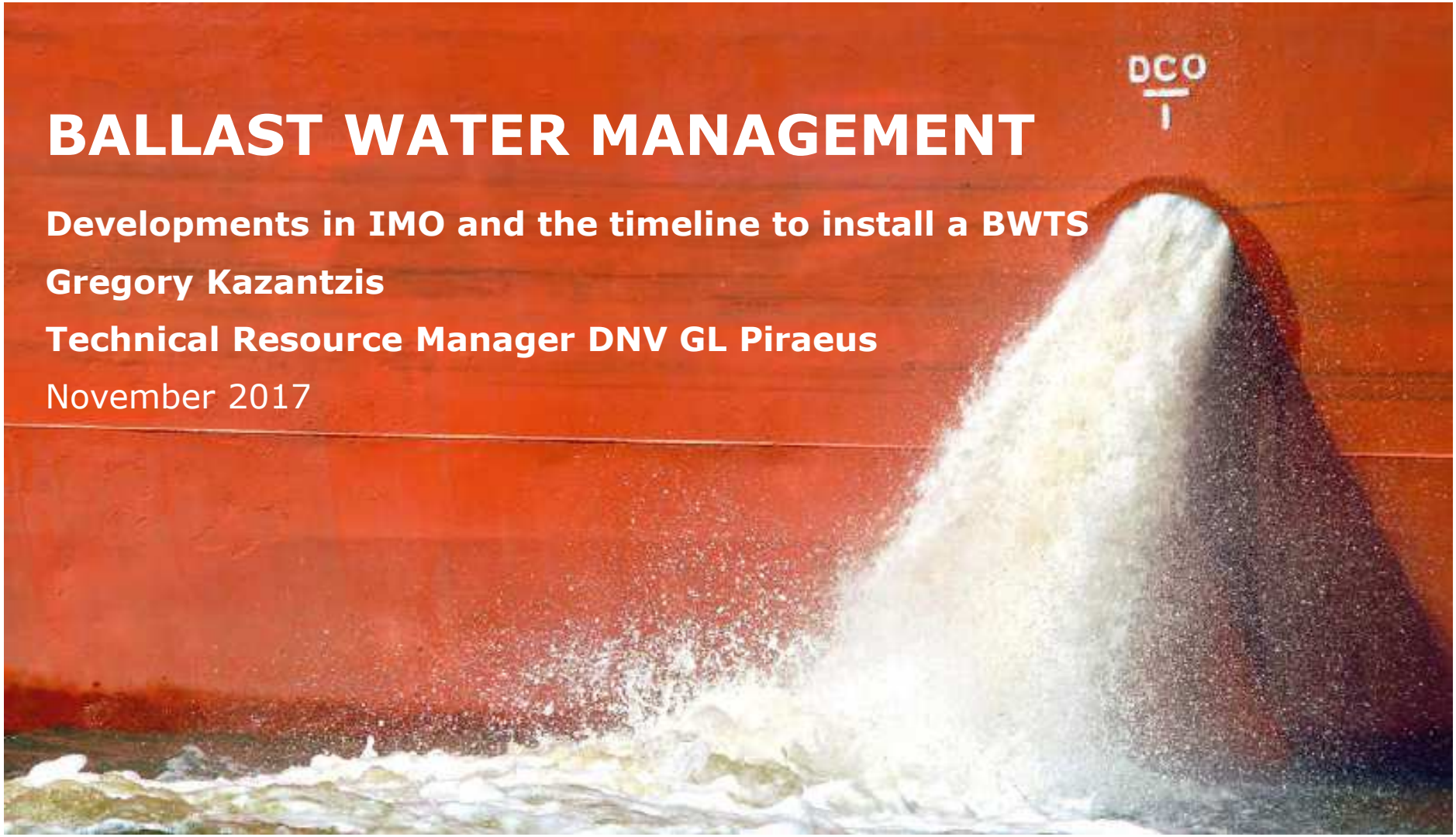


BALLAST WATER MANAGEMENT

Developments in IMO and the timeline to install a BWTS

Gregory Kazantzis

Technical Resource Manager DNV GL Piraeus

November 2017

Ungraded

History

On the agenda for almost 20 years

1997

IMO's *"Guidelines for Control and Management of Ships' Ballast Water to Minimize the Transfer of Harmful Aquatic Organisms and Pathogens",* Res. A.868(20)

2004

IMO's BWM Code adopted

2008-2010

The first systems installed…

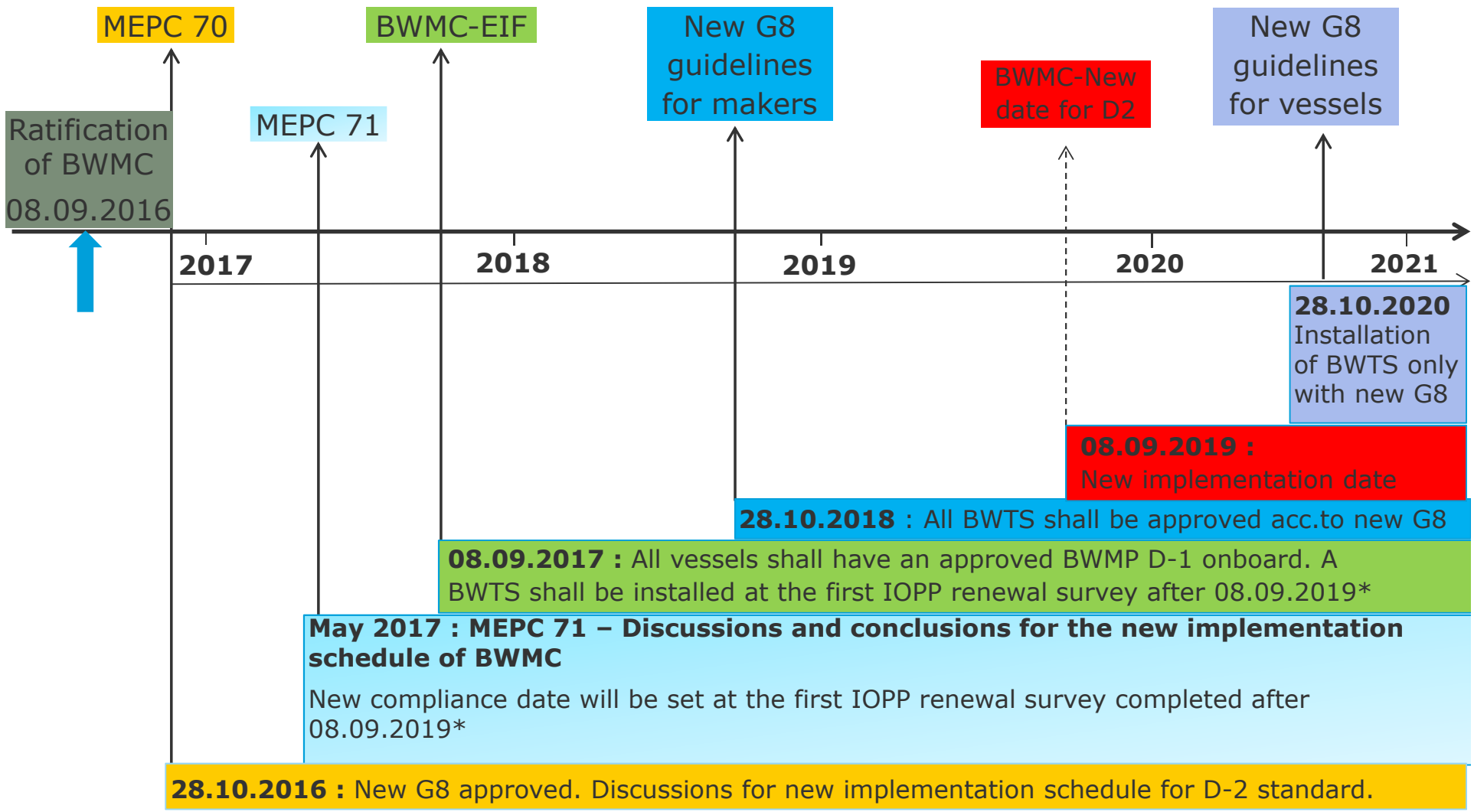
2012

USCG adopted and implemented its own Ballast Water regulations

2016

IMO Ballast Water Convention ratified 8th Sep 2016

The way forward



Ungraded

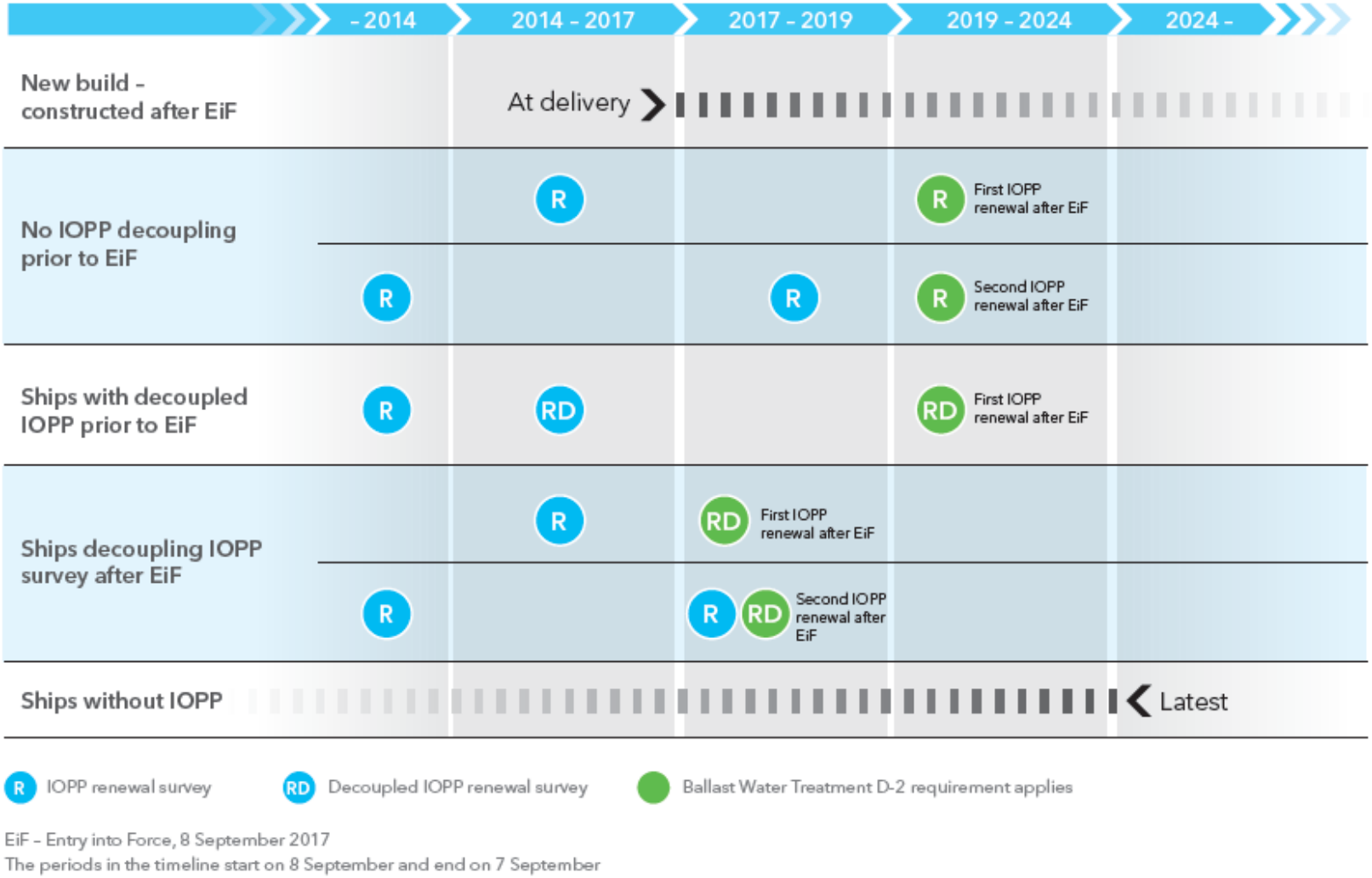
Compromise on implementation dates

- Ships constructed on or after 8 September 2017 need to comply upon delivery
- Existing ships must in general comply by the first IOPP renewal after 8 September 2019
- Ships below 400 GT to comply by 8 September 2024

- No benefit of a second decoupling between 8 September 2017 and 8 September 2019
- Vessels with the last IOPP renewal carried out before 8 September 2014 have nothing to gain by decoupling before 8 September 2017

- MEPC resolution will ensure that this agreement is effective from the entry into force date of the BWM: 8 September 2017

Ballast water compliance time lines - scenarios



Ungraded

DNV·GL

MEPC 70 – G8 revision, practical implications

- Independent testing
- Consecutive successful tests
- Testing in the full range of salinities
- Methods and water qualities to be tested: procedures for the various methods are encouraged to be submitted to PPR
- Temperature: Still up for discussion
- Transparency of tests: All tests should be reported, also unsuccessful ones
- Control and monitoring: More specific requirements to the self-monitoring of the BWMS parameters
- Safety: More specific requirements to sensors and shut-downs, safe-state etc.

Ballast Water – other issues (1)

- **Formal amendments to the convention;** Survey and certification – no need to amend the certificate upon additional survey (aligned with other conventions). Intermediate survey corrected to be included in some paragraphs.
- **D-1 clarification:** Clarification that ships operating in areas where ballast water exchange is not possible is not required to meet D-2 standard. The reasons why BWE was not conducted should be recorded and potential established designated areas for BWE (in accordance with B-4.2) should be considered.
- **Contingency measures:** A general guidance created; giving a final option of discharging in suitable area as acceptable by the Port State.
- **BWE – G4 amended:** Example of ballast water reporting form updated.

Ballast Water – other issues (2)

- **Same risk area:** G7 amended: *SRA defined as Agreed geographical area based on a completion of risk assessment carried out in line with this Guidelines.* Some new paragraphs were inserted.
- **Occasional voyages for ships normally operation within one jurisdiction (.i.e. to repair yard):** *Amendment to the entry and re-entry into exclusive operation in one jurisdiction;* A ship on a single voyage may be granted an exemption under reg. A-4 on the condition that the ship performs ballast water exchange in accordance with reg. B-4 and D-1 and an approved BWMP. Reg. A-4.1.4 (risk assessment) should be addressed to the satisfaction of the countries of origin and destination of the ship.
- **Experience building phase:** Resolution agreed on experience building phase, including non-penalization of ships under specific circumstances. Subsequent amendment package to MEPC 79 (2021)

What about the US?

	Ballast water capacity	Construction date	Compliance date
New ships	All	On or after 2013-12-01	On delivery
Existing ships	Less than 1500 m^3	Before 2013-12-01	First scheduled drydocking after 2016-01-01
	1500 m^3 to 5000 m^3	Before 2013-12-01	First scheduled drydocking after 2014-01-01
	Greater than 5000 m^3	Before 2013-12-01	First scheduled drydocking after 2016-01-01

- **USCG type approved** BW systems required
- USCG applies same standard as IMO BWMC, but with **stricter system test requirements**
- **Six type approved systems on the market.** Time limited equivalency mechanisms available; AMS (little used) and extensions (11 900+ granted, but criteria and duration tightening – 300+ denied or rescinded so far)

Vessel's management may apply for extension of implementation schedule, ref CG-OES Policy Letter No. 13-01 found at Homeport USCG

USCG Type Approved systems status (as of November 3rd 2017)

Marine Safety Center
BWMS Type Approval Status

Approved						
Date Received	**Manufacturer (Country)**	**Model**	**Independent Lab**	**System Type**	**Approved Range**	**Certificate Issued***
20 Sep 2016	Optimarin (Norway)	OBS/OBS Ex	DNV GL	Filtration + UV	167 – 3000 m^3/h	03 Nov 2017
21 Sep 2016	Alfa Laval (Sweden)	Pure Ballast 3	DNV GL	Filtration + UV	150 – 3000 m^3/h	23 Dec 2016
23 Sep 2016	TeamTec OceanSaver AS (Norway)	OceanSaver MK II	DNV GL	Filtration + Electrodialysis	200 – 7200 m^3/h	18 Oct 2017
24 Jan 2017	Sunrui (China)	BalClor	DNV GL	Filtration + Electrolysis	170 – 8500 m^3/h	07 Jun 2017
31 Mar 2017	Ecochlor, Inc. (USA)	Ecochlor BWTS	DNV GL	Filtration + Chemical Injection	500 – 16,200 m^3/h	10 Aug 2017
02 May 2017	Erma First (Greece)	Erma First FIT	Lloyds Register	Filtration + Electrolysis	100 – 3,740 m^3/h	18 Oct 2017

Under Review						
Date Received	**Manufacturer (Country)**	**Model**	**Independent Lab**	**System Type**	**Approved Range**	**Certificate Issued**
28 Sep 2017	Samsung Heavy Industries Co., Ltd (Republic of Korea)	Purimar BWMS	Korean Register	Filtration + Electrolysis	250 – 10,000 m^3/h	Pending
31 Oct 2017	Techcross, Inc.	Electro-Cleen System	Korean Register	Filtration + Electrolysis	150 – 12,000 m^3/h	Pending

*Complete copies of the Coast Guard Type Approval Certificates can be found on the Coast Guard HOMEPORT website under the "Environmental" Missions Tab or by visiting the USCG Approved Equipment List at: http://cgmix.uscg.mil/Equipment/Default.aspx

Ungraded

Thank you for your attention

www.dnvgl.com

SAFER, SMARTER, GREENER

Ungraded