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| **../logo/ORCA_Logo.png**  **Orchestration and Reconfiguration Control Architecture** | | |
| **Open Call 2**  First ORCA Competitive Call for Extensions | | |
| Full Title of your proposal  Acronym of your proposal (optional) | | |
| Call[[1]](#footnote-1) - Identifier[[2]](#footnote-2) | ORCA-OC2-EXTx | |
| Date of preparation of your proposal: | xx/yy/2018 | |
| Version number (optional): |  | |
| Your organisation name: | name | |
| Name of the coordinating person: | First name Last name | |
| Coordinator telephone number: | number | |
| Coordinator email:  [This is the email address to which the Acknowledgment of receipt will be sent] | Email address | |

Note: Grey highlighted areas need to be filled. Word template can be downloaded from ORCA project website (see http://www.orca-project.eu/open-calls)

# Section A Project Summary

*(Maximum 300 words – summary of the proposed work)*

*Remark: The information in this section may be used in public documents and reports by the ORCA consortium.*

*This section needs to be completed in the draft proposal and will be used for the feasibility check (cf. Section D)*

# Section B Detailed description and expected results

*(minimum 4 pages, and maximum 8 pages)*

*This section describes the details on the planned Extension (what does the proposer hope to obtain?, how?, why is it relevant?). This section should also include all information with respect to the State-of-the-Art and the expected scientific or business impact.*

*This section needs to be completed in the draft proposal and will be used for the feasibility check (cf. Section D)*

## Concept and objectives

*Describe the specific objectives of the proposed Extension, which should be clear, measurable, realistic and achievable within the duration of the Extension (not through subsequent development). Show how they relate to the topic(s) addressed by the competitive call and how and why ORCA is needed for realizing them.*

*Describe and explain the overall concept that forms the basis for your Extension. Describe the main ideas, models or assumptions involved.*

## Impact

*Describe the potential that the Extension will be used by future wireless experimenters from the broader scientific community as well as developers from industry, in particular individuals and SMEs, in subsequent (funded) ORCA open calls or by (non-funded) open access of ORCA facilities and software platforms.*

*Show that the proposed Extension has sufficient sustainable benefits for the ORCA project, meaning that there should be an added value for the ORCA project, after the proposer has finished his Extension.*

## Description of State-of-the-Art

*Describe in detail how the Extension will advance existing software, hardware and/or experimental platforms, and to which extent the functionality added by the proposed Extension is different from the functionality that is already available in existing work.*

## Methodology and associated work plan

*Provide a work plan. Provide clear goals and verifiable results, and also a clear timing.*

*The work plan involves at least the following phases:*

1. *Design of Extension*
2. *Executing the Extension*
3. *Analysis & feedback*

* *Analysis of the results of the Extension*
* *Feedback on user experience*
* *Recommendations for improvements and/or future extensions of ORCA software platforms and testbeds*

1. *Showcase: Set up of a showcase (demonstration) to be used for the evaluation of the Extension at the review meeting with the EC, and for further promotion of ORCA*
2. *Dissemination: Regular dissemination actions (journal publications, conferences, workshops, exhibitions, events, advertising of results at ORCA website, etc.)*
3. *Final report, code and documentation*

*NOTE: there is NO need to define work packages or deliverables. All results need to be reported in the final report at the end of the Extension. Of course, a good communication plan with the Patron is required to exchange progress within different phases.*

# Section C Requested ORCA software platforms, radio hardware platforms and testbeds

*(Target length 1 page)*

*Please check the ORCA software platforms, radio hardware platforms and testbeds**that will be required for your Extension.*

*Please visit the ORCA website to get details on the specific:*

* http://www.orca-project.eu/testbeds

*This section needs to be completed in the draft proposal and will be used for the feasibility check (cf. Section D).*

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| **TESTBEDS** | **Required (Yes/No)** |
| w.iLab.t (Heterogeneous wireless testbed @ imec, Ghent, Belgium) |  |
| IRIS (Software Defined Radio testbed @ TCD, Dublin, Ireland) |  |
| ORBIT (20 x 20 radio grid testbed @ Rutgers University, New Jersey, US) |  |
| IMEC portable testbed |  |
| TUD macro scale testbed (Macro scale testbed @ TUD, Desden , Germany |  |
| KU Leuven testbed (KU Leuven @Leuven, Belgium) |  |

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| **SDR HARDWARE PLATFORMS** | **Number of nodes required** |
| Nutaq ZeptoSDR |  |
| Nutaq picoSDR |  |
| PicoZed Xilinx Zynq®-7000 SoC |  |
| USRP B200-mini |  |
| USRP E310 |  |
| USRP N210 |  |
| USRP X310 |  |
| USRP 2920 |  |
| USRP 2921 |  |
| USRP RIO 2942R |  |
| USRP RIO 2943R |  |
| USRP RIO 2952R (+ GPS) |  |
| USRP RIO 2953R (+ GPS) |  |
| USRP RIO 2953R (+ EBD) |  |
| WARPv2 |  |
| Xilinx ZC706 Evaluation Kit - Zynq® 7000 SoC + AD FMCOMM radio frontend |  |
| ZedBoard Xilinx Zynq®-7000 SoC |  |
| ZedBoard Xilinx Zynq®-7000 SoC + AD FMCOMM radio frontend |  |
| BB – NI PXI 7975 Module |  |
| BB – NI PXI 7965 Module |  |
| FE – NI PXI 5644 |  |
| FE – NI PXI 7976R |  |

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| **SOFTWARE TOOLS** | **Required (Yes/No)** |
| IRIS Software Radio |  |
| GNU Radio |  |
| NI LabVIEW |  |
| Xilinx Vivado Design Suite v2015.4 for RFNoC related development |  |
| Xilinx Vivado Design Suite v2016.2 and Analog Device AD9361 HDL Reference Design |  |
| Xilinx Software Development Kit (SDK) |  |
| NI LabVIEW Full Duplex |  |
| NI LabVIEW Massive MIMO |  |
| NI LabVIEW Communications System Design Suite based GFDM flexible transmitter |  |
| LabVIEW Communications LTE Application Framework |  |
| LabVIEW Communications 802.11 Application Framework |  |
| NI L1-L2 API |  |
| ns-3 network simulator (LTE + WiFi module) |  |
| Time-Annotated Instruction Set Computer (TAISC) |  |
| Generic Internet-of-Things ARchitecture (GITAR) |  |

*Please provide a short motivation on why specific testbeds, hardware platforms and software platforms will be required for the proposed Experiment. (maximum ½ page)*

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# Section D Feasibility and Relevance check

*(maximum 1 page)*

*This section contains the feedback from the ORCA partner acting as Patron on this Extension. Each proposing party must contact the ORCA consortium regarding its submission to identify a possible Patron. This Patron can be the ORCA partner responsible for the testbed, hardware or software platform the proposer will use during its Extension. The proposing party must submit its draft proposal to this Patron by Monday the 21st May 2018, end of the day. The feedback by the Patron is copied into this section of the proposal.*

# Section E Background and qualifications

*(maximum 2 pages)*

*This section describes the proposer and includes an overview of the activities, the proposer’s qualifications, technical expertise and other information to allow the reviewers to judge the proposer’s ability to carry out the Extension.*

# Section F Expected feedback to the ORCA Consortium

*(maximum 1 page)*

*This section contains valuable information for the ORCA consortium and should indicate the expected feedback the ORCA consortium can expect from the use of its software tools, hardware platforms and/or testbeds after carrying out the Extension. This information is essential in view of the further improving the usability of the ORCA facility.*

# Section G Requested funding

*(maximum 1 page)*

*This section provides an overview of the budgeted costs and the requested funding. A split is made in personnel costs, other direct costs (travel, consumables, etc.) and indirect costs.*

*Besides the table below, extra information can be provided to support the requested funding and which may help to judge the cost to the ORCA project.*

*Please show your figures in euros (not thousands of euros).*

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|  | **Total PM** | **Cost (**€**)** |
| (1) Direct personnel costs |  |  |
| (2) Other direct costs, of which: | |  |
| Travel | |  |
| Equipment | |  |
| Other goods and services | |  |
| (3) Indirect costs | |  |
| (4) Total costs (Sum of 1, 2 and 3) | |  |

*In row (1), insert your direct personnel costs for the work involved.*

*In row (2), insert any other costs, for example travel or equipment costs. Please allocate sufficient budget for participation at the final review meeting, and visit(s) to ORCA partners, in case this is required in view of advanced support by the Patron.*

*In row (3), calculate the indirect costs (for personnel and other direct costs)*

*In row (4), calculate the sum of your personnel, other direct costs and indirect costs.*

*The maximum funding which is allowed in this call is set at 75 000 € for Extension.*

*In view of the review of your proposal it is best to list the costs related to the proposed Extension as would be done for any European Project.*

# Section H Use of proposal information

*In this section the proposing party is asked to include some statements related to sharing information of his proposal within the ORCA consortium.*

*Proposals are treated in a confidential way, meaning that only successful proposals must be disclosed to the ORCA consortium. Open calls previously organized by other projects were very successful and have revealed that many submitted non-granted proposals also contain very interesting and valuable information that could be used for setting up collaborations or to extract ideas for further improving the federated test infrastructures. Therefore the ORCA project would like to have the opportunity to collect more detailed information and further use this information, also if the proposal is not selected for funding. In any case, the ORCA consortium will treat all information of a proposal confidentially.*

*Two types of information usage are envisaged:*

* *Information which is part of the Sections A, C, D and F will be used within the ORCA project as input for tasks related to testbed and software platform optimizations, sustainability studies, etc. The same information can also be used in an anonymous way to create statistics and reports about this first open call. All proposals submitted to this competitive open call are obliged to allow this form of information access and usage.*
* *Other information belonging to this proposal might also be accessed by the ORCA consortium, if allowed by the corresponding proposer. Any use of such information will be discussed and agreed upon with the proposers. Proposers have the freedom to select if they wish to support this kind of information usage.*

Top of Form

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| I allow that the material provided in Sections A, C, D and F of this proposal may be accessed by the ORCA consortium, also if the proposal is not selected for funding. In any case, the ORCA consortium will treat all this information confidentially. It will be used within the ORCA project as input for tasks related to testbed and software platform optimizations, sustainability studies, etc. The same information can also be used in an anonymous way to create statistics and reports about this first open call. | Yes |
| Furthermore, I allow that the other parts of this proposal may be accessed by the ORCA consortium, also if the proposal is not selected for funding. In any case, the ORCA consortium will treat all information of this proposal confidentially. Any use of this information will be discussed and agreed upon with the proposers. | Yes | No |

Bottom of Form

1. This call: ORCA-OC2 [↑](#footnote-ref-1)
2. EXT as ‘Extension’ followed by the number of the extension topic applying for: EXT1 - Partial reprogramming of FPGA on SDR at runtime; EXT2 - Polar Codes for FPGA; EXT3 - Interfaces for 5G and LTE interworking; EXT4 - Dynamic runtime composition of mmWave transceiver chains consisting of processing functions that are split between FPGA and CPU.

   [↑](#footnote-ref-2)