

## An infrared sensor that locates and counts people but respects their privacy

*By enhancing the thermal resistance of a polymer, Carnot MICA Institute has enabled Irlynx to come up with an infrared detector that helps create a more sustainable city.*

### Supporting Innovation

Infrared radiation (IR) has long been used to detect presence based on levels of heat emitted. Infrared technology frequently combines the use of a video camera to make up for the lack of detail. High-precision analysis is required to protect privacy and eliminate any possible misinterpretation of a situation. Irlynx has successfully developed a French-produced sensor to come up with an affordable solution that can distinguish an animal from a human being, locate and count individual people, determine whether they are moving or static, and even detect if they are having a fall. This customisable, camera-less system is easy to deploy either during the construction phase or when a building is up and running. It is aimed at the security market and at “smart buildings” that regulate power supply based on whether any users are actually around.



Illustration : exemple d'utilisation du capteur Irlynx pour une application de GTB

Source : [fiche technique du produit WildCat](#)

### The client needs

Irlynx was created in 2012 to develop anonymous IR sensors for health and assisted-living facilities. From 2014 on, advances in research and the changing needs of property developers led this Grenoble-based SME into the broader-based markets of security and building facilities management. However, Irlynx needed to enhance the precision of its camera-less system to cover all situations: one of its insulating polymers proved to have poor heat resistance which affected the sensor's precision. In 2015, the company entered into a partnership with Carnot MICA Institute and Charles Sadron Institute (Michel Bouquey) – which has specialised expertise in polymers – took charge of the project. This partnership culminated in an affordable product with remarkable technical features, brought to market in 2018. With a workforce of 20 people, Irlynx is now looking to tackle the international market.

### Partnership

Carnot MICA Institute brings together 16 research laboratories and technical centres including ICS Strasbourg, all focused on materials, surfaces and interfaces and related processes. It has a multi-sector offering and develops projects for all markets. Following a six-month feasibility study and an 18-month R&D programme, MICA and Irlynx teams created an innovative, very thin polymer that is compatible with process engineering. The research lab focused on an original strategy of enhancing the polymer's heat resistance by combining it with air – the best insulator currently known to man – through the use of a foam-like porous material. The composite material, consisting of resin filled with hollow silica microbeads and placed directly on the silicon semiconductor, optimizes the infrared radiation emitted by the detector. It has enabled the partners to greatly improve the quality of the analysis. MICA partnered the SME through to technology transfer needed for moving into the production phase, thus illustrating its capacity to participate fully in the company's growth and development. Irlynx is now ideally positioned to meet the needs of the booming “smart city” market.