



# **DITS.center e.V.**



*Digital Innovations and Technologies aligned to  
ensure life, liberty and Security*

## *About us*



*DITS believes in the performance of  
innovation, entrepreneurship and  
dedicated teams to fight for  
safety and security*

DITS.center e.V. was established in 2016 under German law as a non-profit association by a team of highly diversified excellent experts. The founding members followed their ideals and are supporting the association with their relevant experiences gained in decades of successful professional activities in practice and leadership.

Increasingly asymmetric threat scenarios are typically caused by well-equipped and well-funded enemies. Wicked, illegitimate and unexpected actions need quick and effective response for which state institutions are responsible.

The universal Declaration of Human Rights Article 3  
is the guiding principle for the engagement of DITS:

"Everyone has the right to life, liberty and security of person."

The availability of innovative supporting technology is one of the pre-conditions to be successful in counter-measures. DITS pursues the non-commercial objective of promoting applied research in projects for civil and public security applications, also in the field of crime prevention. The association supports national and international co-operation, technology transfer, information exchange and dialogue between different institutions and organizations. DITS conducts its own research projects.

DITS provides suitable services to moderate information sharing, brainstorming and cooperation between science and all stakeholders and partners.

It's Not the Big that creates the suitable product in good time -

It's the Fast and the Innovative that support the needs at the best.

## ***The whole is greater than the sum of its parts***

DITS concentrates on science, research and development projects contributing to national security. DITS is keen to support and achieve improvements in all kinds of technologies allowing for online and real-time actions to early identify and classify threats in surveillance and protection missions. Key elements are the collection, analysis and aggregation of data and information into situation pictures and intelligence reports.

Outstanding and practical solutions need active support provided by both science and the operational scenario. The spirit of visionaries and the farsightedness of engineers together with the support of operators create a productive working atmosphere. DITS brings together experience, knowledge and the benefits of a network of excellent senior experts from different domains organized in the Advisory Team. Highly motivated young and engaged scientists, engineers and technical specialists are the best basis for successful research and development work.

DITS follows all principles of ethical standards and adheres to Human Rights as a whole. DITS respects export regulations and domestic legislations in all countries involved.

Membership fees, donations as well as EU and federal government funding programs support the financing of comprehensive activities.

## *Agenda*



*Less is more - DITS promotes  
research in the service of security*

DITS works creatively to promote and carry out application-oriented research in the field of signal acquisition, analysis and information processing. Recognized methodological standards are used to investigate fundamental questions in their causes and contexts and to transfer research results to applications:

- Setting up a collection of relevant information
- Publication of dedicated papers
- Organization of scientific conferences
- Creation of projects for the development of prototypes and pilot series
- Preparation of studies and reports.

Financing is provided by the use of sponsorships and project funding from the public sector, donations and membership fees.

## *Emphasis*

Bundling of resources achieves an enormous punch-through force. This is when you hit a nail into the wall and also if you want to tackle particularly critical and important problems.

DITS concentrates the activities in a solution-oriented manner to meet the interests of the stakeholders by utilizing possibilities and competences of research and science in the following security relevant applications:

- Protection of values, objects and infrastructure
- Support for civil protection and rescue organizations
- Early detection of dangerous situations and threats
- Prevention of crime.

## *Advisory Team*



*Young entrepreneurs meet senior experts  
for the benefit of  
effectiveness, efficiency and success*

Advisory team members are independent senior consultants experienced in the following subjects: research and development, forensics, police operations, security surveillance and intelligence fusion. Team members represent expertise, knowledge and networks in the areas of operations, technology, legal affairs and business administration. Advisors with comprehensive experience in international project management and law are available to assist the management process and the handling of legal issues. Constructive co-operation with young visionaries is their passion.

The team is acting as a consulting forum especially focused on technology, operational, market relevant and legal topics. Over the years, congeniality between all board members has created a solid trustful fundament of friendship, which influences the work positively and creates an atmosphere supporting the generation of considerable synergies.

Knowledge, experience and the network of external specialists are integrated in the long-term oriented management and support policy. Empathy for the circle of all stakeholders in complex projects helps to find the right path also in intricate scenarios. The team is a unique institution relieving and supporting the projects in many respects.

## **Operations**

- Different disciplines in the field of intelligence
- Police investigations
- Ministries of Interior affairs
- Intelligence services und fusion centers
- Security agencies
- International relations, export control policy.

## **Technology, development and research**

- Electromagnetic wave propagation
- Electronics, sensors
- Signal, image, video processing
- Sensor data fusion, tracking
- Measurement, direction finding, localization
- Multilingual speech and text technology, pattern recognition
- Software technology, offshore development
- Security related research.

## **Management and legal**

- Business administration
- Human resources, coaching
- Contracts, project management
- Start-Up, business plan, financing, governmental funding, product management
- Sales, legal requirements, export regulations.

## *Digital World*



*Digital signals, data and information are relevant for security and safety issues - for each of us*



Digital signals, data and information are controlling our life - today more than ever before. Digital solutions create progress, new opportunities and create a new living environment and business conditions for people, society, organizations and economy. However, the digital world is also linked to threats, new forms of criminality and fraud.

It is part of our human nature to use sophisticated communications for expressing different kind of messages. Small talk and the clear instruction not allowing any objection are constituent parts of our communicative life. Each action, however, needs stimulation by exchange of information. Humans are generally communicating via audio, text, images or other types of sensory and psychological information.

Today's telecommunications use different channels and technologies to transfer signals over long distances and to distribute them among a large or a specific community of counterparts. Today, using electromagnetic waves as carriers for coded signals allow us to use wireless means of communicating with each other that determine our life to an extraordinary degree. The Internet is the medium that allows for communicating between people, computers and machines with previously unknown speed, quantity and performance.

The control of technical systems would be impossible without using digital signal processing methods developed over the last thirty years to an unexpected degree of perfection and complexity.

Technically generated signals are used in several ways to identify and to classify objects of different kinds. RADAR and SONAR are good examples for that kind of technical systems.

Patterns derived from signal and image sensors describe scenarios and the status of systems and often allow for the classification of different features and the recognition of content.

Signals and data are the source of generating information and intelligence to support leaders in decision-making processes.

Across industries, cyber security threats are becoming increasingly focused on the digital sphere.

## ***Challenges***

DITS takes care of security-related projects and innovations. The broad range of tasks is a challenge, but it also offers opportunities for many ideas, technologies and enterprises. DITS provides assistance and support to get projects going.

# Innovation



*Innovation needs close cooperation between users, developers, researchers and visionaries*

Innovation is the process of developing an idea or invention into a valuable product, service or process that create value or for which customers will pay.

To be called an innovation, an idea must be replicable at an economical cost and satisfy a specific need. Innovation involves deliberate application of information, imagination and initiative in deriving greater or different values from resources, and includes all processes by which new ideas are generated and converted into useful products. In business, innovation is often a result of ideas materialized by the company in order to further satisfy the needs and expectations of its customers.

Innovation needs three elements: courage to look into the face of reality, tenacity to stick to an issue, plus the strength and will to admit new ideas and solutions. It seems to be common understanding today, that large organizations ruled by well-established processes, procedures, budgeting and short-term EBIT-related reporting do have difficulties supporting creators of promising ideas adequately. Daily issues do not allow for the "tender shoots" of innovation to grow. Valuable ideas are lost in day-by-day business.

Consequently, the creation of an atmosphere of freedom, trust, openness and cooperative behaviour within teams driving innovation requires special attention. This includes the support of start-ups in general and of the motivated entrepreneur in particular.

## ***Innovation in service of security***

Fighting for security in asymmetric scenarios is a particular challenge for state security agencies, security forces and all industrial suppliers concerned. The enemy does not comply with law and international conventions and ignores human rights. Organized crime and terror organizations often possess the financial strength to provide state-of-the-art equipment in their area of influence. It is hard to fight against these threats in times of limited budgets and mandatory legal provisions.

Innovation in combination with commitments to maintaining confidentiality is the best weapon against those threats. To transfer technology from research into projects and further on into the responsibility of end-users has always been part of brilliant solutions.

## *Technology*



*Technology and technology transfer is attractive  
for the global security community*

Signals, information and intelligence processing define the topics for many researchers and scientists. Most of the scientific disciplines are dealing directly or indirectly with the processes of generation, transmission, perception and analysis of data. Engineers and computer scientists are essentially focusing on the technical aspects of signal processing, analysis, classification and recognition.

Many applications and products that have changed our life significantly have been a result of these activities. The homeland security market is open for further solutions and products.

## ***Technologies of interest***

State of the art technology and current activities in research are the starting point for the development of innovative products and their placement in the markets. A wide range of technologies are relevant:

### **Sensors**

- Signal sensors for different types of signals
- Solutions for the localization of electromagnetic emitters
- Radar - also including passive radar solutions

### **Processing and tracking**

- Sensor data fusion
- Signal classification and pattern recognition
- Tracking of moving objects
- Demodulation, decoding and decryption
- Signal classification

### **Content analysis**

- Speech recognition
- Speaker identification and speaker verification
- Language and topic identification
- Translation
- Text analysis
- Content interpretation

### **Biometric, physiological and forensic analysis procedures**

- nalysis and fusion
- Back office organization
- Data collection and storage
- Big data visualization and analytics
- Information fusion and aggregation.

# Security



*Supporting safety and security is a worthy, honourable and respectable area of activity*

Homeland security comprises a wide range of topics having an influence on public security. Human rights, national constitutions and laws typically define the specific functions and responsibilities of public organizations.

The market volume of the homeland security market was approx. \$238bn in 2014. It divides roughly into counter-terror intelligence 28.4%, telecommunication-, data- and cyber security 19.5%, infrastructure security 12.0 %, border security 8.8 %, aviation security 8.6%, maritime security 7.0% and mass transit security 3.5% (Vision Gain: Homeland Security Market Forecast 2014-2024).

Most important is the fact that the security market is a growing market. Innovation is the door opener for innovative start-ups and engaged entrepreneurs. Small and medium sized enterprises (SMEs) are accepted suppliers in the market place.





## ***Characteristics and tasks***

Providing security and safety for people one needs to deal with the following issues:

- crime in general
- organized crime
- asymmetric threats
- terrorism
- attacks to infrastructure
- smuggling and illegal arms trade
- smuggling of human beings, illegal prostitution
- piracy
- illegal immigration
- integrated border management.

Prosecution and countermeasures need the support of the task forces and organizations equipped with dedicated technical support of different kind.

*Everyone has the right to life, liberty  
and security of person.*

DITS.center  
Germany  
 +49 (0) 9131 537 155  
 +49 (0) 9131 54865  
 +49 (0) 160 9487 4906  
 info@dits.center

© w717hj.092