

Experimenting Cognitive Radio Communication with GNU Radio on CorteXlab

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While many theoretical and simulation works have already highlighted the potential gain of cognitive radio, several technical issues still have to be evaluated and overcome from an experimental viewpoint. Our team is currently developing a new experimental facility remotely accessible and dedicated to this problem. CorteXlab is developed in the framework of a nationwide French program Future Internet of Things which proposes a federated and competitive infrastructure. The CorteXlab facility offers a 167m² EM shielded room and integrates a set of 22 USRP from National Instrument, 16 picoSDR nodes from Nutaq. CorteXlab is built on the network architecture developed for the SensLAB testbed and exploits the free and open-source toolkit GNU-radio. All nodes are remotely accessible through a software interface called Minus.

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