**QuantERA Full Proposal Template**

Project Acronym

Co-Op ZX

Project Title

Compilation and optimisation for near-term quantum computing using the ZX calculus

Coordinator contact point for the proposal

|  |  |
| --- | --- |
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Partners’ people involved in the realisation of the project

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***Partner Number*** | ***Country*** | ***Institution/ Department*** | ***Name of the Principal Investigator (PI)*** | ***Name of the co-Investigators*** | ***Name of the other personnel participating in the project*** |
| ***1***  *Coordinator* | France | Grenoble | Dominic Horsman |  | *Post-doc* |
| ***2*** | France | LORIA (LRI) | Simon Perdrix | E. Jeandel B. Valiron | R. Vilmart *Post-doc* |
| ***3*** | UK | Oxford | Bob Coecke | N. de Beaudrap M. Backens | *Post-doc* |
| ***4*** | UK | CQC | Ross Duncan |  | *Post-doc* |
| ***5*** | Poland | Gdansk | Ana Belén Sainz |  | *Post-doc* |
| ***6*** | Netherlands | Radboud (Nijmegen) | Aleks Kissinger |  |  |

(Use as many lines as needed)

Duration: months

**Summary of the project**(publishable abstract, max. 1/2 page):

Be precise and concise. This summary will be used to select suited reviewers for the proposal.

**Relevance to the topic addressed in the call**(in particular specify here which part of the call text is concerned by your project, max. 1/4 page):

Be precise and concise.

**Detailed project information**

**General recommendations:**

1. Sections *1. Excellence* in the short and full proposals must be identical.
2. The same font and style should be used for the whole proposal (Arial, 11pt, single spaced).
3. Please complete all sections.
4. Please adhere to the given page limits.
5. For the evaluation criteria, please refer to the Call Announcement. Your proposal should include all details required.
6. Excellence (max. 6 pages)
   1. **Targeted breakthrough, baseline of knowledge and skills**

Describe the targeted breakthroughs of the project.

Describe how the science and technology contribute to the establishment of a solid baseline of knowledge and skills for the specific theme addressed.

Describe the specific objectives of the project, which should be clear, measurable, realistic and achievable within the duration of the project.

* 1. **Novelty, level of ambition and foundational character**

Describe the advance your proposal would provide beyond the state-of-the-art, and to what extent the proposed work is ambitious, novel and of a foundational nature. Your answer could refer to the ground-breaking nature of the objectives, concepts involved, issues and problems to be addressed, and approaches and methods to be used.

* 1. **Concept and methodology**

Describe and explain the overall concept and research approach underpinning the project. Describe the main ideas, models or assumptions involved. Identify any interdisciplinary considerations and, where relevant, use of stakeholder knowledge.

Describe any national or international research and innovation activities which will be linked with the project, especially where the outputs from these will feed into the project.

Describe the methodology and explain its relevance to the objectives.

Describe the appropriateness of the methodology to narrow down multiple options and to address high scientific and technological risks.

* 1. **Interdisciplinary nature**

Describe the research disciplines involved and the range of added value from interdisciplinarity, including measures for exchange, cross-fertilisation and synergy.

1. Impact (max. 3 pages)
   1. **Expected impacts**

Be specific, and provide only information that applies to the proposal and its objectives. Wherever possible, use quantified indicators and targets.

Describe how the project will contribute to the expected impacts (see ‘Research Targeted in the Call’ of the Call Announcement).

Describe the importance of the technological outcome with regard to its transformational impact on technology and/or society.

* 1. **Dissemination, exploitation of results, communication**

Provide a plan for disseminating and exploiting the project results beyond the project itself.

Results include any data produced in the framework of the project. If applicable, describe how data curation and distribution can be ensured beyond the project duration.

Describe the proposed communication measures for promoting the project and its findings during the period of the project. Measures should be with clear objectives. They should be tailored to the needs of different target audiences, including groups beyond the project’s own community.

Where relevant, include measures for public/societal engagement on issues related to the project.

1. Implementation
   1. **Work plan**

(max. 2 pages)

Provide a brief presentation of the overall structure of the work plan.

Clearly define the intermediate targets.

Provide a timing of the different work packages and their components (Gantt chart or similar).

Provide a graphical representation of the work packages components showing how they inter-relate (Pert chart or similar).

* 1. **Work packages**

(max. 1 page per WP)

For the description of each work package, please use the template provided. Use as many templates as needed.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **WP 1** | | **WP Title** | | | | | | | | | Start month | | End month |
| **Contribution of project partners** | | | | | | | | | | | | | |
| Partner number[[1]](#footnote-0) | | | | 1 | | 2 | 3 | 4 | 5 | 6 | | 7 | 8 |
| Total effort per partner (person\*months) | | | |  | |  |  |  |  |  | |  |  |
| **Aim of the WP**  Description of the objectives of the WP and the interrelation with other WPs. | | | | | | | | | | | | | |
| **Tasks** | | | | | | | | | | | | | |
| **T1.1** | **Task title (start month – end month: responsible partner; involved partners)[[2]](#footnote-1)**  Description of work and role of participants | | | | | | | | | | | | |
| **T1.2** | **Task title (start month – end month: responsible partner; involved partners)**  Description of work and role of participants | | | | | | | | | | | | |
|  | Add tasks as needed | | | | | | | | | | | | |
| **Deliverable** | | | **Month of delivery** | | **Title of deliverable** | | | | | | | | |
| **D1.1** | | |  | |  | | | | | | | | |
| **D1.2** | | |  | |  | | | | | | | | |
|  | | |  | | Add deliverables as needed | | | | | | | | |

**Work package overview (total effort per WP and partner in person.months)**

Use as many lines and columns as needed.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Partner | WP1 | WP2 | WP3 | WP4 | WP5 | WP6 | Total |
| 1 |  |  |  |  |  |  |  |
| 2 |  |  |  |  |  |  |  |
| 3 |  |  |  |  |  |  |  |
| 4 |  |  |  |  |  |  |  |
| 5 |  |  |  |  |  |  |  |
| 6 |  |  |  |  |  |  |  |
| Total |  |  |  |  |  |  |  |

* 1. **Management structure, milestones, risk assessment**

(max. 2 pages)

Describe the organisational structure and the decision-making including a list of milestones (template provided). A milestone is a major and visible achievement. It should be SMART: Specific, Measurable, Attainable, Relevant, Time-bound.

Explain why the organisational structure and decision-making mechanisms are appropriate to the complexity and scale of the project.

**List of milestones**

Use as many lines as needed but try to limit the number of milestones.

|  |  |  |  |
| --- | --- | --- | --- |
| **Milestone** | **Delivery month** | **WP involved** | **Title** |
| **M1** |  |  |  |
|  |  |  |  |

Describe any critical risks, relating to project implementation, that the stated project’s objectives may not be achieved. Detail any risk mitigation measures. Please provide a table with critical risks identified and mitigating actions (template provided).

**Critical risks for implementation**

Use as many lines as needed.

|  |  |  |
| --- | --- | --- |
| **Description of risk (indicate level of likelihood: Low/Medium/high)** | **WP(s) involved** | **Proposed risk-mitigation measures** |
|  |  |  |
|  |  |  |

* 1. **Consortium as a whole**

(max. 1 page)

The individual members are described in section 3.5, there is no need to repeat that information there.

Describe the consortium. How will it match the project’s objectives and bring together the necessary expertise? How do the members complement one another?

In what way does each of them contribute to the project? Show that each has a valid role and adequate resources in the project to fulfil that role.

If applicable, describe the industrial/commercial involvement in the project and explain why this is consistent with and will help to achieve the specific measures which are proposed for exploitation of the results of the project.

**3.5 Description of the consortium**

(max. 1 page per partner)

Describe expertise and role in the project for each partner (templates provided). The information provided here will be used to judge the operational capacity. Use the following templates for the coordinator, the other partners requesting funding, and partners not requesting funding if any. If the project relies on input to be provided by a third party, append a letter of commitment at the end of the proposal.

|  |  |
| --- | --- |
| **Partner 1**  Project Coordinator | **Organisation name / Department** |
| **Expertise:**  Expertise of the organisation related to the project objectives.  For the principal investigators give a brief CV, including gender, highlighting research experience; and list up to 5 relevant publications, and/or products, services (incl. widely-used datasets or software), or other achievements relevant to the call content. | |
| **Role in project:** | |

***Use this template if this partner is requesting funding***

|  |  |
| --- | --- |
| **Partner n** | **Organisation name / Department** |
| **Expertise:**  Expertise of the organisation related to the project objectives.  For the principal investigators give a brief CV, including gender, highlighting research experience; and list up to 5 relevant publications, and/or products, services (incl. widely-used datasets or software), or other achievements relevant to the call content. | |
| **Role in project:** | |

***Use this template if this partner is not requesting funding***

|  |  |
| --- | --- |
| **Partner n** | **Organisation Full name / Department** |
| **Expertise:**  Expertise of the organisation related to the project objectives.  For the principal investigators give a brief CV, including gender, highlighting research experience; and list up to 5 relevant publications, and/or products, services (incl. widely-used datasets or software), or other achievements relevant to the call content. | |
| **Role in project:** | |
| **Please explain how the partner is able to secure its own funding:** | |

* 1. **Consortium agreement principles (partner’s rights and duties, IPR management)**

(max. ½ page)

* 1. **Significant facilities and large equipment available to the consortium to perform the project**

(max. ½ page)

* 1. **Link with ongoing projects**

(max. ½ page)

For each partner indicate (if applicable) the ongoing projects linked to the proposal topic, and their funding sources.

* 1. **Financial plan**

(max. 1 page)

The resources to be committed for each project partner have to be described in the Electronic Submission System by the coordinator. These resources include: Personnel, Consumables, Equipment, Travel, Subcontracting, Provisions, Licensing fees, other. Justify them here. Both the justification and the information in the system will be communicated to the Evaluation Panel.

1. Ethical issues (max. ½ page)

Describe any foreseeable ethical issue that may arise during the course of the research project. Describe all mitigation strategies employed to reduce ethical risk, and justify the research methodology with respect to ethical issues.

1. References (max. 30 references)

Provide references of articles and publicly available documents directly supporting the proposal.

1. ***Bold*** *the partner number of the work package leader* [↑](#footnote-ref-0)
2. *For instance: T1.1 Development of something (M3-M6; responsible: 3; involved: 1, 4)* [↑](#footnote-ref-1)