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5<sup>th</sup> MASRG

ISO Standards in MASS

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# Background to ISO

International Organization for Standardization

Independent non- governmental international organization with a membership of 164 National Standards Bodies (NSB)

1946 65 delegates from 25 countries met at the Institute of Civil Engineers in London – created in 1947.

Now has 781 committees and 160 people work full time in central secretariat Geneva.

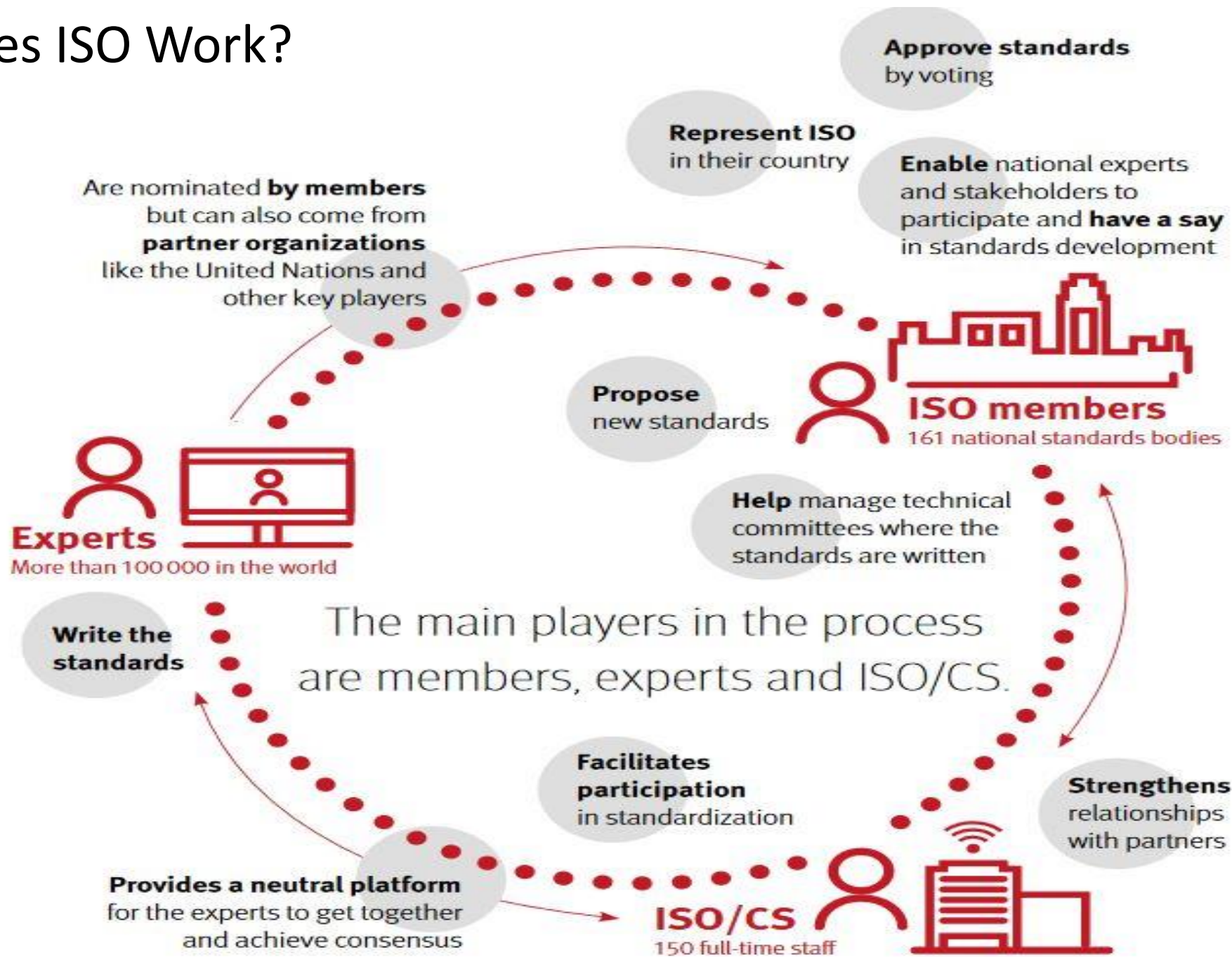
ISO is derived from the Greek isos meaning equal.

Quite cunning really.

Examples; paper, country codes, credit cards, currencies



# How Does ISO Work?

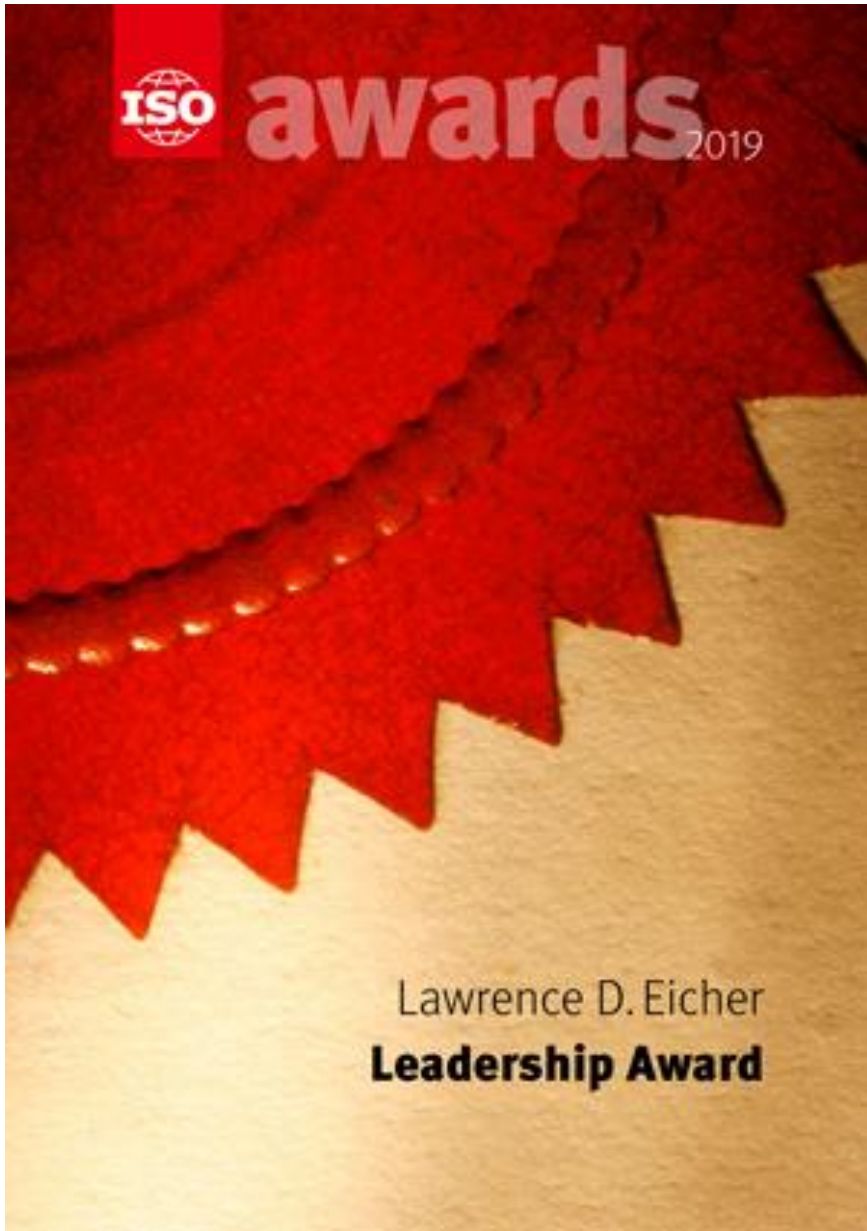


# Who is ISO / TC8? Ships and Marine Technology (>24m)



Winner of the Lawrence D. Eicher Leadership award in 2007 and 2019.

Only ISO TC to have won the top award twice



# TC8 Structure



Chair; Yanqing Li

Secretary; Ms Jing Wang

Executive advisor(?); Robin Townsend (ex Vice Chair)

SC1 maritime Safety (RT)

SC2 Marine Environmental Protection

SC3 Piping and Machinery

SC4 Outfitting and Deck Machinery

SC6 Navigation and ship operations

SC7 Inland Navigation Vessels

SC8 Ship Design

SC11 Intermodal and Short Sea Shipping

SC12 Large Yachts (UK/BSi)

SC13 Marine Technology

WG3 Special offshore structures

WG4 Maritime Security (inc Cyber) (RT)

WG6 Ship Recycling

WG8 Liquid and Gas Fueled Ships

WG10 Smart Shipping

WG11 Dredgers

WG12 Aquatic Nuisance Species

WG14 Maritime Education and Training

How does MASS fit in?

And other related items?

ISO/AWI 23860

Terminology Related to Automation of Maritime Autonomous Surface Ships

One part with high level standardized vocabulary

- Autonomy vs. automation
- Remote control- etc.

Second part with proposed technical vocabulary

- Operational domain
- Operational modes etc

Other potential standards?????

# ISO MASS = IMO MASS

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Rolls Royce

IMO strategy; 'Integrate new and advancing technologies in the regulatory framework'.

2017 MASS placed on MSC Agenda

Hope to complete scoping exercise by 2020.

Definitions are key to scoping.

ISO is a linking instrument between IMO and industry

# Background ISO 23860



Impractical for IMO to develop the type of document that eg US SAE have done for cars (SAE J3016)

ISO sat on IMO correspondence group since inception.

MSC 100 August 2018 – first submission to IMO

‘proposal for a classification scheme for degrees of autonomy’.

Identified ambiguities in degrees of autonomy.

Possible misunderstandings on how to interpret certain terms and concepts.

Characterisation of ship autonomy

Details of automation levels



## IMO Response



Yara

MSC 100 – not great!!!

took into account ISO proposals;  
IMO should lead the way.

MSC 101 – complete U-turn

*5.11 Following discussion, the Committee agreed that the matter of a glossary should be further considered after RSE had been completed; together with the submission from ISO concerning their aforementioned new standard expected for MSC 102.*

# Main Elements



Rolls Royce

Dec 15<sup>th</sup> latest response

## Automatic;

Pertaining to a process or device that, under specified conditions, can function without human intervention (definition is based on ISO/TR 11065).

## Autonomous ship system

All physical and human elements that together ensures effective execution of the processes of an autonomous ship in its intended operation or voyage.

## Remote Control Centre – RCC

An RCC is a site remote from the ship from which monitoring and/or control of some or all of the ship processes can be executed.

## Unattended

Used for a control position, e.g. an unattended bridge or a control room, without personnel attending to the control position to monitor and/or control the processes assigned to the control position.

## Unmanned ship

A ship with no crew on board.

# Chewing Points



Supervision; Human or machine? Autonomous systems supervise humans – famously 737Max. Ultimate extension of stall warning systems.

Levels of Autonomy

Unmanned vs unattended

ethics; painting robots friendly colours so not to scare school children OR – programmed decision making leading to deliberate loss of life.

Human element and training (how to experience ship motion from an armchair in Surrey)

## Summary;

ISO standards for MASS are underway

They are supported by IMO – expected to be referenced within the system

YOU should be aware and TAKE PART

SEE; National Standards Body or Convener.

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