AMANDA

One Card – A World of Features and Solutions!

Autonomous self-powered miniaturized intelligent sensor for environmental sensing and asset tracking in smart IoT environments.

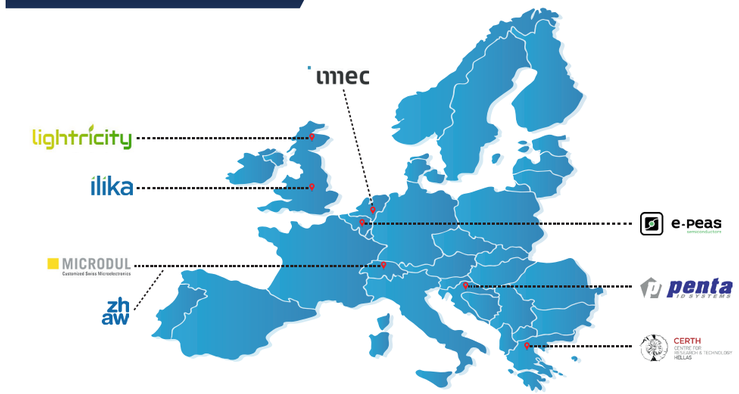
Trusted solutions

The AMANDA Consortium has designed and developed a maintenance-free, miniaturised and easily deployable **Autonomous Smart Sensing Card - ASSC** for environmental sensing and for asset and people tracking/monitoring in smart living and working environments.

We aim to provide an individually tailored, comprehensive solution for every application. That's why the AMANDA Consortium consists of partners – researchers and SMEs – each one an expert in their field.

The ASSC's advantage over existing products on the market is its autonomy of 10 years of operation, its miniaturised dimensions and its ultra-low-power consumption.

The team behind AMANDA



- Penta
- E-Peas
- Certh
- Imec
- Lightricity
- Ilika
- Microdul
- Zhaw

AMANDA

The world in your hands

Autonomous Smart Sensing Card (ASSC)

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The Consortium

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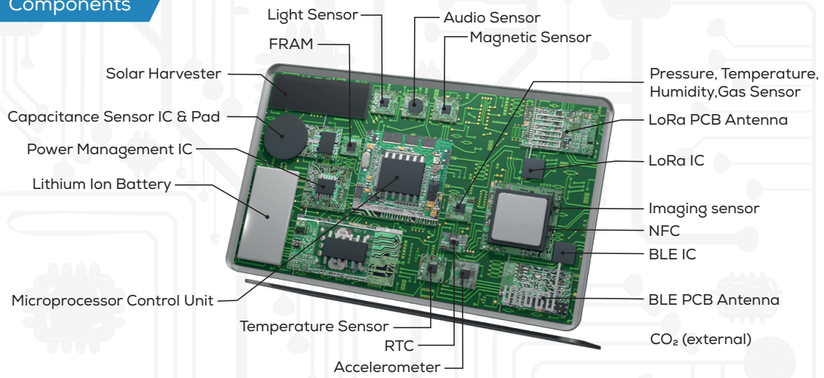
The AMANDA project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 825464

The AMANDA ASSC contains components developed and optimised by the project's partners: **Energy Harverster, Power Management electronics, Temperature sensor, Capacitive sensor and Imaging sensor. Selected short- and long-range radio interfaces, as well as off-the-shelf sensors, are also included.**

Three versions of the **AMANDA ASSC** are derived by adding different sets of sensors, selecting the suitable radio interface and loading application-specific software: an **indoor**, an **outdoor** and a **wearable** version.

The system can provide much more power density than other energy harvesting, which means it can provide functionalities that were not possible before on such a reduced footprint. Technical innovations are on achieving its small footprint, small thickness and high system efficiency and functionality.

Components



Off-the-shelf sensors	Motivation
Low-power accelerometer	Support for positioning, activity monitoring, event capturing
Spintronics sensor/Magnetometer	Support for positioning
RH&T, VOC, CO_2 sensor	Environment monitoring
Light sensor	Light condition monitoring for power failure prediction
Acoustic sensor	Environment monitoring, event capturing

Use case	Scenario	
1	**Environment monitoring and reporting**	**Work environment and thermal comfort monitoring**
	Indoor / Outdoor/ Wearable	
2	**Asset tracking and occupancy monitoring**	**Parking lot occupancy monitoring**
	Indoor / Outdoor/ Wearable	
3	**Mitigating the effects of the pandemic**	**Crowd counting for social distancing**
	Indoor	

Unique value proposition

Autonomy: ASSC is self-powered even in a low-light indoor environment
Wearability: ASSC is lightweight with a small footprint and thickness
Self-learning: the card adapts intelligently to its deployed environment
Power consumption: each component is powered down when not in use
Multisensing: ASSC incorporates all of the measurements coming from various sensors to get a better estimation of the dynamical system
10 years of maintenance-free lifetime