Presentation: Decentralized Strategies for Coordinated Control of Multi-Robot Systems

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Biography: Lorenzo Sabattini received the B.Sc. and M.Sc. degrees in mechatronic engineering from the University of Modena and Reggio Emilia, Italy, in 2005 and 2007, respectively, and the Ph.D. degree in control systems and operational research from the University of Bologna, Italy. He has been an Associate Professor with the Department of Sciences and Methods for Engineering, University of Modena and Reggio Emilia, since 2018. His research interests include multirobot systems, decentralized estimation and control, and mobile robotics. He served as an Associate Editor for IEEE Robotics and Automation Letters from 2015 to 2018 and IEEE Robotics and Automation Magazine from 2017 to 2019 and for The International Journal of Robotics Research (IJRR).

Abstract: This talk will present some recent results in the field of decentralized control for multi-robot system. We will see different communication modalities, to ensure proper exchange of information, which is fundamental to achieve common objectives for teams of robots deployed in the environment. Building upon these concepts, we will see how to exploit the information exchanged among robots to achieve a common goal, in a decentralized manner. As a motivating example, we will consider a coverage control problem, aimed at optimizing the deployment of robots in an unknown environment for data gathering.