

*Press release*

## **GPS-free positioning for the Internet of Things.**

**Neuchâtel, Switzerland, 21 July 2016 – CSEM has proposed the first commercial solution based on Semtech's LoRa® technology for GPS-free geolocation of connected devices. This technological breakthrough allows the geographical tracking of LoRaWAN™ end-nodes without any material impact on bill of materials or battery life, and will help enhance the industrial development of Internet of Things (IoT).**

The use of LoRa, the ultra-low power wide-area RF technology for IoT applications, is growing rapidly worldwide, and the LoRa Alliance™ today counts over 330 members. Semtech, developer of LoRa, recently announced the addition of geolocation functionality, which is compatible with all LoRaWAN end-nodes and second generation gateways.

### **Geolocation at the heart of IoT**

According to Machina Research, more than half of IoT applications will need geolocation, in particular applications such as Smart cities, asset tracking and agriculture. However up until now only GPS was available, which is often incompatible with the low-cost, long battery life needs of LoRaWAN nodes. To meet this challenge CSEM, the Swiss research and technology organization, worked with Semtech on a LoRaWAN network deployment in Neuchâtel, Switzerland. CSEM, a member of LoRa Alliance, applied a state-of-the-art statistical algorithm to Semtech's time-difference-of-arrival (TDOA) approach to calculate the position of LoRaWAN nodes. This statistical approach, while more robust than other types of solvers, also integrates motion models to allow the tracking of moving objects. The pilot deployment used for development and testing of the solver was composed of 10 gateways located in and around the city of Neuchâtel. As a result, CSEM today has announced its own LoRa-based solver allowing tracking of any LoRaWAN node using existing second generation hardware.

### **Low-power solution available today**

“Low-power geolocation is key to the expansion of IOT networks” explains Alain-Serge Porret, VP Integrated and Wireless Systems at CSEM. “With this solution, CSEM was able to apply its large expertise in geolocation and low-power wireless networks”.

The geolocation solver is available under license from CSEM, and can be adapted and optimized for specific client requirements and applications. The availability of low-power geolocation offers exciting new perspectives for the continued massive growth of the IOT.

## Additional information

### CSEM

Simon Gray  
Tel. +41 32 720 5080  
Fax +41 32 720 5763  
E-mail: [sga@csem.ch](mailto:sga@csem.ch)

## About CSEM

### CSEM—technologies that make the difference

CSEM, founded in 1984, is a Swiss research and technology organisation (public-private partnership) specializing in microtechnology, nanotechnology, microelectronics, system engineering, photovoltaics and communications technologies. Around 450 highly qualified specialists from various scientific and technical disciplines work for CSEM in Neuchâtel, Zurich, Muttenz, Alpnach, and Landquart.

Further information is available at [www.csem.ch](http://www.csem.ch)

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## About Semtech

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## Media contact

### CSEM

Florence Amez-Droz  
Corporate Communication Manager  
Tel. +41 32 720 5203  
Mobile: +41 79 311 5116  
Email: [florence.amez-droz@csem.ch](mailto:florence.amez-droz@csem.ch)