



# TeamUp5G Newsletter

September 2022

## MOOC - Ultra-Dense Networks for 5G and its Evolution

TeamUp5G ESRs produced the MOOC to close the knowledge gap between high school graduation and post-graduate learning on topics linked to developing 5G technologies and their applications, including the coming 6G. The entire course is divided into six modules. The MOOC is available on the edX platform under the coordination of UC3M.

Module 1. Ultra-dense networks and small cells	Module 2. New transmission technologies	Module 3. Interference management and energy efficiency	Module 4. Spectrum sharing and carrier aggregation	Module 5. Use cases and prototyping	Module 6. The future ahead
<ul style="list-style-type: none"><li>• 5G Network-Requirements, Scenario, KPIs, and Enablers</li></ul>	<ul style="list-style-type: none"><li>• Massive MIMO</li><li>• Beamforming</li><li>• Millimeter waves</li><li>• Channel estimation</li><li>• Visible light communications</li></ul>	<ul style="list-style-type: none"><li>• Scheduling and interference management</li><li>• The cell-free paradigm</li><li>• Interference management</li><li>• Energy harvesting</li></ul>	<ul style="list-style-type: none"><li>• Spectrum sharing</li><li>• Carrier aggregation</li><li>• Licensed and unlicensed access</li><li>• Dynamic Channel Access</li></ul>	<ul style="list-style-type: none"><li>• Privacy and security</li><li>• AR/VR and immersive media rendering</li><li>• Drones as communication network</li><li>• LiFi testbed</li><li>• Prototyping</li></ul>	<ul style="list-style-type: none"><li>• Emerging technologies: RIS, THz</li><li>• Joint radar communications</li><li>• Towards 6G</li></ul>

For more details: <https://www.edx.org/course/ultra-dense-networks-for-5g-and-its-evolution>

## PROGRESS MEETING 8 (PM8)

TeamUp5G coordinated their eighth progress meeting (PM8) in an Online manner. Firstly, a review to check whether the goals set in PM7 were met. Next, the current status of the work packages was explained by the respective leaders and decisions on foreseen goals were made. Two new members, CTTC and HEIA-FR/HESS-SO joined the consortium. Last, other businesses and next actions were discussed.



TELECONFERENCE (BB COLLABORATE), APRIL 29, 2022

## TeamUp5G 3rd Training on Standardization and Workshop on Testbeds and VLC

The 3rd training on Standardization and Workshop on Testbeds and Visible Light Communications aimed at providing a forum where the ESRs will bring together their recent research efforts and learn, by a practical approach, how to prepare original contributions to standardization bodies, through brain storming and discussion with tutors and fellow researchers.

Dr Adam Flizikowski (IS-Wireless) gave a tutorial and demonstration of open Radio Access Networks, with application to real virtualized and open 4G and 5G networks, followed by a presentation on Visible Light Communications towards 6G (with a perspective from research on VLC at University of Oulu's 6G Flagship and UC3M). The workshop also organized talks and visits by ORCIP (Optical Radio Convergence Infrastructure for Communications and Power Delivering) and the Aveiro STEAM (Science, Technology, Engineering, Arts & Mathematics) City initiative toward digital transformation.

The second day at the TeamUp5G MSCA Workshop concluded with talks and discussions on different aspects of Standardization moderated by Dr. Prof. Periklis Chatzimisios. Dr. António Gamelas, Altice Labs, Aveiro, Portugal, gave a talk on "Standardization Process within ETSI: Benefits to Network Operators," followed by a talk on "Non-terrestrial Networks" by Dr. Giovanni Geraci, UPF, Spain. Dr. Mona Ghassemian, Huawei, UK, presented "How is 3GPP setting ICT standards for 6G enabled future technologies?" followed by Dr. Evgeny Khorov's insights on "Li-Fi and IEEE 802.11bb standard" from the Institute for Information Transmission Problems of the Russian Academy of Science.

"Practical aspects of standardization - IEEE Standards Game" was conducted by James Irvine, Strathclyde University, Glasgow, Scotland, followed by a talk on "Opportunities for Academia during the Development of IEEE Standards" by Tuncer Baykas, Kadir Has University, Turkey.

Our ESRs Diego González Morín, Bahram Khan, Nidhi, Hamed Farkhari, and Daniele Medda presented their Contributions to Standardization Activities. The event was an excellent opportunity for the early-stage researchers from TeamUp5G to have a valuable interaction with experts from both academia and industry.



Instituto de Telecomunicações, Aveiro, Portugal, June 6-8, 2022

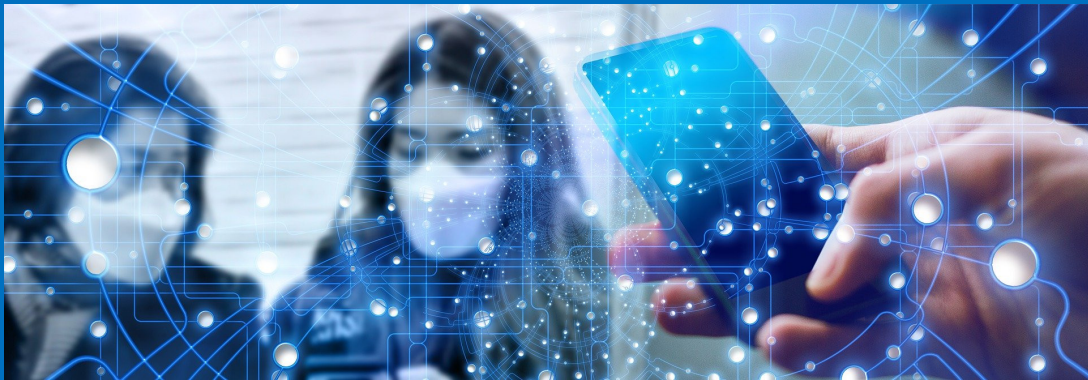
## UPCOMING EVENTS

### Online Talk on “Writing your thesis”



Further information: <https://teamup5g.webs.tsc.uc3m.es/training-1/online-talks/>

### Big Industrial Workshop



Further information: <https://teamup5g.webs.tsc.uc3m.es/training-1/training-workshops/>

TeamUp5G project has received funding from the European Union’s Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie project number 813391.

Further information on [here](#)

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