UNITED STATES DEPARTMENT OF COMMERCE
National Telecommunications and Information Administration
Washington, D.C. 20230

APR 12 2010

Ms. Mindel De La Torre
Chief of the International Bureau
Federal Communications Commission
445 12th Street SW
Washington, DC 20554

Dear Ms. De La Torre:

The National Telecommunications and Information Administration (NTIA), on behalf of the Executive Branch agencies, approves the release of a draft Executive Branch proposal for WRC-12 agenda item 1.10 (AP 18). NTIA proposes modifications to Appendix 18 (Rev. WRC-07) of the *Radio Regulations*, Table of transmitting frequencies in the VHF maritime mobile band.

NTIA considered the Federal agencies' input toward the development of U.S. proposals for WRC-12. NTIA forwards this package for consideration and review by your WRC-12 Advisory Committee. Dr. Darlene Drazenovich is the primary contact from my staff.

Sincerely,

Karl B. Nebbia
Associate Administrator
Office of Spectrum Management

UNITED STATES OF AMERICA

DRAFT PROPOSALS FOR THE WORK OF THE CONFERENCE

Agenda Item 1.10: to examine the frequency allocation requirements with regard to operation of safety systems for ships and ports and associated regulatory provisions, in accordance with Resolution **357 (WRC-07)**

Background Information:

Simplex Use of Duplex Channels

The Radio Regulations Board approved a Rule of Procedure after WRC-07 regarding simplex use in Appendix **18**, effectively implementing this part of the enclosed proposal. WRC-07 revised Appendix **18** to allow simplex use of channels 01, 07, 19, 20, 21, 60, 66, 78, 79, 80, and 81 subject to coordination with affected administrations (Note *m)*. However, WRC-07 omitted placing an "x" in the "Single frequency" column against affected channels in Appendix **18**, thereby unintentionally omitting this from the Radio Regulations.

Expansion of optional simplex use of duplex channels (add more "x" designations to duplex channels) in Appendix **18** will provide further benefits to maritime radiocommunications by relieving current congestion in the VHF maritime mobile bands in accordance with Recommendation ITU-R M.1084-4. Report ITU-R M.2010-1, a study on efficiency in the VHF maritime mobile band, concluded that this spectrum efficiency option expands the number of usable communications channels with the minimum of compatibility issues. The analogue VHF radio on board vessels that travel internationally would have access to both the original two-frequency channels and their single-frequency derivatives, thus allowing port operations on two or single frequency channels.

Channels for E-Navigation (e-Nav)

Designating in Appendix **18** six channels for E-Navigation (eNAV)*data exchange responds to the International Maritime Organization's (IMO) E-Navigation initiatives for future VHF data exchange. Technical studies are ongoing within the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) E-Navigation Committee with close coordination between IALA and the ITU-R. Recommendation ITU-R M.1842-1 provides examples of potential VHF E-Navigation systems and recommends the use of Appendix **18** channels for the exchange of data for E-Navigation to support future digital technologies in the maritime mobile service VHF bands. The ITU-R summarizes E-Navigation spectrum requirements in a liaison statement to IALA (5B/417 Annex 28) and proposes continued cooperative efforts between the two maritime organizations. Adding a new Note *s*) to the table of Appendix **18** and to the section "Notes referring to the Table" supports the identification six channels (24, 25, 26, and 27) for potential E-Navigation systems.

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* eNAV – From IMO: "E-Navigation is the harmonised creation, collection, integration, exchange and presentation of maritime information onboard and ashore by electronic means to enhance berth to berth navigation and related services, for safety and security at sea and protection of the marine environment".

Protection of Channels AIS 1 and AIS 2

Protecting the Automatic Identification System channels (AIS 1 and AIS 2) from harmful interference would ensure the future safety of maritime mobile radiocommunications for these channels. Report ITU-R M.2122 "EMC assessment of shore-based electronic navigation (eNAV) infrastructure and new draft standards for data exchange in the VHF maritime mobile band (156-174 MHz)" describes the susceptibility of AIS 1 and AIS 2 to interference from the adjacent duplex channels. This Report also provides technical guidelines for the electromagnetic compatibility between AIS and systems that use channels 27 and 28. Thus, modifying Note *c)* in the section "Notes referring to the Table" of Appendix **18** is necessary for protecting AIS.

Non-Application of Channel Interleaving

Recommendation ITU-R M.1084-4 describes the advantages of increased spectrum efficiency by channel interleaving 12.5 kHz channels with 25 kHz channels. The current Appendix **18** excludes maritime mobile service safety channels from 12.5 kHz channel interleaving (See Note *e)*). By modifying Note *e*) in the section "Notes referring to the Table" of Appendix **18**, the non-application of channel interleaving extends to the exclusion of AIS 1 and AIS 2, and the proposed channels for E-Navigation discussed above.

Long-Range Detection of AIS

Recommendation ITU-R M.1371-3 provides technical and operational characteristics for designing systems intended for long-range detection of AIS. Modifying Note *n*) in the section "Notes referring to the Table" of Appendix 18 identifies the use of AIS for long-range detection for channels 75 and 76 and ensures the protection of these channels from harmful interference.

Proposal:

MOD USA/AI 1.10/1

APPENDIX 18 (Rev.WRC-~~07~~12)

Table of transmitting frequencies in the VHF maritime mobile band

(See Article **52**)

NOTE A – For assistance in understanding the Table, see Notes *a)* to *q)* below. (WRC-07)

NOTE B – The Table below defines the channel numbering for maritime VHF communications based on 25 kHz channel spacing and use of several duplex channels, ~~but~~ and also allows the simplex use of ~~12.5 kHz channel spacing~~duplex channels. The channel numbering for ~~12.5 kHz channels and the conversion of two-frequency channels for~~ single-frequency operation of duplex

channels shall be in accordance with Recommendations ITU-R M.493 and 1084 (Latest versions) ~~4 Annex 4, Tables 1 and 3~~. (WRC-~~07~~12)

Reasons: Proposed changes to NOTE B will allow for more flexibility for simplex (single-channel) use of duplex channels.

MOD USA/AI 1.10/2

Channel designator	Notes	Transmitting frequencies (MHz)		Inter-ship	Port operations and ship movement		Public corres-pondence
		From ship stations	From coast stations		Single frequency	Two frequency	
60	*m), o)*	156.025	160.625		x	x	x
01	*m), o)*	156.050	160.650		x	x	x
61	*m), o)*	156.075	160.675		x	x	x
02	*m), o)*	156.100	160.700		x	x	x
62	*m), o)*	156.125	160.725		x	x	x
03	*m), o)*	156.150	160.750		x	x	x
63	*m), o)*	156.175	160.775		x	x	x
04	*m), o)*	156.200	160.800		x	x	x
64	*m), o)*	156.225	160.825		x	x	x
05	*m), o)*	156.250	160.850		x	x	x
65	*m), o)*	156.275	160.875		x	x	x
06	*f)*	156.300		x			
66	*m), o)*	156.325	160.925		x	x	x
07	*m), o)*	156.350	160.950		x	x	x
67	*h)*	156.375	156.375	x	x		
08		156.400		x			
68		156.425	156.425		x		
09	*i)*	156.450	156.450	x	x		
69		156.475	156.475	x	x		
10	*h), q)*	156.500	156.500	x	x		
70	*f), j)*	156.525	156.525	Digital selective calling for distress, safety and calling			
11	*q)*	156.550	156.550		x		
71		156.575	156.575		x		
12		156.600	156.600		x		
72	*i)*	156.625		x			
13	*k)*	156.650	156.650	x	x		
73	*h), i)*	156.675	156.675	x	x		
14		156.700	156.700		x		
74		156.725	156.725		x		

15	*g)*	156.750	156.750	x	x		
75	*n)*	156.775	156.775		x		

Channel designator	Notes	Transmitting frequencies (MHz)		Inter-ship	Port operations and ship movement		Public corres-pondence
		From ship stations	From coast stations		Single frequency	Two frequency	
16	*f)*	156.800	156.800	DISTRESS, SAFETY AND CALLING			
76	*n)*	156.825	156.825		x		
17	*g)*	156.850	156.850	x	x		
77		156.875		x			
18	*m)*	156.900	161.500		x	x	x
78	*m)*	156.925	161.525		x	x	x
19	*m)*	156.950	161.550		x	x	x
79	*m)*	156.975	161.575		x	x	x
20	*m)*	157.000	161.600		x	x	x
80	*m)*	157.025	161.625		x	x	x
21	*m)*	157.050	161.650		x	x	x
81	*m)*	157.075	161.675		x	x	x
22	*m)*	157.100	161.700		x	x	x
82	*m), o)*	157.125	161.725		x	x	x
23	*m), o)*	157.150	161.750		x	x	x
83	*m), o)*	157.175	161.775		x	x	x
24	*m), ~~o)~~, s*	157.200	161.800		x	x	x
84	*m), ~~o)~~, s*	157.225	161.825		x	x	x
25	*m), ~~o)~~, s*	157.250	161.850		x	x	x
85	*m), ~~o)~~, s*	157.275	161.875		x	x	x
26	*m), ~~o)~~, s*	157.300	161.900		x	x	x
86	*m), ~~o)~~, s*	157.325	161.925		x	x	x
27	*r)*	157.350	161.950			x	x
87		157.375	157.375		x		
28	*r)*	157.400	162.000			x	x
88		157.425	157.425		x		
AIS 1	*f), l), p)*	161.975	161.975				
AIS 2	*f), l), p)*	162.025	162.025				

Reasons: Proposed changes to the Table will allow for more flexibility for simplex (single-channel) use of duplex channels. Additional notes are added to identify channels for E-Navigation and protection of AIS 1 and AIS 2.

Notes referring to the Table

General notes

MOD USA/AI 1.10/3

c) The channels of the present Appendix, ~~but preferably channel 28 and~~ with the exception of channels 06, 13, 15, 16, 17, 70, 75 and 76, may be used for direct-printing telegraphy and data transmission, subject to special arrangement between interested and affected administrations.

Reasons: Proposed change reflects the need to protect AIS 1 and AIS 2 from adjacent band interference from channel 28.

MOD USA/AI 1.10/4

e) Administrations may apply 12.5 kHz channel interleaving on a non-interference basis to 25 kHz channels, in accordance with the most recent version of Recommendation ITU-R M.1084, provided:

- it shall not affect the 25 kHz channels of the present Appendix maritime mobile distress and safety, AIS, and E-Navigation data exchange frequencies, especially the channels 06, 13, 15, 16, 17, ~~and~~ 70, 24, 25, 26, 84, 85, 86, AIS 1 and AIS 2, nor the technical characteristics set forth in Recommendation ITU-R M.489-2 for those channels;
- implementation of 12.5 kHz channel interleaving and consequential national requirements shall be subject to coordination with affected administrations. (WRC-07)

Reasons: Proposed changes to Note *e)* identify AIS and E-Navigation channels as additional channels requiring protection from channel interleaving.

MOD USA/AI 1.10/5

n) The use of these channels (75 and 76) should be restricted to navigation-related communications only and all precautions should be taken to avoid harmful interference to channel 16, e.g. by limiting the output power to 1 W or by means of geographical separation. These channels are also used for long range detection of AIS in accordance with recommendation ITU-R M.1371.

Reasons: Proposed change protects the channels intended to be used for long-range detection of AIS from harmful interference.

ADD USA/AI 1.10/6

r) When using these channels (27 and 28), all precautions should be taken to avoid harmful interference to AIS 1 and AIS 2. (WRC-12)

Reasons: Proposed change protects AIS 1 and AIS 2 from harmful interference.

ADD USA/AI 1.10/7

s) These channels are designated for the exchange of data for E-Navigation (operations of safety systems for ships and ports) in accordance with Recommendation ITU-R M.1842. (WRC-12)

Reasons: Proposed Note *s)* identifies channels for E-Navigation in Appendix 18.