

CONNEXIONS Newsletter

InterCONNECTed NEXt-Generated Immersive IoT Platform of Crime and Terrorism
DetectiON, PrediciON, InvestigatiON, and PreventiON Services

Issue 2, December 2020



EDITORIAL

A bittersweet farewell to 2020. For CONNEXIONS, 2020 was the second year of its implementation where promising activities, collaborations, and progress were planned. Even though the pandemic changed rapidly our everyday lives and postponed multiple aspects of our goals and dreams, the CONNEXIONS consortium achieved its objectives and continued to work with positive attitude and much more determination for the future. In a year where our health and security were challenged, it was our duty to continue to work hard to fulfil our promise to provide a secure environment for EU citizens. On behalf of the CONNEXIONS consortium, we would like to wish you a Happy New Year and a turn of the page in 2021, where we will continue to deliver on our promises and gain our lives back.

CONSORTIUM UPDATES

The second year of the project saw several updates in the CONNEXIONS consortium:

- In October 2019, **the coordination was transferred from Motorola Solutions to CERTH-ITI ([Multimedia Knowledge and Social Media Analytics Laboratory](#))**, which was already the Scientific Manager of the project. **Motorola Solutions remained as the Technical Manager**, thus affirming their commitment to the project and their strong interest in the results that will be produced, also with a view to future exploitation.
- Additionally, we **welcomed KEMEA ([Centre for Security Studies](#))** to the consortium as a replacement of the Spanish National Police. **KEMEA** has significant experience in H2020 projects and its MoU with the Hellenic Police allows active police officers from the Hellenic Police to participate as end users in KEMEA's activities within CONNEXIONS. Moreover, **KEMEA also became the leader of the Dissemination and Communication activities of the project.**
- Finally, a reorganisation of our partner SIVCO ROMANIA SA led to a partial split and resulted in its replacement in the project by its spin off company **SIMAVI ([Software Imagination & Vision](#))**.



PROJECT PROGRESS

During the second year of the project, CONNEXIONS **made significant progress** and underwent a successful review in May 2020.

After gathering the user requirements of the **eight LEAs** in the consortium, the technical partners designed the architecture of the **CONNEXIONS platform** and invested on the development of tools and components pertaining to (i) **multimodal information extraction, understanding, integration, correlation, retrieval, and delivery service**; (ii) **immersive environments** for improving situational awareness, investigation and training capabilities; and (iii) **an Operation Command Centre** for real-time management of LEA operations, with the goal to integrate them into the CONNEXIONS platform.



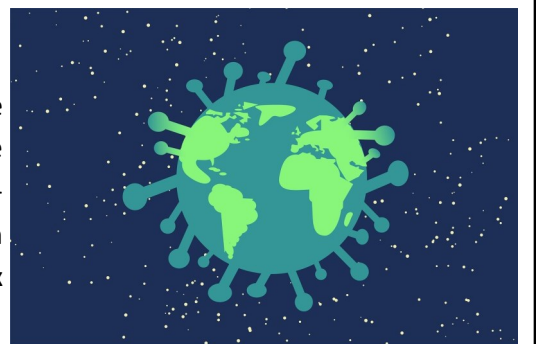
The CONNEXIONS platform is based on **ethics and privacy** by-design principles, implementing EU legal requirements, whilst being highly customisable to local legislation.

An initial validation by the end users of the developed solutions took place in October-December 2020 during the first iteration of our field demonstrations for two operational **pilot use cases** (PUCs):

- **PUC1: Counter-terrorism security in large scale public events, and**
- **PUC2: Human trafficking investigations and mitigation.**

COVID-19 IMPACT

The **COVID-19 pandemic** has affected all of our lives and plans. The main impact on the CONNEXIONS project activities has been on the execution of the pilot demonstrations which needed to be postponed for about six months. To mitigate the effect of this shift in the project planning, CONNEXIONS has been **extended by six months** and will now be ending in February 2022.



CONNEXIONS PUC1 PILOT

"Access to large scale public events needs to be performed in a secure and efficient manner". Thus, the Romanian Protection and Guard Service (**Serviciul de Protecție și Pază – SPP**) has the objective to ensure that all security measures are considered and employed so that threats are detected in time and that any vulnerabilities are fixed before they can be exploited.

CONNEXIONS assisted SPP in achieving the desired level of security with the aid of a platform that can help officers to detect threats, plan security measures, and review measures with the goal of improving human skills.



The first iteration for the PUC1 pilot test on “Counter-terrorism security in large scale public events” was organised by SPP and took place **December 7th, 2020**. Due to the COVID-19 pandemic, a physical meeting could not be organised and therefore a remote meeting was organised, where technical partners could assist the officers when their intervention was needed.

The pilot demonstration took place at SPP headquarters in **Bucharest**. Officers with different specialities joined the demonstration and shared their experience by evaluating the platform from different points of view. All measures were taken to ensure that national regulations regarding the COVID-19 pandemic were strictly followed. All functionalities within the platform were objectively tested and evaluated from the point of view of each officer, by providing feedback to the developers in the form of a questionnaire.

Overall, one can conclude that SPP officers are enthusiastic to involve more **technological solutions in their everyday tasks** and to reduce time and effort for performing their duties. This first demonstration of the CONNEXIONS platform for PUC1 can be considered a success; there are of course still some aspects that need attention and the next iterations will fix any identified limitations and will shape the platform to fit more the needs of officers. SPP highly values the work of its consortium partners and expresses its availability to help improve the CONNEXIONS platform to reach its highest peak.



CONNEXIONS PUC2 PILOT

On **October 22nd, 2020**, CONNEXIONS performed the first pilot test for PUC2 “Human trafficking investigations and mitigation” at the Police Service of Northern Ireland (PSNI) premises. Specially trained officers from the Modern Slavery and Human Trafficking Unit participated in a virtual demonstration of the **CONNEXIONS platform** and associated technologies.

Investigating human trafficking can be difficult for several reasons, but primarily because individuals will be coerced into not reporting a crime due to threats to family members, language barriers or economic instability.

One of the proactive policing methods of investigation for these types of crimes includes regular review of job and other web-based listings for potential signs that the individual may be at risk. This is exceptionally resource-demanding and time-consuming.

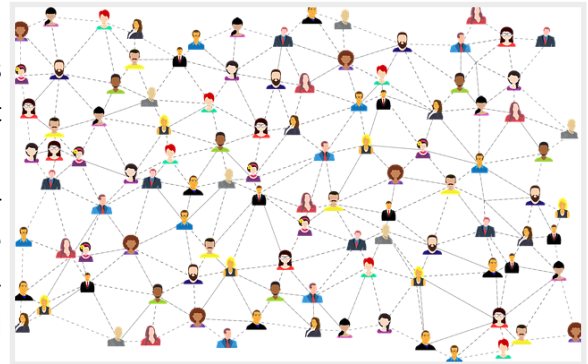
Employing the technology provided by the CONNEXIONS solutions, the platform was able to analyse large amounts of data and identify risk factors associated with human trafficking. The **language analysis and understanding toolset** identified the risk factors, while the **semantic reasoning** component provided a numerical assessment for fast identification of possible victims. Within the main interface, an automatic alert was sent to the investigating officer.

One added feature allowed officers to search the dataset at any given time throughout the analysis period and not wait until the process was completed. This was very useful as some investigations may be time-specific, such as a risk to life. The officers testing the system found it very user friendly and believed it would be a useful asset in their fight against crime.



CONNEXIONS DISSEMINATION & COMMUNICATION ACTIVITIES

The outbreak of COVID-19 pandemic has significantly affected the dissemination impact of projects and especially actions regarding to face-to-face events in physical places. As a swift response to this new challenge, the CONNEXIONS consortium actively participated in multiple virtual events such as webinars, conferences, and workshops in order to disseminate research progress and insightful outcomes with potential users, peers in the research field, industry, other commercial players, and policymakers.



To highlight a few:

- **23rd European Police Congress** (*February 2020*);
- **Cyber security a key research topic under Horizon 2020** (*May 2020*);
- **CoU FCT workshop on organised crime and cybercrime: Synergies, complementarities, platforms** (*June 2020*);
- **Research data in fighting crime and terrorism - ethical and legal clarifications** (*June 2020*);
- **MPD's (Munich Police Department) Cybercrime Unit & Feedback Session** (*July 2020*); and
- **DG Home's Workshop Involvement of Practitioners** (*November 2020*).

Even though the pandemic affects dissemination activities, the CONNEXIONS consortium is striving to eliminate any possible effects by keeping contact and engaging with the stakeholders of the project through a continuous participation in online events, webinars, conferences etc.

A significant achievement of the project in 2020 is the 10 publications that were published reaching a number of **12 publications** in total so far. Publications enhance the research activities, provide validation to the results, and assist in the dissemination of the project's outcomes. Some recent publications include:

- [*User Identity Linkage in Social Media Using Linguistic and Social Interaction Features*](#)
- [*Semantic Web Technologies in Fighting Crime and Terrorism: The CONNEXIONS Approach*](#)



CONNEXIONS Project Next Steps

CONNEXIONS project will continue to participate in online events for as long as the circumstances will not allow any physical presence. In addition, there will be more scientific publications generated and published until the completion of the project. Further, the 2nd prototype will be completed in April 2021, while the second iteration of the pilots for the three CONNEXIONS use cases will take place between May and June 2021, together with related trainings.



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CONNEXIONS Project



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This project has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 786731.

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