

Memorandum of partnership for SCT Detector and Physics (hereafter the "MoP")

The effective date of this MoP shall be November 18th 2021 (the "Effective Date").

Between:

Budker Institute of Nuclear Physics ("BINP"), a research institute of Siberian branch of Russian academy of science, as *the Coordinator*,

and:

The partners listed in Annex 1 to this MoP, including BINP (the "Partners")

Hereinafter collectively referred to as the "Parties" and individually as the "Party".

Considering that:

- The Super Charm-Tau (SCT) project is under consideration of being implemented in Russia;
- The accelerator and detector technologies being developed for SCT are essential for other state-of-art collider experiments, such as FCC-ee, CLIC, ILC and CEPC;
- The Partners have expressed their interest to take part in and contribute to the SCT project;
- BINP's role as initiator and coordinator of the SCT project;
- The mutual benefit of the Parties that shall result from collaboration between them;

HAVE AGREED AS FOLLOWS:

1 Scope

- 1.1. The Parties form the Partnership for joint development of the SCT project;
- 1.2. This MoP defines the framework under which the Parties shall cooperate in the Partnership, and describes the organisational structure and decision mechanism of the Partnership;
- 1.3. This MoP shall be complemented by Annexes, which shall form an integral part of this MoP;
- 1.4. Except as may be provided otherwise, each Party shall bear its own cost of participation in the Partnership.

2 The Partnership

2.1. The Partnership aims at:

- Studies of the physics discovery potential and prospects for precision measurements at the SCT e^+e^- collider, including aspects related to beam polarisation;
- The detector simulation and optimisation studies;
- Software development for event generation, detector simulation, event reconstruction and analysis;
- Hardware development for detector sub-systems and their readout electronics;
- Engineering and integration studies for a future SCT experiment, including supporting infrastructures;
- Building consensus on critical aspects of the SCT experiment planning and relaying it to the officials;
- Preparing governance rules for the full-scale collaboration that will be launched after the funding decision.

- 2.2. A Party is a scientific group affiliated with a research or educational organization. Only one Partner per organization joins the Partnership.
- 2.3. The detailed scientific and technical objectives of the Partnership shall be as described in Annex 2 to this MoP, that shall be updated on a regular basis, subject to the approval of the Institutional Board.

3 Organisational structure and decision mechanism

- 3.1. The Organisational structure of the Partnership shall include the following entities:
 1. The SCT detector and physics Institutional Board (IB);
 2. The Russian Spokesperson;
 3. The International Spokesperson;
 4. The other position/committees appointed by IB.

The organisational structure of the Partnership resembles that of other HEP experiments. The Partners will be represented in the “SCT detector and physics Institutional Board ” (IB). While the IB is the ultimate decision entity that gives directions to the Partnership, the representation roles will be covered by the “SCT spokespersons”.

The organisational structure of the Partnership is described in global terms below. A more detailed description of the internal procedures of the entities is described in Annex 3. Updates of Annex 3 are subject to approval by the IB.

- 3.2. The SCT detector and physics Institutional Board:
 - Comprises one member from each Party participating in the Partnership;
 - Meets at least once per year;
 - Defines the direction of the Partnership, taking higher-level constraints and strategies into account;

- Shall elect its Chairperson;
 - Shall elect the Spokespersons of the Partnership;
 - Appoints and approves other position/committees upon agreement;
 - Defines the rules applicable in the execution of the Partnership, including in particular the rules for the election and renewal of appointments and the publication rules and internal procedures for public presentations and publications;
 - Issues recommendations on the SCT experiment planning decisions that lay beyond the scope of the Partnership;
 - Admits new Partners to the Partnership;
- 3.3. The Russian SCT Spokesperson represents the Partnership to Russian authorities, the SCT host laboratory, and general public.
- 3.4. The International SCT Spokesperson represents the Partnership to the outside, except the cases related to Russian authorities and SCT host laboratory.

4 Responsibilities of BINP as Coordinator

- 4.1. BINP is responsible for the organization of the kick-off partnership meeting. During this event the first IB meeting should be held or scheduled.
- 4.2. BINP is responsible for the organization of the first IB meeting. During the first IB meeting
- the IB chair must be elected;
 - the procedure for electing Russian and International spokespersons should be defined;
 - the procedure preparing and approving the MoP annexes 2, 3, and 4 should be defined.

5 Responsibilities of the Parties

- 5.1. The Partners shall, on a best effort basis, contribute to the Partnership.
- 5.2. Any specific agreement on a contribution to the Partnership by a Partner may be set out in an Annex to this MoP.

6 Intellectual property

- 6.1. Proprietary information, including any information protected by trademark, patent or copyright, whether pre-existing or developed in the execution of this MoP, contributed to the Partnership by a Party in the execution of this MoP, shall not create any right in respect of that information for the other Parties, other than a free, irrevocable and non-exclusive licence to use such information in so far as required for the execution of this MoP or in the scope of its scientific program, for non-military purposes.
- 6.2. The Parties provide no warranties or representations of any kind to each other. They shall have no liability to each other with respect to the subject matter of this Article and each Party shall be exclusively liable for the consequences of its use of proprietary information contributed to the Partnership.

7 Publications

Publication rules and internal procedures for public presentations and publications require approval by the IB, and shall be set out in Annex 4 to this MoP.

8 Liability

The Parties shall have no liability to each other in the execution of this MoP.

9 New Partners

- 9.1. The Partnership intends to welcome new Partners. The admission of any new Partner is subject to the formal approval by the IB.
- 9.2. To join to the Partnership, a new Partner prepares a letter of intent (Annex 5) signed by a scientific leader of the group and (optionally) representative of affiliated organization management and communicates it to the Coordinator.

10 Entry into force and duration

- 10.1. This MoP enters into force upon signature by at least 8 Partners. It can be terminated by a common decision of all Partners.
- 10.2. Any Partner or Coordinator may withdraw from this MoP, upon one-year-advance written notice to the IB.

11 Dispute resolution

The Parties shall settle any difference concerning this MoP amicably. Where this is not possible, the Parties shall resort to arbitration in accordance with a procedure to be specified by the Parties. Notwithstanding reference of the dispute to arbitration, the Parties shall continue to perform their obligations under this MoP.

12 The SCT Steering Committee

The SCT Steering Committee (SC) is an external body to the Partnership. The SC comprises of:

- appointed/elected Partnership officials: the IB Chair, the Russian and International SCT spokespersons, etc;
- appointed representatives of the Coordinator;

- appointed representatives of the Host Laboratory;

The SC is the main communication channel between the Partnership and the Host Laboratory. It translates the Partnership recommendations to the authorities.

A Annex 1. The Partners

List of all Partners. To be updated each time a new Partner has joined.

Country	Affiliation	LoI signing date
Germany	Justus Liebig University (JLU) Giessen	2021.09.22
Russia	Novosibirsk State Technical University (NSTU)	2021.09.24
Russia	Novosibirsk State University (NSU)	2021.10.11
Russia	P.N. Lebedev Physical Institute of Russian Academy of Science (LPI RAS)	2021.10.11
Russia	Budker Institute of Nuclear Physics (BINP)	2021.10.13
Russia	Lomonosov Moscow State University Skobeltsyn Institute of Nuclear Physics (SINP MSU)	2021.10.29
Mexico	Physics Department, Center for Research and Advanced Studies (Cinvestav)	2021.11.12
International	Joint Institute for Nuclear Research (JINR)	2021.11.15
Russia	Higher School of Economics (HSE) University	2021.11.15
Russia	Institute of Nuclear and Radiation Physics (INRP) RFNC-VNIIEF	2021.11.16

Table 1: Updated on November 18, 2021.

B Annex 2: Detailed scientific and technical objectives of the Partnership

The detailed scientific and technical objectives of the Partnership shall be updated on a regular basis, subject to approval of the IB. They are described below.

To be completed once the IB has been put in place and once it has agreed on the objectives of the Partnership and on their accompanying time-line.

C Annex 3: Organisational Structure – Internal Procedures

The internal procedures of the Partnership are subject to approval of the IB. They are described below.

To be completed once the IB has been put in place and once it has agreed on the internal procedures.

D Annex 4: Procedures for conferences and publications

The procedures for conferences and publications are subject to approval of the IB. They are described below.

To be completed once the IB has been put in place and once it has agreed on the procedures for conferences and publications.

E Annex 5: Letter of Intent (LoI) template

To Budker Institute of Nuclear Physics as Coordinator of the SCT Partnership

On behalf of the group affiliated with NAME OF ORGANIZATION I declare that the group is willing to participate in the Partnership for the SCT Detector and Physics and agrees with the rules listed in the SCT Memorandum of Partnership. The group is interested in contributing to the following fields: LIST OF FIELDS.

Done in PLACE

Date

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NAME OF THE GROUP LEADER

THE GROUP LEADER AFFILIATION AND POSITION

Date

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NAME OF THE OFFICIAL REPRESENTATIVE

THE OFFICIAL REPRESENTATIVE AFFILIATION AND POSITION