

GRANT



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Orchestration and Reconfiguration Control Architecture

D6.6: Final SDR experimentation toolset for testbeds

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| Authors | Clemens Felber (NI), Walter Nitzold (NI), Wei Liu (IMEC), Andrea Guevara (KUL), Roberto Bomfin (TUD), Joao Santos (TCD), Yi Zhang (TCD) |
| Reviewers | Ingrid Moerman (IMEC) |

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| Abstract | This deliverable provides an overview of the final software tools for WP6, made available publicly or through dedicated licenses. The supporting documentation is made available in the public ORCA portal. |
| Keywords | Software tools, real-time, mmWave |

ORCA SDR software toolsets developed in from Y1 to Y3 are made available via the ORCA portal webpage <https://www.orca-project.eu/orca-functionalities/>, as shown in Figure 1. The webpage was updated, restructured and optimized. The offered functionalities are grouped into categories including: Full Duplex, Full stack SDR solutions, Massive MIMO, mmWave, PHY & MAC, RAT Interworking, SDR management, Sensing and Slicing. Users of ORCA facility can apply the category as filtering conditions to more easily search for their desired functionalities. In each of the functionality, we mention the supported testbed.

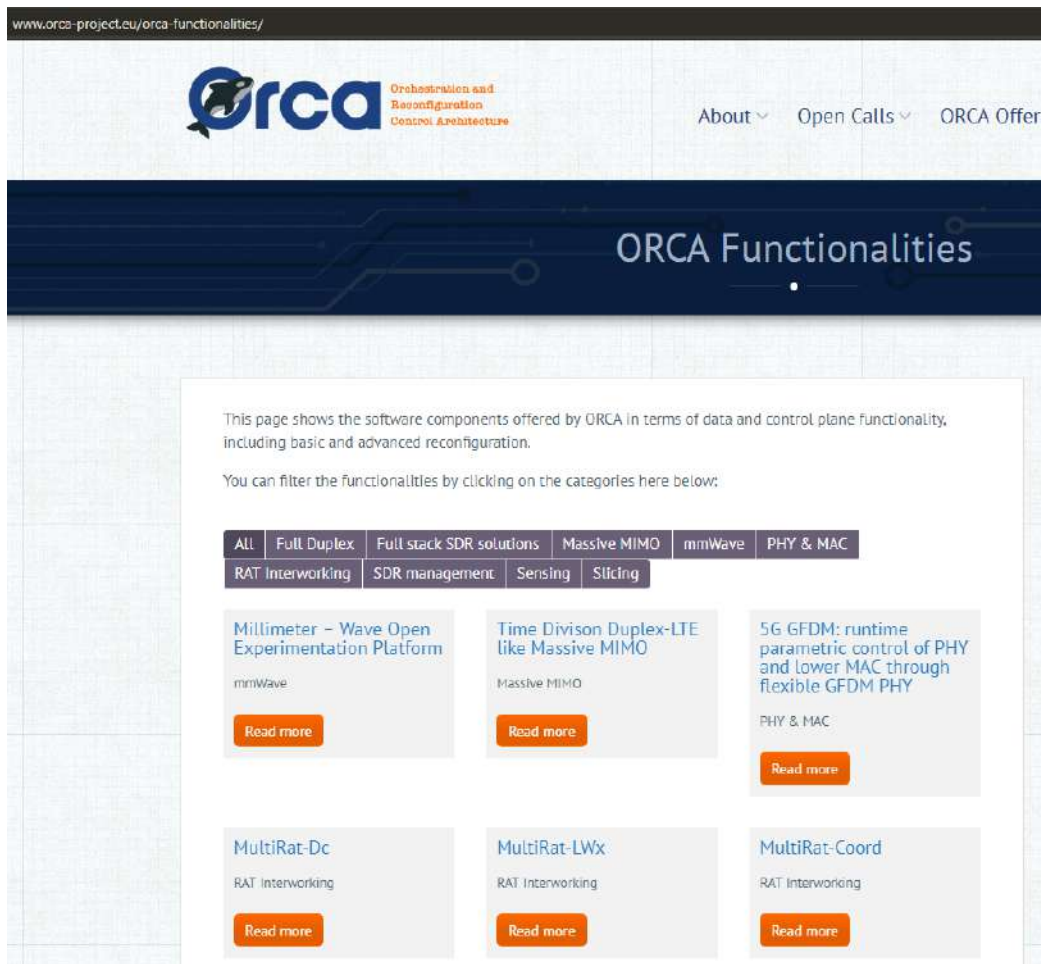
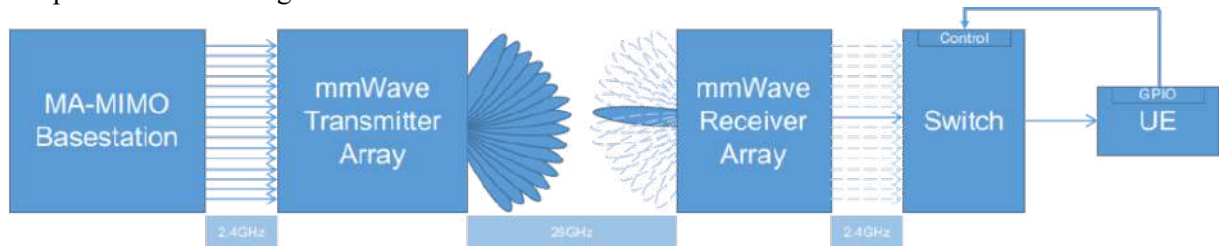


Figure 1 ORCA software components overview

There are in total 24 functionalities, all of them are supported on at least one ORCA testbed. We highlight a few of the components to showcase how ORCA facility support these functionalities.

- Openwifi is offered as a full stack SDR solution, but it is now also released publicly as an open source project at <https://github.com/open-sdr/openwifi>. The conceptual figure of openwifi is given as below. Users who do not have the required hardware can try this feature out on the w-iLab.t testbed, this is explained in the testbed tutorial <https://doc.ilabt.imec.be/ilabt/wilab/tutorials/openwifi.html>.
- 26 GHz mmWave frontend is integrated in both TUD and KUL testbed, though the frontend is configured and setup in different ways. For instance the 26 GHz mmWave frontend is connected to massive MIMO setup, allows hybrid beamforming. The conceptual figure of this setup is shown in the figure below.



- There are three RAT interworking related tools, the MultiRAT-DC, MultiRat-LWx, and MultiRat-Coord, all three functionalities are available on the TUD OWL testbed.