



SAFETY AND SUSTAINABILITY: THE NEW SHIPPING FRONTIERS



Paolo Salza - Chief Technical Officer
Genova, 1st October 2016



RINA

SKILLS AND EXPERTISE

RINA is

“

a multi-national Group fully capable of supporting its clients in the development and management of the various phases of their activities, offering certification, testing and inspection services as well as consulting engineering through dedicated companies

”

OVER 150
YEARS OF
EXPERIENCE



RINA

Our services

T.I.C.

C.E.

Classification

Operation&Maintenance

Certification

Consulting Engineering

Testing

Project management

Inspection

Special studies

Training

Design

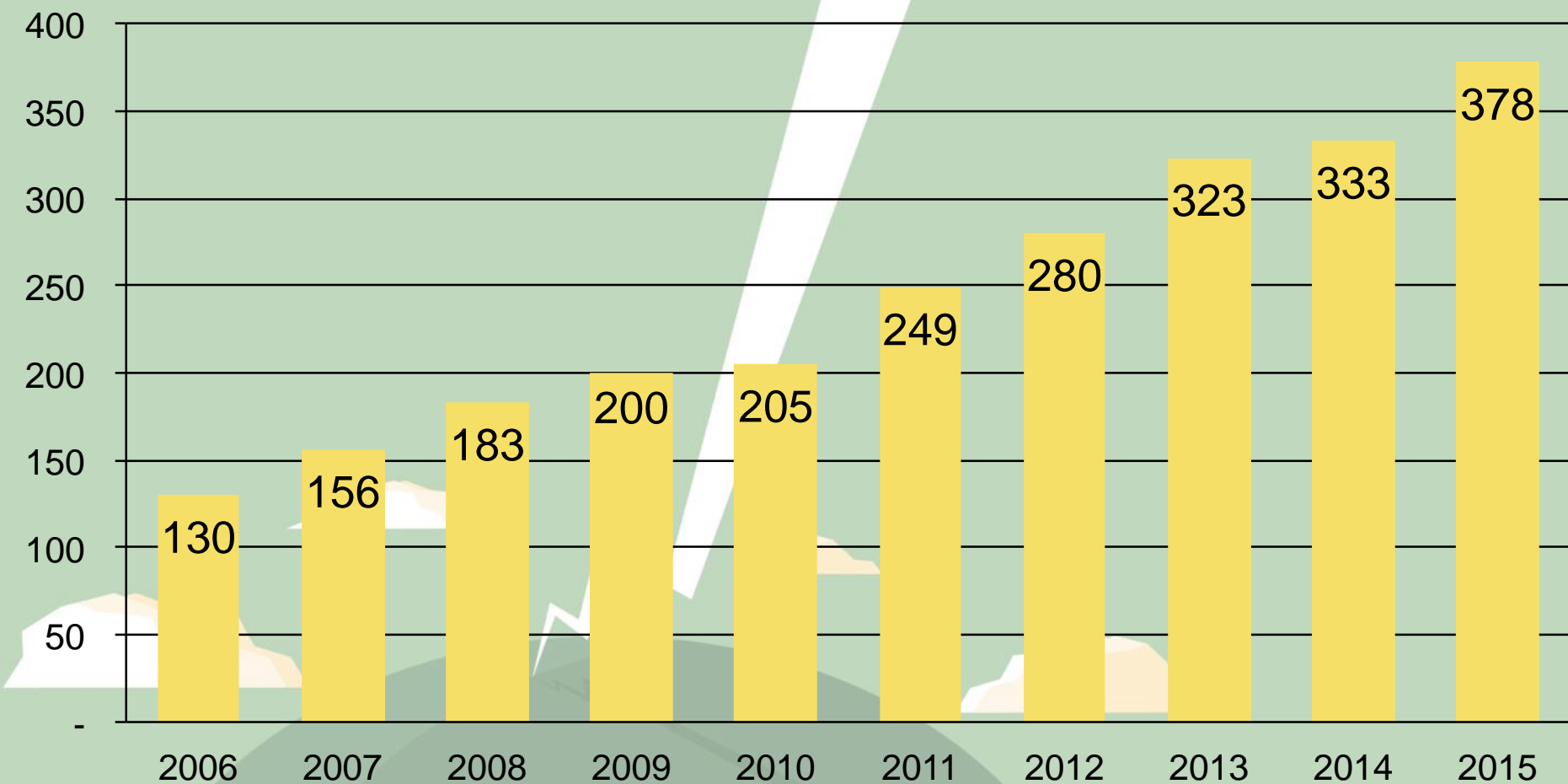
RINA SERVICES

D'APPOLONIA



RINA

REVENUES TURNOVER (million of euro)



RINA

The Group

Aug. 2016

Acquisition of **100%**
Edif Group Limited (UK)
key worldwide provider of
T.I.C. and C.E. services



EDIF

**EDIF NDE
(T.I.C.)**

**EDIF ERA
(C.E.)**

- Turnover of **100 Millions €**
- **15 Millions €** EBITDA
- **650 employees** and over **2,500 associates**
- **20 offices worldwide**



RINA

WHAT IS RINA TODAY



480
Mil.€
2016 Est.
Turnover



170+
Offices



65+
Countries



4000
Colleagues



RINA

HAVING THE CUSTOMER IN OUR MIND

MARINE



ENERGY



BUSINESS
ASSURANCE



TRANSPORT &
INFRASTRUCTURES



IFIs &
INVESTORS



SERVING ALL TYPE OF INDUSTRIES



RINA

RINA SERVICES

T.I.C.

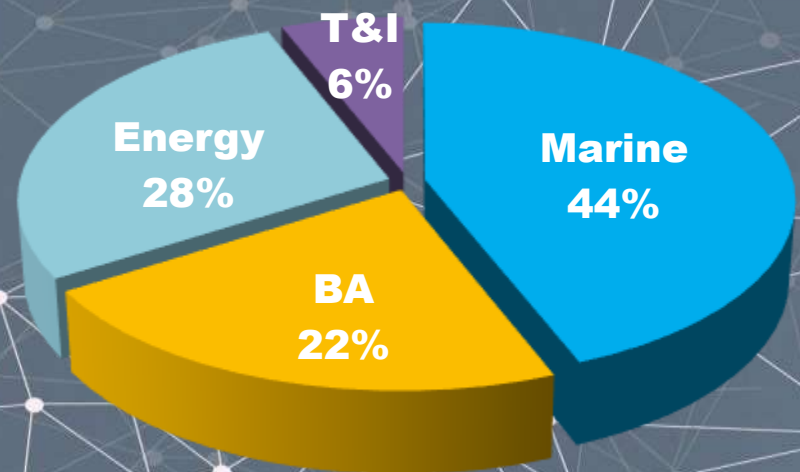
Classification

Certification

Testing

Inspection

Training



RINA SERVICES

classification, certification, inspection & testing

RINA SERVICES

A KEY INSTITUTIONAL PLAYER

- Statutory certification and services
- Compliance with higher standards of environmental protection and safety at sea

WITH AN EYE TO THE INDUSTRY...

- Niche activities
- Added value services

... AND TO NEW CHALLENGES

- E-navigation
- Big data
- Cyber security
- Additive manufacturing (3D printers)

MARINE

44%
T.I.C.
Operating
Revenues



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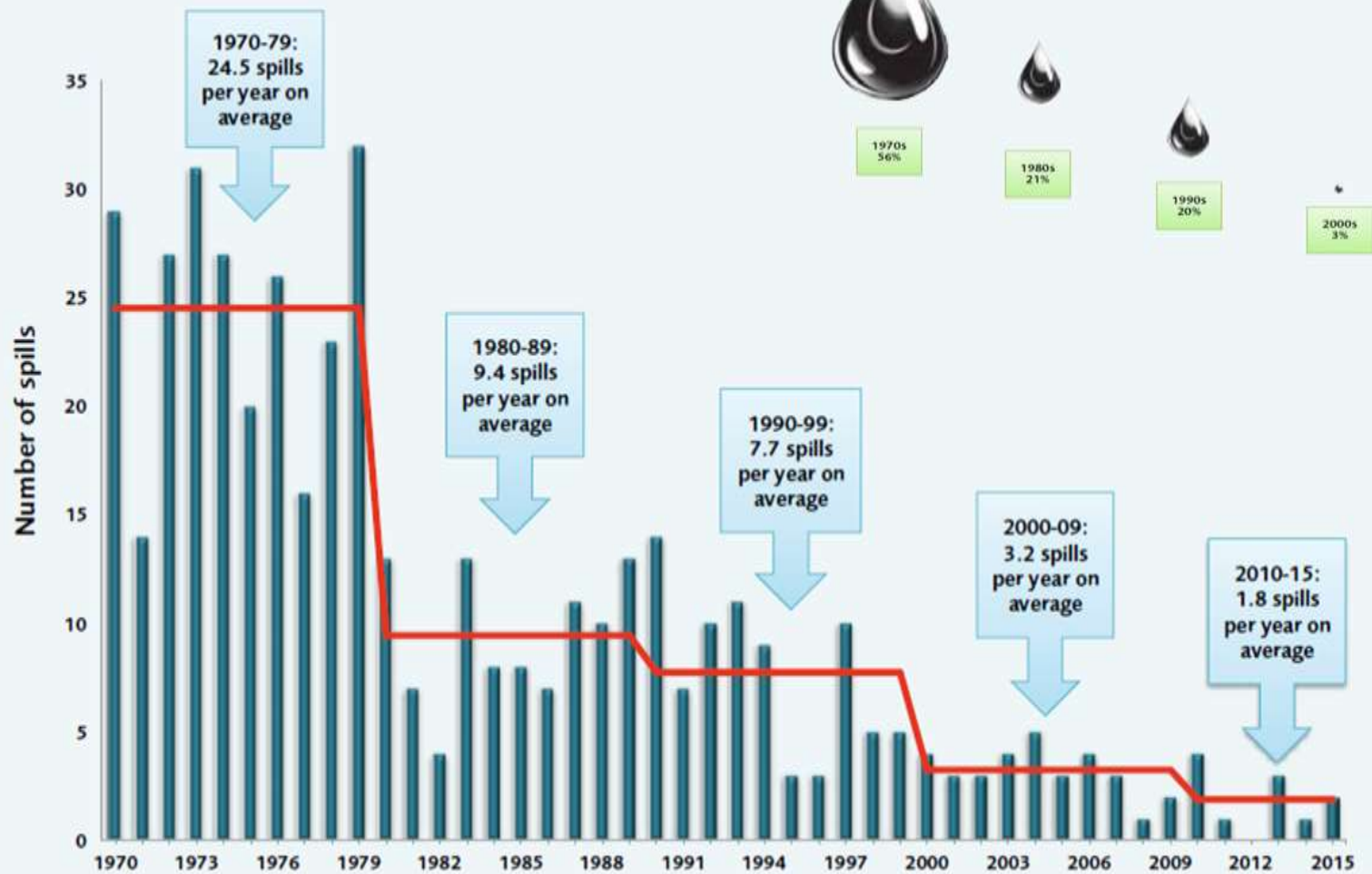
LIVES LOST

Number killed or missing on cargo ships / world seaborne trade



OIL POLLUTION

World Fleet Performance

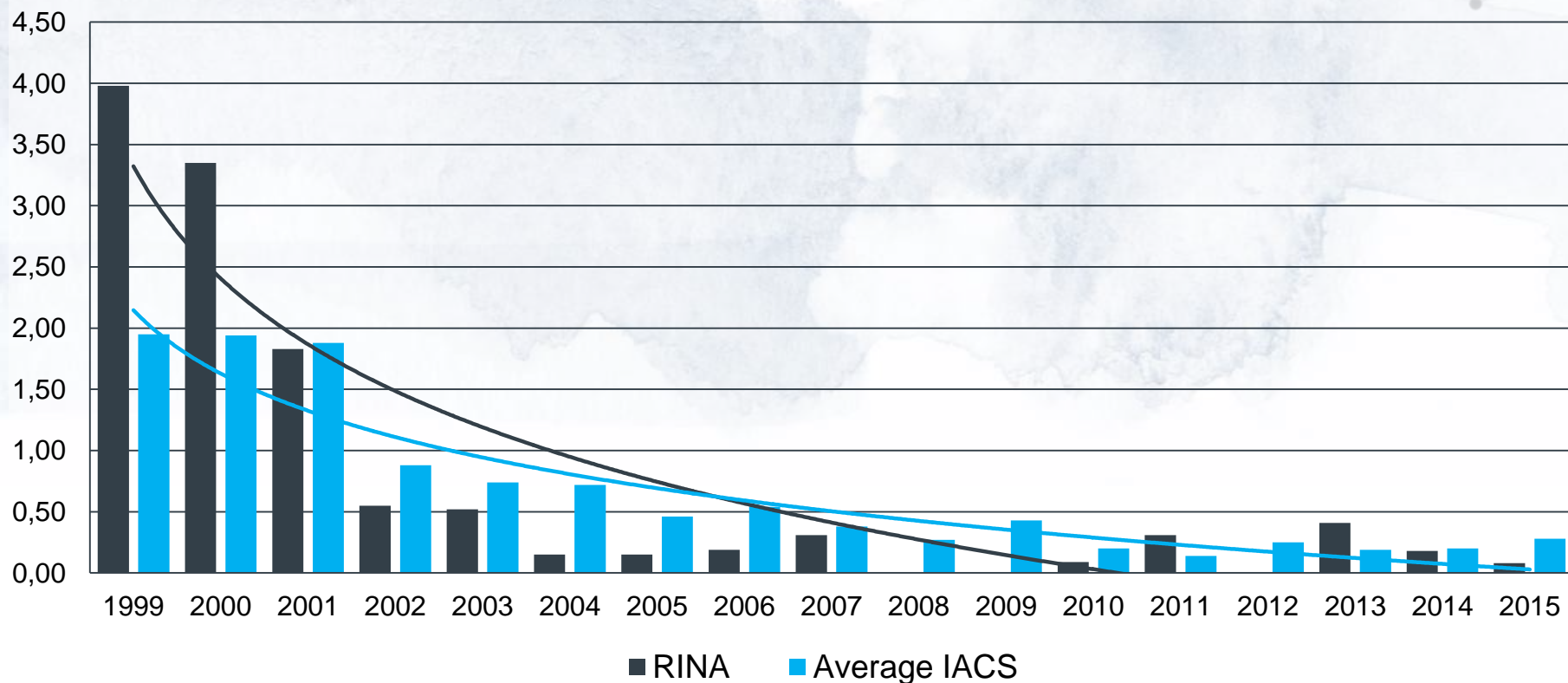


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PORT STATE CONTROL

Zero Detention



Always in «high performance level», RINA is among the first best performing Classification Societies



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NICHE AND VALUE ADDED SERVICES

- Green Plus
- MRV (Monitoring Reporting and Verification)
- EGO (Infoship) Software
- LNG as Fuel



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Green Plus



A “goal based” approach to a voluntary environmental standard based on the assignment of an **Environmental Index**

RINA offers also:

- A **Gap Analysis** to evaluate ships' environmental index and measure how far it is from the Green Plus target
- A special **energy management package** to monitor and reduce fuel consumption on board and supplying an energy-saving index for the overall energy ship performance over time



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EU MRV Regulation

Monitoring, Reporting and Verification (MRV) of CO2 emissions from ships

- RINA is following European Sustainable Shipping Forum - Monitoring Subgroup discussion in Brussels for implementation of EU MRV
- RINA is also following Data Collection Working Group for implementation of IMO global MRV Scheme
- RINA is offering pre-verification of Monitoring Plan according to EU MRV Regulation. At the end of the assessment, when the monitoring plan is found in line with the regulation, and «MRV Ready» statement is issued



ENVIRONMENT



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EGO - Energy GOvernance



InfoSHIP Energy GOvernance is a system for global management and continuous monitoring of the Energy Cycle on board, which contributes to global savings in ship operations

Comply with existing and forthcoming **regulations (SEEMP, MRV)**

Decision support tool for retrofitting actions based on real return of investment data

Have **reliable consumption data** for each ship of the fleet in order to plan an optimal deployment with the correct related cost

Perform **accurate company reporting** of fuel costs

Reduce fuel consumption with **trim optimization** and **propulsion efficiency** (on the average 3% to 5% is expected)

Solutions



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LNG AS FUEL

AIDA HYPERION PROJECT

Italian flag, Dual DVN-GL/RINA class

- Alternative design (risk assessment)
- Innovative cruise ship with alternative design approved by the Flag Administration.

Shipyard: Mitsubishi HI, Nagasaki Shipyard

Owner: AIDA (Carnival Group)

Size: 1(+1) - GT 125.000 - 4.350 passengers

First delivered ship: **AIDA Prima**

Environmental and efficiency top features

- Gas cold ironing - LNG plug-in system for harbour power generation
- Air bubble system for hull hydrodynamics optimisation



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LNG AS FUEL

CARNIVAL XL PROJECT

Shipyard: Meyer Werft- Papenburg

Shipowner: AIDA

Size: 2 × cruise ships (183,200 gt)

Shipyard: Meyer - Turku

Shipowner: Costa Crociere

Size: 2 × cruise ships (183.200 gt)

Revolutionary “green design”

*The first ships in the cruise industry to be powered
at sea by LNG*



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NEW CHALLENGES

- E-NAVIGATION
- BIG DATA
- CYBER SECURITY
- ADDITIVE MANUFACTURING
(3-D PRINTERS)



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E-NAVIGATION

- Harmonized collection, integration, exchange, presentation and analysis of ship information onboard and ashore by electronic means



InfoSHIP Electronic Log Book is a software for a paperless management of technical and commercial operation data, which have to be recorded in a structured format



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BIG DATA

- Big data in the maritime field come from performance monitoring systems, navigation systems, automation systems, fuel consumption and equipment condition monitoring



CYBER SECURITY

- Cybercrime damages innovation by eroding the returns on intellectual property (IP), cybercrime invisibly creates a disincentive to innovation.
- Cleaning up cybercrime is expensive. The cost to individual companies of recovery from cyberfraud or data breached is increasing.

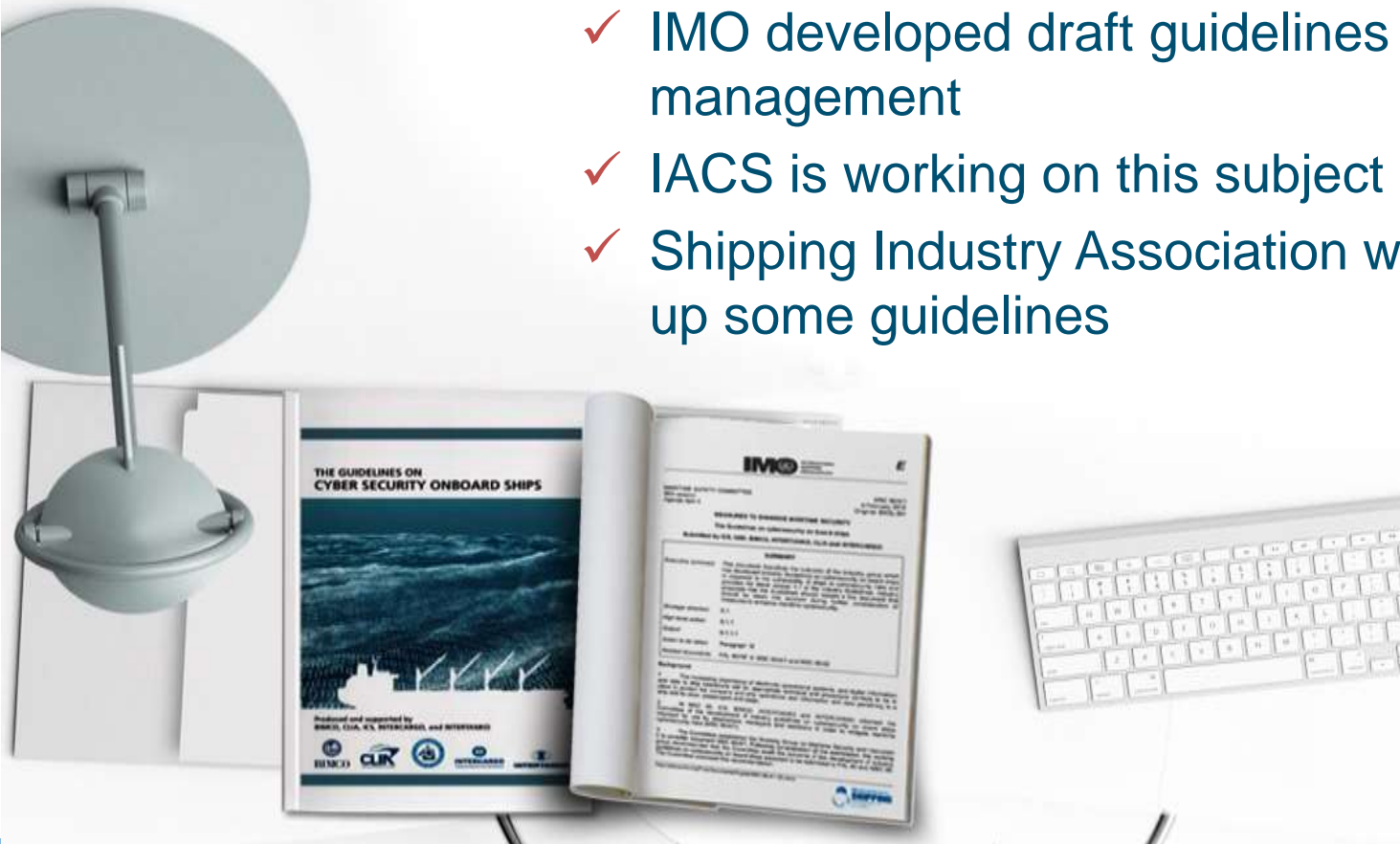


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CYBER SECURITY

- Cyber Security is being monitored:
 - ✓ IMO developed draft guidelines on cyber risk management
 - ✓ IACS is working on this subject by a panel
 - ✓ Shipping Industry Association with IUMI draw up some guidelines



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ADDITIVE MANUFACTURING

- Additive Manufacturing, also known as 3D Printing, is the processes used to synthesize a three-dimensional object from a simple file.
- In additive manufacturing processing, successive layers of material are formed under computer control to create an object.



**Thank you for your
kind attention**

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