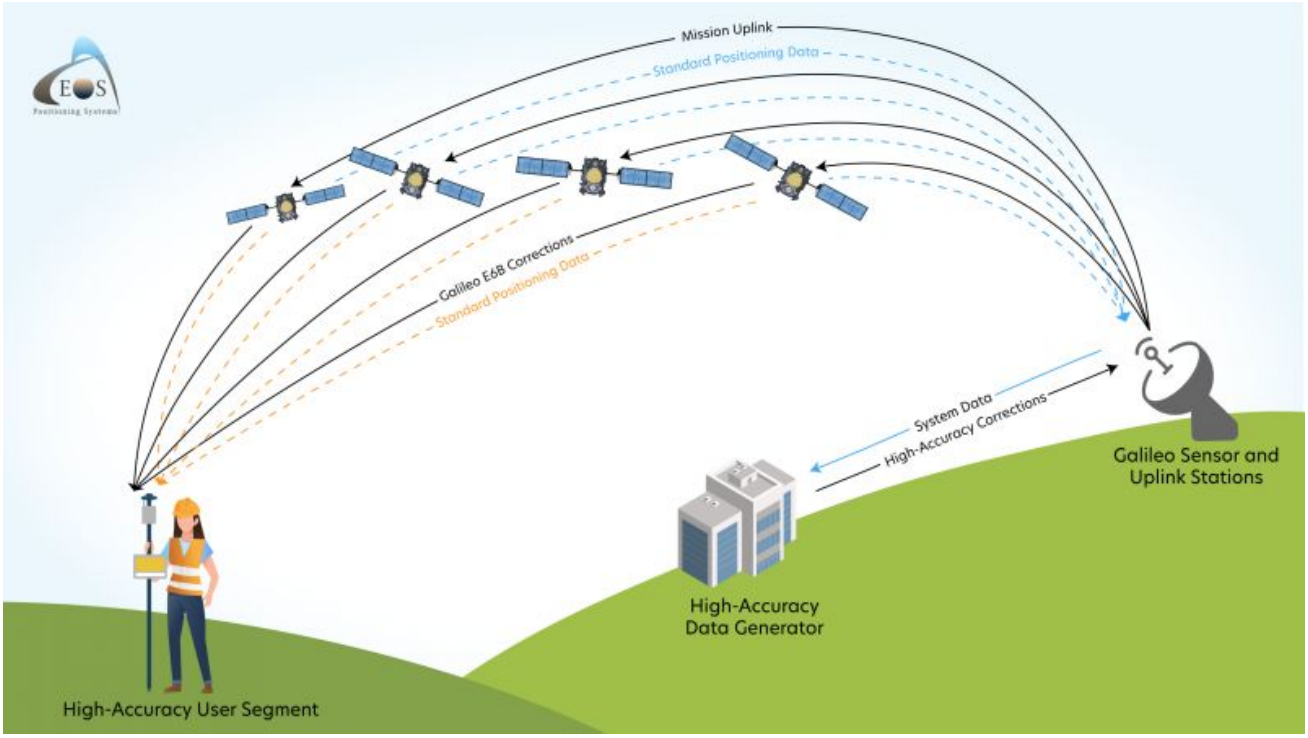
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Galileo Test Guides Tractor With Centimeter Precision

The European Union says the satellite system could help farmers cut fuel use and reduce waste in field work

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The European Union Agency for the Space Programme said on Thursday that tests of Galileo's High Accuracy Service showed the system can help farmers guide tractors with enough precision to reduce overlaps in planting, spraying and harvesting, a development that could lower fuel use and cut waste of seeds, fertilizer and other inputs.

The agency said the trial was carried out at New Holland's campus facilities in Peñarrubias del Pirón, in Segovia, Spain, in collaboration with the European GNSS Service Centre, Hemisphere GNSS and Case New Holland. The test used a tractor working over an area of about 20,000 square meters, with a perimeter of roughly 740 meters and a working width of 2.55 meters. Over three hours, the teams collected satellite navigation data to measure how closely the machine followed its intended path.

According to EUSPA, the tractor was driven in automatic mode, with manual steering needed only at the end of each pass. An independent antenna mounted on the cab fed two positioning systems: one based on Galileo HAS and another using RTK corrections, which served as a reference path for comparison. The Galileo corrections were received directly from space through the Galileo E6 band.

The agency said the results showed horizontal errors of 3-6 cm during the test. It reported a 95% horizontal error of 5.9 cm and a maximum value below 8 cm, both well within Galileo HAS's 20 cm horizontal accuracy target. On the vertical axis, EUSPA said the 95% error was 12.4 cm and the maximum stayed below 25 cm, compared with a target of 40 cm.

EUSPA also said pass-to-pass accuracy reached 1.18 cm, indicating that the tractor maintained a stable distance between adjacent passes. That measure matters in agriculture because it helps avoid gaps and overlaps when machines move across fields repeatedly during seeding, crop protection and harvest work.

The agency said the service is designed as an open correction system delivered through Galileo or over the internet with global coverage. It said that by improving guidance accuracy, the system could help farmers save fuel and reduce losses tied to repeated coverage of the same ground.

Galileo is the European Union's satellite navigation system. EUSPA manages its operational services, while the European Commission oversees the program and the European Space Agency handles system design and evolution.