Special Sessions Program

(WEDST – Western European Daylight Savings Time, Local Time in Aveiro)

San Francisco	New York	Aveiro	Rome	New Delhi	Beijing
00:30h-02:30h PDST	03:30h-05:30h EDST	08:30h-10:30h WEDST	09:30h-11:30h CEST	13:00h-15:00h IST	15:30h-17:30h CT
03:00h-05:00h PDST	06:00h-08:00h EDST	11:00h-13:00h WEDST	12:00h-14:00h CEST	17:30h-19:30h IST	20:00h-22:00h CT
06:00h-08:00h PDST	09:00h-11:00h EDST	14:00h-16:00h WEDST	15:00h-17:00h CEST	20:30h-22:30h IST	23:00h-01:00h CT (Next Day)
08:30h-10:30h PDST	11:30h-13:30h EDST	16:30h-18:30h WEDST	17:30h-19:30h CEST	23:00h-01:00h IST (Next Day)	01:30h-03:30h CT (Next Day)

Spes-01	***"Future Platforms for Cloud-Edge Continuum – Theoretical Foundations and Practical Considerations"***
Organizers	**Marcin Paprzycki** - Systems Research Institute Polish Academy of Sciences, Warsaw, Poland **Rajkumar Buyya** - The University of Melbourne, Melbourne, Australia **Tarik Taleb** - The University of Oulu, Oulu, Finland **Maria Ganzha** - Warsaw University of Technology and Systems Research Institute, Warsaw, Poland **Carlos Palau** - Universitat Politecnica de Valencia, Valencia, Spain **Levent Gürgen** – Kentyou, Grenoble, France

	Spes-01 - Session 1		***Session 1: Future Platforms for Cloud-Edge Continuum***
	Monday October 16 11:00-13:00 WEDST (Hybrid – In person in Aveiro, Portugal and Virtual Live Online)	*1441*	***"Towards autonomous configuration management for IoT ecosystems*.",** Piotr Lewandowski[1], Wieslaw Pawlowski[2], Marcin Paprzycki[1], Maria Ganzha[1], and Ignacio Lacalle Ubeda[3]; (1) Polish Academy of Sciences, Warsaw, Poland; (2) University of Gdansk, Gdansk, Poland; (3) Universitat Politecnica de Valencia, Valencia, Spain.
	Room 5	*1275*	***"Design Concepts of the ASSIST-IoT Smart Orchestrator for Managing the Realization of NGIoT Systems*.",** Alejandro Fornés-Leal[1], Francisco Mahedero Biot[1], Rafael Vaño[1], Raúl Reinosa Simón[1], Pawel Szmeja[2], Ignacio Lacalle[1], and Carlos Enrique Palau[1]; (1) Universitat Politècnica de València, Valencia, Spain; (2) Polish Academy of Sciences, Warsaw, Poland.
		1346	

			"Emerging IoT Applications and Architectures for Smart Maritime Container Terminals.", Michalis Michaelides[1], Sheraz Aslam[1], Herodotos Herodotou[1], Eduardo Garro[2], Álvaro MartínezRomero[2], María A. Burgos[2], Alessandro Cassera[3], George Papas[3], and Petros Dias[3]; (1) Cyprus University of Technology, Limassol, Cyprus; (2) Prodevelop S.L., Valencia, Spain; (3) Eurogate Container Terminal, Limassol, Cyprus.
		1311	***"A novel approach to self-* capabilities in IoT industrial automation computing continuum.",*** Ignacio Lacalle[1], Salvador Cuñat[1], Andreu Belsa[1], Rafael Vaño[1], Raúl S-Julián[1], Philippe Buschmann[2], José Eduardo Fontalvo-Hernández[2], Korbinian Pfab[2], Renzo Bazan[2], Florian Gramß[2], Katarzyna Wasielewska-Michniewska[3], and Carlos Enrique Palau[1]; (1) Universitat Politècnica de València, Valencia, Spain; (2) SIEMENS AG, Nuremberg, Bavaria, Germany; (3) Systems Research Institute Polish Academy of Sciences, Warsaw, Poland.
Spes-02	***"[Special Session on Cybersecurity Issues of IoT in Ambient Intelligence Environment (2nd Edition)](#)"***		

Organizers		• **Abdellah Chehri** - Royal Military College of Canada, Kingston, Ontario, Canada • **Gwanggil Jeon** - Incheon National University, Incheon, Korea • **Imran Ahmed** - Anglia Ruskin University, Cambridge, UK • **Muhammad Zeeshan Shakir** - University of the West of Scotland, Paisley, Scotland, UK	
Spes-02 - Session 1 **Tuesday October 17 08:30-10:30 WEDST** (Hybrid – In person in Aveiro, Portugal and Virtual Live Online) **Room 5**	*1158* *1372* *1293*	*Session 1: Privacy, Efficiency and Anomaly Detection in IoT* *"Design and Implementation of a Simple Wireless Battery Monitoring System for Photovoltaic Applications*.", Roger Martin Crowter, and Nagham Saeed; University of West London, West Ealing, England, UK. *Federated Learning for IoT Networks: Enhancing Efficiency and Privacy,* Sofia Zahri[1], Hajar Bennouri[2], Abdellah Chehri[3], and Ahmed Mohamed Abdelmoniem Sayed[1]; (1) Queen Mary University of London, London, UK; (2) Technological University Dublin, Dublin, Ireland; and (3) Royal Military College of Canada, Kingston, Ontario, Canada. *"SIMAGRO: A prototype for network anomaly detection in agrifood IoT environments"*, Roberto Magán Carrión[1], Marta Fuentes García[2], Celia Fernández Rosales[2], and Patricia Maldonado Mancilla[2]; (1) University of Granada, Grenada, Spain; and (2) COSCYBER Fidesol, Granada, Spain.	
Spes-02 - Session 2		*Session 2: Enhancing Security in IoT*	

	Tuesday October 17 11:00-13:00 WEDST (Hybrid – In person in Aveiro, Portugal and Virtual Live Online) **Room 5**	*1285*	*"Predictive Maintenance and Time Series Analysis for Equipment Failure",* Muhammad Zia Ur Rehman[1], Abdellah Chehri[2]; and Anand Paul[1]; (1) Kyungpook National University, Daegu, South Korea; and (2) Royal Military College of Canada, Kingston, Canada.
		1307	*"Enhancing Security in Ambient Intelligence: A STRIDE Threat Modeling Perspective"*, Md Ismail Hossain, and Ragib Hasan; University of Alabama at Birmingham, Birmingham, Alabama, USA.
		1056	*"Rediscovering Fraud Detection in Bitcoin Transactions Using Machine Learning Models"*, Fernando Martinez[1], Mohamed Rahouti[1], Abdellah Chehri[2], Mohammad Ruhul Amin[1], and Nasir Ghani[3]; (1) Fordham University, New York, New York, USA; (2) Royal Military College of Canada, Kingston, Ontario, Canada; and (3) University of South Florida, Tampa, Florida, USA.

Spes-03	*"Advances on the Internet of Biological and medical things (AdIoBMT)"*

Organizers	• **Maria Fatima Domingues** - Khalifa University, Abu Dhabi, UAE • **Andrea Sciarrone** - University of Genoa, Genoa, Italy

	Spes-03 - Session 1 **Tuesday October 17 16:30-18:30 WEDST** (Hybrid – In person in Aveiro, Portugal and Virtual Live Online) **Room 5**	*Pres*	***Session 1: Advances on the Internet of Biological and Medical Things (AdIoBMT)*** ***Invited Speaker: "The Future of eHealth: Trends and Challenges in IoT based Applications",*** Chiara Garibotto, Digital Signal Processing (DSP) Laboratory - DITEN, University of Genoa, Genoa, Italy
		1443	***"Selective Lead Integration: Enhancing ECG Classification for Effective Cardiac Monitoring",*** Khalid Elgazzar, and Ahmad Mousa; Ontario Tech University, Oshawa, Ontario, Canada.
		1418	***"FBGs based solution for handgrip fine skills force evaluation.",*** Maria de Fatima Domingues[1], Matilde Rocha[2], Nelia Alberto[2], and Paulo Antunes[3]; (1) Khalifa University, Abu Dhabi, UAE; (2) Instituto de Telecomunicações, Aveiro, Portugal; and (3) University of Aveiro, Aveiro, Portugal.
		1286	***"A Digital Twin Framework for Personalized Healthcare Management Services"***, Hikmat Ullah, Najah AbuAli, and Mohammed Hayajneh; College of Information Technology, United Arab Emirates University, Abu Dhabi, UAE.
		1149	***"Improving Security Practices in Health Information Systems with STRIDE threat modeling***.", Md Ismail Hossain, and Ragib

			Hasan; University of Alabama at Birmingham, Birmingham, Alabama, USA.

Spes-04	***"[Software Engineering for the Industrial Internet of Things](#)"***		
	Organizers		• **Rui Pinto** - Faculty of Engineering of the University of Porto, Porto, Portugal • **Gil Gonçalves** - Faculty of Engineering of the University of Porto, Porto, Portugal • **Pedro Miguel Baptista Torres** - Polytechnic Institute of Castelo Branco, Castelo Branco, Portugal • **Paulo Leitão** - Polytechnic Institute of Bragança, Bragança, Portugal

	Spes-04 - Session 1 **Wednesday October 18 08:30-10:30 WEDST** (Hybrid – In person in Aveiro, Portugal and Virtual Live Online) **Room 5**	*1313* *1332* *1303* *1167*	***Session 1: Software Engineering for the Industrial Internet of Things*** ***"A Low-Cost Solution for Assets Location Tracking Based on LoRaWAN Networks",*** Ricardo Severino[1], António Serrador[1], Nuno Datia[1,2], Rogério Campos-Rebelo[3,4,5], and José Machado[3]; (1) Lisbon School of Engineering(ISEL), Polytechnic University of Lisbon, Lisboa, Portugal; (2) NOVALINCS, NOVA School of Science and Technology, Monte da Caparica, Portugal; (3) CTT-Correios de Portugal S.A, Lisboa, Portugal; (4) UNINOVA, Center of Technology and Systems, Monte de Caparica, Portugal; and (5) Polytechnic Institute of Beja, School of Technology and Management, Beja, Portugal. ***"A Blockchain Approach Towards Secure Industrial Internet of Things Management",*** Breno Pimentel, and Rui Pinto; Faculty of Engineering, University of Porto, Porto, Portugal. ***"Digital Factory: An Industrial Case Study for Function Block-Oriented Development",*** Gonçalo Pinto[1], Alexandre Nunes[1], Leandro Silva[1], Rui Pinto[2], João Pinheiro[2], and Anabela Ribeiro[3]; (1) Faculty of Engineering, University of Porto, Porto, Portugal; (2) SYSTEC, ARISE - Faculty of Engineering, University of Porto, Porto, Portugal; and (3) Continental Advanced Antenna, Sociedade Unipessoal, Lda, Vila Real, Portugal. ***"A Speculative Computing Approach to Accelerate the Task Execution in Cyber-Physical Systems",*** Eliseu Pereira, and Gil Gonçalves; Faculty of Engineering of the University of Porto; Porto, Portugal.
Spes-05	***"[GROWS: 6G-empoweRed iOt netWorkS](#)"***		

	Organizers		• **Daniel Nunes Corujo** - Instituto de Telecomunicacoes, Aveiro, Portugal • **Håkon Lønsethagen** – Telenor Research, Oslo, Norway • **Hasita Kaja** – Samsung Electronics, USA
	Spes-05 - Session 1 **Wednesday October 18 11:00-13:00 WEDST** (Hybrid – In person in Aveiro, Portugal and Virtual Live Online) **Room 5**	*Pres* *1064* *1296* *1343*	*Session 1: GROWS: 6G-empoweRed iOt netWorkS.* *Invited Speaker: "An approach to the new wireless technologies opportunities, by a European SME",* Mario Rui, Wavecom, Aveiro, Portugal. *"A Data Flow Programming Framework for 6G-Enabled Internet of Things Applications"*, Gabriele Baldoni[1,2], Julien Loudet[1], Carlos Guimarães[1], Sreeja Nair[1], and Angelo Corsaro[1]; (1) ZettaScale Technology, Saint Aubin, France; and (2) Universidad Carlos III de Madrid, Madrid, Spain. *"Designing an optimization framework for optimal electrical consumption"*, David Ribeiro Santos, and Rui Morais Silva; Instituto de Telecomunicações, Aveiro, Portugal. *"Evaluating Scalable Work Distribution Using IoT Devices in Fog Computing Scenarios",* Stefan Forsstrom and Hans Lindqvist; Department of Computer and Electrical Engineering (DET), Mid Sweden University, Sundsvall, Sweden.
Spes-06	"*Internet of Robotic Things*"		
	Organizers		• **Prabha Sundaravadivel** - The University of Texas at Tyler, Tyler, Texas, USA • **Thinagran Perumal** - Universiti Putra Malaysia, Selangor, Malaysia • **Soumya Kanti Dutta** – Digiotouch, Niece, France • **Preetha Roselyn** - SRM Institute of Science and Technology, Noida, Uttar Pradesh, India

	Spes-06 - Session 1 **Monday October 16 16:30-17:30 WEDST** (Hybrid – In person in Aveiro, Portugal and Virtual Live Online) **Room 5**	*1353* *1410*	***Session 1: Internet of Robotic Things*** *"Joint Traffic and Obstacle-aware UAV Positioning Algorithm for Aerial Networks.",* Kamran Shafafi, André Coelho, Rui Lopes Campos, and Manuel Ricardo; INESC TEC and Faculdade de Engenharia, Universidade do Porto, Porto, Portugal. *"Smart Road Reflector: Enhancing Road Health and Safety through Precise Sensing Technology.",* Md Sharif Ahmed[1], Prabha Sundaravadivel[1], and Lakshman Tamil[2]; (1) The University of Texas at Tyler, Tyler, Texas, USA; and (2) The University of Texas at Dallas, Richardson, Texas, USA.

		1411	*"Multi-Object Detection Using Enhanced Computer Vision Models for Underwater Systems.",* Md Sharif Ahmed[1], Maliha Kabir[1], Parker Wilmoth[1], Prabha Sundaravadivel[1], and Preetha Roselyn[2]; (1) University of Texas at Tyler, Tyler, Texas, USA; (2) SRM Institute of Science and Technology, Kattankulathur, Chennai, India.

Spes-07	*"Navigating the Opportunities and Challenges in Maritime IoT"*

Organizers	• **Rui Campos** - INESC TEC and Universidade do Porto, Porto, Portugal • **Filipe Borges Teixeira** - INESC TEC, and Universidade do Porto, Porto, Portugal • **Roberto Petroccia** - NATO STO-CMRE, Sarzana, Liguria, Italy

	Spes-07 - Session 1 **Thursday October 19 16:30-17:30 WEDST** (Hybrid – In person in Aveiro, Portugal and Virtual Live Online) **Room 5**	*1404* *1397* *1417*	*Session 1: Navigating the Opportunities and Challenges in Maritime IoT* *"Advancing Offshore Underwater Applications using a Robotic System with Robust Navigation and Virtual Supervision Capabilities."*, Ivan Loncar, Phillipe Santos, and Edin Omerdic; University of Limerick, Limerick, Ireland. *"DURIUS: A Multimodal Underwater Communications Approach for Higher Performance and Lower Energy Consumption*.", João Pedro Loureiro, Filipe B. Teixeira, and Rui Campos; INESC TEC and Faculdade de Engenharia, Universidade do Porto, Porto, Portugal. *"WELOC: Localizing Equipment in Marinas using Ultrasound."*, Trifun Savic[1], Keoma Brun-Laguna[1], and Thomas Watteyne[2]; (1) Wattson Elements – Falco, Paris, France; (2) National Institute for Research in Digital Science and Technology (Inria), Paris, France.
Spes-08	*"IoT for Agriculture and Aquaculture"*		
	Organizers		• **Stefano Giordano** - University of Pisa, Pisa, Italy • **Mike O Ojo** - Texas A&M University, College Station, Texas • **Mehmet Can Vuran** - University of Nebraska-Lincoln, Lincoln, Nebraska
	Spes-08 - Session 1 **Wednesday October 18**	*1319*	*Session 1: IoT for Agriculture and Aquaculture* *"IoT-based Solution to Reduce Waste and Promote a Sustainable Farming Industry."*, Bruno Matheu Moreira Stefanuto[1], Gustavo

	16:30-18:30 WEDST (Hybrid – In person in Aveiro, Portugal and Virtual Live Online) **Room 5**		Funchal[1], Victória Melo[1], André Mendes[1], Délio Raimundo[2], Hélia Gouveia[2], João Paulo Coelho[1], and Paulo Leitão[1]; (1) Instituto Politécnico de Bragança, Bragança, Portugal; (2) Campotec IN, Silveira, Torres Vedras, Portugal.
		1355	*"Internet of Things and Artificial Intelligence for Sustainable Agriculture: A Use Case in Citrus Orchards*.", Antonino Pagano[1,2], Federico Amato[1], Matteo Ippolito[1], Dario De Caro[1], Daniele Croce1,2, Antonio Motisi1, Giuseppe Provenzano1, and Ilenia Tinnirello[1,2]; (1) Università degli studi di Palermo, Palermo, Italy; (2) CNIT - Consorzio Nazionale Interuniversitario per le Telecomunicazioni, Parma, Italy.
		1421	*"A seedling handling system in a hydroponic greenhouse for homogeneous crop growth.",* Giuseppe Caruso, Marialaura Tamburello, Cristian Bua, Davide Adami, and Stefano Giordano; University of Pisa, Pisa, Italy.
		1289	*"3D Drone Path Planning Algorithms with Collision Avoidance: Collision Resolution vs. Prevention.",* Rutuja Dilip Shivgan[1], Jorge Medina[2], Ziqian (Cecilia) Dong[1], and Roberto Rojas-Cessa[2]; (1) New York Institute of Technology, New York, NY USA; (2) New Jersey Institute of Technology, Newark, New Jersey, USA.
Spes-09	*"[LPWAN and 5G/6G-enabled Artificial Intelligence of Things applications for Internet of Ships and Maritime Internet of Things](#)* "*		
	Organizers		• **Ana Maria Drăgulinescu** - Politehnica University of Bucharest, Bucharest, Romania • **Bogdan Ionescu** - Politehnica University of Bucharest, Bucharest, Romania • **Frank Yong Li** - University of Agder, Grimstad, Norway • **Octavia Dobre** - Memorial University of Newfoundland, St. John's, Canada • **Marius Vochin** - Politehnica University of Bucharest, Bucharest, Romania

	Spes-09 - Session 1 **Friday October 20** **16:30-18:30 WEDST** (Hybrid – In person in Aveiro, Portugal and Virtual Live Online) **Room 5**	*1361* *1379*	*Session 1: LPWAN and 5G/6G-enabled Artificial Intelligence of Things applications for Internet of Ships and Maritime Internet of Things* *"Enabling Reinforcement Learning for Network Slice Management in Multi-Agent 5G Networks*.", Larisa Mihaela Tufeanu[1], Marius-Constantin Vochin[1], Constantin-Laurentiu Paraschiv[1], and Frank Y. Li[2]; (1) University Politehnica of Bucharest, Bucharest, Romania; and (2) University of Agder, Grimstad, Norway. *"Maritime Internet of Things meets LoRaWAN: a container testbed, measurement campaign and dataset analysis*", Ana Maria Dragulinescu[1], Mihai Gabriel Constantin[1], Bogdan

		    1382 *1383* *1257*	Ionescu[1], Marius Vochin[1], and Razvan Tamas[2]; (1) Politehnica University of Bucharest, Bucharest, Romania; (2) Maritime University of Constanța, Constanța, Romania. *"Adaptive generative-music application for cognitive support during maritime and aerial travel*.", George Craioveanu, and Ioana Manuela Marcu; University Politehnica of Bucharest, Bucharest, Romania. *"Tridimensional Representation and Analysis of UltraWideband using Two Way Ranging for Maritime and Sports Applications.",* Cristian Alexandru Tanase, Anamaria Dumitescu, Ana-Maria Claudia Dragulinescu, and Bogdan Emanuel Ionescu; University Politehnica Bucharest, Bucharest, Romania. *"Enabling innovation in maritime ports and the need of the 6G candidate technologies: 5G-LOGINNOV showcase*.", Eusebiu Catana[1], Pavlos Basaras[2], and Ralf Willenbrock[3]; (1) ERTICOITS Europe, Brussels, Belgium; (2) Institute of Communication and Computer Systems (ICCS), Athens, Greece; and (3) TSystems International GMBH, Leinfelden-Echterdingen, Germany.
Spes-11	*"[Quantum Internet of Things](#)"*		

Organizers			• **Riccardo Bassoli** - Technische Universität Dresden, Dresden, Germany • **Holger Boche** - Technische Universität München, Munich, Germany • **Christian Deppe** - Technische Universität München, Munich, Germany • **Frank H.P. Fitzek** - Technische Universität Dresden, Dresden, Germany • **Janis Nötzel** - Technische Universität München, Munich, Germany
Spes-11 - Session 1 **Friday October 20 08:30-10:30 WEDST** (Hybrid – In person in Aveiro, Portugal and Virtual Live Online) **Room 5**	*Spes* *1300* *1271* *1392*		*Session 1: Hardware and Software for Future Quantum IoT* *Invited Speaker: "Deutsche Telekom's path to Quantum",* Dr. Marc Geitz, Deutsche Telekom, Munich, Germany. *"Microwave to Optical Conversion via Six-Wave Mixing for Optical Telecommunication Networks.",* Swaraj Shekhar Nande, Osel Lhamo, Riccardo Bassoli, and Frank H. P. Fitzek; Technische Universität Dresden, Dresden, Germany. *"Comparing Latency and Power Consumption: Quantum vs. Classical Preprocessing*.", Zuhra Merve Amiri, and Janis Nötzel; Technische Universität München, Munich, Germany. *"Design and Simulation of a Quantum-Classical Network Service Access Point Encoder*.", Buniechukwu Njoku, Sonai

			Biswas, Riccardo Bassoli, and Frank H. P. Fitzek; Technische Universität Dresden, Dresden, Germany.

	Spes-11 - Session 2 **Friday October 20 11:00-13:00 WEDST** (Hybrid – In person in Aveiro, Portugal and Virtual Live Online) **Room 5**	*1357* *1351* *1349* *1310*	*Session 2: Quantum IoT System's design and Security* *"An Operator's View on Opportunities and Challenges of Quantum Internet of Things*.", Leonardo Alexis Gonzalez[1], Ming Yin[2], Caspar Hopfmann[3], Matheus Ribeiro Sena[2], Marc Geitz[2], Oliver Holschke[2], Riccardo Bassoli[1], and Frank H. P. Fitzek[1]; (1) Technische Universität Dresden, Dresden, Germany; (2) Deutsche Telekom AG, Berlin, Germany; (3) Leibniz-Institut für Festkörper- und Werkstoffforschung, Dresden, Germany. *"Machine Learning Based Attack Detection for Quantum Key Distribution*.", Hilal Sultan Duranoglu Tunc, Yingjian Wang, Riccardo Bassoli, and Frank H. P. Fitzek; Technische Universität Dresden, Dresden, Germany. *"Common Randomness Generation for Information Theoretic Security in Post-Quantum Internet of Things.",* Prashanth Kumar Herooru Sheshagiri, Siddharth Das, Juan Alberto Cabrera, Riccardo Bassoli, and Frank H. P. Fitzek; Technische Universität Dresden, Dresden, Germany. *"Quantum Static Remote Attestation.",* Davide Li Calsi, and Janis Noetzel; Technical University of Munich, Munich, Germany.
Spes-12	*"IoT for Road Safety: Innovations, Challenges, and Future Directions"*		
	Organizers		• **Abd-Elhamid Taha** - Alfaisal University, Riyadh, Saudi Arabia • **Sharief Oteafy** - DePaul University, Chicago, Illinois, USA • **Mohamed Abusharkh** - Ferrist State University, Big Rapids, Michigan, USA

Spes 12 - Session 1 **Thursday October 19 08:30-10:30 WEDST** (Hybrid – In person in Aveiro, Portugal and Virtual Live Online) **Room 5**		*Session 1: IoT Architectures for Road Safety*	
	1373	*"Towards Accountable Self-Driving Cars: A Framework for Identifying the Cause of Autonomous Traffic Collisions.",* Yasmin Hisham Mansy, Nourhan Ehab, and Amr Elmougy; New Cairo, Egypt.	
	1189	*"A Framework to Support Collection, Processing and Analysis of Smart Vehicles Data*.", Mariana Azevedo1, Thais Medeiros[1], Morsinaldo Medeiros[1], Carlos Viegas[1], Marianne Silva[1], Ivanovitch Silva[1], and Daniel G. Costa[2]; (1) Federal University of Rio Grande do Norte, Natal, Rio Grande do Norte, Brazil; (2) University of Porto, Porto, Portugal. *This paper has been presented in Session 2 of Topical Track 02.*	
	1306	*"M-IIoT System for Reducing Bandwidth Costs in Cloud-Hybrid Multimedia Pipelines.",* Fuad Shamieh[1], and Xianbin Wang[2]; (1) TripleLift, Manhattan, New York City, NY USA; (2) Western University, London, Ontario, Canada.	
	1402	*"A Software QA Framework for Autonomous Vehicle open source application: OpenPilot.",* Khalid Ali[1], Manar Jammal[1], Mohamed Abu Sharkh[2]; (1) York University, Toronto, Ontario, Canada; (2) Ferris State University, Grand Rapids, Michigan, USA.	

Spes 12 - Session 2 **Thursday October 19 11:00-13:00 WEDST** (Hybrid – In person in Aveiro, Portugal and Virtual Live Online) **Room 5**		*Session 2: IoT Testbeds for Road Safety*
	1405	*"DigiWays: A Digitalisation Testbed for Sustainable Traffic Management on Swedish Motorways*.", Xiaoliang Ma[1], Jiaqui Xu[1], Magnus Nordenvaad[2], and Tomas Julner[2]; (1) KTH Royal Institute of Technology, Stockholm, Sweden; (2) Swedish Transport Administration, Stockholm, Sweden.
	1324	*"Keep Calm and Cross: Smart Pole Interaction Unit for Easing Pedestrian Cognitive Load*.", Vishal Chauhan, Chia-Ming Chang, Ehsan Javanmardi, Jin Nakazato, Koki Toda, Pengfei Lin, Takeo Igarashi, and Manabu Tsukada; The University of Tokyo, Tokyo, Japan.
	1264	*"Assessing the Robustness of LiDAR, Radar and Depth Cameras Against Ill-Reflecting Surfaces in Autonomous Vehicles: An Experimental Study.",* Michael Lötscher, Nicolas Weiming Baumann, Edoardo Ghignone, Andrea Ronco, and Michele Magno; ETH Zurich, Zurich, Switzerland.
	1316	*"Containerized edge architecture for centralized Industry 4.0 fleet management.",* Ander Garcia, Javier Tardos, Juan Luis Ferrando, and Telmo Fernandez; Vicomtech Foundation, Basque Research and Technology Alliance (BRTA), San Sebastian, Spain.