ABSTRACT SUBMISSION –– SOUMISSION DE RESUME

**Topic No.: / 5**

**proposed topic / sujet proposé: The performance of AtoN design and planning With AtoN Simulator**

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ABSTRACT / RESUME:

**Aids to Navigation (AtoN) are important in providing navigation information to a ship. Previously, planning the distribution of AtoN was carried out using the experience of an expert and a marine chart. Recently the size of the ships, the vessel traffic and the complexity of the harbour area are increasing, and so the need for a scientific design technique for planning the distribution of AtoN is increasing.**

**The AtoN Simulator provides simulation circumstances, which include the topographical and environmental characteristics of a primary harbour and the characteristics of a navigating ship and the maritime traffic. The AtoN planning expert can design a safer and more efficient distribution of AtoN using the simulator.**

**The AtoN Simulator is based on a ship handling simulator and has been developed by KAAN (the Korea Association of Aids to Navigation) and KRISO (the Korea Research Institute of Ships & Ocean Engineering) funded by Ministry of Oceans and Fisheries (MOF) in Korea. The AtoN Simulator is a management software package (SW) which can place an AtoN and assign it properties such as the shape, colour, light and function, etc. An AtoN simulator was installed at the Buoy Management Office (Korea Government) in Yeosu.**

**The objectives of the AtoN Simulator are to develop the design and construction technology of an AtoN simulator system with full mission bridge, AtoN manager and operating equipment. Full mission simulation validates the effectiveness of the mix of aids to navigation in combination with specific manoeuvring aspects and definition of Standard Operating Procedures. The full mission simulator is characterised by a typical 210 degree field of view projected onto screens. Instrumentation, handling and communication equipment are real. The AtoN simulator system is developed to assist the decision making in AtoN design and placement plan, taking into account the impact of topographical, environmental and maritime traffic characteristics of a targeted navigation area.**

**The AtoN Manager software was developed as a virtual/real AtoN management for AtoN simulation. The AtoN data software was assigned the difficult task of managing the conversion to electronic data; they are complicated large data that include the various properties of AtoN systems. In addition, the operation of an AtoN simulation system is needed for managing the database of AtoN properties effectively. Therefore, this system was a structural database of AtoN properties based on the analysis of AtoN properties for implementing visual simulation.**

**The AtoN Simulator is designed to assist decision making for AtoN design and AtoN position planning according to the performance measures based on visibility for effective placement of AtoN with topographical, environmental and maritime traffic characteristics of the targeted navigation area**

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