NEWSLETTER 1

MAY 2020

assistance

Adapted Situation AwareneSS tools and tallored training scenarios for increaSing capabiliTies and enhANcing the proteCtion of First RespondErs

www.assistance-project.eu

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Dear Reader,

Welcome to the first issue of the ASSISTANCE Newsletter. We would like to introduce you to our project and its objectives, our team and first accomplishments after a year of the project implementation.

ASSISTANCE is an innovative approach for protecting the First Responders of different organisations during their mitigation activities in complex disaster scenarios.

Our consortium is developing new tools and capabilities focused on improving the situation awareness (SA) of the FR units in field to support their tasks and increase their safety. ASSISTANCE proposes also to prove the concept of a Virtual Reality (VR) network of training platforms to enhance the training capabilities of the FRs through complex virtual scenarios.

We hope that ASSISTANCE results will be a useful set of tools and capabilities for increasing the protection of the FRs.

If you are interested in getting involved in the project, please take a look at the ASSISTANCE Users Community section of this Newsletter and join the team!

ASSISTANCE Project Coordinator

+ About ASSISTANCE

ASSISTANCE is an international research project funded by the European Commission under the **Horizon 2020 programme** in Secure Societies Challenge addressing the **SU-DRS02-2018-2019-2020 (Technologies for first responders)** topic.

The main purpose of ASSISTANCE project is twofold: first **to help and protect different kind of first responders' (FR) organisations** that work together taking into account the type of disaster/crisis they are mitigating in each moment and second **to enhance their capabilities for facing complex situations** providing them advanced training based on Virtual Reality (VR), Augmented Reality (AR) and Mixed Reality (MR), tailored to their real needs depending on the type of incident.

ASSISTANCE will employ **novel technologies** such as: **drones, robots and innovative modules** for increasing the FR's **situation awareness (SA)** and taking into account their **needs in terms of data** (e.g. real time video, persons and objects location, evacuation routes status, ad-hoc network coverage etc.).

ASSISTANCE will also establish **the core of an advanced training network based on VR, AR and MR** along with a set of **training curricula tailored to the needs** of the different types of first responders (e.g. **Firefighters, Emergency medical services, Police**, etc.) and characteristics of **the type of incident**.

All the ASSISTANCE results will be tested under controlled conditions in **three different demonstration pilots** which will involve FRs from different organisations.

The solutions proposed in ASSISTANCE will be developed in compliance with **EU societal values, fundamental rights and applicable legislation**, including in the area of **privacy and personal data protection**. Societal aspects (e.g. perception of security, possible effects of technological solutions on societal resilience, gender diversity) will be taken into account in a comprehensive and thorough manner.

+ Year1 summary and accomplishment of the first project milestones

ASSISTANCE project has been **started in May 2019** with a kick-off meeting hosted by its **coordinator Universidad Politécnica de Valencia** in Spain.

In addition to the project management tasks (WP1), activities in four work packages have been launched with the first month of the project, i.e. **User requirements, scenarios & system architecture** (WP2), **Advanced training network based on virtual and augmented reality** (WP6), **Gender, ethical, societal and legal issues** (WP8) as well as **Exploitation and dissemination** (WP9).

ASSISTANCE KoM

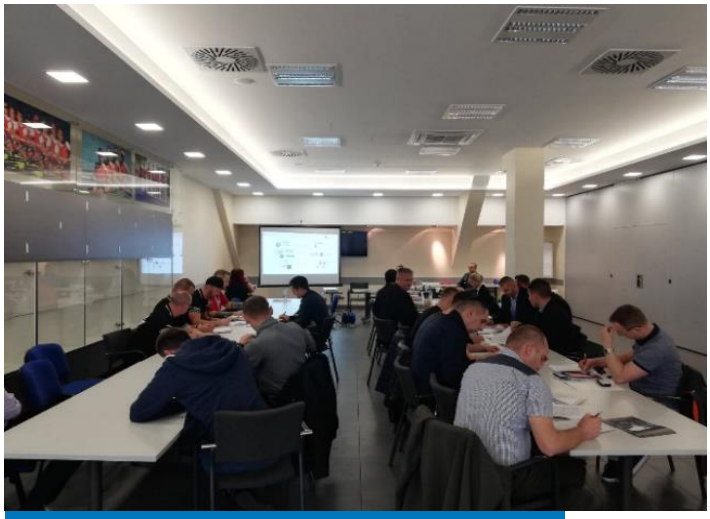
In the first half year of the project implementation **several deliverables** have been produced in these work packages and **successfully submitted to the EC within the planned schedule**, with the first one – the project public website (D9.1) – in operation from month 3.

Delivered results cover both the administrative and research part of the project. Project management handbook (D1.1), Data Management Plan (D1.2) and Risk & Opportunities Register (D1.3) have been produced as tools serving an efficient project execution and management of its outcomes, while the research works of the various ASSISTANCE teams focused on analysis and identification of the **State-of-the-Art Situational Awareness and training tools (D2.1)**, specification of the **user requirements (D2.2)** and definition of **reference scenarios and pilot experiments (D2.3)**, accompanied by the **studies on the relevant legal EU framework and assessment of the ethical impact (D8.1)**.

Majority of these outcomes will be publicly available on the project website after they are approved by the EC services, during the first project review scheduled for end of May 2020.

Besides the development and submission of deliverables, the activities of ASSISTANCE partners covered **organisation and participation in different types of events (workshops or fairs) and liaison with other related research initiatives**, such as other H2020 project in security theme.

On 18-19 October 2019 **CNBOP-PIB** has **co-organised the 4th DroneTech World Meeting** – an event encompassing two days of **B2B meetings, demonstrations and indoor drone racing championships** combined with a **trade fair** and a **conference**. At the event, ASSISTANCE was presented to the end-user community during a **project-themed workshop for all representatives of first responders, uniformed services and rescuers**, which was devoted to the **use of new technologies (VR, AR, drones, etc.)** when dealing with disasters such as: **earthquake, industrial accident** or **terrorist attack**, as well as new training methods.



DroneTech World Meeting 2019 (CNBOP-BIP's stand and workshop with end-users)

Also in October 2019 **FADA-CATEC** has presented ASSISTANCE at their stand during the **S-moving 2019 event** and **UPVLC** made a presentation introducing the project during the **kick-off meeting** of the **H2020 INGENIOUS** project.

S-moving 2019 event (FADA-CATEC's stand)

ASSISTANCE presentation at the INGENIOUS KoM

The first half year was concluded with the **general assembly meeting in October 2019**, hosted in Rome by E-Lex. The meeting included a summary of the delivered results and a progress check of the ongoing works as well as an **early kick-off** of another two work packages **WP3 Sensor abstraction service (SAS)** and **WP4 Unmanned platforms & wearable sensors**.

Back to back with the plenary meeting, **E-Lex** has organised a public seminar - **International Workshop on Data Protection and Security in Emergency Situations**, where ASSISTANCE was presented by its coordinator prof. Esteve.

ASSISTANCE General Assembly meeting in Rome

International Workshop on Data Protection and Security in Emergency Situations

The next six months of the project implementation brought another **successful and timely deliveries of results in all active work packages** as well as active interaction between the partners, such as the **technical meeting** held between **Ł-PIAP and OSPOM on sensors and payloads** that can be used on the **mobile robot** in ASSISTANCE scenarios. In result of these discussions an additional use case has been proposed, related to **integration of the cutting extinguisher** on the robot's arm.

Meeting between Ł-PIAP and OSPOM

The first year of the project implementation was summarised during the **plenary meeting in March 2020** that was originally planned to be hosted by IFV in The Netherlands. Due to the SARS2-COV-19 pandemic the meeting was organised **in a teleconference format** and was **accompanied by the remote workshop** with consortium end-users on the **detailed design of the Situational Awareness Platform's HMI** and presentation of the **IFV training platform**.

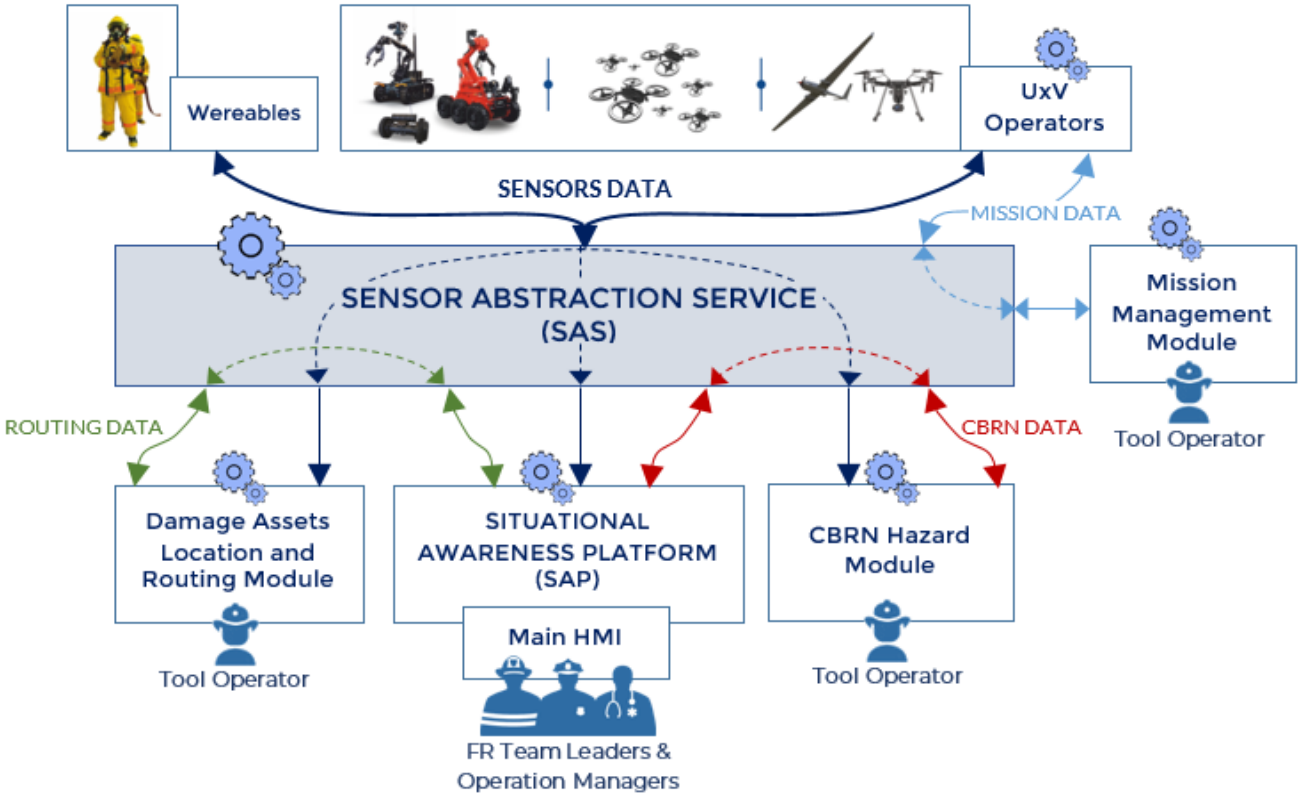
Two major project milestones have been achieved during the first year of the project implementation: **gathering of the user requirements (MS1) and definition of the system architecture (MS2)**.

+ ASSISTANCE system architecture

The core of the ASSISTANCE system is the Situational Awareness Platform (SAP) that will receive data from different sensors and sub-systems to integrate all this information and display it through its main HMI in a manner tailored to the various types of the First Responders using the platform. **Different ASSISTANCE modules and systems will gather information** from sensors and different sources and send the results to the SAP.

All information exchanges in the ASSISTANCE system will be performed through the Sensor Abstraction Service (SAS) module, which will provide a homogeneous manner of exchanging all necessary data among the different ASSISTANCE modules/sub-systems.

The overall ASSISTANCE architecture, its components, interactions and information flows are shown below.

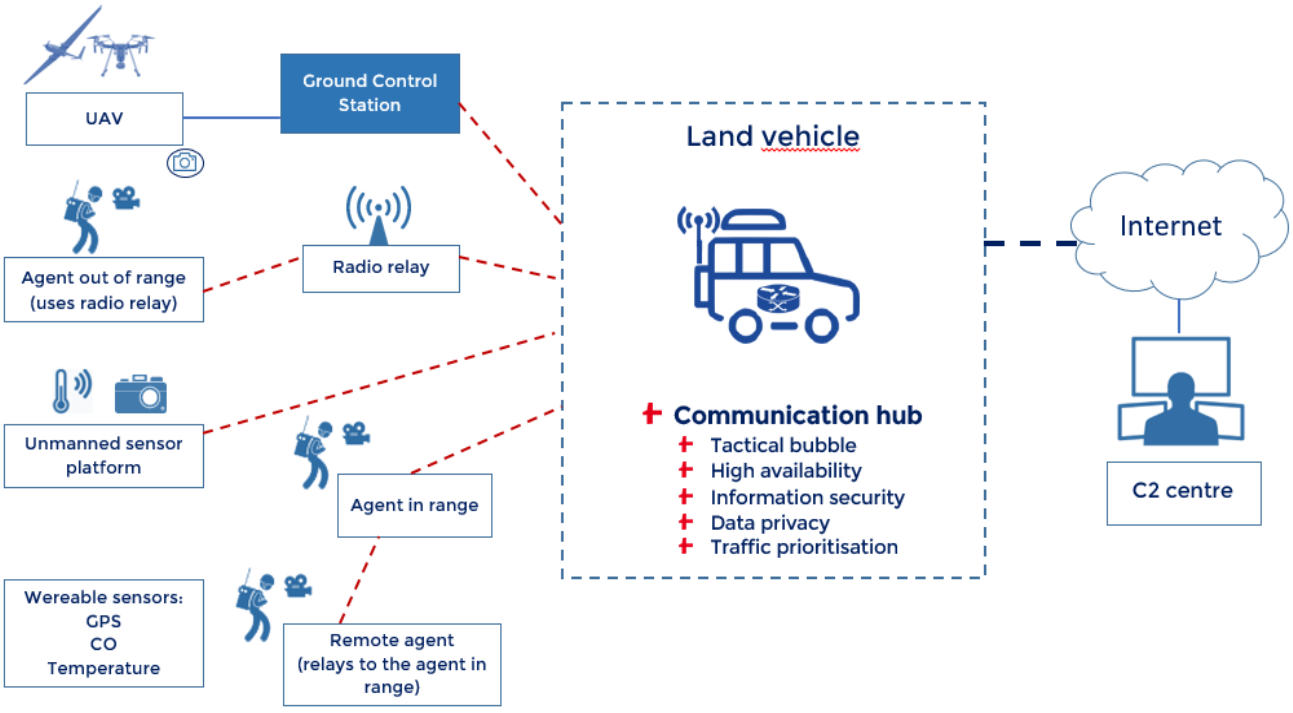


ASSISTANCE Architecture Schema

ASSISTANCE will be tested in three disaster scenarios: earthquake, industrial accident and terrorist attack, using variety of use cases related to different ASSISTANCE modules. In all pilots the SAP will receive **video streams and measurements from cameras and sensors mounted on mobile platforms or as wearables**. Other data will come from **the Damage Assets Location and Routing module**, providing the optimum routes (avoiding all potentially dangerous areas or damaged infrastructures detected) as well as from the **CBRN Hazard module**, which provides information on toxic plumes or gas location and prediction of its evolution. The **Mission Management** module will publish via the SAS the mission parameters for drones or robots.

In the ASSISTANCE pilots' deployments there will be **two different kinds of C2 centres**, the advanced C2 centre and the rear C2 centre. The advanced C2 centre will be deployed on field and it can be composed by one or several laptops that directly take information from sensors deployed on field and use this information for taking tactical decisions and also for protecting the units deployed on field. **It is possible that different kinds of FRs have their own advanced C2 centre on field**. The rear C2 centre is the entity that has a global view and control of all the components of the ASSISTANCE system.

In order to establish **a reliable, resilient, robust and secure connectivity between sensors, UxVs, field units and C2 centres** the overall ASSISTANCE communication solution is based on a **secure hybrid network approach** which will provide the necessary availability and data rates within the latency constraints. It will be able to support the large set of interactions between the field operators and the advanced and rear C2 centres in time-critical missions and will ensure **high availability in remote areas outside of the coverage area of common communication networks and/or areas where these networks were disabled** due to an emergency event. The high level overview of the ASSISTANCE network architecture is shown in figure below.



ASSISTANCE Network Architecture Schema

+ *ASSISTANCE User Community*

One of the goals for the ASSISTANCE consortium is to establish **a broad dialogue with the end-users on the solutions proposed in the project and collect input on expectations as well as feedback on the results**. We are aiming to build a large community around the ASSISTANCE project that will encompass various end-users and stakeholders interested in **being informed on the progress of the project, its conclusions and results as well as in active engagement and support for different project activities**.

For that reason the **End User Group** has been established and is **coordinated by our end-user partner AAHD** under a dedicated project task.

The committed members of the Group may support and influence the project providing **inputs on end-user needs, gaps and existing practices, participating in workshops, field exercises and demonstrations to provide feedback** and contribution to **dissemination of the project and their results via available communication channels** to create large awareness, which is paramount to preparing the future acceptance and uptake of project results.

If you would like to join ASSISTANCE User Community and become a member of the End User Group please fill in the Letter of Intent available under this link and send to fecarrod@upvnet.upv.es.

+ Contact

You can find us at: + www.assistance-project.eu

/ASSISTANCEh2020 /assistance-project

Contact us: + contact@assistance-project.eu

assistance

H2020 call	H2020-SU-DRS02-2018-2019-2020 (Technologies for first responders)
Timeline	01/05/2019 – 30/04/2022 (36 months)
Budget	6 393 691.25 Euro
Coordinator	Universidad Politécnica de Valencia
Countries	8
Partners	19

PARTNERS

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