

ELECTRICAL, ELECTRONICS AND COMMUNICATIONS ENGINEERING

PNRR - Reconfigurable Electromagnetic Skins for Smart propagation environments

Funded By	Ministero dell'Università e della Ricerca - MUR [P.iva/CF:96446770586] Politecnico di TORINO [P.iva/CF:00518460019]
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Context of the research activity	<p>A new key-enabling technology based on reconfigurable intelligent metasurfaces to overcome the current limitations of 5G technologies in order to handle ultra-high capacity and near-zero latency. The proposed solutions, capable of performing integrated communication and sensing tasks, will also handle EM energy in a smarter way, dramatically reducing the number of APs and RBSs as well as EM interference and pollution.</p> <p>PNRR M4C2, Investimento 1.3 - Avviso n. 341 del 15/03/2022 - PE0000001 REsearch and innovation on future Telecommunications systems and networks, to make Italy more smart (RESTART) - CUP E13C22001870001</p>
Objectives	<p>The activity will leverage the innovative techniques developed by the research group for the design of metasurfaces. The research will start with the design of static metasurfaces of innovative concept, and will proceed with the study of reconfiguration technologies, with choice of the most promising for the specific application. The minimum degrees of freedom of the reconfiguration will be studied and applied to the design of reconfigurable smart skins. The activity is multidisciplinary, ranging from wireless communication theory (physical layer) to antenna design to computational electromagnetics.</p>
Skills and competencies for the development of the activity	<p>Outstanding math ability and programming skills; Profound knowledge of Electromagnetics; Working knowledge of wireless communications Physical Layer a plus</p>

