

# China-based Entry among ESA Competition Winners

A team in The University of Nottingham Ningbo China's (UNNC) Department of Civil Engineering is the only China-based entry among the winners of a competition run by the European Space Agency (ESA). The competition involved accurately tracking and positioning using Europe's current satellites and was successfully entered by teams across the world.

The Department of Civil Engineering has a suite of [multi global navigation satellite system \(GNSS\) receivers](#) that continually track at least 30 GNSS satellites currently in orbit, including those operating on the Chinese BeiDou system. These receivers are used by academics, in collaboration with international companies and other organisations, to test and develop GNSS applications, and were used to fulfil the competition criteria.

GNSS receivers operate using a range of satellite systems, the most famous and widespread of which is the US system GPS. A huge range of technological applications rely on GPS from mapping apps on mobile phones and tracking devices in planes to monitoring the movements of engineering structures to millimetre-precise accuracies.

## Alternative GNSS

In order to challenge GPS' global dominance, the ESA and the European Union are currently developing their own GNSS, Galileo, which will provide an alternative high-precision positioning system upon which European nations can rely. The competition was launched in commemoration of the first anniversary of Galileo's first satnav positioning measurement. Currently there are only four operational Galileo satellites in orbit, but it is planned to have 30 by around 2020.

Gethin Roberts, professor of Geospatial Engineering in the Department of Civil Engineering at UNNC, said being amongst the winners of this competition is recognition of the skills and equipment currently available in the department – UNNC finds itself on a list with renowned institutions and organisations across the world, which is fantastic exposure for the work being done in Ningbo, Roberts added.

The fact that UNNC was the only successful China-based team demonstrates the unique set-up UNNC has, which allows it to work with companies and institutions across Asia to test future applications of multi GNSS, Roberts concluded.