Program of the International Symposium on Advanced Electrical and Communication Technologies (ISAECT-2019)

November 27th – 29th, 2019

University of Rome Tor Vergata - Rome, Italy

www.isaect.org

Date	Time	Event
Day 1 – Wednesday November 27th, 2019	08:00 am – 09:00 am	Registration
	09:00 am – 10:00 am	Opening Ceremony – Room Leonardo **Prof. Orazio Schillaci (Rector of University of Rome Tor Vergata)** **Prof. Michele Luglio (General Co-Chair)** **Prof. Mohamed Nabil Srifi (General Co-Chair)** **Prof. Ernesto Limiti (Director of Electronics Engineering Dpt of University of Rome Tor Vergata)** **Eng. Enrico Russo (Honorary chair – CTO Italian Space Agency)**
	10:00 am – 10:30 am	**Coffee Break**
	10:30 am – 11:15 am	**Keynote Speaker 1: Chair Prof. Mario Marchese** **Prof. Mohamad Obaidat** *College of Computing and Informatics, University of Sharjah, UAE* **Risk-Based Authentication Technique Using Biometrics in Web Environment Systems** Room Leonardo
	11:15 am – 12:00 pm	**Keynote Speaker 2: Chair Prof. Mohamed Nabil Srifi** **Prof. Luciano Tarricone** *University of Salento, Italy* **Safe, Sustainable and Low-cost Electromagnetic Technologies for the Internet of Things** Room Leonardo
	12:00 pm – 01:15 pm	**Lunch**
	01:15 pm – 02:00 pm	**Keynote Speaker 3: Chair Prof. Cesare Roseti** **Prof. Fabrizio Granelli** *University of Trento, Italy* **Virtualization and Softwarization in 5G Wireless Networks and Beyond** Room Leonardo
	02:00 pm – 03:15 pm 1 4 p a p e r s	**Session 1.1: Smart City** – Room Leonardo - **Chairs S1.1:** Giovanni Vitale ***ID: 29*** ***Study of component noise of digital MEMS gyroscope*** Antonino D'Alessandro, Giovanni Vitale, Salvatore Scudero and Luca Greco **ID: 28** ***New ultraportable data logger to perform magnetic surveys*** Giovanni Vitale, Salvatore Scudero, Antonino D'Alessandro, Antonino Fabio Pisciotta, Raffaele Martorana and Patrizia Capizzi **ID: 96** ***Utilizing Resonant Scattering Signal Characteristics of Magnetic Spheres via Deep Learning for Improved Target Classification*** Alper Selver, Tugce Toprak, Mustafa Secmen and Yesim Zoral **ID: 97** ***Machine Learning Based Bounding Box Regression for Improved Pedestrian Detection*** Alper Selver **ID: 14** ***A Data Mining Approach to Student Performance Prediction within Internet-worked Environments*** Esther Khakata, Vincent Omwenga and Simon Samwel Msanjila
		Session 1.2: Satellite networks and 5G – Room Galileo - **Chairs S1.2:** Prof. Francesco Zampognaro **ID: 47** ***Satellite as a virtual edge application for 5G service continuity in mobility*** Cesare Roseti **ID: 20** ***Global Aggregated Traffic Model for LEO Satellite Constellation IoT Network*** Zhicheng Qu, Yifan Cheng and Gengxin Zhang **ID: 50** ***Enabling CoDel AQM with TCP Cubic connections over satellite links*** Francesco Zampognaro **ID: 52** ***Performance evaluation of a QUIC-based proxy architecture over a hybrid satellite-terrestrial backhaul network*** Mattia Quadrini

		ID: 78 ***5G4Space*** Alessandro Di Mezza and Alessandro Vanelli Coralli
		Session 1.3: Energy – Room Archimede – **Chair S1.3** Prof. Stefano Bifaretti **ID: 12** ***Enhancement of Secrecy Throughput Performance in a Cooperative Network with Interference-assisted Energy Harvesting*** Chandrima Thakur and Sudipta Chattopadhyay **ID: 67** ***Neural network architecture to detect system faults / cyberattacks anomalies within a photovoltaic system connected to the grid*** Giovanni Battista Gaggero, Mansuero Rossi, Paola Girdinio and Mario Marchese **ID: 18** ***Harmonic Interaction Effects on Power Quality and Electrical Energy Measurement System*** Roberto Silva, Rodolfo Quadros, Hamid Shaker and Luiz Silva **ID: 27** ***An Investigation of Cell Efficiency of Pathor Kuchi Leaf (PKL) Cell for Electricity Generation*** Md. K. A. Khan, Akhlaqur Rahman, Shuva Paul, Md. Siddikur Rahman, Tanvir Ahad and Md. Al Mamun
	03:15 pm – 03:45 pm	**Coffee Break**
	03:45 pm – 05:00 pm 15 papers	**Session 1.4: Smart City 2** – Room Leonardo - **Chairs S1.1:** Prof. Pradeep Reddy CH **ID: 21** ***BLDC control method optimized by PSO algorithm*** Aymen Flah, Berkati Ousama, Sbita Lassaad, and Mohamed Nabil Srifi **ID: 33** ***A multi-objective optimization approach for sustainable supply chains incorporating business strategy*** Esma Bozgeyik and Metin Türkay **ID: 36** ***Intelligent Decision Making Support System for Smart City Governance and Management*** Vasily Popovich, Tatiana Popovich and Oksana Smirnova **ID: 63** ***Sensors system methodology for artefacts identification in Virtual Reality games*** Oana Balan, Alin Moldoveanu, Livia Petrescu, Gabriela Moise, Stefania Cristea, Catalin Petrescu, Florica Moldoveanu and Marius Leordeanu **ID: 44** ***Forecasting Public Electricity Consumption with ARIMA Model: A Case Study from Italian Municipalities Energy Data*** Michele Angelaccio
		Session 1.5: 5G and networks – Room Galileo - **Chairs S1.5:** Prof. Syamsuri Yaakob **ID: 24** ***5G Architecture: Deployment scenarios and options*** Amine El Rhayour and Tomader Mazri **ID: 39** ***Characteristics of RoF Millimeter-wave Generation for 5G System*** Syamsuri Yaakob, Zuraidah Zan, Romli Mohamad, Mohd Rashidi Che Beson, Muhammad Zamzuri Abdul Kadir and Sevia Mahdaliza Idrus **ID: 68** ***Towards Increasing the LoRa Network Coverage: A Flying Gateway*** Aya Moheddine, Mario Marchese and Fabio Patrone **ID: 69** ***Virtualizing LoRaWAN Nodes: a CoAP-based Approach*** Antonio Cilfone, Luca Davoli and Gianluigi Ferrari **ID: 73** ***Testing Distributed Cloud: A Case Study*** Fatima-Zahra Moutai, Sara Hsaini, Salma Azzouzi and My El Hassan Charaf

		Session 1.6: Antennas – Room Archimede - **Chairs S1.1:** Prof. Prof. Mohamed Nabil Srifi **ID: 2** ***A Novel Super Wideband Circular Fractal Antenna for Energy Harvesting Applications*** Kayhan Celik and Erol Kurt **ID: 25** ***Double-Slotted Multiband Bowtie Antenna*** Osama Ata and Mutaz Jawadeh **ID: 46** ***Dual Band CPW-Fed Double Monopole Antenna for 2.4/5.8 GHz ISM band Medical Applications*** Chaïmaâ Kissi, Mariella Särestöniemi, Marko Sonkki, Sami Myllymäki, Mohamed Nabil Srifi, Heli Jantunen and Carlos Pomalaza-Raez **ID: 72** ***Reducing the curl-curl matrix bandwidth in 2D magnetostatics using tree-cotree method*** Petr Domnikov **ID: 53** ***Bandwidth Enhancement of Trapezoid Antenna Using an Open F-rotated and I-shaped Slots Defected Ground Structures (DGS)*** Mourad Elhabchi, Mohamed Nabil Srifi and Raja Touahni
Day 2 – Thursday November 28th, 2019	08:15 am – 09:00 am	Registration
	09:00 am – 09:45 am	**Keynote Speaker 4: Chair Prof. Mario Marchese** **Dr Yuri Rassega** *Enel, Italy* **Cyber Security Risk Management in a global energy company – The Enel case** Room Leonardo
	09:45 am – 10:30 am	**Keynote Speaker 5: Chair Osama Ata, Akhlaqur Rahman** **Prof. Sung Ho Cho** *Hanyang University, Seoul, South Korea* **UWB Radar Sensors for Elderly Health Monitoring** Room Leonardo
	10:30 am – 10:45 am	**Coffee Break**
		Session 2.1: Smart City 3 – Room Leonardo - **Chairs S2.1**: Prof. Sung Ho Cho **ID: 65** ***A Perceptually Optimized Wavelet Foveation Based Embedded Image Coder and Quality Assessor Based Both on Human Visual System Tools*** Abderrahim Bajit and Ahmed Tamtaoui **ID: 74** ***Sustainable Tourism Using Decision Support System Based On System Dynamics: A Case Study From Amsterdam*** Mahak Sharma and Rajat Sehrawat **ID: 66** ***Harmonic Analysis of LED Biodynamic Lighting Luminaires in Buildings*** Canan Perdahci **ID: 77** ***Multi-objective Optimization of Electric Vehicles Facing Uncertainty*** Oumayma Bahri and El-Ghazali Talbi **ID: 38** ***Simultaneous Localization and Mapping with Application to Monitoring of Underground Transportation Infrastructure*** Antonio Marangi, Khashyar Olia, Fred Daneshgaran, Nicola Bruno, Fausto Lizzio and Marina Mondin **ID: 31** ***Route Balancing Vehicle Routing Problem with Time Windows for Urban Logistics*** Banu Ulusoy and Metin Türkay **ID: 49** ***Sensorless control of PMSM Drive with BEMF based MRAC Algorithm*** Suryakant Shukla, Mini Sreejeth and Madhusudan Singh

	10:45 am – 12:30 am 2 0 p a p e r s	**Session 2.2: Eenergy 2** – Room Galileo - **Chairs S2.2**: Prof. Prof. Jawad Fawaz Farraj Al Asad **ID: 19** ***The Optimal Energy Management in the Smart Microgrid Considering Demand Response Program and Energy Storage*** Sobhan Dorahaki, Rahman Dashti and Hamid Reza Shaker **ID: 26** ***Optimal Sizing of Renewable Energy Resources in a Microgrid for a Distributed Generation System*** Astitva Kumar, Mohammad Rizwan and Uma Nangia **ID: 40** ***Adaptive Fuzzy Self-Tuning PI Controller of Onboard Energy Storage System for Railway Braking Energy Recovery*** Sadiq Eziani and Mohammed Ouassaid **ID: 62** ***Large area perovskite solar modules with improved efficiency and stability*** Sara Pescetelli, Antonio Agresti, Stefano Razza, Luigi Angelo Castriotta and Aldo Di Carlo **ID: 41** ***An Accurate Fault Location Algorithm for Smart Electrical Distribution Systems Equipped with Micro Phasor Measurement Units*** Hamid Mirshekali, Rahman Dashti and Hamid Reza Shaker **ID: 13** ***Design and Analysis of Cascaded Generalized Integrators for Mitigation of Power Quality Problems*** Hemant Saxena, Alka Singh and Jitendra Nath Rai
		Session 2.3: Innovative Transmission Systems – Room Archimede - **Chairs S2.3**: Prof. Osama Ata **ID: 30** ***Optimal Rules Mining in SON for Distributed Intelligence in Future Cognitive Cellular Networks*** Gerald Budigiri, Diego Fernando and Stephen Mwanje **ID: 61** ***VLC channel equalization simulator based on LMS algorithm and virtual instrumentation*** Radek Martinek, Lukas Danys, Rene Jaros, David Mozny, Petr Siska and Jan Latal **ID: 82** ***Effect of Carbon Dioxide on SDR-Based Modulated Optical Beams for Free Space Optical Link*** Jan Latal, Zdenek Wilcek, Jakub Kolar, Filip Sarlej and Radek Martinek **ID: 83** ***Measurement of the Energy propagation in Optical Splitters due to High-Power and Gamma Radiation Load*** Jan Latal, Zdenek Wilcek, Jakub Kolar, Filip Sarlej and Radek Martinek **ID: 99** ***Multiple-Input Single-Output Universal Biquad Filters Using Reduced Number of OTAs*** Ajishek Raj, Pragati Kumar and Data Ram Bhaskar **ID: 100** ***Realization of Single CCCDTA based incremental/decremental type Memconductance Emulator*** Damyanti Singh and Neeta Pandey **ID: 89** ***LLR–Based Hybrid On–Off Relaying in Rayleigh Fading*** Wassim Alexan, Refaat Mohamed, Mohamed Magdy, Abdullah Mohamed and Hisham Hussein
	12:30 am – 01:30 pm	**Lunch**
	01:30 pm – 02:15 pm	**Keynote Speaker 6: Chair Prof. Jawad Fawaz Farraj Al Asad** **Prof. Giacomo Oliveri** *University of Trento, Italy* **Compressive Sensing as applied to Electromagnetic Engineering: Recent Advances and Current Trends** Room Leonardo
	02:15 pm – 03:00 pm	**Keynote Speaker 7: Chair Yorgos J. Stephanedes** **Prof. Franco Chiaraluce** *Polytechnic University of Marche, Italy* **Code-based post-quantum cryptography** Room Leonardo
	5:30 pm	**Guided Tour**

	7:15 pm	**Gala Dinner**
	10:00 pm	**Back to hotels**
Day 3 – Friday November 29th, 2019	09:00 am – 09:45 am	**Keynote Speaker 8: Chair Prof. Michele Angelaccio & Prof. Radek Martinek** **Prof. Yorgos J. Stephanedes** *University of Patras, Greece* **C-ITS and Risk Management in Smart Cities** Room Leonardo
	09:45 am – 10:30 pm	**Keynote Speaker 9: Chair Prof. Michele Angelaccio & Prof. Radek Martinek** **Prof. Hamid Reza Shaker** *University of Southern Denmark* **Smarter Maintenance for Smarter Cities** Room Leonardo
	10:30 am – 11:00 am	**Coffee Break**
		Session 3.1: Medical applications for Smart City – Room Leonardo - **Chairs S3.1:** Prof. Mounir Arioua **ID: 17** ***An Efficient Smart Cane Based Navigation System for Visually Impaired People*** Akhlaqur Rahman, Kh. Fatema Nur Malia, Md. Milan Mia, A.S.M Mehedi Hasan Shuvo, Mahmudul Hasan Nahid and A.T.M. Manfat Zayeem **ID: 94** ***Adaptive In Silico Knowledge Discovery Based on Data Analytics and Visualization Supporting Precision Medicine*** Veska Gancheva **ID: 86** ***Lumbar Posture Correction by Vibratory / Auditory Stimulation*** Rio Sugiyama, Naoaki Tsuda, Yoshihiko Nomura and Norihiko Kato **ID: 22** ***Fetal ECG Signal Processing by Different ICA-based Algorithms*** Rene Jaros, Radek Martinek, Lukas Danys, Jan Latal and Petr Siska **ID: 42** ***FPGA Implementation of CNN Algorithm for Detecting Malaria Diseased Blood Cells*** Serkan Sağlam, Fatih Tat and Salih Bayar **ID: 59** ***Extraction of Fetal Electrocardiogram by Independent Component Analysis*** Rene Jaros, Radek Martinek, Katerina Barnova and Martina Ladrova **ID: 43** ***Spectral Decomposition by Schur for Medical Ultrasound Image Denoising*** Jawad F. Al-Asad, Muhammad O. Butt, Adil H. Khan

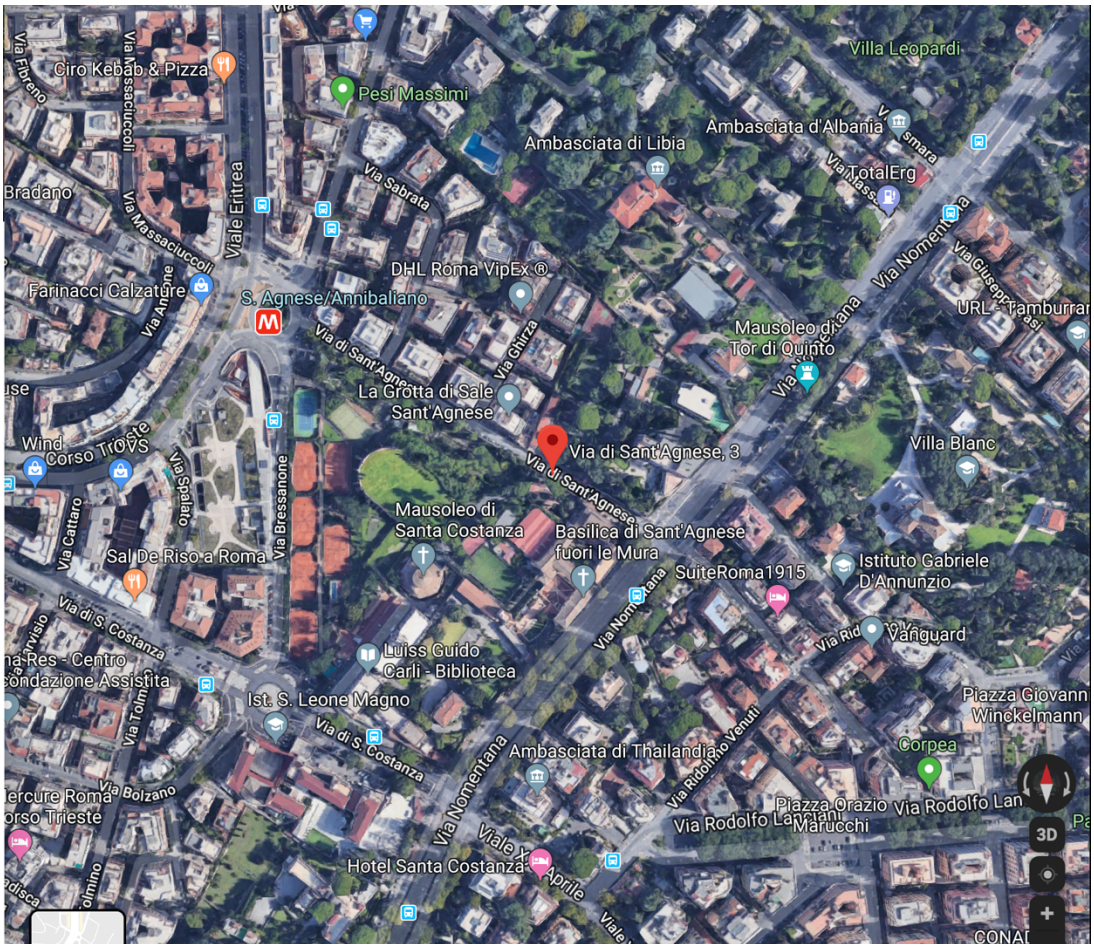
	11:00 am – 12:30 pm 1 6 p a p e r s	**Session 3.2: Technology for satellite systems** – Room Galileo - **Chairs S3.2:** Eng. Giuseppe Grelli **ID: 79** ***Development of a MMIC chip-set for W-band space-borne communications*** Patrick Ettore Longhi, Carlo Antonio Leone, Lorenzo Pace, Silvio Fenu, and Ernesto Limiti ***ID: 51*** **Development of a V-Band MMIC chip-set for in-orbit Inter-Satellite Links** Lorenzo Pace, Patrick Ettore Longhi, Silvio Fenu, Walter Ciccognani, Sergio Colangeli and Ernesto Limiti **ID: 98** ***Development and Experimental Validation of a Super-Synchronized Phasor Measurement Unit*** Quirino Morante, Enrico Varriale, Alfredo Vaccaro and Antonio Pepiciello **ID: 84** ***Satellite Communication for ATM: Space Segment Definition Description*** Roberto Winkler, Stefano La Barbera, Alessia Miglietta, Paolo Conforto, Carla Marrone, Stefano Buratti, Marco Blanchi and Luca Pandolfi **ID: 37** ***Modulation Domain Encrypted Transmission Based on Chaotic Sequence for Satellite Communication*** He Qihui, Yuan Shuai and Zhu Lidong
		Session 3.3: Antennas and Transmission systems – Room Archimede - **Chairs S3.3:** Prof. Gamal Khalaf **ID: 91** ***Single and Double staircase FMCW waveforms for enhanced range and velocity resolutions*** Walaa Sahyoun, Abdul Rahman El Falou and Zeina Al Masri **ID: 106** ***Experimental Demonstration of 20 Mb/s Underwater Wireless Optical Communications Using Directly Modulated 460 nm Blue LED*** Mohd Rashidi Che Beson, Syamsuri Yaakob, Syed Alwee Aljunid Syed Junid, Anuar Mat Safar and Abdul Rahman Kram **ID: 55** ***Research on collaborative beamforming for a distributed satellite cluster based on Convex Optimization*** Luoman Yu, Yi Fan Cheng, Tao Hong and Gengxin Zhang **ID: 58** ***Improve the robustness of MVDR beamforming method based on steering vector estimation and sparse constraint*** Elie Khalil and E. N Ibrahim
	12:30 pm – 01:15 pm	
	01:15 pm – 02:15 pm	**Lunch**
		Session 3.4: ITAL-GOVSATCOM – Room Leonardo - **Chairs S3.4:** Eng. A. Tuozzi, Eng. E. Russo **ID: 101** ***ITAL-GOVSATCOM GEO Telecommunication Satellite for Institutional Users*** Massimiliano Marcozzi, Francesca Finocchiaro, Francesca Pieralice, Rodolfo Mura, Enrico Russo, Giacomo Raimondo and Giampiero Di Paolo **ID: 102** ***Electric propulsion subsystem for the I-GSC geostationary platform*** Tommaso Andreussi, Tommaso Misuri and Massimiliano Marcozzi **ID:107** ***ITAL-GOVSATCOM: The Italian Communication system solution for GovSatCom Users*** Alessandro Pisano, **ID: 108** ***ITAL-GOVSATCOM: the New Italian TLC Satellite System for Secure Communications*** Antonio Ceccarelli, Marco Ferrari, Ennio Guarino

	02:15 pm – 03:15 pm 15 papers	**Session 3.5 5G and networks 2:** – Room Galileo - **Chairs S3.5:** Prof. Pradeep Reddy CH **ID: 81** ***An Optimized Security Vehicular Internet of Things -IoT-Application Layer Protocols OSMQTT and OSCOAP Based on Cryptographic Elliptic-Curve*** Abderrahim Bajit, Omar El Omari and Ahmed Tamtaoui **ID: 90** ***A Hybrid TDMA-NOMA Based M2M Communications over Cellular Networks with Dynamic Clustering and 3D Channel Models*** Anthonya Barsha Rozario and Md. Farhad Hossain **ID: 95** ***Backhaul-Aware Scheduling for LWA with Energy-Throughput Tradeoff for an In-Order Packet Arrivals*** Mahmoud Elmesalawy, Gamal Khalaf and Eman Serag **ID: 71** ***Implementation details to reduce the latency of an SDN Statistical Fingerprint-Based IDS*** Alessandro Fausto and Mario Marchese
		Session 3.6: Energy – Room Archimede - **Chairs S3.6:** Prof. Mounir Arioua **ID: 75** ***FPGA Based Fault Distance Detection and Positioning of Underground Energy Cable by UsingGSM/GPRS*** Guner Tatar, Osman Kılıç and Salih Bayar **ID: 76** ***Low temperature process of homogeneous and pin-hole free Perovskite layers for fully coated photovoltaic devices up to 256 cm2 area at ambient condition*** Luigi Vesce, Maurizio Stefanelli and Aldo Di Carlo **ID: 88** ***Study on Dielectric Properties of Epoxy Resin Nano-Composites*** Prabath Karunarathna, Kavish Chithradewa, Sameera Kumara, Chinthaka Weerasekara, Rasara Samarasinghe and Thushara Rathnayake **ID: 92** ***ULTRACAPACITOR high power booster for Dynamic wireless charging*** Salma Sraidi, Mohamed Maaroufi, Karim El Arnabi and Nadia Machkour
		Session 3.7: Medical applications for Smart City 2 – Room Pitagora - **Chairs S3.7:** Prof. Rene Jaros **ID: 60** ***Use of a Hybrid Method ICA-PCA-ICA for Fetal Electrocardiography Extraction*** Rene Jaros, Radek Martinek, Katerina Barnova and Martina Ladrova **ID: 64** ***The Contribution of Neuroscience to Biodynamic Lighting System*** Canan Perdahci and Deniz Yuce **ID: 85** **A 5G monitoring for workers health and safety through wearables and computational intelligence** Antonio Pallotti, Emanuela Tagliente
	03:15 pm	**Closing Ceremony**

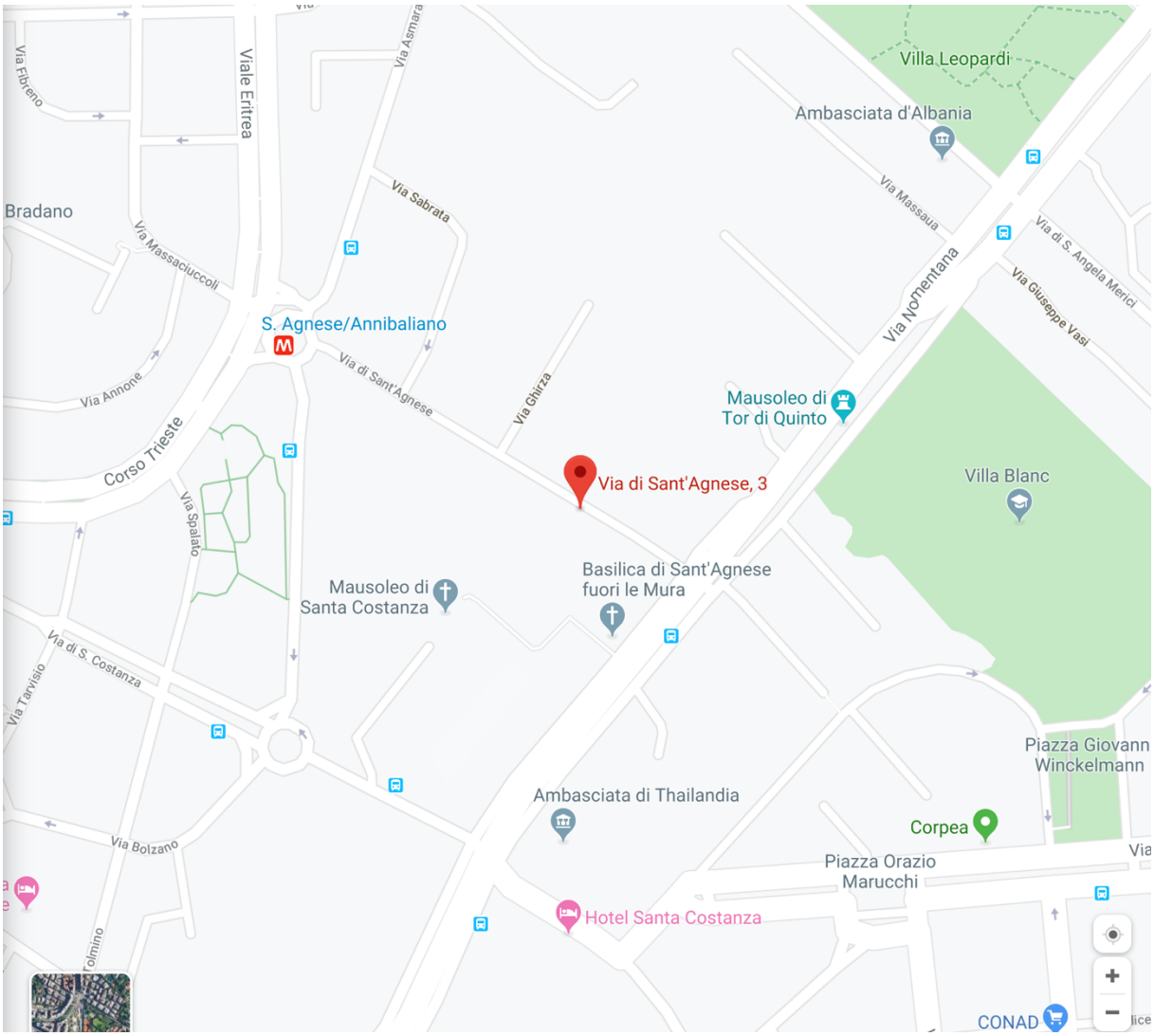
SOCIAL EVENT AND GALA DINNER

The organizing Committee of the ISAECT2019 cordially invites all participants and accompanying persons to attend the Social Events and Gala Dinner.

The social event will be a Guided Tour of St. AGNES BASILICA and of MAUSOLEUM OF COSTANZA on November 28, 2019, from 17h30 to 19h15.
The appointment is at **Via di Sant'Agnese 3**.



The Gala Dinner will be hosted in the same premises on November 28, 2019, at the end of the guided tour, from 19h20 to 22h00.



To reach via di Sant'Agnese it is possible to take the **metro line B1** and get off at **S. Agnese/Annibaliano** and then 100 m walking turning on via di Sant'Agnese from Annibaliano square.
The metro line B1 can be taken from Termini station, if you are on the metro line A, direction Jonio, but also from any other station of metro line B. Pay attention that line B and line B1 are different. They partially share the same path (from Laurentina to Bologna) but the common part doesn't include S. Agnese/Annibaliano station.
Alternatively, you can reach via di Sant'Agnese by bus travelling along Via Nomentana (for example n. 60 from Repubblica metro station or n. 90 from Termini station) and getting off at the cross with via XXI Aprile. From there, still 100 m walking following the map. Any information about public transportation in Rome on https://atac.roma.it or https://muoversiaroma.it/#sthash.3KJZj0Ij.dpbs.

Authors who must present the paper are kindly requested to contact the session chair before the session and to arrive in the room of the session 15 minutes before starting to upload the presentation on the PC located there.