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 **Monday October 16** **11:00-13:00 WEDST** (Hybrid – In person in Aveiro, Portugal and Virtual Live Online) **Room 5**	*1441* *1275* *1346*	***Session 1: Future Platforms for Cloud-Edge Continuum*** ***"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. ***"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.

		1311	***"Emerging IoT Applications and Architectures for Smart Maritime Container Terminals.",*** Michalis Michaelides[1], Sheraz Aslam[1], Herodotos Herodotou[1], Eduardo Garro[2], Álvaro Martínez-Romero[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. ***"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* *1307* *1056*	***"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. ***"Enhancing Security in Ambient Intelligence: A STRIDE Threat Modeling Perspective***", Md Ismail Hossain, and Ragib Hasan; University of Alabama at Birmingham, Birmingham, Alabama, USA. ***"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* *1443* *1418* *1286* *1149*	***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 ***"Selective Lead Integration: Enhancing ECG Classification for Effective Cardiac Monitoring",*** Khalid Elgazzar, and Ahmad Mousa; Ontario Tech University, Oshawa, Ontario, Canada. ***"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. ***"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. ***"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**		***Session 1: Software Engineering for the Industrial Internet of Things***
		1313	***"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.
		1332	***"A Blockchain Approach Towards Secure Industrial Internet of Things Management",*** Breno Pimentel, and Rui Pinto; Faculty of Engineering, University of Porto, Porto, Portugal.
		1303	***"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.
		1167	***"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 • **Hesitate 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**		***Session 1: GROWS: 6G-empoweRed iOt netWorkS.***
		Pres	***Invited Speaker: "An approach to the new wireless technologies opportunities, by a European SME",*** Mario Rui, Wavecom, Aveiro, Portugal.
		1064	***"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.
		1296	***"Designing an optimization framework for optimal electrical consumption***", David Ribeiro Santos, and Rui Morais Silva; Instituto de Telecomunicações, Aveiro, Portugal.
		1343	***"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**		***Session 1: Internet of Robotic Things***
		1353	***"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.
		1410	***"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**		***Session 1: Navigating the Opportunities and Challenges in Maritime IoT***
		1404	***"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.
		1397	***"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.
		1417	***"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**		***Session 1: IoT for Agriculture and Aquaculture***
		1319	***"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**	 *1355* *1421* *1289*	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. ***"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. ***"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. ***"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

			Ionescu[1], Marius Vochin[1], and Razvan Tamas[2]; (1) Politehnica University of Bucharest, Bucharest, Romania; (2) Maritime University of Constanța, Constanța, Romania.
		1382	***"Adaptive generative-music application for cognitive support during maritime and aerial travel***.", George Craioveanu, and Ioana Manuela Marcu; University Politehnica of Bucharest, Bucharest, Romania.
		1383	***"Tridimensional Representation and Analysis of Ultra-Wideband 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.
		1257	***"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) ERTICO-ITS Europe, Brussels, Belgium; (2) Institute of Communication and Computer Systems (ICCS), Athens, Greece; and (3) T-Systems 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**		***Session 1: Hardware and Software for Future Quantum IoT***
		Spes	***Invited Speaker: "Deutsche Telekom's path to Quantum",*** Dr. Marc Geitz, Deutsche Telekom, Munich, Germany.
		1300	***"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.
		1271	***"Comparing Latency and Power Consumption: Quantum vs. Classical Preprocessing***.", Zuhra Merve Amiri, and Janis Nötzel; Technische Universität München, Munich, Germany.
		1392	***"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**	 *1373* *1189*	***Session 1: IoT Architectures for Road Safety*** ***"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. ***"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.

		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.