UNITED STATES OF AMERICA

PROPOSALS FOR THE WORK OF THE CONFERENCE

Agenda Item 1.16: *to consider regulatory provisions and spectrum allocations to enable possible new Automatic Identification System (AIS) technology applications and possible new applications to improve maritime radiocommunication in accordance with Resolution **360 (WRC-12)**;*
Resolution **360 (WRC-2012)**: *Consideration of regulatory provisions and spectrum allocations for enhanced Automatic Identification System technology applications and for enhanced maritime radiocommunication*

Background Information: This agenda item addresses regulatory provisions and spectrum allocations for use by maritime safety systems for ships and ports.

Automatic Identification System (AIS) is a maritime communication and safety of navigation system operating in the VHF band and is used for vessel collision avoidance as well as the delivery of information about specific details of the vessel. Further, consequential to the introduction of the AIS-SART for search and rescue operations, the AIS channels were added to Appendix 15 of the International Radio Regulations.

With increasing demand for maritime VHF data communications, AIS has become heavily used for maritime safety, maritime situational awareness and port security. As a result, overloading of AIS1 and AIS2 has created a need for additional AIS channels. International Maritime Organization (IMO) Resolution MSC 74(69) required that AIS, "…improve the safety of navigation by assisting in the efficient navigation of ships, protection of the environment, and operation of Vessel Traffic Services (VTS), by satisfying the following functional requirements: 1) in a ship-to-ship mode for collision avoidance; 2) as a means for littoral States to obtain information about a ship and its cargo; and 3) as a VTS tool, i.e. ship-to-shore (traffic management)". The International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) has advised in its Maritime Radio Communication Plan (MRCP) that additional AIS channels are required for ship-to-ship and ship-to-shore maritime safety information (MSI) and general data communications (i.e. Area Warnings, Meteorological and Hydrological Data, Channel Management of AIS, future VHF Digital Data Channels, and Ship-shore Data Exchange).

Although satellite detection of AIS on AIS 1 and AIS 2 was proven to be possible, its effectiveness was determined to be unacceptably limited where VHF Data Link (VDL) loading is high. The need for a separate dedicated service on separate dedicated channels was confirmed by WRC-12 and two additional channels were designated. While this new designation solves the problem for satellite detection, AIS VDL loading remains a serious issue to an increasing degree in many parts of the world due to the proliferation of AIS applications, message types, services and equipment types plus the unanticipated increase in user volume. To solve this problem and protect the integrity of the AIS VDL, AIS subject matter experts recommend a revision to the AIS system which would move Application Specific Messages (ASM) to two additional

channels. WRC-12 facilitated this concept in a revision of Appendix 18 and provided four candidate channels (27, 87, 28, and 88) on an experimental basis for this evaluation.

The United States notes the progress of various international forums which have comprehensively addressed terrestrial and satellite component configurations required for new Automatic Identification System (AIS) technology applications. While consensus exists on the goals for AIS, the solution sets have identified several methods.

U.S. VIEW: Upon review by Radio Technical Commission for Maritime Services (RTCM) and its Special Committee (SC) 123 on Digital Message Services over Maritime Frequencies, the United States supports the existing ITU-R WP 5B proposed CPM text with the identification of Method C to address potential terrestrial and satellite communication systems and resolve the agenda item. The United States supports the inherent spectrum suitability and consequential technical flexibility of Method C to allow a robust development and implementation of the terrestrial and satellite components of a beneficial global system with new AIS applications. The United States supports the continued development of an international standard for the prospective new VHF Data Exchange System (VDES).

Proposals:

Example for METHOD C:

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APPENDIX 18 (Rev.WRC-~~12~~15)

TABLE 1

Table of transmitting frequencies in the VHF maritime mobile band

Channel designator	Notes	Transmitting frequencies (MHz)		Inter-ship	Port operations and ship movement		Public correspondence
		From ship stations	From coast stations		Single frequency	Two frequency	
…		…	…		…	…	
~~27~~	~~*z)*~~	~~157.350~~	~~161.950~~			~~x~~	~~x~~
1027		157.350	157.350		x		
2027	*za)*	161.950	161.950				
87	~~*z)*~~	157.375	157.375		x		
~~28~~	~~*z)*~~	~~157.400~~	~~162.000~~			~~x~~	~~x~~
1028		157.400	157.400		x		
2028	*za)*	162.00	162.000				
88	~~*z)*~~	157.425	157.425		x		
AIS 1	*f), l), p)*	161.975	161.975				
AIS 2	*f), l), p)*	162.025	162.025				

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za) These channels are designated exclusively for Application Specific Messages (ASM) supporting AIS applications.