



# SAR/GPS III & SAR/GLONASS MEOSAR Downlink RF Interference Summary

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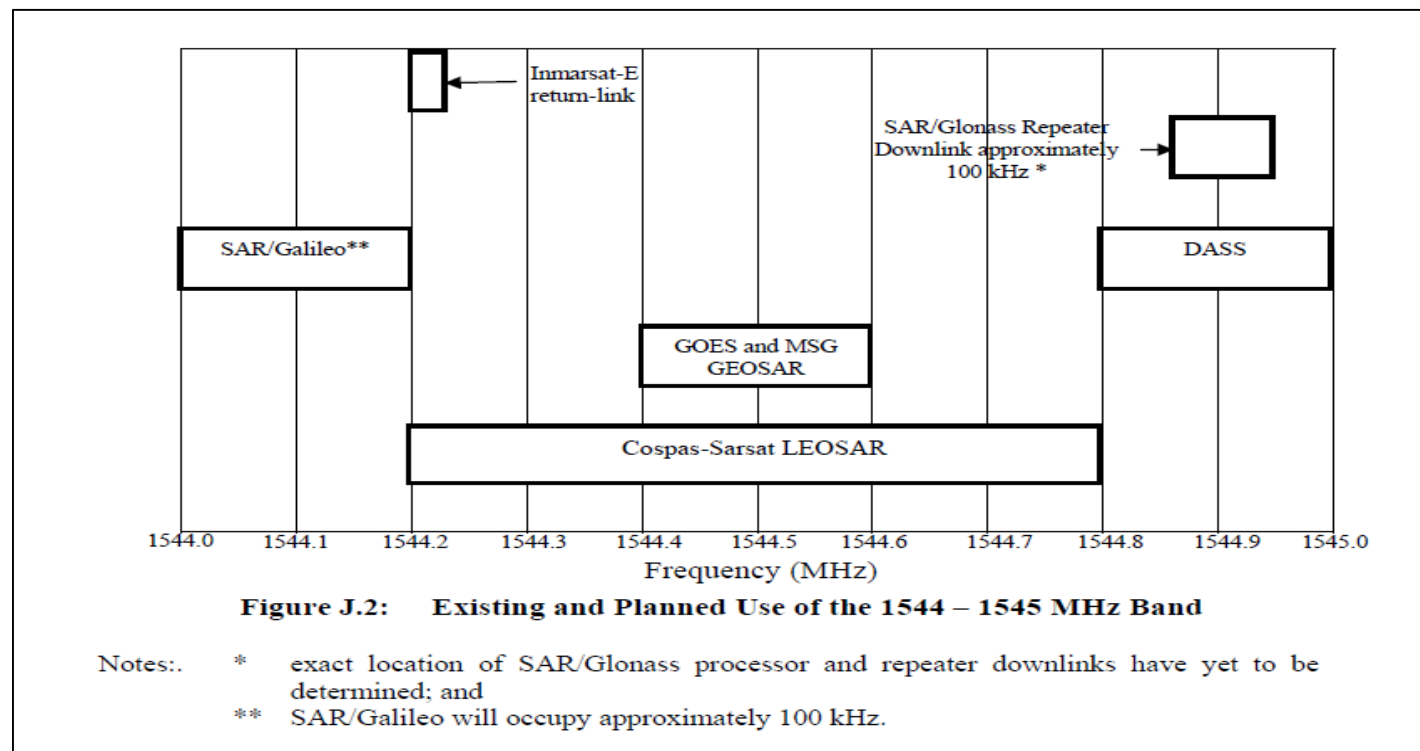


- Action from TG-1 for USA, Canada, and Russia to advance coordination between SAR/GPS and SAR/Glonass
- Proposed steps to resolve possible RF Interference between SAR/GPS III and SAR/Glonass L-Band Downlink (D/L) Frequencies
- Lessons learned from SAR/BDS and SAR/Galileo L-Band interference could provide potential resolution
  - LEOSAR needs to be part of the frequency coordination

## C/S T.014 – Cospas-Sarsat Frequency Management

- C/S T.014 is out of date and many SAR payloads have not been included into this document.
  - Need to coordinate with NTIA and ITU the GPS III D/L frequency assignment

**C/S T.014 Figure J.2**



- China/BDS agreed to change SAR/BDS transponder downlink center frequency to 1544.21 MHz to avoid overlapping downlink frequency with SAR/Galileo
  - Coordination included SAR/Galileo, SAR/BDS and LEOSAR
- Polarization Diversity remained unchanged
  - Galileo: LHCP
  - BDS: RHCP
  - LEOSAR: LHCP

# U.S. Preliminary Results



- C/S R.012 – Issue 1- Rev.13, Action Item 6.2 Ad Hoc meeting in Toulouse
  - *MEOSAR providers should study the issue of how many DASS and SAR/Glonass MEOSAR repeaters could be accommodated in the upper portion of the band without generating harmful interference to each other.*
- U.S. generated preliminary link budgets for SAR/GPS and SAR/Glonass to address:
  - Baseline (no interference) with weak C/N & nominal C/N uplink signal
  - Cases model interference with/without polarization isolation & frequency separation
  - SAR/GPS receiver bandpass bandwidth of 150 KHz need to be taken into account in the determination of the SAR/GPS D/L center frequency

# C/S T.016 L-Band RF Frequencies & Polarization



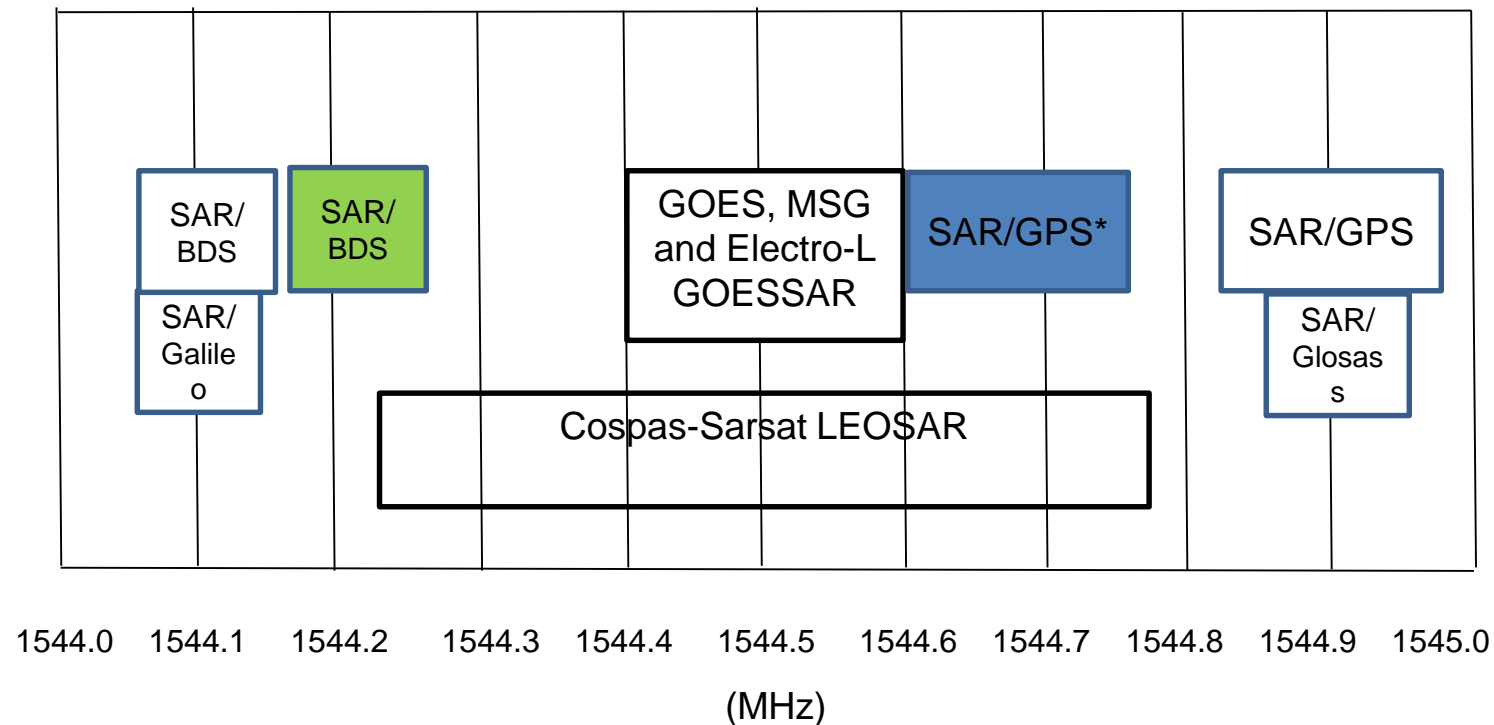
<i>MEOSAR Space to Earth Downlink</i>	Units	Galileo	BDS	LEOSAR	GPS III	Glonass
Polarization		LHCP	RHCP	LHCP	RHCP	LHCP
Frequency	MHz	1544.1	1544.2	1544.5	1544.9	1544.9

Note : C/S T.014 J.7 Glonass frequency to be determined, Annex H budget shows 1544.8 MHz

<i>Proposed MEOSAR Space to Earth Downlink</i>	Units	Galileo	BDS	LEOSAR	GPS III	Glonass
Polarization		LHCP	RHCP	LHCP	RHCP	LHCP
Frequency	MHz	1544.1	1544.2	1544.5	1544.675*	1544.9

\*TBR based on TG-1 ESA Proposal for Update to the Interoperability Requirements for MEOSAR Transponder  
28 June, 2018

# Proposal for Update to the Interoperability Requirements for MEOSAR Transponders



\*TBR based on TG-1 ESA Proposal for Update to the Interoperability Requirements for MEOSAR Transponder 28 June, 2018



- Path Forward:
  - Finalize analysis (orbit conjunction, link budgets)
    - Similar approach taken with Galileo/BDS D/L concern
  - Ad-hoc meeting required to discuss results
  - Present paper to C/S jointly (Canada-US)
  - Propose update to C/S documents at the appropriate JC meeting
  - Request amendment to NTIA and ITU filing