The sensing-liquid enterprise industrial applications in OSMOSE

Workshop: IoT for the Sensing Enterprise: challenges and achievements

June 4, 2016

IOT Week 2016 - Belgrade June 2016, 1st

Michele Sesana
(michele.sesana@txtgroup.com)
PROJECT FIGURES

Full name: OSMOsis applications for the Sensing Enterprise
Grant Agreement: 610905
Call: FP7-ICT-2013-10
Project Partners: 9
Budget: 4.6 mil €
Duration: 36 months
Our focus

• Let’s focus on complex systems (flight simulators)...
• After sales management...
• **How can you improve Customer satisfaction?**

• **Customer is expecting:**
  – Availability
  – Reliability
  – Perfect maintenance
  – Decrease time and costs for the assessment of customer feedbacks

• **Customer is providing:**
  – data/information on HW/SW problems occurred (incomplete - non deterministic)
  – few info on spare parts usage and consumption
Imaginary (but realistic) discussion

Field representative:

The oil pressure indicator was a bit too high.

09:24

Ok; what do you mean as "a bit"?

09:26

Not too high but seems a bit more than normal.

09:26

Mmmmm.. what were you doing?

09:26

Flying..

09:27

Ok; can you give more details? Where? When? Which wind conditions?

09:28

I don't remember well.. I was flying 10,000 feet.. I don't remember wind conditions.

09:29
So:
• No objective data...
• ... based on people memory
• ... and sensations (got under stressfull situations)
• ... and interpretation

Leading to:
• Several iteration with the customer
• False positive
• Long assessment process
The OSMOSE sensing-liquid application

The application is a **cloud-based** software solution that allows remote monitoring and maintenance of simulator fleets:

- **Remote Monitoring** of simulation data
- **Understand** what is happening
- **Fast react** to events
- **Anticipate** and solve problems
Keep everything under control!

Sensing approach
Monitor and react

Liquid approach
processes involving all stakeholders

Centralised Control Room

Distributed Complex Systems
How does it work?

**onFlight Module (smartphone APP)**

- Snag Timing, Snag information and simulator data

**debriefing Module**

**inOffice module (control room)**

- Snag Timing, Snag information and simulator data

Daily HW components usage
Summary of major functionalities

- **Major functionalities (control room)**
  - *ingest* issues with additional significant data to improve their comprehension;
  - *simulation data visualization to analyze* a posteriori snags during the debriefing session for their approval and classification;
  - *guided process* of snag assessment and resolution based on bug tracking system;
  - *manage* the scheduling of the maintenance sessions;
  - *monitor* the status of hardware configuration and *alert* technicians when hardware component degradation is found to prevent failure;
  - *notify* involved people about process advancements and bug fixing
  - *deploy* code to simulator after maintenance
Conclusions and future steps

• The sensing liquid application has proven to be effective
  – Sensing aspect: fast reaction by processes, objective data
  – Liquid aspect: processes involves actors from the OEM, SW provider and HW provider

• The experimentation is currently ongoing
  – Project closure and fina report end of September

• A new product has already been launched

• Flight simulators are good examples of Complex Systems and...

• ... new application are possible on:
  – Production Machineries/Lines
  – Vehicles (Airplanes, Trains, Cars, Trucks, Vessels, etc.)
  – ... complex system in general...
Thank you for your attention!

Website: http://www.txt-next.com
Email: info@txt-next.com
Michele Sesana michele.sesana@txtgroup.com

Website: www.osmose.project.eu
Project Coordinator: Michele Sesana michele.sesana@txtgroup.com
Technical Coordinator: Sergio Gusmeroli sergio.gusmeroli@txtgroup.com
Exploitation Manager: Maurizio Griva m.griva@reply.it
The sensing-liquid enterprise industrial applications in OSMOSE

Workshop: IoT for the Sensing Enterprise: challenges and achievements

June 4, 2016

IOT Week 2016 - Belgrade June 2016, 1st

Michele Sesana
(michele.sesana@txtgroup.com)