

SpacEarth Technology is a spin-off of Istituto Nazionale di Geofisica e Vulcanologia, INGV, currently the largest European research Institute in Geophysics and Volcanology.

SpacEarth Technology is composed by a team of engineers, physicists and geologists with a long involvement in research: Upper Atmosphere Physics, Space Weather, Satellite Navigation and Positioning, Environmental Geophysics, Marine Monitoring, Remote Sensing and Training. Realising innovative products and services is our goal thanks to the knowledge and technological transfer acquired from excellent research results. Via di Vigna Murata n. 605 00143 Rome - Italy Tel: +390651860396

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INGV spin-off SPACEARTH TECHNOLOGY

challenging the innovation





SPACEARTH T E C H N O L O G Y APPLICATION AREAS

With our expertise in several Geophysics applications, we offer highly customizable solutions in:

- Radio Propagation
- Space Weather
- High Precision GNSS
- Marine Monitoring
- Environmental Geophysics
- Data Management and Elaboration



HIGH PRECISION GNSS

The presence of the ionosphere poses threats on the availability and reliability of the precise positioning and navigation services. SpacEarth Technology is proud to introduce a series of solutions able to nowcast, forecast and mitigate the ionospheric impact on GNSS services. The major threats posed by ionosphere are gradients of Total Electron Content (TEC) and diffraction effects when the signal is received at ground (scintillation).

Mitigation on high accuracy positioning and navigation

An innovative GNSS-based service delivered through a software package consisting in:

• a patent-filed algorithm for short-term (from seconds to minutes) forecasting of ionospheric disturbances;

• mitigation algorithms to improve position accuracy based on the aforementioned forecasting algorithm.

Resilience is provided against harsh ionospheric conditions when such solution is integrated in precise positioning services like NRTK (Network Real-Time Kinematic)





PRODUCT	TIME SCALE	COVERAGE	APPLICATION
Scintillation nowcasting	Real-time	Local Regional Global	Early warning and identification of corrupted GNSS signals in real time
Range error nowcasting	Real-time	Local Regional Global	Improvement of the accuracy of single frequency positioning
Prediction of TEC	Long-Term (24 hrs) Short-term (30 min)	Local Regional Global	Operation planning for GNSS reliant services
Mitigation service	Real-time	Local Regional	Accuracy improvement on NRTK services