

SSRS-4 and the CREMLIN follow up project

Towards elaborating a plan for the future collaboration



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www.cremlin.eu

CREMLIN WP5 Workshop:

"Towards a conceptual design for the Russian SSRS-4 facility"

Hamburg, 23.01.2018



Overview

1. SSRS-4 in CREMLIN
2. The H2020 Call
3. Prepare for the follow-up proposal



*The SSRS-4. Sketch by NRC
KI*

1. **SSRS-4 in CREMLIN**
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1. SSRS-4 in CREMLIN

> CREMLIN targets at all 6 Russian Mega Science Projects:

- PIK Powerful Research Reactor, PNPI Gatchina
- NICA Ion Collider Facility, JINR Dubna
- **SSRS-4 Fourth Generation SR Source, NRC KI Moscow**
- XCELS High power laser, IAP Nizhniy Novgorod
- SCT Lepton collider SCT, BINP Novosibirsk

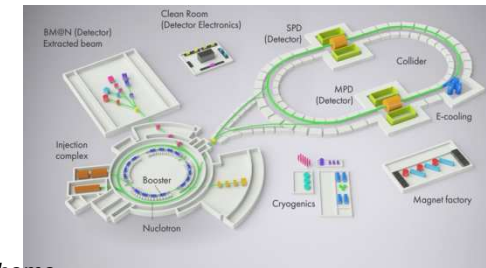
In a slightly less prominent way:

- IGNITOR Fusion project, NRC KI Moscow

> All 6: **quite different** status of implementation, collaboration and funding



PIK reactor

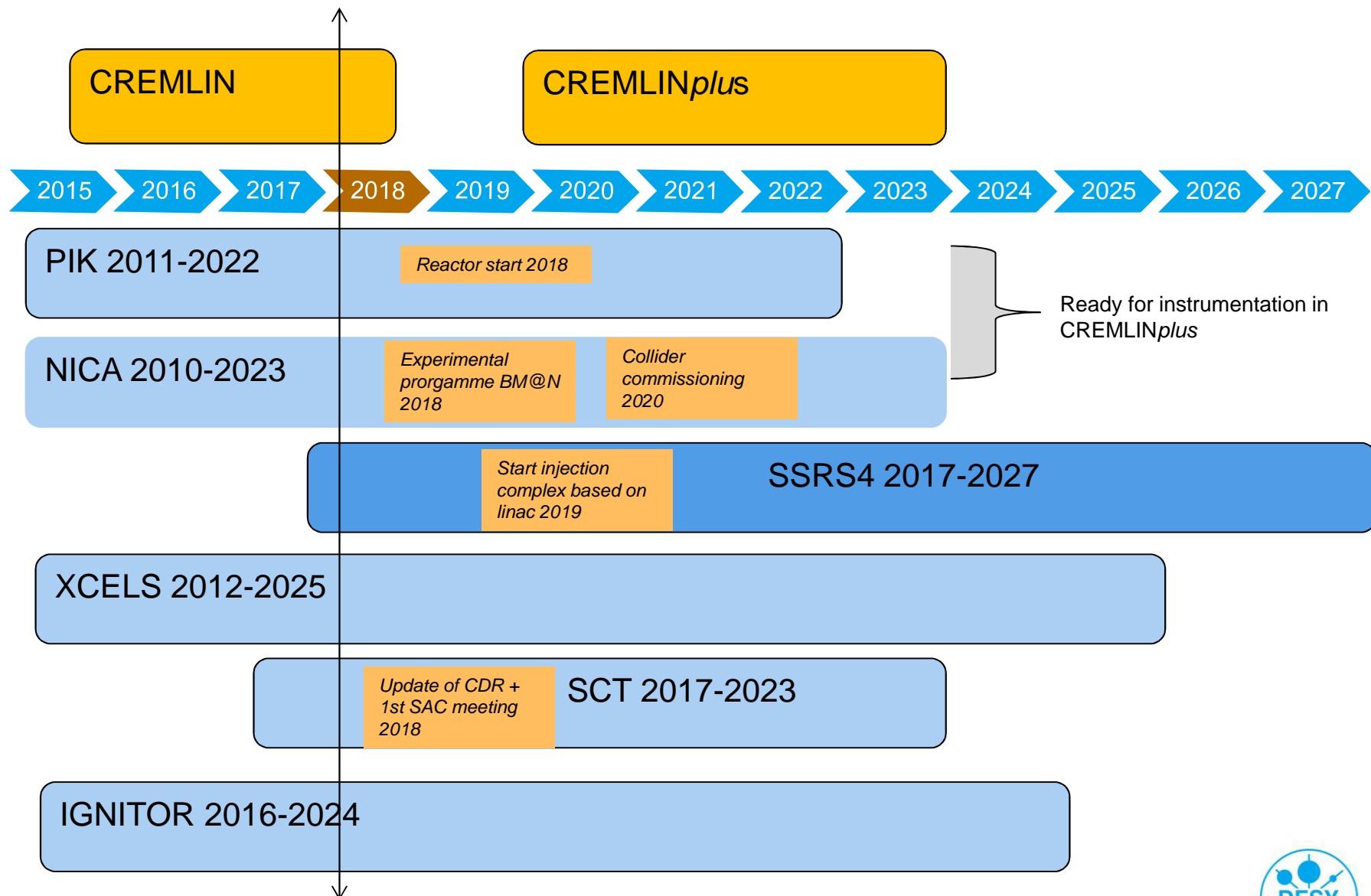


NICA scheme



XCELS

Different timelines for the projects



5 Thematic WPs

WP#	Title	Beneficiaries
WP3	Science cooperation with the NICA collider facility in the field of ion beams and heavy ion physics	FAIR + JINR
WP4	Science Cooperation with the PIK research reactor in the field of neutron sources	Jülich + PNPI HZG TUM ILL ESS
WP5	Science cooperation with the SSRS-4 synchrotron radiation source in the field of photon science	ESRF + NRC KI DESY European XFEL IC RAS Lund MAX IV
WP6	Science cooperation with XCELS in the field of high power laser research	CEA + IAP RAS ELI-DC
WP7	Science cooperation with the Super tau-charm factory STC in the field of lepton colliders	CERN + BINP



Examples of Activities WP5 SSRS4 collaboration

- > SSRS4 still in its initial phase
- > CREMLIN collaboration was used to prepare the scientific case for SSRS4 and to map the user demands of the RU and European SR user communities
- > 1st Working meeting face-to-face on 11 July 2016 at DESY Hamburg in preparation of the User demands WS
- > Workshop on User Demands SSRS-4: back-to-back with the Russian Conference on Crystallography during 22-23 November 2016 in Moscow



*Picture: DESY; WP5 meeting
11/07/2016 at DESY*

SPAB Recommendations for SSRS-4

- > SPAB: external advisory board to CREMLIN
- > Jean Moulin, Günter Kaindl, John Womersley, Sergey Mazurenko, Vladislav Panchenko
- > SPAB2 Recommendations on SSRS-4, May 2017:
- > *“The SPAB encourages the Russian partners to continue to **clarify the major design choices** for the SSRS-4 facility within the framework of a joint international design (with international experts) that could open the way for the subsequent establishment of an international cooperation on the project. In this context, the role of CREMLIN is important in helping to **promote the links with the user communities**.”*



Picture: Helmholtz Brussels.
SPAB2 Brussels.

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EC Info day in Moscow

- > EC: Call INFRASUPP-01-2018–2019:
“Policy and international cooperation measures for research infrastructures”
- > 3 flagships initiatives, 1 with Russia
- > 1 Dedicated Topic for Russia, with deadline in March 2019
- > Objective: “Support the further structuring of the cooperation with the Russian Federation in the Research Infrastructures domain”, building on the **Recommendations** of CREMLIN
- > Indicative budget all measures: EUR 25 million



Credit: NUST MISIS
Participants of Info day 19.12.2017



Call INFRASUPP-01-2018–2019

Three dimensions of the call:

- i) Cooperation with **Mega Science** projects
- i) Facilitate the **access** of EU scientists to Russian Research Infrastructures
- ii) Develop **staff exchange** programme



Call INFRASUPP-01-2018–2019

Dimension (i):

= Key dimension of the call with regard to SSRS-4 collaboration

Cooperation with **Mega Science** projects:

- > **“Joint development and acquisition of specific instrumentation** to be used by the European and Russian Infrastructures. This activity will target the infrastructures that are close to being operational, e.g. **NICA and PIK”**
- > **“Joint conceptual and technical design** of Russian Infrastructures of European interest. This activity will particularly target the infrastructures that are at an early conceptual stage, e.g. **SSRS-4, XCELS or SCT”**
- > **“Joint development of future technologies** required for Research Infrastructures' instrumentation”



Call INFRASUPP-01-2018–2019

Dimension (ii):

Facilitate the access of EU scientists to Russian Research Infrastructures:

- > Contribute to **overcoming the barriers** that prevent European scientists from accessing Russian Research Infrastructures of European interest.
- > The project will support Russian Facilities in setting-up the **appropriate access conditions** and cover the travel and subsistence costs that European researchers would sustain in accessing the facilities.
- > The project will have to take into account the **list of Research Infrastructures** open to International collaboration produced by the Russian Federation in 2016 (update possible) and the European Charter for Access to research infrastructures.



Call INFRASUPP-01-2018–2019

Dimension (iii):

Develop **staff exchange** programme:

- > The proposal will develop a staff exchange programme and thematic courses and workshops (e.g. summer schools), aimed at fostering **exchanges of best practices on management practices, access procedures and scientific collaboration** between infrastructure Staff and Scientists belonging to both the Russian Federation and European Union.



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Next steps

- > Develop a clear plan for the SSRS-4 project **conceptual design and project implementation timeline**
- > Develop draft for **SSRS-4 dedicated 4 year work package** within CREMLIN*plus* (dimensions 1 and 2), including consortium definition and rough budget
- > 21.02.2018: Present and approve this draft to SPAB during **SPAB3** meeting in Moscow
- > 5.-6.6.2018: Present and approve draft during CREMLIN Closing Conference in Hamburg to CREMLIN **Consortium Board CB**
- > Joint elaboration of **WP description details**
- > **Submit** CREMLIN*plus* proposal March 2019
- > CREMLIN*plus* envisaged project duration: 12/2019-12/2023



Also relevant to address

- > Set up an **international governance** SAC for SSRS-4
- > Propose **Joint European-Russian R&D** for state-of-the-art accelerator components for this 4th generation light source
- > Strengthen Photon Science **User community**
- > Clearly point out the **complementarity** to the X-ray sources in Europe: closer collaboration with newly established **LEAPS** platform and also with **ESFRI** projects and landmarks
- > <https://www.leaps-initiative.eu/>



Open Discussion

Thank you for your attention!

- > **Discussion Session is open now!**
- > *Which type of synchrotron light source will be proposed?*
- > *Which will be the preferred energy range for the SSRS-4?*
- > *Which will be the prospective major fields of application?*
- > *Which will be the intended complementarity of the SSRS-4 facility with existing Russian and European SR facilities?*
- > *... and many more*



**Thank you for your
attention!**

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