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1st Open Annual Workshop on Future ICT

25 MAY 2022 09:00 - 18:00

Agenda

- Exploring ICT state-of-the-art
- Covering aspects such as 5G/6G, Cybersecurity, IoT and Cloud
- Discovering European funded research projects

Physical Event
The Golden Age Hotel of Athens,
57 Michalakopoulou Street, 11528

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About “1st Open Annual Workshop on Future ICT”

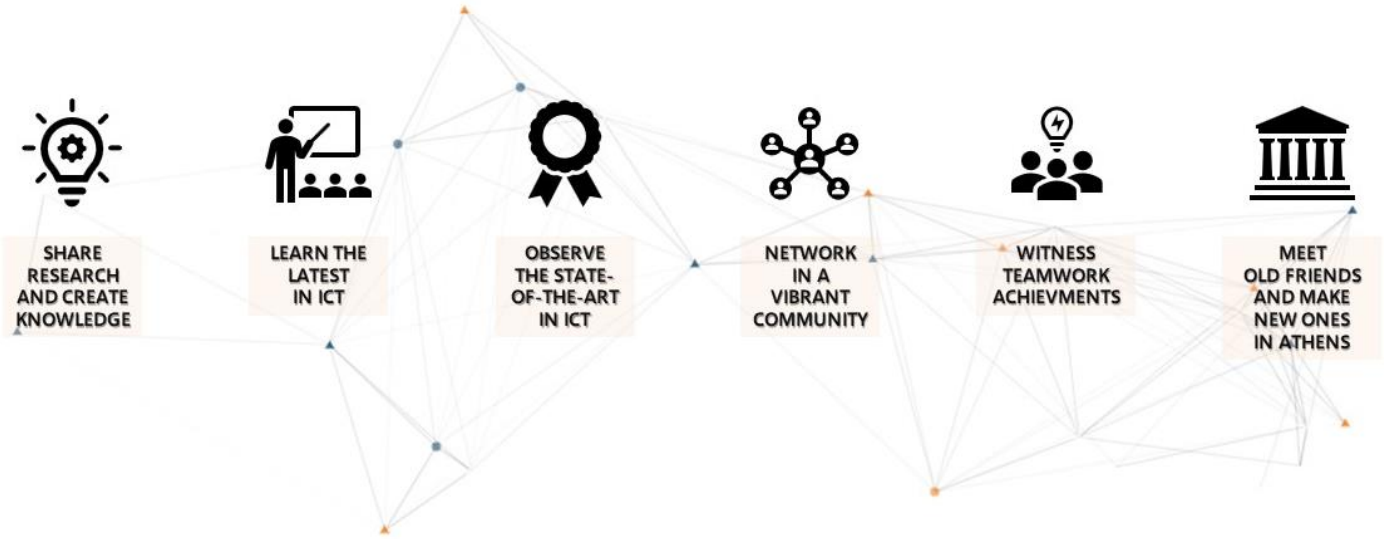
The “**1st Open Annual Workshop on Future ICT**” will take place physically, in The Golden Age Hotel of Athens (you can find more information at the end of the agenda), on May 25th, 2022, between 09:00 - 18:00 (Greek time).

Useful information:

- Registration: Free participation by registering at the Registration desk.
- Certificates of attendance will be provided to Workshop participants.
- Contact Information: +30 210 6444553, +30 6944 522418, athens@8bellsresearch.com

Disclaimer: the timing and scheduling of the timeslots may change depending on the presenters.

TOP 6 REASONS TO ATTEND



AGENDA - TIMETABLE

	Nr.	START	END	DUR.	DESCRIPTION / PRESENTER / ENTITY	PROJECT
	-	**8:30**	**9:00**	**0:30**	**Registration & Coffee**	
	-	9:00	9:05	0:05	Opening Remarks & Introduction **Dr. Ioannis Giannoulakis**, Co-founder and Chief Technology Officer **EIGHT BELLS LTD**	
CYBERSECURITY	1	9:05	9:20	0:15	Horizon Europe Cluster 4 Funding and Networking opportunities (focus on Digital) **Mr. Georgios Megas**, Horizon Europe Cluster 4 main NCP for Greece **National Documentation Centre (EKT)**	HORIZON EUROPE
	2	9:20	9:35	0:15	How to finance your Digital Transformation: The EY approach • **Vasileios Tsiamis,** Associate Partner, Strategy & Transactions Services, Head EU Policies & Access to EU funding & Incentives, Security and Defence Leader • **Dimitris Tasias**, Director, Technology Consulting **Ernst & Young Business Advisory Solutions S.A.**	
	3	9:35	9:50	0:15	EU-funded R&D initiatives on cyber defence **Dr. Georgios Gardikis,** R&D Manager **Space Hellas**	• EDIDP2019 PANDORA
	4	9:50	10:05	0:15	Selected ongoing EU funded R&D projects in Cybersecurity and advanced communications systems **Dr. Spyros Vassilaras,** R&D Programs Manager **Intracom Defense**	• EDIDP 2019 - SMOTANET • PADR 2019 PRIVILEGE • H2020 HERMES
	5	10:05	10:20	0:15	Explainable Artificial Intelligence Framework for Industrial Cybersecurity Threat Detection and Defense **Dimitrios Taketzis**, Research Associate **Department of Information and Communication Systems Engineering (ICSD), University of Aegean**	
	6	10:20	10:35	0:15	The Pledger Approach to Cloud-Edge Security **Dr. Olga Segou**, Senior Research and Innovation Development Specialist **Netcompany-Intrasoft**	• H2020 PLEDGER

	Nr.	START	END	DUR.	DESCRIPTION / PRESENTER / ENTITY	PROJECT
CYBERSECURITY	7	10:35	10:50	0:15	Evolution of phishing email attacks and sophisticated Machine Learning detection solutions **Mr. Panagiotis Bountakas**, Research Assistants **Systems Security Laboratory (SSL), Department of Digital Systems of the University of Piraeus**	• EPANEK/EDK NetPHISH • H2020 CyberSec4Europe • H2020 SECONDO
	8	10:50	11:05	0:15	Future ICT: a new approach from research to innovation **Mr. Paolo Comi** Research and Innovation Manager **Italtel s.p.a.**	• H2020 AI@EDGE • H2020 BRAINE • H2020 GUARD
-	-	**11:05**	**11:15**	**0:10**	**Coffee and Brokerage**	
5G – SOFTWARIZED NETWORKS	9	11:15	11:30	0:15	Programmable Radio Propagation Environments: The RISE-6G Perspective **George Alexandropoulos,** Assistant Professor **Department of Informatics and Telecommunications, National and Kapodistrian University of Athens (NKUA)**	• H2020 RISE-6G
	10	11:30	11:45	0:15	5G-CARMEN - 5G for Connected and Automated Road Mobility in the European Bologna-to-Munich corridor **Mr. Fantini Roberto**, Senior Radio Access Engineer **Telecom Italia (TIM)**	• H2020 5G CARMEN
	11	11:45	12:00	0:15	5G programmability and development of Network Applications (NetApps) **Dr. Harilaos Koumaras**, Research Assistant Professor **Media Networks Laboratory (MediaNet Lab), NCSR "Demokritos"**	• H2020 EVOLVED-5G
	12	12:00	12:15	0:15	Innovative connectivity technologies on the way from 5G to 6G **Dr. Markus Werner**, Managing Director **AEROLIFI - ATMOSPHERE**	
	13	12:15	12:30	0:15	End-to-end real time service provisioning in SDN-controlled heterogeneous Fiber-Wireless 5G/6G networks **Dr. Marios Gkatzianas**, Researcher **Aristotle University of Thessaloniki**	• H2020 5G-PHOS • H2020 5G-COMPLETE
	14	12:30	12:45	0:15	Photonics enabled Terahertz wireless communications for 5G systems **Dr. Panos Groumas**, Managing Director **Optagon Photonics**	• H2020 TERAWAY

	Nr.	START	END	DUR.	DESCRIPTION / PRESENTER / ENTITY	PROJECT
5G	15	12:45	13:00		Distributed approaches for signal processing and machine learning tasks in 5G/6G wireless communications **Dr. Aris Lalos**, Principal Researcher **Signal Processing & Communications Lab, Department of Computer Engineering & Informatics, University of Patras** **(Lab director: Prof. Kostas Berberidis)**	
-	-	**13:00**	**13:45**	**0:45**	**Lunch and Brokerage**	
CLOUD – ARTIFICIAL INTELLIGENCE	16	13:45	14:00	0:15	Cloud Orchestration for Optimized Computing Efficiency: The Case of Wind Resource Modelling **Dr. rer. nat. Stamatia Rizou**, Research Manager **SingularLogic, European Projects Department**	• H2020 WINDSIDER
	17	14:00	14:15	0:15	Cybersecurity & Resilience in Smart Grid **Panagiotis Sarigiannidis** Associate Professor, **Director of ITHACA - University of Western Macedonia (UoWM), Department of Electrical & Computer Engineering**	• H2020 SDN-microSENSE
	18	14:15	14:30	0:15	Decentralized, secure, cognitive architectures, tools and methods for cyber-physical system of systems **Dr. Aris Lalos**, Principal Researcher, Head of Multimedia Information Processing Systems Group **Industrial Systems Institute, Athena R.C.**	• H2020 CPSOSAWARE
	19	14:30	14:45	0:15	Secure and Seamless Edge-to-Cloud Analytics **Mr. Sotiris Diamantopoulos** Research Consultant **EXUS**	• H2020 ELEGANT
	20	14:45	15:00	0:15	Deep Semantic NLU Algorithms for Information Superiority **Mr. Gianluca Sensidoni**, EMEA Sales Manager, R&D Security Manager **Expert.ai SpA**	Expert.ai
	21	15:00	15:15	0:15	An Artificial Intelligence Framework for Addressing Cybersecurity Challenges in 5G-leveraged CAVs ecosystem **Dr. Antonios Lalas** Postdoctoral Research Associate **Information Technologies Institute, Centre of Research and Technology Hellas (CERTH)**	• H2020 AVENUE • H2020 nIoVe • H2020 SHOW • H2020 SANCUS

	Nr.	START	END	DUR.	DESCRIPTION / PRESENTER / ENTITY	PROJECT
CLOUD - AI	22	15:15	15:30	0:15	Leveraging Cloud-native tools as the glue to seamlessly converge different computing worlds **Mr. Achilleas Tzenetopoulos**, PhD student – Junior Researcher **Microprocessors and Digital Systems Lab (MicroLab) of the School of Electrical & Computer Engineering of National Technical University of Athens (NTUA)**	• H2020 EVOLVE
-	-	**15:30**	**15:40**	**0:10**	**Coffee and Brokerage**	
IOT & SENSORS	23	15:40	15:55	0:15	AI@EDGE: A Secure and Reusable Artificial Intelligence Platform for Edge Computing in Beyond 5G Networks **Roberto Riggio** Associate Professor **Università Politecnica delle Marche**	• H2020 AI@EDGE
	24	15:55	16:10	0:15	Humans in the loop: Humans as sensors and humans as actuators **Charalampos Z. Patrikakis.** Professor **Dept. of Electrical and Electronics Engineering, University of West Attica**	• H2020 STORM
	25	16:10	16:25	0:15	Security and Privacy Protection in Internet of Things Devices **Dr. Georgios Kioumourtzis**, Managing Director **Ianus Consulting Ltd**	• H2020 SECANT
	26	16:25	16:40	0:15	Multi-drone platforms for situational awareness in emergency response **Dr. Panayiotis Kolios**, Research Assistant Professor, **KIOS Research and Innovation Center of Excellence, University of Cyprus**	• H2020 PathoCERT
	27	16:40	16:55	0:15	Integrated Circuit Security: The Hardware Trojan example **Paris Kitsos**, Associate Professor **Electrical and Computer Engineering, University of Peloponnese**	
	28	16:55	17:10	0:15	5G Technologies and Cybersecurity in EU H2020 funded projects **Mr. Philippos Philippou**, R&D Senior Project Manager **eBOS**	• H2020 5GROUTES • H2020 5GSOLUTIONS • H2020 VITAL5G • H2020 5GMEDIAHUB • H2020 SANCUS

	Nr.	START	END	DUR.	DESCRIPTION / PRESENTER / ENTITY	PROJECT
IOT & SENSORS	23	17:10	17:25	0:15	COVID@HOME: A remote monitoring system for COVID-19 patients **Mrs. Xenia Varveri**, Marketing Manager **Business & Bytes Informatics Ltd**	• H2020 COVID-X
	30	17:25	17:40	0:15	8BMGT: Eight Bells Maritime Gimbal-Enabled Thermal Camera **Mr. Emmanouil Fountoulakis**, Senior Researcher and Project Manager **EIGHT BELLS LTD**	• H2020 RESPOND-A
	31	17:40	17:55	0:15	InfraStress: A situational awareness platform in service of collaborative crisis management. **Mr. Umberto Battista**, Chief Technology Officer **STAM SRL**	• H2020 INFRASTRESS
	32	17:55	18:10	0:15	Non-Public LTE/5G Networks for Airports **Mr. George Kontopoulos**, Softwarized Networks Domain Director **EIGHT BELLS LTD**	
	33	18:10	18:25	0:15	SPIDER **Mrs. Konstantina Papachristopoulou**, Senior EU R&D Project Manager **EIGHT BELLS LTD**	• H2020 SPIDER
-	-	18:25	18:35	0:10	Closing remarks **Dr. Ioannis Giannoulakis**, Co-founder and Chief Technology Officer **EIGHT BELLS LTD**	
		18:35			**End of the day**	

Nr.	1	Time	09:05	09:20
Title	**Horizon Europe Cluster 4 Funding and Networking opportunities (focus on Digital)**			
Presenter	**Mr. Georgios Megas** Horizon Europe Cluster 4 main NCP for Greece, Innovation Consultant			
Entity	**National Documentation Centre (EKT)** 			
Abstract	Cluster 4 of Horizon Europe Cluster 4 is one of the Pillar II Programmes to address global challenges and industry competitiveness million. With a budget of about 15 billion, the primary vision behind the proposed investments is that of Europe shaping competitive and reliable technologies for a European industry that will lead the world in key areas, enhancing the environmental protection dimension in the production process, and consumption, with respect for the limits of our planet. The aim is to move towards a competitive, digital, low-carbon and circular industry that will ensure a sustainable supply of raw materials, develop advanced materials and provide the basis for progress and innovation in global challenges for society. EKT as National Contact Point of Horizon Europe EKT is a National Contact Point (NPC) for Horizon Europe, specifically the Marie Skłodowska-Curie Actions (MSCA) programme of Pillar 1 and the 'Health' and Digital Technologies, Industry and Space' sectors of Pillar 2. It supports organisations, companies, academics and research organisations: from identifying funding opportunities to drafting and submitting proposals, implementing projects and exploiting research results. In addition, it contributes to the recording and analysis of Greece's participation in European research and innovation programmes. As a National Contact Point, it supports ongoing projects under Horizon 2020. EKT is a key member of the Horizon Europe's network of Ideal-ist and Industry NCP4Industry. EKT is the first Digital Innovation Hub (DIH) in Greece to be registered in the European Commission list. It actively participates in the DIH Expert Group of the European Commission. EKT is also the Coordinator of the Greek EIT Health node in Greece.			
Relevant Projects	--			

Nr.	2	Time	09:20	09:35
Title	**How to finance your Digital Transformation: The EY approach**			
Presenter	• **Mr. Vasileios Tsiamis**, Associate Partner, Strategy & Transactions Services, Head EU Policies & Access to EU funding & Incentives, Security and Defence Leader • **Dimitris Tasias,** Director, Technology Consulting			
Entity	**Ernst & Young Business Advisory Solutions S.A.** EY Building a better working world			
Abstract	Considering the fact that Digital transformation is not a luxury anymore, but rather a necessity since all market sectors are disrupted, entrepreneurs need to adhere to a holistic understanding of all available funding instruments, so as to achieve it as rapidly and efficiently as possible. A prerequisite for such an holistic approach, however, is to be aware and knowledgeable of all key technological trends in the European ICT sector that are reflected in the priorities of funding instruments available in the European Union. Hence, organisations need to find their path based on key technological pillars, such as Cloud solutions, Internet of Things (IoT), and Cybersecurity. With regards to the former, digital transformation means applying End-to-end Cloud Services and successful Cloud transformation approaches. With regards to IoT, the emphasis is on applying IoT Data Advanced Analytics, IoT platforms, and IoT security & connectivity solutions. In Cybersecurity, the focus is on evaluating and securing trust in critical business applications and data platforms hosted in multi-cloud environments, so enterprises can make transformational change and enable innovation with confidence. After developing an understanding of these technological pillars, organisations need to proceed with a) an analysis of EU strategy and policies for the digital transformation, and b) the identification of EU funding options to support the private and/or public sector. EY has developed a specific approach to navigate this landscape and support the technological and industrial base in Greece.			
Relevant Projects	--			

Nr.	3	Time	09:35	09:50
Title	**EU-funded R&D initiatives on cyber defence**			
Presenter	**Dr. Georgios Gardikis** R&D Manager			
Entity	**SPACE HELLAS S.A.**			
Abstract	Improving the EU capacity on cyber defence operations is among the top priorities in European defence R&D, as also highlighted by the respective funding opportunities in the EDIDP and EDF programmes. This presentation will start with a brief overview of the EDIDP PANDORA project, co-funded by EC, Greece and Cyprus. It will also identify further research directions on cyber defence, aligned with the priorities of the latest calls of the EDF programme.			
Relevant Projects	• EDIDP 2019 PANDORA			

Nr.	4	Time	09:50	10:05
Title	**Selected ongoing EU funded R&D projects in Cybersecurity and advanced communications systems**			
Presenter	**Dr. Spyros Vassilaras** R&D Programs Manager			
Entity	**INTRACOM DEFENSE SINGLE MEMBER S.A.**			
Abstract	This presentation will provide an overview of 3 EU funded R&D projects which aim to advance the state-of-the-art in cybersecurity and telecommunication systems, namely EDIDP project SMOTANET, PADR project PRIVILEGE, and H2020 FET Open project HERMES. Coordinated by Intracom Defense (IDE), SMOTANET is a project aiming to design an advanced, secure, ad hoc wireless network suitable for tactical use. PRIVILEGE focuses on developing privacy-preserving tools and techniques for sharing confidential data so as to be used by AI technologies, but without revealing the actual data. Finally, HERMES is an ambitious 4-year project which aspires to achieve tens of Gbps wireless data rates in 6G sub-THz bands, as well as efficient wideband spectrum sensing for cognitive radio and signal intelligence. The basic objectives and underlying technologies of each one of the 3 projects will be outlined and the role of IDE will be highlighted.			
Relevant Projects	• EDIDP 2019 - SMOTANET • PADR 2019 PRIVILEGE • H2020 HERMES			

Nr.	5	Time	10:05	10:20
Title	**Explainable Artificial Intelligence Framework for Industrial Cybersecurity Threat Detection and Defense**			
Presenter	**Mr. Dimitrios Taketzis** Research Associate			
Entity	**University of Aegean** **Department of Information and Communication Systems Engineering (ICSD)**			
Abstract	Given the high heterogeneity and the corresponding lack of hardware and software interoperability, the Industrial environment is vulnerable to escalating cyber-threat vulnerabilities, leading to problems with substantial economic and social consequences. Although, the modern defense of these industrial networks is based on advanced systems that integrate Big Data Analytics and Cyber Threat Intelligence (CTI). The logic of CTI applications and data-driven systems in general, which make extensive use of Artificial Intelligence and Machine / Deep Learning methods, is based primarily on systematic and large-scale analysis of resources such as log files, malware binaries, events, Open Source Intelligence (OSINT) and other sources of information on cyber security incidents or data. While it is widely accepted that intelligent systems are promising and highly efficient in detecting complex cyber threats, the industrial environment, and the protection of critical infrastructure, in general, require much greater transparency in dealing with these risks and assisting in making optimal decisions in general. The lack of detailed interpretation associated with the use of complex deep learning architectures can mainly affect the model's performance, prevent the frequent adjustment of some critical hyperparameters, and ultimately reduce the algorithm's reliability and the generalization that should characterize the systems in question. The disadvantages in question hinder the main stakeholders, e.g., CISO, CEO, etc., from trusting and making meaningful and systematic use of AI-driven cybersecurity systems. Wanting to overcome these challenges, and explainable artificial intelligence framework for industrial cybersecurity threat detection and defense is proposed. It is a holistic meta-learning system			

	that automates selecting and using the most appropriate algorithmic hyperparameters that optimally solve a problem under consideration, approaching it as a solution search model where it is solved by mapping input and output data using Weight Agnostic Neural Networks (WANN) methodology. It is an evolving strategy in neural network development techniques that can perform a specialized task regardless of the weights of the connections in the building blocks of the neural network, which equates to a lack of training. The logic of using WANN is a primary investigation in the search for architectural neural networks with specific biases that can potentially categorize a given problem, even when using random weights. This digital security system can create robust self-identifying systems capable of withstanding even zero-day attacks. To explain how to select the most appropriate hyperparameters and, more generally, to explain how to solve the given problem, the Shapley methodology is widely used, which offers clear explanations for which interactions are performed between the characteristics - variables make a decision. Shapley methodologies are a very effective way of generating explanations from game theory and specifically a cooperative game, where it is rendered by a real function that gives values to player sets. The explanations are divided into general ones where the most essential features of the system are investigated and what interactions take place between them and local explanations focusing on data samples, where the prediction is analyzed and explained, which may depend only linearly or monotonously on certain features, instead of contains more complex dependencies. The connection of Shapley values with the problem of explaining the architectural structures of WANN is made by considering WANN as a collaborative game whose players are the characteristics of the data set. The gain function is the neural network model under consideration, and the model predictions the corresponding gains. In this context, the Shapley values show the contribution of each feature and, therefore, explain why the model made a specific decision. The method works as a linear model and, more specifically, as a method of additional contribution of features. Intuitively with the proposed approach, an explanation is a linear approach to model behavior, which can be very complex as an integrated entity. Still, it is easy to approach around a specific presence or absence of a variable that leads to a decision. This holistic approach, which fully automates and thoroughly explains how machine learning algorithms work in the Industrial CTI application, helps the particular use of AI-driven cybersecurity systems.
Relevant Projects	--

Nr.	6	Time	10:20	10:35
Title	**The Pledger Approach to Cloud-Edge Security**			
Presenter	**Dr. Olga Segou** Senior Research and Innovation Development Specialist			
Entity	**Netcompany – Intrasoft** **Research and Innovation Development Department** netcompany intrasoft			
Abstract	Pledger is an innovative project that will deliver a set of tools and processes to enable edge computing providers to enhance the stability and performance effectiveness of their edge infrastructures, and edge computing adopters to understand the computational nature of their applications. The project will also allow third parties to act as independent validators of QoS features in IoT applications. However, the complex and decentralised nature of Edge-Cloud infrastructures, along with their dynamic nature introduces cyber risks. When applications and services can be instantiated and turn down in seconds, have critical QoS demands and perform data-intensive operations, it is crucial to ensure that the infrastructure is appropriately hardened, and proper cybersecurity assets are in place to address evolving cyber threats and ensure privacy and service continuity. We will present the threat analysis methodology, the Pledger security architecture and illustrate some early results from our security demo.			
Relevant Projects	• H2020 PLEDGER			

Nr.	7	Time	10:35	10:50
Title	**Evolution of phishing email attacks and sophisticated Machine Learning detection solutions**			
Presenter	**Mr. Panagiotis Bountakas** Research Assistant			
Entity	**University of Piraeus** **Systems Security Laboratory (SSL), Department of Digital Systems** 			
Abstract	The wide expansion of emails render them a priceless tool and at the same time a growing and hazardous threat. Phishing email campaigns are the most pernicious cyber-criminal strategy to perform malicious actions that often act as a preliminary stage for conducting large-scale and sophisticated attacks (e.g., APTs). Despite the longevity of phishing email attacks, traditional email filtering techniques have been inefficient to curb the on-going threat of phishing emails. Thus, new sophisticated solutions for detecting phishing emails have been introduced that are based on Machine Learning to increase the detection performance. The presentation will highlight the evolution of phishing emails and elaborate on recent ML-based phishing email detection solutions. Finally, it will present the results of a new Hybrid Ensemble Learning approach that has attained high detection performance in real-life evaluation scenarios.			
Relevant Projects	• EPANEK/EDK NetPHISH • H2020 CyberSec4Europe • H2020 SECONDO			

Nr.	8	Time	10:50	11:05
Title	**Future ICT: a new approach from research to innovation**			
Presenter	**Mr. Paolo Comi** Research and Innovation Manager			
Entity	**Italtel S.p.A.**			
Abstract	We propose our idea to approach the transition from research to innovation of future ICT market. We believe that modern research and innovation activities need to cross organizational boundaries to reach a tangible and relevant impact on the Company and on the Society. Market is the final destination. To make this journey we have to build a bridge between research ideas and market exploitation working in parallel from both sides. For this reason, we have created a Research and Innovation Lab following the Open Innovation paradigm to promote, at the same time, research and innovation with a new mindset and openness towards internal and external cooperation.			
Relevant Projects	• H2020 AI@EDGE • H2020 BRAINE • H2020 GUARD			

Nr.	9	Time	11:15	11:30
Title	**Programmable Radio Propagation Environments: The RISE-6G Perspective**			
Presenter	**George Alexandropoulos** Assistant Professor			
Entity	**National and Kapodistrian University of Athens** **Department of Informatics and Telecommunications** 			
Abstract	Reconfigurable Intelligent Surfaces (RISs) constitute the enabler for programmable propagation of electromagnetic signals and are lately being considered as a candidate physical-layer technology for the demanding connectivity, reliability, localization, and sustainability requirements of 6G wireless communications networks. This talk will present the core objectives and up-to-date technical achievements of the ongoing EU H2020 RISE-6G project which focuses on the design of RIS-based technological solutions to achieve intelligent, sustainable, and dynamically programmable wireless environments that go well beyond the 5G capabilities.			
Relevant Projects	• H2020 RISE-6G			

Nr.	10	Time	11:30	11:45
Title	**5G-CARMEN - 5G for Connected and Automated Road Mobility in the European Bologna-to-Munich corridor**			
Presenter	**Mr. Fantini Roberto** Senior Radio Access Engineer			
Entity	**Telecom Italia**			
Abstract	5G-CARMEN is an EU-funded Horizon 2020 project that aims to create a 5G digital corridor for connected and automated mobility along the Bologna-Monaco motorway. Activities currently ongoing focus on demonstrating the use of 5G to support autonomous driving in situations where an unconnected vehicle would require human intervention. The use cases of the project are tested with particular focus on border areas, where maintaining continuity of service is more challenging. Key factors are the 5G technology and an Edge Computing architecture to ensure reliability and improved latency.			
Relevant Projects	• H2020 5G CARMEN			

Nr.	11	Time	11:45	12:00
Title	**5G programmability and development of Network Applications (NetApps)**			
Presenter	**Dr. Harilaos Koumaras** Research Assistant Professor			
Entity	**National Centre for Scientific Research "Demokritos"** **Institute of Informatics and Telecommunications** **Media Networks Laboratory (MediaNet Lab)**  			
Abstract	Programmability in the 5G Core (5GC) allows operators to make telecom network capabilities and services available to third-party developers, allowing them to create innovative network-aware vertical applications. The 5G Service Based Architecture (SBA) embodies this openness by exposing network intelligence to vertical applications via standardized Application Programming Interfaces (APIs). The ecosystem of Network Applications (NetApps) arises as a facilitating middleware between the network and applications, building on the application empowerment that programmable APIs may offer, releasing new economic potentials. The design and implementation components of an open all-encompassing framework for NetApps are presented, which covers their complete life cycle from development to market release.			
Relevant Projects	• H2020 EVOLVED-5G			

Nr.	12	Time	12:00	12:15
Title	**Innovative connectivity technologies on the way from 5G to 6G**			
Presenter	**Dr. Markus Werner** Managing Director			
Entity	**AEROLiFi GmbH / ATMOSPHERE**			
Abstract	Combining the complementary R&D work from aeroLiFi GmbH and Atmosphere GmbH (Germany), the presentation will highlight several recent R&D As an optical technology working in both visible and infrared spectrum, LiFi or VLC can form a very interesting, tailored connectivity component in future 6G networks. Mostly for indoor applications due to its inherent 'very small cell' capability, the key features, challenges and opportunities are discussed, and the status of technology development and roadmap of aeroLiFi is presented. Some focus is based on recent work towards integrated multilink LiFi/WiFi/5G Connectivity for various vertical markets and user segments. In the second part of the presentation, selected topics around connectivity for and through small civilian UAVs are addressed, and recent R&D achievements and further ambitions of Atmosphere in this area are presented. Some focus is laid on integrated 5G/satcom connectivity, flight trials including UAVs for specific first responder scenarios, and the role of UAV connectivity in future 6G NTN networks.			
Relevant Projects				

Nr.	13	Time	12:15	12:30
Title	**End-to-end real time service provisioning in SDN-controlled heterogeneous Fiber-Wireless 5G/6G networks**			
Presenter	**Dr. Marios Gkatzianas** Researcher			
Entity	**Aristotle University of Thessaloniki,** **Department of Informatics, Center for Interdisciplinary Research and Innovation** 			
Abstract	Fiber-Wireless (FiWi) convergence has clearly emerged as the most promising low-cost, energy-efficient solution to address the explosive growth in 5G and beyond mobile broadband and URLLC services, along with their stringent throughput and latency requirements, in highly dense and concentrated Hotspot deployment scenarios, while also enabling a sustainable evolution path of the mobile network towards the 6G era. Towards this goal, we will present in this talk the work performed in two H2020 5GPPP projects: 5G-PHOS (coordinated by the WinPhos research group in the Center for Interdisciplinary Research and Innovation of the Aristotle University of Thessaloniki) and 5G-Complete (coordinated by the Photonics Communications Research Laboratory in the Institute of Communication and Computer Systems of the National Technical University of Athens). In 5G-PHOS, we propose and demonstrate, via a live field trial, an interoperable, RAT-agnostic and SDN-programmable analog Radio-over-Fiber-based FiWi transport solution exploiting novel Photonic Integrated Circuits, multi-rate DSP-assisted optical transmission engines and modular V-band millimeter wave MIMO antennas to offer a packetized X-haul alternative to the legacy CPRI-based solutions. Motivated by similar advances in Ethernet-based X-hauling, 5G-Complete takes a holistic view of the 5G architecture and introduces distributed compute and storage resources over a unified converged FiWi Radio Access Network (RAN) to transform it into a 3-tier (i.e., edge/fog/cloud) infrastructure efficiently supporting different X-haul flows under a common Ethernet-based platform jointly coordinated by an SDN-enabled network orchestrator in tight integration with specialized resource allocation algorithms.			
Relevant Projects	• H2020 5G-PHOS • H2020 5G-COMPLETE			

Nr.	14	Time	12:30	12:45
Title	**Photonics enabled Terahertz wireless communications for 5G systems**			
Presenter	**Dr. Panos Groumas** Managing Director			
Entity	**Optagon Photonics P.C.** 			
Abstract	The 5G vision for high-capacity connectivity everywhere will require densely deployed base stations and new front-haul and back-haul connectivity solutions that can cope with the increasing bandwidth demands. Terahertz wireless signals with carrier frequencies in the range of 300 GHz have been identified as possible alternative to short optical fiber links offering similar capacity and moreover can be generated on photonic integrated circuits (PICs). Generating Terahertz signals on PICs offers flexibility in selecting the carrier frequency, and possibility for combination with complex signal processing techniques like optical beam forming. Terahertz technology enabled by PICs developed within the EU project TERAWAY will be presented for application to high-capacity wireless links for the 5G front-haul and back-haul networks. The developed electronic driving solutions that allow these PICs to operate at their potential will be also presented.			
Relevant Projects	• H2020 ICT-TERAWAY			

Nr.	15	Time	12:45	13:00
Title	**Distributed approaches for signal processing and machine learning tasks in 5G/6G wireless communications**			
Presenter	**Dr. Aris Lalos,** Principal Researcher, ISI			
Entity	**University of Patras** **Department of Computer Engineering & Informatics, Signal Processing & Communications Lab (Director: Prof. Kostas Berberidis)**			
Abstract	We are entering an era in which wireless communication systems are expected to support high rate, reliable, time critical transmissions with privacy constraints among a variety of heterogeneous devices both from the side of the infrastructure as well as the end user's side, in order to support 5G and envisioned 6G use cases in autonomous driving, precision agriculture, and remote sensing, to name a few. An already powerful set of wireless communications technologies including (massive) MIMO (operating in the mmWave/THz bands), relaying, and cognitive radio is further enriched with new ideas including intelligent surfaces, and mobile BSs using UAVs. For these technologies to deliver what is theoretically expected, communication algorithms need to be scalable, capable of capturing all relevant information about the transmission environment, adapt to time varying conditions, while imposing minimum communication overheads. On top of the previous challenges, time critical operations hint to the execution of the desired functionality closer to the edge of the network with as little intervention from, e.g., base stations and the cloud, as possible. To address these challenges, a new generation of distributed and adaptive signal processing and machine learning algorithms needs to be devised for (a) the physical and multiple access layers and (b) system-wise and end-user-wise learning operations that take into account the wireless environment. In this talk, recent activities in channel estimation, coordinated beamforming, multiple access using NOMA, and fully distributed federated learning, among others, will be presented.			
Relevant Projects	--			

Nr.	16	Time	13:45	14:00
Title	**Cloud Orchestration for Optimized Computing Efficiency: The Case of Wind Resource Modelling**			
Presenter	**Dr. rer. nat. Stamatia Rizou** Research Manager, European Projects Department			
Entity	**SingularLogic, a Space Hellas Group member** SingularLogic Member of Space Hellas Group			
Abstract	The Weather Research and Forecasting (WRF) model is a multi-purpose open-source weather model, which is widely used by the wind energy community. Existing applications using the WRF model for wind resources modelling do not always meet the sector's needs. The fundamental challenge is the massive quantity of data required for accurate modelling, as well as the expenses associated with the computing of such massive volumes of data, implying that state-of-the-art approaches are not appropriate. In this presentation, we are going to present our work in the context of the H2020 WindSider project that tackles this issue with the use of a novel orchestration framework relying on cloud computing technologies. During the presentation, we will discuss the overall software architecture of the proposed Cloud Orchestration System, enabling the dynamic and flexible cloud deployment of containerized wind resource model chains. Moreover, a set of performance, functional and operational criteria will be presented, using a real use case of a wind resource model.			
Relevant Projects	• H2020 WINDSIDER			

Nr.	17	Time	14:00	14:15
Title	**Cybersecurity & Resilience in Smart Grid**			
Presenter	**Panagiotis Sarigiannidis** Associate Professor, Director of ITHACA			
Entity	**University of Western Macedonia (UoWM)** **Department of Electrical & Computer Engineering**   			
Abstract	In view of the Industry 4.0 paradigm, Internet of Things (IoT) applications are becoming common in modern industrial systems, especially in critical infrastructure paradigms such as the Smart Grid (SG). The integration of IoT into SG facilitates the automation of the processes related to the generation and distribution of energy, by offering remote monitoring, supervision, and control. Moreover, the digitalisation of the legacy grid to a SG ecosystem enables the employment of Artificial Intelligence and Machine Learning (AI/ML) algorithms towards optimising energy-related operations and supporting the decision-making processes. Despite its numerous benefits, the integration of IoT introduces several cybersecurity risks as the infrastructure is also exposed to cyberthreats. Since the SG constitutes a critical infrastructure of paramount importance, potential disruptions to its normal operation can have devastating consequences on both societal and economical levels. This presentation, entitled “Cybersecurity & Resilience in Smart Grid”, aims to explore the principles of cybersecurity and resilience in IoT-enabled Smart Grid environments and provide an overview of potential incidents, vulnerabilities and associated risks. Also, appropriate countermeasures, methodologies, and tools for ensuring the SG cybersecurity and resilience requirements will be presented. In addition, particular focus will be given to the leverage of novel technologies, such as Software Defined Networking (SDN), Network Function Virtualisation (NFV), and Next-Generation Internet-			

	of-Things (NG-IoT), for enabling large-scale threat detection, identification, and mitigation. Finally, the presentation will outline good cyber hygiene practices, introducing the latest outcomes and results of the H2020 SDN-microSENSE (833955) project, and discuss future research directions.
Relevant Projects	• H2020 SDN-microSENSE

Nr.	18	Time	14:15	14:30
Title	**Decentralized, secure, cognitive architectures, tools and methods for cyber-physical system of systems**			
Presenter	**Dr. Aris Lalos,** Principal Researcher, Head of Multimedia Information Processing Systems Group			
Entity	**Industrial Systems Institute (ISI)**			
Abstract	In this talk, a holistic, decentralized and cognitive design and operation approach that supports CyberPhysical System of Systems (CPSoS) autonomic (without human intervention) behavior, making such systems aware of their physical and cyber environment and reacting to it accordingly so that they constantly match their intended purpose will be presented. The proposed solutions strengthen reliability, fault tolerance and security at system level but also support CPS designs that work in a decentralized way, collaboratively, by sharing tasks and data with minimal central intervention. Also, the proposed system supports the interaction of the CPSoS with human users/operators through extended reality modules (AR glasses, haptics interfaces) to increase human situational awareness but also to include human behavior in the CPSoS design and operation phase. Emphasis is also given on enhancing the 4D situational awareness in a swarm of Connected and Automated robots, employing information diffusion. Finally, the successful application of the aforementioned tools and methods in automotive and industrial use cases concludes this talk.			
Relevant Projects	• H2020 CPSOSAWARE			

Nr.	19	Time	14:30	14:45
Title	**Secure and Seamless Edge-to-Cloud Analytics**			
Presenter	**Mr. Sotiris Diamantopoulos** Research Consultant			
Entity	**EXUS** 			
Abstract	Nowadays, the main driving force of extreme analytics is the business decisions that derive from processing vast amounts of data streams obtained from IoT devices (predicted to reach 25 billion by 2020). Regarding computational capacity, the IoT devices can differ significantly varying from smartphones to micro-controllers. Although the performance of such devices can differ dramatically when compared to Big Data processing, they broadly fall into the same category as they all operate in orders of magnitude lower for capacity and energy profiles than large scale-out data analytics clusters. However, even in such scenarios, Big Data infrastructures cannot cope efficiently with the amount of raw data that IoT devices can generate, due to scalability or operational cost challenges. Therefore, on-edge computations, by means of lightweight computations such as aggregations, filtering or even lightweight AI models, are performed in order to enable a first order of data manipulation and filtering before they reach the backend of the Big Data stacks. The existing Big Data/IoT programming paradigm breaks the uniformity and interoperability of end-to- end processing (from IoT to data analytics) for the following reasons: 1. Fragmentation of programming languages and code duplication: Big Data frameworks are programmed with high-level languages such as Java or Scala, while IoT frameworks typically rely on native languages. Hence, any code that manipulates data both on edge-devices and on the Big Data platform has to be written twice. 2. Lack of dynamic code motion: Users cannot dynamically select and deploy logic on the edge. For every new functionality, code has to be manually deployed and re-compiled. 3. Inability to dynamically perform decisions in the performance, energy efficiency, security, reliability, and dependability (PESRD) optimization space: Existing unified systems cannot intelligently			

	make decisions of where to execute code or move data in order to satisfy the PESRD requirements of the whole deployment. ELEGANT's vision is summarized by the following objectives: ➢ Unification of programming environments: Through virtualized execution, both Big Data and IoT devices will offer the same application programming interface (API) to programmers. This will allow us to define operators, code them once, and deploy them both at the data analytics (Big Data) and the IoT sides. ➢ Dynamic Code Motion: By unifying the programming environments between Big Data and IoT we will enable code reuse between the different platforms. This in turn, will enable the dynamic code motion across the different layers of the deployments. This will be achieved by enabling the lightweight IoT runtimes to dynamically accept and apply incoming operators without restarting their execution. ➢ Intelligent resource selection and allocation: By enabling the dynamic code motion between Big Data and IoT we essentially unify the two systems, thereby allowing intelligent resource selection and allocation. By establishing a global monitoring system, we will enable decisions such as where to execute code, how much and which data we can process in-situ or stream to the data analytics side, IoT energy savings, etc. ➢ Secure, Reliable, and Dependable code deployment: The unification of operators that can execute on both IoT and Big Data will enable a single code validation and security point for all running code. In addition, the same runtime verification and security techniques will be applied on both sides. Finally, through dynamic code motion we will be able to transition between in-situ on-edge processing and data streaming completely dynamically based on the data sensitivity, network stability, and software and hardware reliability.
Relevant Projects	• H2020 ELEGANT

Nr.	20	Time	14:45	15:00
Title	**Deep Semantic NLU Algorithms for Information Superiority**			
Presenter	**Mr. Gianluca Sensidoni** EMEA Sales Manager, R&D Security Manager			
Entity	**Expert.ai SpA**			
Abstract	Expert.ai is a LE, leader in Artificial Intelligence (AI) applied to text with more than 30 years of experience in NLU. We work with some of the largest organizations and government agencies throughout Europe, the Americas and the Middle East. Analysts, data scientists and linguists worldwide recognize the value of our patented AI-based NLU technology and its unique approach, which combines semantics and ML/DL (so Hybrid technology) as the highest performing, most pragmatic way to address even the most complex unstructured information management use cases. Roughly 80% of data is estimated to be in an unstructured form (Unstructured Big Data). If the goal is to improve know-how with insights from domain experts, Artificial Intelligence (AI) and Cognitive algorithms must be adopted as part of the next big data analytics. They can gather contents coming from different type of sources (on-line and off-line), analysing/fusing them by deep semantic NLU algorithms and discovering insights referred to (f.e) particular threats on a dedicated population during a specific temporal reference and in a targeted GEO location. From social media to scientific papers, from technical reports to newspapers, and more; everything becomes a useful source of information so that practitioners can find the "information nuggets" that trigger new ideas or activate verifications or interventions. The ability to automatically understand natural language enables new approaches to advanced analysis; even citizens can become “sensors” for their territory by means of analysis of the human factors using avant-garde behavioural algorithms such as emotions and stylometric analysis.			

	The target is to provide high level TRL AI/Cognitive algorithm with strong tuning on the specific domains and languages (built-in knowledge by domain experts), so that the analytical task can be domain focused, can run automatically and with objectivity on 24/7, going to leave the final action and deduction to humans as added value in the last part of the reasoning process. This can greatly increase the "Intelligence" as "Information Superiority" so going to unveil the "exceptions of the rules", low signals/low level indicators and finally improve and fastening the quality of decision-making processes.
Relevant Projects	--

Nr.	21	Time	15:00	15:15
Title	**An Artificial Intelligence Framework for Addressing Cybersecurity Challenges in 5G-leveraged CAVs ecosystem**			
Presenter	**Dr. Antonios Lalas** Postdoctoral Research Associate			
Entity	**Centre of Research and Technology Hellas (CERTH)** **Information Technologies Institute**			
Abstract	The massive connectivity of devices, systems, infrastructure, and vehicles as fundamental components of the smart cities ecosystem, is rapidly emerging. A variety of vehicles wirelessly exchanging data with servers, infrastructure, pedestrians, and other vehicles, utilize mainly mobile networks and especially the novel deployed 5G infrastructure. In addition, the vehicles are transforming towards automation and targeting autonomous functionality, sensing the surrounding environment, but also the internal in-cabin environment, and navigating through cities without human input. Consequently, Connected and Autonomous Vehicles (CAVs) introduce new enablers in mobility and transport, along with associated communication infrastructure. However, this comes with the cost of a new set of cybersecurity challenges pertaining to higher risks of cyber-attacks in multiple vectors. A cyber-attack in a CAV can yield high recall costs and even jeopardize human safety in different ways. Therefore, the cyber-protection of CAVs is of paramount importance and appropriate tools are urgently required. Artificial Intelligence (AI) can effectively provide robust solutions shielding CAVs and associated 5G networks. The cybersecurity challenges in 5G-leveraged CAVs ecosystem are thoroughly presented, while various solutions are explored towards a holistic AI-enabled cybersecurity framework.			
Relevant Projects	• H2020 AVENUE • H2020 nIoVe • H2020 SHOW • H2020 SANCUS			

Nr.	22	Time	15:15	15:30
Title	**Leveraging Cloud-native tools as the glue to seamlessly converge different computing worlds**			
Presenter	**Mr. Achilleas Tzenetopoulos** PhD student – Junior Researcher			
Entity	**National Technical University Of Athens (NTUA)** **Microprocessors and Digital Systems Lab (MicroLab) of the School of Electrical & Computer Engineering**			
Abstract	Cloud-native technologies are recently used in various fields, to allow for seamless deployment and to offer a higher level of abstraction to the users. The current challenge, as it is described in the European Commission roadmap is software to be distributed, forming a "continuum of computing" across platforms and devices, from the "deep edge" to the cloud, HPC, and data centers. In EVOLVE, a pan-European Innovation Action we aimed to fully-integrate High-Performance-Computing (HPC) hardware with state-of-the-art software technologies under a unique testbed, that enables the convergence of HPC, Cloud, and Big-Data worlds and to increase our ability to extract value from massive and demanding datasets. EVOLVE's advanced compute platform combines HPC-enabled capabilities, with transparent deployment at a high abstraction level, and a versatile Big-Data processing stack for end-to-end workflows. Hence, domain experts have the potential to substantially improve the efficiency of existing services or introduce new models in the respective domains, e.g., automotive services, bus transportation, maritime surveillance, and others. In AI@EDGE, another H2020 project, we develop a connect-compute platform – specifically leveraging the serverless paradigm – for creating and managing resilient, elastic, and secure end-to-end network slices. Such slices will be capable of supporting a diverse range of AI-enabled applications. Privacy-preserving machine learning and trusted networking techniques will be used to ensure each			

	stakeholder can use the platform without disclosing sensitive information. Our main contribution is focused on three fields: i) designing hardware-accelerated AI functions on a variety of platforms, e.g. FPGA, GPU, TPU, ii) allowing for hardware-acceleration enabled infrastructure over the Kubernetes container orchestrator, and iii) providing a methodology for intelligent resource management of accelerated AI functions in MEC systems.
Relevant Projects	• H2020 EVOLVE

Nr.	23	Time	15:40	15:55
Title	**AI@EDGE: A Secure and Reusable Artificial Intelligence Platform for Edge Computing in Beyond 5G Networks**			
Presenter	**Mr. Roberto Riggio** Associate Professor			
Entity	**Università Politecnica delle Marche** UNIVERSITÀ POLITECNICA DELLE MARCHE			
Abstract	Artificial Intelligence (AI) has become a major innovative force and a major pillar in the fourth industrial revolution. This trend has been acknowledged by the European Commission, who has pointed out how high-performance, intelligent, and secure networks are fundamental for the evolution of the multi-service Next Generation Internet (NGI). While great progress has been done in the accuracy and performance of AI-enabled platforms, their integration in autonomous decision-making and critical systems requires end-to-end quality assurance. The AI@EDGE project addresses these challenges harnessing the concept of "reusable, secure, and trustworthy AI for network automation". To this end, AI@EDGE targets significant breakthroughs in two fields: (i) general-purpose frameworks for closed-loop network automation capable of supporting flexible and programmable pipelines for the creation, utilization, and adaptation of the secure, reusable, and trustworthy AI/ML models; and (ii) converged connect-compute platform for creating and managing resilient, elastic, and secure end-to-end slices supporting a diverse range of AI-enabled network applications. Cooperative perception for vehicular networks, secure, multi-stakeholder AI for Industrial Internet of Things, aerial infrastructure inspections, and in-flight entertainment are the uses cases targeted by AI@EDGE to maximise its commercial, societal, and environmental impact.			
Relevant Projects	• H2020 AI@EDGE			

Nr.	24	Time	15:55	16:10
Title	**Humans in the loop: Humans as sensors and humans as actuators**			
Presenter	**Mr. Charalampos Z. Patrikakis** Professor			
Entity	**University of West Attica** **Department of Electrical and Electronics Engineering**			
Abstract	With the explosive growth of computing and communications, translated into minimisation of size, exponential increase in processing, and ubiquitous and ultra-high speed wireless communications, the concept of the Internet of Everything, where people, devices, and software are always connected has become a reality. We are ready to see more than a simple communication between humans and devices, advancing to the level of collaboration between humans and machines (and AI advocates for that). In this presentation, cases where the combined use of machine processing, AI, digital communications and active human involvement (both at physical and mental level) can provide added value and cost-effective solutions to problems such as remote monitoring, protection of cultural heritage and the fight against misinformation, all taken out of results from EU research projects in the context of H2020 framework.			
Relevant Projects	• H2020 STORM			

Nr.	25	Time	16:10	16:25
Title	**Security and Privacy Protection in Internet of Things Devices**			
Presenter	**Dr. Georgios Kioumourtzis** Managing Director			
Entity	**Ianus Consulting Ltd**			
Abstract	The SECANT platform will enhance the capabilities of organizations' stakeholders, implementing (a) collaborative threat intelligence collection, analysis and sharing; (b) innovative risk analysis specifically designed for interconnected nodes of an industrial ecosystem; (c) cutting-edge trust and accountability mechanisms for data protection and (d) security awareness training for more informed security choices. The proposed solution's effectiveness and versatility will be validated in four realistic pilot use case scenarios applied in the healthcare ecosystem. Ultimately, SECANT will contribute decisively towards improving the readiness and resilience of the organizations against the crippling modern cyber-threats, increasing the privacy, data protection and accountability across the entire interconnected ICT ecosystem, and reducing the costs for security training in the European market.			
Relevant Projects	• H2020 SECANT			

Nr.	26	Time	16:25	16:40
Title	**Multi-drone platforms for situational awareness in emergency response**			
Presenter	**Dr. Panayiotis Kolios** Research Assistant Professor			
Entity	**University of Cyprus** **KIOS Research and Innovation Center of Excellence** 			
Abstract	Waterborne pathogen contamination events can occur anywhere, and may be caused by various natural events or they can be the result of human activity, either accidental or malicious. During these emergencies, first responders may need to operate within a certain pre-defined incident area, and are likely to be exposed to contaminated water originating from various sources, such as surface water, wastewater or drinking water. This can pose a significant risk of illness, disease or even death, through skin contact, ingestion or inhalation. This talk will first overview the H2020 PathoCERT project that aims to strengthen the coordination capability of the first responders in handling waterborne pathogen contamination events. This will increase the first responders' capabilities, allowing the rapid and accurate detection of pathogens, improving their situational awareness, and improving their ability to control and mitigate emergency situations involving waterborne pathogens. Then, it will focus on the multi-drone platforms for situational awareness in emergency response developed at the KIOS Center of Excellence, as an integral part of the Pathogen Contamination Emergency Response Technologies (PathoCERT) technologies that will be field-validated by first responders within this project.			
Relevant Projects	• H2020 PathoCERT			

Nr.	27	Time	16:40	16:55
Title	**Integrated Circuit Security: The Hardware Trojan example**			
Presenter	**Mr. Paris Kitsos** Associate Professor			
Entity	**University of Peloponnese** **Electrical and Computer Engineering**   			
Abstract	In the first part of this talk the activities of the ECE department and the Electronics Circuits, Systems and Applications laboratory (ECSA Lab) will be presented. The main scope of second part is the presentation of the basic non-destructive methods for detecting Hardware Trojans (HTs) in Integrated Circuits (ICs). These methods are divided into run time methods, logic-time methods and side channel analysis methods. After presenting the main features of these methods a Ring Oscillator based method for HT detection will be presented.			
Relevant Projects	--			

Nr.	28	Time	16:55	17:10
Title	**5G Technologies and Cybersecurity in EU H2020 funded projects**			
Presenter	**Mr. Philippos Philippou** R&D Senior Project Manager			
Entity	**eBOS**			
Abstract	With the 5G technologies promising to transform network connectivity and streamline operations at higher capacities, the upgraded mobile network offers revolutionary potential capable to transform the whole world. Ensuring the availability, confidentiality and integrity of information in an ever-increasing digital world renders a robust cybersecurity framework critical to the infrastructure of today's companies. The presentation takes a close look at work done in 5G technologies and Cybersecurity in EU funded projects under Horizon 2020 programme and discusses the objectives and scope of the research endeavours, the adopted methodology towards the vision of the projects as well as the discovered benefits and lessons learned. It concludes with an insight to the research results.			
Relevant Projects	• H2020 5GRoutes • H2020 5GSolutions • H2020 Vital5G • H2020 5gMediaHub • H2020 SANCUS			

Nr.	29	Time	17:10	17:25
Title	**COVID@HOME: A remote monitoring system for COVID-19 patients**			
Presenter	**Mrs. Xenia Varveri** Marketing Manager			
Entity	**Business and Bytes Informatics Ltd.**			
Abstract	The national health systems of EU countries have been overwhelmed by the rapid progression of the COVID-19 pandemic and, especially during the exponential phase of each wave, hospitals and personnel struggle to provide the appropriate level of care for each individual patient. Most patients however do not require the on-site facilities of a hospital, merely close monitoring by healthcare personnel. The private health care sector is uniquely qualified to tackle this challenge since it is mainly comprised of smaller, more "agile" teams and facilities. All they lack is a specialized tool to assist in and coordinate the tasks of medical data collection, analysis, communication with the patient and staying up-to-date with the latest scientific information on the pandemic. COVID@HOME (C@H) provides a solution for the remote monitoring of patients with mild to moderate symptoms who are already at home or under consideration for hospital discharge, by enabling and encouraging patients to adopt an active approach to their disease management in cooperation with a local health provider of their choice. C@H consists of a modular client-server software package, with the server side hosted locally at the health provider and the client side running on the patient's and physician's smartphone or equivalent device. It consists of a patient's app, where the patients can record their symptoms and medical data accurately, and a doctor's app, where the healthcare professional can access patient files and evaluate the patient's condition. The system also supports automatic retrieval of vital data (oxygen saturation, temperature, pulse rate, etc.) with the use of third-party CE-marked medical sensors that connect with the system. The doctor can also receive an alert for			

	the patients' need for hospitalization via the Medical Data Analysis module (AI feature) that is developed. C@H provides a better alternative to the uncertainty of the recommended self-evaluation of symptoms by creating way for patients to accurately record their symptoms from the comfort of their own home and relieve the healthcare system in these trying times. We aim to contribute in bridging the gap between technological innovations and the needs of the healthcare system to fully harness the power of data. C@H is developed by Business & Bytes, Ltd., a medical software solution provider that takes advantage of emerging technologies to create integrated solutions for healthcare providers and their patients, and validated by Vascular Research, a healthcare provider and our clinical partner during the solution's development.
Relevant Projects	• H2020 COVID-X

Nr.	30	Time	17:25	17:40
Title	**8BMGT: Eight Bells Maritime Gimbal-Enabled Thermal Camera**			
Presenter	**Mr. Emmanouil Fountoulakis** Senior Researcher and Project Manager			
Entity	**EIGHT BELLS LTD** EIGHTBELLS Independent Research & Consultancy			
Abstract	EIGHT BELLS, with a long-standing expertise in research and innovation projects, is further expanding its R&D portfolio by introducing an advanced thermal imaging family of products, incorporating uncooled thermal sensor, day camera and Laser Range Finder (LRF) applicable to all kinds of terrains including land, sea and air. The 8BMGT, inhouse designed and developed by EIGHT BELLS is an advanced gimbal-mounted camera capturing the infrared thermal radiation emitted by objects and humans. It requires no ambient light and operates during day and night under any weather conditions. The 8B THERMAL CAMERA supports video analytics and can be used for both ground and maritime applications.			
Relevant Projects	• H2020 RESPOND-A			

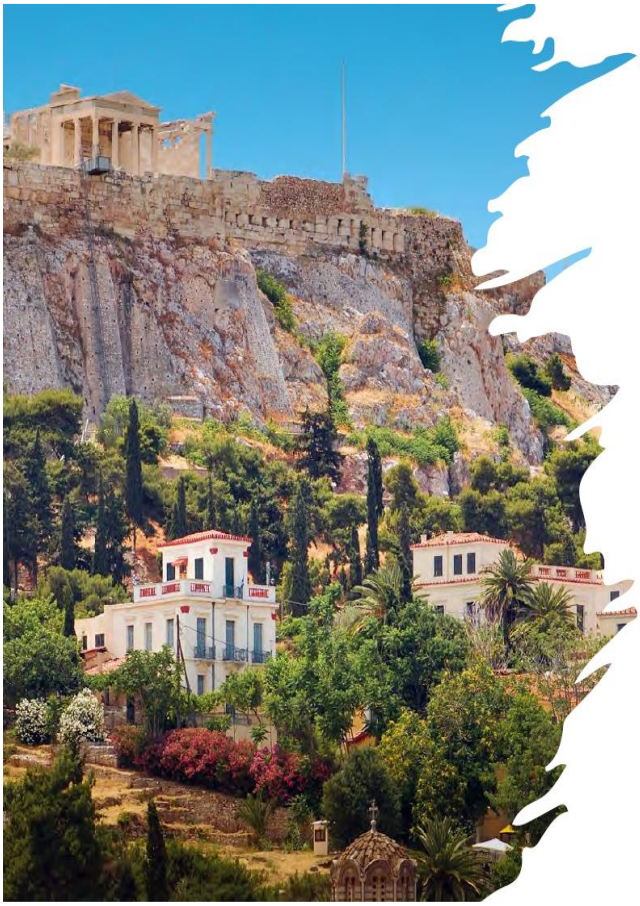
Nr.	31	Time	17:40	17:55
Title	**InfraStress: A situational awareness platform in service of collaborative crisis management.**			
Presenter	**Mr. Umberto Battista** Chief Technology Officer			
Entity	**STAM** STAM MASTERING EXCELLENCE			
Abstract	STAM is a multidisciplinary engineering firm which provides high-tech and turnkey solutions in the following domains: Industry 4.0 & Robotics, Space & Defence, Security & Transport, Energy & Bio-circular economy. Since 2010 we have enlarged our expertise to sensors and measuring techniques as well as IoT, High Performance Computing and Cloud. The enthusiasm and the cross-sectoral experience of the personnel is our main asset jointly with our patent's portfolio and our 500+ network of satisfied clients and partners across EU and beyond. INFRASTRESS addresses cyber-physical (C/P) security of Sensitive Industrial Plants and Sites (SIPS) Critical Infrastructures (CI) and improves resilience and protection capabilities of SIPS exposed to large scale, combined, C/P threats and hazards, and guarantee continuity of operations, while minimizing cascading effects in the infrastructure itself, the environment, other CIs, and citizens in vicinity, at reasonable cost. INFRASTRESS, with its 27 partners from 11 countries, achieved to build on preceding research towards a TRL 7 solution that includes threat detection, situational awareness, input from end-users and evaluation activities, presented in user-friendly services. With its integrated customized solutions, INFRASTRESS also hopes to help cultivate a culture of participation among all involved stakeholders, from the private and public sector to civil society and citizens.			
Relevant Projects	• H2020 INFRASTRESS			

Nr.	32	Time	17:55	18:10
Title	**Non-Public LTE/5G Networks for Airports**			
Presenter	**Mr. George Kontopoulos** Softwarized Networks Domain Director			
Entity	**EIGHT BELLS LTD** 			
Abstract	Airports globally face a lot of challenges making it hard to achieve profitability. As airports turn to transformative technology initiatives to tackle those challenges and capitalize on the massive data they generate, they find that connectivity on their campus is an important enabler for this digitalization journey. Wireless connectivity provided by private LTE/5G campus networks enables airports to consolidate existing legacy systems, reduce TCO and provide service to previously difficult to cover environments (under the wing). New use cases are emerging for the terminal, aircraft line maintenance at the gate, first responders, asset tracking, etc. Notable first mover is Aéroports de Paris embarking on a "Smart Airport" transformation project. Selecting the proper deployment option and defining the partner roles is critical for the success of non-Private network deployments.			
Relevant Projects	--			

Nr.	33	Time	18:10	18:25
Title	**SPIDER: a cyberSecurity Platform for vIrtualiseD 5G cybEr Range services**			
Presenter	**Mrs. Konstantina Papachristopoulou** Senior EU R&D Project Manager			
Entity	**EIGHT BELLS LTD** 			
Abstract	5G technologies through their potential to enable and support a spectrum of functions and applications are destined to play a major role towards the successful digital socio-economic transformation in the EU affecting a wide range of sectors such as IoT, energy utilities, healthcare, public safety, manufacturing, media and entertainment, transportation and finance. However, there are many security challenges and a broad spectrum of vulnerabilities to be taken into consideration towards 5G secure network architecture development. The increasing complexity of the telecommunication domain's cyber threat landscape intensifies the need for new security solutions and for improving the technical security skills of experts and non-experts in the multi-tenant and multi-service environments coming with the domain's 5th generation (5G). At the same time, attack mechanisms are increasingly sophisticated, pervading critical infrastructures despite billions of euros invested in cybersecurity measures. To address the above, SPIDER developed a sophisticated cyber range environment that provides its users (trainees) with the ability to master how to use domain-specific cyber protection technologies and collaboratively improve their ability to handle incidents and cyber risks. As a result, SPIDER has delivered a novel Cyber Range as a Service (CRaaS) platform targeting 5G deployments to assist cybersecurity professionals of various levels to enhance their skills by being trained under realistic conditions. The innovative SPIDER Platform extends and combines the capabilities of existing telecommunication testbeds and cyber ranges into a unified facility for (i) testing new security technologies, (ii) training modern cyber defenders in near real-world conditions, and (iii) supporting organisations and relevant stakeholders in making optimal cybersecurity investment decisions. At its core, it is a highly customisable dynamic network modelling instrument that enables			

	real-life virtualisation and emulation of networks and systems. It also offers real-time interaction and information sharing capabilities by acting as a serious gaming repository for multiple stakeholders to share material and maximise efficiency in delivering complex cyber exercises. SPIDER's gamified learning environment enables trainees to master how to use domain-specific cyber protection technologies and collaboratively improve their ability in handling incidents and risks. Complemented by cyber econometric capabilities, SPIDER also enables users to forecast the evolution of attacks and their associated economic impact through the application of innovative risk analysis methodologies, econometric models and real-time attack emulation. The proposed cyber range model is currently being validated in five highly realistic pilot use case scenarios aimed at demonstrating its applicability and validity. Learn more at https://spider-h2020.eu/.
Relevant Projects	• H2020 SPIDER

Welcome to Athens: a business and tourism hub



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