e-Navigation Underway
Asia-Pacific 2019 Conference

September 2\textsuperscript{nd}(Mon) - 3\textsuperscript{rd}(Tue), 2019
Millennium Hilton Hotel
Seoul, Republic of Korea
Dear Esteemed Colleagues,

It is my great pleasure to invite you to the 2019 e-navigation Underway Asia-Pacific Conference (2019 ENUW AP Conference) on 2-3 September 2019 in Seoul, Korea.

The Ministry of Oceans and Fisheries (MOF) of Korea; International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA); and Danish Maritime Authority (DMA) have been co-organizing this Conference as a forum for technical discourse on e-navigation in the Asia-Pacific region since 2017 to be in line with the policy directions of the International Maritime Organization (IMO).

A compelling need to improve navigation safety and reduce human errors prompted discussions over development and introduction of e-Navigation, which has driven the IMO to take a concrete step for the service to begin from 2020. In line with the organization’s digital move for maritime safety and security, the Conference will be focusing on prioritized e-Navigation issues in multiple sessions, including maritime autonomous surface ships (MASS), maritime digitalization and cyber security under the main theme of “e-Navigation: Implementing New Digital Maritime Services in Asia Pacific.”

As a side event for the Conference, MOF, IMO and IALA will be co-organizing the Workshop on Capacity Building for e-Navigation on 4-6 September 2019 in Busan, to provide participants with an opportunity to share the current state of play in terms of relevant technological development and to discuss way forward.

I look very much forward to your participation in these important events.

Best Regards,

Seong-Hyeok MOON
Minister of Oceans and Fisheries
Republic of Korea
### Program

**Opening Session**
- Introduction to VIPs among participants
- Opening Speech
- Congratulatory Speech
- Keynote Speech

- Host: Seong-hyeok MOON (Minister, MOF)
- Francis Zachariae (Secretary General, IALA)
- Andreas Nordseth (Director General, DMA)
- Javier Yasniozusk (Representative, IMO)

**Session 1: Developing and Delivering Digital Maritime Services**
- Chair: Michael Bergmann (Secretary, ICDMC)
- Testbed Cases or Products of e-Navigation Maritime Services (MS)
- Haronization and Interoperability among Different Standards of Platforms
- Benefits and Challenges in Implementing e-Navigation for Users and Administrators
- Testbed Cases or Products of Platforms that Enable e-Navigation MS
- Introduction to the SMART Navigation Project

- Michael Bergmann (Secretary, ICDMC)
- Mikael Lind (Associate Professor, RISE)
- Ung Gyu Kim (CEO, e-Marine)
- Jon Leon Ervik (Head of Department, NCA)
- Jinhyoung Park (Researcher, KRISO)

**Session 2-1: Innovations in Marine Navigation and Communications**
- Chair: Nick Lemon (Manager, AMSA)
- Users' (Crew, Pilots, Shipping) Requests to e-Navigation Maritime Services
- Smart Fairways
- Shipborne Equipment for Implementing e-Navigation: S-Mode, ECDIS, ECS, and Web
- Digital Maritime Communications: VDES and D-HF/MF
- Digital Maritime Communications: LTE-M and SAT
- Why Do We Need the MCP?

- Nick Lemon (Manager, AMSA)
- Thomas Erlund (Senior Vice President, MeriTaito)
- Seewoong Oh (Researcher, KRISO)
- Kae-Myung Park (Manager, KR)
- Woo-Seong Shim (Researcher, KRISO)
- Thomas Christensen (Secretary General, MCC)

**Session 2-2: Innovations in Marine Navigation and Communications**
- Chair: Jon Leon Ervik (Head of Department, NCA)
- The Work in IMO FAL/NCSR regarding Further Development on Maritime Services
- SESAME II Innovation and Testbed in Norway and Singapore
- Orchestrating IT, OT and Data Farming for Maritime Industry
- New Innovative Services in NAVTOR

- Jon Leon Ervik (Head of Department, NCA)
- Bjorn Coster (Project Manager, KNC)
- Seojeong Lee (Professor, KMOU)
- Borge Hetland (Sales Director, NAVTOR)

**Session 3: Cooperation and Capacity Building for e-Navigation**
- Chair: Javier Yasniozusk (Head, Operational Safety, IMO)
- Further Development of IMO Guidance on e-Navigation Maritime Services and Capacity Building Programmes
- Roles of Stakeholders (Administrators, Industries, Users, NGOs, and IGOs)
- International, Bilateral and Multilateral Cooperation
- Web/Internet Based e-Navigation Maritime Services

- Javier Yasniozusk (Head, Operational Safety, IMO)
- Omar Eriksson (Deputy Secretary General, IALA)
- Weylin TANG (Deputy Director, MPA)
- Sunbae Hong (Director, MOF)

**Session 4: Cyber Security in the Maritime Sector**
- Chair: Thomas Christensen (Secretary General, MCC)
- Aspects of Cyber Security – Legal and Ethical
- Implementation of the Danish Cyber Security Strategy
- Cyber Security Aspects of Common Shore - based System Architecture
- On-board Cyber Security Activities

- Tristan Perez (Leader Autonomy Assurance, Trusted Autonomous Systems Defence CRC)
- Anette Dybdal Fenger (Director, DMA)
- Tai Hyo Kim (CEO, Formal Works Inc)
- Kwangli Lee (Professor, KMOU)

**Session 5: Upcoming e-Navigation Underway Conferences**
- Chair: Omar Eriksson (Deputy Secretary General, IALA)
- Introduction to ENUW NA 2019
- Introduction to ENUW International 2020
- Introduction to IALA VTS-ENAV Symposium 2020
- Introduction to Workshop on e-Navigation 2019
- Introduction to the Consolidated Website of ENUW Conference
- Introduction to e-Navigation Strategies of APHOMSA Member States

- TBD (ENUW-NA)
- Linda Assel Hal (Project Manager, DMA)
- Maarten Berrevenets (Senior Policy Advisor, Ministry of Infrastructure and Water Management)
- Minsu Jeon (Technical Operations Manager, IALA)
- Larry Yim (Liaison Officer, ENUW Secretariat)
- TBD

**Session 6: Panel Discussion and Wrap up**
- Chair: Sunbae Hong (Director, MOF)
- Introduction to the Summary of Each Session by the Respective Session Chairs
- Panel Discussion among Each Session Chairs in Terms of Conference Highlights
- Q&A with Audience
- Adoption of Conference Highlights

**Closing Session**
- Minjong Kim (Director General, MOF)
- Francis Zachariae (Secretary General, IALA)

* Experts who wish to make a presentation, please contact the secretariat team.*
### Time Table

<table>
<thead>
<tr>
<th>1 September 2019 (Sunday)</th>
<th>2 September 2019 (Monday)</th>
<th>3 September 2019 (Tuesday)</th>
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<tbody>
<tr>
<td>Registration</td>
<td>Session III</td>
<td>Session IV</td>
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<tr>
<td>(08:00 - 10:00)</td>
<td>Cooperation and capacity building for e-navigation</td>
<td>Cyber security in the maritime sector</td>
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<tr>
<td>Opening</td>
<td>(09:00 - 10:30)</td>
<td>(11:00 - 12:30)</td>
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<td>(10:00 - 10:25)</td>
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<tr>
<td>Group Photo &amp; Coffee Break</td>
<td>Coffee Break</td>
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<tr>
<td>(10:25 - 10:45)</td>
<td>(10:30 - 11:00)</td>
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<tr>
<td>Session 1</td>
<td>Session IV</td>
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<tr>
<td>Developing and Delivering Digital Maritime Services</td>
<td>Cyber security in the maritime sector</td>
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<td>(10:45 - 12:30)</td>
<td>(11:00 - 12:30)</td>
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<tr>
<td>Lunch</td>
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<td>(12:30 - 14:00)</td>
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<tr>
<td>Session 2-1</td>
<td>Session V</td>
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<tr>
<td>Innovations in Marine Navigation and Communications</td>
<td>Upcoming E-Navigation Underway Conferences</td>
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<tr>
<td>(14:00 - 15:30)</td>
<td>(14:00 - 15:10)</td>
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<td>Coffee Break</td>
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<td>(15:30 - 16:00)</td>
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<tr>
<td>Session 2-2</td>
<td>Session VI</td>
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<tr>
<td>Innovations in Marine Navigation and Communications</td>
<td>Panel Discussion and Wrap up</td>
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<tr>
<td>(16:00 - 17:30)</td>
<td>(15:30 - 17:00)</td>
<td>(17:00 - 17:10)</td>
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<tr>
<td>Welcoming Dinner</td>
<td>Networking Dinner</td>
<td>Farewell Dinner</td>
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<td>(18:00 - 20:00)</td>
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### Venue

**Millennium Seoul Hilton**

Address: 50, Sowol-ro, Jung-gu, Seoul, Republic of Korea

Contact: +82 2 317 3278

### Spouse Programs

**Day 1 September 2**
1. Cook and Dine: Kimchi
2. Gwanghwamun Plaza
3. The Commander of the Gate Guard
4. Gyeongbokgung Palace

**Day 2 September 3**
1. Namsangol Hanok Village
2. Seoul Fortress Wall
3. N Seoul Tower

### Registration

<table>
<thead>
<tr>
<th>Category</th>
<th>Early Bird (Until July 31)</th>
<th>Registration (August 1 - September 2)</th>
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<tbody>
<tr>
<td>Conference</td>
<td>USD 300</td>
<td>USD 400</td>
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<tr>
<td>Supporting Organization</td>
<td>One representative exempted (USD 300 per additional representative)</td>
<td>One representative exempted (USD 400 per additional representative)</td>
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<tr>
<td>Exhibition</td>
<td>USD 1,000</td>
<td>(One representative per organizing exhibitor is exempt from conference fee.)</td>
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### Contact Information

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**Website** www.e-navigation.website

*Experts who wish to make a presentation, please contact the secretariat team.*