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Circular 8/15

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To: All CIRM Members

From: Richard Doherty, Deputy Secretary-General

Report – CIRM Annual Meeting 2015

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Kouklia, Cyprus, Mon 27 April – Wed 29 April 2015

Richard Doherty, CIRM

Summary

For this year's Annual Meeting CIRM returned to the Aphrodite Hills hotel in Kouklia, Cyprus, the venue of our Annual Meeting in 2013.

The format of this meeting's technical programme was slightly different than in previous years. Two days of presentations were followed by a final day of Working Groups. In addition, the second day of presentations included a Panel Discussion, featuring invited guests from across the shipping industry (a full report of this discussion is attached as the Annex).

Michael Bergmann gave the President's address

Presentations

As usual the meeting featured a varied range of presentations, grouped together in sessions by topic or theme. All presentations are available from the MyCIRM section of the website (http://cirm.org/my-cirm/cirm-pres.html).

Session 1 was opened by the Secretary General, Frances Baskerville, who also gave the keynote speech on behalf of Mr Andreas Chrysostomou of the Department Of Merchant Shipping Ministry of Communications and Works, Republic of Cyprus, who was unable to attend the meeting. Michael Bergmann gave a presentation from the CIRM President's perspective, and then Richard Doherty, Chief Technical Officer gave a report on CIRM's technical activity summarising the main areas of focus over the past 12 months.

Session 2 focused on Satellite Systems & Services, with presentations from INMARSAT, exactEarth, Orolia and SIRM. Vladimir Maksimov of INMARSAT reported on their current and future communication services. David Martin of exactEarth talked about an innovative service to enable cost-effective vessel tracking in economically deprived regions. Jean-Yves Courtois of Orolia spoke on MEOSAR developments and their impact on electronics for maritime safety. Claudio Aleandri of SIRM closed the session with an introduction to a new fleet management system built upon satellite AIS tracking integrated with a novel ship collision avoidance/alert system.

Session 3 featured presentations on Regulations & Standards, including progress reports from IEC, ITU and ISO from Kim Fisher (IEC) and Peter Andersen (Cobham SATCOM), an update on the Radio Equipment Directive from Michael Lowry of TUV SUD, and information on the revision of IHO ECDIS standards from Tom Mellor of the UK Hydrographic Office.

Session 4 focused on e-Navigation and featured presentations from invited guests. Peter Paap of the Netherlands Ministry of Infrastructure and the Environment opened the session and gave a report on the results of the ACCSEAS project. Following this, Richard Doherty gave a brief report on CIRM's e-navigation activity, Omar Frits Eriksson from the Danish Maritime Authority informed us about the EfficienSea 2 project, and the final presentation of the day was given by Mikael Hägg and Mikael Lind on the MONALISA 2.0/Sea Traffic Management projects.

Session 5 was dedicated to cyber security, reflecting the increased profile of this topic across the shipping industry. Simon Cooke of Northrup Grumman Sperry Marine opened with a presentation identifying some of the cyber security risks facing industry and the technical solutions being developed in response, including IEC 61162-460 on Ethernet security. Our guest Aron Frank Sorensen of BIMCO followed this with an introduction to the voluntary cybersecurity guidelines being developed by BIMCO and partners. The session was closed with a presentation by new CIRM members NCC Group on what they see as the threats and opportunities related to maritime cybersecurity.

Session 6 focused on Service Perspectives, in acknowledgement of CIRM's strong service contingent. Valentin Yatchenko of ERNC spoke on the concept of APT for ECDIS, something that has long been promoted by CIRM members. Elijah Agunbiade of Multidigital Nigeria Ltd spoke to us about the emerging maritime markets across Africa, and Jimmy Grewal of Elcome International closed the session with a presentation on the role of AIS in Maritime Domain Awareness (MDA).

Session 7 was the final presentation session and focused on Product Developments. Hans Ottosen of Danelec Marine presented on "Big Data for 1 Dollar per Day", which outlined Danelec's VDRConnect service capability. Finally Carl Magne Rustand of Kongsberg Maritime provided an overview of their Composite Radar Picture.

Session 8 was devoted to the Panel Discussion, and the Annex contains the full report of that discussion.

Working Groups

Three Working Groups were established on Wednesday, and within these three groups six different sessions were held as detailed below. Discussion outlines and Reports of these sessions are available on MyCIRM (http://cirm.org/my-cirm/cirm-pres.html).

The outlines for these sessions were prepared in advance of the meeting, in consultation with CIRM members. This resulted in relevant and focused discussions, and the feedback from those who participated in the WGs was largely positive. A number of actions have resulted from the groups, which will be followed up in due course.

Many thanks to those who volunteered to chair these groups.

Working Group 1	
Morning	**Type Approval** (chaired by Jim Moon, JRC) - MED Mk II developments (Implementing Acts and Electronic Tagging) - Radio Equipment Directive matters
Afternoon	**ECDIS** (chaired by Andrey Vorobiev, ChartWorld International) - Revision of S-52, S-64 and IEC 61174 and ECDIS updating requirements - Consideration of Flag Administration views on ECDIS updating
Working Group 2	
Morning	**GMDSS** (chaired by Kim Fisher, IEC TC 80) - Review of Annexes 3 and 4, of DSC Recommendation M.493-13 - General matters relating to Review and Modernization of the GMDSS
Afternoon	**Cyber Security** (chaired by Hannu Peiponen, Furuno Finland) - Discussion of CIRM member security concerns - Development of Industry Guidelines by BIMCO and how we can contribute
Working Group 3	
Morning	**Service/Software Maintenance** (chaired by Richard Doherty, CIRM) - Review of the draft standard on Software Maintenance (developed by the CIRM/BIMCO JWG) - Consideration of the Service Role in the standard
Afternoon	**E-navigation** (chaired by Richard Doherty, CIRM) - Review of the Work Programme submitted to MSC 95 - Consideration of the proposed E-navigation Outputs and CIRM's role

GMDSS Working Group

Annex – Panel Discussion

Panel Discussion (Session 8)
CIRM Annual Meeting
28th April 2015, Cyprus

Panel participants

- Martin Bransby – Research and Radionavigation Manager, General Lighthouse Authorities of the UK and Ireland
- Francis Zachariae – Secretary General, International Association of Lighthouse Authorities (IALA)
- Phillip Belcher – Marine Director, INTERTANKO
- Nicholas Cutmore – Secretary General, International Maritime Pilots' Association (IMPA)
- Peter Hinchliffe – Secretary General, International Chamber of Shipping (ICS)
- Aron Frank Sorensen – Chief Marine Technical Officer, BIMCO
- Robert Ward – President, International Hydrographic Organization (IHO)

Moderator: Michael Bergmann – President, CIRM

E-navigation

Moderator: What practical solutions do you think will be delivered by e-navigation, and what will be the benefits to users?

Francis Zachariae (International Association of Lighthouse Authorities) - IALA has been involved in e-navigation since 2007. It is a mistake to describe e-nav as a "project"; it is an ongoing development that is here to stay. Any products delivered as part of e-nav should make life easier for the mariner and people ashore. We forgot to make the business case for e-navigation – how will the shipowners benefit? In general there is a more positive mindset evolving around e-nav, and we can already start to see the results.

Peter Hinchliffe (International Chamber of Shipping) - The "no-brainer" solution that should come out of e-nav is automated reporting. Industry is crying out for it, and it could be achieved through the joint effort of shipping industry users and the manufacturers. If we can reduce the information burden for mariners, we can help them make decisions.

Martin Bransby (General Lighthouse Authorities) - A lot of advantages will come out of the test beds that are underway around the globe, including automated reporting.

Robert Ward (International Hydrographic Bureau) - E-navigation is a digital information environment ensuring that all those things that we have to do can be done smarter and more efficiently. We do need automated reporting, but achieving a common global standard is fraught with difficulty. E-navigation has great potential, but solutions have to sell themselves, as IMO will not mandate.

Peter Andersen (CIRM/Cobham SATCOM) – The shore-side aspect of e-navigation is important. What are the intentions here?

Francis Zachariae (IALA) - IALA's e-nav and VTS committees are looking into the shore-side implementation of e-nav now. They are seeking to make decisions easier for the mariner and to improve Maritime Service Portfolios (MSPs). The link between the shore and the ship is vital to e-navigation.

Peter Hinchliffe (ICS) - We cannot make automated reporting work until Member States agree amongst themselves. All of them have different visions for automated reporting. IMO must establish the framework and standards. IMO has the controlling role in the implementation of e-navigation.

Aron Frank Sorensen (BIMCO) - Let's take the iPhone as an example – it provides us with multiple functions and is very easy to use. It allows cheap, quick application development. E-navigation needs to be thought of in this way.

Phillip Belcher (INTERTANKO) - Obviously there are potential benefits that can come from e-navigation. But when we talk about iPhones – these may change every 2 years, and this is not something we want for shipboard e-navigation equipment. The equipment needs to last.

Use of non-SOLAS approved equipment

Moderator – When we consider the iPhone, it is a device that is not approved for use on the bridge of a SOLAS ship. Airplane pilots are permitted to use an iPad or Android device in the cockpit, but this is facilitated by the approval regime in the aeronautical industry, which provides for different categories of approved equipment. What does the panel think about the potential of using iPads and other non-approved equipment on board of SOLAS ships?

Nick Cutmore (International Maritime Pilots' Association) - Personal Pilot Units (PPUs) have flourished amongst pilots. This is a non-SOLAS piece of equipment, and we are conscious of their status. PPUs are port specific and unique – any attempt to standardise them would likely fail. They are not a mandatory piece of carriage equipment – they are a tool. Our pilots often find that the ECDIS on the ship is not up to date when they come on board.

Francis Zachariae (IALA) - Use of non-SOLAS equipment is a natural development. Airplane pilots use iPads extensively. It is useful to have an iPad on a pleasure craft.

Aron Frank Sorensen (BIMCO) - We already have basic navigation tools – we need to be careful here. A pleasure craft is not a super tanker – a tanker must be navigated in a safe manner with the right equipment. Technological development across society is fast – but the SOLAS world is slow.

Peter Hinchliffe (ICS) - SOLAS must be the baseline – ICS have no objection to extra equipment carried on board in a testbed capacity. However liability is a very big concern. This is a Flag State issue – they will either allow or not allow the additional equipment.

Anders Rydlinger (CIRM/TRANSAS) – SOLAS regulates equipment used for anti-collision (radar) and anti-grounding (ECDIS). We cannot touch radar or ECDIS. However a great deal of additional information is available, and if we use iPads or additional displays then we can harness this information more quickly. iPads may not be approved under SOLAS but they are inherently safe.

Martin Bransby (GLA) - I would agree with this. The Master could carry an iPad alongside the other mandatory equipment. Consider GNSS receivers with augmentation – the augmentation chipsets may be unapproved yet they form part of a SOLAS device.

Phillip Belcher (INTERTANKO) - The key issue is which equipment is the navigator trusting? Relying on non-approved equipment will mean the investigator will come down hard in the event of an accident.

Jean-Yves Courtois (CIRM/Orolia Group) – Why are these not issues in the aeronautical industry where peripheral devices are commonly used in the cockpit?

Michael Bergmann (CIRM/Jeppesen) – in the aeronautical industry, the data used by the iPad is certified for use, and backed up by procedures.

Anders Rydlinger (CIRM/Transas) – In response to Phillip Belcher's point, we would use a tablet for other types of information, not critical navigation information.

Anders Rydlinger (CIRM/Transas) – I am a former navigator. The navigator's responsibility is to use all information available to them – more information means better navigation.

Phillip Belcher (INTERTANKO) - But this information must be relevant to the context. Not all data is useful at all times.

Robert Ward (IHB) - I do not understand the issue – what data are we talking about here? What data will we be using that we don't use now?

Michael Bergmann (CIRM/Jeppesen) – By way of example, using an iPad to pan an ENC – this cannot be done on an ECDIS.

Ralph Becker-Heinz (CIRM/Safebridge) – I only use 1/3 of my smartphone's functions. Will a sailor be able to handle all of these technological matters? On ECDIS we find lots of incorrect technical settings. The mariner must handle more software appliances than other professions.

Aron Frank Sorensen (BIMCO) - I would agree on the point about phones – but we are not the target of these. The younger generation is the target and they are comfortable with technology.

Michael Bergmann (CIRM/Jeppesen) - I was in Busan at the Human Centred Design workshop. The human factor is a core part of e-navigation implementation. Smartphone users take 2 weeks to adapt to a new device, to learn how to use it and how to access its features. Mariners do not have this luxury!

Pieter Paap (Netherlands Ministry) - The lack of global framework means there is a potential constraint for industrial developments in support of e-navigation. How can we implement e-navigation in a globally harmonised way?

Phillip Belcher (INTERTANKO) - Manufacturers will always innovate.

Tor Svanes (CIRM/Navtor) – In the leisure industry, manufacturers own the database and can develop advanced functions for their equipment. SOLAS locks this down.

Andreas Lentfer (CIRM/Raytheon Anschuetz) – We are constantly developing functions for radars, as are other manufacturers like Kongsberg. We are free to deliver functionality above and beyond SOLAS requirements provide it does not affect the required SOLAS functionality.

Cyber security

Moderator – Following on from the cyber security presentations we have seen during this meeting, what are the thoughts of the panel on the issues facing the industry?

Phillip Belcher (INTERTANKO) - The tanker industry is always regulated first – we are the testbed, from a human factors and safety point of view. Safety is still important – there is too much reliance on electronics, as exposed in ECDIS failures. We need non-electronic backups. Regarding cyber security, there is a gap within the regulatory approach which the industry guidelines will address.

Aron Frank Sorensen (BIMCO) - ECDIS is sensitive to cyber threats, e.g. when someone illicitly changes the depth contours. A lot of cyber security is common sense. Phillip's example is a good one – we should be wary of the paperless chart carriage option when the backup is an ECDIS.

Francis Zachariae (IALA) - Authentication is key. I am a formal naval officer, and we can learn from the military. The navy has had e-nav on ships for decades (e.g. Link II) involving information sharing between assets. This will all come down to cost – the technology is available now.

Michael Bergmann (CIRM/Jeppesen) – But cost is not an issue for navies. Nor is regulation.

Francis Zachariae (IALA) - That is not strictly true – NATO introduces standards for the military.

Morten Gjersoe (CIRM/Jotron) – We should look at the EU and their "Single European Sky" initiative, where they have harmonised air traffic over Europe. Flights send text messages, seamless digital communications. We can learn from aviation.

Michael Bergmann (CIRM/Jeppesen) – True, and the SeaSWIM concept behind the Sea Traffic Management project is based on AirSWIM, a similar initiative in aviation.

Michael Bergmann (CIRM/Jeppesen) – I would like to pose a question to Robert Ward. Safety and security of data is important. Has IHO looked into options to secure the supply of data?

Robert Ward (IHB) - We are not introducing anything fundamentally new. S-100 will modernise standardisation beyond just ENCs.

Tom Mellor (CIRM/UK Hydrographic Office) – We have had Hydrographic Office data cause ECDIS issues, but we have not experienced malicious attacks that put the system under threat.

Phillip Belcher (INTERTANKO) - The problems we experience with ECDIS are not due to attacks – we have created a system with a single point of failure, and we must learn from this.

Software maintenance

Moderator – How can we work with the issue of outdated systems, a lack of an updating regime, and systems not working properly?

Martin Bransby (GLA) - Navigation is the exchange of information. Can't some of this be software updates carried over the air?

Nick Cutmore (IMPA) - ECDIS software is a big concern to us. This over-the-air software update concept is interesting. We are in favour of the concept of an ECDIS APT, as it could be used to easily check that the ECDIS is up to date.

Aron Frank Sorensen (BIMCO) - The CIRM/BIMCO Joint Working Group (JWG) will address some of this in developing the draft standard on software maintenance. ECDIS is still a new beast, and it requires updating. Industry has to adjust to this idea. However manufacturers must adjust to this too. There is a lack of connection between the makers and the buyers, but the work of the JWG will help to address this.

Robert Ward (IHB) - IMO sets the guidelines and outlines a globally coordinated approach. During the ECDIS anomalies issue we learned lessons. This points to a change in the scene. CIRM assisted in this matter, approaching all manufacturers and obtaining a coordinated approach, which we then took to IMO. IMO was interested but not keen to take action.

I am keen on the ECDIS APT and the updating guidelines. 5/10 years ago I would have given a different response – the stakeholder community is moving in advance of IMO – we are not waiting for IMO to react. IHO operates like this these days, we are coming up with the solutions.

From my point of view there is not much more you could be doing to address software maintenance issues.

Tom Mellor (CIRM/UK Hydrographic office) – By way of update on the IHO standards. S-63 will include a built-in check of ENC versions. An ECDIS APT is a good idea – we need to look that ECDIS is using the latest presentation library and therefore able to display the ENCs properly. We also need to explain to industry the reason for the coming ECDIS updates and what the benefits will be.

Peter Hinchliffe (ICS) - We actually like the idea of an ECDIS APT, because of the reasons just given by Tom. However I would offer a caution - it's a good idea which we should explore, but you need to make sure you can support it.

Anders Rydlinger (CIRM/Transas) – I agree, there have been lots of ECDIS issues in the past. IEC has undertaken a lot of work to sort it out, and ECDIS makers are developing new systems to meet the new standards. But what do we do about enforcement of new software versions?

Phillip Belcher (INTERTANKO) - The problem of early adoption of new equipment means that some of our members had had to replace the whole bridge as a response to system issues. This is where S-Mode becomes relevant although I understand it is not a popular idea with CIRM.

Aron Frank Sorensen (BIMCO) –
That sounds very radical to me! BIMCO members would not replace a whole bridge in this way. We need to all be software minded. We need to be think along the lines of "plug 'n' play". We should make updates easy.