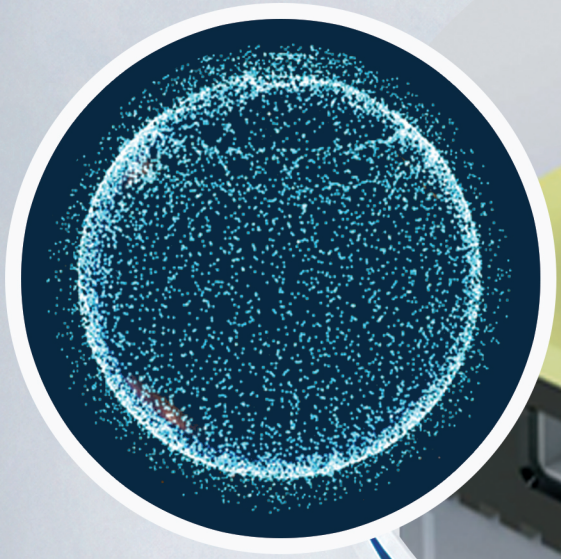



The AeroPos system

is a positioning system that uses signals from LEO communication satellites. To date, no commercially operational product based on this approach has been introduced worldwide. AeroPos is the first positioning system capable of operating independently of GNSS satellites.

- This system does not emit radio signals and is passive.
- The coverage area for this product is worldwide.
- The system is capable of continuous 24-hour operation.
- This product requires no external systems or initial data for positioning; it operates solely based on satellite radio specifications.
- The system output complies with the NMEA protocol and can be integrated with other navigation systems.

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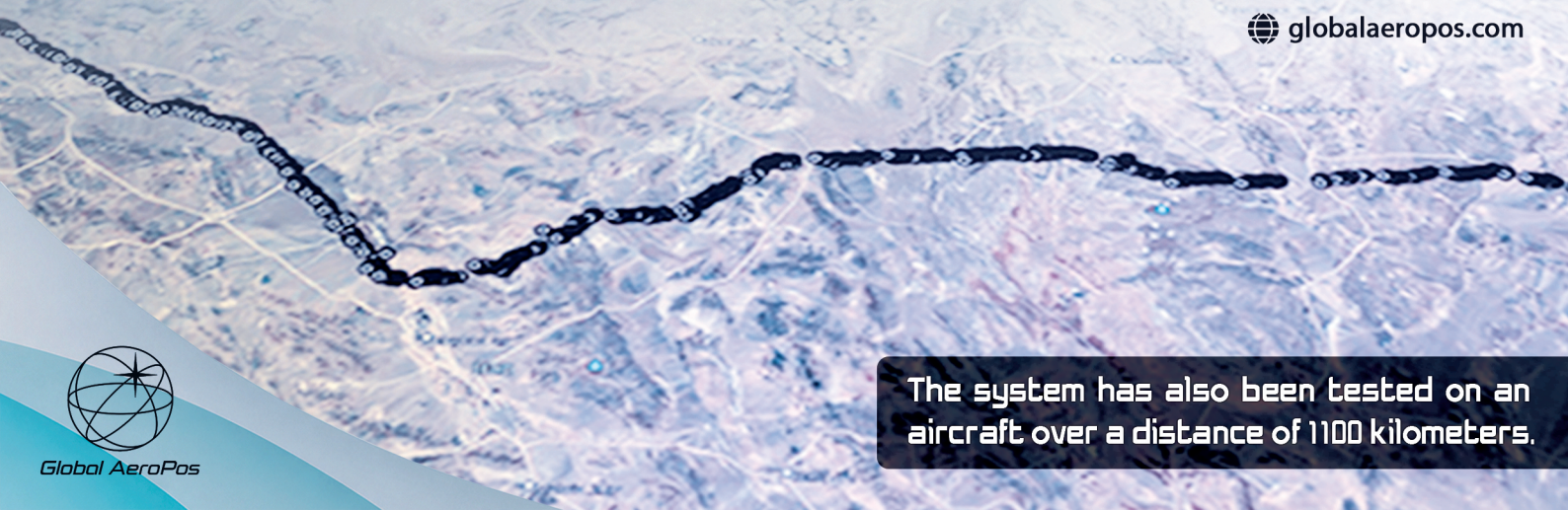

The system has also been tested on an aircraft over a distance of 1100 kilometers.

Global AeroPos

Technical specifications
of the system components

Global AeroPos

Parameter	Specification	Description / Remarks
Antenna	L Band Antenna	Applicable for marine (floating), aerial(UAV), and land mobile (vehicular) platforms
RF Receiver	L Band Receiver	–
Supported Speed	900 Km/h	Tested and verified up to 900 km/h
Output Rate	Every 2 seconds	–
Output Interface / Protocol	NMEA Protocol	Available via Serial (RS-232) and LAN (Ethernet)
Positioning Accuracy	0.75 Km	Average Circular Error (mean error) over a 1,100 km baseline distance
Enclosure (Housing)	IP68	Dust-tight and waterproof (continuous immersion)
Dimensions	4.8 × 9 × 10 cm	–
Operating Temperature	-10°C to +50°C	–

The system can act as a verification for common navigation systems and alert in case of their disruption or spoofing.

During the flight test, the duration was 8 hours, and the average position output interval was 2 seconds.

The average positioning accuracy of the system up to a speed of 900 kilometers per hour is 0.75 kilometers.

The integrated system consists of an antenna, an amplifier, radio frequency modules, and a processing card. The unit requires no additional interfaces or signals other than a primary electrical power feed for its operation

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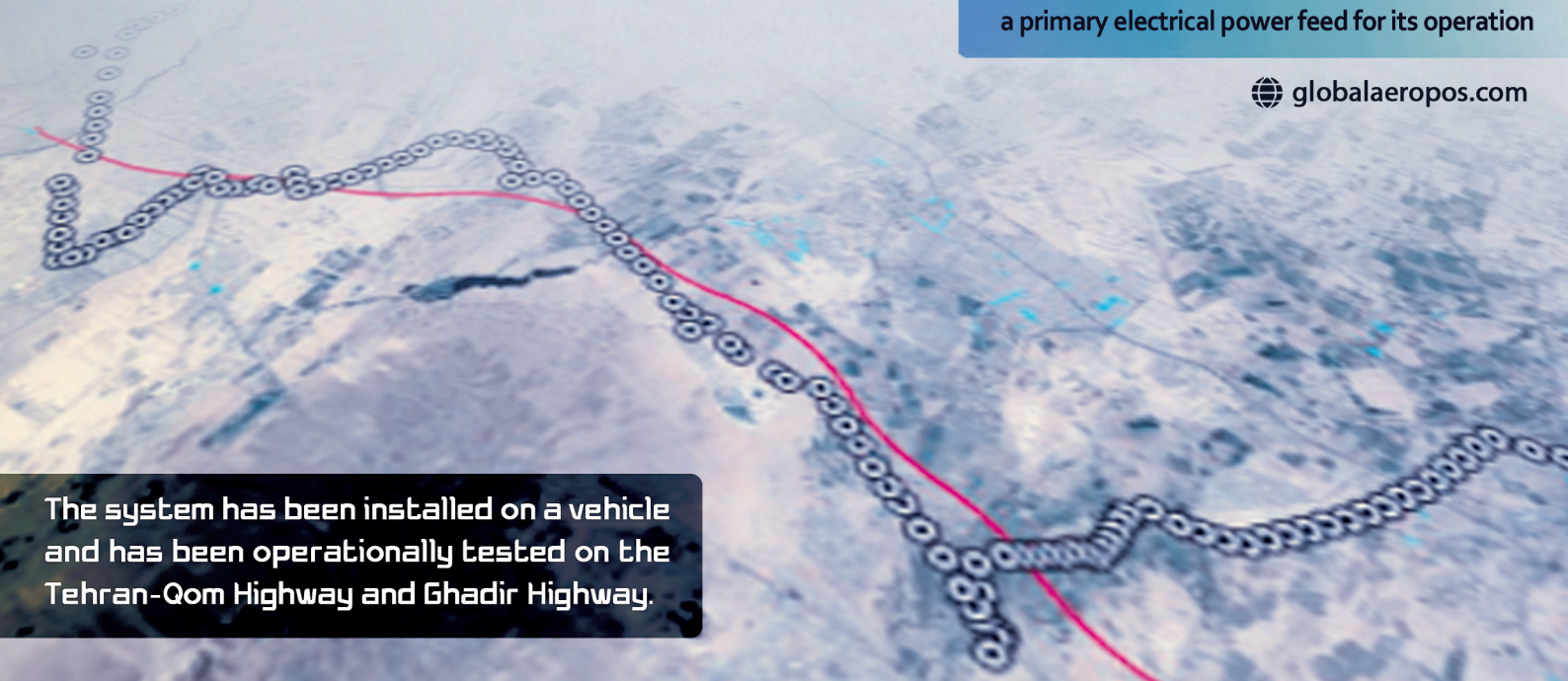

The system has been installed on a vehicle and has been operationally tested on the Tehran-Qom Highway and Ghadir Highway.