

Optimising Design for Inspection (COST Action CA 18203: ODIN)



Project chair

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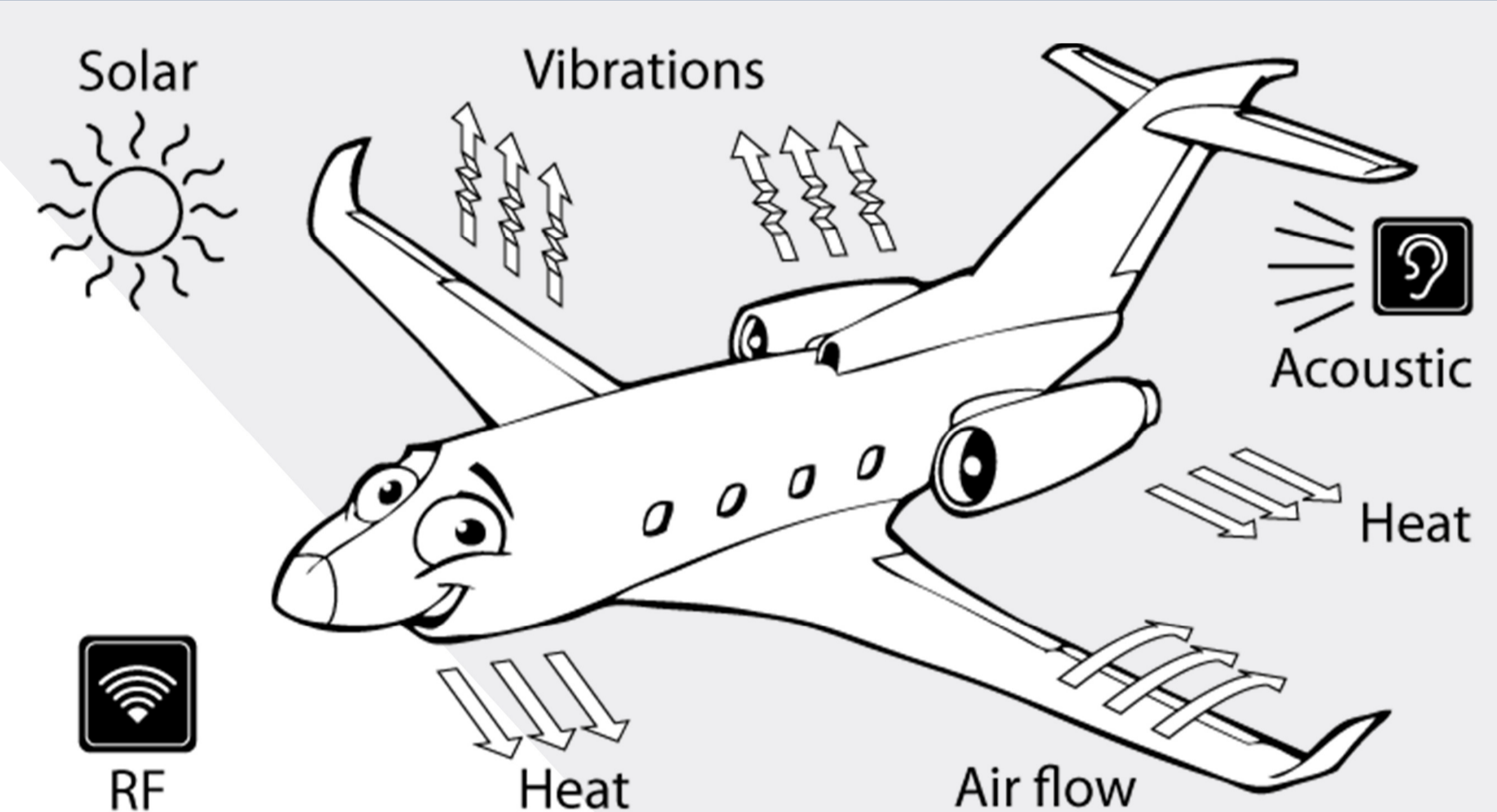
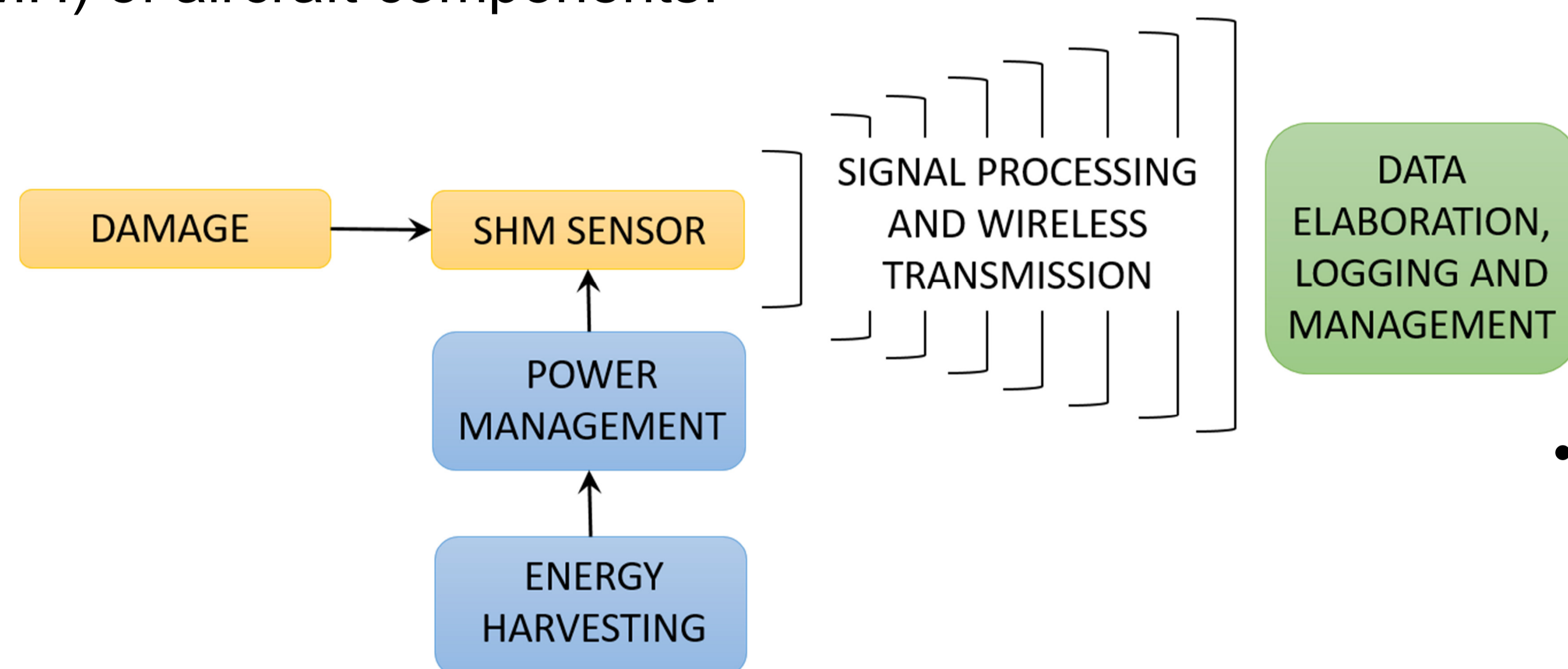
Local coordinator

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In partnership with institutions from: Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, France, Germany, Greece, Iceland, Ireland, Israel, Italy, Latvia, Lithuania, Netherlands, North Macedonia, Poland, Portugal, Romania, Serbia, Slovenia, Spain, Sweden, Turkey, United Kingdom, Canada, China and USA

Autonomous SHM systems for airplanes

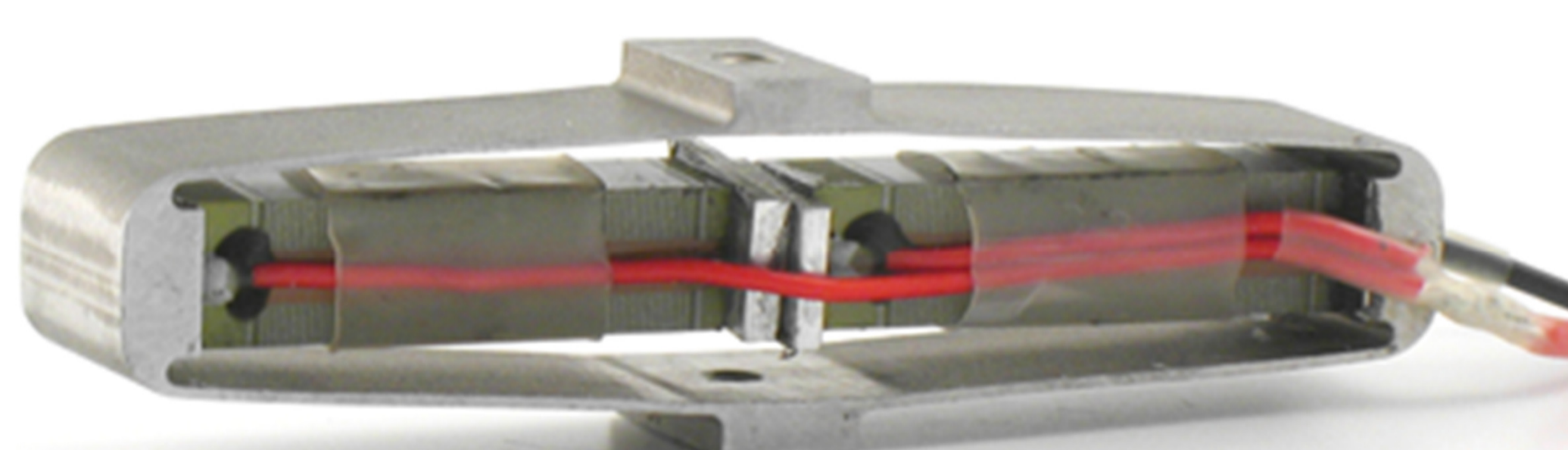
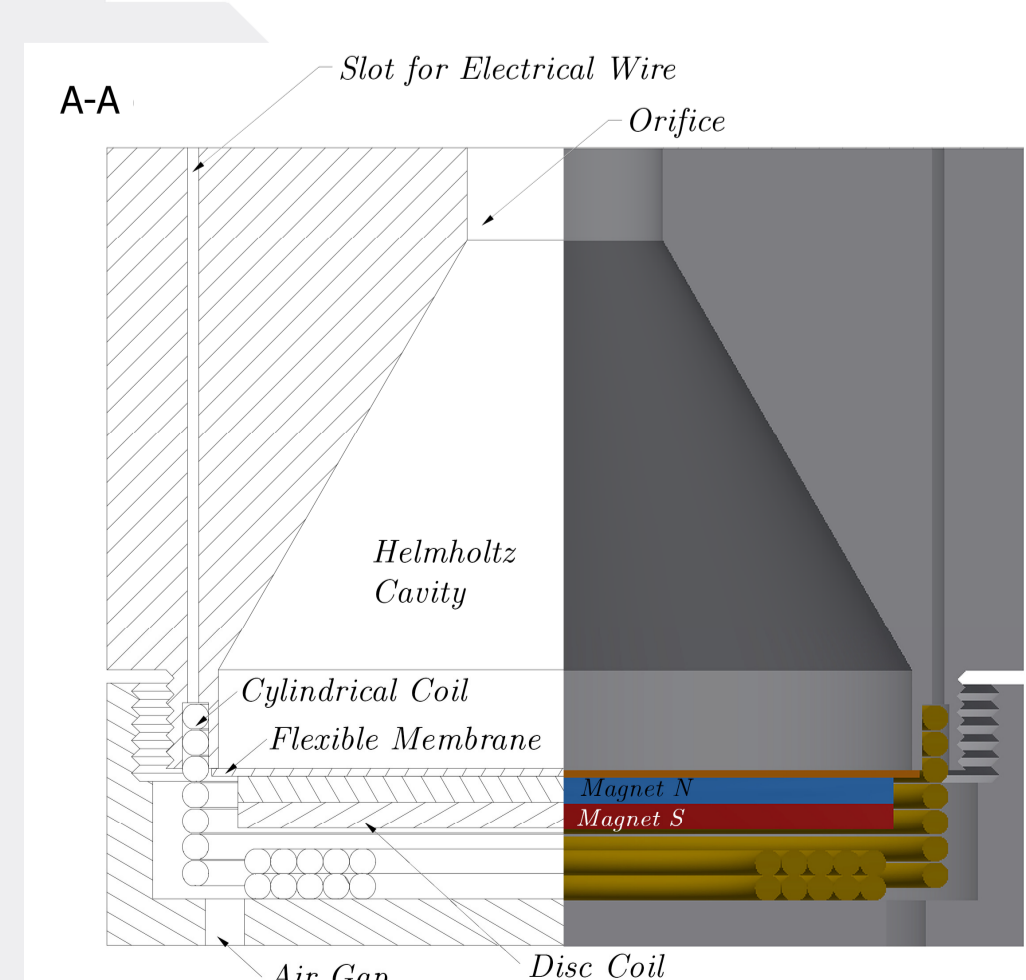
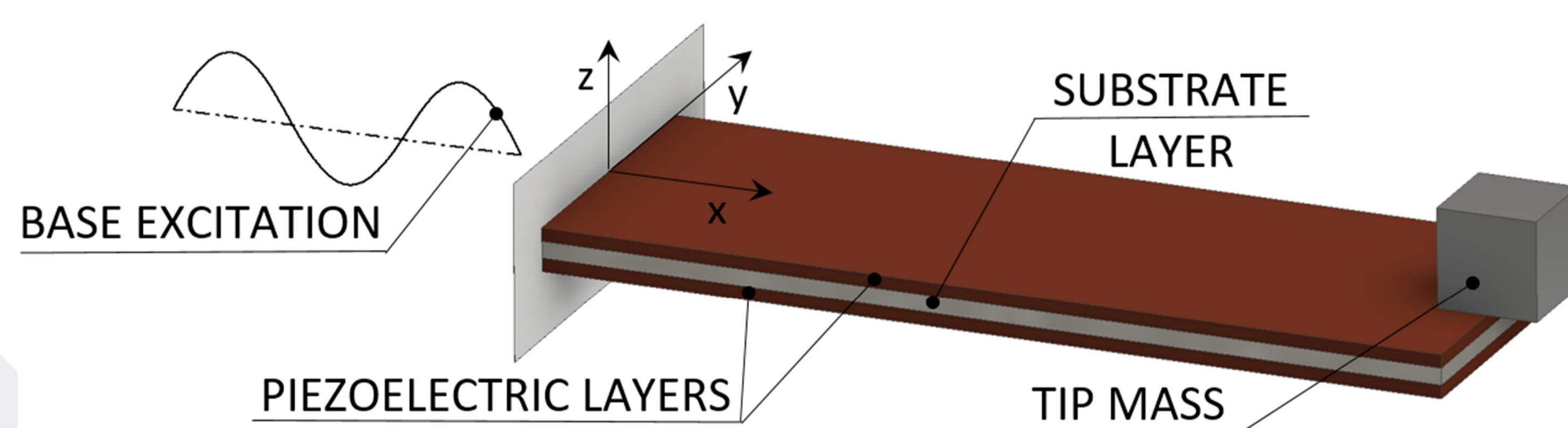
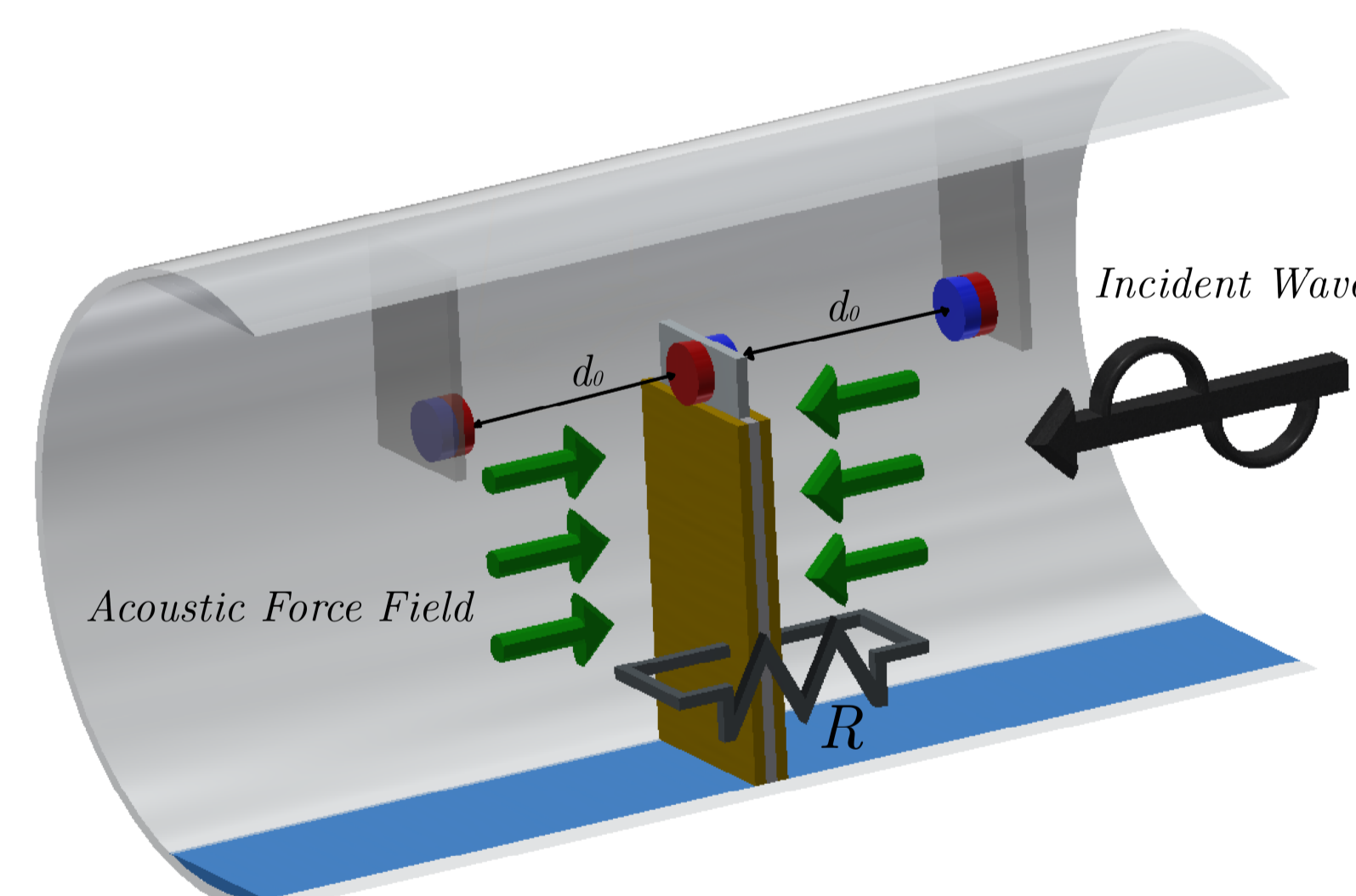
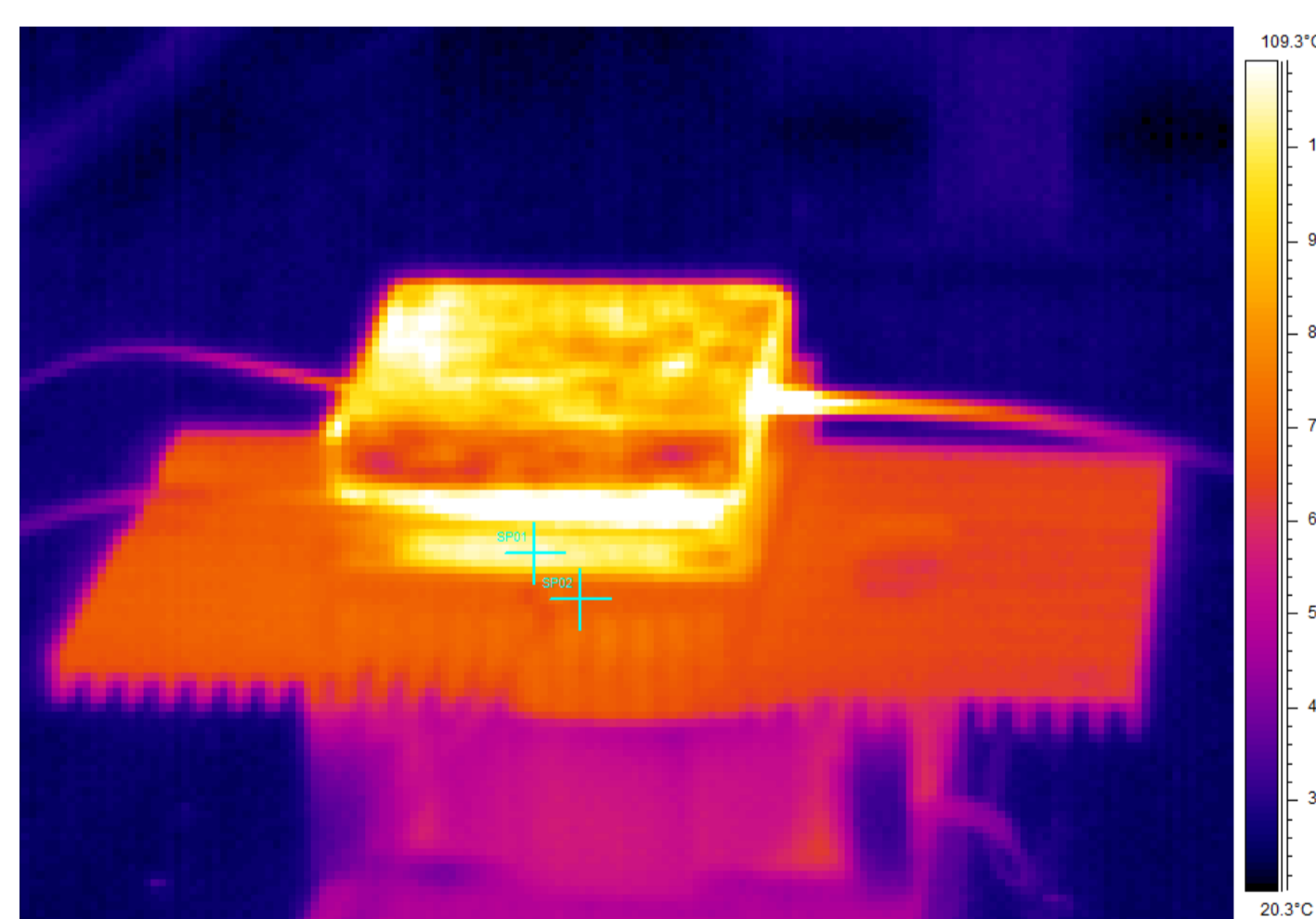
- The ODIN COST Action brings together the top European experts across different areas to support the development of **optimised systems** aimed for **structural health monitoring** (SMH) of aircraft components.



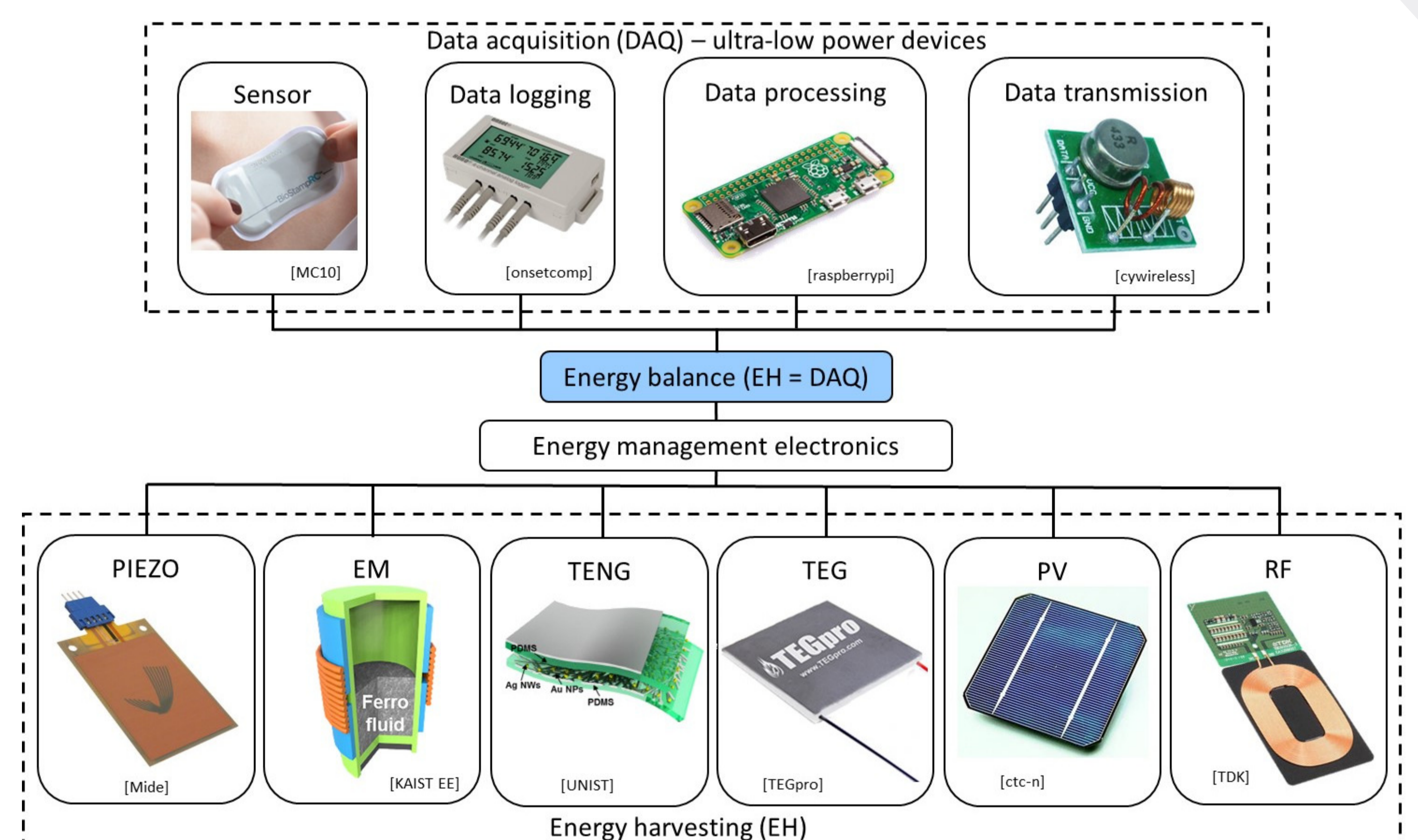
- The merger of **energy harvesting** (EH) technologies with **data processing** and **logging** components will result in innovative **autonomous** SHM sensor systems, powered by **ambient energy** sources generated on or around the airplane.

Energy Harvesting

- Energy harvesting systems:** **kinetic**, waste **heat**, **solar**, **wind**, **RF** energy sources → conversion into **electrical energy**



- Kinetic** - **piezoelectric**, **electromagnetic**, **strain**
- Waste heat** (temp. gradient) – **thermoelectric** (TEG)
- Solar** – **photovoltaic** (PV)
- Wind / acoustic** – **piezo** flags, **Helmoltz** resonators
- RF** - **rectenna**-based EH devices



Local ODIN Team @ RITEH

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