

ValSmart : at the heart of a project

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ValSmart

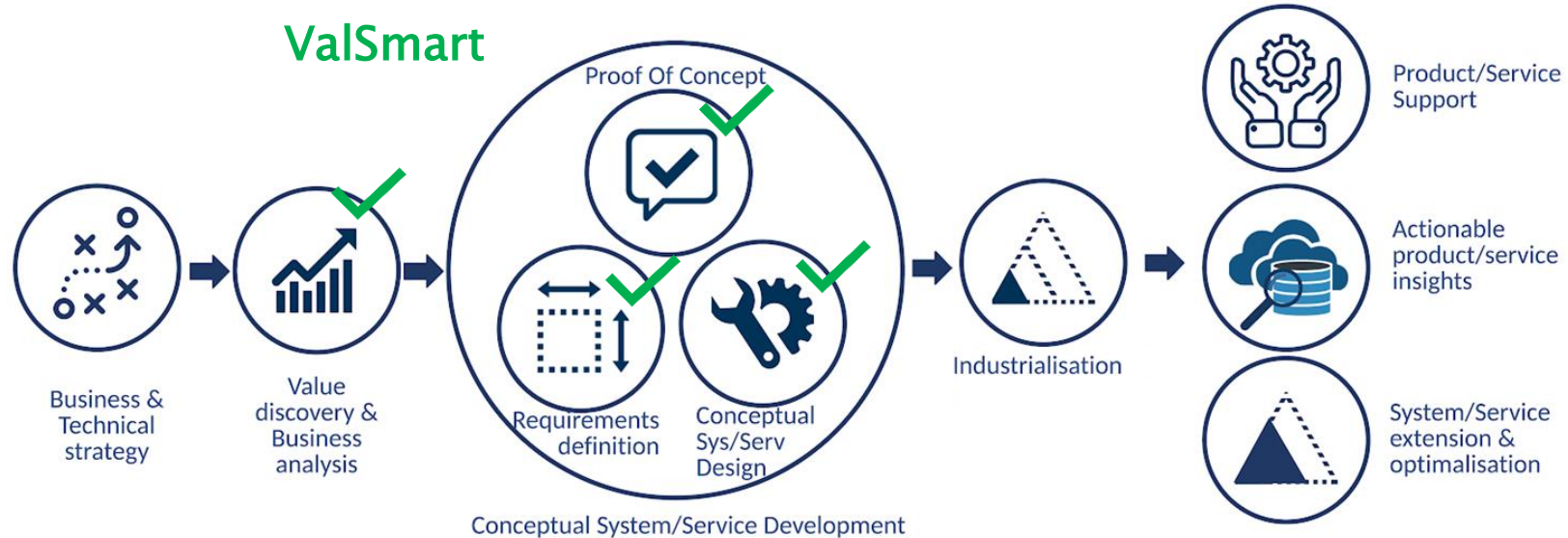
- “Valorisation of the full potential of Smart interconnected products”
- Partners : Sirris and Hahn–Schickard
- User Committee : Belgian/German SME
- Start date : 1 / 04 / 2018
- End date : 31 / 03 / 2020

ValSmart research project

- Main objective :
 - Define a methodology/set of resources for entrepreneurs
 - To evaluate full potential of value creation vs costs for a focused set of smart product configurations
 - Through tools/platforms/'building blocks' designed for PoC/mockups development & hypothesis validation
 - And contributing documentation to help addressing all projects specifications and requirements/costs before industry take-over and development
- But also raise Sirris/HS knowledge in the field of Smart Products/IoT, disseminate to SMEs

« Smart product » development cycle

ValSmart



Expected results for SME

- Lower entry barriers
- Better assess smart product opportunities and configurations before making a decision
- Orientate about efforts, costs and benefits to turn a physical product into a smart product
- Speed up analysis process through guidance

Technical progress summary

- Almost all WPs are completed, only subject to minor changes
- Focused on finalizing the three demonstrators to support ValSmart project
- And entering dissemination phase early 2020

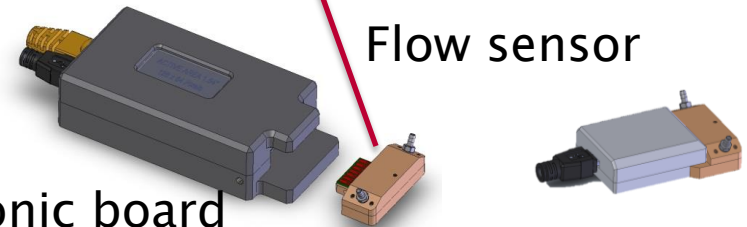
1. ValBOX demonstrator

- 5« ValBOXes » will be developed
- Integration of needs coming from user committee scenarios (sensors, connectivity, components (battery, antenna...), ...) –
- 7 sensors, 1 actuator, 7 connectivity options
- Showcases :
 - PoCs development (connectivity, data processing, enclosure design,...)
 - Demonstrate IoT platforms (data collection, visualization, valuation, fleet management)
 - Explore the digital twin (AR/VR)



2. Peristaltic pump with integrated flow sensor

- **Goal:**
stable flow rate due to an optimized pump control for increased quality of PCR analysis
- **Metrics: Flow sensor integration & Miniaturization**
 - Disposable
 - 5 $\mu\text{l}/\text{min}$... 3 ml/min
 - rapid reaction time
 - USB & BLE connectivity



Electronic board

Flow sensor

3. Environmental Information System (EIS)

- **Goal:** Monitoring the room climate
- **Metrics/Sensors:**
 - 2D airflow (i.e. cleanroom environment)
 - Air temperature, pressure, humidity
 - Light intensity
 - Orientation
- **Connectivity:**
 - USB
 - 6LoWPAN or Bluetooth LE
- **Power supply:**
 - Battery, rechargeable via USB
 - External power supply



SME User Committee

- 10 SMEs in BE User committee
- 6 SMEs in GE User committee

- 18 individual meetings
- 3 user committee and 1 bi-national meetings

- Note : Strong complementarity of UC

Dissemination

- Through 1–1 and UC meetings during the project
- Mostly at the end of the project (2020) :
workshop, masterclass, individual closing meetings

Exploitation perspectives

- At Sirris :
 - Masterclasses and sessions to disseminate
 - Provide tailored services for SME that do not have in-house skills or wish to be coached
- At Hahn-Schickard :
 - SMEs are interested to turn their own physical products into smart IoT products. Higher TRL levels (>5) are reached in directly commissioned follow-up projects

Our successes

- Transregional collaboration :
 - Exchange about different topics : IoT platform benchmarking, sensors types, electronics, UC use cases,...
 - Experience sharing
 - Cross-visits in Belgium and Germany
 - Shared demonstrators
 - First research project between Sirris & Hahn-Schickard : another one is in progress (InsightProducts), two others were submitted (DigiMould/RealPrintt). We build trust and LT relationship.
- Strong interest of the user committee with very positive feedback on achievements.

Lessons learnt

- Good to have complimentary companies but not that easy to get them together
- UC companies were not taken from the value chain but from different applications perspective