

CHIST-ERA Project Seminar 2013
26th & 27th of March 2013

smarter?

Pr Jean-Marie Dilhac



Outline

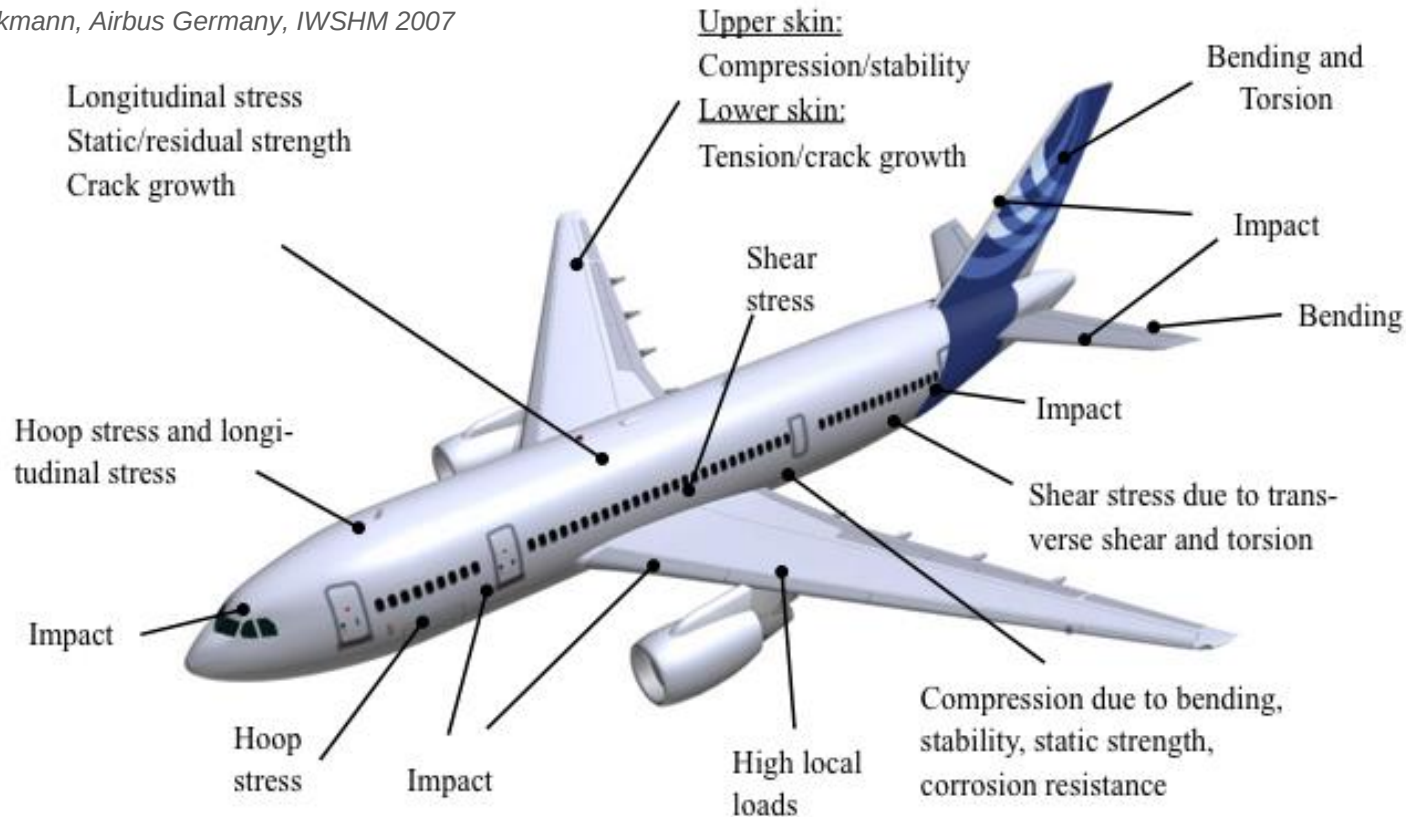
- *Objectives*
- *Scientific background & key challenges*
- *Presentation of consortium*
- *Structure of the project*
- *Project management*
- *Industrial advisory board*

Objectives of SMARTER

*Smart Multifunctional Architecture & Technology
for Energy-aware wireless sensoRs*

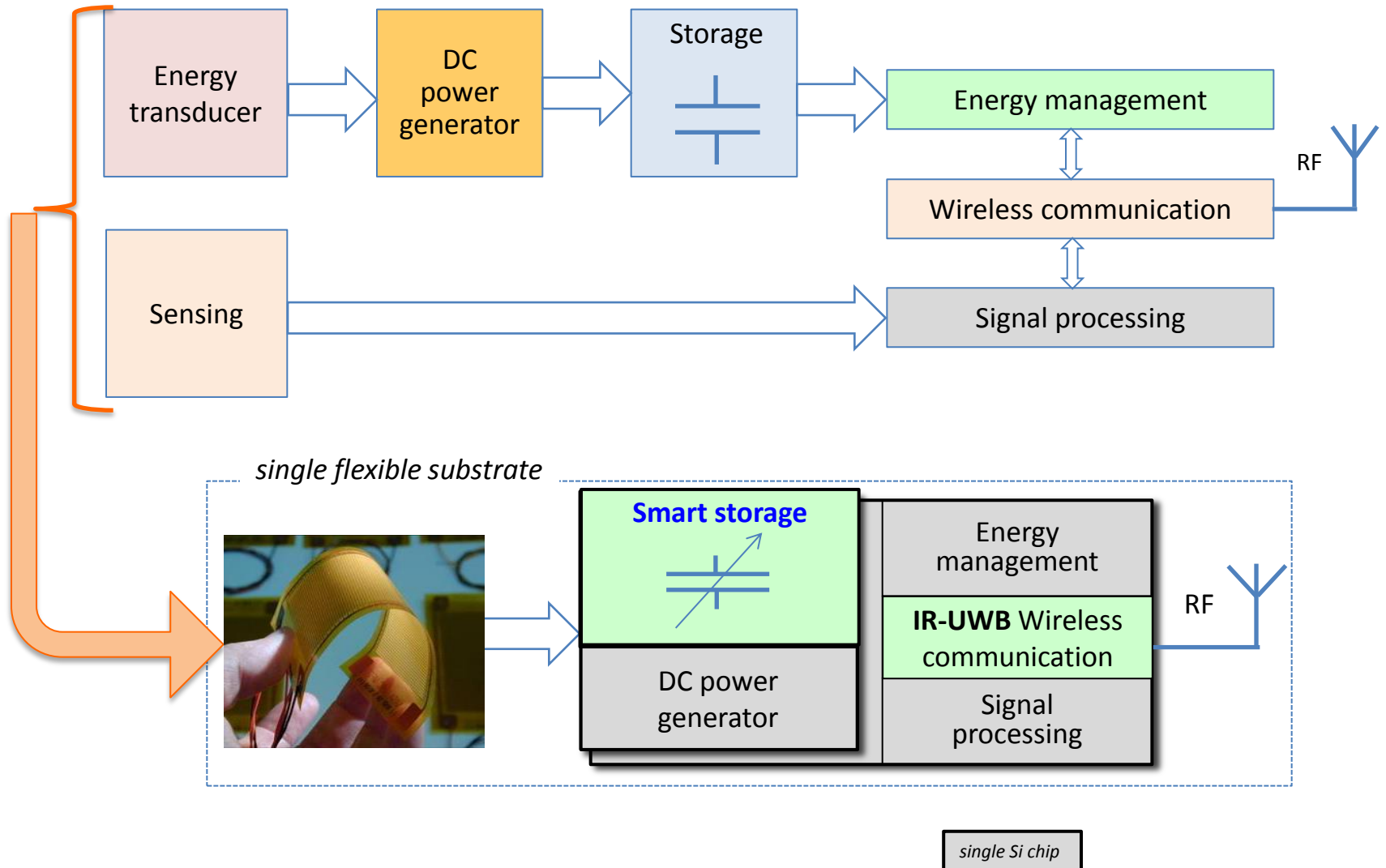
Structural Health Monitoring *through deployment of wireless and battery-free sensor network*

© Holger Speckmann, Airbus Germany, IWSHM 2007



Potential impact: *predictive maintenance is a major challenge and is linked to Clean Sky, a Public Private Partnership between the European Commission and the Aeronautical Industry. It was set up to bring significant step changes regarding the environmental impact of aviation.*

Scientific background & key challenges

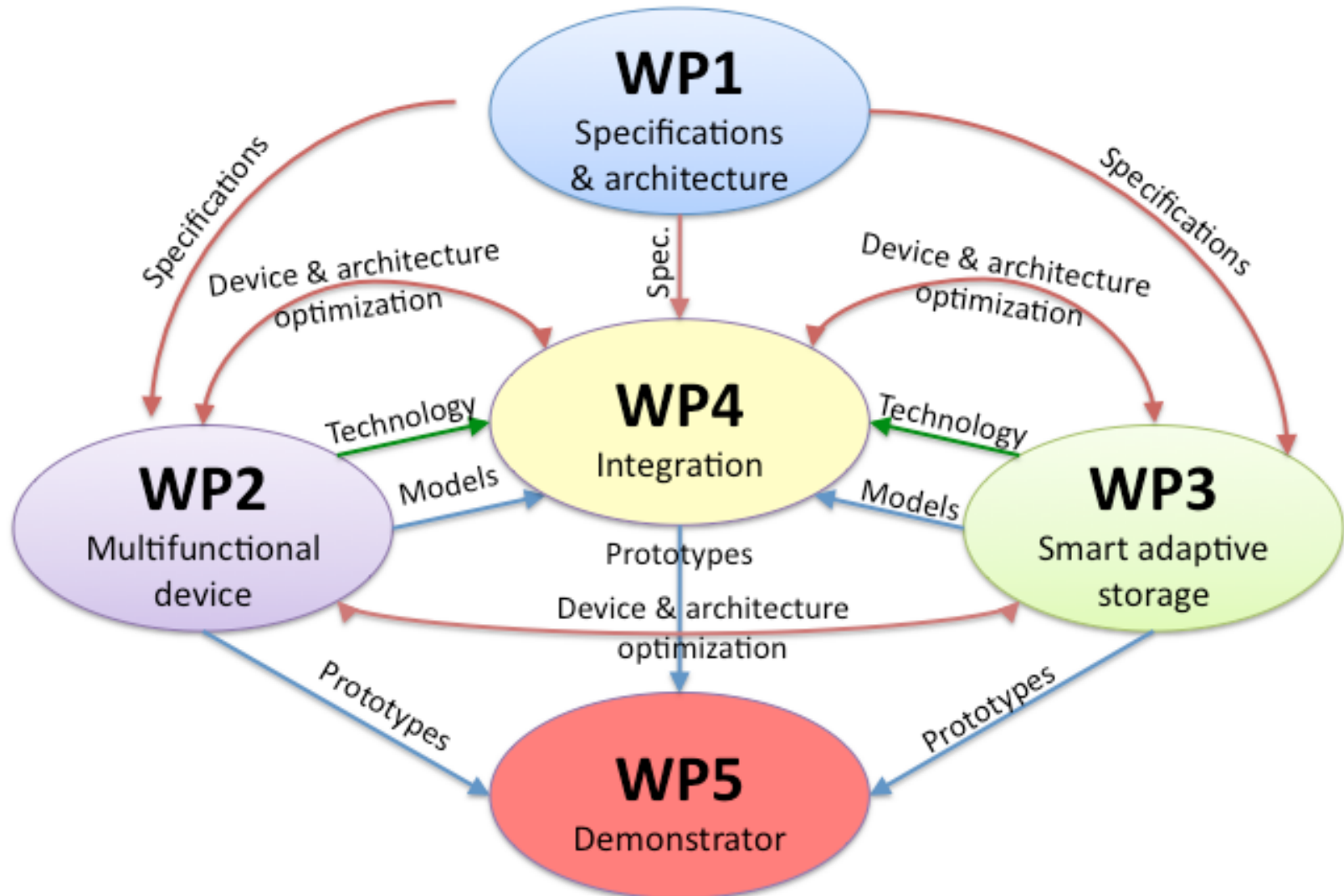


Presentation of consortium

Participant	Main activities / skill	availability of chist-era funding
Cranfield University	harvesting and sensing device, simulation, tests	1 st of October 2012
University of Barcelona	full-custom integrated circuit	not yet
LAAS-CNRS	management, adaptive storage, communication	15 th of March 2013

Structure of the project / workplan

WP0 – Project management





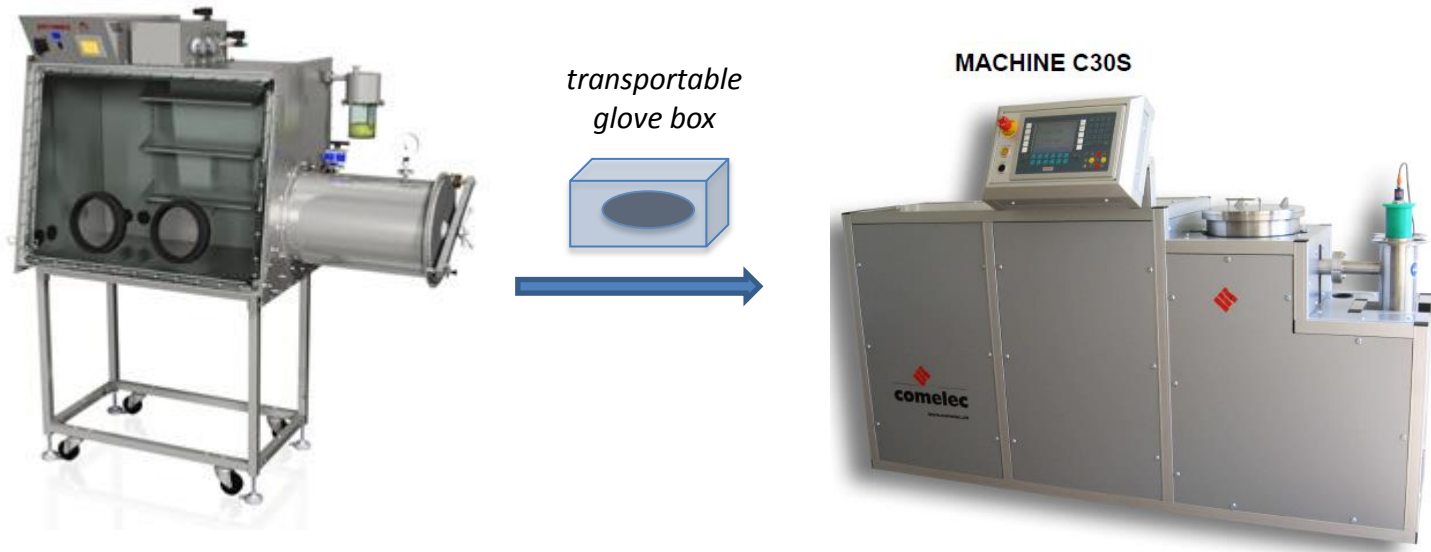
Sensor / harvester location: wing root

Sensor / harvester target performance:

- *1.2-15mw at 1-10 Hz*
- *230-570 micro strain for 20 cm²*

Supercapacitors: encapsulation

- Constraints in fabrication: use of sensitive electrolytes < 1 ppm H₂O required
- Realisation of sample transfer system from Glove Box (Jacomex) to parylene deposition system (Comelec)



- Alternative: encapsulation with polymer films

[illegible]

Project management

- ✓ *kick-off meeting*
- ✓ *$t_0=1^{\text{st}}$ of January 2013?*
- ✓ *common website to share documents*
- ✓ *industrial advisory board end 2013*
- *T0.1: consortium agreement < six months*
- *face-to-face meetings every six months*
- *dissemination of knowledge and results*
- *mobility for students*

Industrial Advisory Board

LEONI



BAE SYSTEMS

Julien Féau	Airbus Operations SAS	julien.feau@airbus.com
Bruno Foucher	EADS Innovation Work	bruno.foucher@eads.net
Johannes Nachtrab	LEONI Bordnetz-Systeme GmbH	johannes.nachtrab@leoni.com
Vincent Rouet	EADS Innovation Work	vincent.rouet@eads.net
Jean-Michel Rogero	Airbus France	jean-michel.rogero@airbus.com
Thierry Goureau	Thalès	thierry.goureau@fr.thalesgroup.com
Ian Harrington	BAE Systems (Preston)	
Nisar Mirza	BAE Systems (Rochester)	
Chris Bagley	TWI	

THALES



EADS

Project management

- ✓ *kick-off meeting*
- ✓ *$t_0=1^{\text{st}}$ of January 2013?*
- ✓ *common website to share documents*
- ✓ *industrial advisory board end 2013*
- *T0.1: consortium agreement < six months*
- *face-to-face meetings every six months*
- *dissemination of knowledge and results*
- *mobility for students*