Code B_2736

Department	Electrical and Electronic Engineering
UniCa reference person	Marco Martalo'
Project title in English	Low-latency communications for reliable and trustworthy IoT service provisioning
Project title in Italian	Comunicazioni a bassa latenza per la fornitura di servizi IoT affidabili e sicuri
Subject area of reference (World University Ranking)	ENGINEERING AND TECHNOLOGY
Project summary and VPS' profile	Low-latency communications represent a cornerstone in the realm of trustworthy IoT service provisioning. The Internet of Things (IoT) promises transformative capabilities, but to harness its full potential, the challenge of achieving rapid data exchange while upholding trustworthiness is paramount. In particular, to achieve trustworthy service provisioning, an IoT device should be able to sense the environment and collect data in a sufficiently quick and reliable way. To this end, the protocol and the technology used to transmit data to and from IoT devices play a key role and may hinder the effectiveness of the final service provisioning. The goal of the proposed visit is to establish a collaboration to investigate the interplay between the medium access strategy that poses fundamental limits to the end-to-end network latency, and the amount of data that the network is able to collect, which is strictly related to the achievable reliability and trustworthiness. This research will require a cross-layer approach since it will jointly entail elements from lower layers of the ISO/OSI protocol stack, e.g., transmission and multiple access strategies, along with upper ISO/OSI layers, e.g., transport and application. Since the expertise at UniCa is predominantly on the latter, the VPS profile should be in the field of design and performance evaluation of wireless networks with a focus on experimentally tailored activities. The VPS should also have experience in teaching (undergraduate and graduate) courses on topics related to mobile communication networks. Finally, the VPS will be asked to offer seminars for masters' and PhD students within the corresponding programs at UniCa.
Proposed length of stay	Short visit of 10 days
Expected period of activity	June 2024
Academic position of the VPS'	Professor
Course of Study	Laurea magistrale (2nd cycle University Degree), Dottorato di ricerca (PhD Course)
Language of instruction	English