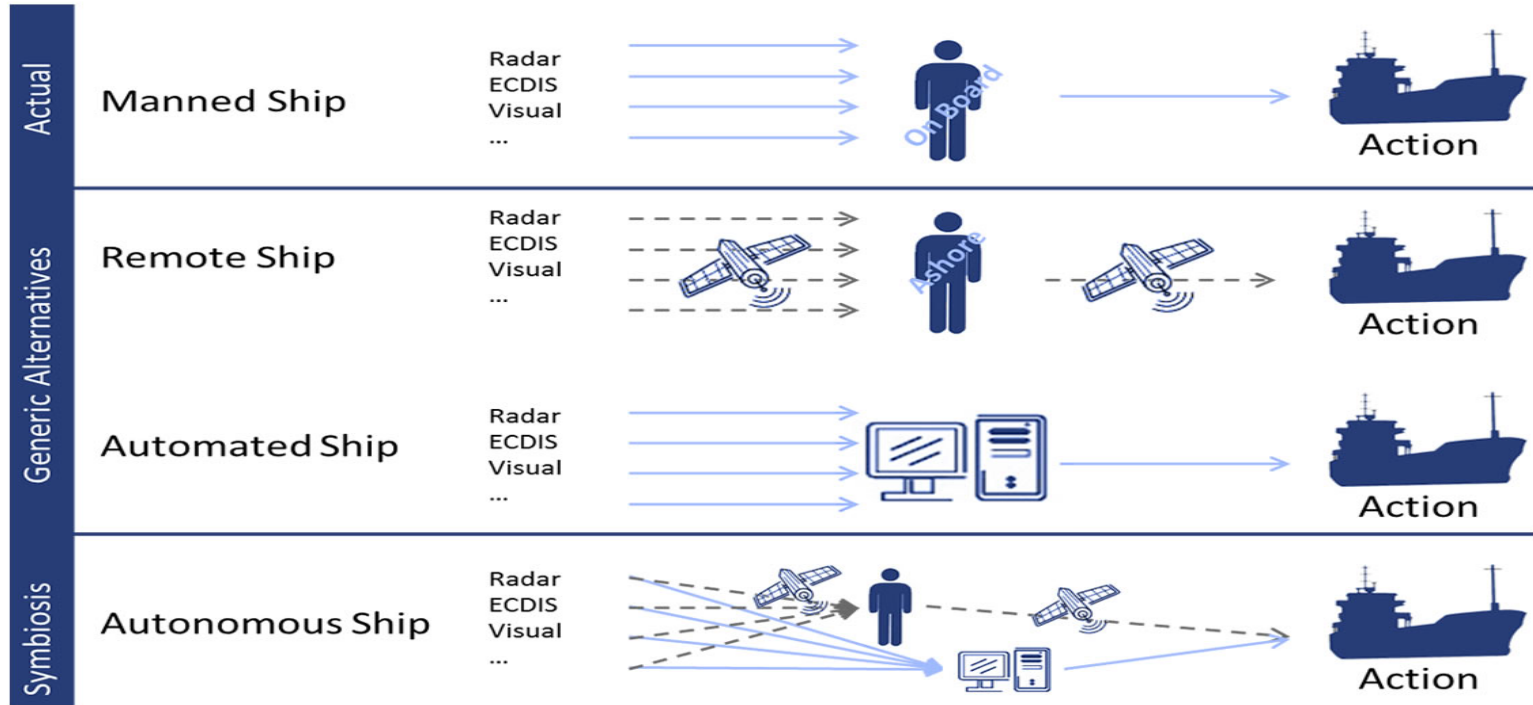


UNMANNED SHIPS LEGAL IMPLICATIONS



MARITIME AUTONOMOUS SURFACE SHIP (MASS)

A SHIP THAT CAN OPERATE INDEPENDENTLY OF HUMAN INTERACTION





NEW KEY ROLE PLAYERS

- REMOTE OPERATORS
- MANUFACTURERS/ PROGRAMMERS OF NAVIGATION SYSTEMS
- SUPPLIERS OF COMMUNICATION AND NETWORK SOLUTIONS



REMOTE CONTROL/OPERATION

- Monitoring & Control
- Navigation & Piloting
- Operation of payload systems

DECISION SUPPORT

- Navigation (e.g. Routing)
- Situational awareness
- Collision avoidance
- Safety support

NAVIGATION & POSITIONING

- Situation awareness & Sensing
- Dynamic Positioning & Auto pilot
- E-Navigation

OPERATIONS OPTIMISATION

- Onboard energy optimisation
- Fleet optimisation
- Revenue optimisation

CONDITION MANAGEMENT

- Health monitoring
- Self diagnostics
- Smart maintenance schemes
- Remote support
- Maintenance robots

ONBOARD AUTOMATION

- Automatic reporting
- Automatic systems (e.g. Mooring)
- Robotics
- Full autonomous operation

CAN THE MASS BE CONSIDERED “A SHIP”?

FRENCH LAW: *"The ship is a floating craft, equipped with propulsion means and able to face the perils of the sea"*

INTERNATIONAL CONVENTIONS: Do not require crew on board

WHO IS “THE MASTER” OF THE MASS?

FRENCH LAW: *"The person who actually exercises the command of the ship"*

INTERNATIONAL CONVENTIONS: Define “Seafarers”
(*"any person employed or engaged or working in any capacity on board a ship"*)

MARITIME CONVENTIONS WILL APPLY AND WILL NOT NEED TO BE ALTERED

COLLISION

Liability is based on *"error of ships"*

Applies to the remote operator and all entities implicated in the conception of the MASS in case of fault

COLREG, Rules 3(f) and 18:

MASS is not a *"ship not under command"* or *"restricted in her ability to maneuver"*

COLREG Rule 5: *"Every vessel shall at all times maintain a proper look-out by sight and hearing as well as by all available means appropriate in the prevailing circumstances and conditions so as to make a full appraisal of the situation and of the risk of collision"*

**MARITIME
CONVENTIONS
WILL APPLY
AND WILL NOT
NEED
TO BE ALTERED**

CARRIAGE OF GOODS

Seaworthiness (the remote operator must be qualified)

Duty of Care (no requirement of the presence of a crew on board)

Navigational Act (exemption for errors of the remote operator in the management or navigation of the ship)

**MARITIME
CONVENTIONS
WILL APPLY
AND WILL NOT
NEED
TO BE ALTERED**

LIMITATION OF LIABILITY

Can be invoked by the remote operator as
"servant of the owner"

POLLUTION (CIVIL LIABILITY)

Immunity of the remote operator as
*"servant of the owner" and/or "(an)other
person who, without being a member of the
crew, performs services for the ship"*

ADJUSTMENTS TO BE MADE IN SAFETY REGULATIONS AND DOMESTIC LAW

SAFETY REGULATIONS

(eg. STCW, SOLAS)

Duty of Assistance cannot be fulfilled

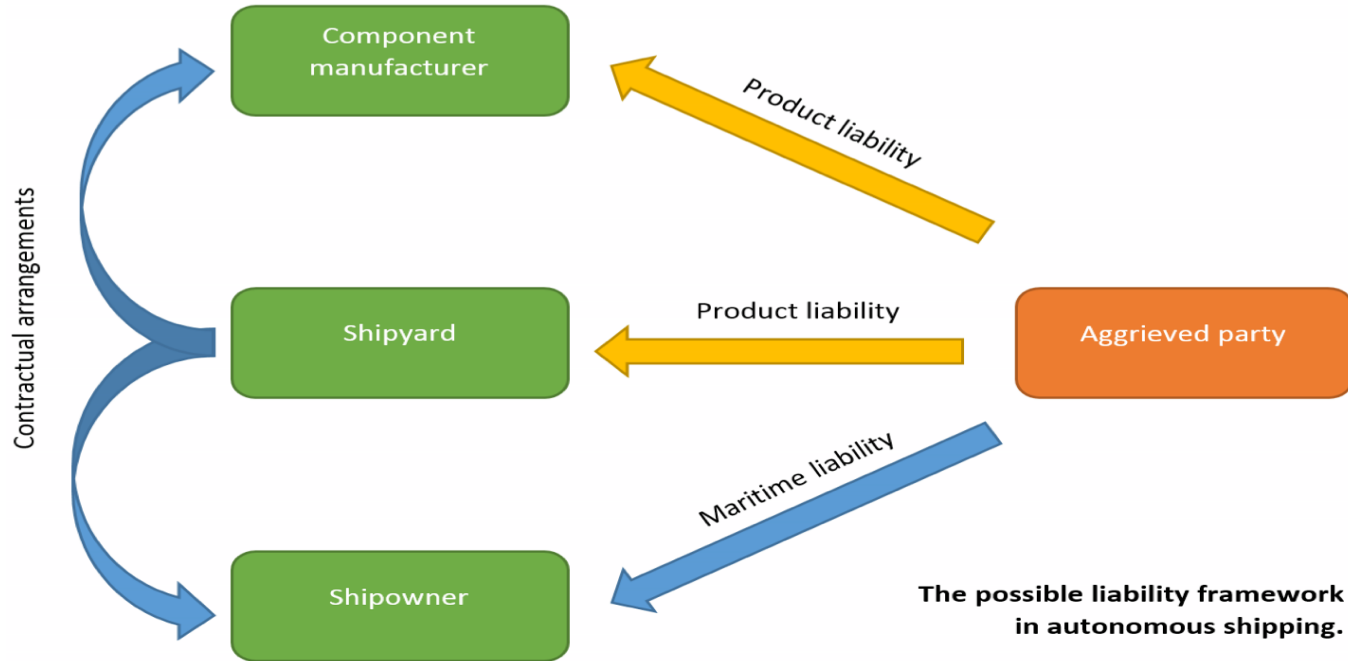
ARREST

Service cannot be made anymore to the “Master”

CRIMINAL LIABILITY

The “Master” cannot be efficiently sanctioned

NEW LIABILITIES



INSURANCE MARKET ADAPTATION

- **NEW RISKS**

Cyber Risks

Product Liability

- **INSURANCE COVER OF THE
NEW KEY ROLE PLAYERS**

