St Germaine WG 2 Input paper

Agenda item 10

Task Number xx

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Design Considerations for VDES: Use of ASM channels after ITU test period

# Summary

## Purpose of the document

IALA is requested to support the transmission of ASM (application specific messages) on ASM channels (prospectively channels 2027 and 2028) during the transition period and to allow for the use of the modulation method in ITU-R M.1371-5 for ASM transmissions, until prospectively another more efficient modulation scheme for ASM is designated with an effective date (expected effective date January 1, 2019) by the ITU World Radio Conference.

## Related documents

Saint Germaine WD02 Design Considerations for VDES

WRC-15 Agenda Item 1.16

Rec. ITU-R M.1371-5

Rec. ITU-R M.1842-1

RTCM SC121 (ASM)

RTCM 12301.1 (digital small messages on VHF channels)

FCC 2014 NPRM on Parts 80 & 95, WT Docket 14-36 (incorporates RTCM 12301.1)

# Background

During the IALA WG 3&4 Intercessional meeting held in Saint Germain En Laye, France from 14.03.31-14.04.04 a working document was produced to open discussion and begin developing design considerations for VDES.

Current understanding in the US is that 4 channel AIS radios could be used to move some of the ASM to the two ASM channels which would serve to improve ASM communications and to reduce VDL loading of AIS channels in high traffic areas. If this were implemented with software, it would enable 4 channel AIS radios to employ AIS modulation to use the additional channels. This scheme, along with the latest FCC rulemaking, would provide a way forward for the US during the ITU allowed test period for ASM and VDES.

# Discussion

CONSIDERING that two alternate channels for use of ASM could be approved in the US using the current modulation scheme;

ALSO CONSIDERING that radios do exist that could, with software modifications, transmit and receive ASM on alternate channels using GMSK modulation identical to AIS;

RECOGNIZING that future ASM modulation may be variant, possibly on a slot basis, but would most likely use the same AIS slot structure;

ALSO RECOGNIZING that future ASM would likely use an efficient modulation scheme identified in ITU-R M.1842, not necessarily GMSK;

HAVING NOTICED that ASM channels do not necessarily need to duplicate transmissions on both channels;

CONCLUDES

A transition from current use of ASM which utilize AIS GMSK modulation on alternate channels to future design use of ASM will be required;

# RECOMMENDS

IALA inform its members, and recommend to manufacturers, that the equipment software should constrain its operation, to require a software update to further its operation, after the effective date in accordance with the revised radio regulations for the use of the ASM channels.