

TFK programme, funded projects 2025

Project title: Finland-Latin America Collaboration on 6G Machine-Type Communications	
Coordinator Oulun Yliopisto Hirley Alves, hirley.alves@oulu.fi	The main goal of this project is to foster collaboration among UOulu, UTEM, and UFSC in research and graduate-level education on themes related to machine-type communication (MTC) technologies associated with the Internet of Things (IoT) and the sixth generation (6G) of wireless networks. The project activities are built around three key development areas shared by all three institutions: (i) an active internationalization policy; (ii) a sustained commitment to environmental sustainability; and (iii) enhanced engagement with the surrounding environment. In summary, the proposed activities include the following: - Joint development of a course module on MTC for the IoT. Such material introduces the topic, its relation to 6G networks, and state-of-the-art open problems, challenges, and opportunities. - Independent teaching of the course material in each of the involved institutions, at the graduate level or the final semesters at the undergraduate level, either as a stand-alone course or as a novel module of an already established course.
Partners Federal University of Santa Catarina (UFSC), Universidad Tecnológica Metropolitana (UTEM)	- Planning and developing new collaborative research work on themes related to MTC and IoT, including participants from multiple institutions in the co-supervision of MSc and PhD students. - A sustainability-focused design challenge for the MSc and PhD students from the three institutions involved. Each team will identify a real-world environmental or social issue relevant to their region and propose a solution leveraging 6G MTC technologies. The proposals will be presented during a public online workshop. - A public online workshop involving professors and students of all institutions presenting previous results and projects of the sustainability-focused design challenge. - Short-term and long-term staff and student mobility among the three institutions supporting the planned activities. The anticipated results are: - Increased quality of the education offered in the three institutions by preparing new content and teaching/learning strategies with a multicultural approach. - Attraction of new talented students to graduate-level courses and scientific research, which is an area with high demand for qualified professionals, especially in Finland.

	- Renew and strengthen the fruitful collaboration already established by the three institutions, resulting in new and impactful research and education outcomes. - Enhanced student awareness and competence in applying 6G technologies to address societal and environmental challenges in their local contexts. This will promote the integration of sustainable development goals into technical education and encourage innovation-driven impact. Increase the interest and awareness of undergraduate students in Science, Technology, Engineering, and Mathematics (STEM), in particular, Wireless Communications Engineering and related areas.
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