NAVISP INDUSTRY DAY

DRACONAV

January 18th 2019

FDC in a Nutshell

Services

- Business Consulting & Management
- Technology Consulting
- Research, Development & Innovation

Fields of Expertise

- Space Programmes and Applications
- Security

Key facts & figures

Founded in 1989
HQ in Vincennes, France

Financially & legally independent

Turnover ~ 3 M€

R&D intensity ~ 20%

20 employees

DRACONAV at a Glance

Secure GNSS Module for Intelligent Transport applications

- Provide **Confidence** and **Trust** in **Position, Navigation and Time**
- **Protected against cyber-attack**
- Deliver **authenticated information** to application

- Four main tasks:
  - Hardware design update
  - Firmware and software update
  - Pilot series manufacturing
  - Certification preparation and tests

- Duration: 14 months

DRACONAV (DNAV) Module Briefing

Security is the key Module differentiator

- Mono-frequency L1 Multi-GNSS engine
- Advanced GNSS signal attacks detection and mitigation algorithms (Jamming/interference, Spoofing detection)
- PVT Level of Confidence (LOC) and type of attack indicators
- Estimate of true position under attack (dead reckoning support)
- Firmware and hardware integrity control
- Secure memory for sensitive data
- Secure firmware upgrade and module configuration
- Secured NMEA stream data (digitally signed)
- Fully compliant with Smart DT ISO7816-4 protocol

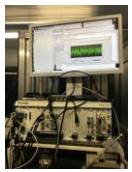
Leveraging on the H2020 FOSTER ITS Project Legacy

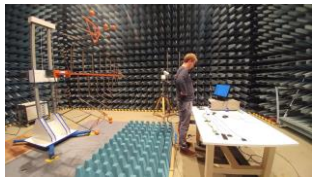
Purpose

Design and develop a **secure GNSS module prototype** to improve **resilience** and **trust** in navigation for **Intelligent Transport System** applications.

Achievement

- TRL 7 GNSS module prototype focusing on **GNSS attack detection & mitigation** and implementing **IT security**
- Deeply tested by FDC (more than 3000 kms of field test) and with JRC at EMSL lab
- Experimented in real environment



Supported by:

European Global Navigation Satellite Systems Agency

FDC

life.augmented

NOVACOM SERVICES

NavCert

– FOSTER ITS ended-up in July 2018 with a validated module prototype

– **NAVISP** appeared as a relevant tool to quickly move to the **industrialization phase**

DRACONAV Objectives & Expected Outcomes: The **Main Challenges**

Hardware Optimisation & Design Update

- Size and weight reduction
- Bill of Material optimisation

Test Bench & Module Personalisation Process

- Tailored to the DNAV module and allowing security personalization
- Allowing parallel testing

IT System Development

- Implementing the whole security lifecycle
- Producing key and personalization data
- Ensuring Accounting

Pilot Series Manufacturing

- Developing an automatised production process tested with a representative quantity of samples

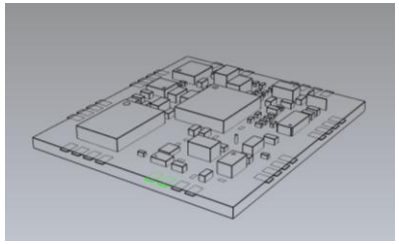
Test & Certification

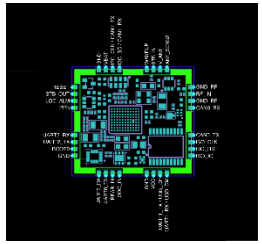
- Preparing Automotive grade, Security (CSPN), RED and CEM

Results achieved so far

Hardware design update

- Schematic & BOM: **Completed**
  - BOM optimization: 22,5% Gain
- PCB Layout design: **Completed**
  - 45% Footprint gain
- RF shield enclosure design **completed**
- Test bench specification **on-going**





Software design update

- Security policy: **on-going**
  - First version released
- IT system: **on-going**
  - Specification finalised
- Firmware & software update: **on-going**

Pilot series manufacturing

- Components procurement: **completed**
- Manufacturing in Europe

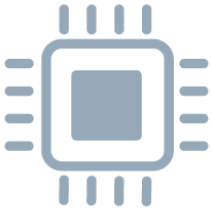
Test and certification

- Security certification: **on-going**
  - Framework under analysis

Way forward

With NAVISP

- **Mid Term Review** planned in February 2019
- **Test bench** and **Information system** development are our current priorities
- Validation of the **manufacturing process**



Beyond NAVISP

- DRACONAV commercially available **second half 2019**
- Marketing and Commercialisation
- Expand the **range of applications**
- Roadmap for DRACONAV evolution: OS-NMA, multi frequency … And always **more secure** !

Thanks for your Attention !

Contact

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