



SECURITY INDUSTRY

in the Berlin-Brandenburg Capital Region

THE GERMAN CAPITAL REGION
MORE VALUE FOR YOUR INVESTMENT

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Introduction



“Civil Security” is an essential component of the activities the city of Berlin pursues in its capacity as Germany’s capital. It affects nearly every aspect of citizens’ lives as well as tourism, industry and research. Policy-makers are called upon to find answers to the issues of security in our society.

Citizens, businesses and the Land have a shared interest in the prevention, containment and control of security risks. Laws aimed at reducing security risks have already been stepped up at the European and German levels, and these efforts are continuing. Measures have also been taken to increase the availability of security technology and techniques. In response to increasing demand and new markets on the one hand and the need for more efficiency and higher standards on the other, economic regions across Germany and Europe are now competing to raise their respective profiles in the security economy.

Germany’s capital region is at the forefront of this trend. Berlin and Brandenburg are well positioned to compete in this arena by better safeguarding the security of the capital region and simultaneously providing security technologies and techniques that the world needs.

The Land of Berlin launched the technology initiative “IT-Enhanced Security” (Sicherheit mit Informationstechnologie) in 2002 as a component of “Project Future” (Projekt Zukunft). From the outset, companies and institutions located in Brandenburg have been involved in this initiative. Numerous projects have since been implemented and networks created. The “Master Plan for the Security Industry and Security Research in Berlin-Brandenburg” was adopted in 2008.

In 2009, Berlin and Brandenburg jointly applied for the Federal “Leading-Edge Cluster Competition” under the label “SIGNUM”. Brandenburg established the Transfer Office for the Security & Safety Industries (Transferstelle Sicherheitswirtschaft) and the Brandenburg Institute for Society and Security (Brandenburgisches Institut für Gesellschaft und Sicherheit - BIGS).

The Länder of Berlin and Brandenburg now systematically participate in international security conferences, facilitate technology transfer between research institutions and businesses and contribute to international and European forums that help define future security needs. Since 2010, security has been a central interdisciplinary element of the joint innovation strategy pursued by the two Länder.

For further information, please navigate to:
▶ www.sicherheit.berlin-brandenburg.de
▶ www.gemas-bb.de

Berlin-Brandenburg - Germany's Capital Region

Welcome to Berlin-Brandenburg

Germany's capital Berlin and the Federal Land of Brandenburg form Germany's capital region. With an area of 30,000 square kilometers, the region is the size of Belgium. It has six million residents, making it more populous than Denmark, Norway and Finland. It has a gross domestic product of around 150 billion euros and exports of around 20 billion euros.

Berlin-Brandenburg is also home to future-oriented industries that offer enormous development potential:

- ▶ Media, information and communications technology, and creative industries
- ▶ Transportation technology / mobility (aerospace, automotive engineering, rail technology, telematics)
- ▶ Services (logistics, financial services, trade, manufacturing-related services, call centers, tourism)
- ▶ Life sciences (biotechnology, medical technology)
- ▶ Industry (chemicals, machine building, food, lumber, paper, metal, fuels)
- ▶ Micro-technology / enabling technologies (laser technology, nanotechnology, optics)
- ▶ Energy and environment
- ▶ Clean technologies

As a relatively new, interdisciplinary industry, the region's security sector profits from the strength of all these cutting-edge industries and is building a profile that most likely is unique within Germany.

There are ten factors that set Berlin-Brandenburg apart as a location for business and industry:

- ▶ Proximity to decision-making centers
- ▶ The highest concentration of research activity in Germany
- ▶ Qualified workforce
- ▶ Flexible working hours
- ▶ High productivity
- ▶ Modern infrastructure
- ▶ Innovative suppliers
- ▶ Affordable real estate in all locations
- ▶ The best economic development incentives in the EU
- ▶ Outstanding quality of life



The Market for Security Solutions in Germany



The global market for security technology solutions and services is expected to grow from nearly \$80 billion in 2008 to over \$180 billion in 2015. The market in Germany will experience the same dynamic growth.

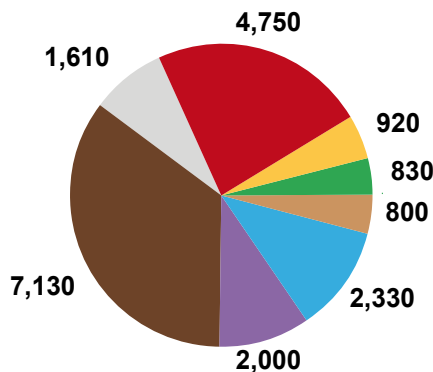
A study by the Federal Ministry of Economics and Technology (Bundesministerium für Wirtschaft und Technologie - BMWi) forecasts especially fast growth over the coming years for the segments IT security and biometrics. This forecast forms the basis for the Ministry's industry policy initiative "Civil Security: A Key Future Market" (Industriepolitiches Konzept für den Zukunftsmarkt zivile Sicherheit).

The concept was introduced on November 24th, 2010 and is based on three pillars:

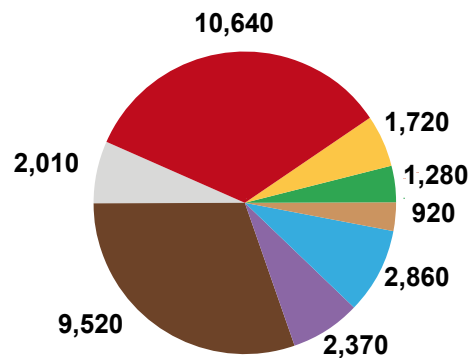
- ▶ Export initiative for security technology and services,
- ▶ Coordinating office for the security industry,
- ▶ Incentives for security clusters.

The objective of the Land governments of Berlin and Brandenburg is to ensure that businesses and research institutions in the capital region are part of this positive development.

The market for security solutions in Germany in 2008 (in millions of euros)



The market for security solutions in Germany in 2015 (in millions of euros)



■ Hazardous materials
 ■ Fire
 ■ Equipment
 ■ Identification / authentication
 ■ Break-ins
 ■ Investigations
 ■ IT security
 ■ Emergency communication

The Market for Security Solutions in Berlin-Brandenburg

Providers

Over 250 businesses in Berlin and Brandenburg currently operate in the security industry. Their turnover amounts to approximately 3 billion euros, and they employ over 27,000 people. Half of these businesses were founded in the last ten years, and since 2003, their sales have been increasing by 18% annually.

Security technology, IT security and security services are especially well represented in the capital region. Over 40 independent and university-affiliated research institutes work on security issues, and several institutions of higher learning offer education and professional development in security-related fields.

Number of businesses in Berlin-Brandenburg that offer security solutions:

| | |
|-------------------------------------------------|------------|
| ▶ IT security | 124 |
| ▶ Production of security technology and systems | 75 |
| ▶ Service and consulting | 43 |
| ▶ Biometrics | 13 |
| ▶ Defense | 11 |
| ▶ Total | 267 |

The Berlin-Brandenburg region offers competencies in a number of security-related areas, including the following:

- ▶ Classic security technology (access control, video technology, physical protection, fire protection, etc.)
- ▶ Systems integration for building security
- ▶ Identification and authentication of people, objects and documents
- ▶ Sensors for the detection of biological, chemical or nuclear hazards or explosives
- ▶ IT security
- ▶ Police tactics for major events and demonstrations
- ▶ National security

Consumers of Security Services

The Berlin-Brandenburg region is home to a high concentration of government institutions that provide and supply security solutions. Security consumers include the following:

- ▶ Constitutional bodies (the Bundestag, the federal government, the Bundesrat, the Federal President)
- ▶ Federal agencies and the representations of the federal Länder
- ▶ Approximately 180 foreign embassies and consulates
- ▶ The Land government of Berlin, with 12 districts, and the Land government of Brandenburg, with 14 administrative districts and four urban municipalities
- ▶ Deutsche Bahn, S-Bahn Berlin and the municipal transport company Berliner Verkehrsbetriebe (BVG), which together form Germany's largest public transportation network
- ▶ Major companies like Siemens, Bayer HealthCare Pharmaceuticals, Mercedes-Benz, MTU and Rolls-Royce Germany
- ▶ Infrastructure operators like Vattenfall, Berlinwasser, GASAG and Netzgesellschaft Berlin-Brandenburg
- ▶ Messe Berlin
- ▶ Berlin Brandenburg Airport
- ▶ Logistics companies like DB Schenker, Gefco, Kühne + Nagel and Ullrich

In addition, the capital must also address the same security issues as other major cities, including the following:

- ▶ Civil defence
- ▶ Protection of mass transit
- ▶ Protection of major transportation hubs (rail stations, airports, freight haulage centers)
- ▶ Protection of major events (national holidays, inter-governmental conferences, sporting events, etc.)



Berlin's security requirements are the same as those of other European capitals like Madrid, London or Warsaw. The security of the capital itself is the foremost concern, but the security of the region must also be ensured. The interdependent areas in the nearer vicinity of the city face special security issues given Berlin's function as the capital. These include the rail, road, air and water routes that connect surrounding areas to the city, the future Berlin-Brandenburg Airport, which is located within the territory of Brandenburg, and the major freight haulage centers through which the city is supplied. The close ties between Berlin and Brandenburg's utility infrastructures (energy, water, supply) and the cooperation between the police, fire departments and other emergency services and law enforcement agencies are a natural consequence of the geographic proximity of the two Länder, but they are also necessary as they concern critical security aspects.

Berlin and Brandenburg must be understood as one region when it comes to security issues. Therefore, the Land governments, economic development agencies and business networks in Berlin and Brandenburg work together closely through joint activities and initiatives. They are also involved in many projects that involve cooperation with the federal government. Thus, the capital region offers perfect conditions for security industry networks.

The Master Plan for the Security Industry and Security Research

Based on a report on the importance of the security industry and the related opportunities, Berlin and Brandenburg developed a "Security Industries and Research Master Plan". It serves as the guideline for measures to be implemented over the coming years.

The following five areas are to be targeted for development:

- ▶ Secure Identity
- ▶ Secure Infrastructure
- ▶ IT Security / IT-Enhanced Security
- ▶ Security and Society
- ▶ Urban Security



Education and credentials for the entire industry are a further focus area. The Länder provide support to a large number of individual projects in these thematic areas with grants for R&D projects and investments, facilitation of contacts and networking, technology transfer, requests for proposals, events and lobbying.

Berlin and Brandenburg are the first German federal Länder to systematically approach the security industry as an opportunity and promote its development.

Joint Brand SIGNUM

In 2009, Berlin and Brandenburg jointly applied for the Federal "Leading-Edge Cluster Competition" under the brand "SIGNUM". The application was structured based on the requirements set out in the Master Plan, with three sub-clusters focused on "Secure Identity," "Secure Infrastructure and Security of Supply" and "Integrated Education and Credentials."

A total of 124 partners contributed to the application. They included 64 small and mid-sized companies, 27 large companies, 21 government agencies and 11 research institutes. The application fostered strong engagement on this issue in the region, and the Länder of Berlin and Brandenburg continue to work together under the SIGNUM brand today.

Berlin and Brandenburg develop and market technologies and services related to all aspects of identity security. Both Länder consider this field to be a special focus of competency within the security sector that offers enormous economic potential.

Secure Identity

Secure Identity Innovation Cluster

The Fraunhofer Secure Identity Innovation Cluster is existing since 2008. It is operated and funded by an alliance of five Fraunhofer Institutes in Berlin and Brandenburg, five universities, the Bundesdruckerei, over a dozen other private sector companies including Daimler and Sagem Orga and the federal Länder of Berlin and Brandenburg. The project has the task of researching, developing and bringing to market products and processes that secure the identity of persons in the real and virtual world, as well as the identity of methods, processes, technologies and intellectual property.

► www.sichere-identitaet.de

The following important steps have already been taken:

- Establishment of the endowed chair for “Secure Identity” (Technologies for Securing Identities) by the Bundesdruckerei at Freie Universität of Berlin
- The creation of SecurityLab Berlin by the Bundesdruckerei and Fraunhofer Institutes
- The establishment of an association (currently with 16 members) that brings together business, researchers and policymakers for the development of new solutions

Thirty-three projects representing a total volume of 16 million euros have been initiated, and many of them have already been completed. The “Secure Identity” conference and the “Euro ID” trade fair draw visitors from beyond Brandenburg’s borders to the capital region.

Competence Center of Object-ID and Authentication

A center for object identification and authentication has been established at the University of Applied Sciences Wildau, which is very close to the new Berlin Brandenburg Airport. It offers companies in industries such as pharmaceuticals, medical technology, packaging, luxury goods and machine building the latest technologies to protect their products against piracy and counterfeiting. It also develops business and logistics concepts to complement and fully exploit these new technologies.

► www.th-wildau.de/autoidrfid/coida.html

Berlin-Brandenburg Secure Identity Association

The security of physical and electronic identities is becoming an increasingly central issue in our society. The Berlin-Brandenburg Secure Identity Association (Sichere Identität Berlin-Brandenburg e.V.) is responding to this need. It represents businesses and organizations in the capital region that are active in the field of identity security. As a technology network, industry cluster and forum for experts, it represents its members to the public, bundles competencies, and helps stakeholders from business, science and policy form networks. The association has set itself the goal of improving the conditions for innovation in the field of identity security in the Berlin-Brandenburg region. On the one hand, it works to improve integration between research, development, production and marketing. On the other hand, it seeks to increase awareness of developments related to all aspects of identity security through the exchange of information and a strong public presence.

► www.sichere-identitaet-bb.de

Center for Automated Virtual Reconstruction

One unique competence in the Berlin-Brandenburg region is the automated, virtual reconstruction of destroyed paper documents. This technology has a variety of applications, including tax or financial fraud investigations as well as historical and archeological research.

The leaders in this field are the Fraunhofer Institute for Production Systems and Design Technology (Fraunhofer Institut für Produktionsanlagen und Konstruktionstechnik - IPK) and SAP. In response to growing global demand, the center is planning to spin-off a new firm that will provide this service commercially.

► www.ipk.fraunhofer.de



Secure Infrastructure

The security of “critical infrastructures” is enormously important to the functioning of our society. Few things work without electricity these days. Transportation hubs like airports, train stations and ports provide the mobility to which we have become accustomed. Oil and natural gas lines, telecommunications networks and data centers are also sensitive infrastructure that must be protected against both service interruptions and intentional damage. The Berlin-Brandenburg metropolitan area is a testing ground for secure infrastructure and crisis management.

European Aviation Security Center

The goal of all stakeholders in aviation is to ensure safe flights. Terrorism presents particularly difficult challenges for the aviation industry. Airports, airlines and aviation security authorities have to adapt to constantly changing risk-scenarios and continuously improve technologies and procedures. This demands flexible, proactive and comprehensive solutions that take the entire spectrum of aviation processes into account. One way to develop such solutions would be a manufacturer-independent aviation security center that can provide testing sites and certification solutions for airport operators, stage threat-scenario simulations, develop suitable training modules and participate in research activities. Businesses, industry networks and research institutes in the aviation and security technology sectors from Berlin, Brandenburg and other German Länder have joined forces in the non-profit association “Schönhagen e.V.” to develop just such a center at the Schönhagen Airport. Schönhagen is the largest airfield in its class in the new German Länder and is situated south of Berlin, between Potsdam and the Schönefeld Interchange.

easc European Aviation Security Center Schönhagen e.V. (Europäisches Luftsicherheitszentrum)

► www.eascshoenhagen.org

Competence Center for Critical Infrastructure

A competence center for training and consulting aimed at operators of supply infrastructure is currently being founded. In addition to electricity, gas and water are important lifelines for industry and the populace.

Many of these systems function as small municipal units, however. In these cases, outside consultants can help provide the necessary security competencies. The Competence Center for Critical Infrastructure will contribute to this process.

► www.kki-verein.de

Security in Underground Transport Systems

Both real and perceived threats to the security of underground transportation systems present considerable challenges for the responsible security authorities.

This applies not just to normal tunnel operations, but also to the threat of petty crime, accidents or fires, environmental disasters such as storms or flooding, and even terrorist attacks in connection with the growing asymmetrical threat. Over twelve businesses and research institutes cooperate within the ZIM-NEMO-Network to investigate and develop technical solutions for this special environment. The network is supported by a grant from the Federal Ministry of Economics and Technology (Bundesministerium für Wirtschaft und Technologie - BMWi).

Some examples of the network's collaborative projects include:

- Investigation of simulation-based preventative security measures
- Optimization of the integration of human and technology-based security
- Innovative, psychologically beneficial lighting design
- New alarm and signage systems
- Mobile sensor systems
- Combined evaluation of sensor data
- Materials substitution / functional coatings

siu-x: Sicherheit in unterirdischen Verkehrsanlagen

► www.siu-x.net

Systems for Integrated Security Monitoring

The “ne-sis Network: Systems for Integrated Security Monitoring” has been a model of successful cooperation since 2004. ne-sis is a network of experienced and innovative companies - most of which are small to mid-sized. Their common objective is the fast and flexible development of complex security monitoring and secu-

rity management solutions that meet their clients' unique needs. They achieve this by means of close collaboration with their partners, by implementing each other's products and conducting joint R&D projects. ne-sis offers expertise in all aspects of security monitoring and the secure transmission of all security-relevant data. It builds on integrated data collection, object tracking and evaluation systems based on state-of-the-art information and communications technology solutions. ne-sis helps to establish control over both perceived and real threat scenarios. It is in the process of establishing a far-reaching mobile network of active measurement nodes that will expand both the range of available responses to specific threats and the range of possible outcomes from security measures. New technical and organizational structures of this kind demand comprehensive public education measures to cause awareness and acceptance. ne-sis is making a decisive contribution in this respect. In addition, ne-sis is conducting joint R&D projects that are driving innovation as well as the implementation of new technologies and processes that will raise standards in the fields of emergency management, crime prevention and homeland security.

ne-sis – Netzwerk: Systeme für integriertes Sicherheitsmonitoring
▶ www.ne-sis.org

Transmission Control Center

The continually growing installed capacity of wind turbines, with their extremely varied output to the grid, has transformed the demands on electric power supply systems. The need to instantaneously balance active power levels, which is essential for maintaining a stable frequency in the network, is a growing challenge for grid operators. This demands quick reactions from control center staff. The growing output of renewable energy sources to the grid results in variations of up to 1,000 MW per quarter hour. Grid engineers must be ready at a moment's notice to implement the necessary switching measures or reduce input from conventional, coal-fired power plants, even to minimum capacity. They must regularly train for these situations, just as they must train for restoring service after disruptions in critical network situations. The transmission network operator, Vattenfall Europe Transmission, has initiated the establishment of a research and training center "System Security of Electrical Grids" at the Brandenburg University of Technology Cottbus. Operations personnel working with transmission and distribution network operators will receive training and professional development at this center (grid and systems training).

Forschungs- und Trainingszentrum zur Systemsicherheit elektrischer Netze (Transmission Control Center)
▶ www.cebraz-gmbh.de

Tunnel Safety & Security Network

Tunnels are sensitive transportation bottlenecks and are thus particularly vulnerable in case of accidents or terrorist attacks. Given the risk to human life and the broader ramifications associated with tunnel security, the "tusec" network is dedicated to developing technologies and methods for prevention and damage containment.

Some examples of the network's collaborative projects include:

- ▶ Sensor fusion and sensor innovation, combined evaluation of data measured in real time
- ▶ Mobile sensor systems
- ▶ Detection of anomalies in tunnel traffic
- ▶ Training on how to react in case of an emergency in tunnels
- ▶ Protective equipment featuring enhanced vision systems
- ▶ Tunnel design and traffic management;
- ▶ Predictive modeling of fire spread;
- ▶ Robot-controlled water-mist fire extinguishing systems

tusec - Tunnel Safety & Security Network
▶ www.tusec.de



IT Security / IT-Enhanced Security



The secure operation of information technology is absolutely vital for every citizen, every business and the public administration as well. Attacks from the outside, be they viruses, Trojans, hackers or other threats, have to be reliably identified and stopped. Encryption technologies must be developed constantly to ensure the security of online communication.

On the other hand, information technology itself is an instrument for providing security: Modern office buildings, industrial facilities and high-security areas can no longer be managed without the aid of information technology.

Sensors and actuators ensure fire safety. Biometric equipment protects against unauthorized access. CCTV surveillance systems and digital image processing allow remote surveillance of protected areas. With more than 10,000 companies, the region around the German capital is one of Europe's key business locations for IT. Many of these companies specialize in IT security.

Hasso Plattner Institute for Software Systems Engineering

Based at the University of Potsdam and largely financed through private sponsoring by SAP AG founder Hasso Plattner, this is one of Germany's leading IT institutes. The institute maintains a second location in Palo Alto, California. The Hasso Plattner Institute's student programs are aimed primarily at gifted young people who aspire to more than an 'ordinary' computer science degree and want hands-on training as IT engineers.

The institute's key concentrations include research and education in the fields of "Future Internet" and "Security and Trust Engineering".

► www.hpi.uni-potsdam.de

SeSamBB

Within the network "SeSamBB - Security and Safety made in Berlin-Brandenburg e.V.", security experts from multinational groups, small and medium sized enterprises as well as university research institutions conduct interdisciplinary projects that address the challenges of internal and public security as well as security concerns in companies, especially in the field of IT security / IT-enhanced Security. By forging networks and facilitating joint action, SeSamBB intends to strengthen and increase the quality, innovative power, value creation and cost efficiency of the region's security industry.

► www.sesambb.de

Secure Buildings

Modern buildings are highly complex systems involving technology, people and processes. These systems must be managed by means of central control systems: access controls at fences, gates and doors, heating and ventilation systems, sprinkler systems, electric power supply, emergency exits, telecommunications networks and systems, video surveillance of sensitive areas, etc. These are just some of the systems that play a role in the secure management of buildings and the protection of people who work and live in them.

In Berlin, companies and research institutes have formed an association for the purpose of jointly promoting building security. On board are service providers such as Gegenbauer Sicherheitsdienste, FM Academy and Dussmann; research institutions such as Fraunhofer FOKUS; and users of security like BIM Berliner Immobilienmanagement GmbH. Their approach is based on the idea that synergies resulting from intelligent planning and installation of all relevant systems in buildings will result in significant cost savings and a higher security standard.

The association will pursue these objectives through projects like the “Secure Building” seal and the development of a handbook for Business Continuity Management in the field of building security.

► www.probuilding.de

Trade Fairs / Conventions

The many summits, trade fairs and conferences on IT-security topics in the capital region include:

Build IT Berlin: The IT and Communication Trade Fair for the Construction Sector (February)

► www.build-it-berlin.de

European Police Congress presented by Behörden Spiegel (February)

► www.european-police.eu

Euro ID, International Trade Fair and Science Forum for Automatic Identification (April / May)

► www.euro-id-messe.de

IT-Profits: The Business-Forum for IT, Mobile and Web-Services (May / June)

► www.it-profits.de



Training and Qualification

The IT world is changing rapidly. The staff responsible for IT security in businesses and government agencies faces new and increasingly complex challenges every day. Each year, around 4,000 students graduate from a degree program in computer sciences at Berlin and Brandenburg's various universities.

A growing number of these students focus on IT security. Examples of IT security-related degree programs and research projects include:

The endowed chair for “Secure Identity” at Freie Universität Berlin, sponsored by the Bundesdruckerei. The primary focus is the safety of ubiquitous computing networks (cloud computing).

► www.inf.fu-berlin.de/groups/ag-si/

The chair for “Security in Telecommunications”, currently held by Dr. Jean-Pierre Seifert at Technische Universität Berlin.

► www.isti.tu-berlin.de/security_in_telecommunications/

The Master of Science (MSc) in “Security Management”, a degree course at the Brandenburg University of Applied Science, with a focus on security management, IT-security, mathematical and physics fundamentals, law and business administration.

► www.security-management.de

The Bachelor of Arts in Security Management (BA), a degree course at the Berlin School of Economics and Law (Hochschule für Wirtschaft und Recht - HWR), which teaches commercial, industrial and municipal security management.

► www.hwr-berlin.de/fachbereich-polizei-und-sicherheitsmanagement

Security and Society

As the seat of the federal government, the Bundestag and the Bundesrat, an awareness of the sociopolitical dimensions of security is built into the fabric of the city. Berlin is where directives and guidelines are discussed and transformed into laws. The populace, however, may react critically to excessive security measures: just because something is technically feasible does not mean that it is socially desirable.

The development and acquisition of security technologies must therefore always be accompanied by careful consideration of the operational, social and economic consequences of this technology. These consequences, including their ethical and political aspects, must be assessed and taken into account.

The German capital region boasts numerous academic institutions that deal these issues, advising government as well as commercial enterprises. Some examples include the following:



The Brandenburg Institute for Society and Security

The Brandenburg Institute for Society and Security (Brandenburgisches Institut für Gesellschaft und Sicherheit gGmbH - BIGS) at the University of Potsdam focuses primarily on studies of civil security through the lens of social science and public policy. It benefits from its close proximity to the Federal Police Central Bureau in Potsdam (Bundespolizeipräsidium).

► www.bigs-potsdam.de

German Institute for Economic Research

DIW Berlin examines, as part of several EU-subsidized research projects, the economic causes and consequences of terrorism and organized crime.

► www.economics-of-security.eu/eusecon

European University Viadrina Frankfurt (Oder)

The European University Viadrina Frankfurt (Oder) offers programs leading to the degrees of Master of International Human Rights and Humanitarian Law and Master of Arts in Human Rights & Genocide Studies. Mediation, peace studies, compliance and ethics are also part of these programs.

► www.europa-uni.de

Institute for Social Sciences at the Humboldt University of Berlin

The Institute for Social Sciences at Berlin's Humboldt University is a center of outstanding competence related to the study of the phenomenon of risk and security in historical, sociological and philosophical terms. Prof. Herfried Münkler, head of the Department of Political Theory, is an authority in this field and has initiated the creation of a multidisciplinary excellence cluster. This topic will also be integrated into the Berlin Graduate School of Social Sciences at the Humboldt University.

► www.bgss.hu-berlin.de

The Center for Technology and Society at Technische Universität Berlin

The Center has many years of experience conducting impact assessments to measure the effect of video surveillance systems like the one in the London underground on subjective perceptions of security, operational processes and crisis management.

► www.ztg.tu-berlin.de

Urban Security



The particularly dense concentration of all features of civilization in cities and urban areas leads to an equally dense concentration of security-critical phenomena. The expression “urban security” is a relatively recent catchword, an attempt to come to grips with the complexity of the issue. A growing number of companies and institutions are focusing on „urban security“.

The consequences of steadily increasing urbanization, especially in emerging nations in Asia, South America and Africa include:

- ▶ More, and more complex, security concepts
- ▶ A fast-growing need for security solutions
- ▶ A large market for new technologies
- ▶ Increasing media pressure
- ▶ A close link between safety and security
- ▶ Enduring social challenges such as migration and integration of immigrants
- ▶ Growing dependence of cities on efficient resource management

The Länder of Berlin and Brandenburg therefore consider “urban security” a dual task. On the one hand, it demands technologies, services and concepts that can satisfy the security needs of the world’s major cities (export opportunities). On the other, it calls for an examination of approaches and systems that increase accessibility and inclusion to preserve an open society.

Initial projects have been launched in urban quarters in Berlin to better integrate industrial areas into the surrounding urban space without sacrificing security. Whereas up until now these areas were isolated from adjacent neighborhoods, they will now be transformed into open campuses. Integrating security-relevant areas of public transportation and establishing connections to urban spaces is as much of a challenge as securing essential supplies in a disaster or pandemic. Securing the large-scale open spaces at Berlin Brandenburg Airport has also been a major challenge.

Some of the important technological aspects include:

- ▶ Integrated infrastructure security
- ▶ Intelligent video surveillance
- ▶ Situation rooms
- ▶ Mobility management
- ▶ Resource management
- ▶ Integrated security solutions
- ▶ Emergency service management
- ▶ Logistics management in emergency situations and measures to restore service

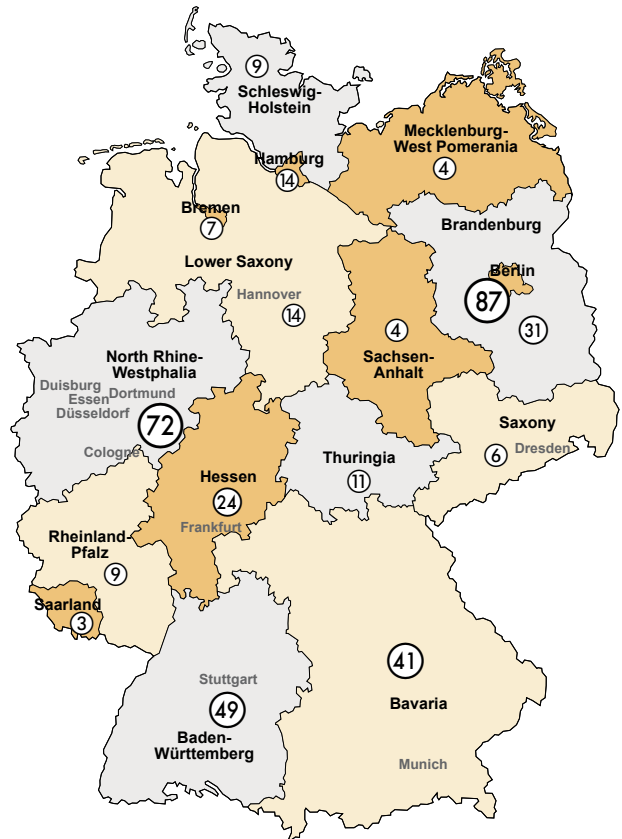
Research and Development

As part of the National Security Research Program adopted in 2008, the Federal Government created an Internet site with a map that provides an overview of security research in Germany.

The map shows that the center of gravity for security research in Germany is in the Berlin-Brandenburg area, followed by North-Rhine Westphalia and Baden-Württemberg. Alongside many independent research institutes, 16 universities and universities of applied science are actively engaged in teaching and research related to security issues.

Many of these universities house several departments and institutes that conduct security research: Freie Universität Berlin is home to ten departments that work on security, while the University of Potsdam has 17.

At Technische Universität Berlin, there are over 40 departments in 18 institutes that conduct security research. To reflect this fact, the Technische Universität made Civil Security its eighth research concentration in early 2010.



The numbers in circles indicate the number of research institutions in each federal Land. Source: www.securityresearchmap.de (Date: June 2011)

Universities and Universities of Applied Science in the German Capital Region:

| | |
|-----------------------------------------------------|------------------------------------------------------------------------|
| Beuth University of Applied Sciences for Technology | ► www.beuth-hochschule.de |
| Brandenburg University of Technology Cottbus | ► www.tu-cottbus.de |
| Charité - Universitätsmedizin Berlin | ► www.charite.de |
| Berlin University for Professional Studies | ► www.duw-berlin.de |
| European University Viadrina Frankfurt (Oder) | ► www.europa-uni.de |
| Brandenburg University of Applied Sciences | ► www.fh-brandenburg.de |
| Brandenburg Police Academy | ► www.fhpolbb.de |
| Freie Universität Berlin (FU Berlin) | ► www.fu-berlin.de |
| Lausitz University of Applied Sciences | ► www.hs-lausitz.de |
| HTW University of Applied Sciences | ► www.htw-berlin.de |
| Berlin School of Economics and Law | ► www.hwr-berlin.de |
| Humboldt-Universität zu Berlin (HU Berlin) | ► www.hu-berlin.de |
| Steinbeis University of Applied Science | ► www.risk-and-fraud.de |
| Technical University of Applied Sciences Wildau | ► www.th-wildau.de |
| Technische Universität Berlin (TU Berlin) | ► www.tu-berlin.de |
| University of Potsdam | ► www.uni-potsdam.de |

There are twenty additional non-university research institutions in Berlin-Brandenburg that are partly or entirely

dedicated to technologies, knowledge and skills that can be utilized for security products and services.

Non-university Research Institutions in Berlin and Brandenburg (selection):

| | |
|---------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Federal Institute for Materials Research and Testing, Berlin und Horstwalde | ▶ www.bam.de |
| Federal Institute for Risk Assessment, Berlin | ▶ www.bfr.bund.de |
| German Institute for Economic Research (DIW Berlin) | ▶ www.diw.de |
| German Aerospace Center (DLR) – Institute of Planetary Research, Berlin | ▶ www.dlr.de |
| Transport Technology Systems Network | ▶ www.fav.de |
| Fraunhofer Application Center for Logistics System Planning and Information Systems , Cottbus | ▶ www.ali.fraunhofer.de |
| Fraunhofer Research Institution Polymeric Materials and Composites, Teltow | ▶ www.pyco.fraunhofer.de |
| Fraunhofer Institute for Telecommunications, Heinrich Hertz Institute, Berlin | ▶ www.hhi.fraunhofer.de |
| Fraunhofer-Institute for Production Systems and Design Technology, Berlin | ▶ www.ipk.fraunhofer.de |
| Fraunhofer-Institute for Computer Architecture and Software Technology, Berlin | ▶ www.first.fraunhofer.de |
| Fraunhofer Institute for Software and Systems Engineering, Berlin | ▶ www.isst.fraunhofer.de |
| Hasso Plattner Institute for Software Systems Engineering, Potsdam | ▶ www.hpi.uni-potsdam.de |
| Helmholtz-Centre Potsdam, GFZ German Research Centre for Geosciences | ▶ www.gfz-potsdam.de |
| IHP GmbH Innovations for High Performance Microelectronics, Frankfurt (Oder) | ▶ www.ihp-microelectronics.com |
| Institute for Thin Film and Microsensoric Technology, Teltow | ▶ www.idm-teltow.de |
| Max Born Institute (MBI) for Nonlinear Optics and Short Pulse Spectroscopy at the Berlin Research Association | ▶ www.mbi-berlin.de |
| Robert Koch Institute (RKI), Berlin | ▶ www.rki.de |
| German Institute for International and Security Affairs, Berlin | ▶ www.swp-berlin.org |
| Social Science Research Center Berlin | ▶ www.wzb.eu |
| Department of Transnational Conflict and International Institutions | |



In addition to teaching, research and development at universities and independent research institutions, the capital region is also home to a number of major institutions that provide training and professional development for emergency responders:

Arbeiter-Samariter-Bund Deutschland e.V. (ASB)

The ASB, literally translated as the “Samaritan Association of Workers”, is active in the fields of emergency rescue services, disaster prevention and preparedness, as well as crisis intervention. Around 1,500 volunteers currently work for ASB in Berlin alone.

National Training and Research Center of the German Lifeguards’ Association, Berlin Chapter

The National Training and Research Center (Bundeslehr- und Forschungsstätte der Deutschen Lebensrettungs-Gesellschaft, Landesverband Berlin e.V.) is the only facility of its kind in the world. Its pressure chamber and diving tank, housed in a 12-meter-tall tower, can create pressures of up to 15 bar, which can be used to test diving equipment.

Johanniter-Unfall-Hilfe e.V.

The Berlin-Brandenburg chapter of the Johanniter relief service counts 82,000 sponsoring members, 1,943 volunteers and 973 permanent employees. The JUH provides first aid and hospice services; works on behalf of the socially disadvantaged; cares for and counsels the elderly, sick, and disabled; operates daycare centers and a school; works with youth; and provides humanitarian aid abroad. Every year, the JUH trains well over 2,000 people in first aid and rescue techniques.

Land School and Technical Institute for Fire Safety and Disaster Prevention and Protection Eisenhüttenstadt

The LSTE (Landesschule und Technische Einrichtung für Brand- und Katastrophenschutz - LSTE) provides practical training and professional development for firefighters and emergency service units as well as liaison officers in municipal government, the police, and the military in the Land of Brandenburg and beyond. The



Institute also inspects and maintains vehicles and other devices for emergency services and fire departments and provides equipment and specialist personnel in cases of major damage.

► www.lste.de

First Responders’ School of the Berlin Fire Department

The school offers comprehensive training and professional development for first responders and emergency services. Every year, emergency personnel are deployed on about 200,000 missions in Berlin. All employees of the Berlin Fire Department receive training and professional development in emergency rescue at the First Responders’ School. That includes training for emergency medical technicians and assistants as well as a comprehensive array of professional development offerings provided in cooperation with the “AG Notarzt Berlin” working group for emergency physicians and Berlin’s hospitals. The public can also participate in the school’s programs.

Networks

A number of networks for the security industry have been formed in Berlin in recent years. These networks are critical platforms for joint projects that lead to innovation in the field of security. They bring stakeholders from science, business and government together. In most cases, they receive start-up funding from the public sector, for example through the (ZIM-)NEMO-Program of the Eco-

nomics Ministry or the Joint Task for the Improvement of Regional Infrastructure (Bund-Länder-Gemeinschaftsaufgabe Regionale Wirtschaftsentwicklung - GA / GRW). Currently, there are nine network projects in the capital region, through which over 100 businesses, scientific institutes and public institutions are working together on security issues.

easc European Aviation Security Center Schönhausen e.V.
(Europäisches Luftsicherheitszentrum)
▶ www.eascschoenhagen.org



KOSYnet Integrated Systems for Flooding and Emergency Management
▶ www.kosynet.de



ne-sis Netzwerk
Systems for integrated security monitoring, solutions for national security and population protection
▶ www.ne-sis.org



ProBuilding e.V.
Building security
▶ www.probuilding.de



SeSamBB Security and Safety made in Berlin-Brandenburg e.V.
IT-security
▶ www.sesambb.de



siu-x Safety & Security in Underground Facilities Network
▶ www.siu-x.net



tusec Tunnel Safety and Security Network
Tunnel safety
▶ www.tusec.de



Secure Identity Berlin-Brandenburg Association
▶ www.sichere-identitaet-bb.de



Partners



As the seat of Germany's federal government and parliament, the capital region is home to a large number of associations, institutes and other institutions engaged with civil security. They all play a role in crafting new legal guidelines, defining standards and norms, and making adjustments to the larger social and technology-policy context.

The Brandenburg Institute for Society and Security (BIGS)

BIGS (Brandenburgisches Institut für Gesellschaft und Sicherheit gGmbH - BIGS) was established in 2009. Its majority shareholder is the UP Gesellschaft für Wissens- und Technologietransfer GmbH (Society for the Transfer of Knowledge and Technologies), an affiliated institute of the University of Potsdam. The Institute primarily investigates the sociological ramifications of security requirements and new technologies. Its shareholders are EADS European Aeronautic Defense and Space Company, IABG Industrieanlagen-Betriebsgesellschaft mbH, and Rolls-Royce Deutschland.

► www.bigs-potsdam.org

Research Forum on Public Safety and Security

Founded in October 2009, the *Forschungsforum Öffentliche Sicherheit* at the Freie Universität Berlin is dedicated to aggregating research projects pursued in various disciplines and institutions that deal with questions of public security, and to enable the discussion of

their results. It is affiliated with the informal, non-partisan initiative in the Bundestag, the Forum on the Future of Public Safety and Security (*Zukunftsforum Öffentliche Sicherheit - ZOES*).

► www.sicherheit-forschung.de

German European Security Association e.V. (GESA)

Founded in 2007, GESA is an association of 80 companies, research institutes, government agencies and individuals in Germany that works to represent the interests of the civil security industry in a European context. GESA's headquarters are in Berlin.

► www.gesa-network.de

Coordination Office for Civil Security at the German Institute for Standardization

The Coordination Office for Civil Security (*Koordinierungsstelle Sicherheitswirtschaft*) was established at DIN (*Deutsches Institut für Normung e.V. - DIN*) in November of 2010 with support from the Federal Ministry of Economics and Technology (*Bundesministerium für Wirtschaft und Technologie - BMWi*) pursuant to a resolution of the Bundestag. The office's goal is to promote a coordinated, efficient approach to standardization in the field of security and to gradually strengthen and improve the German security industry's position in a global context.

► www.sicherheitswirtschaft.din.de



▼ Come where your investment takes you further

Berlin-Brandenburg offers the best economic development incentives in Europe. Investment subsidies come in the form of direct grants. The incentive programs created to provide these grants draw on funds from the EU, the Federal Government, and the Länder of Berlin and Brandenburg. In the capital region, large companies can receive up to 30 percent, mid-sized companies up to 40 percent, and small companies up to 50 percent of their total investment in grants.

▼ Where quality of life is a way of life

The capital region offers an incomparable mix of the international flair of the metropolis Berlin and the fascinating natural landscapes and historic attractions of Brandenburg. An unparalleled club scene, world-famous major events, over 375 museums, 200 theaters, and 500 palaces, churches and parks beckon visitors. Residents enjoy virtually unlimited opportunities for recreational sports like golf, riding, water sports and flying. Rent, transportation and recreation are significantly cheaper in Berlin than in other major metropolitan areas.

▼ Berlin makes investment easy

The economic development agencies Berlin Partner GmbH and ZukunftsAgentur Brandenburg GmbH offer comprehensive support for companies establishing locations in Berlin. Their service is competent, fast, free of charge, confidential and involves no red tape.

- **Information:** Economic data and facts on the Berlin-Brandenburg region;
- **Staffing:** Support for recruiting and training new employees;
- **Real Estate:** Assistance in searching for properties for rent or purchase;
- **Financing:** Consultation on taking advantage of subsidies and other means of financing;
- **Contacts:** Government agencies, banks, chambers, associations and business networks.

www.businesslocationcenter.de

www.brandenburg-invest.de

www.capital-region.de

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Berlin-Brandenburg - an Attractive Location for Business

- 1 Metropolis Berlin: Potsdamer Platz
- 2 Tourism Highlight: Brandenburg Gate in Potsdam
- 3 Central Location: Berlin's Hauptbahnhof train station
- 4 Quality of Life in Potsdam: Shopping on Brandenburger Strasse



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