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Securing the **future**

How European Union **research projects** are contributing to the security of citizens throughout the continent

The freedom that Europeans have today to go about their daily lives, without worrying about the dangers that they may one day have to face, is a fundamental freedom that the European Union seeks to uphold in the future through its security research projects.

By injecting €1.4 billion into security research over the 2007-13 period, the EU is paving the way for new ground-breaking security applications. These applications will make it possible for the EU to become more adequately prepared for any upcoming challenges.

While national governments are doing everything in their power to protect their citizens from risks posed by terrorism, organised crime and natural disasters, the nature of these risks may necessitate greater action on a wider scale. This is why experts are getting together from all across Europe to share ideas, develop and test new security systems and supply emergency equipment.

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The **Ethics** of Technology



The EU's research security programme addresses ethical challenges. Scientific progress must not come at the expense of personal freedom and liberty.

Rather than wait for privacy issues to arise, researchers are looking forward and thinking of ways to make privacy and technology compatible at the design stage, before they come into conflict.

New technologies, such as camera surveillance, are being reviewed to identify ethical issues and uncover 'undesirable features'. Researchers are asking if the fight against terrorism has consequences for human rights, one of the EU's key principles.

Prevention is best

Several of the EU research projects aim to prevent disasters before they occur.

Rather than respond to a bomb attack, wouldn't it be better to find out and close down the clandestine factory where the bombs are being made? Sensitive devices that analyse the air for substances used in bomb making are being developed to be placed in various locations. Once these devices identify the presence of dangerous substances, they then cross-reference the data to pinpoint exactly where the bomb factory is located.

By automatically analysing the movements and noises produced by a gathering of people, it is now possible to detect a riot at its outbreak. Wouldn't this be better than waiting for someone to call the police?

And, rather than see people fall ill due to contaminated water supplies, wouldn't it be better to be able to detect the presence of unwanted chemicals? Through the use of biofilms on pipe walls, it may well be possible in the near future to rapidly detect an attempt to contaminate the water supply. This would then prompt the launch of decontamination measures and limit the number of victims.



More security, **less hassle**



Technology-driven security should be as transparent as possible. We want to be safe, but we also want to maintain our freedom of movement and ability to conduct business.

Mass transport is an interesting case in point. Transport systems such as underground railways are particularly vulnerable to terrorist attack, yet are critical to the daily life of millions of city dwellers. Trains are often packed with commuters carrying all kinds of bags where dangerous material could easily be hidden. An attack is likely to result in a high number of casualties.

Unlike airports where access is highly regulated, access to urban public transport is unrestricted. And while the number of people travelling by air is not small, it shrinks in comparison to those travelling by public transport. By way of illustration, 56 million passengers use Frankfurt airport a year – a staggering 7.3 billion use the Paris and London public transport systems. There is a clear need therefore to consolidate research into urban transport security.

These kinds of gaps are being addressed in the security projects. Using integrated technologies, solutions are being investigated to make rail systems in large cities safer. The technologies developed should also make security less

burdensome. The integration of technologies, such as biometrics, e-documents and image analysis is likely to result in fewer border checks. These developments can also free up security forces from the more mundane tasks, allowing them to concentrate on more essential ones.

"The technologies developed should also make security less burdensome."

Maritime border surveillance is another interesting case, as it involves physically sweeping huge areas of coastline, often by plane. Limited budgets mean the coastline therefore cannot be fully protected around the clock against smugglers or illegal immigrants. New technology is being developed to do this, in a way that saves both money and time over the long term.

This is by no means an easy challenge. Researchers are aiming to create a system that can automatically distinguish between legitimate recreational craft and boats carrying illegal immigrants or smugglers. In addition to the sophisticated software, designers have to invent cameras and listening devices that can withstand difficult environmental conditions, including salt, wind and sun.

Preparing **first responders**



Even with the best efforts in place, terrorist attacks or natural disasters are always hard to prevent. So we should be well prepared.

First responders are dedicated people who face a wide range of risks in their daily work. In recognition of this, the EU is paying special attention to them in the current round of funding.

When first responders are required, technology developed through the EU security research programme will mean they are equipped and trained for any eventuality. A multipurpose, lightweight respiratory protection device against gas, fire, radiation or biological attacks is one such example.

The projects are diverse and include standardisation of training curriculums, interoperable communications systems for first responders, devices for detecting trapped people following a building collapse, identification of the needs of medical first responders. These committed people deserve the best protection technology can provide.



The European Commission is funding a number of wide-ranging research activities to develop new and enhanced security measures. The projects below all aim to make Europe a safer place for citizens.

ADABTS - AMASS - BeSeCu - COCAE - COPE - CPSI - CREATIF - CRESCENDO - CrisComScore - DEMASST - DETECTER - EFFISEC - ESCoRTS - EULER - EU-SEC II - EUSECON - FESTOS - FORESEC - FRESP - GLOBE - iDetecT 4ALL - IMSK - INDECT - INEX - INFRA - LOTUS - NMFRDisaster - Odyssey - OPERAMAR - OPTIX - SAFE-COMMS - SAMURAI - SECRICOM - SECTRONIC - SecurEau - SECURENV - SEREN - SGL for USaR - SICMA - STRAW - SUBITO - TALOS - UNCOSS - WIMA2S

These are the first 45 security research projects being undertaken as part of the Seventh Framework Programme for Research and Technological Development (FP7). By cooperating and coordinating on a broad scale, the EU is preparing itself to better assess and respond to new and emerging risks.

For further information, please visit DG Enterprise and Industry's website (http://ec.europa.eu/enterprise/index_en.htm) and FP7 website (<http://cordis.europa.eu/fp7/>).



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