## The Joint Committee for CERN-JINR Scientific Cooperation

## Status of CERN – JINR Protocols and Addenda

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- The goal is to look over JINR-CERN contractual documents (MoU's, protocols, addendums), in order to check status and give recommendation for termination, prolongation or updating of the documents.
- Table includes recent contractual documents for collaboration and common developments in the following areas:
- LHC experiments.
- Information technologies.
- Detectors and read-out electronics.
- Accelerator physics and technology. Design and construction of magnets.

## **Status of CERN – JINR Contractual Documents**

| Document #                          | Date | Туре                     | Parent document   | Title / content   | Status    | Contact person<br>CERN | Contact person<br>JINR | Decision<br>Continue/<br>Close |
|-------------------------------------|------|--------------------------|---|---|-----------|------------------------|------------------------|--------------------------------|
| CERN/P123                           | 2015 | Protocol                 | Cooperation Agreement concerning Scientific and technical co-operation in high energy physics | Participation by JINR in Large Hadron<br>Collider project (LHC)   | Active    | DG CERN                | JINR director          | Continue                       |
| Addendum<br>P123/A1                 | 2016 | Addendum                 | Protocol CERN/P123  | Collaboration in the design, manufacture and assembly of the Precision Laser Inclinometer to monitor ground angular oscillations during the LHC operations with the aim of studying their effects on the luminosity for the HL LHC beam delivered to the ATLAS experiment | Completed | B. Girilamo            | J. Budagov             | Prolonged                      |
| Amendment<br>to addendum<br>P123/A1 | 2017 | Amendment<br>to addendum | Addendum<br>P123/A1   | Collaboration in the design, manufacture and assembly of the Precision Laser Inclinometer to monitor ground angular oscillations during the LHC operations with the aim of studying their effects on the luminosity for the HL LHC beam delivered to the ATLAS experiment | Active    | B. Girilamo            | J. Budagov             | Continue                       |
| CERN/P124                           | 2015 | Protocol                 | Cooperation Agreement concerning Scientific and technical co-operation in high energy physics | Collaboration and common developments in the area of neutrino physics and technology and related fields   | Active    | M, Nessi               | N. Rusakovich          | Continue                       |
| P075/LHC                            | 2005 | Protocol                 | 1992 co-operation agreement   | Collaboration on information technologies (IT) in LHC Era   | Active    | E. Elsen               | V. Korenkov            | Continue                       |
| CERN-P115                           | 2014 | Protocol                 | Cooperation Agreement concerning Scientific and technical co-operation in high energy physics | Collaboration and common developments in the area f controls and related software activities for accelerators   | Completed | M. Draper              | V. Korenkov            | To close                       |

| CERN-P115      | 2014 | Protocol     | Cooperation Agreement          | Collaboration and common                | Completed      | M. Draper       | V. Korenkov   | To close       |
|----------------|------|--------------|--------------------------------|---|----------------|-----------------|---------------|----------------|
|                | 2011 | 11000001     | concerning Scientific and      | developments in the area f controls and | Completed      | Wi. Braper      | V. Korenkov   | 10 01030       |
|                |      |              | technical co-operation in high | related software activities for         |                |                 |               |                |
|                |      |              | energy physics                 | accelerators                            |                |                 |               |                |
| Addendum       | 2015 | Addendum     | Protocol CERN-P115             | Collaboration in the development of     | Completed      | D. Mathieson    | V. Korenkov   | To close       |
| P115/A.1       | 2013 | , raderidani | 11000010211111123              | "Plan version2", CERN planning tool for | Completed      | 2. Wideineson   | T Koremov     | 10 0.030       |
|                |      |              |                                | long shutdowns                          |                |                 |               |                |
| Addendum       | 2016 | Addendum     | Protocol CERN-P115             | Collaboration in software development   | Active         | D. Mathieson    | V. Korenkov   | Continue       |
| P115/A.2       |      |              |                                | for administrative applications         |                |                 |               |                |
| ,              |      |              |                                |   |                |                 |               |                |
| MoU-CERN-      | 2012 | MOU          | CERN/LHCC_2005-006             | Collaboration in the Deployment and     | Active         | I. Bird         | V. Korenkov   | Continue       |
| JINR_240CT2012 |      |              | P064/LHC July 2003             | Exploration of the World Wide LHC       |                |                 |               |                |
| _              |      |              |                                | Computing GRID (WLCG)                   |                |                 |               |                |
| CERN-P100      | 2010 | Protocol     | Cooperation Agreement          | The Joint Development of computer       | Applied        | D. Mathieson    | N. Rusakovich | Update         |
|                |      |              | concerning Scientific and      | programmes for JINR's administrative    | successfully   |                 | V. Korenkov   |                |
| *)             |      |              | technical co-operation in high | and financial activities.               |                |                 |               |                |
|                |      |              | energy physics                 | (Software, AIS, EVM for NICA)           |                |                 |               |                |
| CERN/PXXX      | 2017 | Protocol     | Cooperation Agreement          | Production of the Gas Electron          | active         | Rui de Oliveira | V. Karjavine  | In preparation |
|                |      |              | concerning Scientific and      | Multiplier (GEM) detectors for the      |                |                 | M. Kapishin   |                |
|                |      |              | technical co-operation in high | Baryonic Matter experiment (BM@N)       |                |                 |               |                |
|                |      |              | energy physics                 | at Nuclotron, JINR.                     |                |                 |               |                |
| MoU            | 2016 |              |                                | Production of Carbon Fiber Spaceframe   | active         | L. Mussa        | Y. Murin      | Continue       |
|                |      |              |                                | for NICA                                |                |                 |               |                |
| MoU            | 2017 |              |                                | Development of MAPC technology          | In preparation | L. Mussa        | Y. Murin      | In preparation |
|                |      |              |                                | ALICE type ITS for MPD/NICA             |                |                 |               |                |
|                |      |              |                                |   |                |                 |               |                |
| CERN/Pxxx      | 2017 | Protocol     | Cooperation Agreement          | Development of read-out electronics     | In preparation | A. Kluge        | S. Movchan,   | In preparation |
|                |      |              | concerning Scientific and      | for TPC MPD/NICA (SAMPA chip)           |                |                 | V. Golovatyuk |                |
|                |      |              | technical co-operation in high |   |                |                 |               |                |
|                |      |              | energy physics                 |   |                |                 |               |                |
| CERN-P101      | 2010 | Protocol     | Cooperation Agreement          | Collaboration and common                | Completed      | F. Kaspers      | I. Meshkov    | Update         |
| CLINIV-F 101   | 2010 | FIOLOCOI     | concerning Scientific and      | developments in the area of             | Completed      | 1. Raspers      | i. iviestikov | Opuate         |
|                |      |              | technical co-operation in high | accelerator physics and technology as   |                |                 |               |                |
|                |      |              | energy physics                 | well as related fields.                 |                |                 |               |                |
|                |      |              | Chergy phrysics                | New title: Problems of particle         |                |                 |               |                |
|                |      |              |                                | dynamics in ion (proton) colliders      |                |                 |               |                |
|                |      |              |                                | ayriannes in ion (proton) coniders      |                |                 |               |                |

| CERN-MoU-2016-017               | 2016 | MoU      |                    | Collaboration in the measure and mapping of the magnetic field of the superconducting solenoid for the Multi-Purpose Detector (MPD) experiment at the NICA collider. | Active  Adapting to a protocol form |              | A. Vodopyanov              | Adapting to a protocol form |
|---------------------------------|------|----------|--------------------|--|-------------------------------------|--------------|----------------------------|-----------------------------|
| P101/TE-A4                      | 2016 | Addendum | Protocol CERN-P101 | Scientific collaboration for design and construction of magnets for the CERN accelerator complex   | Active                              | D. Tommasini | G. Shirkov<br>V. Karjavine | Continue                    |
| MoU Future Circular<br>Collider | 2014 | MoU      |                    | For the Future Circular Collider (FCC) study hosted by CERN,   | Active                              | M. Benedict  | A. Kovalenko               | Continue                    |

<sup>\*)</sup> Documents highlighted in green are concerning cooperation in the area of the NICA accelerator complex.