# 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, Ist





IoT Week Belgrade May 31\*-June 2<sup>rd</sup> 2016

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# **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..



## Status of play



- 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



	← 🥙 Sim Support 🛛 📎 🚦	
Field representative	The oil pressure indicator was a bit too high	oilot
	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?	
	Flying 09:27 4/	
	Ok; can you give more details? Where? When? Which wind conditions? 09:28	
SOFTWARE ENGINEERING SOLUTIONS	I don't remember well I was flying 10,000 feets I don't remember wind conditions	



#### 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

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The Solution: 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

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## Keep everything under control!











## 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 invoves 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



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