

## Secure Tracking Services

# S-TrackS: reliable positioning evidence

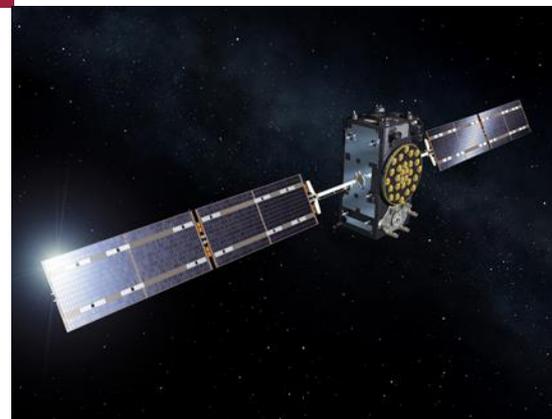
CGI is developing Secure Tracking Services (S-TrackS), which use Galileo, the European Global Navigation Satellite System. These services make positioning 100% reliable and robust. S-TrackS can provide evidence that a position is misleading and will be useful for many more applications. Learn more about the versatile S-TrackS for secure and reliable positioning data.

It sounds like something from a crime novel – via manipulated navigation signals, a cash transport is sent to a remote location where it is attacked by robbers. Fiction? No, this is known as *spoofing* (i.e. the intentional falsification of a location signal). Satellites send navigation signals a long way from the earth, so their signals are relatively weak and can easily – and unnoticeably – be spoofed. The signals' weakness also makes them vulnerable to *jamming* (i.e. interference of the signals).

### GALILEO AND S-TRACKS

The introduction of the European Global Navigation Satellite System, Galileo, makes it possible to securely pass on a navigation signal. Galileo is the European alternative to Global Navigation Satellite Systems (GNSS) such as GPS (US) and BeiDou (China).

It offers 3 different services including a unique Galileo Public Regulated Service (PRS) which sends a highly robust signal via the Galileo satellites. However, the PRS service is available only for government-authorized users and specific security measures and procedures need to be in place before using it. This restricts the possible use of secure PRS in applications because organisations cannot meet the security requirements imposed by the government. For these users, CGI's Secure Tracking Services (S-TRACKS), provides a robust and reliable service that allows the use of GNSS signals as legal evidence on positions or position tracks. It also could provide commercial advantage by providing reliable timed data on the whereabouts of a company's assets.



### FACT SHEET

#### SECURE TRACKING SERVICES: USERS AND APPLICATIONS

S-TrackS is a solution for applications in situations where the owner, transporter or operator of an asset:

- has commercial interests in being able to provide reliable evidence of their historical position or route to prevent time-consuming or labour-intensive inspections (e.g. by customs authorities)
- needs reliable evidence of their position or route in order to activate licences, or as a protection against liability (e.g. for insurance companies)
- has interests in detecting *spoofing*.

## HOW DOES S-TrackS WORK?

S-TrackS receives and processes the GALILEO PRS signals by capturing the secure PRS signals from space, storing them and forwarding them to a central server. This server then validates the incoming signals and can tell whether the positioning or track data is consistent with the expectations.

Validated data can be received at configurable intervals that have been defined by the client. Once the data have been validated, it can be trusted 100%. The service provides a proven record of historical GNSS positions.

This service can be used to authenticate the positions or tracks of a company's asset (e.g. a cash transport or cargo ship) based on the well protected Galileo service. This makes it a perfect *anti-spoofing* system.

## UNIQUE FOR THE NETHERLANDS

European countries are specifically arranging their PRS for their own use. For the Dutch market, S-TrackS is a unique solution that has been developed thanks to CGI's knowledge in the field of transport & mobility and space combined with the company's expertise in the area of security. The applications' possibilities are endless. From sea, air and road traffic to renting equipment (such as boats, airplanes and cars), and from the electronic identification of individuals to road pricing – when it comes to reliable positioning, S-TrackS provides solid evidence that will hold up in court.

## TWO CASES

One could think of numerous situations where it is important to be able to provide reliable evidence of positions or routes of an asset or a person. CGI is currently studying two application possibilities.

The first one is a 'customs' case. As soon as a ship that has left the European territorial waters, returns, it has to be cleared at the first harbour – a time-consuming process. But how do you prove that your ship has remained in the European territorial waters?

S-TrackS can deliver the conclusive evidence.

The second case is not about assets but people – to be precise: people who are not allowed to leave (house arrest) or enter (restraining order) a certain area. This is an interesting case, as it also challenges us to develop a device that is easy to carry. Following a person via open GNSS signals, such as GPS, does not provide any legal proof of this person having violated the restraining order. The Court will then rightly ask whether the data are at all reliable. S-TrackS is able to validate and authenticate the data, which does make them 100% reliable. There has been no test case yet, because S-TrackS can be used only as soon as Galileo has become operational (early 2017). S-TrackS is expected to be fully available for parties, commercial or otherwise, in 2019.

For more information, go to [www.cginederland.nl/space](http://www.cginederland.nl/space) or email us at [info.nl@cgi.com](mailto:info.nl@cgi.com).