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Abstract—This is the list of my Scientific Activities: Publications, Research Projects, Patent, Editor, Committee, Teaching and Academic Advising.

I. SCIENTIFIC PUBLICATIONS

A. Preprint

[1]

B. Book and Book Chapters

[2], [3], [4], [5]

C. International Journals

[6], [7], [8], [9], [10], [11], [12], [13], [14], [15], [16], [17], [18], [19]

D. Italian Journals and Magazine

[20], [21], [22]

E. Proceedings

[23], [24], [25], [26], [27], [28], [29], [30], [31], [32], [33], [34], [35], [36], [37], [38], [39], [40], [41], [42], [43], [44], [45], [46], [47], [48], [49]

F. Ph.D. Dissertation

[50]

II. SELECTED RESEARCH PROJECTS

QUBIP (Quantum-oriented Update to Browsers and Infrastructures for the PQ Transition), funded by the European Union under the Horizon Europe framework programme [grant agreement no. 101119746]. *Project Coordinator*. 2023.

SEDIMARK (Secure Decentralised Intelligent Data Marketplace), funded by the European Union under the Horizon Europe framework programme [grant agreement no. 101070074]. Work Package Coordinator. 2022. https://sedimark.eu

MASTERMINE (European Mining in the Green and Digital Era), funded by the European Union under the Horizon Europe framework programme [grant agreement no. 101091895]. *Technical Leader*. 2022. https://www.mastermine-project.eu

PODIUM (PDI Connectivity and Cooperation Enablers Building Trust and Sustainability for CCAM), funded by the European Union under the Horizon Europe framework programme [grant agreement no. 101069547]. *Technical Leader*. 2022. https://podium-project.eu

SPIRS (Secure Platform for ICT Systems Rooted at the Silicon Manufacturing Process), funded by the European Union under the Horizon 2020 framework programme [grant

agreement no. 952622]. Work Package Coordinator. 2021. https://www.spirs-project.eu

ROOT (Rolling Out OSNMA for the Secure Synchronisation of Telecom Networks), funded by the European Union Space Programme Agency (EUSPA) under the Horizon 2020 programme [grant agreement n. 101004261] . *Technical Leader*. 2020. https://www.gnss-root.eu

USPACE2 (U-space Services for UAM Operations Exploiting Space Assets), funded by European Space Agency (ESA). *Technical Leader*. 2022.

MONICATO (Monitoring Interfering and Cyber Attacks to Timing Operations of Satellite-Based Infrastructures), funded by European Space Agency (ESA). *Technical Leader*. 2020.

HANSEL (Navigation and GNSS in Smart Cities: testbed concept definition), funded by European Space Agency (ESA). *Technical Leader*. 2019

MUV (Mobility Urban Value), funded by the European Union under the Horizon 2020 framework programme [grant agreement no. 723521]. *Technical Coordinator*. 2015.

III. PATENT

Riccardo Scopigno, Daniele Brevi and Andrea Vesco, *Method and System for Controlling Congestion in Wireless Telecommunication Networks*, No: 1413493, Italy. Issued: September 12, 2012

IV. EDITOR

Editor-in-Chief - International Journal of Urban Planning and Smart Cities (IJUPSC). IGI Global, 2020-2022.

Guest Editor - Journal Interaction Design and Architecture (IxD&A), Special Issue on: Games for Urban Sustainability. 2019.

Guest Editor - Sustainability, Special Issue on: New Business and Operational Models for the Management of Green and Sustainable City Logistics. MDPI, 2019.

Guest Editor - International Journal of Public Administration in the Digital Age (IJPADA), Special Issue on: ICTs, Citizens and Governance of Smart Cities. IGI Global, 2007

Co-Editor - Handbook of research on Social, Economic and Environmental Sustainability in Development of Smart Cities. IGI Global 2015.

V. SCIENTIFIC COMMITTEE

Technical Program Committee - Workshop on Beyond the promises of WEB3.0: Foundations and Challenges of Trust Decentralization (WEB3-TRUST). International Congress on Blockchain and Applications, from 2022 to 2023.

Technical Program Committee - International Workshop on Cyber-Security Threats, Trust and Privacy Management in Software-defined and Virtualized Infrastructures. IEEE International Conference on Network Softwarization (NetSoft), from 2020 to 2023.

Co-Chair - IEEE International Workshop on Smart and Sustainable Mobility in Smart Cities. IEEE Computer Software and Applications Conference (COMPSAC), 2017.

Scientific Committee - International Conference on Innovation in Urban and Regional Planning (INPUT). September 2016.

Co-Chair - International Workshop on Social, Economic, and Environmental Sustainability in the Development of Smart Cities. Sustainable Built Environment (SBE), 2016.

Technical Program Committee - IEEE International Energy Conference (ENERGYCON). May 2014.

Technical Program Committee - IEEE Vehicular Technology Conference (VTC-Fall). Track: Wireless Access. September 2013.

Technical Program Committee - IEEE Vehicular Technology Conference (VTC-Spring). Track: Networks, Access Control, and Resource Management. May 2013.

Co-Chair - International Workshop on Flexibility in Broadband Wireless Access Network. IEEE International Conference on Computer Communications and Networks (ICCCN). August 2011.

VI. TEACHING

Contract Professor - Master School EXITone, Smart City Challenge. 2017

Contract Professor - Master School of the Politico di Torino (PoliTo), Smart and Sustainable Urban Mobility. Academic year 2014/2015.

Assistant Professor - Computer Networks, Computer Engineering at Università Telematica Internazionale (UniNettuno). Academic years 2008/2009, 2009/2010 and 2010/2011.

Assistant Professor - Techniques and Programming Languages, Cinema and Media Engineering at Politecnico di Torino (PoliTo). Academic year 2008/2009.

Assistant Professor - Local and Metropolitan Area Network Design, Computer Engineering at Politecnico di Torino (PoliTo). Academic years 2006/2007 and 2007/2008.

Assistant Professor - Local and Metropolitan Area Network Design, Telematic Engineering at Politecnico di Torino (PoliTo). Academic years 2006/2007 and 2007/2008.

Assistant Professor - Models and Strategies for e-business, Production Engineering at Politecnico di Torino (PoliTo). Academic year 2006/2007

VII. ACADEMIC ADVISING

15 Master of Science (M.Sc) and 3 Bachelor of Science (B.Sc) students.

REFERENCES

- [1] S. Dutto, D. Margaria, C. Sanna, and A. Vesco, "Toward a Post-Quantum Zero-Knowledge Verifiable Credential System for Self-Sovereign Identity," Cryptology ePrint Archive, Paper 2022/1297, 2022, https://eprint.iacr.org/2022/1297. [Online]. Available: https://eprint.iacr.org/2022/1297
- [2] A. Vesco and F. Ferrero, Eds., Handbook of Research on Social, Economic, and Environmental Sustainability in the Development of Smart Cities. Hershey, PA: IGI Global, April 2015.
- [3] A. Vesco, S. Di Dio, E. Lissandrello, and D. Schillaci, A Gamified Mobility Experience. Springer, 2020, ch. 45.
- [4] V. Caiati, S. Di Dio, F. Ferrero, and A. Vesco, *The Shift Toward a Sustainable Urban Mobility through Decision Support Systems*. CRC Press Taylor & Francis Group, 2017, ch. 14.
- [5] A. Vesco and R. Scopigno, A Weakly Synchronous and Distributed Coordination Function for QoS Management in CSMA/CA Wireless Access Networks. Hershey, PA: IGI Global, 2011, ch. 4.
- [6] D. G. Berbecaru, S. Sisinni, A. Lioy, B. Rat, D. Margaria, and A. Vesco, "Mitigating software integrity attacks with trusted computing in a time distribution network," *IEEE Access*, vol. 11, pp. 50510–50527, 2023.
- [7] S. Sisinni, D. Margaria, I. Pedone, A. Lioy, and A. Vesco, "Integrity Verification of Distributed Nodes in Critical Infrastructures," *Sensors*, vol. 22, no. 18, 2022. [Online]. Available: https://www.mdpi.com/1424-8220/22/18/6950
- [8] A. Carelli, A. Palmieri, A. Vilei, F. Castanier, and A. Vesco, "Enabling Secure Data Exchange through the IOTA Tangle for IoT Constrained Devices," *Sensors*, vol. 22, no. 4, 2022. [Online]. Available: https://www.mdpi.com/1424-8220/22/4/1384
- [9] M. Davide and A. Vesco, "Trusted GNSS-Based Time Synchronization for Industry 4.0 Applications," *Applied Sciences*, vol. 11, no. 18, 2021.
 [Online]. Available: https://www.mdpi.com/2076-3417/11/18/8288
- [10] A. Minetto, F. Dovis, A. Vesco, M. Garcia-Fernandez, A. López-Cruces, J. Trigo, M. Molina, A. Pérez-Conesa, J. Gánez-Fernández, G. Seco-Granados, and J. López-Salcedo, "A Testbed for GNSS-Based Positioning and Navigation Technologies in Smart Cities: The HANSEL Project," Smart Cities, vol. 3, no. 4, pp. 1219–1241, 2020. [Online]. Available: https://www.mdpi.com/2624-6511/3/4/60
- [11] A. Vesco and S. Di Dio, Eds., "Special Issue on Games for Urban Sustainability," *Journal Interaction Design and Architecture(s)*, vol. 40, 2019
- [12] B. Caroleo, N. Morelli, E. Lissandrello, A. Vesco, S. Di Dio, and S. Mauro, "Measuring the change towards more sustainable mobility: MUV impact evaluation approach," *Systems*, vol. 7, no. 2, 2019.
- [13] G. Perboli, F. Ferrero, S. Musso, and A. Vesco, "Business Models and Tariff Simulation in Car-sharing Services," *Transportation Research Part A: Policy and Practice*, vol. 115, pp. 32–48, September 2018.
- [14] F. Ferrero, G. Perboli, M. Rosano, and A. Vesco, "Car-sharing services: an annotated review," *Sustainable Cities and Society*, vol. 37, pp. 501–518, February 2018.
- [15] A. Vesco, V. Caiati, F. Ferrero, and A. Pacifici, Eds., "Special Issue on ICTs, Citizens and Governance of Smart Cities," *International Journal* of Public Administration in the Digital Age (IJPADA), vol. 4, no. 4, 2017.
- [16] L. Bedogni, M. Gramaglia, A. Vesco, M. Fiore, J. Haerri, and F. Ferrero, "The Bologna Ringway dataset: improving road network conversion in SUMO and validating urban mobility via navigation services," *IEEE Transactions on Vehicular Technology*, vol. 64, no. 12, pp. 5464–5476, December 2015.
- [17] M. Baldi and A. Vesco, "Blocking Probability in Pipeline Forwarding Networks," *Journal of Communications Software and Systems*, vol. 10, no. 1, April 2014.
- [18] E. Masala, A. Vesco, M. Baldi, and J.C. De Martin, "Optimized H.264 Video Encoding and Packetization for Video Transmission over Pipeline Forwarding Networks," *IEEE Transaction on Multimedia*, vol. 11, no. 5, pp. 972–985, August 2009.
- [19] M. Baldi, J.C. De Martin, E. Masala, and A. Vesco, "Quality-Oriented Video Transmission With Pipeline Forwarding," *IEEE Transaction on Broadcasting*, vol. 54, no. 3, pp. 542–556, September 2008.
- [20] F. Ferrero, A. Pacifici, and A. Vesco, "Smart City: Tecnologie, Architetture e Servizi," *Mondo Digitale*, no. 52, pp. 1–11, July 2014.
- [21] A. Vesco, A. Attanasio, B. Caroleo, A. Pacifici, M. Simonov, and F. Ferrero, "Pianificare la Mobilità Elettrica in Ambito Urbano," *AEIT*, no. 11, pp. 12–17, November 2013.

- [22] A. Vesco, "Identità Digitale su Internet delle Cose, grazie a Blockchain: Ecco come," August 2019, Agenda Digitale EU. [Online]. Available: https://www.agendadigitale.eu/sicurezza/identita-digitale-su-internet-delle-cose-grazie-a-blockchain-ecco-come/
- [23] A. Claudio and A. Vesco, "A Novel DID Method Leveraging the IOTA Tangle and its Integration into OpenSSL," in Proceedings of International Congress on Blockchain and Applications, Workshop on Beyond the Promises of WEB3.0: foundations and challenges of trust decentralization (WEB3-TRUST). Guimarães, Portugal: Springer, July 2023.
- [24] M. Pini, A. Minetto, A. Vesco, D. Berbecaru, L. Murillo, P. Nemry, I. D. Francesca, B. Rat, and K. Callewaert, "Satellite-derived Time for Enhanced Telecom Networks Synchronization: the ROOT Project," in *Proceedings of IEEE International Workshop on Metrology for AeroSpace (MetroAeroSpace)*, Virtual Conference, June 2021.
- [25] S. Di Dio, E. Lissandrello, D. Schillaci, B. Caroleo, A. Vesco, and I. D'Hespeel, "MUV: A Game to Encourage Sustainable Mobility Habits," in *Proceedings of Games and Learning Alliance Conference*, Palermo, Italy, December 2018.
- [26] F. Montori, M. Gramaglia, L. Bedogni, M. Fiore, F. Sheikh, L. Bononi, and A. Vesco, "Automotive Communications in LTE: a Simulationbased Performance Study," in *Proceedings of IEEE VTC-Fall*, Toronto, Canada, 2017.
- [27] A. Cecchini, V. Talu, and A. Vesco, "Appropriate Technologies and Deprived Neighbourhoods: Making Technologies Work for Inclusive Urban Development," in *Proceedings of 9th International Conference on Innovation in Urban and Regional Planning*, Torino, Italia, September 2016.
- [28] V. Caiati, L. Bedogni, L. Bononi, F. Ferrero, M. Fiore, and A. Vesco, "Estimating Urban Mobility with Open Data: A Case Study in Bologna," in *Proceedings of IEEE Second International Smart Cities Conference*, Trento, Italia, September 2016.
- [29] V. Caiati, S. Di Dio, F. Ferrero, and A. Vesco, "The Shift Toward a Sustainable Urban Mobility through Decision Support Systems," in Proceedings of International Conference on Smart Cities, New Delhi, India, January 2016.
- [30] A. Vesco, E. Masala, and R. Scopigno, "TDuCSMA: Efficient Support for Triple-Play Services in Wireless Home Networks," in *Proceedings* of IEEE International Conference on Communications (ICC 2015), London, UK, June 2015.
- [31] G. Colombo, F. Ferrero., G. Pirani, and A. Vesco, "Planning Local Energy Communities to Develop Low Carbon Urban and Suburban Areas," in *Proceedings of IEEE International Energy Conference (Energycon 2014)*, Dubrovnik, Croatia, May 2014, pp. 1012–1018.
- [32] A. Vesco, R. Scopigno, and E. Masala, "Supporting Triple-Play Communications with TDuCSMA and First Experiments," in *Proceedings of IEEE Wireless Communications and Networking Conferences (WCNC 2014)*, Istanbul, Turkey, April 2014, pp. 3260–3265.
- [33] A. Vesco, R. Scopigno, C. Casetti, and C. Chiasserini, "Investigating the Effectiveness of Decentralized Congestion Control in Vehicular Networks," in *Proceedings of IEEE Workshop on Vehicular Network Evolution*, Atlanta, Georgia, USA, December 2013, pp. 1314–1319.
- [34] A. Autolitano, C. Campolo, A. Molinaro, R. Scopigno, and A. Vesco, "An Insight into Decentralized Congestion Control Techniques for VANETs from ETSI TS 102 687 V1.1.1," in *Proceedings of IEEE Wireless Days (WD 2013)*, Valencia, Spain, November 2013, pp. 1–6.
- [35] A. Vesco, E. Masala, and R. Scopigno, "Efficient Support for Video Communications in Wireless Home Networks," in *Proceedings of IEEE International Conference on Computing, Networking and Communications (ICNC 2013)*, San Diego, California, USA, January 2013, pp. 599–604.
- [36] A. Vesco, G. M. Toso, and R. Scopigno, "Prototyping of Time-Division Unbalanced Carrier Sense Multiple Access and First Experiments," in Proceedings of IEEE Global Communications Conference (GLOBECOM 2012), Anaheim, California, USA, December 2012, pp. 5500–5505.
- [37] F. Sottile, A. Vesco, R. Scopigno, and M. Spirito, "MAC Layer Impact on the Performance of Real-Time Cooperative Positioning," in *Pro*ceedings of IEEE Wireless Communications and Networking Conference (WCNC 2012), Paris, France, April 2012, pp. 1858–1863.
- [38] A. Vesco, F. Abrate, and R. Scopigno, "Convergence and Performance Analysis of Leaderless Synchronization in Wi-Fi Networks," in *Proceedings of ACM workshop on Performance Monitoring and Measurement of Heterogeneous Wireless and Wired Networks*, Miami Beach, Florida, USA, October 2011, pp. 49–58.

- [39] N. Concer, A. Vesco, R. Scopigno, and L. P. Carloni, "A Dynamic and Distributed TDM Slot-Scheduling Protocol for QoS-Oriented Networkson-Chip," in *Proceedings of IEEE International Conference on Com*puter Design (ICCD 2011), Amherst, Massachusetts, USA, October 2011, pp. 31–38.
- [40] F. Abrate, A. Vesco, and R. Scopigno, "An Analytical Packet Error Rate Model for WAVE Receivers," in *Proceedings of IEEE International* Symposium on Wireless Vehicular Communications (WiVEC 2011), San Francisco, California, USA, September 2011, pp. 1–5.
- [41] A. Vesco and R. Scopigno, "Advances on Time-Division Unbalanced Carrier Sense Multiple Access," in *Proceedings of IEEE International Conference on Computer Communications and Networks (ICCCN 2011)*, Maui, Hawaii, USA, August 2011, pp. 1–6.
- [42] R. Scopigno and A. Vesco, "A Distributed Bandwidth Management Scheme for Multi-Hop Wireless Access Networks," in *Proceedings of IEEE International Wireless Communications and Mobile Computing Conference (IWCMC 2011)*, Istanbul, Turkey, July 2011, pp. 534–539.
- [43] H. Cozzetti, A. Vesco, F. Abrate, and R. Scopigno, "Improving Wireless Simulation Chain: Impact of two Corrective Models for Vanets," in Proceedings of IEEE Vehicular Networking Conference (VNC 2010), Jersey City, New Jersey, USA, December 2010, pp. 323–329.
- [44] F. Abrate, A. Vesco, and R. Scopigno, "Improvement of WiFi Physical Model and Effects on Network Simulations," in *Proceedings of IEEE International Conference on Wireless Communications and Signal Processing (WCSP 2010)*, Suzhou, China, October 2010, pp. 1–6.
- [45] A. Vesco, E. Masala, and C. Novara, "Distortion Prediction for Video Quality Optimization over Packet Switched Networks," in *Proceedings* of *IEEE Global Telecommunications Conference (GLOBECOM 2009)*, Honolulu, Hawaii, USA, December 2009, pp. 1–6.
- [46] A. Vesco and R. Scopigno, "Time-Division Access Priority in CSMA/CA," in Proceedings of IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC 2009), Tokyo, Japan, September 2009, pp. 2162–2166.
- [47] M. Baldi, R. Giacomelli, G. Marchetto, and A. Vesco, "On the Deployment of Pipeline Forwarding on a Nation-Wide Internet Service Provider Network," in *Proceedings of International Conference on Broadband Network and Multimedia Technology*, Beijig, China, September 2007, pp. 41–46.
- [48] M. Baldi and A. Vesco, "Time-Driven Early Discard (TED) to Improve the Fairness of TCP Congestion Control," in *Proceedings of IEEE Global Telecommunications Conference (GLOBECOM 2006)*, San Francisco, California, USA, December 2006, pp. 1–6.
- [49] M. Baldi, J.C. De Martin, E. Masala, and A. Vesco, "Distortion-Aware Video Communication with Pipeline Forwarding," in *Proceedings of ACM International Conference on Multimedia (MULTIMEDIA 2006)*, Santa Barbara, California, USA, October 2006, pp. 117–120.
- [50] A. Vesco, "Traffic Management over Time-Aware Packet Switched Networks," Ph.D. dissertation, Politecnico di Torino, 2009.