

**Programme: Horizon 2020**

**Project: DARLENE (Deep AR Law Enforcement Ecosystem)**

**Project Duration: 1/09/2020 – 31/08/2023 (36 months)**

**Overall Budget: €6.954.860**

DARLENE envisages that Law Enforcement Agents (LEAs), such as police officers, will be able to foster their situational awareness and enhance their ability to accomplish a variety of assignments, utilizing state of the art Augmented Reality (AR) technologies, Machine Learning (ML) and Computer Vision (CV) algorithms. Through a pair of AR Glasses real world objects and persons will be highlighted in real time, thus effectively speeding up the process of identification (whether this refers to detecting firearms or suspects). DARLENE aims to combine AR, ML and CV, taking advantage of the fusion of several heterogenous massive data, originating from the officers’ AR glasses, wearable sensors but also sensors that reside around the officers (e.g., surveillance cameras) towards personalized context-aware recommendations and predictions, which anticipate and prevent criminal activities.

DARLENE will develop practical and beneficial policing applications through the use of affordable, lightweight and unobtrusive AR glasses, such as:

* Real-time scanning and detection. The capacity to detect, categorize and highlight (on demand) elements of the real-world scene, as viewed by the AR glasses’ front-facing cameras, enabling LEAs to obtain real-time information on objects, people and activities. To this end, officers will be able to fully process a scene during a police patrol, through their AR glasses, quickly analyze the scene and detect abnormal behavior. It will further be combined with powerful recognition software, that will enable police officers to identify suspects through face recognition (for each face detected and segmented as an individual in the scene), license plate scanning (for each individual vehicle), etc.
* “X-Ray” Vision for Friend or Foe Identification. This will enable LEAs wearing AR glasses to view interior scenes, as if being able to see through concrete walls. It will utilize multiple indoor security cameras, that will be able to track and reconstruct the 3D pose of both perpetrators of a crime as well as innocent bystanders (e.g., hostages), transferring the data in a manner that will allow the glasses’ software to determine distance to and orientation of each person’s pose in relation to their current position (e.g., armed perpetrator, facing the door to my left). This will allow tactical squads to more efficiently plan their approach, being one step ahead of their enemies and minimizing casualties.

DARLENE will utilize these technologies to address two law enforcement use cases:

* Enhancing surveillance in crowded spaces, including rioting, public speeches, football violence outbreak, concert security etc.
* Tactical neutralization of armed perpetrators in the presence of innocent civilians (e.g., hostages, bystanders, etc.

More information about the project can be found on the [https://www.darleneproject.eu/](https://ssl.microsofttranslator.com/bv.aspx?ref=TAns&from=&to=en&a=https%3A%2F%2Fwww.darleneproject.eu%2F)



 **The project receives funding from the**

**Horizon Programme 2020 Research**

**and Innovation of EU**

**(Agreement No.883297)**