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# Press release

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## **Rachel: “Increased security thanks to the quick detection of hazardous materials”**

**The BMBF is providing €29 million in funding to 16 new collaborative projects for the detection of toxic and explosive substances**

Explosives, toxins and biological pathogens are highly hazardous, even in tiny amounts. The more quickly they can be detected in places such as airports, public transportation systems, or in drinking water, the more effectively people can be protected from them. It is vital for emergency and rescue personnel on the ground to be able to identify the danger posed by toxic and explosive substances in a quick and unambiguous way. More speed, mobility and safety – those are the goals for the detection of chemical, biological, explosive and other hazardous materials. Sixteen collaborative projects are receiving €29 million in funding from the Federal Ministry of Education and Research in order to achieve this ambitious goal. In total, 73 partners are participating in these projects.

“The scientific community and the business community have joined forces with security and rescue services to ensure that hazardous materials do not spread in a way that causes harm to people and the environment. In this way, new solutions can be developed in a timely and practice-oriented manner from the very outset. This is the clear aim of the national programme for civil security research, which will result in more security for our citizens“, said Thomas Rachel, Parliamentary State Secretary at the Federal Ministry of Education and Research in Berlin on Monday, at the launch of the research projects within the thematic priority “Detection Systems for chemical, biological, radiological, nuclear and explosive hazardous substances”. A broad range of new processes and methods are being developed in these projects. The research will also cover ethical, psychological and organizational issues relating to the use of these new technologies.

The projects for the detection of biological hazards focus on the early and reliable identification of biological pathogens that cause epidemics. They also concentrate on the detection of

noxious drinking water contaminations. Other projects have the aim of developing practicable and portable systems for the detection of toxic or explosive substances as well as on-location analysis methods for the examination of suspicious objects and systems for the detection of warfare agents. There are also some projects that focus on researching the use of terahertz technology in security technology applications.

Further information is available from:

**Projektträger Sicherheitsforschung**

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**Projects:**

**AquaBioTox – broadband sensor for monitoring drinking water.** This research project works on the development of a broadband sensor concept that will monitor drinking water and raise alarm in the event of an attack.

**ATLAS – procedure for the quick detection of epizootics.** The aim is to develop a new method for the quick and reliable detection of epizootics and thus for the protection against agroterrorism, among other threats.

**BiGrudi – risk assessment, ultra-fast detection and identification of bioterrorism agents.** A project for the development of a quick and easy-to-use diagnostic platform for assessing the risk posed by suspicious samples. A further aim is to embed this platform into an effective risk communication concept.

**ChipFlussPCR – detection system for biological hazards.** The objective of this project is to develop a portable lab-on-a-chip system for the detailed analysis of biological hazards.

**ChipSenSiTek – gas sensor system for the detection of explosive materials.** This system is to be used for the detection of explosive materials in the security systems of airports and other buildings, such as financial and data processing centres.

**DACHS – detector array for the detection of toxic substances.** The aim of this project is to develop a detector system that is able to enrich and analyse gas traces and that can be used for the quick on-site detection of hazardous materials.

**EXAKT – detection of airborne chemical and explosive materials.** The aim of this project is to analyse gas streams quickly and precisely. The detection of airborne chemical warfare agents and explosives is especially important.

**HANDHELD – portable device for the detection of hazardous substances for airport personnel.** Portable terahertz spectrometers are to be used to detect liquid explosives.

**IRLDEX – detection process for explosives.** This process will be used for the examination of IEDs (Improvised Explosive Devices, booby traps).

**PathoSafe – spectrometer for biological hazards.** This project has the aim of developing a device to help emergency forces detect biological hazards quickly and easily.

**Safe Inside – process for the detection of hazardous materials in hollow spaces.** A project that works on developing a fast and reliable detection system to be used by first responders in areas that are difficult to access.

**TEKZAS – camera for the detection of hidden and dangerous objects** in airport security checks, on the basis of terahertz technology.

**TeraCam – active, fully electronic, realtime system** for the detection of hazardous materials and weapons.

**TeraTom – high-resolution terahertz tomography for security applications.** Work on the development of a shoe scanner.

**THEBEN – ethical issues.** The evaluation and development of the new terahertz technology for security applications.

**THz-Videocam – passive video camera** able to visualize hidden metallic and ceramic objects that cannot be detected using existing optical processes.