

Artificial intelligence for urban security

May 8, 2023

FBK and the City of Trento are partners in three EU-funded international projects aimed at improving the protection of public spaces.

MARVEL will collect “anonymized” video and audio in 5 squares that can help in reporting the presence of potential dangers, like drug dealing or vandalism, and will monitor traffic.

PROTECTOR is dedicated to protecting places of worship and preventing hate crimes, while the PRECRISIS platform **will** identify potential vulnerabilities in the city environment.

Using artificial intelligence to analyze large amounts of data and improve city security. This is the goal of the three European projects MARVEL, PROTECTOR and PRECRISIS, whose partners include **Fondazione Bruno Kessler**, with its laboratories and research units, and the **City of Trento**, with the Innovation and Digital Transition Service and the **local police**. Thanks to these projects, the city thus becomes a large open-air laboratory for testing new strategies to predict dangerous situations and intervene in an effective and timely manner.

MARVEL, a project funded by the European Union, counts as many as 18 public and private entities among its international partners (among Italian ones, in addition to the Municipality of Trento and FBK, there is also CNR). **Trento** is actually one of the **pilot cities** where the **“distributed technology platform”** is being tested, which is collecting, through the cameras of Trento’s video surveillance system and microphones, audio and video material that will provide help with reporting the presence of **potential dangers**: crimes, vandalism, fights, drug dealing or even excessive crowding and traffic jams. The recordings allow **neither facial recognition** nor **listening to conversations**, because FBK has developed artificial intelligence algorithms that can automatically **“anonymize”** the **data**, making images of people’s faces and voices unidentifiable. It will, however, be possible to detect information that will support crime prevention and citizen safety: for example, screams or bangs or knocks may result in an alert being sent to the local police.

The cameras and microphones used by the MARVEL project are located in four squares, Piazza Dante, Piazza Santa Maria Maggiore, Piazza Duomo and Piazza Fiera, and in the Zuffo parking lot. In addition to detecting dangerous situations related to security, they serve precisely the purpose of controlling traffic (Piazza Dante) and crowding (Piazza Duomo and Piazza Fiera).

Funded by the European Union with a contribution of nearly 6 million euros, the MARVEL project (an acronym for Multimodal Extreme Scale Data Analytics for Smart Cities Environments) will end at the end of the year.

Instead, the trial initiated through the European PROTECTOR project, which involved five police forces in Belgium, Germany, Ireland, Italy and Sweden, ended on April 30. PROTECTOR's main technology partner was FBK, with its [Digital Society](#), [Cybersecurity](#) and [Religious Studies centers](#). Aimed at improving the **protection of places of worship** through the **prevention of hate crimes and terrorist threats**, as well as devising new strategies for security protection, PROTECTOR's technology platform **involves the analysis of data** collected from video surveillance cameras and from social media (Twitter and YouTube). Outcomes include developing specific training tools and supporting law enforcement and public authorities in preventing hate crimes and terrorist acts targeting places of worship.

Funded with 1.8 million euros, PROTECTOR (PROTECTing places of wORship) is also a European project whose partners include FBK and the City of Trento. Urban areas monitored include Piazza Fiera, Piazza Duomo, Piazza Cesare Battisti, Piazza Santa Maria Maggiore and the monumental cemetery.

Finally, an evolution of PROTECTOR, the PRECRISIS project, launched May 1, will develop, test and disseminate **innovative, sustainable and effective digital solutions** based on artificial intelligence in **compliance with ethical standards and data protection regulations**. The technological innovation is the PRECRISIS platform, which will enable the identification of potential vulnerabilities in urban public spaces and **simulate plausible scenarios before, during and after possible terrorist attacks or violence incidents**. The goal is to promote integrated, smarter and innovative security, including through the training of law enforcement, local authorities and first responders.

The European project PRECRISIS (PRotECTing public spaces thRough Integrated Smarter Innovative Security) involves 9 multidisciplinary partners representing 7 EU member states and will end on April 30, 2025.

[Municipality of Trento Press release](#)

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