



Radio Technical Commission for Maritime Services

1800 N. Kent St., Suite 1060
Arlington, Virginia 22209-2109
www.rtc.org hq@rtc.org

Telephone: +1-703-527-2000

Telefax: +1-703-351-9932

**Before The
FEDERAL COMMUNICATIONS COMMISSION
Washington, D. C. 20554**

In the Matter of)	
)	
Radio Technical Commission for Maritime Services)	RM-_____
)	
Petition for rulemaking to amend Part 80 of the commissions rules to provide for a digital small message service on certain Maritime VHF channels)	July 24, 2009

PETITION FOR RULEMAKING

The Radio Technical Commission for Maritime Services (RTCM) hereby requests the Commission to commence a rulemaking to permit a digital small message service on certain Maritime VHF channels. RTCM has recently completed its standard, RTCM 12301.1, "VHF-FM Digital Small Message Services (VDSMS)"¹, which enables transmission of short digital messages without interfering with other communications on the same channel and the adjacent channels. Such services and technology are also addressed in Recommendation ITU-R M.1842-1 and Report ITU-R M.2122 which both reference and recommend the technology developed by RTCM Special Committee 123 (RTCM SC123) that is incorporated in this technical standard.

¹ The RTCM standard, RTCM 12301.1 is attached at ANNEX 2.

VDSMS are designed to be embodied within an item of equipment capable of receiving and transmitting VHF communication. VDSMS are intended to provide for short messaging from ship-to-ship, shore-to-ship and ship-to-shore. VDSMS are intended to operate on frequencies in the international VHF Marine Band defined in Appendix 18 of the International Radio Regulations (RR Ap 18), unless otherwise restricted by regulation. VDSMS may share channels with other services (e.g. voice services) on a non-interference basis.

RTCM considers digital messaging in the VHF Maritime Mobile Radio Service to be an urgent need for many reasons, including, but not limited to the following:

1. Digital messages are sent with much better spectrum efficiency than verbal messages because they occupy significantly less time. In this case, only 150 milliseconds is needed to transmit information that could literally take minutes to describe and verify in a verbal conversation.
2. Digital messages are accurately transmitted and are not likely to be misunderstood or in need of repetition for lack of clarity or intelligibility.
3. Digital messages can be automatically acknowledged by the receiving station and repeated if necessary to insure reception.
4. Digital messages can be left on the message screen to be verified, copied and/or recorded.

5. There is a serious lack of communications channels in the VHF Maritime Mobile Service, especially in the United States.
6. The proposed VDSMS application does not compete with, interfere with or disrupt the current use or users of the VHF Maritime Mobile Radio Service communications channels.

Background:

The RTCM is a non-profit organization whose objectives include studying and preparing reports on maritime electronic navigation and telecommunications practices. Our focus is on needs and technologies with a view toward improving efficiency and capabilities of maritime electronic navigation and telecommunications services, suggesting ways to keep rules and regulations to the minimum essential for effectiveness, and making recommendations on important issues. Established by the U.S. government in 1947 to support technical decision-making in the area of maritime radiocommunications, RTCM is now a membership organization² that supports and encourages needed improvements in maritime communications and electronic navigation. RTCM technical standards have been widely incorporated in the FCC Part 80 rules, they have served as international standards, and they have been used as the basis for many more ITU and IEC international technical standards used in the maritime services.

² RTCM membership is comprised of the maritime stakeholders from the US and foreign governments, marine equipment manufacturers, maritime communications service providers, marine dealers and distributors, US government contractors, technical standards organizations, technical service organizations, marine pilots organizations, marine transportation services, marine insurance providers and many other interested parties in the marine industry in the US and abroad.

RTCM notes that digital messaging (e.g., text messaging) is widely used in the various wireless services, including cellular telephony, due to its most efficient use of the radio spectrum. It is also noted that the FCC Part 80 rules do not currently provide for VHF data transmission except for one channel in Alaska (channel 68) and for the VHF Public Correspondence (VPC) services, and that a technical standard is needed to insure interoperability.

At its May 2005 Annual Meeting, at the request of its members, to insure the most efficient use of the VHF marine spectrum and with the assurance that this was in the best interests of the marine industry and the general public³, the RTCM Board of Directors convened Special Committee 123 (RTCM SC123), comprised of radiocommunications technical experts from the marine industry around the world, for the purpose of developing a technical standard for the transmission of digital small messages in the marine VHF-FM band.

The RTCM SC123 contributed to the development of an international technical report on electromagnetic compatibility (EMC) in the marine VHF band, Report ITU-R M.2122, which includes and references the work of RTCM SC123, and an international technical standard, Recommendation ITU-R M.1842-1, which also includes and references the work of RTCM SC123. Subsequently, and in accordance with these and other relevant international reports and standards, the RTCM has recently completed its standard,

³ Recommendation ITU-R M.1842-1 has considered that IMO has stated that the maritime industry has need for safe, fast and inexpensive communications for business and safety. At IMO the future need for harmonization of systems using maritime VHF channels was considered, and ITU-R has been informed of the possible future need for worldwide systems for the exchange of data and electronic mail on maritime VHF channels.

RTCM 12301.1, “VHF-FM Digital Small Message Services (VDSMS)”, which enables transmission of short digital messages without interfering with other communications on the same channel. Such services are addressed in Recommendation ITU-R M.1842-1.

RTCM’s proposal:

Radio Technical Commission for Maritime Services (RTCM) proposes that the Commission commence a rulemaking to permit digital small message services on certain Maritime VHF channels. VDSMS are designed to be embodied within an item of equipment capable of receiving and transmitting VHF communication. VDSMS are intended to provide for short messaging from ship-to-ship, shore-to-ship and ship-to-shore. VDSMS are intended to operate on frequencies in the international VHF Marine Band defined in Appendix 18 of the International Radio Regulations (RR Ap 18), unless otherwise restricted by regulation. VDSMS may share channels with other services (e.g. voice services) on a non-interference basis.

The channel access method that uses “white space” for VDSMS is intended to ensure that a call in progress is not disrupted by monitoring a channel to ensure that it is not in use before transmitting data, which is consistent with the FCC’s current “listen-before-talk” rule. VDSMS transmissions are designed to co-exist on the same channel with voice communications, and they thus have a duration limited to 150 milliseconds and a duty cycle which limits transmissions to no more than once per second to ensure the availability of the channel for the other users.

RTCM proposes the following revision to 47 CFR Part 80:

Revise §§ 80.351 and 80.361 to

- incorporate RTCM 12301.1 by reference; and
- allow access to voice channels for RTCM 12301.1 data except for the maritime safety and security channels and other channels excluded under footnote *b*) of Appendix 18 of the Radio Regulations, as well as designated VTS channels in the VTS areas.

The class of emission required for VDSMS (F1D) is already permitted under § 80.207(d) for frequencies in the 156-162 MHz band.

Proposed revisions to §§ 80.351 and 80.361 are attached at Annex 1.

Conclusion:

RTCM urges the FCC to amend its Part 80 rules accordingly so as to provide an approved means for implementing this valuable service.

For the Radio Technical Commission for Maritime Services

A handwritten signature in black ink, appearing to read "R L Markle". The signature is written in a cursive, slightly slanted style.

R. L. Markle
President

ANNEX 1

Proposed revisions to 47 CFR 80.351 and 80.361 to permit VDSMS service on maritime mobile frequencies

By revising section 80.351 to read as follows:

§ 80.351 Scope.

The following sections describe the carrier frequencies and general uses of radiotelegraphy with respect to the following:

- Distress, urgency, safety, call and reply.
- Working.
- Digital selective calling (DSC).
- Narrow-band direct-printing (NB-DP).
- Facsimile.
- VHF-FM digital small message services (VDSMS).

By adding a new section 80.361(e) to read as follows:

§ 80.361 Frequencies for narrow-band direct-printing (NBDP), radioprinter and data transmissions.

* * * * *

(e) *VHF-FM Digital Small Message Services.* Frequencies in the 156-162 MHz band may be used for VHF digital small message services (VDSMS) complying with RTCM Standard 12301.1 with the following exceptions:

VHF-FM CHANNELS NOT AVAILABLE FOR DIGITAL SMALL MESSAGE SERVICE

Channel	Frequency (MHz)
06	156.300
67	156.375
70 ⁴	156.525
13	156.650
15	156.750
75	156.775
16	156.800
76	156.825
17	156.850
22A	157.100
AIS 1/2 ⁵	161.975/162.025

⁴ RTCM Standard 12301.1 may be included within an item of equipment capable of receiving and transmitting VHF communication, including DSC; however, because Channel 70 is the dedicated DSC distress and calling channel, Channel 70 may be used for calling purposes but not for RTCM Standard 12301.1 digital messages.

(1) Unless authorized by the U.S. Coast Guard, VDSMS is also prohibited in designated U.S. Coast Guard Vessel Traffic Service areas on frequencies reserved for those services under § 80.373(f) of this Part.

(2) RTCM Standard 12301.1 is incorporated by reference. The Director of the Federal Register approves this incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies of this standard can be inspected at the Federal Communications Commission, 445 12th Street, SW., Washington, DC (Reference Information Center) or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: <http://www.archives.gov/federalregister/codeoffederalregulations/ibrlocations.html>. RTCM standards can be purchased from the Radio Technical Commission for Maritime Services (RTCM), 1800 N. Kent St., Suite 1060, Arlington, VA 22209-2109, www.rtcmm.org.

⁵ RTCM Standard 12301.1 may be included within an item of equipment capable of receiving and transmitting VHF communication, including AIS; however, because AIS1 and AIS2 are the dedicated AIS channels, these channels may be used in accordance with Recommendation ITU-R M.1371-3 for calling purposes but not for RTCM Standard 12301.1 digital messages.

ANNEX 2

RTCM 12301.1
RTCM Paper 151-2009-SC123-STD



© RTCM – Not for reproduction or redistribution

RTCM STANDARD 12301.1
VHF-FM DIGITAL SMALL MESSAGE SERVICES

DEVELOPED BY
RTCM SPECIAL COMMITTEE NO. 123

JULY 10, 2009

COPYRIGHT©2009 RTCM

Radio Technical Commission for Maritime Services
1800 N. Kent St., Suite 1060
Arlington, Virginia 22209-2109, U.S.A.
E-Mail: info@rtcm.org
Web Site: <http://www.rtcmm.org>