

IDM Task Force
Draft document

***Practical assessment
of electromagnetic and interference environment
at the measurement point in GNSS
frequency bands.***

Recommendation.
The results of the development.
Current version

Dr. Stanislav Kizima, ITU-expert
Dipl.-Ing. Egor Zheltonogov, Geyser-Telecom, Ltd

The purpose of recommendation:

The purpose of this Recommendation is to present a methodology of assessment of electromagnetic and interference environment at the measurement point in GNSS frequency bands

This methodology can be used for spectrum protecting and interests of assessment of propagation and reception conditions of GNSS signals

The recommendation taking into account:

1. *Peculiarity satellite navigation systems*
2. *Peculiarity frequency band of GNSS*
3. *Sensitivity of satellite navigation systems to the levels of electromagnetic noise and interference*

Direction of Recommendation:

- 1. Providing the solution of problems of monitoring of parameters of propagation medium and reception of GNSS signals.*
- 2. Operational analysis of electromagnetic situation at the place of assessment.*
- 3. Detection of high levels of electromagnetic background noise and interference of propagation and reception of GNSS signals.*

Potential users of the Recommendation:

- *Operators of GNSS and organizations of responsible for solving problems of spectrum monitoring in frequency bands of GNSS*
- *Developers of technical equipment, complexes and systems of monitoring of parameters of propagation conditions and reception of GNSS signals*

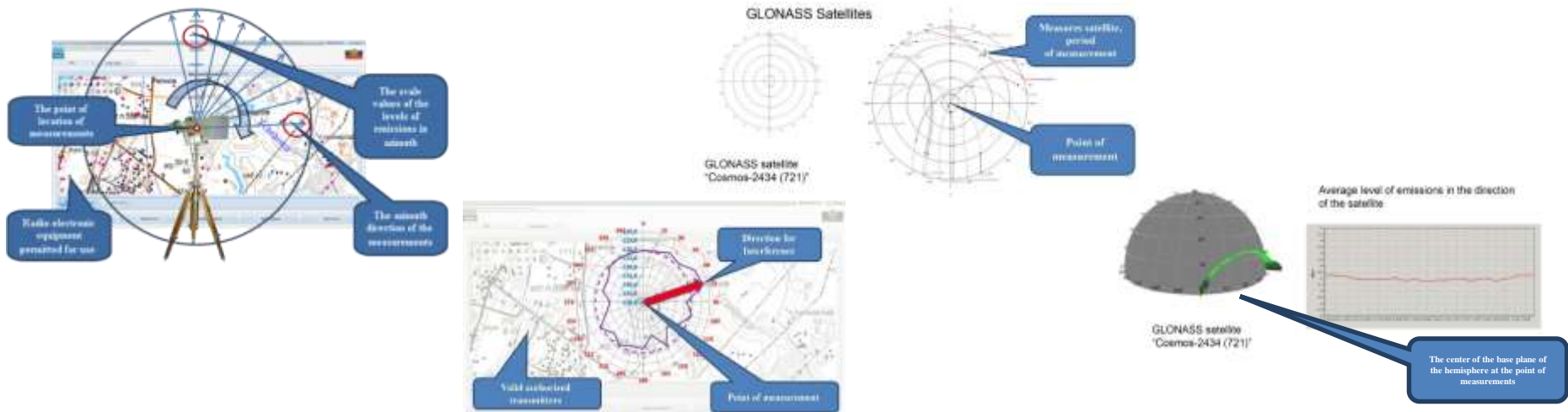
Novelty of Recommendation:

- The technology of Recommendation **works** in a large frequency band with the entire set of observed emissions (signals).
- **The source data** for technology of Recommendation is plenty of spectra in the azimuthal directions with many of observed emissions (signals).
- **The final result** of the technology of Recommendation are General estimates about the presence of unwanted radio emissions and interference to the reception of GNSS signals.

The main sections of the recommendations:

1. **General description of technology** of assessment of electromagnetic and interference environment at the measurement point in GNSS frequency bands
2. **Requirements for radio monitoring equipment** used to conduct measurements for the assessment of electromagnetic and interference environment in GNSS frequency bands
3. **A practical example of measurement and assessment** of electromagnetic and interference environment in a given frequency band at the point of measurements in the interest of spectrum protecting of GNSS

Final provisions



The first version of the draft document:

- Was presented at the meeting IDM Task Force
10 May 2017 – ICG, IDM Task Force, Baska, Croatia - Presentation
- Was sent for consideration to the participants IDM Task Force
31 May 2017 - ICG, Sending first versions to participants IDM Force
- Was sent for consideration to the participants ITU WP 1C
*7 July 2017 - ITU, Working Party 1C «Spectrum monitoring»,
Presentation of the project (first version) document in a Report format*
- Was refined according to received comments and suggestions
*July - November 2017 - receive of comments and modification of the
project document*

The first version of the draft document:

Received comments and suggestions to the draft document

Comments and the proposed changes in document

All received comments and suggestions – 36

Substantive comments and suggestions:

<i>Addition</i>	<i>Explain, clarify</i>	<i>Editorial corrections</i>
2	22	12

The second version of the draft document:

- Was sent for consideration to the participants IDM Task Force
16 Nov 2017 - ICG, Sending second versions to participants IDM Force
- Was presented at the meeting IDM Task Force
4 December 2017 - ICG, IDM Task Force, Kyoto, Japan – Presentation

The current version of the draft document:

- **Received a completely new improved translation of the draft document from the original language**

Is propose:

- ❖ To continue work on the draft document. New translation of the second version of the draft document it is proposed to adopt for further consideration by IDM Task Force participants.
- ❖ It is suggested that the current version of the draft document be considered for the next intersessional period and that comments and suggestions be made to improve the draft document.
- ❖ It is proposed at the next meeting IDM Task Force to consider the results of the work on the draft document.
- ❖ **In case later of positive decision IDM Task Force on the draft document it is necessary to offer the draft document for review and approval on WG-S**



International Committee on
Global Navigation Satellite Systems

Thank you for your attention