

JOINT IMO/ITU EXPERTS GROUP ON
MARITIME RADIOCOMMUNICATION
MATTERS
12th session
Agenda item 5

IMO/ITU EG 12/5/11
23 June 2016
ENGLISH ONLY

**CONSIDERATION OF THE OUTCOME OF WRC-15 AND PREPARATION OF INITIAL
ADVICE ON A DRAFT IMO POSITION ON WRC-19 AGENDA ITEMS CONCERNING
MATTERS RELATING TO MARITIME SERVICES**

WRC-19, Agenda item 1.9.1

Submitted by Germany

SUMMARY

Executive summary:	This document contains a first intermediate result of the work in the new study period towards WRC-19 in ITU-R Working Party 5B on agenda item 1.9.1 dealing with autonomous maritime radio devices.
Action to be taken:	Paragraph 15
Related documents:	NCSR 3/29; Resolution 809 (WRC-15); Resolution 362 (WRC-15); Document 5B/71, Annex 21

Introduction

1 The Sub-Committee on Navigation, Communications and Search and Rescue, at its third session held from 29 February to 4 March 2016, instructed the Joint IMO/ITU Experts Group on Maritime Radiocommunication Matters (hereinafter referred to as Experts Group) at its 12th session to be held from 11 to 15 July 2016, to analyse the Resolutions of WRC-15 in order to identify major areas of interest for IMO and provide relevant input, as appropriate; and to prepare initial advice on a draft IMO position on WRC-19 Agenda items concerning matters relating to maritime services.

2 The Agenda item 1.9.1, dealing with autonomous maritime radio devices, reads as follows:

"1.9 to consider, based on the results of ITU-R studies:

1.9.1 regulatory actions within the frequency band 156-162.05 MHz for autonomous maritime radio devices to protect the GMDSS and automatic identifications system (AIS), in accordance with Resolution 362 (WRC-15)."

3 The aim of this agenda item is to prevent unregulated operation of such autonomous maritime radio devices to enhance safety of navigation and to ensure the integrity of the GMDSS which is the only system for distress, urgency, safety and routine communication for general shipping.

4 Applications with autonomous maritime radio devices are reflecting a new development in recent time. Due to the rapid technical progress and cost-effective production, more and more of such applications in the maritime environment are created and used in the field.

Discussion

5 In the maritime mobile service as defined in RR No.1.28 the autonomous radio devices are not listed and are therefore not supposed to be operated in this service at this time.

6 The term "autonomous maritime radio device" (AMRD) is not part of the ITU lexicon and needs clarification for a wider audience. In particular, this term may not be understood in IMO and a common definition or agreement may be helpful.

7 The scope of study is limited to devices that use RR Appendix 18 frequencies. It will also take into account the application defined by IMO for radio channels and IMO views on the difficulty to change the performance of mandatory bridge navigation equipment.

8 ITU-R Working Party 5B (WP 5B) has started the studies on agenda item 1.9.1 with drafting a structure of work in the following way:

- Definitions
- Compilation of existing autonomous maritime radio devices
- Description of technology which is implemented
- Categorizing of autonomous maritime radio devices
- Spectrum needs
- Addressing/numbering required for operation
- Evaluation of the effect of AMRD on AIS for safety of navigation and search and rescue activities
- Operational and provisional actions

9 WP 5B detected that prior to studies of possible spectrum for AMRDs, the key issues "definitions" and "categorizing of AMRDs" need to be solved.

10 A definition for AMRD which fits into the existing RR Article 1 "Terms and definitions" could not be found yet. The requested definition has to take into account the existing terms and definitions of SOLAS as well.

11 For categorizing AMRDs, WP 5B decided to create decision tables to make a two-step approach. As a first step a table should mention all different applications of AMRDs in a general list of applications. As second step, in a detailed list of AMRDs, a table should indicate all different technologies used for the different applications.

12 The goal of that categorizing is to evaluate whether certain AMRDs should use frequencies which are allocated for the existing maritime mobile service or whether their operation may only be permitted on (new) frequencies which are not used in the existing maritime mobile service.

13 Depending on the categorizing of AMRDs in addition to spectrum requirements the issues of addressing/numbering and operational procedures need to be studied, taking into account the effect of AMRDs on AIS for safety of navigation and search and rescue activities.

14 The intermediate result of the ongoing work on agenda item 1.9.1 is shown in annex 1: Working document towards a preliminary draft new Report ITU-R M.[AMRD] - Autonomous maritime radio devices (Document 5B/71, annex 21). Annex 2 is indicating the proposed work plan for WRC-19 agenda item 1.9.1 (Document 5B/71, annex 4).

Action requested of the Experts Group

15 The Joint IMO/ITU Experts Group is invited to note the crucial points of agenda item 1.9.1. The group is further invited to discuss the problematic nature of AMRDs and to prepare initial advice on a draft IMO position on WRC-19 Agenda items concerning matters relating to maritime services.

ANNEX 1

WORKING DOCUMENT TOWARDS A PDN REPORT ITU-R M.[AMRD]



Radiocommunication Study Groups



INTERNATIONAL TELECOMMUNICATION UNION

Source: Document 5B/TEMP/28
Subject: WRC-19 agenda item 1.9.1

**Annex 21 to
Document 5B/71-E
17 June 2016
English only**

Annex 21 to the Working Party 5B Chairman's Report

WORKING DOCUMENT TOWARDS A PRELIMINARY DRAFT NEW REPORT ITU-R M.[AMRD]

Autonomous maritime radio devices

1 Background

This report addresses Resolution **362 (WRC-15)** which will be agenda item 1.9.1 at WRC-19.

The aim of this agenda item is to prevent unregulated operation of such autonomous maritime radio devices to enhance safety of navigation and to ensure the integrity of the GMDSS which is the only system for distress, urgency, safety and routine communication for general shipping.

Applications with autonomous maritime radio devices are reflecting a new development in recent time. Due to the rapid technical progress and cost-effective production, more and more of such applications in the maritime environment are created and used in the field.

The intention of the document is to start the discussion on this agenda item and to try to structure the work on it. During the study period additional aspects may needed to be added.

2 [Structure of Work]

2.1 Definitions

The term autonomous maritime radio device (AMRD) is not part of the ITU lexicon and needs clarification for a wider audience. In particular, this term may not be understood in IMO and a common definition or agreement may be helpful.

Determine the scope of the agenda item.

[An AMRD is a [mobile] station; operating [in the maritime domain][at sea or to a station at sea];[is not presently part of the maritime mobile service] [and working independently of a ship station or a coast station]]

[Editor's note: It is important that this is defined early in the study period as this strongly influences the direction of the work.]

The scope of study is limited to devices that use RR Appendix **18** frequencies. It will also take into account the application defined by IMO for radio channels and IMO views on the difficulty to change the performance of mandatory bridge navigation equipment.

2.2 Compilation of existing autonomous maritime radio devices

As a first step studies on the worldwide market should be done to draw up a comprehensive list of all known applications of autonomous maritime radio devices. As result several kinds of applications using different technologies are to be expected.

2.3 Description of technology which is implemented

For all detected types of autonomous maritime radio devices it is necessary to describe the technology used. Some applications for the same purpose may use different technologies, including combinations of technologies (including DSC, AIS, voice telephony, etc.).

2.4 Categorizing of autonomous maritime radio devices

As required by *invites 2* of Resolution **362 (WRC-15)**, categorizing different devices means to evaluate whether an application may be operated inside or outside the maritime mobile service. For a correct estimation of the appropriate category not only the purpose of an application may be relevant, but also the technology used may be an important aspect. The source and object of radio communication may also determine the evaluation. As result of this study two categorized groups (maritime mobile service/ not maritime mobile service) should be established.

[2.x] Evaluation of the effect of AMRD on AIS for safety of navigation and search and rescue activities

The *further recognising* of Resolution **362 (WRC-15)** states that the majority of autonomous maritime radio devices using AIS technology are operating in AIS 1 and AIS 2 frequency bands, and, to some extent, occupying the resources of MMSIs for ship stations or aids to navigation that an evaluation of the effects on the functioning of AIS used for the safety of navigation, and especially search and rescue activities implemented by AIS-search and rescue transmitters (AIS-SARTs), is required. A view expressed in the Liaison Statement from IMO, [5B/13](#), stated concerns about overloading of the VHF data link (VDL).

2.5 Addressing / numbering required for operation

As a follow-up step, studies on addressing and numbering need to be carried out. For devices which are categorized as belonging to the maritime mobile service, an addressing / numbering system is needed which is in accordance with the identification rules of stations in the maritime mobile service (RR Article **19**, Rec. ITU-R [M.585](#)).

For devices which are categorized outside the maritime mobile service it might be possible and useful to create new and independent addressing and numbering systems, depending on the implemented technology.

2.6 Spectrum needs

The usage of the frequencies allocated to the maritime mobile service shall in principle be limited to devices which are categorized for this service.

For the devices outside the maritime mobile service, depending on the implemented technology, studies are necessary to identify spectrum needs to operate such devices.

Further studies need to be carried out to identify and allocate necessary spectrum for the usage of autonomous maritime radio devices. In accordance with *invites 3* of Resolution **362 (WRC-15)**, sharing studies between different applications and technologies should be initiated to ensure safe operation and no new constraints are placed on GMDSS and AIS. For special exemptions it might be possible to share frequencies subject to RR App. **18**. Due to the fact that in the maritime environment reprogrammed or recoded maritime devices will be deployed, the frequencies in the

“gap” of App. 18 may be suitable and of special interest. These frequencies are already generically allocated to the mobile service.

2.7 Operational and provisional actions

Studies on operational regulations for both categories of devices are important. In case of categorizing man over board devices, operating with a combination of DSC and AIS technology (new class M devices) in the maritime mobile service, it is necessary to explain the operational procedures and to describe them in an appropriate way either in the RR or in an ITU-R Recommendation.

Depending on technology and spectrum, also for autonomous radio devices outside the maritime mobile service operational procedures may be needed to be defined. Especially in cases where frequencies are shared, operational regulations are required. ITU-R Recommendations may be the appropriate way to implement such regulations.

3 Criteria for categorization of devices

For categorization a two-step approach is proposed.

The first step is a compilation of the existing applications of AMRD which could be found on the worldwide market. This could be done in a table what gives a general description for information but not for judgment. This table only shows the different applications. It will not contain any deeper technical details. Table 1 is a draft template for the table showing the titles of the lines in it.

The second step is to build a detailed list of AMRDs to describe the technical realisation of the applications listed in Table 1. It is expected that the detailed list will contain applications with the same purpose but using different technologies. Table 2 is a draft template for the table showing the titles of the lines in it.

TABLE 1
General list of Applications

Item	Example (Man over board)	Remarks
General description	Personal rescue devices in man over board situation	Name or classification of AMRD, not for judgement
Purpose of communication	Alerting, tracking, homing	this could be classified in a more general way, based on the information compiled, to some explicit classifications, such as identifying, alerting, tracking, positioning, data transmitting, or some kind of combination...
Source of communication	Person in the water in distress situation	personal device, independent device, or ship equipped device, This factor is also helpful for determining the device included in the scope or not
Interest for user	personal	person, enterprise or administration, etc.
Destination of communication	From person in the water to own vessel, or to all vessels in vicinity	combining with the factor of <u>General technology</u> and <u>Coverage</u> , this factor determines the operation mode to be open loop, or close loop

Item	Example (Man over board)	Remarks
Kind of communication	Different systems available: AIS, DSC, 121.5 MHz, 406 MHz, other frequencies, synthetic voice or in combination	by this factor, the device could be judged if it is within the scope of the Agenda Item. For example, some possible comprehensive system which is too complicated could be excluded.
Implication to ship stations	yes	if the message sent by device needs to be read, recognized, displayed, acknowledged or responded by on-board equipment, etc.
Implication to coast stations	Only in special cases depending on the used system, the position and the follow up situation (rescue coordination from shore side)	if the message sent by device needs to be read, recognized, displayed, acknowledged or responded by coast station, etc.
Implication to safety of navigation	Depending on the system	
Safety related communication	yes	
Observation	Several different systems using different technologies are on the market. The different systems may be created for different kind of vessels (e. g. fast going container vessels, passenger vessels, fisher boats, yachts, single hand crews etc.)	including Application status and Scale of application or potential quantity
Evaluation 1	Additional assessment needs to be done for the different systems. Depending on the used technology and on the kind of vessel on which a device should be used, different results concerning the existing maritime mobile service can be expected.	If additional assessment needs to be done for the different systems
Result		the result that indicates the device should be included in the permission list or not

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TABLE 2
Detailed list of AMRDs

Name of AMRD		Example (MOB1)	Remarks
General technology/ main technical characteristics	AIS	X	
	Radiotelephony (voice)	–	
	Synthetic voice	–	
	DSC (Ch. 70)	–	
Frequency band/ Resource consumption	AIS1	X	by this factor, the device could be judged if it is within the scope of the Agenda Item. For example, some device that is not operating in the maritime mobile service band could be excluded.
	AIS2	X	
	121.5 MHz	X	
	406 MHz	–	
	Other frequency	–	
Deployment scenario	Alerting	(X) with additional equipment only	deployed by person, or free drift object, or man-controlled moving object, etc. this is helpful for determining the implication to ships and safety of navigation
	Tracking	X	
	Homing	X	
Coverage		ca 5 nm	this depends on some technical parameters, such as transmitting power, antenna height or etc.
main technical characteristics			including the power, the message size, the transmitting cycle, etc, for the purpose of determining the requirement of numbering and spectrum
Assessment			the existing consumption of the resources of MMS, including numbering and spectrum
Comments		open system, but AIS is no alerting system, additional equipment or software is needed	
Evaluation 2		TBD	If the further evaluation is needed

4 Conclusion

[TBD]

[Editor's note: The following annexes contain information received at the May 2016 meeting, but these annexes may be incorporated into Table 1 and Table 2 above at a later stage of the study.]

Annex 1 [[Example] study by Germany]

The following tables show examples for man over board (MOB) devices and diver devices:

General list of autonomous devices with the different applications

	Man over board	Diver	Other applications
General description	Personal rescue devices in man over board situation	Personal communication device for divers	
Source of communication	Person in the water in distress situation	Diver in the water	
Interest for user	personal	personal	
Purpose of communication	Alerting, tracking, homing	Radiotelephony, tracking, homing, alerting	
Destination of communication	From person in the water to own vessel, or to all vessels in vicinity	From diver to mothership or in distress situation to vessels in vicinity	
Kind of communication	Different systems available: AIS, DSC, 121.5 MHz, 406 MHz, other frequencies, synthetic voice or in combination	Different systems available: AIS, DSC, 121.5 MHz, 406 MHz, other frequencies, synthetic voice or in combination	
Influence on shipping	yes	In routine situation only mothership	
Influence on Coast stations	Only in special cases depending on the used system, the position and the follow up situation (rescue coordination from shore side)	Normally no	
Influence on satellite	Depending on the system	Normally no	
Safety related communication	yes	Only in emergency case	
Observation	Several different systems using different technologies are on the market. The different systems may be created for different kind of vessels (e. g. fast going container vessels, passenger vessels, fisher boats, yachts, single hand crews etc.)	Different systems using different technologies are on the market.	
Evaluation 1	Additional assessment needs to be done for the different systems. Depending on the used technology and on the kind of vessel on which a device should be used, different results concerning the maritime mobile service can be expected.	Additional assessment needs to be done for the different systems. Depending on the used technology different results concerning the maritime mobile service can be expected.	

Additional table for MOB:

	MOB1 (WamBlee W460-W460LP)	MOB2 (MOBILARMV100)	MOB3 (Ocean Signal M100 / M100X)	MOB4 (Seareq MOBOS ®)
AIS	X	–	X	–
Radiotelephony (voice)	–	–	–	–
Synthetic voice	–	X on Ch. 16	–	–
DSC (Ch. 70)	X closed loop only	X open loop	–	–
AIS1	X	–	X	–
AIS2	X	–	X	–
121.5 MHz	–	–	X	–
406 MHz	–	–	–	–
Other frequency	–	–	–	869.52 MHz (Europe)
Alerting	X own ship only	X	(X) with additional equipment only	X own ship only
Tracking	X	X	X	X own ship only
Homing	X	X	X	X own ship only
Comments	system works only in closed loop	open system, which doesn't fulfil rules of RR, interference in areas with heavy traffic	open system, but AIS is no alerting system, additional equipment or software is needed	closed system, different frequencies, depending on region
Evaluation 2	TBD	TBD	TBD	outside maritime mobile service

MOB1: <http://www.wamblee.it/marittimo/w460/?lang=en>

MOB2: <http://www.orcv.org.au/index.php/docman-link/safety/2291-mobilarmv100brochure/file>

MOB3: <http://oceansignal.com/products/m100m100x/>

MOB4: <http://www.seareq.de/en/products/mobos>

There are several more different systems of MOBs on the market; therefore this table needs to be expanded.

Additional table for diver devices

	diver1 (easyRESCUE- DIVE)	diver2 (Nautilus LifeLine)	diver3 (Seareq ENOS ®)	
AIS	X	–	–	
Radiotelephony (voice)	–	X VHF App 18	–	
Synthetic voice	–	–	–	
DSC (Ch. 70)	–	X	–	
AIS1	X	–	–	
AIS2	X	–	–	
121.5 MHz	–	–	–	
406 MHz	–	–	–	
other frequency	–	–	869,52 MHz (Europe)	
Alerting	(X) with additional equipment only	X	X own ship only	
Tracking	X	X	X own ship only	
Homing	X	X	X own ship only	
Comments	open system, but AIS is no alerting system, additional equipment or software is needed	TBD	closed system, different frequencies, depending on region	
Evaluation 2	TBD	TBD	outside maritime mobile service	

diver1 <http://www.easyais.com/en/products/d-easyrescue-dive-a040/>

diver2 <http://www.seareq.de/en/products/enos>

diver3 http://www.nautiluslifeline.com/nautilus_lifeline

There may be other different systems of diver devices on the market; therefore it may be necessary to expand the table.

Annex 2[[Example] study by China]

The maritime radio regulatory Administration of China conducted a first phase survey by collecting the information on application requirement, main technical and operational characteristics of the device, and spectrum related aspects for supporting the study of agenda item 1.9.1. The delivery of questionnaire covers maritime safety administration, search and rescue organization, ministry of government related to the marine active such as fishing administration and National Meteorological Bureau, and some of the industrial enterprises. The working document is developed based on the summary of outcomes from the preliminary survey.

A2.1 Information on application requirement

Item	1	2	3	4	5	6
Device	Fishing Locator	AIS AtoN	AIS-SART	AIS-MOB	Oceanic meteorological data transmitter	Oceanic observation data transmitter
Application situation	Fishing nets, aquaculture net, life jacket and craft	Navigational buoys	Vessel, lifecraft	lifejackets, etc.	Oceanic meteorological buoys	Oceanic observation
General technology	AIS	AIS	AIS	AIS	AIS	AIS
Purpose	Fishing instrument or crew recognition and location	Aiding to navigation	Lifeboats locating at sea	man overboard alarm and locating	Ocean current and meteorology monitoring	Oceanic environment observation
Deployment scenario	Mainly deployed in fishing sea area; sometimes installed on nets towed by fishing boat, fixed aquaculture net, or equipped on life jacket or craft.	Mainly deployed on light houses or buoys along fairways.	Generally installed in the bridge of ships, but would be deployed on lifeboats when distress occurs.	Attached to life-saving equipment, such as life jackets.	Deployed on meteorological floating buoys.	Deployed on oceanic observation buoys
Relationship to existing equipment onboard	Mainly no needs to transmit information to merchant ships, except those installed on nets towed by fishing boat, but need to be read by fishing boat.	Transmits information to merchant ships. Information needs to be read for the purpose of aiding navigation.	Transmits information to rescue units to indicate the position and status of lifeboats.	Transmits information to rescue units to indicate the location and status of men overboard.	Irrelative	Irrelative
Application administration	Fishing administration and enterprises	Maritime administrations, Navigation Guarantee Center	Maritime administrations, RCCs and shipping companies.	Maritime administrations and shipping companies.	Meteorology administrations.	Oceanic administration
Scale of application quantity	About 5 000 annually in recent two years	Several hundred annually	Several hundred annually	A few in use	A few in use	A few
Application status	In use	In use	In use	In planning and trial operation	In use	In trial

A2.2 Information on main technical and operational characteristics

Item	1	2	3	4	5	6
Device	Fishing Locator	AIS AtoN	AIS-SART	AIS-MOB	Oceanic meteorological data transmitter	Oceanic observation data transmitter
Frequency bands using or requirement	AIS 1, AIS 2	AIS1, AIS2	AIS1, AIS2	AIS1, AIS2	AIS1, AIS2	AIS1, AIS2
Access mode	SOTDMA,CSTDMA	FATDMA, ITDMA, RATDMA	RATDMA, CSTDMA, SOTDMA	RATDMA	RATDMA	FATDMA, ITDMA, RATDMA
Transmitting power	2W	5W, 12.5W, 6W	1W, 2W, 6W	2W, 1W	N/A	5W, 12.5W, 6W
Message format	Message 18, 19, 24A and 24B	Message 21, 6	Message 1, 6, 14, 18, 21, 24	Message 1, 14	Message 18, 19, 24A and 24B	Message 21, 6
Data size of message	Refer to ITU-R M.1371-5	360 bits, 128 bits	128 bits, 160 bits, 160+168 bits,	Refer to ITU-R M.1371-5	N/A	360 bits, 128 bits
Transmitting period	30 sec, 3 min	3 min, 6 min, 1-360 min	10 sec, 30 sec, 6 min, 1 min, 1-360 min	26.67 ms, 1 min	N/A	3 min, 6 min, 1-360 min
Requirement to the channel link	Refer to Class B AIS	2 slots/min, 1 slot/min	1 slot/min, 8 slots/min	8 slots/min	N/A	2 slots/min, 1 slot/min
Station identification mode	Not regulated	MMSI, Refer to ITU-R 585-7	MMSI, Refer to ITU-R 585-7	Not regulated	Not regulated	MMSI, Refer to ITU-R 585-7
Displayed icon					N/A	
Complied standard or recommendation	ITU-R M.1371-5	IEC62320-2	IEC61097-14, IEC62287-1,ITU-R M.1371-5	ITU-R M.1371-5, IEC62287(2010), MSC.74(69), IEC60945	N/A	IEC62320-2

A2.3 Information on spectrum issues

The following table gives a brief description on the current allocation status and main usage of VHF band within 156-162.05 MHz in Chinese mainland.

Frequency band (MHz)	Allocation (Chinese mainland)	Application	Remarks
156-156.4875	FIXED MOBILE	Refer to RR. No. 5.226 and App. 18	RR. No. 5.226
156.4875-156.5625	MARITIME MOBILE (distress and calling)	DSC	RR. Nos. 5.111, 5.226, 5.227
156.5625-156.7625	FIXED MOBILE	Refer to RR. No. 5.226 and App. 18	RR. No. 5.226
156.7625-156.7875	MARITIME MOBILE Mobile-satellite (Earth-to-space)	Refer to RR. No. 5.228	RR. Nos. 5.111, 5.226, 5.228
156.7875-156.8125	MARITIME MOBILE (distress and calling)	Refer to RR App. 18	RR. Nos. 5.111, 5.226
156.8125-156.8375	MARITIME MOBILE Mobile-satellite (Earth-to-space)	Refer to RR. No. 5.228	RR. Nos. 5.111, 5.226, 5.228
156.8375-160.975	MARITIME MOBILE LAND MOBILE	Refer to RR App. 18	RR. No. 5.226
160.975-161.475	FIXED MOBILE	Land mobile	
161.475-161.9625	MARITIME MOBILE LAND MOBILE	Land mobile	RR. No. 5.226
161.9625-161.9875	MARITIME MOBILE LAND MOBILE Aeronautical mobile (OR) Mobile-satellite (Earth-to-space)	AIS, Refer to RR. Nos. 5.228E, 5.228F and App. 18	RR. Nos. 5.228E, 5.228F, 5.226
161.9875-162.0125	MARITIME MOBILE LAND MOBILE	Refer to RR. No. 5.226 and App. 18	RR. 5.226
162.0125-162.0375	MARITIME MOBILE LAND MOBILE Aeronautical mobile (OR) Mobile-satellite (Earth-to-space)	AIS, Refer to RR. Nos. 5.228E, 5.228F and App. 18	RR. Nos. 5.228E, 5.228F, 5.226
162.0375-162.050	MARITIME MOBILE LAND MOBILE	Land mobile	RR. No. 5.226

ANNEX 2

PROPOSED WORK PLAN FOR WRC-19 AGENDA ITEM 1.9.1



Radiocommunication Study Groups



INTERNATIONAL TELECOMMUNICATION UNION

Source: Document 5B/TEMP/26

**Annex 4 to
Document 5B/71-E
17 June 2016
English only**

Subject: WRC-19 agenda item 1.9.1

Annex 4 to the Working Party 5B Chairman's Report

PROPOSED WORK PLAN FOR WRC-19 AGENDA ITEM 1.9.1

Working Party 5B meetings	Work plan
<p>First meeting May 2016</p>	<ul style="list-style-type: none"> - Presentation of the agenda item, Resolution 362 (WRC-15) for WRC-19 agenda item 1.9.1 - Develop a work plan for conducting studies and producing outputs relating to WRC-19 agenda item 1.9.1 - Develop the skeleton of a working document towards a preliminary draft new Report ITU-R M.[AMRD] (Autonomous Maritime Radio Devices (AMRD)) - Develop definitions/scope - Compile initial list of existing AMRD - Compile initial list of existing AMRD technology - Develop framework for categorisation of existing devices - Develop the skeleton of the draft CPM text - Send LS to IMO, IALA and others as appropriate to inform of the work.
<p>Second meeting November 2016</p>	<ul style="list-style-type: none"> - Review and update work plan as needed - Review, and complete if possible, the definitions/scope in working document toward preliminary draft Report and complete if possible - Develop possible working document toward a preliminary draft Report on a new numbering scheme - Continue collecting information on Categorization - Study on the effect of AMRD on existing safety use - Continue developing the working document towards a preliminary draft new Report on AMRD, based on input contributions - Develop draft CPM text for sections 1, 2, and 3, considering and incorporating from contributing groups - Transmit the working document towards a preliminary draft new Report on AMRD to contributing groups as appropriate for review - Transmit draft CPM text to contributing groups for review - Send a circular letter to ITU members regarding AMRD devices in their jurisdiction based on input contributions - Send LS to IMO, IALA and others as appropriate to inform of the work.

Working Party 5B meetings	Work plan
Third meeting May 2017	<ul style="list-style-type: none">- Review and update work plan as needed- Continue develop working document toward a preliminary draft Report on a new numbering scheme- Study possible frequency plans for the AMRD- Continue developing the working document towards a preliminary draft new Report on AMRD, based on input contributions- Continue developing draft CPM text- Transmit the working document towards a preliminary draft new Report on AMRD to contributing groups as appropriate for review- Transmit draft CPM text to contributing groups for review- Send LS to IMO, IALA and others as appropriate to inform of the work.
Fourth meeting November 2017	<ul style="list-style-type: none">- Review and update work plan as needed- Complete preliminary draft new Report on a new numbering scheme- Continue developing the working document towards a preliminary draft new Report on AMRD, based on input contributions- Continue developing draft CPM text- Send LS to IMO, IALA and others as appropriate to inform of the work.
Fifth meeting May 2018	<ul style="list-style-type: none">- Finalize PDN Report ITU-R M.[AMRD]- Finalize draft CPM text for WRC-19 AI 1.9.1.

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