



OUR PLANET FROM SPACE

HIGH PRECISION GNSS FOR MARITIME SHIPPING, AGRICULTURE AND AVIATION

The presence of the ionosphere poses threats to the availability and reliability of the precise positioning and navigation services. SpaceEarth Technology, the INGV spin-off, 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 and diffraction effects when the signal is received at ground.

Main applications are:

- Maritime shipping in the Arctic
- Precision agriculture in Brasil
- Aviation

ISTITUTO NAZIONALE DI GEOFISICA E VULCANOLOGIA



OUR SOLUTION

A patented added-value product able to forecast the ionospheric parameters minutes in advance, providing a solution for agriculture, shipping and aviation.

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SPACEARTH TECHNOLOGY has introduced innovative GNSS-based products consisting in: a patent-filed algorithm for short-term (from seconds to minutes) forecasting of ionospheric disturbances along each individual satellite- receiver ray-path in the area of interest;

tools for nowcasting and forecasting of ionospheric status able to alert on different temporal and spatial scales; a mitigation algorithm to improve position accuracy based on the aforementioned forecasting algorithms.

When integrated in existing precise positioning services, like NRTK (Network Real-Time Kinematic), this solution provides resilience against harsh ionospheric conditions that limit GNSS applications.



Maritime Shipping in the Arctic

A highly accurate and robust GNSS precise positioning service for Arctic and sub-Arctic areas based on innovative forecasting and alerting models together with low power architectures designed for Arctic conditions.



GNSS High Precision Agriculture

A highly accurate and robust GNSS precise positioning service for equatorial areas based on innovative forecasting and alerting models designed for agriculture. Test cases are in Brasil.



GNSS High Precision in Aviation

Providing civil aviation with information on space weather that has the potential to affect communications, navigation and the health of passengers and crew.

SpacEarth Technology, a spin-off company of Istituto Nazionale di Geofisica e Vulcanologia, comprising a team of researchers, engineers, physicists, and geologists delivering executive solutions in Seismology, Environmental Geophysics, Remote Sensing, Satellite Navigation and Positioning and Training fields.

Our goal is to realize innovative products and services thanks to knowledge and technological transfer from excellence in research.



Use this code to access the dissemination materials on the INGV space-related activities

