

SISNeTlab



ESA Brings SBAS to the Classroom

WHAT IS SISNeTlab?

SISNeTlab is a new software tool that allows users to quickly and easily assess the performance of various SBAS systems. It gives the user a wide variety of functionalities and the graphs produced can help in comparing and better understanding the various SBAS systems.

The SISNeTlab project has been developed by ESA during the second half of year 2004. In February 2005, the beta version of the tool was launched, and the Tool was successfully tested. Since April 2005, the first version of the tool is available worldwide free of charge.

Figure 1 puts the SISNeTlab tool in context. This tool is based on the ESA EGNOS Message Server (EMS), a 24h/24h archive of SBAS broadcast publicly available via FTP. SISNeTlab downloads the data corresponding to the requested period from EMS, and performs various analyses on the information broadcast in the SBAS messages, presenting results in a graphical and easy to understand manner. This makes SISNeTlab a tool especially useful for the Educational community. Students can quickly learn about SBAS systems and understand the information broadcast by those.

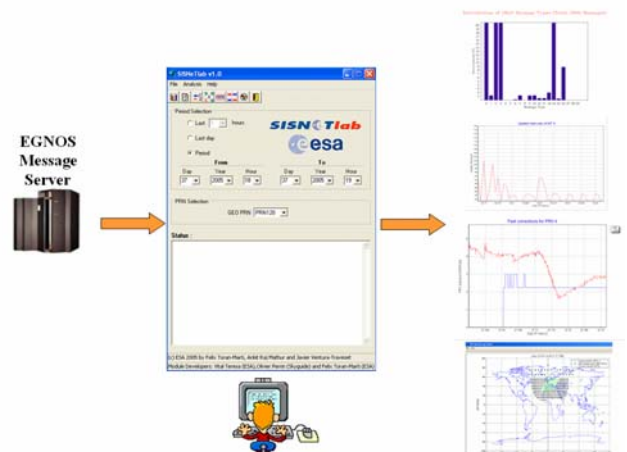


Figure 1. The SISNeTlab Tool in Context

WHAT are the Functionalities of SISNeTlab?

For any given SBAS Geostationary satellite, and for a selected period of time, SISNeTlab offers various analysis capabilities. These include:

- Distribution of messages
- Update intervals of each message type
- Number of messages lost, if any

- Different analyses at Ionospheric Grid Points
- UDRE and Fast corrections evolution over time
- Satellite monitoring status.

Distribution of SBAS Message Types (Total: 3600 Messages)

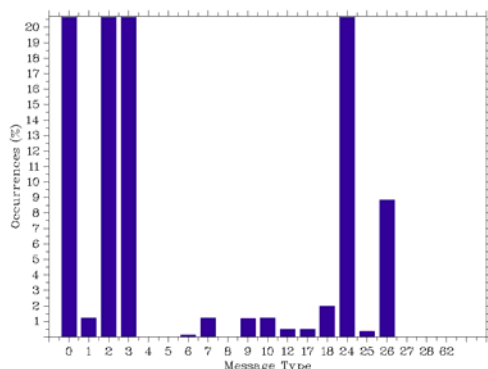


Figure 2. Distribution of SBAS Messages

WHO CAN BENEFIT FROM SISNeTlab?

For those users wanting to get a good background level in GNSS and SBAS performance monitoring, SISNeTlab will be the reference practical tool to complement theoretical knowledge. The typical terms, magnitudes and representation techniques, employed to measure the GNSS and SBAS performances (e.g. UDRE, GIVE, Stanford plots, etc.) will be better understood thanks to the practical experience with SISNeTlab. A wide user community of students and research scientists, Small Medium Enterprises (SMEs) and Engineers involved in the development and exploitation of the various SBAS systems would benefit from this tool.

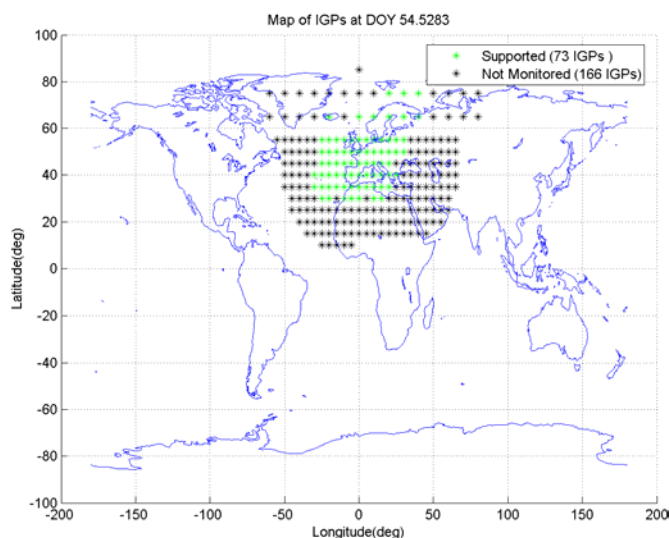


Figure 3. The Monitoring status of IGPs

HOW TO GET THE SISNeTlab SOFTWARE TOOL?

The SISNeTlab Software tool is available for free download from the ESA SISNeTlab Website <http://www.esa.int/navigation/sisnetlab>

WILL SISNeTlab BE FURTHER IMPROVED? CAN UNIVERSITIES CONTRIBUTE TO THIS?

ESA intends to further improve this tool for the benefit of European Universities and SMEs. A version 2.0 is planned before the end of 2005, including many more features and incorporating, as much as possible, user's feedback.

ESA has conceived SISNeTlab as a modular tool. Each functionality is implemented as an independent module, i.e. a Windows executable console program. SISNeTlab modules can be developed in any programming language of your choice (C++, Delphi, Python, Matlab, etc.). New modules can be developed and tested independently. Final acceptance and integration into the SISNeTlab User Interface is conducted by ESA Engineers.

If you are at a University and you are interested in expanding the capabilities of SISNeTlab through the development of new modules, please, do not hesitate to contact the SISNeTlab team at SISNETLAB@esa.int and send to us your proposal. This will be carefully analysed by ESA Engineers for its possible consideration.

Internet Resources

ESA Navigation Website	http://www.esa.int/navigation
EGNOS for Professionals	http://www.esa.int/navigation/egnos-pro
SISNeTlab	http://www.esa.int/navigation/sisnetlab
EMS ftp site	ftp://ems.estec.esa.int
SISNeTlab Team Contact address	SISNETLAB@esa.int

Contact the SISNeTlab Team

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