

# IFAFRI Industry Day Europe 2019 Conference Proceedings

European Commission  
Tuesday, 15 October 2019  
Brussels, Belgium

# 1 Background Industry Day Europe

To respond more safely, efficiently and effectively to everyday and catastrophic emergencies, first responders around the globe need affordable, technologically advanced tools and equipment.

In furtherance of its mission to address this challenge, the International Forum to Advance First Responder Innovation (IFAFRI) aims to provide a platform for knowledge-sharing and network-building among relevant stakeholders, including industry, academia and first responders. Industry Days are one such platform the IFAFRI designed to influence the primary responder market and industry. The purpose of the Industry Days is to inform industry and academic developers of global first responders' highest priority capability gaps, with operational context and characterisation of the potential global market. The desired outcome was to incentivise industry and academia to pursue the development of innovative, affordable solutions to these capability gaps.

The current First Responder R&D-market is highly fragmented, and government procurement is not agile enough. IFAFRI needs to become a one-stop-shop for countries to learn what technologies are out there and for firms to know what products first responders are interested in.

So, to ensure innovation and the rapid development of affordable products for safeguarding the lives of first responders and victims of natural and man-made disasters, the forum needs to provide (a) vetted, agreed-upon list of global capability gaps; (b) demonstrate the aggregate buying power of its member countries; and (c) inform market actors of government needs.

## 2 Objectives Industry Day

The Industry Day Europe aimed at communicating IFAFRI's goal of enhancing and expanding the development of affordable, innovative technology for first responders worldwide to interested stakeholders. Further, it allowed IFAFRI to present details on its ten high priority Common Global Capability Gaps.

The concrete objectives of the Industry Day were to:

- Inform stakeholders of IFAFRI initiatives and interests, including the Common Global Capability Gaps, the SOOs and the Deep Dive analyses;
- Provide a summary of the ten SOOs to stakeholders to provide them with a clearer understanding of the specific operational performance parameters required by responders;
- Provide an opportunity for stakeholders to directly engage with IFAFRI members and first responders of all disciplines (i.e., law enforcement, fire and emergency medical services (EMS)) regarding each of the ten Capability Gaps and their accompanying SOOs individually, via Q&A sessions, discussions and informal discussions;
- Demonstrate tools and solutions which match with the commonly agreed IFAFRI Capability Gaps to get a better understanding of the current landscape;
- Expand the IFAFRI's base of relevant stakeholder contacts by establishing new stakeholder relationships; and
- Collect general feedback from stakeholders regarding the IFAFRI, its Common Global Capability Gaps and SOOs.

### 3 Added Value for Industry Stakeholders

The Industry Day provided the opportunity for industry stakeholders to learn about needs for first responders, explore possible markets and ultimately deliver first-class security products.

The Industry Day furthermore offered the opportunity for the industry to engage in a dialogue with the demand side (practitioners/first responders) to better identify capability needs and gaps, and to monitor innovation at all stages. As part of this event, an overview of the ten Statement of Objectives (SOOs) documents were presented, which define the operational performance parameters that proposed first responder technology solutions should meet, for all ten of its capability gaps. The IFAFRI developed the SOOs with input from first responders of various IFAFRI-member countries.

The findings from the Deep Dive analyses, that were conducted were, in parts, also presented during the event. The Deep Dive analyses define and quantify the markets related to each gap; characterise other market factors such as market phase, opportunities and barriers; examine the competitive landscape, including existing solutions and those in development; and highlight first responder-specific solutions with relevance to the gaps. The Industry Day also provided the opportunity for the IFAFRI to directly engage with stakeholders through Q&A sessions and virtual chat sessions.

## 4 Industry Day Summary

The half-day event took place on October 15, 2019, in Brussels, Belgium. Hosted by the European Commission (DG HOME), the IFAFRI Industry Day Europe allowed the IFAFRI to communicate its goal of enhancing and expanding the development of affordable, innovative technology for first responders worldwide to interested stakeholders.

There were 200 total participants (approx. 100 in-person and 100 online) from the first responders and security sector and the innovation community which represented the following countries and country groups: Austria, Belgium, Bosnia and Herzegovina, Cyprus, Finland, France, Germany, Greece, Ireland, Italy, Lithuania, Netherlands, Norway, Romania, Slovakia, Spain, Sweden, Switzerland, Turkey, United Kingdom and the United States of America

The agenda is provided as appendices to this summary. In addition, copies of the Industry Day PowerPoint presentations are provided as an attachment to the email that promulgates this summary. Further, the SOO documents and Deep Dive analyses can be found on the IFAFRI website under [Resources](#).

### 4.1 Registration and Networking/Welcome and Overview

Attendees were given time to register for the event prior to the start of the event.

Additionally, participants were able to begin networking and engaging during this time, which occurred from 8:30 – 9:00 AM CET. At 9:00 AM, the first IFAFRI Industry Day Europe commenced with introductory words of the acting IFAFRI Chair and Deputy Head of Unit Industrial Policy and Security Research, European Commission, DG HOME, Andrea De Candido followed by an opening address from Matthias Oel, Director for Migration, Mobility and Innovation, European Commission, DG HOME, as well as keynotes of a couple of selected speakers. Julia Stewart-David (European Commission, DG ECHO) began, followed by a presentation of Radu Pop, an Airbus representative, and Inko Mulder, a first responder from the Dutch National Police. Subsequently, an overview of IFAFRI was given by the Capability Gaps Committee Chair Stefan Tangen (Swedish Civil Contingency Agency) and the ten Statement of Objectives (SOO's) were introduced by Michelle Royal (First Link Analytics). Her contribution consisted of a presentation, the responder operational context, and a Q&A. The event concluded with a live demo of seven solutions: [FOTOKITE Sigma](#) (gap 7), [AGNET](#) (gap 5), [AVENGER](#) (gap 7), [SURVEIRON](#) (gap 7), [HEIMDALL](#) (gap 9), [beAWARE](#) (gap 9), [EOD 10 Bomb Suit](#) (gap 10).

### 4.2 Welcome address: Matthias Oel, Director for Migration, Mobility and Innovation, European Commission, DG HOME

Mr Oel opened his speech by announcing that the role of the Commission in IFAFRI has expanded with colleagues from DG ECHO now also supporting the work in the IFAFRI committees. He continued by reiterating the reasons why the European Commission is so strongly committed to IFAFRI. Protecting the security of its citizens is one of the most high-ranking priorities of the European Commission and is what the people in Europe expect from them. The European Commission's main objective is making Europe a safe and secure place to be. The European Commission, therefore, uses every possible instrument at their disposal to achieve this objective.

Facilitating innovation is one of these instruments because knowledge and technological innovation are strategic enablers for developing capabilities to address today's security challenges and anticipate tomorrow's threats. He highlighted that the work should of the European Commission helps the ones who do the most challenging part in protecting security: the First Responders. They are the ones putting their own lives in danger to protect European citizens. Mr Oel hereafter took the opportunity to thank all first responders in the room for their daily commitment.

Mr Oel continued by giving an overview of how the European Commission tackles the task of making innovation for First Responders possible. The first angle is the Security Research under Horizon 2020, the framework programme for research and innovation of the EU. Every year the European Commission is funding a significant number of projects, some of them were displayed in the exhibition, which is also aiming at better technologies and equipment for First Responders. However, he flagged that research does not always automatically lead to new tools and instruments made available. This is because the civil security market is not a market like any other. It is institutional but fragmented, consisting of mainly public buyers and driven by short-term demands. This causes a discontinuity between research efforts and actual market uptake.

Research for security cannot stand alone but needs to be integrated into the broader Capability Development Process, driven by policymakers and end-users such as First Responders. It is the responder on the ground who can define best what kind of solution he or she needs. Meaning that if research is brought as close as possible to the First responder, it will consequently lead to results that have the highest impact on the front line, making their job less dangerous and more efficient. The European Commission is following this path in research by involving end-users- such as First Responders- as fully-fledged beneficiaries into EU-funded projects. He noted that the European Commission is convinced that this involvement in an early stage of the innovation process is crucial. Thus, the European Commission made the participation of end-users in the research project consortia a mandatory criterion in Horizon 2020. The European Commission will continue along this path under the upcoming new framework programme for research and innovation, Horizon Europe.

Mr Oel also stressed that such a path could not be followed without the continuous involvement of the Industry, which is why he was pleased to see that the private sector attended the IFAFRI Industry Day so well. Without the knowledge and commitment of specialised companies, possible innovative solutions would be trapped in endless circles of research and could never be brought to the market and thus not to the First Responders, which means that an effective Capability Development Process needs industry as one of the key actors. As such industry partners are partners in the consortia of projects we are funding in security research, be it well-established industrial realities, or innovative SMEs. And IFAFRI recognises this crucial role of the security industry as well and wants to make use of its innovative potential to support First Responders with first-class products.

Mr Oel continued his opening speech by highlighting one more fundamental feature of IFAFRI: its international scope. The forum provides a unique setting for sharing information at a global level among partners in security. And IFAFRI is not at all a closed-shop, new members are very welcome. Mr Oel found it a promising sign that many participants during the Industry Day are coming from non-IFAFRI countries and may use this opportunity to make themselves familiar with its interesting work.

Mr Oel moved on with his speech by emphasising the uniqueness of the process set up within IFAFRI to identify and analyse capability gaps. He highlighted that any requirement is valid and relevant if discussed between so many First responders from different parts of the world and mentioned that he

is impressed about the level of granularity of the SOO-documents which he considers is impressive and an excellent guideline for the colleagues from industry and research to suggest solutions for the capability gaps. For the European Commission, they are a valuable source of information to be translated into our security research priorities.

Mr Oel closed his contribution by inviting all to take the time to speak with the different exhibitors that have gathered with several examples of solutions and initiatives that address selected capability gaps identified by IFAFRI.

#### 4.3 Ms Julia Stewart-David, Head of Unit, DG ECHO B1, Civil Protection Horizontal Issues: Keynote speech

In her speech, Ms Julia Stewart-David introduced the work of the European Response Coordination Centre (ERCC), the Union Civil Protection Mechanism (UCPM) and RescEU<sup>1</sup>, which is creating an additional reserve of capacities, including firefighting planes and helicopters to be ready to help Member States when needed, i.e. to complement national capacities when overwhelmed. RescEU also aims to streamline and simplify administrative procedures to reduce the time needed to deploy life-saving assistance.

She stressed that one of the main difficulties in the field of civil protection is knowing what the capacity gaps are. Ms Stewart-David also emphasised that for solutions to be efficient, they need to be interoperable under whatever circumstances. Solutions also need to be transportable, easy to maintain and used. She mentioned the importance of platforms which can enhance communication. Trained personal and technological innovation are also key.

#### 4.4 Mr Radu Pop: Head of Infrastructures and Frontier, Security Solutions Sales, AIRBUS Defence and Space: AIRBUS presentation

In his presentation, Mr Radu Pop gave an overview of the various solutions, services and products Airbus offers for civil protection and first responders ranging from Physical Security Systems to Intelligence Centers & Systems passing through Intelligence Centers & Systems, Communication Systems, Mobile C2. This includes command and control, massive Intelligence for Crisis Management, End-to-end, secure & flexible communications systems and the connection between terrestrial, (Microwave, Fiber Optics, etc.), radio (e.g. PMR) and satellite networks. Airbus' mission is to create innovative solutions which make a difference for emergency responders. Mr Pop emphasised that new trends in the domain are space-based monitoring. He also mentioned the importance of data.

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<sup>1</sup> [https://ec.europa.eu/echo/files/aid/countries/factsheets/thematic/resceu\\_en.pdf](https://ec.europa.eu/echo/files/aid/countries/factsheets/thematic/resceu_en.pdf).

#### 4.5 Stefan Tangen, IFAFRI Capability Gaps Committee Chair (Swedish Civil Contingency Agency): IFAFRI presentation

Mr Tangen gave an overview of IFAFRI and its beginnings, the objectives and its future vision. He explained that the United States initiated IFAFRI after 9/11. In its beginnings, IFAFRI was called a consortium and was based on the bilateral agreements several countries had with the United States. He furthermore explained the difference between the procurement and R&D situation in the military and civil protection sector and the unique challenges the First Responder market faces mainly due to a fragmented and decentralised landscape.

#### 4.6 Michelle Royal, First Link Analytics: Statement of Objectives (SOO) Presentations

The SOO presentations detailed the IFAFRI's ten SOOs that corresponded to the *Common Global Capability Gaps* and provided the opportunity for stakeholders to ask questions and engage in discussion. The format of these sessions included a presentation of each SOO, the responder operational context for each SOO, and then a Q&A for each SOO. The IFAFRI SOO's are as follows:

1. The ability to know the location of responders and their proximity to risks and hazards in real time.
2. The ability to detect, monitor and analyse passive and active threats and hazards at incident scenes in real time.
3. The ability to rapidly identify hazardous agents and contaminants.
4. The ability to incorporate information from multiple and nontraditional sources (for example, crowdsourcing and social media) into incident command operations.
5. The ability to maintain interoperable communications with responders in any environmental conditions.
6. The ability to obtain critical information remotely about the extent, perimeter, or interior of the incident.
7. The ability to create actionable intelligence based on data and information from multiple sources.
8. The ability to conduct on-scene operations remotely without endangering responders.
9. The ability to monitor the physiological signs of emergency Responders.
10. The ability to provide advanced personal protective equipment (i.e., garments, gear, and breathing apparatus) for incident type (e.g., weather, comfort, protection).

#### 4.7 Inko Mulders, Dutch National Police: First Responder Perspective

To add a first responder perspective to the Industry Day, Mr Inko Mulders from the Dutch National Police shared his first responder perspective and gave a presentation on multidisciplinary training. The first half-year of 2019 his unit trained more than 2100 first responders in North-Holland consisting of fire departments, ambulance and police. All included personnel of the communication centre. The team encountered a range of issues during the exercises. The first one was having an up-to-date operational image of the situation. The second point is related to collaboration and the third one, the coordination between the units.



## 5 Interactive Demo

The second part of the day focused on displaying solutions and further engaging with stakeholders through discussions. After the presentations, attendees were directed to the exhibition area where solutions for each of the ten Capability Gaps were presented. At the exhibition, interested stakeholders were provided with the opportunity to discuss the SOOs and solutions related to those SOOs in more detail individually.

Registered participants were visiting the European Parliament for a guided tour after the event.

## 6 Recommended Next Steps

- As a follow-up to this Industry Day and potentially as planning for the next edition keep industry and academia engaged and focused on the IFAFRI gaps while ensuring that the Stakeholder Engagement Committee is prepared to support their needs.
- Maintain intensive outreach efforts to engage in industry/academia.
- Collect and analyse information submitted for potential technology solutions to gaps to develop awareness of potential solutions for IFAFRI and promote that awareness out to IFAFRI members.
- Determine IFAFRI approaches to addressing submissions with varying degrees of maturity (i.e. concepts vs mature solutions).
- Isolate promising technologies that merit additional scrutiny.
- Consider schemes for hosting/attending demonstrations for targeted technologies.
- Develop an outreach plan to describe the IFAFRI approach for appropriate follow up and bringing actions to a conclusion.



International Forum to Advance  
**FIRST RESPONDER INNOVATION**

# **IFAFRI INDUSTRY DAY 2019**

Tuesday 15 October 2019

Rue du Champ de Mars 21  
1050 Brussels, Belgium





## AGENDA

Agenda item	Time
<b>A. Registration &amp; Networking</b>	08:30 – 09:00
<b>B. Welcome and overview</b>	
<b>1. Introductory remarks</b>	09:00 – 09:30
<ul style="list-style-type: none"><li>a. Matthias OEL: Director, DG HOME.B, Borders, Interoperability and Innovation</li><li>b. Julia STEWART-DAVID: Head of Unit, DG ECHO B1, Civil Protection Horizontal Issues</li><li>c. Radu POP: Head of Infrastructures and Frontier, Security Solutions Sales, AIRBUS Defence and Space</li></ul>	
<b>2. Introduction to IFAFRI</b>	09:30 – 10:30
Stefan TANGEN: IFAFRI Capability Gaps Committee Chair <ul style="list-style-type: none"><li>a. Overview of IFAFRI and Goals and Objectives</li><li>b. Global Market Overview</li><li>c. Gap Identification Process</li><li>d. Q&amp;A Session</li></ul>	
<b>C. Statement of Objectives (SOO) Overview</b>	10:30 – 12:00
<ul style="list-style-type: none"><li>a. Presentation SOO #1 to #10: Michelle ROYAL: First Link Analytics</li><li>b. First Responder perspective: Inko MULDER: Programme manager for first-responders training, Dutch National Police</li></ul>	
<b>D. Interactive Demo related to new IFAFRI gaps</b>	12:00 – 14:00
Selected Industry Stakeholders get the opportunity to present their solutions and products to the audience.  Lunch will be served during the Interactive Demo.	
<b>E. Social event: Visit to the European Parliament</b>	Departure at 14h15

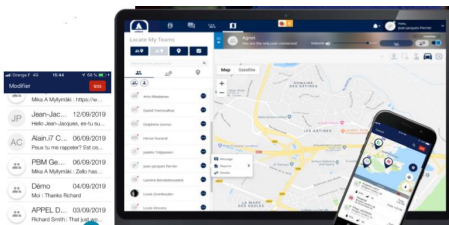
Moderation: Andrea DE CANDIDO: acting Head of Unit, DG HOME B.4, acting Chair of IFAFRI



The interactive Demo related to the latest IFAFRI capability gaps will feature the following products and solutions:

**Gap 5: The ability to maintain interoperable communications with responders in any environmental conditions**

**AGNET** – <https://www.securelandcommunications.com/tactilon-agnet>



©AIRBUS

Agnet is the Mission critical collaboration solution for public safety by AIRBUS. It features:

**Consistent share of information across the teams**

- Uncompromised security – 3GPP MCS compliant
- Interoperability with legacy PMR (TETRA, TETRAPOL, P25, DMR)
- Designed for nationwide coverage (on premise or cloud solution), as well as tactical systems

**Services**

- Individual and group voice communications
- Group and individual multimedia instant messaging
- User location management and monitoring
- Individual and group video sharing
- Emergency calls and lone worker features

**Users**

- Field users (Android & iOS)
- Central or mobile command position (dispatcher)

**Gap 7: The ability to conduct on-scene operations remotely without endangering responders**

**AVENGER** - <https://www.med-eng.com/>

The Avenger is a medium sized Unmanned Ground Vehicle (UGV) and has been designed to conduct on-scene operations from a remote location (in testing distances of 1000m line of sight have been demonstrated), ensuring responders are kept a safe distance from potential hazards. Avenger is



©Med-Eng

supplied as standard with an intuitive controller mostly reliant on icons but where verbiage is used it can be supplied in multiple languages.

Due to its size Avenger can be transported by SUV or small panel van and can be prepared and configured by a single trained operative. Its size permits entry and investigation of urban & rural areas including mass transit vehicles. Avenger is a strong and fast UGV (8km/h in tracked configuration) with a four-hour mission duration (mission dependent). Avenger's integrated architecture allows fitment and integration of 3rd party digital equipment ensuring the system can be specifically configured to conduct EOD, IEDD, CBRN, HAZMAT, SWAT, HRT, SAR missions.

Avenger is fitted with a seven degrees of freedom Manipulator Arm which provides exceptional dexterity with a 2.5m vertical reach, where required Avenger can dead lift 50kg. Avenger's Arm also incorporates pre-set positioning thereby reducing the operational burden on the responder.

#### **FOTOKITE - <https://fotokite.com/>**

Fotokite Sigma is a vehicle-integrated aerial camera system that provides public safety teams with mission critical situational awareness. Fotokites save firefighting and emergency response team resources by launching, flying, and landing with the single push of a button. First Responders can now gain access to both thermal and low light visual video from above, streamed directly in to handheld tablet devices with no piloting necessary.



©Fotokite

Weather rated to operate in rain, snow, and windy conditions, the Fotokite uses a reinforced ultrathin, load-rated tether for precise localization near the ground (independent of GPS or other radio signals), for flight power, and for secure video downstream & control links. Fotokite Sigma systems have already been deployed by Fire Departments in a number of live fire responses, search and rescue missions, and training exercises, bringing significant value to any Public Safety team looking for safe and simple situational awareness tools.

#### **SURVEIRON – <https://aeorum.com/index.php/surveiron-p/>**



©Surveiron

SURVEIRON is a global information system to which drones and counter-drones from different manufacturers can be connected.

SURVEIRON distributed architecture allows drones to be commanded locally or remotely in order to address all kinds of police operational needs. All the information is recorded and processed in the data centre, where different applications run simultaneously. Data can be accessible in real time by other devices anywhere, any time. This allows the commissioning of large police

deployments in a very simple way and without losing the chain of command, achieving a safer and more efficient decision-making.

SURVEIRON also works as a comprehensive counter-drone system. Several anti-drone devices can be integrated into SURVEIRON architecture. The artificial intelligence-based framework analyses all the information in order to maximise the threat detection probability and propose the most effective action response, based on the behaviour rules and security protocols established by the competent authority.

SURVEIRON is completely scalable: more drones and counter-drone devices can be added by simply expanding the data centre.

SURVEIRON is an example of successful open innovation in Europe carried out through the collaboration of the Spanish Ministry of the Interior, the ENLETS network and the Spin Off of the University of Malaga AEORUM.

**Gap 9: The ability try to create actionable intelligence based on data and information from multiple sources**

beAWARE - <https://beaware-project.eu/>



beAWARE is a software platform with several different and interconnected services to support authorities before, during and after a disaster.

beAWARE is installed in the project's servers.

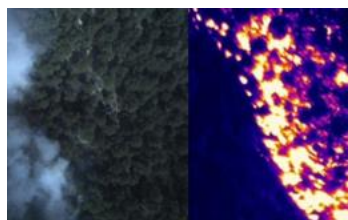
©bcAWARE

beAWARE is an integrated solution that supports forecasting, provides early warnings, transmits efficiently the emergency data, aggregates and analyses multimodal data and manages the coordination between the first responders in the field and the relevant disaster management authorities.

beAWARE relies on platforms, theories and methodologies that are already used for disaster forecasting and management and add the elements that are necessary to make them work more efficiently and in harm under the same objective.

HEIMDALL - <http://heimdall-h2020.eu/>

The HEIMDALL system provides end users with support in emergency situations with respect to preparedness and response plan. The platform leverages on data made available from



©HEIMDALL



remote resources such as EO images and sensors, which can be fed into the simulators or in general used for preparing the response plan.

The product has been validated with respect to the cases of forest fires, terrain movement, and flooding but as a matter of fact has been developed in a modular way so as to possibly extend it towards any kind of hazard.

**Gap 10: The ability to provide advanced personal protective equipment (i.e., garments, gear, and breathing apparatus) for incident type (e.g. weather, comfort, protection)**

**EOD 10 Bomb Suit - <https://www.med-eng.com/>**

The Med-Eng EOD 10 Bomb Suit is the latest generation of personal protective equipment for military and public safety explosives disposal teams. It offers an optimal balance between protection, capabilities and physical mobility. The system is certified by the National Institute of Justice (NIJ) to meet the recent NIJ standard for Public Safety Bomb Suits.

The development of this integrated ensemble took a user-centric approach, meaning it enhances operational capabilities, mitigates heat stress and its components are more user-friendly than previous bomb suit designs. Its advanced features include a Voice Command System that allows the user to control the helmet's technical operations such as its lights, rate of ventilation, and left/right speaker volumes.

The system can be used with a Chemical Protective Undergarment (CPU) and a respirator for CBRNE operations. The ensemble's Remote Control Unit can remember up to four pre-set settings, in support of teams that must share a suit and want their personalized settings recorded.

The system protects against blast threats (overpressure, fragmentation, impact and heat) and can be configured with options such as a steel visor, foot protection, hand protection, hydration system, additional cooling and, hardwire and wireless communications.



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## Capability Gaps

The ability to know the location of responders and their proximity to risks and hazards in real time

The ability to detect, monitor and analyse passive and active threats and hazards at incident scenes in real time

The ability to rapidly identify hazardous agents and contaminants

The ability to incorporate information from multiple and nontraditional sources (for example, crowdsourcing and social media) into incident command operations

The ability to maintain interoperable communications with responders in any environmental conditions

The ability to obtain critical information remotely about the extent, perimeter, or interior of the incident

The ability to create actionable intelligence based on data and information from multiple sources

The ability to conduct on-scene operations remotely without endangering responders

The ability to monitor the physiological signs of emergency Responders

The ability to provide advanced personal protective equipment (i.e., garments, gear, and breathing apparatus) for incident type (e.g., weather, comfort, protection)



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