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| Joint IMO/ITU experts group on maritime radiocommunication matters  15 session  Agenda item 3 | IMO/ITU EG 15/3/Y  DD June 2019  ENGLISH ONLY  Pre-session public release: ☐ |

**Consideration of matters related to World Radiocommunication Conference 2019 (WRC-19), taking into account the outcome of CPM 19-2**

**VDES R-Mode and VHF digital voice communication**

**Submitted by IALA**

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| **SUMMARY** | |
| *Executive summary:* |  |
| *Strategic direction, if applicable:* |  |
| *Output:* |  |
| *Action to be taken:* |  |
| *Related documents:* | A.915 (22), MSC 401(95), MSC.1/Circ.1575, MSC.1/Circ. 1595, NCSR 6/12/4, NCSR 6/WP.5 |

**Introduction**

1 IALA submitted a liaison note to the IMO Secretariat that proposed the following items to be considered as the agenda item for WRC-23:

* providing a means to accommodate digital systems in the VHF maritime mobile band, which would include digital voice;
* providing a radionavigation allocation for VDES R-Mode to support to resilient position, navigation and timing.

2 At the sixth session of the Sub-Committee on navigation, communications and search and rescue (NCSR 6), the Secretariat provided the IALA liaison note to NCSR 6 as input paper, NCSR 6/12/4. The Sub-Committee considered the proposal from IALA and decided that the aforementioned items were not mature enough for inclusion of agenda for WRC-23. But IALA was requested to keep IMO informed of the progress made.

**Digital voice communication**

3 TBD

**VDES R-mode**

4 Ranging-Mode (R-Mode) is a concept of new terrestrial radio navigation system using timing information on existing maritime radio systems to provide GNSS independent PNT. It is therefore considered as highly possible candidate for the backup of GNSS. There are currently two carriers considered for providing timing information, MF using existing DNGSS radio beacon frequencies and VHF using existing AIS or VDES frequencies.

5 MSC.1/Circ.1595 “E-navigation strategy implementation plan update 1” identified one of solutions that is improved reliability and resilience of onboard PNT information and other critical navigation data by integration with, and back up of, external and internal system (S4.3) and based on the solution, IMO adopted MSC.1/Circ. 1575 “Guidelines for shipborne position, navigation and timing (PNT) data processing” that included R-Mode as a future source for provision of PNT data.

6 The Maritime Safety Committee, at its ninety-fifth session (3 to 12 June 2015), adopted resolution MSC.401(95) on Performance standards for multi-system shipborne radio navigation receivers (MSR). The MSR is appropriate to facilitate the combined use of WWRNS (using satellite and terrestrial radio navigation systems) to improve the provision of position, velocity and time (PVT) data and related integrity data. R-Mode could become the suitable candidate to be incorporated in the MSR.

7 VDES R-Mode is designed to provide timing information within VHF coverage, i.e. coastal area with meeting requirements identified by IMO Resolution A. 915 (22) “Revised maritime policy and requirements for a future global navigation satellite system (GNSS)”. In order to fix a position for maritime navigation, R-Mode requires three or more transmitting stations with precise clock.

8 IALA is now working to revise its Guideline G1139 ed.2 “The technical specification of VDES” in order to accommodate R-Mode in VDES standard and planning to hold a Workshop in September 2019. Figure 1 shows possible roadmap for R-Mode development on VDES.

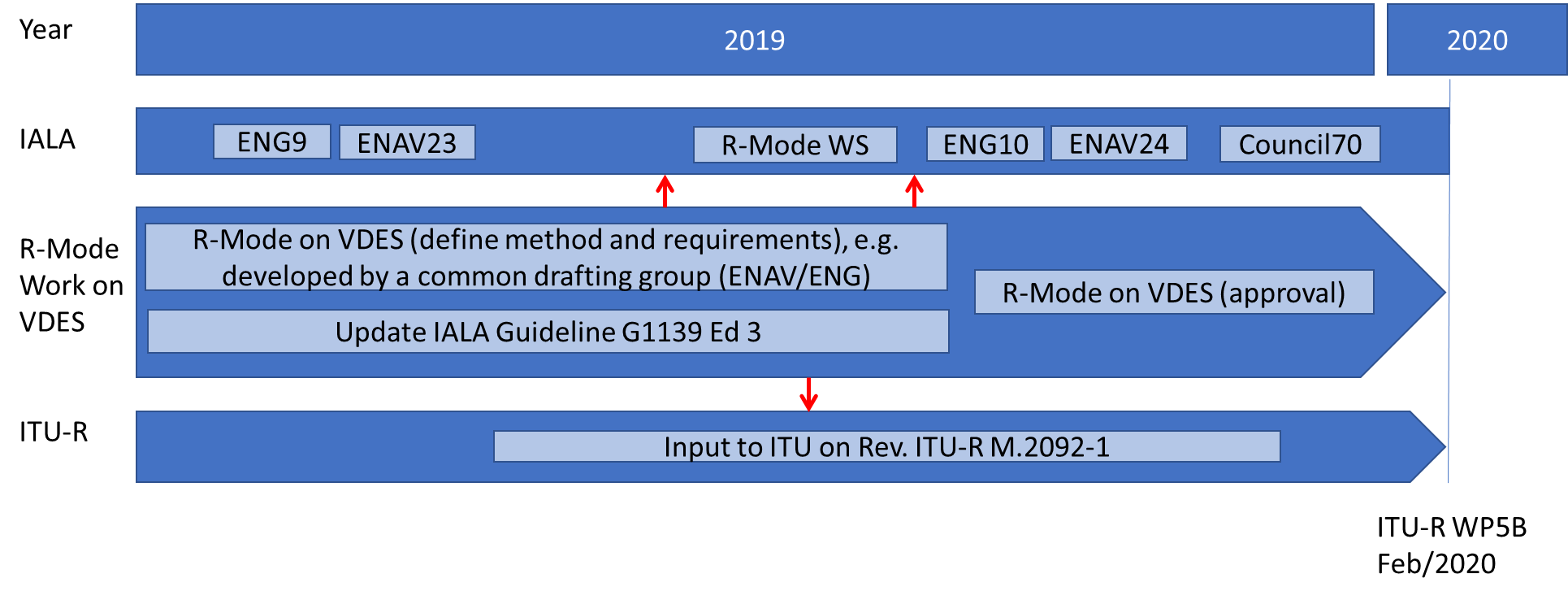


Figure 1: Possible Roadmap for R-Mode Development on VDES

9 There are several projects and studies on VDES R-Mode conducted in several countries. One such project is the R-Mode Baltic project, and its baseline and priority report that provides more detailed information on VDES R-Mode is available for download on the project website www.r-mode-baltic.eu.

**Conclusion**

10 IALA considers that both items proposed will become sufficiently mature for inclusion of possible agenda items prior to WRC-23 and is pleased to keep IMO and ITU informed of the progress made.

**Action requested**

11 The Group is requested to note the information provided and act as appropriate.