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ICG-14

Status of Interoperability-2030 Project

Working Group S

8-13 December 2019

Bangalore, India

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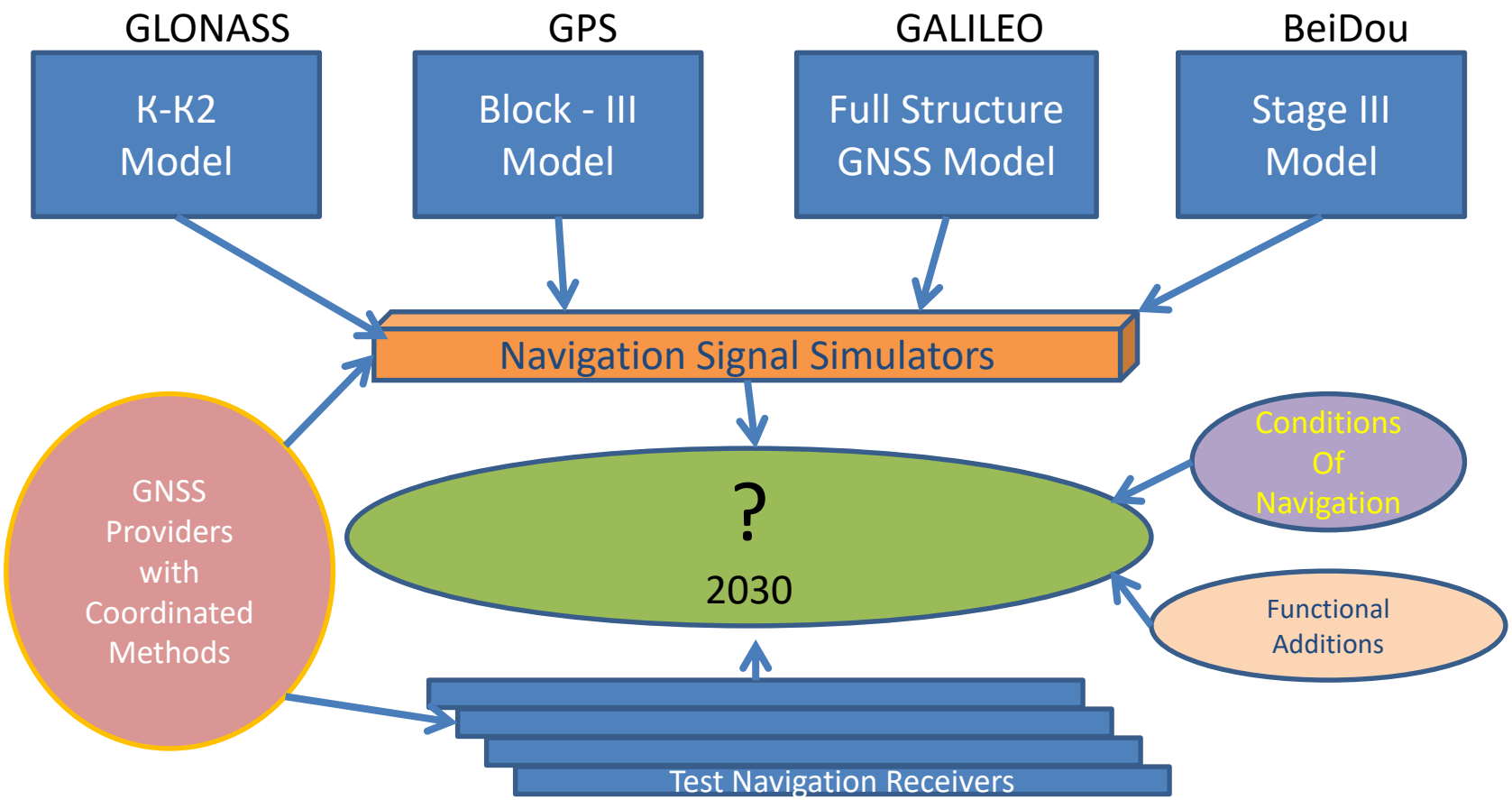
«Interoperability-2030» Project

On 12th ICG Meeting in Kyoto (Japan) in December 2017 and Intersessional ICG working group S meeting in Vienna (Austria) in June 2018 Russian delegation suggested to start «Interoperability-2030» Project Poll.

«Interoperability-2030» Project



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- GLONASS L1, L2, L3
- GPS L1, L2, L5
- GALILEO E1, E5
- BeiDou B1, B2
- SBAS L1, L5
- 432 universal tracking channels

RMS 2D:

Differential phase mode (statics) mm/km	5 mm + 1
Differential phase mode (statics) (RTK) mm/km	10 mm +1
Error of speed determination	0,02 m/s
Error of time tag formation	20 ns

As the model receiver at our national level the basic geodetic SN-7700 module, for example, as a part of the AMSA-2 smart antenna, was chosen

Poll carrying out

The purpose of poll is to organize collecting and analysis of basic data for forecasts and calculations of navigation receivers characteristics for the purpose of formation coordinated program and techniques for control of these characteristics and also their simulating model that can make a basis for creation for system of GNSS interoperability characteristics monitoring.

To the meeting participants and also all interested parties it was offered to answer some questions:

Poll Questions

1. **Whether there is a need for ensuring development of the standard on the model receiver to organize implementation of the action program such as the "Interoperability -2030" project?**
2. **Whether it is necessary to choose the unique operating mode for the receiver – stationary?**
3. **Whether it is necessary to choose several characteristic operating modes for the receiver:**

   stationary;

   the rectilinear movement with acceleration;

   circle movement;

   the movement in the conditions of shadings and re-reflections;

   other conditions (what?)
4. **Whether it is necessary to plan only simulating tests or to provide along with them also tests on real signals?**
5. **Whether have to be presented in the considered standard on the receiver along with characteristics as well techniques for tests?**
6. **Whether it is necessary to use any new parameters of interoperability in addition to already used parameters? If yes, are they will be operational or not operational parameters?**
7. **Whether the new special service of monitoring and assessment of GNSS has to be organized for compliance of interoperability characteristics to standard requirements to quality of signals taking into account requirements to the model receiver?**

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Working Group S Poll

Working group S Co-chairs agreed with need of holding similar poll and promised to distribute the list of questions among the group participants, members of the Committee and other interested persons for the purpose of receiving feedback from the international community.

At the time of holding the current 14th ICG meeting in Bangalore answers to questions are not received in fact.

Russian Poll

The Russian side has in parallel started the similar poll among the Russian enterprises regarding obtaining remarks and offers on a subject of the «Interoperability-2030» Project.

12 enterprises, the organizations and educational institutions from Moscow, St. Petersburg and other Russian cities participated in the poll.

We suggest to your attention the summary of data obtained as a result of the Russian poll.

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Russian Poll Results

The received poll results show interest of the Russian producers of the navigation equipment of consumers, users of services of the global navigation satellite systems, research institutes, educational institutions and other organizations in holding actions of the «Interoperability-2030» Project.

At the same time the idea of creation and use for tests of the model navigation receiver for the purpose of confirmation of interoperability characteristics and parameters for various GNSS is confirmed.

Russian Poll Summary (2)

For assessment and obtaining comparable test results have to be carried out with use of various characteristic for the receiver operating modes, both in the simulating mode, and in an operating mode on real signals. Along with the existing general criteria for evaluation of interoperability of various GNSS private indicators can be used as quick.

Techniques of carrying out tests have to be included in the developed standard.

Assessment of GNSS prospects for compliance of interoperability characteristics to standard requirements to quality of signals taking into account requirements to the model receiver can be executed by the existing services of monitoring of the GNSS parameters.

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Conclusions

Considering the received results, once again it would be desirable to appeal to the Working group S Co-chairs to distribute the list of questions among Group participants, Committee members the and other interested persons for the purpose of receiving feedback from the international community.

Poll results can help with development of the recommendation for the International Committee on GNSS on making decision on start for the «Interoperability-2030» Project.

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Conclusions (2)

Providers have to agree about the minimum international quality standards and have to agree to provide the signals conforming to these standards.

Standardization as basis for creation monitoring system for GNSS interoperability characteristics, is the main task of the offered «Interoperability -2030» Project.

The most important directions of researches determined use methods the complex high-precision, the interference-immune navigation receivers and work methods in the phase modes and also methods of protection against imitating interference.

The group members are invited to keep initiatives of our working group connected with use of the new equipment and get their suggestions on the work in these directions.

THANK YOU FOR ATTENTION !

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