Preparatory Action for Security Research
(PASR 2005)

PROBANT PEOPLE REAL-TIME OBSERVATION IN BUILDINGS: ASSESSMENT OF NEW TECHNOLOGIES IN SUPPORT OF SURVEILLANCE AND INTERVENTION OPERATIONS

The **PROBANT** project will focus on the development, integration and validation of technologies enabling operators in crisis intervention and surveillance situations to observe individuals located inside buildings and trace them in real time.

The aim of the project is to improve the capability of security officers (in particular police officers) to visualize, locate, and identify human beings hidden behind walls and to follow their movements. In addition, measurements of biometric values will help determining if they are alive, nervous, sleeping, etc.

The system will allow for sophisticated data analysis techniques and for remote control.

In the field of protection against terrorism, the technologies validated by **PROBANT** will serve to prepare for solutions to threat detection and identification in cases where hostages are at stake, like kidnapping and hijacking.

They will allow officers to dispose of the information necessary to plan and execute a safe and adequate rescue operation. Moreover they may be used – according to national penal procedure law dispositions – in investigative operations related to terrorist networks.

PROBANT will trade-off the most innovative and promising technologies and will select them with respect to operational requirements.

Two demonstrators will be manufactured integrating the selected technologies. Both demonstrators will be evaluated under realistic conditions to be determined by the participating end-users, who will also provide a test environment simulating rooms and hostage crisis scenarios. Reproducible movements of bodies will be performed within this environment to objectively assert the performance of the demonstrators. Guidelines will be drawn with respect to performance and to the impact on the operational situations.

The following demonstrable novelties in security are expected as a result of **PROBANT**:

- Effective detection and real time observation of moving people in closed environments, with false alarm rate < 10 % and detection rate > 90 % (impossible with existing devices);
- Improvement of the quality of information in images derived from raw data;
- Improvement of the user-interface features, allowing operators to rapidly understand the images and to take decisions with a high level of confidence;
- Provision of more reliable techniques using biometric data to profile and label the moving people and to establish if a person hidden is still alive;
- Implementation of real time wireless transmission of data to remote control centers, allowing for advanced data processing and comparison with other information sources (merging information from other crisis cells).

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