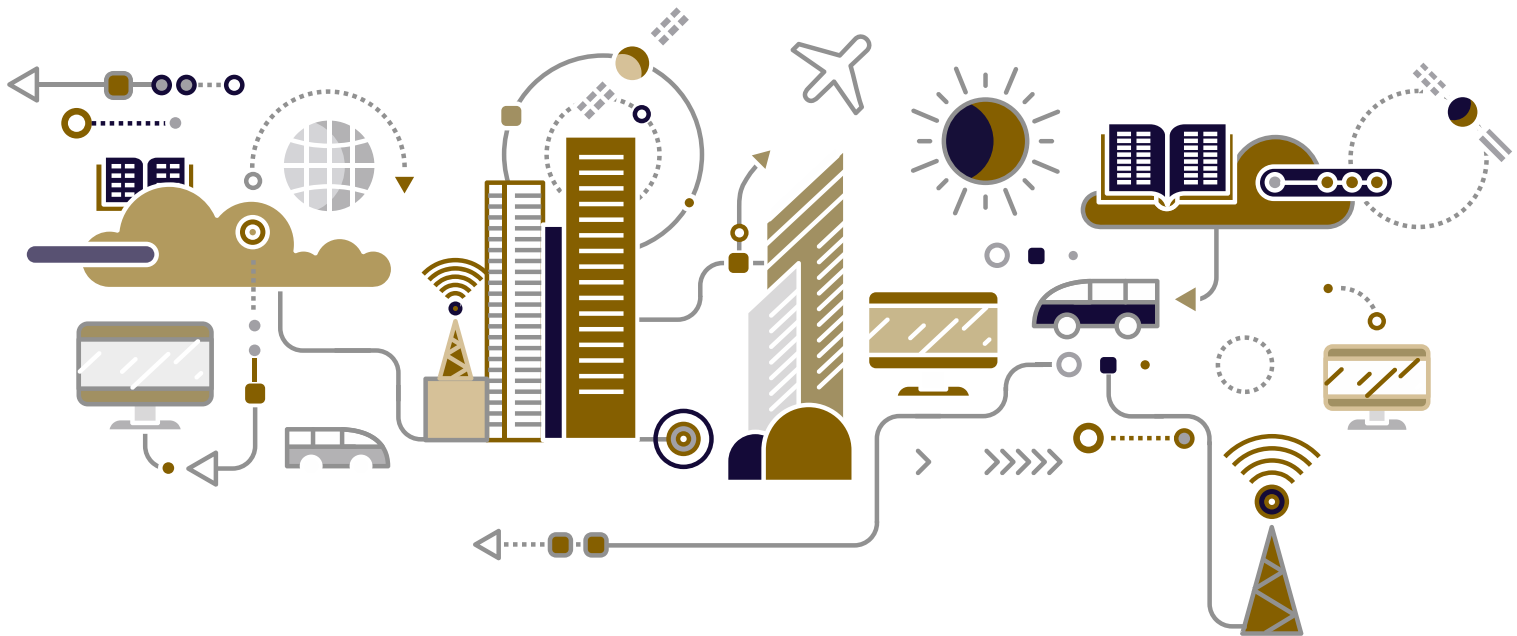


# European SME Expertise in 5G and Beyond



# USEFUL LINKS

Find the SME you need

[www.networld2020.eu/find-the-sme-you-need/](http://www.networld2020.eu/find-the-sme-you-need/)

NetWorld2020 SME support

[www.networld2020.eu/sme-support](http://www.networld2020.eu/sme-support)

NetWorld2020 European Technology Platform

[www.networld2020.eu](http://www.networld2020.eu)

5G Public-Private Partnership

[www.5g-ppp.eu](http://www.5g-ppp.eu)

# EDITORIAL



**JACQUES MAGEN**  
interinnov  
Chair of the SME  
Working Group



I am very happy to welcome you to the 3rd edition of the “SME brochure”. Now that the 5G Public-Private Partnership (5G PPP) is reaching the large-scale trials phase, with on the one hand the objective of targeting vertical sectors, and on the other hand of looking beyond 5G, SMEs are faced with new challenges. This version considers those new challenges, and I expect the participation of SMEs to thrive beyond the 20% share originally targeted as one of the 5G PPP Key Performance Indicator (KPIs) by the European Commission and the 5G Association. This brochure also includes, for the first time, an introduction from the Chair of NetWorld2020 and Chair of the 5G IA Board, supporting more involvement from SMEs of course!

With this 3rd edition, I also want to show the key role that SMEs have already been playing in developing, piloting and deploying 5G technologies, by providing examples of results and success stories from European SMEs involved in 5G PPP projects and otherwise. Of course, those examples are illustrations of what SMEs have achieved in the 5G PPP and more generally in the 5G landscape, and do not represent an exhaustive list of results from all SMEs involved. The SMEs included here are a subset of all the European SMEs working in 5G and other related communications-related topics. Therefore, this year we are adding at the end of the brochure the list of SMEs who are members of the NetWorld2020 European Technology Platform and of the 5G Infrastructure Association.

Some of those examples are already listed below, and further information may be found in this brochure along with the description of each SME.

The CHARISMA 5G PPP project allowed the SME InnoRoute from Munich, Germany, to optimise the platform for ultralow latency, while the SELFNET project helped them optimise the platform to support SDN (Software Defined Networking) modularity and extension. Thanks to those features, InnoRoute was able to enter the Industry 4.0 business by adding TSN (Time Sensitive Networking) functionality to their TrustNode router platform.

IS-Wireless from Warsaw, Poland, benefited from their participation in the 5G Essence project to demonstrate the benefits of 5G mission critical applications in coexistence with centralised RAN (Radio Access Network). This has allowed the company to seriously contribute to the delivery of a complete Software Defined (SD) RAN solution, that should be showcased in 2020.

Visiona Ingeniería de Proyectos from Madrid, Spain, has been contributing to the 5G-Crosshaul and the NRG5 projects. Thanks to 5G features, Visiona has implemented Virtualised Network Functions (VNFs) to deliver computer vision services through the network by deploying them in the edge of the network, to increase drone autopilot reaction. Visiona is now looking at new features around using artificial intelligence to find environmental changes in areas close to key infrastructures.

Through its participation to the 5G PPP projects Matilda and Pg-Phos, Incelligent, a Greek SME located in Athens, was enabled to mature its technology around its AI-powered products for proactive network resource and customer experience (CX) management, as well as its AI-powered products for the fintech and public sectors, and to conduct showcases, by interacting with verticals entities involved in areas like malls, venues, stadiums, and with large ICT companies.



Nomor Research from Munich, Germany, took advantage of their involvement in the 5G MoNArch and in the 5G XCast projects to strengthen their position as number one among the independent providers of simulation results for mobile communication networks. This has happened thanks to their contribution to system-level simulation results in the 5G IA IMT-2020 Evaluation Group, where they are evaluating the 3GPP proposal for 5G ("New Radio") against the IMT-2020 requirements.

Through its participation in One5G, WINGS ICT Solutions from Athens, Greece, enhanced its utility solutions, developing mechanisms for enabling a utility-operator to interact with the network (slice) management systems of a 5G network operator. These technologies were demonstrated at the Mobile World Congress 2019 and were parts of the project booth that received the "best booth award" at the EuCNC 2018 conference.

In the context of its activities across several 5G PPP projects (SelfNet, 5G-Crosshaul, 5G-TRANSFORMER, blueSPACE, 5G-MEDIA, 5GCity, SliceNet, 5G-EVE, and 5GCroCo), the Italian SME Nextworks, from Pisa, has developed a strong asset of software prototypes for an advanced NFV MANO framework targeting 5G infrastructures and integrating innovative features for 5G telcos, service providers and vertical industries. Nextworks performed demonstration activities at major events, which have become key references and success stories to present the company expertise to potential customers, thus increasing competitiveness and differentiation with competitors.

SMEs are benefiting from the 5G PPP not only to innovate and enhance their products and broaden their market share, but also to grow. WINGS, mentioned above, has enhanced its headcount, as well its competence. Although the 5G EVE project has only recently started, the SMEs involved can already see the benefit in participating in the project. Telcaria from Madrid, Spain, has motivated current employees to develop their professional careers to pursue Ph.D. and has been able to hire new employees. ares2t from Rome, Italy, has hired one new employee and plans to hire a second one; they have increased their overall budget by 20% and already extended their network of potential customers thanks to the connection with top companies participating in the consortium.

*The SME Working Group (WG) is gathering about 150 members including 110+ SMEs. More than 350 SMEs are members of NetWorld2020, the European Technology Platform for telecommunications and related services and applications. The SME WG is jointly supported by NetWorld2020 and the 5G IA. The current SME representatives in the 5G IA Board are Nicola Ciulli from Nextworks and Jacques Magen from interinnov. There are five SME representatives in the NetWorld2020 Steering Board: Integrasys, interinnov, Montimage, Nextworks, and Quobis Networks. The SME WG is supported by the To-Euro-5G Coordination and Support Action and is chaired by Jacques Magen from interinnov. Nicola Ciulli from Nextworks is the Vice-Chair. More information is available at [www.networld2020.eu/sme-support/](http://www.networld2020.eu/sme-support/). If you wish to join the SME Working Group, please send a request to [sme-wg-contact@networld2020.eu](mailto:sme-wg-contact@networld2020.eu).*





**RUI L. AGUIAR**  
Networld2020 Steering  
Board Chair

The dynamism of SMEs is an essential feature for a competitive European society. The flexibility, eagerness and drive for innovation, that so many European SMEs possess, are essential for the development of our lives. Networld2020, the European Technology Platform that collects the efforts of all entities interested in telecommunications and associated technologies, is proud to count about 350 SMEs inside its constituency. These SMEs have made large contributions to the overall research in Europe and have shown many success examples on how to bring these innovations into commercial exploitation.

SMEs have been an essential part on, and a key contributor to, the work performed inside Networld2020. The SME working group has been key in intertwining the realities of innovation in European context and the constraints of SMEs, actively working to facilitate this two-way street, improving the interest of SMEs for European research, and promoting the advantages of collaborating with SMEs inside the research and innovation communities. With the upcoming Horizon Europe, novel opportunities will exist for SMEs. At a time when we will be discussing funding priorities for the next years, a renewed engagement of multiple SMEs may smooth the path for future joint successes!

It would be extremely rewarding for all of us if we continue to see an increase of the collaboration of SMEs inside European-funded research, and we see an increase in the SME participation inside Networld2020.

Best of luck to all SMEs!



**COLIN WILLCOCK**  
Chairman of  
the Board, 5G IA

On behalf of the 5G Infrastructure Association (5G-IA) I welcome the opportunity to write an introduction for this SME brochure. SMEs are one of the most important participants in our industry, they have the ability to bring new ideas to market and they represent the seeds that will hopefully grow into major industrial players in the future.

The 5G-IA is committed to the advancement of 5G in Europe. To this aim, the Association brings together a global community of telecoms & digital actors. Within this Association community, SMEs play a vital part, providing the motor for innovation and future growth.

Within the 5G Public Private Partnership (5G PPP), a 700 Million Euro joint initiative between the European Commission and European ICT industry, where the 5G IA represents the “private” side, we have focused on trying to ensure a high SME participation. This has enabled the projects to combine the unique SME aspects of innovative thinking, flexibility and agility with the requirements and reach of the large industrial players. This ability to combine both groups in a set of common projects has been one of the key factors driving the overall success of the 5G PPP programme.



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AETHERIC ENGINEERING



YEAR ESTABLISHED

1989



NUMBER OF EMPLOYEES

2



MORE INFORMATION

[www.aetheric.co.uk](http://www.aetheric.co.uk)



CONTACT

[enquiries@aetheric.co.uk](mailto:enquiries@aetheric.co.uk)

## EXPERTISE IN

SATELLITE  
COMMUNICATIONS

### BACKGROUND, EXPERTISE & SKILLS

As an independent consultancy, specialising in Satellite Communications, we support R&D, design, procurement and implementation of space segment and ground segment systems. We have an in-depth understanding of satellite communications networks and their relevance to commercial applications. Our expertise includes design; procurement; project management; and supervision of manufacture, test, installation and commissioning. Our experience includes working for clients on a world-wide basis.

### ACHIEVEMENTS & SUCCESS STORIES

We have performed feasibility studies for satellite communication systems, for example the provision of telecommunication service throughout Africa, and the augmentation of a terrestrial banking network. We have supported the design and the procurement of telecommunications satellites, including GNSS augmentation, broadband connectivity, television distribution and delivery, and data networks as supported applications. We designed and built a prototype transportable VSAT terminal. We also managed studies into the design standards for the user terminals of a broadband satellite communications network.

### INTEREST FOR FUTURE R&D&I COOPERATION

We are interested in applying our expertise and experience in support of R&D&I in all aspects of satellite communications. In particular, we would welcome opportunities to support researchers with little expertise, themselves, in satellite communications but with technology or IP that they wish to introduce into the satcom sphere.



YEAR ESTABLISHED

2008



NUMBER OF EMPLOYEES

10



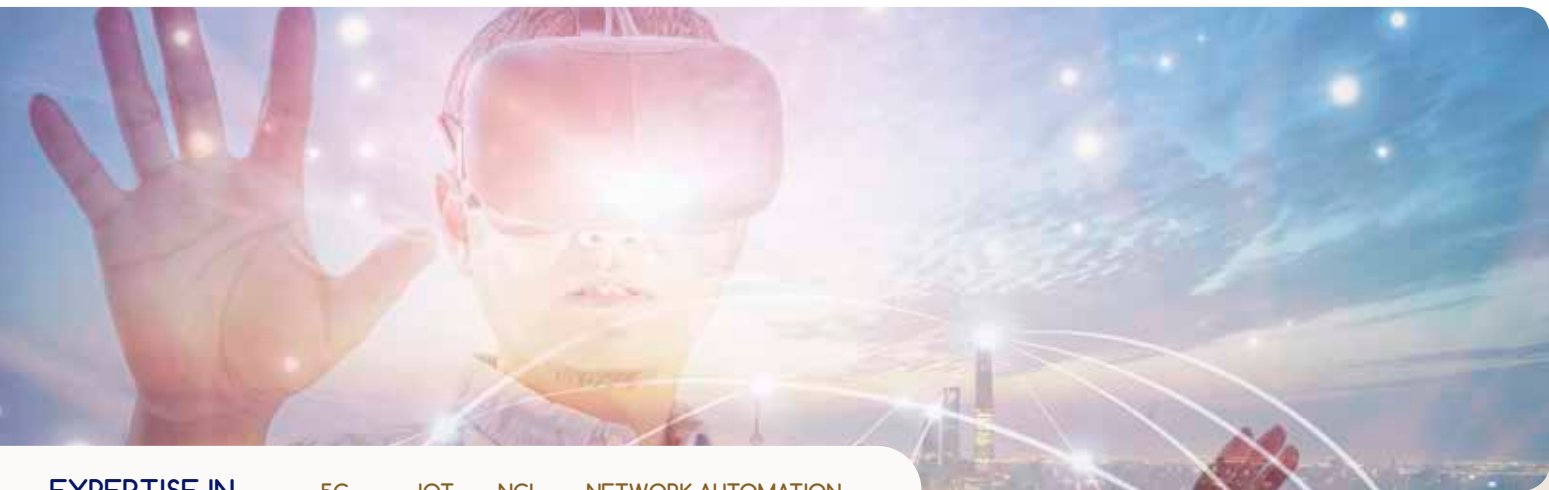
MORE INFORMATION

[www.arctoslabs.com](http://www.arctoslabs.com)



CONTACT

[mats.eriksson@arctoslabs.com](mailto:mats.eriksson@arctoslabs.com)



EXPERTISE IN

5G

IOT

NGI

NETWORK AUTOMATION

## BACKGROUND, EXPERTISE & SKILLS

The team consists of very senior consultants with a wealth of experience from the leading global telecom companies. Our experience covers mobile and core systems, software technology, services development, as well as business management.

We are currently active in 5G R&D, edge optimization & automation etc.

## ACHIEVEMENTS & SUCCESS STORIES

We provide unique technology for edge workload optimization and similar scenarios that has been showcased in PoC's and in major international conferences (such as MWC)

## INTEREST FOR FUTURE R&D&I COOPERATION

Arctos Labs is interested in collaboration projects that moves industry further when it comes to enable emerging edge compute applications and technology



YEAR ESTABLISHED

1991



NUMBER OF EMPLOYEES

50



MORE INFORMATION

[www.beia.eu](http://www.beia.eu)



CONTACT

[george@beia.ro](mailto:george@beia.ro)

EXPERTISE IN

5G

IOT

NGI

SATELLITE  
COMMUNICATIONS

TELECOMMUNICATIONS  
EQUIPMENT

MEDIA &  
CONTENT

TRANSPORT &  
LOGISTICS

HEALTH

ENERGY +

## BACKGROUND, EXPERTISE & SKILLS

BEIA Consult International is a SME performing research, design, production, distribution, sales, installation and service.

BEIA is one of the leading providers of telecommunications equipment and solutions in Romania and offers consultancy services for carrier grade infrastructure, communication solutions for PABX, voice mail, IVR, call centre, VoIP services.

BEIA has R&D expertise in Cloud and embedded M2M telemonitoring applications, developing IoT based platforms such as agriculture monitoring platform for monitoring ecological parameters, and systems for irrigation management.

BEIA provides managed services & system integration, IP-Wireless-SCADA, GPRS/CDMA communications with TCP/IP embedded, GPS applications, µ-controller programming, software development.

BEIA is certified ISO 9001, 14001, 18001 and 27001 and is a member of various professional organizations such as ARIES, PMI, IEEE, AHK, IPMA.

## ACHIEVEMENTS & SUCCESS STORIES

The company's references include over 5,000 national and EU projects for IT and communications solutions, enterprise cloud communications and telemetry, energy, smart cities, public safety, radio networks, etc.

**CitiSim** - Smart City 3D Simulation and Monitoring Platform

**COSIBAS** - Cognitive services for IoT-based scenarios in the industrial domain

**ESTABLISH** - Environmental Sensing To Act for a Better quality of Life: Smart Health

**Mobiway** - Mobility Beyond Individualism: an Integrated Platform for Intelligent Transportation Systems of Tomorrow ProSe - Proximity Services Framework

**Power2SME** - Aims to create a cloud system that will change SMEs' way of consuming energy

**SWAM** - Smart WATER Management system for better environmental sustainability

Other projects (finished and ongoing H2020, ECSEL, MSCA, Eureka/Eurostars, ITEA, Celtic, Erasmus, ERA-Net, AAL, BBI, COST, etc.) can be found on BEIA sites.

## INTEREST FOR FUTURE R&D&I COOPERATION

BEIA is interested for future R&D&I cooperation in the following research areas (not exclusive): IoT, Cloud and embedded M2M applications, agriculture, environment, smart cities, smart mobility, health and well-being, energy, digital industry, digital life, etc.

To develop our projects or to cooperate within other projects, we need partners to build a comprehensive "ecosystem", interdependent on one another.

1. Horizontal partners: to provide the unified, standards-based network infrastructure and contribute with technologies and experiences to create a complete solution.
2. Vertical Partners: to solve market-specific business problems and address particular use cases, to have the knowledge of specific business operational.
3. Geographic, from Europe and other continents: to understand local environments, laws (such as data privacy regulations), and to facilitate project deployments.







YEAR ESTABLISHED

2015



NUMBER OF EMPLOYEES

10



MORE INFORMATION

[www.cumucore.com](http://www.cumucore.com)



CONTACT

[info@cumucore.com](mailto:info@cumucore.com)

EXPERTISE IN

5G

IOT

SDN, MEC,  
eMBMS

MEDIA &  
CONTENT

SMART  
CITIES

PUBLIC  
SAFETY

## BACKGROUND, EXPERTISE & SKILLS

Cumucore is a spin off from Aalto University which products include results of several research projects in cooperation with industry partners such as Nokia, Ericsson, Huawei and Coriant/Infinera.

Ultra-reliable 5G packet core enhanced with SDN mobile backhaul orchestrator to manage network slices and Multi Access Edge (MEC) edge computing. The 5GC includes NB-IOT and eMBMS running in dedicated servers or virtualized on the cloud.

Cumucore 5GC has been deployed in several trials and pilots in Italy, South Africa and middle east showing reliable and optimized packet core for private LTE, Industrial environments and small deployments.

## ACHIEVEMENTS & SUCCESS STORIES

Active participation in EU-KR project related to usage of UAV for firefighting including network slicing and MEC for URLLC required for emergency use cases.

Participation to 5G-SMART project for ultra-reliable 5G Core and network slicing for Industrial use cases.

## INTEREST FOR FUTURE R&D&I COOPERATION

Cumucore is interested to partner with other SMEs to participate in pilots on NB-IoT, eMBMS, Industrial Internet and private 5G networks. We are looking for partners complementing Cumucore portfolio on RAN including SDR and Cloud-RAN as well as OSS and BSS.



YEAR ESTABLISHED

2018



NUMBER OF EMPLOYEES

6



MORE INFORMATION

[www.digitaltwin.technology](http://www.digitaltwin.technology)



CONTACT

[info@digitaltwin.technology](mailto:info@digitaltwin.technology)

EXPERTISE IN

5G

IOT

VR/AR

MEDIA &  
CONTENT

TRANSPORT &  
LOGISTICS

SMART  
CITIES

## BACKGROUND, EXPERTISE & SKILLS

DigitalTwin Technology is software solution provider for construction and ICT industry. We create digital twins of construction site and urban cities for real-time monitoring and operations. We generate simulation behaviour of those 3D model to predict any possible accidents to mitigate in advance. 5G technology, with its promises of immersive virtual reality, will be a data hungry generation of wireless communications. Arrival of 5G will mean we can push these capabilities away from the PC and into something called the edge cloud, so we only require the headset. This is our cloud AR/VR technology. Cloud VR/AR technology is set to be a disruptive form of immersive multimedia in a number of different ways.

## ACHIEVEMENTS & SUCCESS STORIES

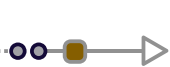
Tunnelware is a VaaS (Virtuality as a Service) for tunnel construction industry to manage the construction process while managing the data generated by various sensors and human interaction. With a focus on reducing cost and waste, and increasing productivity, the system will improve the construction process at every stage, delivering "faster builds to a higher quality with fewer defects and more sustainable tunnels.

Cityware is a digital twin of your city to monitor the infrastructure on real-time, simulate the real situation in the virtual world. Completely under GDPR regulation with no video streaming.

## INTEREST FOR FUTURE R&D&I COOPERATION

Engineers have been so preoccupied with designing and building the low-latency networks for these emerging applications that they've neglected the rest of our vast, tangled telecom networks. The result is that there is now a growing gap between the capabilities of the fixed and mobile sides of these networks. A big part of the problem is that the way data moves through our networks has been designed for efficiency on the mobile side. In the process our networks have become redundant and prone to clogging on the fixed side.

We are looking for partners in the area of networking who can help us taking this research to the next step. Partners can be from EU region or globally.



EXPERTISE IN

5G

IOT

NGI

MEDIA &  
CONTENT

TRANSPORT &  
LOGISTICS

MANUFACTURING

ENERGY

SMART  
CITIES

PUBLIC  
SAFETY

## BACKGROUND, EXPERTISE & SKILLS

EANTC (European Advanced Networking Test Center) is internationally recognized as one of the world's leading independent test centers for telecommunication technologies. Based in Berlin, Germany, the company offers vendor-neutral consultancy and realistic, reproducible high-quality testing services since 1991. Customers include leading network equipment manufacturers, tier-1 service providers, large enterprises and governments worldwide. EANTC's performance and scalability, interoperability, proof of concept, acceptance tests and network audits cover established, and next-generation fixed and mobile network technologies.

EANTC develops new test methodologies for 5G networks and applications. We especially focus on end-to-end interoperability, scalability, and performance tests. They cover network infrastructure (SDN transport, slicing, telco cloud/NFV, edge computing) as well as network applications for a range of industry sectors.

## ACHIEVEMENTS & SUCCESS STORIES

**5G-VINNI:** EANTC provides benchmarking methodology and state-of-the-art testing expertise in NFV, SDN and Network Slicing.

**IETF/NetSecOPEN:** EANTC co-created an independent, multi-vendor, multi-labs, and multi-tool test program for Next-Generation Firewalls, Intrusion detection and prevention systems and unified threat management implementations. The methodology has been prepared as an IETF standard (draft, soon RFC) edited by EANTC. The test suite is used for evaluation and certification of network security products, and to provide guidelines for testing the infrastructure.

**F-Interop:** The European research project aimed to develop online test tools supporting IoT-related technologies.

**ETSI:** EANTC is involved with the TST WG in ETSI's NFV Industry Standardization Group. Capabilities include management of descriptors and software images, life-cycle management of network services and virtual network functions.

## INTEREST FOR FUTURE R&D&I COOPERATION

EANTC has strong industry experience in interop and performance testing of SDN, NFV, 5G services and applications. Being an independent test lab, EANTC is interested in contributing testing, quality assurance, and lab setup/management expertise to research projects. We would like to contribute our extensive commercial telecoms experience and strong focus on realistic scenarios. We find projects exciting that help Europe to capture markets strongly (in TRL 7-8) or to create a technology leadership position (TRL 5-7).

We have worked in small, 50%-funded EU projects as well as in large consortia, fully funded. H2020 and follow-on projects are great, likewise smaller proposals e.g. in the Eurostars area. We are ok to provide Task and WP leaders if desired.





-  YEAR ESTABLISHED  
**2016**
-  NUMBER OF EMPLOYEES  
**10**
-  MORE INFORMATION  
[www.fogus.gr](http://www.fogus.gr)
-  CONTACT  
[info@fogus.gr](mailto:info@fogus.gr)

EXPERTISE IN

5G

IOT

VR/AR

MEDIA &  
CONTENT

SMART  
CITIES

## BACKGROUND, EXPERTISE & SKILLS

Fogus is a thriving SME in Greece that aims at integrating state-of-the-art technological advancements and cutting-edge research achievements, towards an immersive communication and computing experience. Founded by a group of industrial and academic experts covering a wide range of disciplines in the area of Information and Communication Technologies (ICT), Fogus exhibits strong research record and vast experience in managing and implementing ICT Research & Innovation actions. Holding experience that ranges from the design of mobile communication protocols to the development of custom-made software, Fogus undertakes: i) end-to-end set-up of network simulation and emulation environments for IoT and user-centric services, ii) development of network functions end protocols for access and transport network domains, ii) analysis of big data with expertise on mapping network and service performance parameters to user-experience metrics, iv) MEC-empowered service provisioning and integration for 5G.

## ACHIEVEMENTS & SUCCESS STORIES

Fogus has active role in leading consortia and forums for 5G networks. Currently, the company participates in the 5GENESIS (<https://5genesis.eu/>) project. 5GENESIS is a large-scale 5G experimentation project that aims at validating 5G KPIs for various 5G use cases, in both controlled set-ups and large-scale events. This will be achieved by bringing together results from a considerable number of EU projects as well as the partners' internal R&D activities in order to realise an integrated End-to-end 5G Facility. Moreover, the company develops integrated services for user-centric digital content delivery in 5G mobile data networks that will be founded on the pillars of a) blockchain based wireless network resource sharing, b) QoE-enhanced video content delivery, c) software-defined networking and d) cache-enabled mobile data networks.

## INTEREST FOR FUTURE R&D&I COOPERATION

Fogus research and development team has vast experience in participation to many European R&D projects in the past, including FP7 and H2020 actions, ICT, MSCA ITN, IAPP and RISE actions. The company is mainly interested in 5G and beyond research projects. Strategically, the company is looking for academic and industrial partners for potential collaborations in the following directions: i) exploitation of the last advancements in ICT sector to provide complete end-to-end solutions to vertical industries, ii) scientific research on innovative ideas for wireless mobile networking and service provisioning, and ii) participation in training and knowledge sharing activities, as explained in the MSCA work programme.





YEAR ESTABLISHED

2017



NUMBER OF EMPLOYEES

2



MORE INFORMATION

[www.hi2.es](http://www.hi2.es)



CONTACT

[jsesena@hi2.es](mailto:jsesena@hi2.es)



EXPERTISE IN

5G

SATELLITE  
COMMUNICATIONS

MEDIA &  
CONTENT

SMART  
CITIES

PUBLIC  
SAFETY

## BACKGROUND, EXPERTISE & SKILLS

- Media. New mechanisms to broadcast content and provide personal TV. Assistant to ITU-D on supporting new advanced entertainment systems. Also, research analysis on new preferences of content viewers and comparison of efficiencies of different delivery platforms (satellite, cable, terrestrial over the air, OTT)
- Automotive. Designers and supporters of new solutions for Car2Car communications
- Public Safety. Involvement on the standardization processes for ICT solutions applicable to PPDR.

## ACHIEVEMENTS & SUCCESS STORIES

Main areas of work have been the assessment of suitable spectrum for 5G and integration of satellite and terrestrial networks. HI has conducted studies on the use of current available spectrum and future opportunities for 5G.

## INTEREST FOR FUTURE R&D&I COOPERATION

Widely involved in activities in Europe, Latin America and Africa. Assistance is regularly provided to Governments of Mexico, Colombia, Paraguay as well as ongoing activities in Africa.. HI interest in Morocco, Algeria, Tunisia, Egypt, Lebanon, Argentina, Chile, Brazil, Ecuador, Perú, Venezuela, Colombia, Panamá, Costa Rica, Honduras, Mexico.

Main technology areas are related to spectrum management and efficiency on the use of the spectrum through intelligent terminals capable to share the spectrum.



YEAR ESTABLISHED

2014



NUMBER OF EMPLOYEES

12



MORE INFORMATION

[www.incelligent.net](http://www.incelligent.net)



CONTACT

[info@incelligent.net](mailto:info@incelligent.net)

EXPERTISE IN

5G

IOT

MEDIA &  
CONTENT

SMART  
CITIES

PUBLIC  
SAFETY

FINTECH, PUBLIC  
SECTOR

## BACKGROUND, EXPERTISE & SKILLS

Incelligent delivers tailored, out-of-the-box Predictive and Prescriptive Analytics solutions for proactive network resource and customer experience (CX) management, as well as products for fintech and public sector applications. Its expertise lie in its advanced analytics and state-of-the-art methodologies based on Machine Learning (ML) and Artificial Intelligence (AI), as well as its versatile and easy deployment of tailor-made solutions. Whether for proactive network and CX management or for the aforementioned verticals, Incelligent has developed and patented relevant technologies, processing heterogeneous Big Data with advanced ML/AI approaches and offering in-depth insights, predictions as well as actionable solutions.

Validation activities have been performed and/or are under way in the context of various PoCs, including use cases involving smart venues (e.g. stadiums, malls, etc.).

## ACHIEVEMENTS & SUCCESS STORIES

Through its participation to the 5G PPP projects, MATILDA and 5G-PHOS, Incelligent was enabled to mature its technology (in terms of functionality, positioning in standards, etc.), to conduct showcases and enhance its expertise with respect to the 5G ecosystem technologies, by interacting with verticals entities involved in areas like malls, venues, stadiums, and also by working together by large ICT companies. In parallel, Incelligent is proud to deliver contributions that help to the overall shaping of the 5G world and to the maintenance of a prominent European role in the field.

## INTEREST FOR FUTURE R&D&I COOPERATION

Incelligent is interested in creating future collaborations in the areas FinTech and public sector services, retail, smart venue as well as in telecommunication networks management. Of course, we remain open and will be happy to receive new proposals and ideas for collaboration for R&D or product development at a European and international level relevant to our expertise in ML/AI in the context of the 5G ecosystem.





YEAR ESTABLISHED

2017



NUMBER OF EMPLOYEES

7



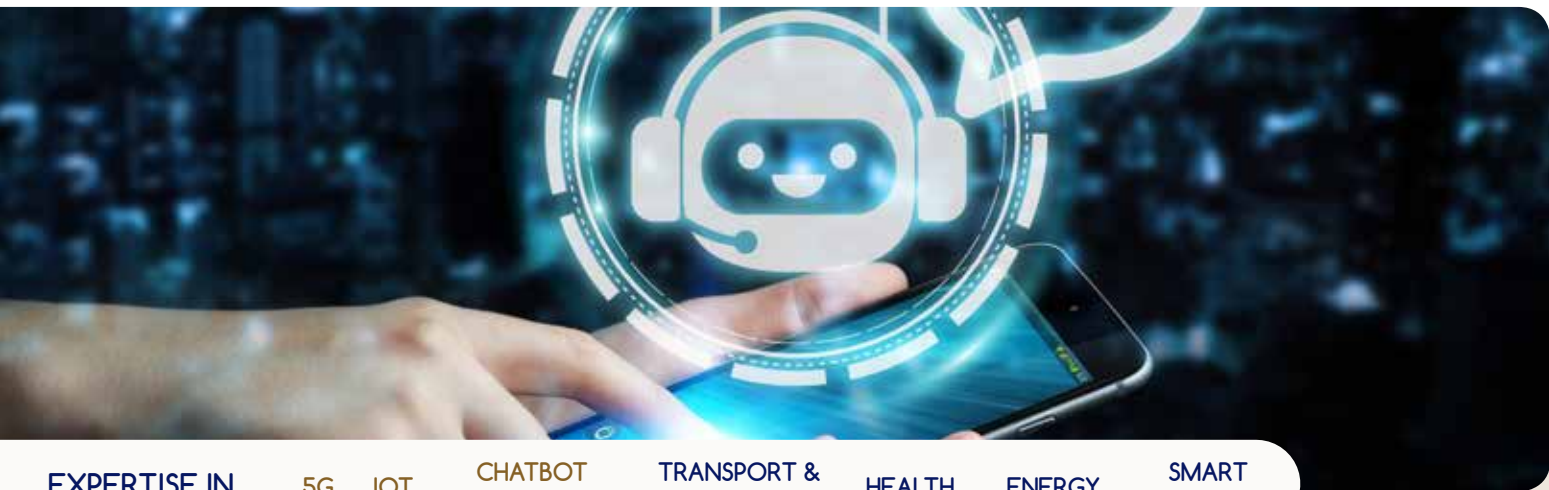
MORE INFORMATION

[www.infolysis.gr](http://www.infolysis.gr)



CONTACT

[research@infolysis.gr](mailto:research@infolysis.gr)



EXPERTISE IN

5G

IOT

CHATBOT  
APPS

TRANSPORT &  
LOGISTICS

HEALTH

ENERGY

SMART  
CITIES

## BACKGROUND, EXPERTISE & SKILLS

INFOLYSIS P.C. is an innovative SME company, established in Athens, Greece, specialising on the design and development of chatbots, either as custom-made standalone applications or as subscribed-based services (Chatbot as a Service) via the privately owned chatbot platform. Chatbots are applications that simulate human conversation, based primarily on conversational flows, enriched with DL/ NLP technologies for more sophisticated solutions.

INFOLYSIS is committed to driving research results forward in order to expand chatbot applicability in novel ICT use-cases by experimenting with novel technologies, such as 5G, SDN/NFV at the network edge and container-based virtualization in IoT domains. An indicative example includes the INFOLYSIS IoT Virtual GW, which offers the provision of agile interoperability over heterogeneous IoT domains, along with a user friendly chatbot interface.

## ACHIEVEMENTS & SUCCESS STORIES

In 2017, INFOLYSIS achieved to commercialise the first chatbot business solution over Viber in Greece, enabling food ordering via chatting. This pioneering solution created strong business cooperation with Viber, granting to INFOLYSIS the title of Viber Preferred Enabling Partner.

Since then, INFOLYSIS demonstrated its solutions to many events organised by Viber. Two events are standing out, the "Viber for Business Innovation Day" at SNFCC and the "Viber Chatbot event" at INNOVATHENS, where both the CEO of Viber Mr. Djamel Agaoua and the VP of Global Partnerships Mrs. Cristina Constandache were present, together with key-players from the Greek market.

Concerning R&D, INFOLYSIS successfully participates in two 5G-PPP/H2020 projects, 5GENESIS ([www.5genesis.eu](http://www.5genesis.eu)) and 5G!Drones ([www.5gdrones.eu](http://www.5gdrones.eu)), which validate 5G applicability in real life use-cases.

## INTEREST FOR FUTURE R&D&I COOPERATION

INFOLYSIS plans to further enhance chatbot characteristics and functionalities with DL/ NLP technologies for providing AI-driven chatbots to the Greek market and therefore there is a strong interest for building a cooperation with AI specialised companies.

Moreover, INFOLYSIS is looking for expanding chatbot applicability to new use-cases, such as improving citizen engagement in smart cities and to smart agriculture use-cases for simplifying continuous monitoring process.

Finally, INFOLYSIS also aims to expand its target market for the privately owned chatbot platform beyond the boundaries of Greece, targeting at popular Viber international chatbot markets in Europe, Russia and Asia, but also extending chatbot development over additional messaging platforms that are popular in specific countries, targeting at niche markets.





# interinnov



YEAR ESTABLISHED

2009



NUMBER OF EMPLOYEES

5



MORE INFORMATION

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CONTACT

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EXPERTISE IN

5G

IOT

NGI

MEDIA &  
CONTENT

SMART  
CITIES

AGRIFOOD

## BACKGROUND, EXPERTISE & SKILLS

In 2009 interinnov started with one specific challenge in mind: bridge the gap between innovation and the real world. We want to transform the breakthroughs achieved by brilliant minds in Science and Technology into actual benefits to target communities and the society. We believe in a positive and colourful vision for the future.

After 10 years, interinnov is a proficient partner in the European and international Research and Innovation context, with a prominent role in several ICT initiatives including the 5G PPP, NGI, FIWARE, and FIRE. Interinnov is a Steering Board member of the NetWorld2020 European Technology Platform and a Board member of the 5G IA. We are involved in several 5G PPP projects with a strong focus on vertical sectors such as media & content, smart cities, and agrifood.

## ACHIEVEMENTS & SUCCESS STORIES

In the framework of the 5G PPP, interinnov coordinates key activities on community building and marketing communication since the initiative started in 2013, including the management of the YouTube channel and design of official printed material. interinnov is leading the impact, promotion and exploitation activities of 5G-MEDIA, one of the first European projects addressing the impact of 5G over the vertical industry of media. In addition, we are chairing the cross-project SME Working Group, responsible for empowering Small-Medium Enterprises.

Besides 5G, interinnov has become a pivotal partner in the new NGI flagship initiative from the European Commission. We are responsible for leading the strategy and activities to create synergies between Europe and the USA, via the NGI Explorers Programme and the Think NEXUS project.

## INTEREST FOR FUTURE R&D&I COOPERATION

interinnov is constantly looking for new partners and projects to strengthen its knowledge of the world of innovation. Our worldwide network of partners will give you access to top-level institutions from the Academia, Industry and Public Administration. Europe is our core centre of operations, strengthened with partners in the Americas, Africa and Asia.

We facilitate a professional framework to create interest-based networks, rapidly identifying and bringing in the key organizations that will strengthen the success of your endeavour. We make your innovation attractive, by giving it an outstanding visibility and market position to deliver your value proposition to the right target audiences. We increase the competitiveness and capacity of your innovation to access the market.





EXPERTISE IN

5G

IOT

NGI

CYBERSECURITY

SMART  
CITIES

PUBLIC  
SAFETY

CRITICAL  
COMMUNICATIONS

TELECOMS

## BACKGROUND, EXPERTISE & SKILLS

INTERNET INSTITUTE Ltd. (ININ) is an innovation intensive SME, specialized in 5G performance and quality metrics development and validation, 5G testing, benchmarking and end-to-end validation, and quality monitoring and SLA assurance for orchestrated 5G infrastructures and services. Also, we are experienced in design, deployment and operation of reliable and resilient 5G infrastructures for public safety and critical communications sectors.

We address telco, corporate and vertical industrial sectors with our quality MONitoring (gMON) portfolio for performance monitoring and SLA assurance, benchmarking and end-to-end validation of communication infrastructures and services. In addition, we specialise in on-site critical communications, smart sensing and intervention monitoring services with our intervention MONitoring (iMON) and remote MONitoring (rMON) portfolios, customised for public safety and critical infrastructures.

## ACHIEVEMENTS & SUCCESS STORIES

We are proud of our continuous cooperation with a number of notable telco players, utility owners and public safety organisations, who help us in creating a realistic hands-on ecosystem for both innovative R&D pilots and actual deployments in practice. We are currently part of the 5G PPP Phase 2 program as part of the MATILDA project ([www.matilda-5g.eu](http://www.matilda-5g.eu)) where our primary focus is on quality and performance monitoring capabilities for 5G-orchestrated domains, as well as real-world 5G vertical use cases for emergency response domain. In addition, we've recently launched PPDR One, a one-of-a-kind 5G and NFV ready experimentation facility that facilitates hands-on experimenting with stationary and portable 5G deployments for public safety and critical communications sectors (<https://5ginfire.eu/ppdr-one-facility/>).

## INTEREST FOR FUTURE R&D&I COOPERATION

Our interests for the upcoming R&D&I cooperation are geared towards further advancements in 5G performance and quality monitoring and verification systems and intelligent network orchestration. In particular: quality assurance of mobile, fixed and cloud systems, including 5G related quality metrics development and validation, 5G testing, benchmarking and end-to-end KPIs validation; cybersecurity monitoring, quality monitoring and SLA assurance for 5G infrastructures and services; R&I and piloting of resilient real-time 5G critical infrastructures, and specialised 5G deployments for public safety, automotive, intelligent transport, and utility verticals.



YEAR ESTABLISHED

1997



NUMBER OF EMPLOYEES

21



MORE INFORMATION

[www.iquadrat.com/  
research-and-development](http://www.iquadrat.com/research-and-development)



CONTACT

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EXPERTISE IN

5G

IOT

NGI

MEDIA &  
CONTENT

SMART  
CITIES

ENERGY

## BACKGROUND, EXPERTISE & SKILLS

IQUADRAT has a focused business plan specifically intended on delivering a “new generation of research tools for system level evaluation of wireless integrated communication systems”. The company is involved in projects with large corporate clients, mobile operators and public authorities. Our R&D department is involved in many National and EU-funded research projects, and has extensive know-how in 5G Networks, IoT, simulation methodologies for Radio Access Networks, Software Defined Networking (SDN) and Demand Response algorithms for Smart Grids. Our key products include a suite of System Level Simulators (SLS) that 802.11, 802.15.4, and 4G LTE networks, an SLS for Smart Grids that implements Demand Response algorithms, an IoT platform for Smart Building automation, and a new SDN/5G platform, with an SD-RAN.

## ACHIEVEMENTS & SUCCESS STORIES

Iquadrat is participating in a number of 5G-network related projects, such as the 5GPPP project 5G-PHOS, H2020-IoT SEMIOTICS, MSCA-ITN 5G STEPFW, MSCA-ITN SPOTLIGHT, and MSCA-RISE DECADE & CASPER. Iquadrat has gained extensive know-how in radio access technologies, network platforms, SDN, IoT and energy management methodologies for smart-grids. Key outcomes are i) our IoT platform for Smart Building automation that supports sensing of comfort related parameters (CO<sub>2</sub>, humidity, lux, etc.) via our own custom battery operated IoT nodes and transmit data over BLE or 802.15.4, and multi- IoT gateway setups with cloud-based control via a centralized controller; ii) our SDN/5G platform that decouples the RAN Control & Data Plane, and consolidates the control plane into a single centralized controller, enabling easier coordination among base stations and offering real-time control.

## INTEREST FOR FUTURE R&D&I COOPERATION

Iquadrat is interested in international cooperation in H2020 projects in ICT-related research and innovation, such as networking research for 5G and beyond, smart anything everywhere initiatives, tools for smart content in creative industries, etc.





EXPERTISE IN

5G

IOT

NGI

ENERGY

SMART  
CITIES

PUBLIC  
SAFETY

## BACKGROUND, EXPERTISE & SKILLS

IS-Wireless develops algorithms, protocols, and tools for 4G and 5G mobile networks. We provide licensable software in the two following areas: i) Software-Defined RAN (SD-RAN) – a NFV-compatible, standard-compliant RAN protocols ready for 4G/5G, it allows mobile networks to support more users with better performance at lower cost ii) the 5GToolset - experimentation solutions for mobile networks supporting research and education on 4G and 5G (5G NR). Our ambition is to bring 4G and 5G innovation for every university and research lab worldwide at affordable prices.

## ACHIEVEMENTS & SUCCESS STORIES

IS-Wireless has designed and develops innovative solutions for RAN virtualization like: the software-defined RAN (SD-RAN) – funded by the Public Authority in Poland; we have also developed the 5G Toolset – experimentation software for 4G/5G link and system level testing, and the unique solution called VNF Composition Framework (VCF) to support virtual RAN operation. Our radio resource management (RRM) solutions include among all 4G scheduler that has been integrated with the Eurescom OpenAirInterface to support carrier aggregation under the umbrella of FP7 Solder. It has been upgraded to also support 5G and multi-RAT scheduling (based on LWA, LWIP coexistence protocols). IS-Wireless is proud member of the two industry fora: O-RAN Alliance (O-RAN) and the Telecom Infra Project (TIP).

## INTEREST FOR FUTURE R&D&I COOPERATION

We are looking for partners willing to collaborate in: (i) development of 5G small cell protocols and radio resource management solutions for 4G/5G and cloud-RAN (ii) delivering cyber security solutions for 4G/5G small cells. We look forward to cooperate with different verticals (IoT/automotive, public safety, media) as we have our proprietary solutions for virtualized RAN that can be tailored and further adjusted per use-case (e.g. to complement existing products or solutions).





# itti



YEAR ESTABLISHED

1996



NUMBER OF EMPLOYEES

70



MORE INFORMATION

[www.itti.com.pl](http://www.itti.com.pl)



CONTACT

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EXPERTISE IN

5G

IOT

NGI

SATELLITE  
COMMUNICATIONS

MANUFACTURING

HEALTH

SMART  
CITIES

PUBLIC  
SAFETY

## BACKGROUND, EXPERTISE & SKILLS

The main competences of ITTI related to 5G are in PHY layer (channel coding, modulation, signal processing, synchronisation) and MAC layer (admission control, congestion control optimization), cognitive resource control and service adaptation (cross-layer, context driven, machine learning based, QoE/QoS), network and cybersecurity, test campaigns (e.g. video systems, mobile data services) and validation by means of system/link level simulators (LTE, WiMAX).

Our expertise covers eHealth, energy, and public safety vertical sectors. We developed Medstar.co solution that offers telecare support for remote patients. In the energy sector, we worked on optimal control for smart cities (e.g. light control, energy management). We also have extensive expertise in economic evaluation of PPDR networks and social media usage in crisis management within the public safety sector.

## ACHIEVEMENTS & SUCCESS STORIES

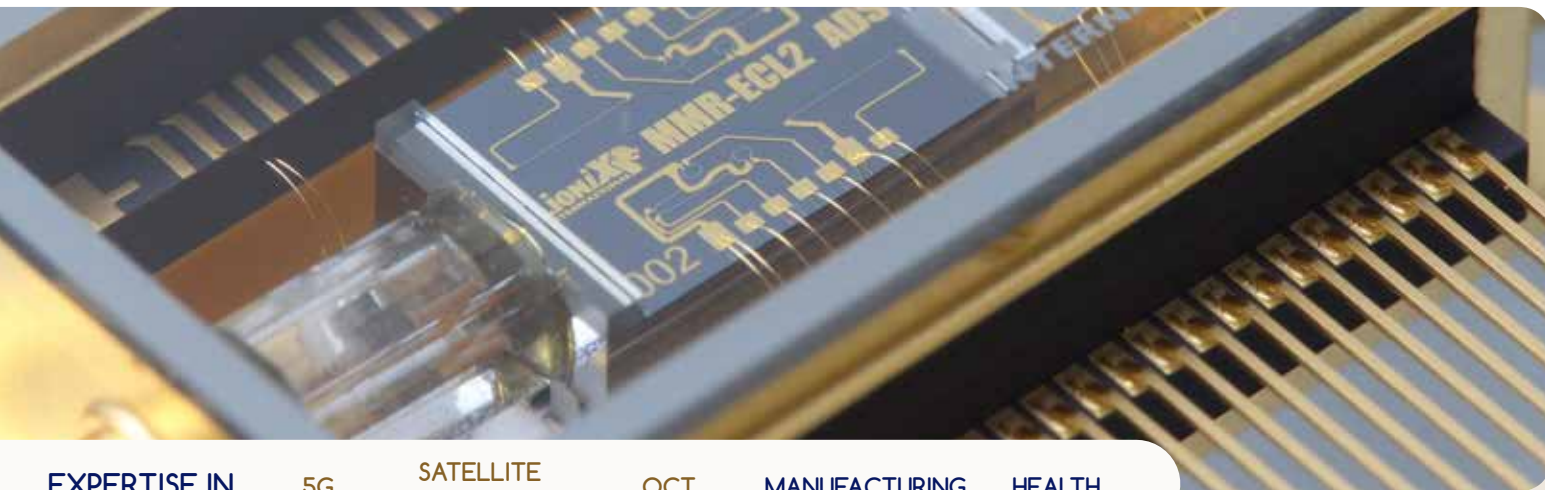
ITTI has contributed to over 50 international R&D projects in the EC Framework Programmes (5FP, 6FP, 7FP, H2020), EDA programmes and ESA programmes.

In recent H2020 CAVICO (Context-Aware Video Controller for autonomous transport and security monitoring) project ITTI successfully tested in the 5GinFire testbed the developed system that is able to control the video streaming on the basis of measured QoS and QoE parameters. In another H2020 project – QoEST4CM (QoE Support for improved Crisis Management) we provided video streaming system, integrated with UAV in the RAWFIE testbed, enabling for adaptive change of video parameters depending on network conditions, and user requirements.

## INTEREST FOR FUTURE R&D&I COOPERATION

Having a competent and experienced team of telecommunication engineers and software developers, ITTI is interested in collaboration with partners on development of innovative solutions for vertical sectors in the 5G ecosystem. In particular, we are interested in integrating novel technologies to our eHealth Medstar.co solution to enhance its functionality leveraging 5G capabilities. We are also seeking partners for collaboration on security solutions for 5G networks.





EXPERTISE IN

5G

SATELLITE  
COMMUNICATIONS

OCT

MANUFACTURING

HEALTH

## BACKGROUND, EXPERTISE & SKILLS

LioniX International is a leading global provider of customized microsystem solutions, in particular integrated photonics-based, in scalable production volumes. We provide customized solutions for OEM's and System Integrators, from design to device, by vertical integration in scalable production volumes and maintaining technology leadership secured by strong IP position. As LioniX International we focus on Photonic Integrated Circuits (PIC) enabled modules based on our proprietary waveguide technology (TriPlex™), in addition to our other core competences micro-fluidics, opto-fluidics and MEMS. As vertically integrated company we deliver a complete solution to our OEM customers: from initial design through volume manufacturing of products. LioniX is manufacturing partner for integrated microwave photonics optical beamforming networks in 5G-PHOS and blueSPACE. Our chips drive your business.

## ACHIEVEMENTS & SUCCESS STORIES

LioniX International secured a seven-figure contract for the development and fabrication of integrated photonic modules that enable ultra-high capacity broadband satellite communications from flatpanel aeronautical antennas. This contract with ViaSat Antenna Systems S.A. is part of the ESA project AIDAN and follows the years of intensive research and development of broadband solutions using microwave

photronics (MWP) beamformers on the proprietary TriPlex™ platform.

LioniX International obtained the prestigious PIC Award 2018 for "Advanced in PIC manufacturing" at the PIC International Conference in Brussels.

Magic Micro, a Kosdaq-listed South Korean electronic component company, acquired a majority share of 75% in LioniX International. This acquisition strengthens the position of both and clearly shows the Photonic Integrated Circuit (PIC) ecosystem is further maturing.

## INTEREST FOR FUTURE R&D&I COOPERATION

LioniX International has a strong R&D focus where more than 50 % of the employees have a PhD degree. The focus on integrated photonics, utilizing the benefits of the low-loss high contrast TriPlex™ microprocessors provide numerous solutions for a suite of applications in telecommunication/data communication, sat com, sensing health tech and health care.

The hybrid integration of InP and TriPlex PICs enables small and compact integrated modules with improved stability and performance.

Main topics of interest are: [1] implementation of microwave photonics (MWP) processing and analog photonic links (APL) and its application in mmWave beamforming for terrestrial and satcom networks, [2] hybrid tunable lasers for telecom and sensor applications [3] low-power actuation of complex processors through stress-optic tuning.



YEAR ESTABLISHED

2006



NUMBER OF EMPLOYEES

250



MORE INFORMATION

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CONTACT

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EXPERTISE IN

5G

IOT

SATELLITE  
COMMUNICATIONS

MEDIA &  
CONTENT

TRANSPORT &  
LOGISTICS

PUBLIC  
SAFETY

## BACKGROUND, EXPERTISE & SKILLS

LiveU is driving the live video revolution, providing live video streaming for TV, mobile, online and social media. Since the company invented cellular bonding, LiveU's portable live video transmission solutions have replaced traditional SNG trucks, offering far greater mobility and cost-effectiveness for global newsgathering, sports and events coverage. From backpacks to smartphones, and satellite/cellular hybrid to external antenna solutions, LiveU offers a complete range of devices for high-quality live video coverage, together with cloud-based management and video distribution. All LiveU products are 5G ready, designed to transmit effectively from the field over 5G networks. With 3,000+ customers in 130+ countries, LiveU's technology is used by global broadcasters, online media, sports organizations, public safety and autonomous vehicle manufacturers with teleoperation/remote-assisted driving.

## ACHIEVEMENTS & SUCCESS STORIES

LiveU offers creative HEVC live video streaming solutions for global newsgathering and every type of sporting event, including the FIFA World Cup™, Winter and Summer Olympic Games, Super Bowl, US Collegiate Championships, IRONMAN and Absa Cape Epic mountain bike race (South Africa).

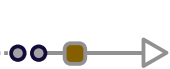
LiveU has been involved in a series of 5G tests worldwide, for example, teaming up with AT&T to trial 5G with its portable HEVC units for live news and sports broadcasts, and taking part in Vodafone's 5G Experience Day, delivering 4K feeds from the 4K camera and over the 5G network to test 5G potential.

LiveU is an active partner in successful EU collaboration projects, including: the 5GPPP research project, 5G-Xcast; 5G-Solutions (2019); 5G-Tour (2019); PrEstoCloud and others.

## INTEREST FOR FUTURE R&D&I COOPERATION

LiveU is looking for EU Horizon 2020 and international collaboration projects in: autonomous vehicles and connected cars, media and broadcasting, 5G, trials, public safety, telemedicine, video compression and video delivery over low cost public internet and any other area that requires reliable high-quality real-time video from the field for monitoring and/or control. LiveU contributes real-time video and data delivery over multiple cellular networks, high quality video over the public internet, remote teleoperation of SAE L3, L4, L5 vehicles and more.





YEAR ESTABLISHED

2005



NUMBER OF EMPLOYEES

28



MORE INFORMATION

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CONTACT

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EXPERTISE IN

5G

IOT

SATELLITE  
COMMUNICATIONS

TRANSPORT &  
LOGISTICS

MANUFACTURING

ENERGY

SMART  
CITIES

## BACKGROUND, EXPERTISE & SKILLS

Magister Solutions is specialist in communication network simulation and emulation tools and services for modelling real world telecom (satellite and terrestrial) in detail. Services for telecommunication include network simulation environments, concept, algorithm and software development, machine learning expertise, testing and PoC development.

## ACHIEVEMENTS & SUCCESS STORIES

Magister Solutions has developed several simulators modelling terrestrial and satellite networks in details. One of the latest developments is a novel simulation framework called Self-Organizing Simulator 3 (SonS3) that makes use of real network data to enable an accurate performance analysis of mobility related SON use cases. In addition to simulator development, we also developed an MRO algorithm which adapts dynamically the Cell Individual Offset (CIO), and a performance analysis within a realistic urban scenario. The proposed MRO algorithm leads to an overall reduction of more than 30% in mobility problems without causing a significant increase in the number of HOs.

## INTEREST FOR FUTURE R&D&I COOPERATION

We are working as a R&D&I partner with companies that are developing wireless systems, providing telecom services or looking for expertise in telecommunications. These companies include Satcom vendors and operators, Telecom vendors and operators and companies in defence and aerospace sector.



- YEAR ESTABLISHED  
1996
- NUMBER OF EMPLOYEES  
16
- MORE INFORMATION  
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EXPERTISE IN

5G

IOT

NGI

SATELLITE  
COMMUNICATIONS

MEDIA &  
CONTENT

TRANSPORT  
& LOGISTICS

SMART  
CITIES

PUBLIC  
SAFETY

## BACKGROUND, EXPERTISE & SKILLS

Martel is a dynamic Swiss-based company with more than 20 years' experience managing digital research and innovation projects across Europe and worldwide. After more than 100 projects, Martel has grown from its origins as a small consulting agency into a thriving organisation with employees located in offices in Zurich, Lugano and Lausanne. In the past five years, Martel's business has diversified to include research and development activities in the area of next generation internet technologies, such as 5G, IoT and Cloud. Our R&D department is specialised in virtualisation and orchestration of virtual resources, including IoT functions and Virtual Network Functions. Martel is an active member of key organisations including 5GIA, Network2020, FIWARE Foundation, BDV, AIOTI, IoT Forum, and NEM.

## ACHIEVEMENTS & SUCCESS STORIES

The proliferation of IoT and the rise of 5G are unleashing the potential to transform public services, transportation, safety, sustainability and infrastructures across many smart city scenarios. Orchestra Cities ([orchestracities.com](http://orchestracities.com)) is a data and IoT-driven solution allowing cities to collaboratively develop and share smart services using Open Source software, APIs and Data Models. It offers easy plug-and-play on top of 5G. Orchestra Cities was developed with the European cities of Antwerp and Helsinki and is now being trialled in Wolfsburg, Germany. It is modular and scalable, satisfying the needs of cities of different sizes. It allows cities to manage data access in a flexible way and in compliance with GDPR. Orchestra Cities supports different data formats and enables the creation of visual dashboards, which present a realtime view of city services.

## INTEREST FOR FUTURE R&D&I COOPERATION

Martel is interested in further developing Orchestra Cities and in trialling it in a variety of scenarios. These trials will complement and extend the platform's current smart cities focus and explore its development and deployment in other verticals, such as smart mobility, automotive, smart energy, sustainability and multi-media content scenarios. We are also looking to explore the behaviour of the Orchestra Cities platform combined with 5G technologies. In turn, this will allow the incorporation of 5G infrastructures and solutions in combination with advanced IoT, Cloud and AI. Our interest is in the convergence between IoT management solutions and 5G, including the usage of micro-services architectures. We are also looking to bring usage scenarios in the context of Electric Vehicle Charging Station Management, Parking Management, Air Quality Management and Waste Management.



EXPERTISE IN

5G

IOT

NGI

CYBERSECURITY

ALL VERTICALS

(MONITORING AND SECURITY MANAGEMENT  
SOLUTION APPLICABLE IN ALL VERTICAL SECTORS)

## BACKGROUND, EXPERTISE & SKILLS

Montimage specialises in the development of techniques and tools for security and performance analysis and management of 4G/5G/IoT networks using real-time monitoring and cyberprotection techniques. It provides flexible Security and Monitoring as a Service adapted for SDN/NFV-based dynamic environments. Montimage's expertise covers the detection, prevention and mitigation of cyber-security incidents in both the data and control planes. Its security management solution allows deploying and configuring monitoring agents to analyse network behaviour using DPI and AI techniques.

Montimage has deep knowledge of network and application protocols and behaviour; and, its products are completely build in-house. In consequence, they are trustworthy, adaptable, reliable, robust and can deal with high throughputs and complex systems. Montimage can rapidly provide proofs-of-concepts adapted to specific needs.

## ACHIEVEMENTS & SUCCESS STORIES

Montimage's solutions have been applied to improve the resiliency and trustworthiness of complex systems and adapted to different domains, including: automotive/transport, manufacturing/industry, health, telecommunications, critical infrastructures. The solutions can be extended to deal with proprietary protocols and analyse the behaviour and business activities of the different sectors.

Montimage has successfully deployed its solution in the SoftFire platform (Software Defined Networks and Network Function Virtualization Testbed within FIRE+, [www.softfire.eu](http://www.softfire.eu)) to improve the security-awareness of the operators; and its IoT solution in Fed4Fire platforms.

Montimage commercialises advanced solutions for creating instant 4G/5G mobile networks for emergency situations, events requiring extra bandwidth, and improving coverage in white/gray zones. It has an ongoing collaboration with Cumucore to commercialise 4G/5G mobile solutions in a box.

## INTEREST FOR FUTURE R&D&I COOPERATION

Montimage participates in many collaborative research projects that allow introducing innovative techniques into its products. For instance:

SISSDEN H2020 project where it analyses darknet and honeypot network traffic to detect low-intensity attacks and evasion techniques.

SENDATE CelticPlus project where it defines and implements new techniques for managing the security of SDN/NFV-based 5G networks.

ANASTACIA H2020 project where it implements new solutions for IoT network security.

Montimage is actively searching for new partnerships and collaborations. It can bring its technical knowhow and tools, its fast exploitation strategy, as well as its experience in the participation and management of projects in different research programs.



YEAR ESTABLISHED

2017



NUMBER OF EMPLOYEES

15



MORE INFORMATION

[www.nemergent-solutions.com](http://www.nemergent-solutions.com)



CONTACT

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EXPERTISE IN

5G

MISSION CRITICAL  
COMMUNICATIONS

PUBLIC  
SAFETY

## BACKGROUND, EXPERTISE & SKILLS

Pioneers in the industry, Nemergent leads the way towards more open Mission Critical Communications. Nemergent Solutions SL has significant expertise in designing and prototyping novel Public Safety solutions over mobile broadband technologies, with an agile development team with vast experience in Internet technologies. Nemergent's portfolio includes a complete and fully 3GPP standard MCPTT ecosystem made up of early implementations concerning MCPTT/MCS Application Servers (AS) and MCPTT/MCS management servers. The server-side components are designed as NFV components, fostering agile and flexible deployments in 5G-alike setups. The innovation-driven nature of the company promotes the establishment of commercial links with different UE, IMS and EPC leading companies.

## ACHIEVEMENTS & SUCCESS STORIES

Nemergent Solutions is involved in international R&D projects oriented to PPDR where it takes advantage of its best-of-breed products such as the MCS servers, MCS client, OAM, control room, etc. The company is engaged in 5GPPP 5GENESIS project bringing the first real-world mission critical integration and use-cases over 5G. It has also finalized a OC2 project in Fed4FIRE+ and OC1 in INTER-IoT and it has also been involved in US NIST/PSCR PSIAP achieving end-to-end mission critical communications according to 3GPP specifications together with Sonim and their XP8 ruggedized devices. Nemergent Solutions is a regular company showcasing its technology in different events (e.g. MWC, CCW, IWCE, BAPCO, CCE, Innotrans, EENA conference, PSCE conference, ...) and counts with a network of well-established partners.

## INTEREST FOR FUTURE R&D&I COOPERATION

The R&D background shows the clear advocacy of the Nemergent Solutions to improve and adapt future MCS communications and the importance of first responders and public protection together with verticals such as railways, ports, fleets management, airports and mining among others. The firm is devoted to adapt and adjust the current mission critical products towards 5G technology and operations and therefore, aims at collaborating with partners providing orchestrators, MEC solutions, 5G Cores, gNodeBs, 5G UEs, deployables, drones, PPDR-related IoT products, and finally other 3GPP MCS compliant vendors and companies for interoperability purposes. These international collaborations are intended not only to serve as an early adoption of 5G operations, but also to assess the service-level KPIs of standardized mission critical products.







EXPERTISE IN

5G

IOT

NGI

SMART  
FACILITIES

MEDIA &  
CONTENT

MANUFACTURING

ENERGY

SMART  
CITIES

PUBLIC  
SAFETY

## BACKGROUND, EXPERTISE & SKILLS

Nextworks has long-term experience in 5G control and orchestration technologies, built on top of solid know-how of ETSI NFV and MEC specifications and architectures. We have deep hands-on expertise with various NFV MANO software tools (ETSI OSM, OpenBaton, Cloudify), SDN controllers (OpenDaylight, ONOS), VIMs (OpenStack), cloud native orchestration (Kubernetes). We developed various solutions for control and orchestration of Network Slices, Network Services and Service Chains made of Virtual network Functions in 5G environments, both proprietary and open-source. We also have strong involvement in SDOs, particularly at ETSI NFV and MEC, where we have been working in various specialist task forces and NFV Plugtests.

Our R&D and products target domains closely related to Media, Smart Cities, Smart Homes and Smart Factories.

## ACHIEVEMENTS & SUCCESS STORIES

Our mission is to provide cutting-edge solutions and consultancy services tailored to customers' needs.

Through the participation in 5G PPP projects, Nextworks is developing a strong asset of software prototypes for 5G, NFV, SDN and MEC; this includes: 5G Apps & Service Catalogue, TIMEO (Transport Infrastructure and MEC Enabled Orchestrator), SEBASTIAN (Service Based Slice Translation, Integration and Automation), Plug & Play control of 5G VNFs, 5GCity Service Development Kit.

Our prototypes are demonstrated at various international events, such as ECOC, EuCNC, ICT, OFC, MWC.

Our background translates into consultancy services: i) Specialized Training on NFV/ MEC technologies and software tools; ii) Technical Project Management for 5G trial experimentation; iii) Standards Development Support in ETSI Specialist Task Forces and NFV Interoperability and API conformance Plugtests.

## INTEREST FOR FUTURE R&D&I COOPERATION

Despite the solid R&D in Software Networks of these years, work is still needed to realize the vision of Smart Networks for any Vertical service on top. Key challenges to address include aspects of control over multiple distributed network control operating systems; use of powerful abstractions for resources and services; new naming schemes for virtualised resources for automated discovery; intent-based APIs and highly configurable policies to control resource and service lifecycles; high degree of automation to enable cognitive (at first) and intuitive (then) network behaviours.

To properly address these challenges, we seek for teaming with international experts on virtualization and control technologies (Networking Industry), service operation (Telcos), vertical business service offering (above all [Industrial-]IoT domain top players for our target products), and top-tier research centers and universities.





YEAR ESTABLISHED

2014



NUMBER OF EMPLOYEES

5-10



MORE INFORMATION

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EXPERTISE IN

5G

IOT

AI

WEBSITE  
DEVELOPMENT

CLOUD

TRANSPORT  
& LOGISTICS

SMART  
CITIES

PUBLIC  
SAFETY

## BACKGROUND, EXPERTISE & SKILLS

We develop customized Data communication solutions helping customers to realize potential of existing Network, while providing innovative solutions in the field of unprecedented business and technological changes.

We Provide

- o Innovations and products in wireless, IP and cloud networking, IoT, NFV and SDN
- o R&D Consultancy and Test Services
- o Customized solutions for Tactical Communication, public safety and other vertical markets

## ACHIEVEMENTS & SUCCESS STORIES

1. Design and Development of Remote Environ Monitoring System
2. IoT Gateway with GPRS connectivity to cloud with optional Wi-Fi and 4G interface to cloud for remote solar power monitoring application
3. Prototype Trial in a small vineyard in Houston USA for LoRA based system for Smart Agriculture
4. Setup Website Design and Hosting Business

## INTEREST FOR FUTURE R&D&I COOPERATION

We are looking for projects in Wireless 5G, IoT, Test Beds, R&D Services including Architecture, Software and Hardware Design and Testing. We are also looking for Business Development partners.





YEAR ESTABLISHED

2006



NUMBER OF EMPLOYEES

43



MORE INFORMATION

[www.quobis.com](http://www.quobis.com)



CONTACT

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EXPERTISE IN

5G

IOT

NGI

MEDIA &  
CONTENT

TRANSPORT &  
LOGISTICS

HEALTH

SMART  
CITIES

## BACKGROUND, EXPERTISE & SKILLS

Since its foundation, Quobis has accumulated extensive experience in the implementation and deployment of real time solutions based on core technologies for corporations, service providers and telcos. Quobis has gained extensive knowledge of mobile networks, interconnection and WebRTC technology from partnerships with the primary equipment vendors.

Quobis is well-known as one of the leaders in the deployment of WebRTC technology after being involved in the release of the industry-first application server, called Sippo WebRTC Application Controller. Today, this element is part of the core network of different telcos worldwide. In addition, Sippo is helping enterprises to defeat the challenges behind digital transformation processes using real-time communications.

## ACHIEVEMENTS & SUCCESS STORIES

Quobis is one of the partners involved in 5GTANGO project, a 5GPPP Phase2 Innovation Action that enables the flexible programmability of 5G networks with:

- a) an NFV-enabled Service Development Kit (SDK);
- b) a Store platform with advanced validation and verification mechanisms for VNFs/ Network Services qualification (including 3rd party contributions);
- c) a modular Service Platform with an innovative orchestrator in order to bridge the gap between business needs and network operational management systems.

The main role of Quobis in this project consists of the development and implementation of the communication suit pilot, that enables real-time videoconferences using media VNFs, application VNFs and platform VNFs for the 5GTANGO platform.

## INTEREST FOR FUTURE R&D&I COOPERATION

Quobis has broad experience working on international projects not funded by public agencies as is a key partner for some of the larger network integrators and service providers that see Quobis as the reference partner for projects with special needs in UC.

Quobis is already cooperating in R&D&I projects with partners in Europe and Brasil. We are looking at strengthening those partnerships as well as opening up to new countries and new projects.



YEAR ESTABLISHED

2002



NUMBER OF EMPLOYEES

1-5



MORE INFORMATION

[www.quotientassociates.com](http://www.quotientassociates.com)



CONTACT

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EXPERTISE IN 5G IOT NGI

SATELLITE  
COMMUNICATIONS

MEDIA &  
CONTENT

TRANSPORT  
& LOGISTICS

SMART  
CITIES

MFG. HEALTH

PUBLIC  
SAFETY

## BACKGROUND, EXPERTISE & SKILLS

Quotient is an international strategy, technology, security and economics consultancy to the communications industry. The company specialises in all aspects of fixed and wireless communications, broadcasting, security, and spectrum regulation and management.

## ACHIEVEMENTS & SUCCESS STORIES

We are used to both leading and participating in multidisciplinary projects. Our skills lie in 5G new technologies in both core and RAN, 5G network security and project management. We are currently serving as part of the technical design authority for UK Government (DCMS) testbeds and trials, which include the vertical sectors of Industrial Internet of Things, Smart Tourism, Connected and Autonomous Vehicles, Healthcare and Agriculture Technology. We also have an overarching security role across all projects, which are now all up and working.

## INTEREST FOR FUTURE R&D&I COOPERATION

We are looking to be involved in any of the above in a technology; strategy; testbeds and trials; network or application security; and / or project management role.



YEAR ESTABLISHED

2011 (UK) and 2018 (Ireland)



MORE INFORMATION

[www.rfsat.com](http://www.rfsat.com)



NUMBER OF EMPLOYEES

10



CONTACT

[general@rfsat.com](mailto:general@rfsat.com)



EXPERTISE IN 5G IOT NGI SATELLITE COMMUNICATIONS MEDIA & CONTENT TRANSPORT & LOGISTICS SMART CITIES MFG. HEALTH PUBLIC SAFETY

## BACKGROUND, EXPERTISE & SKILLS

RFSAT has been in the forefront of mobile communications technology development since over 20 years, starting with the first 3G basestation built in FP5 project back in 1999. Since then it has contributed to developing successor technologies constituting current 4G (LTE and LTE+) and has been involved in developing core technologies as well as value-added services for the future 5G communications. Its employees have been supporting launch of various PPP projects including 5G-PPP or Cyber-PPP. Its main relevant technical competencies relate to hardware efficient transceiver design and implementation, network virtualisation, low-latency networking, network/client-assisted positioning/localisation and security-sensitive services, as well as applying future 5G mobile communication in diverse vertical sectors, including, Health, Security, Environment, Cultural Heritage, Transport, Smart Grids and Precision Agriculture.

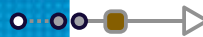
## ACHIEVEMENTS & SUCCESS STORIES

Since over 8 years RFSAT has been focussing its research and technological developments on such vertical sectors as communication, e-Health, environment, transportation, smart cities, smart energy and utility grids and public safety including crisis management. Services are generally focussed on distributed sensing and control (involving sparse Big Data management and IoT technologies) over variety of communication and networking transports for providing added value to mobile users and geographically dispersed enterprises. With its real-time technologies RFSAT has targeted also media virtualisation, such as Mixed-Reality Immersion, demonstrated for real-life e Health and crisis management applications. It has applied new mobile services in both recent and ongoing funded EU projects in areas such as large-scale Crisis Management, Environmental Monitoring and Climate Change, and Cultural Heritage protection. They are expected to be deployed and evaluated in the near future on an operational 5G test infrastructures.

## INTEREST FOR FUTURE R&D&I COOPERATION

RFSAT considers research consultancy and development as core business, actively taking part in European and international funded research projects since its incorporation. It has participated in over six (6) projects as core partner and over ten (10) as associated and/or as SME group member. Funding programs include FP6, FP7, Horizon 2020 and COST Actions. It has been operating several industrial consultancy contracts for both academia and industries in UK and across Europe. Its developed technologies are diverse and seamlessly applicable across multiple sectors. Examples include sensing & control as well as Mixed-Reality technologies used successfully in e-Health, Smart Grids and Security applications, certainly with certain adaptations.





**SEVEN**  
Solutions



YEAR ESTABLISHED

**2006**



NUMBER OF EMPLOYEES

**41**



MORE INFORMATION

[www.sevensols.com](http://www.sevensols.com)



CONTACT

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EXPERTISE IN

IOT

ENERGY

SMART CITIES

FINANCIAL

## BACKGROUND, EXPERTISE & SKILLS

Seven Solutions, worldwide leaders in the White Rabbit (IEEE 1588 high-accuracy profile) timing technology. It is a private held leading company in accurate sub-nanosecond time transfer and frequency distribution for reliable industrial and scientific applications. Our timing solutions have been validated during the last 9 years and we offer currently the best interoperable, dependable and ultra-accurate time transfer and synchronization approach in the market (nanosecond accuracy, deterministic, dependable and scalable).

Seven Solutions provides solutions capable of distributing time and frequency over metro and long-haul 5G links in both back-haul and front-haul:

- Ultra-accurate Time and Frequency Transfer (phase transfer using IEEE 1588 High-Accuracy Profile)
- Reliable GNSS Timing Solution with integrated accurate Time Transfer capability over optical fiber (backup system)
- High bandwidth & latency bounded Ethernet communications
- Deterministic data delivery based for Time-Aware Applications

## ACHIEVEMENTS & SUCCESS STORIES

Currently collaborating with Tier 1 technology partners towards the standard eCPRI. Validating our solution with Deutsche Telekom for the visibility network.

## INTEREST FOR FUTURE R&D&I COOPERATION

We are interested in collaborating in ICT-related H2020 calls related to telecom, satellite services, 5G, IoT, smart cities and energy. Cooperation with international partners from different sectors to setup pilots and PoCs.



YEAR ESTABLISHED

2008



NUMBER OF EMPLOYEES

80



MORE INFORMATION

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EXPERTISE IN

5G

IOT

NGI

MANUFACTURING

SMART  
CITIES

PUBLIC  
SAFETY

## BACKGROUND, EXPERTISE & SKILLS

Siklu is a provider of wireless connectivity solutions based on mmWave technology. Siklu's products include both point-to-point solutions with data rates as high as 10Gbps for backhaul/fronthaul applications and point-to-multi-point solutions that may be used for broadband fixed access applications or small-cell backhaul applications. Siklu has intellectual property in the RFIC and mmWave beamsteering antenna. This allows Siklu to design mmWave remote radio heads compatible with 5G standards. In addition to our hardware portfolio Siklu leads the mmWave industry with a suite of SaaS applications including automated complex network design tools, ROI calculators and management systems

## ACHIEVEMENTS & SUCCESS STORIES

Siklu focuses on Gigabit Wireless Access (GWA) and Smart Cities as well as cellular fronthaul and backhaul. By the end of 2018 we had networks deployed in over 150 Smart Cities around the world. Currently the largest mmWave market is the US, where Siklu has roughly 60% market share for 60, 70/80GHz systems. From a product perspective in 2018 we launched our 10Gbps product with the longest range in the market, a new small size Terminal Unit for outdoor deployment that is just slightly bigger than a typical smart phone, and our automated network design tool WiNDE.

## INTEREST FOR FUTURE R&D&I COOPERATION

Siklu has been intensively involved in R&D and innovation cooperation projects. It has participated in FP-7 projects BunGee and IPHOBAC-NG, as well as in H2020 projects RAPID, and currently participates in the projects 5G-PHOS and THoR. Siklu is also involved with other research consortia and collaborates on research with partners from both industry and academy. Siklu cooperation interests include mmWave radio and antenna technology, high-speed modem technology, mmWave beamsteering antennas, 5G RRH, mmWave/fiber integration and other ideas that may be exploited in our target markets.



-  YEAR ESTABLISHED  
**2017**
-  NUMBER OF EMPLOYEES  
**20**
-  MORE INFORMATION  
**[www.suite5.eu](http://www.suite5.eu)**
-  CONTACT  
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EXPERTISE IN

5G

IOT

DATA ANALYTICS

MEDIA &  
CONTENT

MFG.

ENERGY

SMART  
CITIES

PUBLIC  
SAFETY

## BACKGROUND, EXPERTISE & SKILLS

Suite5 Data Intelligence Solutions is a data analytics and software house with a strong focus on R&D and Innovation projects. Suite5 participates in such activities as an analytics and intelligence provider, working on topics such as big data, data management and insights generation, in various verticals. In more detail, the company works on analytics solutions that are able to provide descriptive and prescriptive analytics, which are based both on structured and unstructured data and are coming out of hardware and software sensors. The company participates in such attempts in the 5G sector (MATILDA project), as well as in other sectors such as Aviation (ICARUS project), Manufacturing (EOSC-hub project, UPTIME project), Cybersecurity (FutureTPM project) and Energy (FLEXCoop project).

## ACHIEVEMENTS & SUCCESS STORIES

In MATILDA Suite5 worked on the development of policy models for applications that run on top of SDNs, and in the area of Analytics that are able to the behaviour of systems in 5G ecosystems. Those two combined are in a position assist decision making towards network placement, deployment and reconfiguration and could help to generate new insights about 5G applications and new policies for optimum utilisation of resources.

## INTEREST FOR FUTURE R&D&I COOPERATION

Suite5 is highly interested in joint ventures which have R&D and Innovation interest in any vertical that either is in need of advanced data insights and analytics, or expects to benefit from the application of data technologies to traditional functions towards using data intelligence and softwarisation to explore value that is not exploited yet.



EXPERTISE IN IOT NGI TRANSPORT & LOGISTICS SMART CITIES MANUFACTURING HEALTH PUBLIC SAFETY

## BACKGROUND, EXPERTISE & SKILLS

Tree Technology is an R&D-performing company providing information and communication technology solutions based on Big Data and Artificial Intelligence. Tree helps optimizing processes and business operations in several sectors using advanced ICT, integrating emerging technologies as part of the Smart Data ecosystem. In particular in 5G, Tree Technology is active in accompanying industrial partners such as telecommunication operators in their digital transformation, contributing with our knowledge in advanced AI and Big Data technologies. In addition to that, Artificial Intelligence-based solutions for cybersecurity in the 5G telco infrastructure are also offered by the company.

## ACHIEVEMENTS & SUCCESS STORIES

Tree Technology operates in several vertical sectors, such as Telecommunications, Health, Transport, Finance, Insurance, Industry, Public Safety, or Security. Tree Technology accompanies industrial partners in their digital transformation and business optimisation, contributing with expert knowledge in advanced smart data technologies such as Big Data, Data Science and Computer Vision. In particular, Tree Technology helps to exploit data to add value to business, with the aid of real time data processing, data mining and automated and deep learning strategies (artificial intelligence).

## INTEREST FOR FUTURE R&D&I COOPERATION

Our R&D activity provides us with knowledge and differential capabilities, based on advanced technologies aligned with worldwide innovation priorities, allowing us to develop competitive advantages. Tree Technology is very active in cooperative R&D initiatives, both publicly and privately funded. In example, Tree Technology actively participates in international R&D projects, strongly performing in the European R&D programme Horizon 2020 in different areas, both as a partner and as a leader. We are open and interested in collaboration in R&D wherever our expertise can add value. Our core activity is in the area of Artificial Intelligence and Big Data, so we are interested to collaborate with partners and initiatives demanding these competencies.





-  YEAR ESTABLISHED  
**2007**
-  NUMBER OF EMPLOYEES  
**17**
-  MORE INFORMATION  
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EXPERTISE IN

5G

IOT

TRANSPORT &  
LOGISTICS

ENERGY

SMART  
CITIES

PUBLIC  
SAFETY

## BACKGROUND, EXPERTISE & SKILLS

TST participated in the Flex5Gware project (<http://www.flex5gware.eu/>), focused on flexible and efficient HW and SW platforms for 5G network elements and devices, addressing increased capacity, reduced energy footprint, as well as scalability, modularity and reconfigurability. Research was demonstrated on proof-of-concept implementations. TST participated on a PoC for testing the reconfiguration of the radio behaviour according to different optimization criteria, allowing for instance multi-cell dynamic resource allocations and switching across different radio access technologies according to the link quality.

## ACHIEVEMENTS & SUCCESS STORIES

TST provides IoT custom solutions on the smart cities, industry and precision farming domains. Some examples are environmental sensing, level sensors for urban waste management, water control for precision farming and real time location systems.

TST has a broad experience in R&D projects, it has been involved in 18 EU-funded research projects related to IoT, smart services and future networks (4 ICT-FP7, 2 ICT-CIP, 3 ICT-H2020, 1 EUJ-H2020, 3 ECSEL, 2 CELTIC, 1 EUROSTARS, 1 PENTA). Its research activity has been recognized by the Spanish Ministry of Economy and Competitiveness, which awarded TST the official "Innovative SME" seal.

## INTEREST FOR FUTURE R&D&I COOPERATION

TST looks forward to continue working with other potential partners in R&D and innovation activities, offering its experience in IoT hardware design and development, smart sensing and system integration.



YEAR ESTABLISHED

2005



NUMBER OF EMPLOYEES

30



MORE INFORMATION

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CONTACT

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EXPERTISE IN 5G IOT AI SECURITY MEDIA & CONTENT MANUFACTURING SMART CITIES ENERGY HEALTH PUBLIC SAFETY

## BACKGROUND, EXPERTISE & SKILLS

UBITECH is active in a series of 5G PPP projects, focusing mainly on the design and development of software development kits and intelligent orchestration mechanisms for network applications. UBITECH is the technical coordinator of the MATILDA H2020 5G PPP project targeting at the provision of a novel holistic framework for enabling vertical industries to take advantage of a 5G ecosystem. UBITECH has developed various application and network services orchestration mechanisms, taking into account the separation of concerns among vertical application and NFV orchestrators, as well as end to end slice management mechanisms. UBITECH has also invested on the design and development of a 5G analytics engine exploiting novel AI technologies, providing resource and elasticity efficiency profiling of 5G services.

## ACHIEVEMENTS & SUCCESS STORIES

UBITECH has developed a set of intelligent orchestration mechanisms (e.g. rules-based policy management framework for NFVOs as well as vertical application orchestrators, big data analytics techniques for network services and applications profiling) and introduced them in existing orchestrators, such as the SONATA NFVO as well as the inhouse developed orchestrator, known as Maestro (<https://themaestro.ubitech.eu/>). UBITECH has also significantly contributed towards the design and implementation of OSS northbound APIs, targeting at interconnection of vertical application orchestrators with telecom operators' network management systems.

## INTEREST FOR FUTURE R&D&I COOPERATION

UBITECH is highly interested in establishing R&D and Innovation cooperation in the framework of research and development projects regarding the evolution of intelligent orchestration and slice management mechanisms, as well as collaborations with telecom operators and vendors towards the design of OSS-oriented functions and APIs, as well as the development of targeted AI mechanisms for resource and elasticity efficiency profiling of network services and applications.



YEAR ESTABLISHED

2006



NUMBER OF EMPLOYEES

7



MORE INFORMATION

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CONTACT

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EXPERTISE IN

5G

IOT

NGI

AI

MEDIA &  
CONTENT

HEALTH

ENERGY

SMART  
CITIES

PUBLIC  
SAFETY

## BACKGROUND, EXPERTISE & SKILLS

VISIONA is a cutting-edge Information Technology SME that has actively participated in several open calls from the research and innovation EU programmes, like the H2020 5G-PPP Phase-1 5G-Crosshaul and Phase-2 NRG5 projects. VISIONA team counts on with expertise in designing big systems and managing projects of big magnitude, in designing network elements and network services for NFV and SDN, planning and operation of networks based on these technologies. Strong background in virtualization of functions that lead to 5G-ready innovative and smart environments.

VISIONA is specialized in groundbreaking media and artificial intelligence technologies as machine vision and deep learning. This makes of VISIONA a suitable partner for any vertical demanding such expertise (from media to smart cities and energy related contexts, among others).

## ACHIEVEMENTS & SUCCESS STORIES

Artificial intelligence for machine vision is the core of all the solutions developed by VISIONA which aim to address the needs of different verticals.

For instance, VISIONA's approach to the preventive maintenance of critical energy infrastructures is able to detect, from an autopilot drone, different changes in the target zones in order to predict possible dangerous conditions on the environment or in the structures. Image processing and deep learning techniques are exploited by VISIONA for: (1) people and vehicle detection system in critical locations, (2) change recognition system on UAV imagery and (3) abnormal hot points through thermal image.

VISIONA also counts on with a portfolio of innovative solutions for parking monitoring and management, advanced surveillance of public and crowded spaces, and QoE/ QoS tools for video quality assessment among other.

## INTEREST FOR FUTURE R&D&I COOPERATION

VISIONA is seeking EU partners interested in collaborating with our SME to identify synergies so that we could work together on the creation of innovative solutions and the design strategies for exploitation of cooperation results in order to achieve maximum impact of 5G-related technologies after experimentation. VISIONA is open to start any kind of project related to artificial intelligence in any vertical as the technology has a wide range of applications.



YEAR ESTABLISHED

2004



NUMBER OF EMPLOYEES

10



## MORE INFORMATION

[www.westaquila.com](http://www.westaquila.com)



## CONTACT

info@westaquila.com



## EXPERTISE IN

5G

IOT

HEALTH

ENERGY

SMART  
CITIES

## BACKGROUND, EXPERTISE & SKILLS

The company has already gained more than a decade-long experience by participating as a key technological partner in several national and European projects, with emphasis on integration of heterogeneous wireless interfaces and IoT.

Furthermore, the company is in one of the five Italian cities selected by the Italian Ministry of Economic Development for pre-commercial 5G trials. It is now surrounded by a 5G eco-system composed of network operators, chip makers, telecom manufacturers and vertical sector integrators that refer to healthcare, mobility, energy, safety and emergency management.

## ACHIEVEMENTS & SUCCESS STORIES

WEST has a record of participations in several EU projects, including two ITN Marie Curie projects (Greenet and Aquasense) focused on the analysis, design, and optimisation of energy efficient wireless networks, and three IAPP Marie Curie projects, WSN4QoL (a healthcare-oriented project proposing Wireless Sensor Networks for Quality of Life), SmartNRG (dealing with new solutions for energy distribution and management for smart cities) and CASPER (dealing with improvement of the Quality of Experience perceived by End Users in mobile wireless networks).

WEST has also participated to a national project on Structural Health Monitoring, where a WSN is used to monitor historical buildings after the earthquake of 2009 in L'Aquila, and UbiCare and CASA+, two projects aimed at remote monitoring aged people and patients who have Down syndrome.

## INTEREST FOR FUTURE R&D&I COOPERATION

WEST is a highly dynamic and innovative company, which aims at bridging the gap between the academic and industry sectors. In this perspective, the company envisions the possibility to exploit cutting-edge technologies in multiple application domains. As an R&D company, there is always a strong interest in fostering new cooperations devoted to study, analyse and prototype solutions in the field of networked embedded systems and cyber-physical systems.

WEST has a history of collaborations with EU partners from both academia and industry sectors but is inherently open to new opportunities for collaborations with interested partners from all around the world.





YEAR ESTABLISHED

2012



NUMBER OF EMPLOYEES

85



MORE INFORMATION

[wings-ict-solutions.eu](http://wings-ict-solutions.eu)



CONTACT

[info@wings-ict-solutions.eu](mailto:info@wings-ict-solutions.eu)

EXPERTISE IN

5G

IOT

NGI

MEDIA &  
CONTENT

TRANSPORT  
& LOGISTICS

SMART  
CITIES

HEALTH

ENERGY

PUBLIC  
SAFETY

## BACKGROUND, EXPERTISE & SKILLS

WINGS ICT Solutions develops solutions (hardware and software) for verticals. Vertical areas covered are utilities (water, gas, energy), smart city applications (e.g., air quality, parking, assisted living, safety), food security/safety, logistics/transportation.

The solutions rely on Artificial Intelligence (AI), big data platforms, IoT and advanced wireless connectivity (namely, 5G, NB-IoT and other).

In the light of the above, WINGS has developed and constantly updates its "Artificial intelligence & Internet of Things powered solution for verticals" (working name ATHENA), as well as "WINGS system level simulation" platforms (working name NESTOR).

WINGS is proud to have already collaborated with top companies such as IBM (primary footprint in Greece and Cyprus), Intrasoftware (aims at EU and MENA) and Pole Star Global (UK, maritime), and many other companies, also in the context of R&D projects.

Furthermore, we are building collaborations with further companies in EU and internationally.

## ACHIEVEMENTS & SUCCESS STORIES

The following results can be highlighted:

Through the Phase 2 project One5G, WINGS enhanced its utility solutions by developing mechanisms for enabling a utility-operator to interact with the network (slice) management systems of a 5G network operator. Through the WINGS mechanisms there can be management of a critical-utility-infrastructure.

Through the Phase 2 Clear5G project, WINGS works in the development of industry-oriented robotics solutions. Eventually, the technologies will be trialled in factories in Taiwan.

Moreover, through the phase-3 5G-EVE project, WINGS works and will enable further development and testing with actual 5G testbeds and smart city solutions.

In the context of the Phase 3 projects 5G Carmen and 5G Mobix, WINGS works on 5G based CCAM systems with focus on environment sustainability (rural and city areas) and cross boarder security/safety.

In 5G Heart and 5G TOURS phase-3 projects, WINGS will integrate the 5G technologies with the food and the smart city/venue worlds. The target will be to stimulate respective business opportunities.

Moreover, WINGS is enabled to contribute to the shaping of 5G technologies, in coordination with its partners, and to assist Europe in maintaining a leading role in the respective 5G developments, also through engaging high-level personnel in positions such as Technical Manager, Work Package leader, Task Leader, or by leading consortia (in the future).

## INTEREST FOR FUTURE R&D&I COOPERATION

WINGS aims at further developing its Research & Development and Innovation activities through cooperation with industrial and academic partners in 5G and vertical sectors, such as utilities (energy, water, gas), CCAM, aquaculture/agriculture and food safety and security, Factories of the Future, logistics and media, in the context of R&D or product development activities at a European and international level.

WINGS also aims at developing novel concepts for serving URLLC and mMTC, enabling and experimenting with novel concepts such as the Internet of Skills, as well as realising a new generation of wireless technologies (6G) through the exploitation of Artificial Intelligence.

Of course, WINGS also welcomes any idea and proposal for new areas of collaboration.





4GCelleX	Israel
Abeeway	France
Accelleran	Belgium
ACORDE Technologies S.A.	Spain
ADVANTIC SISTEMAS Y SERVICIOS S.L.	Spain
AICO EDV-Beratung GmbH	Austria
AITIA International, Inc.	Hungary
Albatronics	Israel
Almouraltec, Lda	Portugal
Alpineon d.o.o.	Slovenia
AMBEENT WIRELESS	Turkey
Amledo & Co	Sweden
Amphinicy Technologies	Croatia
AMVG	Turkey
Ansur Technologies	Norway
Antares S.c.ar.l.	Italy
Antycip Simulation	United Kingdom
AnySolution S.L.	Spain
APFUTURA	Spain
apocope	France
Applied REsearch to Technologies s.r.l. (ARES2T)	Italy
Aradiom	Turkey
Aratos Technologies	Greece
Arctos Labs Scandinavia AB	Sweden
ARDIC APPLIED RESEARCH DEVELOPMENT INNOVATION CENTER	Turkey
Ariadna Servicios Informáticos S.L.	Spain
ArtHaus DOO Skopje	Macedonia
Artklikk Ltd.	Hungary
ASC, Antenna Systems Consulting ApS	Denmark
Ascora GmbH	Germany

asprien GmbH	Germany
Astius Technology	United Kingdom
ATC	Greece
Atekeia Solutions Europe	Spain
Athonet	Italy
ATiT	Belgium
Atlantic Wireless Telecommunications	Ireland
Atlantis Consulting S.A.	Greece
Atlascom Ltd.	Bulgaria
Avanti Communications plc	United Kingdom
AWE Communications GmbH	Germany
Aykan Teknoloji S.T.A.S.	Turkey
BALKANPLAN Ltd.	Bulgaria
b-com	France
Beacon Tech Ltd. Yoram Bar-Zeev	Israel
Beia Consult International	Romania
Bianor Services EOOD	Bulgaria
BitWise D Eadie	United Kingdom
Blu Wireless Technology Ltd	United Kingdom
Bluegiga Technologies Oy	Finland
Bluetab	Spain
BUMA Ltd.	Israel
Business Integration and Business Intelligence	Montenegro
C Tech Bilisim	Turkey
CARD4B SYSTEMS S.A.	Portugal
Cellusys	Ireland
CEVA-DSP Ltd	Israel
Citypassenger	France
COMBALSAT Ltd.	Bulgaria
COMSIS	France
Consultancy & Management Services	Belgium

Consultora de Telecomunicaciones Optiva Media SL	Spain
Content Group Austria	Austria
Core Network Dynamics	Germany
Corporate Fiber Technologies AB	Sweden
CREALAB SRL	Italy
Creativ-IT	Spain
Creativity Software	United Kingdom
Cumucore Oy	Finland
CyRIC (Cyprus Research and Innovation Center Ltd.)	Cyprus
Das Photonics	Spain
Dataport Information Technology Services	Turkey
Delektre Oy	Finland
Diamond Age GmbH	Austria
Digital Dispatch	Finland
DigitalTwin Technology GmbH	Germany
Domos AS	Norway
Douglas Connect GmbH	Switzerland
EANTC AG	Germany
Easy Global Market	France
EBNER electronic GmbH	Austria
eBOS Technologies Ltd	Cyprus
eCom Scotland Ltd	U.K
Edosoft Factory, S.L.	Spain
EFP Consulting Ltd	Israel
Ege Sistem Bilisim Hiz. San. ve Tic. Ltd. Sti. (egesys)	Turkey
ELSIŠ	Lithuania
Emisfera Societa Cooperativa	Italy
Energy Sistem Soyntec SA	Spain
EPIDOTE CONSULTING	Belgium
Esempla Systems SRL	Moldova
ESPACI	Spain
ETA2U	Romania
Eureva	France
EUROB CREATIVE	Spain
Euroma	United Kingdom
EUROPEAN DYNAMICS S.A.	Greece

European Media Laboratory GmbH	Germany
Euroreporter	Italy
Evolution-net	France
Exagate	Turkey
Excellis Business Consulting	U.K
Exelixisnet	Greece
EXENTE	Spain
Eyeled GmbH	Germany
Feron Technologies P.C.	Greece
FGFactory	Ukraine
FIDO Intelligence	Poland
Filtronic Broadband Ltd	United Kingdom
Florella Ltd	Hungary
Fogus Innovations & Services	Greece
Foreca Consulting Ltd	Finland
FTI Communication Systems Ltd	United Kingdom
Future Intelligence	Greece
GARD	Israel
GENERUM OY	Finland
Globema Sp. z o.o.	Poland
Grado Zero Espace Srl	Italy
Grados Bilisim Teknolojileri Ltd Sti	Turkey
Grant Thornton Advisory	Czech Republic
GTD GmbH	Germany
gutura GmbH	Germany
GWT-Tud	Germany
Hedz Hungary,Ltd.	Hungary
Hendrik Berndt Consulting	Germany
hi2	Spain
HI-IBERIA	Spain
Hiro-microdatacenters	Netherlands
Hisbim IT Co.	Turkey
Hringidan / Vortex Inc	Iceland
HW Communications	United Kingdom
Hyperborea SRL	Italy
I.C.A. (Informática y Comunicaciones Avanzadas)	Spain
Ictech	Portugal

IDEATE	France
IDESIO s.r.l.	Italy
IDS Ingegneria dei Sistemi Spa	Italy
IIMC International Information Management Corporation Ltd	Ireland
Il Village	Italy
ILS Technologies	France
Incelligent	Greece
INCITES CONSULTING SARL	Luxembourg
Infocom S.R.L.	Italy
InfoGraph Ltd.	Greece
INFOLYSIS P.C.	Greece
Ingenieria y Soluciones Informaticas	Spain
inno group	Germany
Innomine Group	Hungary
InnoRoute GmbH	Germany
Innovaciones Sociosanitarias	Spain
INNOVAS	France
Innovati Networks S.L.	Spain
Innovators S.A.	Greece
iNOK	Portugal
INTEGRASYS	Spain
Intelekti Ltd.	Bulgaria
INTERFUSION SERVICES LTD	Cyprus
INTERINNOV	France
INTERNET INSTITUTE, communications solutions and consulting, Ltd.	Slovenia
Intron Ltd	Ukraine
INXITION	Italy
ip.access Ltd	United Kingdom
IPCom GmbH & Co. KG	Germany
IPLUSF	Belgium
IQUADRAT INFORMATICA	Spain
ISED SpA	Italy
IS-WIRELESS	Poland
IT ware Kft.	Hungary
ItoM	Netherlands
ITTI Sp. Z o.o.	Poland

Janmedia Interactive Sp. z o.o.	Poland
JCP-Consult SAS	France
K.-D. Kohrt	Germany
Kahdeksas Kanava Oy	Finland
Kiwok Nordic AB	Sweden
kleos r&d	France
Klubverband-ITA Ltd.	Bulgaria
KOHS	Austria
Kontor46	Italy
LABRIS NETWORKS	Turkey
Larkhill Consultancy Limited	United Kingdom
Lattanzio e Associati	Italy
LEO	France
Level7 S.r.l.u.	Italy
LGI Consulting	France
Link Consulting SA	Portugal
LioniX International	Netherlands
LiquidEdge Ltd	Ireland
LiveU Inc.	Israel
Load Interactive Ida	Portugal
LUDMATEC	Germany
M.B.I.	Italy
Made In Mind	United Kingdom
Magister Solutions Ltd	Finland
MÁNTICA Solutions S.L.	Spain
Martel GmbH	Switzerland
Maseng AS	Norway
Mavigex s.r.l.	Italy
Meteorological and Environmental Earth Observation (MEEO)	Italy
milestone management gmbh	Austria
MISONE	Turkey
MOBICS SA	Greece
Mobintec Ltd	United Kingdom
MOBIQUANT SAS	France
Modio Computing PC	Greece
moltosenso s.r.l.	Italy
Montimage	France

MostlyTek LTD	Israel
Movation AS	Norway
Mr. NeC	Netherlands
MSWEB Cooperativa Valenciana	Spain
Multicell	France
Naevatec	Spain
Nemergent Solutions SL	Spain
Neogames	Sweden
Neos	Italy
Neoscopio	Portugal
Net Surfing S.r.l.	Italy
Net Technologies	Finland
Netfort Technologies	Ireland
NETvisor Ltd.	Hungary
New Venture	Belgium
Nextworks s.r.l.	Italy
Nine Tiles	United Kingdom
Norcontel (Ireland) Ltd	Ireland
NOVATEX SOLUTIONS LTD	Cyprus
Oledcomm	France
one2tribe sp. z o.o.	Poland
Open Cells Project	France
Opentix S.L.	Spain
Optare Solutions	Spain
OPTRONICS Technologies SA	Greece
ORGA Systems enabling services GmbH	Germany
ORION INNOVATIONS PRIVATE COMPANY	Greece
PARAGON Europe	Malta
PARAGON LTD	Greece
Parhelion Global Communications Advisors	Netherlands
Particula Group d.o.o.	Croatia
Piran Partners LLP	United Kingdom
Plasma Antennas Ltd	United Kingdom
Pluribus One S.r.l.	Italy
Polatis Ltd	United Kingdom
Postron Engineering S.r.l.	Italy
Power Operations Limited	United Kingdom

Pozitron	Turkey
PragmaDev	France
Primetel Ltd	Cyprus
PRISMA Telecom Testing	Italy
Qamcom Research & Technology AB	Sweden
QUOBIS NETWORKS	Spain
R2M Solution s.r.l.	Italy
Ranplan Wireless Network Design Ltd	United Kingdom
Real Wireless	United Kingdom
Régens IT Plc.	Hungary
Research for Science, Art and Technology (RFSAT) Ltd.	U.K
Ridgeback sas	Italy
Rinicom	United Kingdom
RS-techMarketing	Israel
RTC North Ltd	United Kingdom
RunEL NGMT	Israel
SAE - Automation,s.r.o.	Slovak Republic
Sagax Communications	Hungary
Saliwell Ltd.	Israel
Sapienza SI	Spain
Seavus	Sweden
SemiBlocks	Netherlands
Senception	Portugal
Seprotronic GmbH	Germany
Sequans communications	France
SETCCE	Slovenia
Seven Solutions S.L.	Spain
Sigma Orionis	France
Siklu Communication	Israel
SK Consulting e.U.	Austria
Skaitmeninio Sertifikavimo Centras	Lithuania
Softeco Sismat SpA	Italy
Software Radio Systems Limited	Ireland
Solaiemes S.L.	Spain
Space Engineering S.p.A.	Italy
SPACE HELLAS S.A.	Greece



Spectrum Insight Ltd	United Kingdom
SQS,S.A	Spain
Starhome GmbH	Israel
Steininger Consulting	Austria
STMi	Norway
Strosek Design GmbH & CO.KG	Germany
SUITE5 DATA INTELLIGENCE SOLUTIONS	Ireland
SUNTECH LTD.	Poland
Super Radio AS	Norway
SWAPCOM	France
SwissMedia - Swiss IT & Multimedia Association	Switzerland
Synelixis Ltd.	Greece
Synergetics	Belgium
SYNYO GmbH	Austria
SystAG Systemhaus GmbH	Germany
TAGES	France
Tamum Consulting	France
TARGET SISTEMI srl	Italy
Targeting Innovation Ltd	United Kingdom
T-CONNECT SRL	Italy
TEAMCAST TECHNOLOGY	France
Tekever	Portugal
Telcaria Ideas SL	Spain
Telebid Ltd.	Bulgaria
Telecompare S.A.	Greece
Telemetry Associates Limited	United Kingdom
Telenity	Turkey
TELETEL SA	Greece
Telscom AG	Switzerland
The National Microelectronics Applications Centre Ltd	Ireland
The Quality Group it vision GmbH	Germany
Thema TV	France
Think Light	Sweden
TIGA TECHNOLOGIES SARL	France
Time Critical Networks	Sweden
time.lex	Belgium
TISSAT	Spain

Torque Wind Turbine	Netherlands
Tout Le Contenu SÃ RL	Switzerland
Treelogic	Spain
TRON ELEKTRONIK SISTEMLER AS	Turkey
Trust-IT Services Ltd	United Kingdom
TST	Spain
TTG Int.LTD	Turkey
TTI	Spain
UAB Telesoftas	Lithuania
UBITECH	Greece
Ubiwhere	Portugal
UNIVERSAL K Ltd.	Bulgaria
V.A.S. Telekom	Turkey
Value Grid	Germany
Vanillatech GmbH	Germany
VATP	Latvia
Verhaert	Belgium
VERTICAL M2M	France
VirtuOR	France
VISIONA INGENIERÍA DE PROYECTOS	Spain
VOCS	Belgium
WAVECOMM S.r.l.	Italy
Wellness Telecom S.L	Spain
WEST Aquila Srl	Italy
WIBU-SYSTEMS AG	Germany
Widian Ltd	Finland
WINGS ICT Solutions	Greece
Wireless Innovation	Greece
WIT-Software Lda	Portugal
Wiz consultancy	Spain
WIZI	Portugal
WOM - While on the Move	Finland
Worldadcom - Universaldynamic Technologies, SA	Portugal
Xenia Network Solutions	Italy
Ydreams	Portugal
Yonga Technology Microelectronics R&D	Turkey
YOUMOVE LDA	Portugal
Zeetta Networks Limited	United Kingdom



# SME MEMBERS

Citypassenger	France
INTEGRASYS	Spain
INTERINNOV	France
Martel GmbH	Switzerland
Nextworks s.r.l.	Italy
Oledcomm	France
QUOBIS NETWORKS	Spain
Seven Solutions S.L.	Spain

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