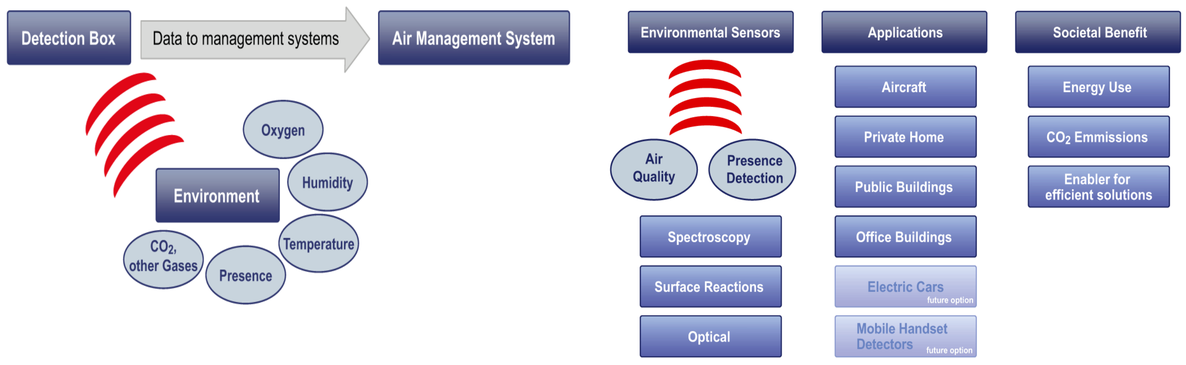
ESEE

Environmental Sensors for Energy Efficiency

General description

The research project “Environmental Sensors for Energy Efficiency” (ESEE) targets further reduction of energy consumption with seamlessly connected sensors for energy management systems.



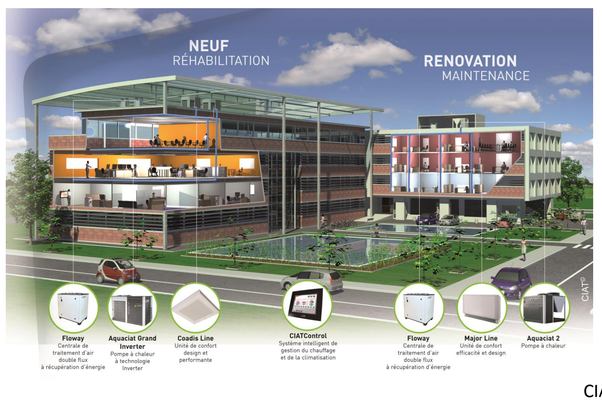
Picture source: ESEE project

Goals / Objectives

ESEE targets applications that require highly reliable information about environmental conditions in order to deduct measures that help to reduce the use of energy. In combination with solutions for air quality management, the potential to save energy

- inside buildings is more than 30 percent,
- and for airplanes the potential is around 5 percent of the whole energy balance.

EADS



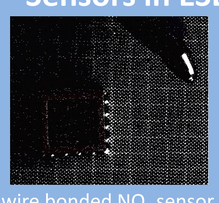
CIAT

The focus of the ESEE project is the development of new low-power connected sensor systems, based on semiconductors and heterogeneous 3D integration for the detection of environmental parameters such as CO_2, CO or humidity. Furthermore, ESEE aims to develop energy management systems for the control of energy flows.

Results / Looking ahead

A high number of Sensors and concepts are available for the final validation phase. First measurement systems are already validated. Final Step is the finalization of the demonstrators and validation activities.

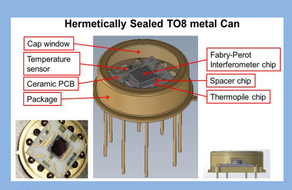
Sensors in ESEE:



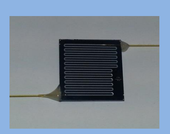
wire bonded NO_x sensor

Ultragas CO_2 sensor

MEMS-microphone and gas peripheral components.



FPI spectrometer component



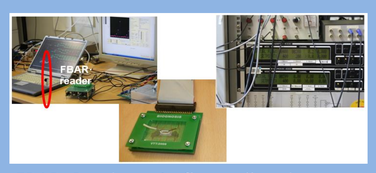
Miniaturized silicon µGC

prototype of wireless sensor nodes

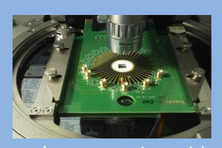
Fabry-Perot Silicon Air-gap filter

Demonstrators and Tests in ESEE:

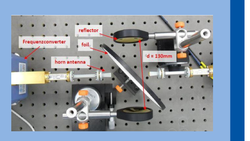
Rectangular-Waveguide Resonator



FBAR: Reader unit, flow cell and gas test board used for sensor tests



probe test station with microphone-wafer under test



Fabry-Perot Resonator

Parallel-Plate Resonator

realized laboratory test station

Partners

* ams integration is in progress…

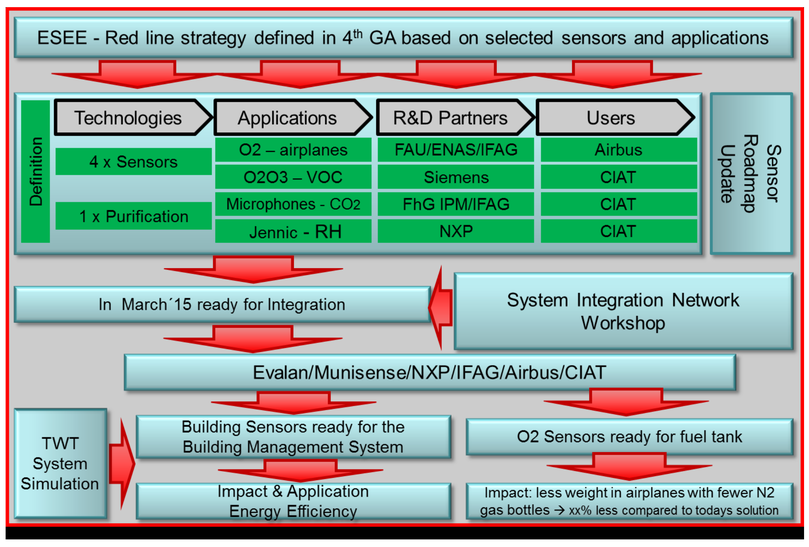
Countries involved

- **Germany**
- **Finland**
- **Netherlands**
- **France**
- **Spain**

The work performed in the project ESEE is co-funded by grants from German, Netherlands, France, Spain and Finland and theENIAC Joint Undertaking.

ESEE Consortium at the 6th GA Meeting 2015

Red Line Strategy



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