

FRONTEX DIALOGUE ON TECHNOLOGY FORESIGHT FOR BORDER SECURITY

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TECHNOLOGY FORESIGHT METHODOLOGIES

METHODOLOGIES AND PROCESSES

- GMV constituted the R&D Committee responsible for selecting R&D activities, allocating resources, and monitoring them
- Active participation in different fairs and events related to the activities of the company
- Collection and analysis of competitors information
- News monitoring about the activity sector of the organization
- Gathering opinions on the sector of activity (experts, users)
- Review and analysis of publications of interest (regulations, patents, bulletins)
- Follow the principles of OSRA (The Overarching Strategic Research Agenda of EDA)
- Being active participant in RDi (Research & Development & Innovation) national and European programs like H2020, FP7 or EDA CapTech groups among others.

TECHNOLOGY FORESIGHT

LESSONS AND BEST PRACTICES



LESSONS LEARNED AND BEST PRACTICES

- To be involved in those projects or programmes where we can ensure continuity (aligned with the strategy of the Company, long term agenda)
- The R&D activities are carried out in R&D projects that are not only fully or partially financed by GMV
- To have permanent contact with the representatives of users communities and with institutions in charge of R&D activities for end-user communities
- The dimension of the workgroups, considering users communities and industry partners, have direct impact in the inertia and efficiency of processes to reach the goals
- Maintain close link with academia community

TECHNOLOGY FORESIGHT NETWORKS



EXISTING NETWORKS

Among others:

- European Defence Agency CapTech
- Security Mission Information & Innovation Group (SMI2G)
- NATO's Research and Technology Organization
- National Armaments Directorates
- European Space Industry Association
- DRIVER+ community
- H2020, PADR communities

TECHNOLOGY FORESIGHT POTENTIAL AREAS OF COLLABORATION



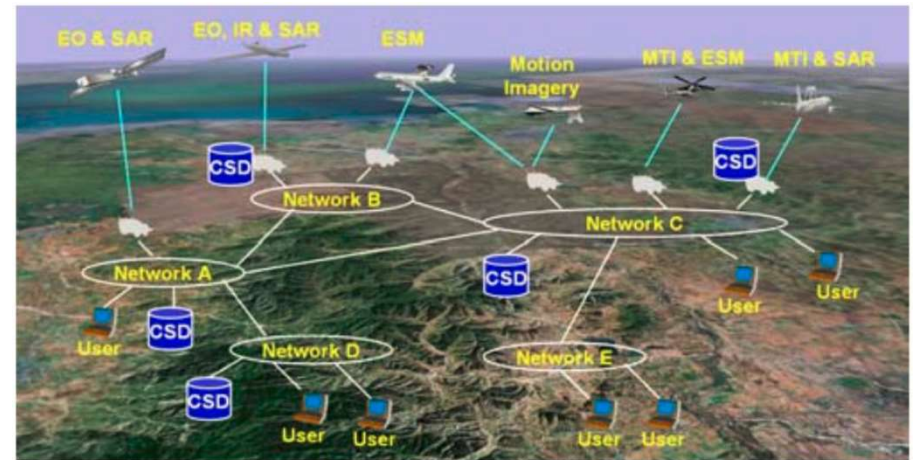
SHARED SENSOR DATA

CONCEPT:

Sensors sharing capabilities in the border security domain for countries which could share resources and interests in common borders as well as with the Agency for the command of joint operations with member states

OBJECTIVES/CAPABILITIES:

- Improve situational awareness and shared use of coalition sensors (GMTI, SAR, EO/IR, Motion Imagery, video streaming, Link16 and ESM tracks).
- Sensor data management in Near Real Time.
- Coordinating assignment, planning, monitoring and management of Information requirements.
- Develop network-based interoperability (NEC).



SUCCESS STORY:

Coalition Shared Database for JISR, developed for NATO and tested under MAJIIC programme.

DRONES AIRSPACE MANAGEMENT

CONCEPT:

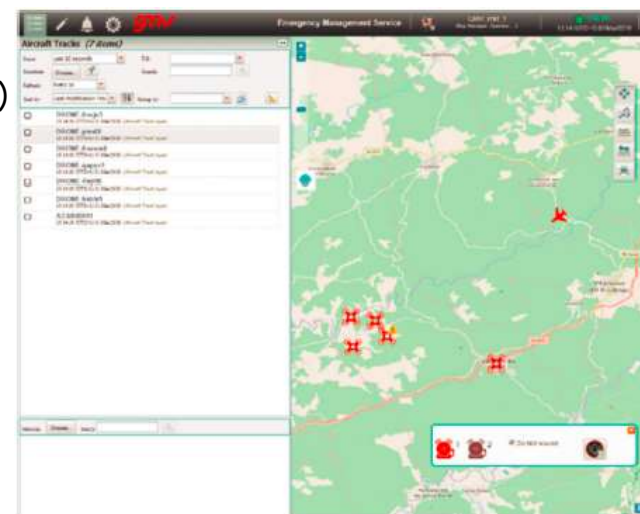
Provision of set of services and specific procedures (planning) designed to support safe, efficient and secure access to airspace for large number of drones used for border surveillance, as well as for helping in the detection of those drones used in activities related to smuggling in drugs/goods through the borders.

OBJECTIVES/CAPABILITIES:

- Collection of different positioning sources (4G/5G RPS, ADS-B, Drone Telemetry)
- Track Fusion and authorised flight plans check
- Tracking alerts management and Drone Incident Management
- Alert notifications to drone operators in the area of the incident
- Interface to non-aeronautical authorities (Law Enforcement, Emergency, Municipalities)
- Dynamic geo-fencing for emergency situations
- Prediction of navigation and surveillance service levels (NACp/NIC)

SUCCESS STORY:

drone locus® for European Commission's U-space demonstration project



BIG DATA AND ARTIFICIAL INTELLIGENCE

CONCEPT:

Continuous development of concepts related to Big Data and Artificial Intelligence for the establishment of mechanisms for an efficient reaction in the domain of border security.

OBJECTIVES/CAPABILITIES:

- The improvement of information sharing based on wider interoperability.
- The enhancement of quality of information.
- The identification of ways of providing a shared situational awareness.
- Analysis of the level of AI needed to support operators to interact permanently with the system
- Provision of a unified, multimodal means of navigation, query and retrieval across interconnected information sets from knowledge data bases supported by BD techniques and data analysis
- Reduction of human workload in the field of information management and restoring human added value whenever it is necessary for the interpretation of the information

SUCCESS STORY:

ABIDE - Artificial Intelligence and Big Data for Decision Making study for European Defence Agency

C2 AND SITUATIONAL AWARENESS

CONCEPT:

Creation of a tactical network connecting the different Member States and Frontex aimed to the direct usage of information from sensors and the command of the different resources assigned in the different operations that can later be used to feed EUROSUR system using its automatic mechanisms fulfilling the requirements of the existing regulations.

OBJECTIVES/CAPABILITIES:

- Integration of information coming from different sources in one Common Operational Picture
- Provide different levels of command (e.g. First Responder, LOC, ROC, NOC)
- Provide interoperability with numerous agencies from different MSs and decision aids for optimization of resources.
- Advanced capabilities for exploiting images (Image chipping, Geo-referencing, Image correction, Image annotation)



SUCCESS STORY:

Socrates suite for European Commission FP7's DRIVER+ and CLOSEYE projects

TECHNOLOGY FORESIGHT CONCLUSIONS

CONCLUSIONS

- Following this Technology Foresight, four areas of possible collaboration for research have been presented for the domain of border surveillance.
- GMV's R&D activities have been and currently are successfully performed using internal procedures and methodology for technology foresight that includes own investment and also, inter alia, following procurement procedures:
 - Public Private Partnership (PPP)
 - Pre-Operational Validation (POV) – e.g. Closeye, EUCISE 2020
 - Pre-Commercial Procurement (PCP)
 - Public Procurement of Innovative solutions (PPI)
- Open to identify other areas that can be interesting where GMV can provide added value



THANK YOU

