



The challenge of VDES in space

Status on frequency allocations for VDE-SAT

VDES Conference 2017 – 13.02.2017

Outcome of WRC-15

- › WRC-15 allocated frequencies for VDE-TER and ASM
 - Opens up for VDE-TER communications
 - ▶ Shore-to-ship
 - ▶ Ship-to-shore
 - ▶ Ship-to-ship
 - Opens up for ASM communications
 - ▶ Shore-to-ship
 - ▶ Ship-to-shore
 - ▶ Ship-to-ship
 - ▶ Ship-to-satellite
 - ▶ Shore-to-satellite

- › WRC-15 did not allocate frequencies for VDE-SAT
 - Revised Resolution 360
 - VDE-SAT frequency allocations on the agenda for WRC-19

Resolution 360 (Rev.WRC-15)

› *resolves to invite WRC-19*

to consider, based on the results of ITU-R studies, modifications of the Radio Regulations, including new spectrum allocations to the maritime mobile-satellite service (MMSS) (Earth-to-space and space- to-Earth), preferably within the frequency bands 156.0125-157.4375 MHz and 160.6125-162.0375 MHz of Appendix 18, to enable a new VDES satellite component, while ensuring that this component will not degrade the current terrestrial VDES components, ASM and AIS operations and not impose any additional constraints on existing services in these and adjacent frequency bands as stated in *recognizing d) and e)*,

› *invites ITU-R*

to conduct, as a matter of urgency, and in time for WRC-19, sharing and compatibility studies between VDES satellite components and incumbent services in the same and adjacent frequency bands specified in *recognizing d) and e)* to determine potential regulatory actions, including spectrum allocations to the MMSS (Earth-to-space and space-to-Earth) for VDES applications,

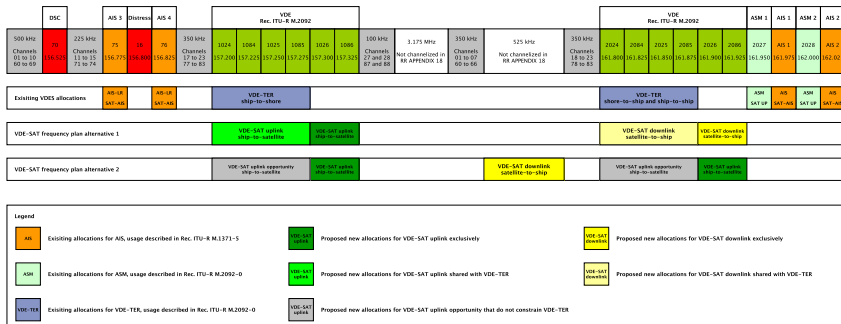
› *further invites*

all members of ITU-R, IMO, the World Meteorological Organization (WMO), the International Hydrographic Organization (IHO), the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA), the International Electrotechnical Commission (IEC) and the International Radio Maritime Committee (CIRM) to contribute to these studies,

WRC-19 Agenda Item 1.9.2

- › Resolution 360 will be handled under WRC-19 Agenda Item 1.9.2
- › ITU-R WP5B have started the required studies
 - WD Preliminary Draft New Report ITU-R M.[VDES-SAT]
- › IALA ENAV WG3 is contributing to these studies
 - Spectrum requirements and frequency plan
 - Technical description of the VDE-SAT service
 - Resource sharing methods for VDE-TER and VDE-SAT
 - Studies on interference to incumbent services
 - Studies on resilience to interference from incumbent services
- › Results from the studies have so far been promising
- › The report is expected to be approved by WP5B in November

Frequency Plan Alternatives



Conclusions

- › Frequency allocation for VDE-SAT is on the agenda at WRC-19
- › The required studies are ongoing in ITU-R WP5B
- › IALA ENAV WG3 is contributing to the studies
- › Two frequency plan alternatives are currently under consideration
- › Study results are promising so far
- › ITU-R WP5B is expected to conclude in November



Questions?



Thank you for the attention!