On-Body Area Networks: from Channel Measurements to MAC Layer Performance Evaluation

Author(s) - Institution(s):
R. Rosini, DEIS/UniBO; CEA, LETI
Flavia Martelli, DEIS/UniBO
Mickael Maman, CEA, LETI
Raffaele D'Errico, CEA, LETI
Chiara Buratti, DEIS/UniBO
Roberto Verdone, DEIS/UniBO

Corresponding author email: ramona.rosini@unibo.it

Corresponding WG group: TWGB

Abstract:

This TD presents the simulation results on the performance evaluation and comparison of different Medium Access Control (MAC) protocols for on-body area networks proposed in the scope of the WiserBAN project. A number of different MAC schemes, based on the existing and emerging standards, were investigated to satisfy the peculiar use-cases requirements in terms of Packet Loss Rate, transmission delay, and energy consumption. A specific measurement campaign was performed to characterize the on-body propagation channel related to the WiserBAN scenarios. Channel measurements and previous channel models were employed for MAC simulation purposes, in order to investigate the channel impact on the system performance.