

# Response to Distributed Maritime Operations

## Capabilities Required for Future Destroyer



May 21st, 2024

Director General of Naval Systems, ATLA

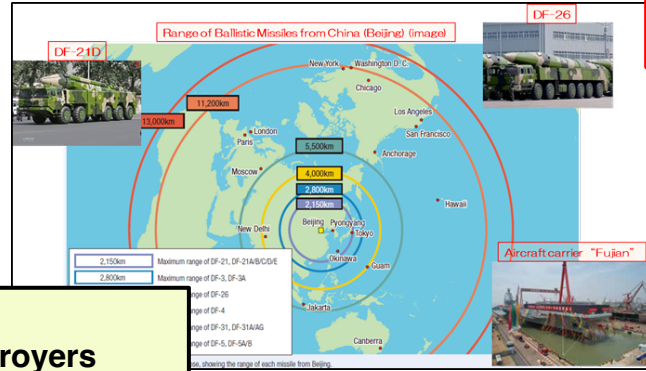
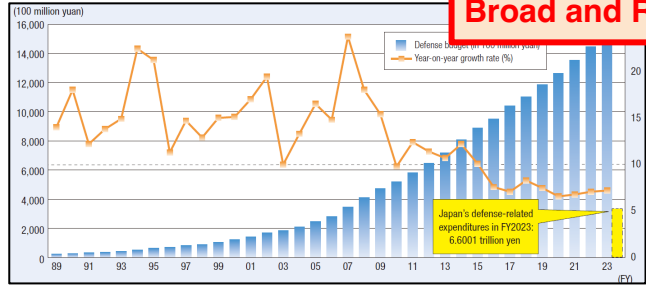
VADM IMAYOSHI Shinichi

# Agenda

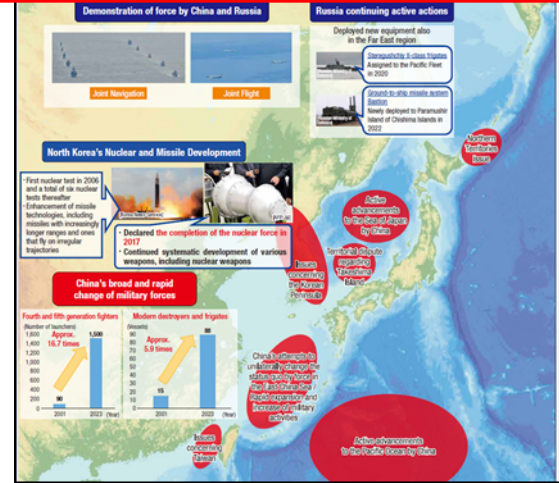
- I Maritime Defense Capability  
(A2/AD Environment)
- II Future Warfare  
(Distributed Maritime Operation)
- III Capabilities Required for Future Destroyer
- VI Toward Construction of Future Destroyer

# Maritime Defense Capability (A2/AD Environment)

## Broad and Rapid Military Buildup of China



## Comparison of Military Capabilities among Japan, the US and China



- ◆ Increase in National Defense Budget
- ◆ Modernization of submarines and destroyers
- ◆ Introduction of fourth and fifth generation fighters

## Key Capabilities for Fundamental Reinforcement of Defense Capabilities

**Stand-off defense capabilities**  
Strengthening of capabilities to respond to opposing forces from a safe distance without being attacked.

**Sustainability and resiliency**  
Buildup of sufficient ammunition, guided missiles, and fuel at an early stage. Japan will also secure funds for the acquisition and repair of equipment as well as for improving the resiliency of facilities.

**Integrated air and missile defense capabilities**  
Strengthening of capabilities to respond to increasingly diverse and complicated submarine threats, including missiles.

**Mobile deployment capabilities and civil protection**  
Reinforcement of maritime and air transportation capabilities for rapid maneuvering and deployment of necessary units. These capabilities are used to protect the people of Japan.

**Unmanned defense capabilities**  
Enhancement of intelligence gathering and combat support capabilities through unmanned assets.

**Command and control and intelligence-related functions**  
Reinforcement of command and control and intelligence-related functions for quick and accurate decision-making.

**Cross-domain operation capabilities**  
Enhancement of capabilities in the domains of space, cyber, and electromagnetic spectrum as well as ground, maritime, and air capabilities needed for combat using all capabilities.

**(1) Strengthening Japan's own architecture for national defense**  
Next generation fighter aircraft

**(2) Enhancing deterrence and response capabilities of the Japan-U.S. Alliance**  
U.S. Marine F-35B landing on the MEKJ-5 "barn" (October 3, 2021)

**(3) Reinforcing collaboration with its like-minded countries and others**  
Multilateral exercise with Japan, U.S., U.K., N.Z., Canada, New Zealand (October 2021)

## Priorities for Building a Maritime Defense Capability

**Information Warfare Capabilities**

Resilient C5ISR

**Underwater dominant Capabilities**

According to SS+UUUV, Underwater superiority

**Stand-off defense capability**

Supersonic and Long Range Missile

--- Closing our kill chain & Breaking their kill chain ---

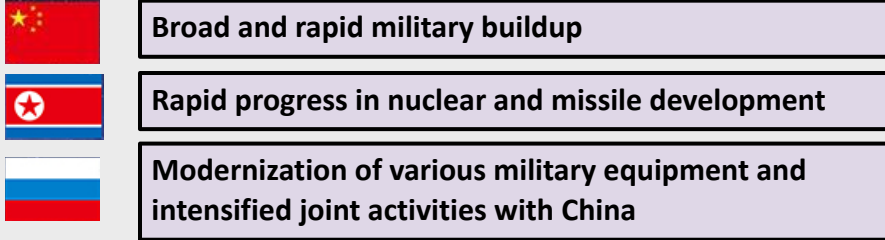
**Strengthening the Logistics Base**  
Survivability, Flexibility, Mobility, Use of Civilian Power, DX

\* The figure is an image.

# II Future Warfare (Distributed Maritime Operation)

Japan is facing strengthening of military capabilities and intensification of military activities of countries surrounding Japan: China, North Korea, and Russia.

2023 Defense White Paper, Japan

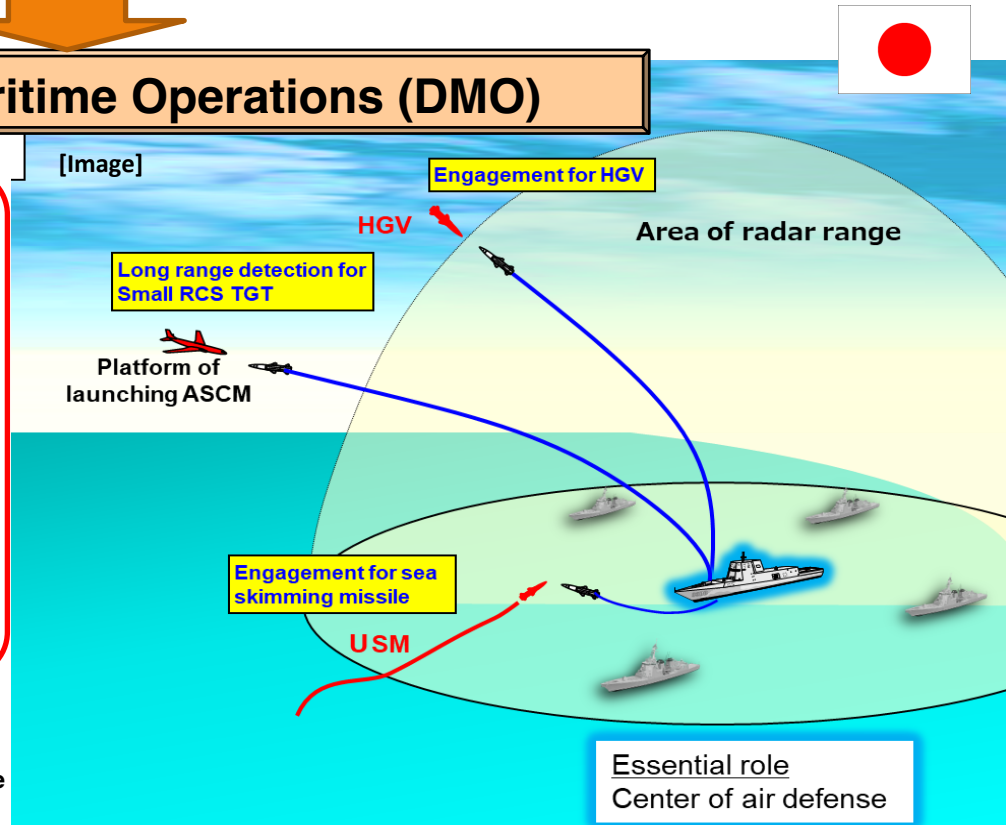


## Distributed Maritime Operations (DMO)

### 【 Concept of DMO in MSDF 】

To utilize distributed maneuvered maritime units so as to oppose the concentration of and the movement of the PLA forces under an A2 / AD environment; while imposing the cost of adversaries, and buying time for the formulation of flexible deterrence options (FDO) and Joint Task Force.

(Source)  
Yoshimitsu Sato, "Three Operations of the U.S. Navy and Marine Corps to Counter A2/AD - Overview of DMO, EABO, and LOCE (Column 169)," Maritime Self-Defense Force officer School, July 15, 2020





# III Capabilities Required for Future Destroyer (1/2)

## Future Goals for JMSDF

Response to Diverse Operations Including **Distributed Maritime Operations (DMO)**

=>

- ◆ Improve air defense and EW capabilities
- ◆ Increase the number of air defense destroyers including Aegis system-equipped destroyers

## Required Capabilities

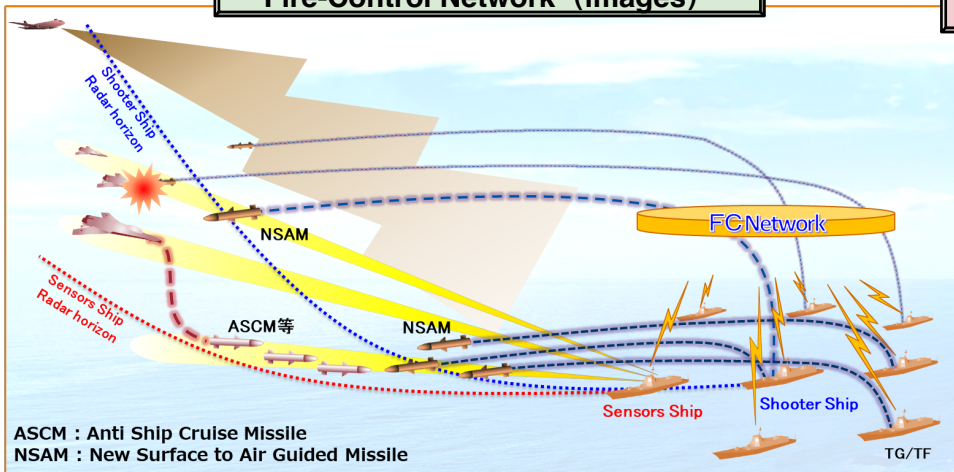
To respond to emerging new ways of warfare

- Large-Scale missile strike
- Asymmetric attacks
- Hybrid Warfare

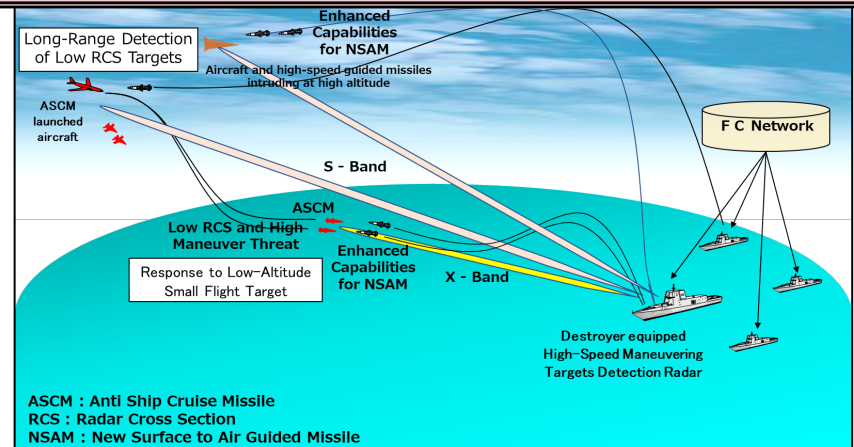
=>

- ◆ Capability for DMO = **Fire-Control Network**
- ◆ Capabilities to respond to HGV/HCV = **High-Speed Maneuvering Targets Detection Radar**
- ◆ Stand-off defense capability = **New Surface to Air Guided Missile (NSAM)**
- ◆ Directed Energy Weapons(DEWs) = **Laser, HPM Weapons**
- ◆ Manpower saving / Unmanned operation = **Autonomous NAV, Remote automatic control technologies, Support decision-making**
- ◆ Integrated Power & Energy System = **IPES**

### Fire-Control Network (images)



### High-Speed Maneuvering Targets Detection Radar(images)





# III Capabilities Required for Future Destroyer (2/2)

## Air Defense Capabilities

- New Ship to Air Missile(NSAM)
- High-Speed Maneuvering Targets Detection Radar
- Rail-gun
- HPM weapons
- Active homing short range SAM
- Laser (100KW class)
- Guided missile for HGV/HCM

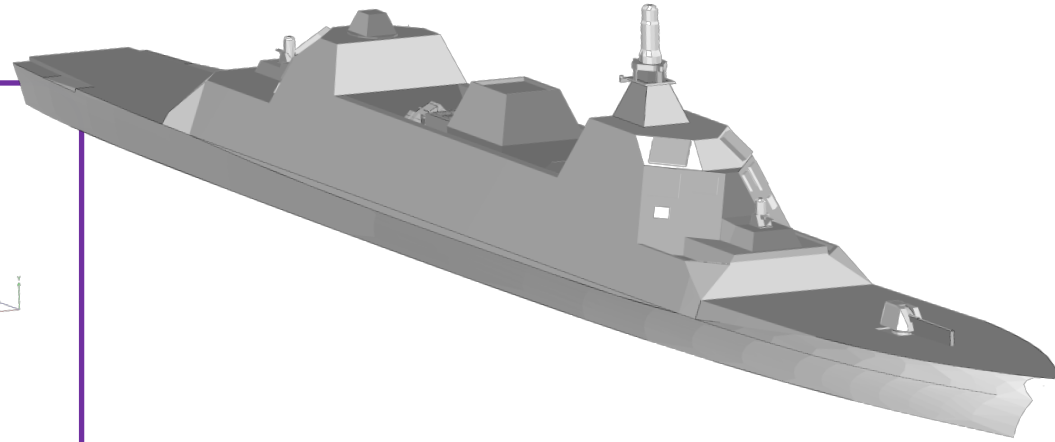
- Stand-off defense capabilities
- IAMD capabilities
- Cross-domain operations capability

IAMD : Integrated Air Missile Defense

## IW/EW Capabilities

- AI based Combat Direction System (CDS)
- FC Network
- Capability for EMW

- C5ISRT and IW capability
- Sustainability and Resiliency



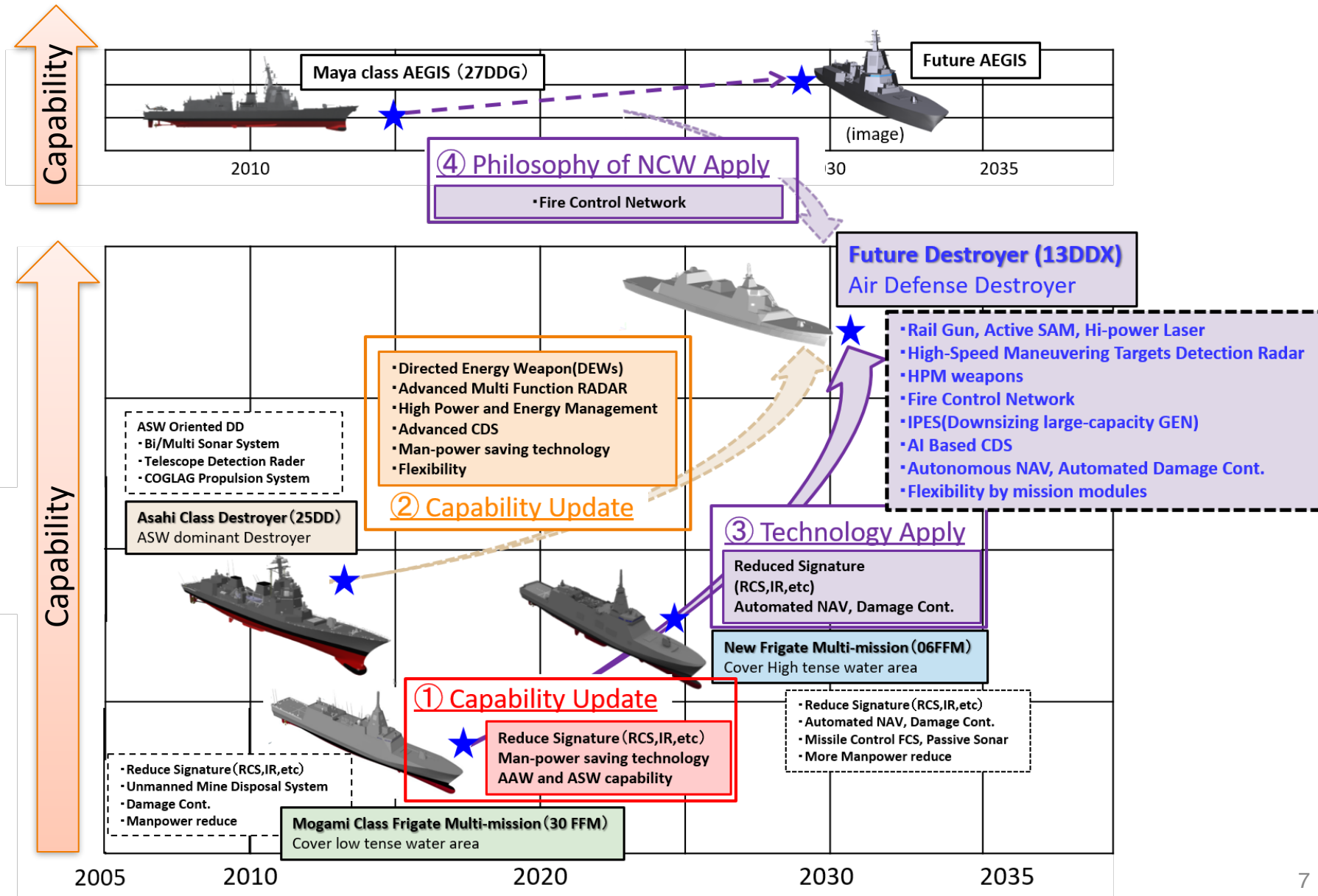
## Common Basic Capabilities

- Power storage, high-voltage power distribution, Integrated Power & Energy System (IPES)
- Enhancement of survivability = Reduced Signature (RCS, IR etc. )
- Manpower saving = Autonomous NAV, Automated Damage Cont. Support decision-making
- Future Scalability = Standardization of S/W, Modularization of H/W

- Maneuver and deployment capability
- Sustainability and Resiliency



# VI Toward Construction of Future Destroyer



**Fin**