**CREMLINplus WP Technical Report – 1st reporting period**

**Period: 01 February 2020 – 31 July 2021**

For the first periodical report we need input from you as WP Leader and Co-leader. We kindly ask you to formulate a summary of your WP progress for the first reporting period (M1-M18) by the given subjects/questions below.

You are free in writing the text. It should be concise and readable. Please write in a clear style, avoiding any abbreviations.
Redundancies should be avoided.

Please use the box below to insert your text. The given subjects/questions give you an idea what is needed.

**Technical Report** **WP5 SCT**

1. **Objectives of WP5 SCT** (as described in Annex 1 of the Grant Agreement)

*Aim of this task is to support efforts devoted to promotion of the SCT project in Europe and world-wide*

* *To support and develop EU and Russian scientific cooperation in the SCT project*
* *To make an example of good practice on establishing collaboration around Russian RI with extensive participation of EU institutions*
* *To support joint EU - Russian efforts on development of future lepton colliders*
* *To increase visibility of SCT project in EU and world-wide scientific and decision-makers communities*
1. **Overall status**
	* Please describe the overall status of the WP (e. g. specific achievements/successes of WP; Is the WP overall in line with the Objectives?)

|  |
| --- |
| *Please describe the overall status of the WP (roughly max. 2000 characters excluding spaces).**Input by WP lead:* |

1. **Tasks and achievements**
	* We have listed the WP specific tasks as described in the Description of Action (DoA) (Annex 1 of the Grant Agreement (GA)). Please describe the work carried out during the reporting period towards the achievement of the listed tasks and specify by which beneficiary (if possible).
	* Please name highlights as well as unexpected issues.
	* Please describe the overlap with other WP or external experts.
	* Please comment on Deliverables and Milestones achieved so far. (Please find all relevant Deliverables and Milestones for the first reporting period on the last page of this template.)
	* Please finalize each task with a statement that the task is well on track (or something similar along these lines). If this is not the case, please list the task in “5. Deviations” of this template and add the reason for the deviation.
	* You may also add pictures/diagrams/scientific data (including a title/brief description) – this will be highly appreciated.

|  |
| --- |
| ***Task 5.1: Fostering internationalization and visibility of the SCT project, support of outreach activities related to SCT****Please describe the work carried out during the reporting period towards the achievement(roughly max. 2000 characters excluding spaces).**Input by WP lead:****Task 5.2: Development of collider technologies and fostering synergy between SCT, CLIC, and FCC-ee collider projects****Please describe the work carried out during the reporting period towards the achievement(roughly max. 2000 characters excluding spaces).**Input by WP lead:****Task 5.3: Development of software for the design of an SCT detector****Please describe the work carried out during the reporting period towards the achievement(roughly max. 2000 characters excluding spaces).**Input by WP lead:****Task 5.4: Development and design of Inner Tracker for the SCT detector****Please describe the work carried out during the reporting period towards the achievement(roughly max. 2000 characters excluding spaces).**Input by WP lead:****Task 5.5: Development and design of Central Tracker for the SCT detector****Please describe the work carried out during the reporting period towards the achievement(roughly max. 2000 characters excluding spaces).**Input by WP lead:****Task 5.6: Development and design of a Particle Identification system for the SCT detector****Please describe the work carried out during the reporting period towards the achievement(roughly max. 2000 characters excluding spaces).**Input by WP lead:* |

1. **Outlook**

|  |
| --- |
| *Please give a short outlook on the next steps and upcoming tasks (roughly max. 1000 characters excluding spaces).**Input by WP lead:* |

1. **Deviations from Annex 1 & 2 of Grant Agreement**
* Explain the reasons for any deviations from the DoA, the consequences and the proposed corrective actions.
* Include explanations for tasks not fully implemented, critical objectives not fully achieved and/or not being on schedule. Explain also the impact on other tasks, on the available resources and the planning.
* [ ]  Not applicable

|  |
| --- |
| *Please insert your text here (roughly max. 2000 characters excluding spaces).**Input by WP lead:* |

1. **Critical Risks**
* In Annex 1 of the Grant Agreement we have identified potential risks for your WP. Please find below the foreseen risks stated in the Grant Agreement.
* If the risk materialized, please formulate a statement which risk-mitigation measures you have applied.

|  |
| --- |
| ***Description of Risk****: R&D of the SCT detector subsystems is a very challenging business. There is always a probability of not achieving the expected parameters to fit the physics programme or collider conditions****Proposed Risk-Mitigation Measures:*** *To minimise possible effects of these risks at least two options for each SCT detector subsystems are to be developed***Did you apply the risk-mitigation measures?** [x]  **YES** [x]  **NO****Did the risk materialize?** [x]  **YES** [x]  **NO***Please add your comments here. If the risk-mitigation measures couldn't be applied, please explain why (roughly max. 1000 characters excluding spaces).**Input by WP lead:* |

|  |
| --- |
| ***Description of Risk****: Mass production of the novel detector technologies could be limited by modern state of the high-tech industry: aerogel production, carbon fibres, photolithography on polymide3 substrates, DLC sputtering, metal coating of carbon monofilament, SiPMs and other front-end electronics with good enough radiation tolerance****Proposed Risk-Mitigation Measures:*** *Throughout the R&D activities, it is necessary to look for reliable industrial partners for mass production of detector components and to produce some small trial batches of component materials to determine most risks of the mass production in advance.***Did you apply the risk-mitigation measures?** [x]  **YES** [x]  **NO****Did the risk materialize?** [x]  **YES** [x]  **NO***Please add your comments here. If the risk-mitigation measures couldn't be applied, please explain why (roughly max. 1000 characters excluding spaces).**Input by WP lead:* |

1. **Unforeseen Risks** *(if applicable)*
* Did an unforeseen risk arise during the first period?
* If so please describe the risk and the risk-mitigation measures you have applied.

|  |
| --- |
| ***Description of Risk****: ……………………………****Proposed Risk-Mitigation Measures:*** *…………………………..**Please add your comments here. If the risk-mitigation measures couldn't be applied, please explain why (roughly max. 1000 characters excluding spaces).**Input by WP lead:* |

|  |
| --- |
| ***Description of Risk****: ……………………………****Proposed Risk-Mitigation Measures:*** *…………………………..**Please add your comments here. If the risk-mitigation measures couldn't be applied, please explain why (roughly max. 1000 characters excluding spaces).**Input by WP lead:* |

**Deliverables Period 1**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Deliverable****Number**  | **Deliverable Title** | ***Due Date (in months)*** | ***Delivery (in months)*** | ***Status*** |
| D5.1 | Status report on thesoftware for the SCTdetector | M18 |  |  |

**Milestones Period 1**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Milestones****Number**  | **Milestones****Title** | ***Due Date (in months)*** | ***Delivery (in months)*** | ***Status*** |
| MS26 | Release of the softwareframework for SCT detector | M18  |  |  |
| MS27 | Kick-off meeting ofinternational collaborationaround the SCT detector | M18 |  |  |

**Terminology**

DoA Description of Action (Annex 1 of the GA)

GA Grant Agreement

WP Work package