Thales partners with Quebec startup OSCP to develop technology for autonomous trains

- Thales and OSCP (One Silicon Chip Photonics) have joined forces to develop a positioning device based on optical inertial technology to enhance autonomous train positioning.
- The solution will be piloted with Thales’ Train Autonomy Platform and enhanced with 5G positioning capabilities.
- This project is supported by ENCQOR 5G (the Evolution of Networked Services through a Corridor in Quebec and Ontario for Research and Innovation program), fostering innovative Canada-Quebec-Ontario partnerships in the field of 5G wireless technologies.

OSCP’s gyroscope chips integrated on an eight-inch silicon wafer are a key part of the inertial Measurement Units (IMU). Photo: OSCP

Montreal, August 26, 2021 - Thales, a global technology leader, has teamed up with a Montreal-based technology startup to help shape the future of autonomous rail technology.

Supported by the ENCQOR 5G program, the partnership between Thales and One Silicon Chip Photonics (OSCP) aims to test a high-performance optical inertial sensor system on an autonomous train platform.

Thales is one of the five global technology leaders of ENCQOR, providing access for small to medium enterprises to showcase their innovations and 5G technologies alongside industry leaders.
The goal of this partnership with OSCP is to develop sensing and navigation capabilities that can be deployed in semi-autonomous and autonomous vehicles in urban and mainline rail environments.

Thales and OSCP will develop an Inertial Measurement Unit (IMU) prototype which will be tested onboard the Thales Train Autonomy Platform. When combined with 5G capabilities, the embedded IMU will allow Thales to track the location of the autonomous train platform even when operating in complex zones where global navigation satellite systems cannot provide adequate performance for navigation.

Over the next nine months, the IMU system will be tested in a field environment. The project will conclude with a demonstration at the York-Durham Heritage Railway test site, in Uxbridge, Ontario to confirm the capacity of the system to provide an accurate position when integrated on a rail vehicle.

“The partnership with Thales and OSCP will allow autonomous rail technologies to be further enhanced, enabling smarter, safer, greener and more advanced systems to be developed here in Canada. We are delighted to partner with OSCP on this exciting project, and Thales will continue to be a strong supporter of the ENCQOR program.” – Walter Kinio, Vice President Research and Innovation, Thales.

“We are proud to partner with such a respected IMU market leader as Thales, with their world-class expertise in autonomous train positioning. Our proprietary Photonics Integrated Circuits (PIC)-based IMU technology will be demonstrated on a Thales platform as a more accurate lower cost alternative to existing market solutions. We are grateful for the generous support of ENCQOR to enable potential collaborations such as this for Quebec-based companies.” – Kazem Zandi, CEO of OSCP.

“ENCQOR is very happy to support this partnership between Thales and OSCP through its state-of-the-art test bed and 5G network. This project is a very good example of a collaborative approach to ensure the accelerated development of a new, very promising solution. The optical inertial measurement unit jointly developed by Thales and OSCP is expected to have a significant impact in the deployment of autonomous and semi-autonomous vehicles used in particular in public transport and the rail sector.” – Pierre Boucher, General Manager of ENCQOR.

**About Thales**

Thales (Euronext Paris: HO) is a global leader in advanced technologies, investing in digital and “deep tech” innovations – connectivity, big data, artificial intelligence, cybersecurity and quantum computing – to build a confident future crucial for the development of our societies. The Group provides its customers – businesses, organisations and governments – in the defense, aeronautics, space, transport, and digital identity and security domains with solutions, services and products that help them fulfill their critical role, consideration for the individual being the driving force behind all decisions.

Thales has 81,000 employees in 68 countries. In 2020 the Group generated sales of €17 billion.
About Thales Canada

A Canadian leader in research and technology, Thales Canada combines over 50 years of experience with the talent of more than 2,200 skilled people located coast-to-coast. With revenues of over $535 million, Thales Canada offers leading capabilities in the defence, urban rail, civil aviation, digital identity and security sectors, meeting the most complex needs and requirements of its customers across all operating environments.

About OSCP

OSCP is an OEM start-up building the next generation of IMUs and INSs for autonomous vehicle market. With its cutting-edge integrated photonics-based technology, OSCP is disrupting the high-end IMU market by introducing a compact, scalable, power and cost efficient solution.

About ENCQOR 5G

The program's mandate is to bring together SMEs and the academic community to contribute to the advancement of research, innovation and application demonstration through a 5G pre-commercial testbed. ENCQOR 5G has five innovation hubs located in Ontario and Quebec, offering a 5G platform where SMEs can develop and test new solutions.

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