



Horizon 2020 Secure Societies European Info Day and
Brokerage Event

Brussels , 6-7 March 2017

GRADIANT

Alicia Jiménez González
ajimenez@gradient.org

Description of the Organization: GRADIANT



ICT R&D Private Technology Center



92
employees

> 100 clients
> 60 active projects



UNMANNED AERIAL VEHICLES

DATALINKS FOR COMMAND AND CONTROL (C2) AND MISSION

FREE OPTICAL COMMUNICATIONS AND POINTING SYSTEMS

COMMUNICATION SUBSYSTEMS UNDER INTERNATIONAL STANDARDS AND RECOMMENDATIONS (SCA)

AUGMENTED SYSTEM FOR RELIABLE AND PRECISE GNSS POSITIONING

DETECTION AND NEUTRALIZATION OF UAVS

COVERAGE AND DATALINK PERFORMANCE SIMULATION

GSM BASED LOCALIZATION SUBSYSTEM

RECOMMENDATIONS FOR AVIONICS (DO-160, DO-178B, DO-254)

SURVEILLANCE SUBSYSTEM SECURED BY WATERMARKING

MULTISENSOR SURVEILLANCE SYSTEMS
Co-funded by the Horizon 2020
Partnership Programme of the European Union



VIDEO PROCESSING

INTELLIGENT VIDEO ANALYTICS FOR HIGHLY DYNAMIC NATURAL SCENARIOS. APPLICATIONS TO DRONE DETECTION, BORDER CONTROL, SEARCH AND RESCUE, MARITIME SURVEILLANCE, ...

TARGET DETECTION, RECOGNITION AND TRACKING. DEEP LEARNING TECHNIQUES FOR IMPROVED PERFORMANCE

FOCUS ON AERIAL VIDEO ANALYSIS AND DRONE DETECTION

RGB, THERMAL AND IR MULTI SPECTRAL ANALYSIS

SYSTEMS INTEGRATION, SENSOR FUSION AND IR BAND FUSION



BIOMETRICS

MULTI-BIOMETRICS: FACE, SIGNATURE AND SPEAKER RECOGNITION. ADDITIONAL MODULES: TEMPLATE PROTECTION AND LIVENESS DETECTION

FOCUS ON BIOMETRIC VERIFICATION IN MOBILE DEVICES AND FACE VERIFICATION AGAINST ID DOCUMENTS

MACHINE LEARNING, DEEP LEARNING AND COMPUTER VISION FOR IMPROVED PERFORMANCE

INTERNATIONAL AWARDS. TECHNOLOGY TRANSFERS TO BANKING SECTOR

MEMBERS OF THE ISO NATIONAL SUBCOMMITTEE AEN/CTN71/SC37 IN STANDARDIZATION OF BIOMETRIC IDENTIFICATION TECHNOLOGIES



COMMUNICATION, POSITIONING AND RADAR

SIGNAL INTELLIGENCE (SIGINT) FOR UAV DETECTION AND NEUTRALIZATION

MARITIME COMMUNICATIONS (I.E. AIS, AIS-SAT, VDES, LONG DISTANCE DATALINKS)

SIGNAL PROCESSING APPLIED TO COMMUNICATIONS, RADAR AND INTERFERENCE ANALYSIS

HIGH PRECISION AND RELIABLE GNSS/NON-GNSS POSITIONING SYSTEMS

ON-BOARD SENSOR DATA ACQUISITION, SYNCHRONIZATION, FUSION AND RELIABLE DATA LINKS



SECURITY AND PRIVACY

DEVELOPMENT OF SECURITY AND PRIVACY BY DESIGN DETECTION AND ARCHITECTURES

PRIVATE COMPUTATIONS (HOMOMORPHIC ENCRYPTION AND HSM OPERATIONS)

ADVANCED ACCESS CONTROL AND SECURE OUTSOURCED KEY MANAGEMENT

DATA ANONYMIZATION AND PRIVACY EVALUATION

SECURE STORAGE AND SELECTIVE SHARING OF SENSITIVE INFORMATION



DATA ANALYTICS

ANOMALY DETECTION

BIG DATA ANALYSIS

NETWORK AND TRAFFIC ANALYSIS

DEEP LEARNING

NATURAL LANGUAGE PROCESSING. SOCIAL GRAPH ANALYSIS BASED ON COMMENT CONTENT

BIG DATA ARCHITECTURE DEFINITION FOR STREAM AND BATCH PROCESSING

USER PROFILING

8 FP7

4 H2020

Last 5 years



DIGITAL HOUND

- We propose to answer this topic by making available a **distributed digital nose** using an underlying **secure IoT approach**
- Use well-established **IoT paradigms** to orchestrate the whole system:
 - Different sensor networks + additional data sources + IoT platform + data access & control + applications/capabilities + interface
 - IoT platform will feature flexibility and discovery capabilities (ability to adapt to changes, turn sensors on/off, automatically add new sensors or features)
- (Digital) Security first: a **Security-by-design** approach will be used across the whole digital dimension of the system
- On top of the data available, **best-of-class data fusion & data analytics techniques** will be co-designed with end-users, trained and tailored by the end-user
 - Many outputs possible: alarms/anomaly alerts/...
 - Optionally human-generated data analytics could be used as additional data source to the system
- Technology matureness of the foreseen components (high TRLs) will make it possible to be **running the prototype during Year 1**



Consortium - profile of known partners and Required Partners



No	Partner Name	Type	Country	Role in the Project
01	GRADIANT	RTD	SP	
02	Industry partner	IND	SP	Big Company. TP
03	Industry partner	IND	BE	Ethics
04		RTD/ IND/ SME		<i>Sensor providers and/or integrators</i>
05				<i>Digital/IoT platform provider</i>
06		IND		<i>Managers of monitoring networks (sewage, air, others)</i>
07		OTHERS		<i>Cities and/or utility/infrastructure managers</i>
08		LEAs		LEAs



Alicia Jiménez
GRADIANT
European Project Office
Tel +34 986 120 430 (3003)
ajimenez@gradient.org
www.gradient.org

