gadani; 720,000 kW Karot Hydropower Plant; soft loans for two nuclear power plants near Karachi (\$6.5 billion)
<b>Sri Lanka</b>	Deepwater port in Hambantota (\$600 million); China Merchants Holdings International investment in Port of Colombo (\$500 million)
<b>Russian Federation</b>	Kazan–Moscow high-speed railway; Siberian gas pipelines to supply China
<b>Thailand</b>	Kra Isthmus Canal (\$28 billion); Kunming–Bangkok highway; railway between Nong Kahi, Bangkok and proposed China–Lao People’s Democratic Republic railway
<b>Tajikistan</b>	Central Asia–China gas pipeline; 500kV power substation reconstruction, Tursunzoda; Dushanbe–Chanak highway upgrades (\$280 million)
<b>Turkmenistan</b>	Islamic Republic of Iran–Kazakhstan–Turkmenistan road and rail network
<b>Uzbekistan</b>	Uzbekistan–China gas pipeline
<b>Viet Nam</b>	Port upgrades, Haiphong; Lang Son–Hanoi highway
<b>Africa</b>	Agreement with African Union to help build railways, roads and airports; coastal road, Nigeria (\$13 billion); Nairobi–Mombasa railway, Kenya (\$3.8 billion); Addis Ababa–Djibouti railway (\$4 billion)
<b>Central and South America</b>	Pledged investment to region (\$250 billion); proposed transcontinental railway between coasts of Brazil and Peru (\$10 billion); natural gas development, pipelines, power generation facilities, highways, ports and telecommunications
<b>Europe</b>	Upgrade of Port of Piraeus, Greece (\$260 million); Hungary–Serbia high-speed railway (\$3 billion); China–Spain cargo railway (12,875 km)

- South China Sea has strategically a significant position in BRI,
- 50% of global merchant fleet operate in SCS,
- Potential threats exist to maritime security in SCS,
- SCS plays an essential role in BRI initiative,

- All maritime States and stakeholders in the region:
  - make efforts to protect the vital shipping lanes in SCS,
  - cooperate and coordinate for the maritime security in SCS.

# Thank You

Prof. Renping ZHANG  
Dalian Maritime University, China  
[rpzhang@hotmail.com](mailto:rpzhang@hotmail.com)