Greater safety and security at Europe's train stations

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The EU research project, Secur-ED, aims to achieve greater security at Europe's train stations. Here, fire department staff can be seen on a test run in Madrid. Credit: Secur-ED

When a suspicious individual fleas on a bus or by train, then things usually get tough for the police. This is because the security systems of the various transportation companies and security services are typically incompatible. The EU project, Secur-ED, aims at creating remedies and establishing better collaboration within the same city.

The train is leaving in a few minutes. But the teeming crowd at the train station finds it anything but easy to get to the right platform quickly. It is confusing and the overcrowded train platforms make travelers aggravated. Even security experts, train employees, police and firefighters work up a sweat. For example: when they are pursuing a wanted person, or if a suspect leaves a suitcase behind unmonitored. The train stations use IT systems that are intended to protect their customers from hazards. Admittedly, there are problems, though: frequently, only one train station or an individual mass transit operator is in danger. Since the use of this IT is not coordinated on a centralized basis, the systems within a city are frequently incompatible with each other. That makes it difficult to exchange information in critical situations and to respond in tandem.

Technologies that "understand" each other

The Secur-ED Project aims to reveal how organizational and information technology-based collaboration within major European cities can be improved – even doing so when facing a variety of threats and differing parameters. The abbreviation stands for Secure Urban Mass Transportation – European Demonstrator. With 39 partners and a budget of EUR 40.2 million, it is one of the largest demonstration projects in European security research. "Since most major cities already have numerous sensors – like video cameras – and control centers for security in local transit, we initially analyzed where the duties lay for those participating partners as well as for the existing IT systems, " says Dr. Wolf Engelbach, Project Director at IAO. "For this purpose, we have developed an interoperability concept: It describes the best possible ways for participants to share their information during crisis situations. Building on that foundation, concrete formats that regulate the exchange can be developed and implemented." To enablesecurity agencies to more effectively share their information and discuss their approaches, the researchers also built a multi-touch table: After extraordinary events, the

participants can select data, provide it to the partners and jointly assess the situation.

Test runs in Berlin, Madrid, Milan and Paris

Together with their partners, the researchers connected the new solutions from Secur-ED to integrated solutions – coordinating for the train stations and railroad networks in Berlin, Madrid, Milan and Paris – and tried them out there in test runs. For instance, an "unauthorized party" slipped into a railroad storage depot in Milan, which the staff at the "control center" was able to detect with the aid of a heat-sensitive camera and a camera with a zoom-lens. In another scenario, a bus driver felt one passenger was "suspicious" and reported this to Central. Although the passenger got out at the [train station](), the employee at the control center kept an eye on him – thanks to a new software product. All they had to do was mark the suspicious individual on the camera image. The software then automatically calculated where the suspect might have moved and of the total 300 cameras, recommended to the employee those cameras that last tracked that individual.

When conducting a manhunt for specific individuals, the police will soon be able to count on the project's findings, as well: For example, the researchers in Madrid transmitted an image of the individual being sought via LTE – the cellular network – to the city's busses. Cameras in the busses compared the faces of boarding passengers with that of the target individual. If the face was a match, the system dispatched an automatic message to the bus driver and the control center.

Despite the sheer number of these exercises, the project partners were unable to run through all the developments in all their variations. Therefore, the researchers at IAO also developed recommendations as to how various scenarios could subsequently be adapted. These include agent-based simulations and calculations for gas dispersion in order to

plan evacuations as well as to place cameras and sensors.

The closing conference of Secur-ED (www.secur-ed.eu) takes place on September 17 in Brussels. In addition, the project will be presented at Future Security 2014, the security research conference in Berlin, from September 16 to 18 (www.future-security2014.de).

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