It's about time for a European Robotic Cluster

By Stephen Jackson -

IB Consultancy conducted an interview with Lt Col Jean-Paul Monet, CBRNe Zonal Advisor for the French Sapeur-Pompiers. Many interesting topics were addressed including the role of the Sapeur-Pompiers in the event of CBRN accidents and attacks, robotics in the field of CBRN and EU CBRN first response.

Could you briefly outline France's main CBRN response plans?

At national level a "meta-plan" to determine general national threats is permanently active in order to conduct timely risk assessment and hence determine national preparedness and surveillance capabilities' mobilisation. It's "Vigipirate" national threat level planning.

More specific national response plans centred on national security have also been established to deal with threats against national security arising from terrorists or climate disasters, namely: Piratox and Piratom for CBRN as well as PiratNet for cyber criminality.

From the civil protection point of view, the main response planning system is ORSEC (under the authority of the Ministry of Interior) and deals with, amongst others: SEVESO sites, dangerous material transport, and electricity grid breakdown.

What is the role of the *sapeur-pompiers* in the event of a CBRN accident or attack?

The *sapeur-pompiers* (French Fire Brigade are civilian forces, linked to the Ministry of Interior) execute both the national safety response plan ORSEC as well as the specific national security plans such as Piratox, Piratom and so forth.

On the ground, first response coordination is dealt with by an officer (incident commander) from the *sapeur-pompiers*. He coordinates response efforts between the police, the *gendarmerie nationale* (Police part of the French Armed forces), ambulances and hospitals present on the ground. All the *sapeur-pompiers* are trained to deal with CBRN of accidental, industrial or terrorist nature and they have special units to deal with decontamination of chemical risks and depollution. The incident commander from the *sapeur-pompiers* reports to the strategic level represented by the Mayor (municipal level) or the Prefect (area department level) depending on the gravity and the geographical scope of the crisis. If the latter constitutes a threat to national security, the Prime Minister is responsible for nation-wide response strategy.

If the CBRN crisis is long lasting or nation-wide the French Armed Forces can assist the first response efforts. Notwithstanding, the Sapeur-Pompiers and French Armed Forces train together at the *Centre National Civilo-militaire* for CBRN CNCMFE (National Cimic CBRN centre) in order to prepare themselves against CBRN attacks for example.

I noticed you emphasized on terrorist matters, does that mean the "e" in CBRNe is becoming predominant for first response training and response?

The problem is that terrorist are not only restraint to the "e" category but have widened the scope of their activities. Our fear is that terrorists diffuse chemical products or dirty bombs. The problem nowadays is that different response departments including the police, the *sapeur-pompiers* or the armed forces have to improve their communication together. Therefore, France works hard to de-compartmentalise these departments in order to better address CBRN crises. Indeed, there is no unique crisis typology but rather different crises that are to be addressed by all the first responders

together according their competencies and responsibilities. French first responders have to get into the habit of working together and coordinate properly. I sincerely hope that current budget constraints on public services will have a positive effect, on rationalisation and collaborative work, between departments involved.

As zonal CBRN technical advisor for the *Etat Major de Zone Sud*, what is your role?

The French territory is split into nine Security and Defence zones (super regions comprising many different area departments) that mutualise capabilities in order to deal with CBRN terrorist attacks, accidents and incidents (for example decontamination units, spectrometry, sample collection capabilities, water bombers and helicopters). My role is to federate the 15 area department technical advisors of my zone. Consequently, part of my work is harmonisation within my zone. For example, when it comes to decontamination practices, I have to make sure that all area departments address decontamination practices the same way.

Furthermore, as zonal CBRN technical advisor, I am in charge of operation scenarios, lessons learned, I establish civil-military zonal CBRN exercises scenarios and conduct them. Finally, within the national RADART expert group, I participate in national hazmat materials and substances advisory board and knowledge network.

What was your role in the dedicated CBRN robot programme with ECA?

In 2002, after many first response operations, we came to the conclusion that robotics could play a significant role in CBRN response. This was an innovative project that emerged from the annual meeting of the *National Fire Association* (FNSPF) and a number of dedicated CBRN conferences.

The project started off with bilateral agreements between French manufacturers and my brigade and from 2006 onwards little consortiums financed by French national funds were established for the first leg of the robotic programme from 2006 to 2009. The *Sapeur-pompiers* were at the centre of the project comprising research centres, industries and end users. The first manufactured CBRN product manufactured by ECA was released in 2009. They have since sold approximately 20 units of this CBRN robot.

Together with ECA and other companies, we are now working on the second leg of the project spreading from 2011 to 2015. We have kept the same platform: ECA's terrestrial medium weight robot (30 kilograms). The aim of this second development is to enhance the robot's CBRN capabilities but also to broaden the capability scope of the robot to other *sapeur-pompiers* operations such as fires in tunnels. The project is inter-services with the collaboration of the police and the military since nowadays robots can be used to support the armed forces during operations for support or demining, EODs or hostage crises. We are working on a common robotic platform for each service (fire brigade, police, army) that can then be adapted according to respective needs by replacing different sensors.

The *sapeur-pompiers'* main objective is to enhance the robot's thermal resistance in order to better deal with the heat of fires. Furthermore, data collection and management improvement (for manoeuvring, detection, sounds...) is a priority in order to enhance accurate data processing capabilities so that crises are addressed more efficiently. We are also focusing our efforts on inter-robots communication, dealing with interferences amongst robots for example. However, we are not interested in developing remotely autonomous robots for first response operations. The only autonomous application that immediately comes to my mind is for CBRN perimetec and detection scanning.

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What is the French State's implication in robotics projects? Is it considered as an R&D priority?

The French State participates in R&D projects through the *Agence Nationale de Recherche* ARN (National Research Agency) and the *Banque Publique d'Investissement* BPI (National Investment Bank). The French State has contributed approximately 1 million euros for R&D robotic research projects. For the moment the budget allocated by the French State is important but remains still quite reasonable.

In March 2013, Mr Montebourg, Minister for Production Recovery, launched a special programme dedicated to national robotic research and development for industries and personal assistance purposes mainly. However, Minister Montebourg did acknowledge that robots could also play an important role in the field of security. Consequently, I believe this is only the first step towards more state investment in robotics R&D.

What are French strategic priorities when it comes to CBRNe?

It is not my role to talk about the State's priorities but in my opinion through the national strategic documents called the *Livre Blanc de la Defense* (White book for Defence) published in 2013; the French State enumerated a number of key strategic priorities for the military and civilian units for the fight against terrorism.

Due to harsh constraints on defence and internal security budgets, I cannot predict what future evolutions will be. However, I have noticed that the French State has stepped up its efforts to address malicious and accidental activities in order to increase citizens' security. At the *Sapeur-Pompiers'* level we have really noticed first hand that the scope of our prerogatives has been broadened in order to encompass national security threats emanating both from accidental causes but also criminal, terrorist and political activities. I will give you an example; we could have to deal with environmental activists that carry out biological attacks: this is not a fictional scenario. As a matter of fact, we have already witnessed an attack on a laboratory carried out by environmental activists who were fighting against animal epxerimentations.

Overall the French State is dedicated to taking into account a broad range of threats whatever their origin in order to protect its citizens. Consequently, CBRN threats remain high on France's strategic agenda.

What is your opinion when it comes to the mutualisation of CBRN response capabilities at the European Union's (EU) level?

This is a very good idea that was initiated a while ago by the Commissioner Michel Barnier who had drafted a project for E4 capability mutualisation. However, I regret that these recommendations have not been sorely followed. At the EU level there is a civil security response mechanism with its' command centre under the authority of the Directorate General ECHO and there is also a training platform at the EU level. This mechanism does not have its own capabilities but it can send specialised teams of experts and coordinate the redistribution of air transport equipment. Eventually, this EU civil response mechanism can deploy CBRN capabilities in the event of an oil spill for example.

In my opinion the EU should go even further and mutualise its capabilities, in the wide spectrum of threats, to security and safety including CBRNe operations.

What is your view on joint EU Robotics research? Do you participate in any of these projects?

No I do not participate in such EU projects. However, I am very interested in new Horizon 2020 research projects that combine the development of robotic platforms as well as data transmission and management applications. In my opinion these robotic projects are not only for industrial purposes but also for the field of security, directly usable by end-users.

I strongly advocate for a European Robotic Cluster that would bring together European robotic manufacturers. EADS was established in 1992; Now I would like to see the EADS of robots. However for the moment, the European robotic Market is scattered, we are witnessing an expansion of the market and every day a new company enters the market so to speak.