**Template TA**

|  |  |  |  |
| --- | --- | --- | --- |
| **Work package number** | WP3 | **Start date** | 01/06/2019 |
| **Activity Type** | Transnational Access | | |
| **Work package acronym** | TA1-COSY | | |
| **Work package title** | Transnational Access to COSY | | |
| **Lead beneficiary** | 7 - FZJ | | |

# Publicity concerning the new opportunities for access

*[Please describe the measures taken to publicise the opportunities for access* *during the third reporting period (June 2022 – July 2024)].*

## Before each CBAC/USP meting a call for proposals is distributed via E-Mail to all actual as well as to potential new users.

## The opportunity for support via the transnational access activity at COSY is advertised at workshops and collaboration meetings.

## Detailed web-pages are available with information concerning the COSY facility and the experimental installations. A special web-page is available with information about the possibility of support of new users by the EU program:

## <http://www.ikp.fz-juelich.de/strong2020>

# Selection procedure

## 2.1 Organization of the Users Selection Panel (USP)

## For the selection of experiment proposals the COSY Beamtime Advisory Committee (CBAC) is installed which acts also as USP. The CBAC/USP meets once or twice a year. New proposals or beam time requests have to be sent to the scientific coordinator at COSY four weeks before the CBAC/USP meeting, who will pass them to the CBAC/USP members for evaluation.

## 2.2 Selection criteria

## The proposed measurements are evaluated and selected on the scientific value.

## The selection of users for EU support follows the priority rules given by the EU.

## 2.3 Users Selection Panel members

## The USP consists of external international experts in the field of hadron and precision physics, which are all fully independent of the infrastructure. The following list gives the actual USP members with the chairperson Prof. Marc Weber.

Prof. Kurt Aulenbacher University Mainz. Germany

Prof. Oliver Kester TRIUMF, Canada

Prof. Christian Schmidt GSI Darmstadt, Germany

Prof. Thomas Stöhlker GSI, HI Jena, Germany

Prof. Marc Weber KIT Karlsruhe, Germany (Chairperson)

## 2.4 Users Selection Panel meetings

## In the reporting period only one CBAC/USP meeting took place on

## February 23rd and 24th, 2023.

## Five proposals requesting support via the EU transnational access activity were submitted which are all eligible for support and all proposals were selected for support.

### For all submitted projects a short written report was prepared by the user selection panel (CBAC) which includes also ratings concerning the feasibility, readiness and importance and this reports with the recommendation for beam time were sent to the users.

# 3. Transnational Access activity during the reporting period

## 3.1 Detailed description of the activity

The activities during the reporting period concerns studies in view of an electric dipole measurement in a storage ring and various test measurements of detector components.

In the project DTEST particle detectors for the R3B and SFRS experiments which are part of the FAIR Phase-0 experimental program have been characterized. These test measurements included Si-strip and pixel detectors and scintillation crystals.

The MVD project studied the performance of micro vertex detectors to be used for the future PANDA experiment including the read out via the new ToAST ASIC under beam conditions.

The project AYPP2 is a continuation of the AYPP activity to test a complex detector system for a measurement of antiproton scattering at CERN. It included tracking detectors, straw tubes and scintillating fibers, scintillators and Cherenkov detectors.

The ITOF project for test measurements of large area scintillators with SiPM read out received beam time in the second reporting period and some travels were accounted for the third reporting period.

With the project D-EDM2 further activities in view of a measurement of the EDM for deuterons have been done. Data have been taken to improve the data statistics and investigations of systematics errors have been performed.

The PSCT project looked for the spin coherence time for protons which is more complicated due to the higher precession speed and higher number of spin resonances. Systematic studies have been done to understand the behavior but a drastic increase comparable to the deuteron case was not achieved.

***Table 3.1 Access to the facility during the reporting period supported by the project***

|  |  |  |  |
| --- | --- | --- | --- |
| **Project No.** | **User-project acronym** | **Number of users** | **Number of man/days spent at the infrastructure** |
| 1 | ITOF | 2 | 21 |
| 2 | DTEST | 13 | 123 |
| 3 | D-EDM2 | 8 | 96 |
| 4 | MVD | 2 | 17 |
| 5 | AYPP2 | 4 | 80 |
| 6 | PSCT | 7 | 120 |
| 7 |  |  |  |
| 8 |  |  |  |
| 9 |  |  |  |
| 10 |  |  |  |

## 3.2 Scientific output of the transnational access activity in the reporting period

The following publications were achieved in the reporting period.

First Search for Axionlike Particles in a Storage Ring Using a Polarized Deuteron Beam

S. Karanth et al., Phys. Rev. X 13, 031004

First detection of collective oscillations of a stored deuteron beam with an amplitude close to the quantum limit

J. Slim et al., Phys. Rev. Accelerators and Beams 24, 124601 (2021)

***Table 3.2 List of user meetings***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **User-project acronym** | **Date** | **Venue** | **Number of users** | **Overall number of attendees** |
| PSCT / D-EDM2 | 20/21.06.2022 | FZJ | 15 | 90 |
| PSCT / D-EDM2 | 17/18.10.2023 | FZJ | 20 | 95 |

# 4. Tables to be filled in the IT tool in Part A of the Periodic Report

***4.1 Researchers who have trans-national access to research infrastructures through Union support***

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Researcher** | | | **Employing organisation/Home institution** | | | **User-project acronym** | **Activity Domain (Discipline)** | **Installations used by the researcher (\*)** | | |
| **Name** | **Gender** | **Nationality** | **Name** | **Legal Status** | **Country** | **Infrastructure Short Name** | **Installation ID** | **Installation Short Name** |
| *Pawel Kulessa* | *M* | *PL* | *INP Kraków* | *RES* | *PL* | *AYPP2* | *Physics* | *COSY* | *1* | *COSY* |
| *Johann Zmeskal* | *M* | *AT* | *SMI Vienna* | *RES* | *AT* | *AYPP2* | *Physics* | *COSY* | *1* | *COSY* |
| *Marcin Zielinski* | *M* | *PL* | *JU Kraków* | *UNI* | *PL* | *AYPP2* | *Physics* | *COSY* | *1* | *COSY* |
| *Dachi Okropiridze* | *M* | *GE* | *HEPI TSU* | *UNI* | *GE* | *AYPP3* | *Physics* | *COSY* | *1* | *COSY* |
| *Ekaterina Megrelishvili* | *F* | *GE* | *HEPI TSU* | *UNI* | *GE* | *D-EDM2* | *Physics* | *COSY* | *1* | *COSY* |
| *Giuseppe Tagliente* | *M* | *IT* | *INFN Bari* | *RES* | *IT* | *D-EDM2* | *Physics* | *COSY* | *1* | *COSY* |
| *David Mchedlishvili* | *M* | *GE* | *HEPI TSU* | *UNI* | *GE* | *D-EDM2* | *Physics* | *COSY* | *1* | *COSY* |
| *Mikheil Chikhradze* | *M* | *GE* | *GTU* | *UNI* | *GE* | *D-EDM2* | *Physics* | *COSY* | *1* | *COSY* |
| *Jamal Slim* | *M* | *LB* | *RWTH Aachen* | *UNI* | *DE* | *D-EDM2* | *Physics* | *COSY* | *1* | *COSY* |
| *Andrea Pesce* | *M* | *I* | *INFN Ferrara* | *RES* | *I* | *D-EDM2* | *Physics* | *COSY* | *1* | *COSY* |
| *Dachi Okropiridze* | M | *GE* | *HEPI TSU* | UNI | *GE* | *D-EDM2* | *Physics* | *COSY* | *1* | *COSY* |
| *Irakli Lomidze* | M | *GE* | *AUG* | UNI | *GE* | *D-EDM2* | *Physics* | *COSY* | *1* | *COSY* |
| *Matt Whitehead* | *M* | *UK* | *York Uni.* | *UNI* | *UK* | *DTEST* | *Physics* | *COSY* | *1* | *COSY* |
| *Bastian Löher* | *M* | *DE* | *GSI* | *RES* | *DE* | *DTEST* | *Physics* | *COSY* | *1* | *COSY* |
| *Oleg Kiselev* | *M* | *RU* | *GSI* | *RES* | *DE* | *DTEST* | *Physics* | *COSY* | *1* | *COSY* |
| *Wei Zhang* | *M* | *CN* | *York Uni.* | *UNI* | *UK* | *DTEST* | *Physics* | *COSY* | *1* | *COSY* |
| *Ivan*  *Mukha* | *M* | *RU* | *GSI* | *RES* | *DE* | *DTEST* | *Physics* | *COSY* | *1* | *COSY* |
| *Ionut*  *Stefanescu* | *M* | *RO* | *IFIN-HH,*  *Romania* | *RES* | *RO* | *DTEST* | *Physics* | *COSY* | *1* | *COSY* |
| *Martin*  *Bajzek* | *M* | *HR* | *GSI* | *RES* | *DE* | *DTEST* | *Physics* | *COSY* | *1* | *COSY* |
| *Luke*  *Rose* | *M* | *UK* | *York Uni.* | *UNI* | *UK* | *DTEST* | *Physics* | *COSY* | *1* | *COSY* |
| *José Luis Rodríguez Sánchez* | *M* | *ES* | *Coruna Unisity* | *UNI* | *ES* | *DTEST* | *Physics* | *COSY* | *1* | *COSY* |
| *Martina Feijoo Fontan* | *F* | *ES* | *Uni. of Santiago de Compostela* | *UNI* | *ES* | *DTEST* | *Physics* | *COSY* | *1* | *COSY* |
| *Carlos Nogueira Lages* | *M* | *ES* | *IGFAE Santiago de Compostella* | *RES* | *ES* | *DTEST* | *Physics* | *COSY* | *1* | *COSY* |
| *Antia Graña Gonzalez* | *F* | *ES* | *Uni. of Santiago de Compostela* | *UNI* | *ES* | *DTEST* | *Physics* | *COSY* | *1* | *COSY* |
| *Dolores Cortina Gil* | *F* | *ES* | *Uni. of Santiago de Compostela* | *UNI* | *ES* | *DTEST* | *Physics* | *COSY* | *1* | *COSY* |
| *Pawel Kulessa* | *M* | *PL* | *INP Kraków* | *RES* | *PL* | *ITOF* | *Physics* | *COSY* | *1* | *COSY* |
| *Marcin Zielinski* | *M* | *PL* | *JU Kraków* | *UNI* | *PL* | *ITOF* | *Physics* | *COSY* | *1* | *COSY* |
| *Pavel Stanek* | *M* | *CZ* | *CTU Prague* | *UNI* | *CZ* | *MVD* | *Physics* | *COSY* | *1* | *COSY* |
| *Lukas Tomasek* | *M* | *CZ* | *CTU Prague* | *UNI* | *CZ* | *MVD* | *Physics* | *COSY* | *1* | *COSY* |
| *Zara Metreveli* | *F* | *GE* | *AUG* | *UNI* | *GE* | *PSCT* | *Physics* | *COSY* | *1* | *COSY* |
| *Swathi Karanth* | *F* | *IN* | *JU Kraków* | *UNI* | *PL* | *PSCT* | *Physics* | *COSY* | *1* | *COSY* |
| *Andrea Pesce* |  | *I* | *INFN Ferrara* | *RES* | *I* | *PSCT* | *Physics* | *COSY* | *1* | *COSY* |
| *Otari Javakshishvili* | *M* | *GE* | *AUG* | *UNI* | *GE* | *PSCT* | *Physics* | *COSY* | *1* | *COSY* |
| *Dachi Okropiridze* | *M* | *GE* | *HEPI TSU* | *UNI* | *GE* | *PSCT* | *Physics* | *COSY* | *1* | *COSY* |
| *Irakli Lomidze* | *M* | *GE* | *AUG* | *UNI* | *GE* | *PSCT* | *Physics* | *COSY* | *1* | *COSY* |
| *David Mchedlishvili* | *M* | *GE* | *HEPI TSU* | *UNI* | *GE* | *PSCT* | *Physics* | *COSY* | *1* | *COSY* |
| *Mirian Tabidze* | *F* | *GE* | *HEPI TSU* | *UNI* | *GE* | *PSCT* | *Physics* | *COSY* | *1* | *COSY* |

***4.2 Research infrastructures made accessible to all researchers in Europe and beyond through EU support and summary of trans-national access provision per installation per reporting period (RP)***

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Participant number** | **Organisation short name** | **Short name of infrastructure** | **Installation** | | **Unit of access** | **Min. quantity of access to be provided in Annex I (A)** | **Access provided in RP3** |
| **Number** | **Short name** |
| *7* | *FZJ* | *COSY* | *1* | *COSY* | *Beam hour* | *400* | *288* |