

### Project SURFAS

European Regional Development Fund

## SURFAS Flexible Smart Surfaces for augmented indoor communications.

The demand for communicating devices (CDs) continues to increase, as does the range of services they offer such as internet, wireless health care, home automation, wireless access controlling systems and alarms. Proposing energy-efficient disruptive solutions for powering future CDs is a global challenge. Within the France (Channel) England (FCE) zone a consortium of universities and SME's have come together to propose the SURFAS project to tackle this issue.



The objective is to **design a zero-power consuming electronic surfaces** able to optimally focus ambient electromagnetic (EM) waves on the appropriate receiver in order to enable both self-powered CDs and improve their performances (sensitivity, range, rate). Such a system is new and missing in the market. It is expected to decrease the energy bill of the FCE zone by more than 5.9GWh a year, while saving 14.9 million € by just considering (but not limited to) both applications over Wi-Fi boosters and smoke alarms.

For these targeted applications two prototypes will be designed, fabricated, experimentally tested, validated over two demonstrators, and transferred to interested SMEs (more than 217 in the FCE zone) developing various kinds of CDs:

- The first prototype will increase the feeding power (lifetime) harvested from ambient waves over ISM/GSM/3G/Wi-Fi bands to enable EM-based self-powered devices such as smoke alarms, detectors, sensors, etc.
- The second prototype will increase the range of Wi-Fi signals without consuming additional power unlike common Wi-Fi-boosters.

### Our consortium

The SURFAS consortium consists of 6 partners from France and the UK, including Intrinsic Materials Ltd (UK), Greensystech (Fr), University of Kent (UK), Projection (Fr), University of Surrey (UK) and ESIGELEC-IRSEEM (Fr) as the project lead.

### Funding

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