



## PREVENTING A CBRNE TERRORIST ATTACK

*Sarin gas attacks in Japan in 1994 and 1995, Anthrax filled envelopes in the United States in 2001, chlorine-filled canister explosions in Iraq in 2007, bombings in France, the United Kingdom and Spain; these events all showed the murderous potential, but also social dislocation, of terrorist acts when using nuclear, radiological, biological, chemical and explosive agents, products and materials (NRBC-E)*

*Following these recent attacks, certain revelations reinforce international awareness surrounding a threat that could take the form of dirty bombs, of radiological or nuclear "scatter bombs". In fact, attempts have been made by the Islamic state to obtain these materials. Reuters has reported that ten or so grams of iridium, a highly radioactive material, were stolen in Southern Iraq in November of 2015.*

***In response to this underlying threat, a consortium of French businesses and research centres have come together to work on an innovative project called "Operational Capacity for the Detection and Identification of Nuclear and Radiological materials" (CODI-NR)***

### A PREVENTATIVE ANSWER TO THE NUCLEAR AND RADIOACTIVE THREAT

*"The CODI-NR project aims to prevent malicious acts (radioactive materials, radiological or nuclear events) in public or in contact with public infrastructures by developing an innovative system both portable and communicative for the detection and identification of nuclear and radiological materials for personnel in charge of safety and security, which would allow them to quickly take preventative action and enforce the necessary protection" explains Bernard Leibovici, CEO of SDS France, leader of the consortium that also includes Novitact, TPL Systems, SNEF Connect and the CEA-List.*

### SECURING OF MAJOR EVENTS

*"To this day, systems consist of fixed beacons communicating by wire with the security centre and portable detectors with self-contained video*

*screens or to information legible on smart phones or tablets. These systems are either too bulky or not powerful enough to be used in public gatherings" stresses Bernard Leibovici.*

The aim of the project is to develop a solution for the detection and identification of nuclear and radiological materials in zones of gathering (train stations, airports, subway stations, sporting events, concert halls...)

*"There is a real need for mobile systems that would allow the early detection and identification of radioactive waste or materials. Their localisation in a crowd or in public spaces is also an important issue. In addition, these systems need to be connected to an alert system and security management to allow for a coordinated and adapted response from security forces. The CODI-NR project responds to these demands by proposing an appropriate solution to these threats, capable of being easily deployed in the field" adds Jean-Michel Dumaz, director of the Defence and Security programmes of the SAFE hub.*

The project responds to the expression of needs formulated as part of the securing of major events such as the Olympic Games or the G8 or G20 summits.

The system will allow, in the long term, to continually



detect and identify a radiological threat by scanning the flow of people entering a place or an event:

- Detection in an open or closed environment (securing of a crowd in the street, in a subway station, Fan Zone, in the subway)
- Detection in inspection mode / filtering (palpation) enabling the equipping of one out of two or three agents
- Connection to a command point in real time to trigger the necessary actions for confirmation and counter-measures
- A discreet alarm emitting from the wearer of the device, security / safety agent.

But the system could also be used by any personnel carrying out a mission in a building, like the agents in a nuclear power plant in operation or being dismantled, or healthcare personnel who are at risk of radiological contamination etc.

## ADJUSTABLE & INTEROPERABLE

The project guarantees a double security in the performance of identification of NR materials and alert management (provided by the distribution of different communication and localisation functions between the different equipment). This project responds primarily to the most important needs but will also be adjustable to adapt to the specific needs of each client. *“The advantage of remote interpretation resides in the limitation of the number of specially trained personnel: a centralised NR team will supervise a multitude of security agents and will only intervene for confirmation or in the case of an imminent operation. Even if the system is aimed at private sector security agents, it*

*will be interoperable with the means of the Department of Homeland Security (Bluetooth connection to the portable terminal TETRAPOL)”* guarantees our expert. The CODI-NR integrated system permits the detection of a radiological threat but also to discreetly alert the agent wearing the equipment, and to transfer the information in real time to the suitable command station (police, security). It will also include a gamma-ray spectrometer and identification of radioactive materials, a vibrating bracelet and a pager, all supplied by French companies.

## BETWEEN BUSINESS & SCIENTIFIC ADVANCEMENTS

The socio-economic fallout will be particularly important seeing as twenty or so jobs should be created in R&D for all partners. The sale of the CODI-NR solution will allow for each business partner to develop firstly in France, then internationally. The turnover generated by the CODI-NR project should be higher than 10 million euro over a period of 6 years, after the industrialisation phase of the project. Beyond performance and economic perspectives, the deployment of the CODI-NR project should ensure a great scientific advancement in citizen security.



**With a budget of almost 2.7 million euro, the project falling within the scope of the 22nd appel de projet of the Single Interdepartmental Fund (Fond Unique Interministériel – FUI) certified by competitive clusters SAFE, SYSTEMATIC, AEROSPACE VALLEY and I-TRANS has also received the support of the committee for the industrial security sector (CoFIS) by the issue of the first certification for “innovative project”**