

# RNSS Spectrum Vigilance - Status

GPS Innovation Alliance

Presentation

To

PNT AB

December 8, 2016

## A Needless Force Multiplier Problem Impeding RNSS Spectrum Defense

- **European Common Allocations Table (ECAT) shows commercial GNSS PL--intentional interferers— “applications” in the RNSS band 1559-1610 MHz!**

1559 MHz - 1610 MHz (5.341)	<ul style="list-style-type: none"><li>• AERONAUTICAL RADIONAVIGATION</li><li>• RADIONAVIGATION-SATELLITE (SPACE-TO-EARTH) (SPACE-TO-SPACE) (5.328B) (5.329A) (5.208B)</li></ul>	<ul style="list-style-type: none"><li>• GPS</li><li>• GNSS Repeater</li><li>• GNSS Pseudolites</li><li>• GALILEO</li><li>• GLONASS</li></ul>
-----------------------------	---	--

- ECC Recommendation 11(08), the regulation addressing GNSS commercial PL, is incapable of use:
  - Without confirmation of PRN code assignments by National GNSS Operators—a key Rec 11(08) license requirement
- ECC Rec 11(08) should be withdrawn:
  - **This misleading recommendation misinforms proponents of future terrestrial applications as to the availability of spectrum in an RNSS band, when none is realistically available.**
  - Needlessly complicates RNSS spectrum defense.
  - Failing to remove Rec. 11(08) will require constant vigilance on the part of the world’s GNSS community.

## Withdraw ECC Recommendation 11(08)!

### Possible? **One Administration Changed “Yes” To “No”!**

- ECC status database: CEPT Administration(s) review of Rec 11(08)
  - “Implemented” by 14 Administrations so far
- **One Administration changed to “No” after being informed that a National GNSS Operator publicly:**
  - “. . .[d]oes not support civil/commercial terrestrial transmission in the GPS frequency bands due to the potential to degrade GPS performance”
  - Prompting a rhetorical question:
    - Could confirmation of GNSS PRN codes potentially imply some responsibility for commercial GNSS PL operating in the RNSS band?
- **It is troubling that CEPT Telecom Administrations lack this information:**
  - The USG could lead to:
    - Provide the National Operator’s position via the 2004 Joint Agreement to EU signatories, EC & CEPT
    - Seek to encourage, in cooperation with the EC, fully informed CEPT Administrations to also change to “No”.
  - **If Rec 11(08) is incapable of use, then this is a basis for withdrawal**

“GNSS – Is It Time For Backup?”  
Theme For 2017 Munich SatNav Summit

- Potential contradiction?
  - As European governmental organizations consider systems that provide backup for GNSS usually to help ensure against jamming and spoofing
  - Some CEPT Administrations are allowing commercial PL--harmful interferers (& potential jammers and spoofers)—in the RNSS band
- “Government users are also concerned that uncontrolled use of these devices [commercial PL in RNSS bands] might negate the trust in the use of GNSS and *therefore undermine the regulatory basis of **any** location-based applications.*” See ECC Report 168 at 16, 4.1.1.
- Thus, withdrawal of ECC Recommendation 11(08) is fundamental to a discussion of GNSS backup systems.

## RNSS L2 (1215 – 1300 MHz)

- Satellites in the Earth Exploration-Satellite Service (active)
  - May operate on a co-primary basis to RNSS in the 1215-1300 MHz band, but are effectively made secondary to RNSS in the 1215-1260 MHz segment of the band
  - Specific proposals for individual EESS (active) satellites are subject to case-by-case consideration between proponents and RNSS system operators.
  - Mechanisms for addressing potential aggregate interference to RNSS from multiple, overlapping EESS (active) satellites have not yet been developed in relevant technical fora (including the ITU-R and SFCG).