



Orchestration and Reconfiguration Control Architecture

Open Call 1

First ORCA Competitive Call for Extensions

Unified Platform for Benchmarking
3GPP Unlicensed LTE Flavors in ORCA
UP-ORCA

Call - Identifier	ORCA-OC1-EXT3
Organisation name:	Universitat Oberta de Catalunya

Section A Project Summary

This extension proposes to enable the ORCA platform with the three unlicensed LTE flavors specified by the 3GPP. To this aim, we will implement LTE-WLAN Radio Aggregation (LWA) and LTE-WLAN Radio Level Integration (LWIP) in ns-3 and interface these along with the existing implementation of Licensed Assisted Access (LAA) to ORCA SDR platforms. The objectives of this extension also include the comparison among these unlicensed LTE approaches. Importantly, thanks to the SDR interfacing, this comparison will be performed under real network conditions, which have been shown to differ from common analytical and simulation assumptions when LTE devices coexist with WiFi nodes in the same frequency band. The results of this comparison will enable researcher and practitioners to devise which approach works best under given network conditions. These results, using the ORCA framework, will also be the basis of a new line of work on unlicensed LTE protocol orchestration in real-time.