

The CREMLIN Project

Kicking off CREMLIN: Where do we stand? Where will we go?



HORIZON 2020

Martin Sandhop

Moscow, 6-7 October 2015

> Introducing the DESY CREMLIN team:

- Helmut Dosch: Chairman of the DESY Board of Directors; CREMLIN: Consortium Board
- Peter Wibbeling: Coordination
- Frank Lehner: DESY International Relations; CREMLIN WP2
- Ute Krell: EU Project Office at DESY
- Bea Bugla: EUP at DESY (administration)
- Volker Gülzow: DESY IT Department; CREMLIN: e-infrastructure & big data
- Oliver Seeck: PETRA III Experiments; CREMLIN: DESY contribution to WP5
- M.S.: IRI Hamburg Office; DESY Project manager



- CREMLIN start: good to remember some items from the H2020 call INFRASUPP-6-2014:
- CREMLIN not a pure research action, but a coordination and support action (means: also supposed to support the EU-Russia policy dialogue)
 - **Specific challenge:** “ (...) the research infrastructures activity will **focus on a number of key third countries seen as strategic for the development, exploitation and management of world-class research infrastructures.**”
 - **Scope:** “(...) the research infrastructure action will focus its activities on international cooperation in three different but complementary ways, as required: **bilaterally with a single third country at policy level; (...)**”



It's (also) about politics!



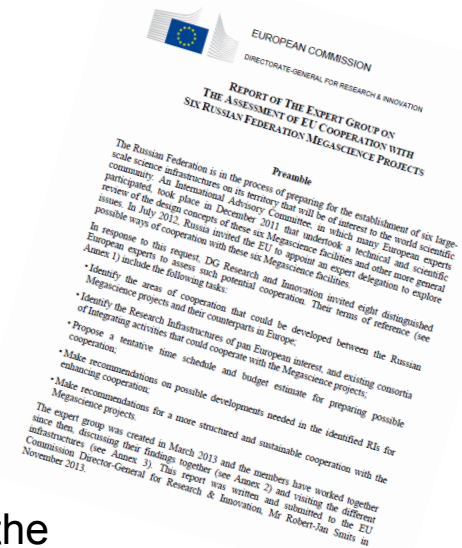
Political Context

- > CREMLIN also to contribute to trust-building between EU and Russia in terms of **science diplomacy**
- > “(...) *Russia is a very active scientific partner of the EU. It is still a welcome partner in Horizon 2020 projects. We are working to maintain this **important bridge to Russia**, preserving a **precious link** through the common language and ideals of science.*” (Carlos Moedas, EC, Commissioner for Research, Science and Innovation, 1 June 2015, The European Institute, Washington)



Expert Committee

- Expert Committee submitted Report to DG Research & Innovation Robert-Jan Smits in November 2013
- Report on *Assessment of the EU Cooperation with Six Russian Megascience Facilities*
- Recommendations e.g.
 - Provide **networking links** and resources to pursue collaboration workshops, exchange of scientific staff (→ call)
 - Realistically **assess the capacity** of the host labs to implement the projects in parallel
 - Assess **complementarity of facilities** with respect to those on the ESFRI Roadmap within a landscape analysis
 - Develop **closer cooperation** with Russian projects: leveling of standards across both regions (peer review; access standards; safety systematics; transparent processes; equality issues;...)
 - Useful to organise **strategic meetings** RU and EU member states in neutrons; SR; particle physics; heavy ions; lasers



Objectives: CREMLIN to CONTRIBUTE to...

Global objectives	<ul style="list-style-type: none">• CREMLIN as a pathfinder:• Enhance S&T cooperation Europe-Russia in the context of RIs• Better align the Russian projects to European RIs; open them for European users• Establish European-Russian science policy dialogue platforms
Specific objectives	<ul style="list-style-type: none">• Establish sustainable networks: training events, conferences,...• Draw up dedicated roadmaps for the cooperation• Link Russian projects to European e-infrastructure initiatives• Strengthen bottom-up elements
WP-related objectives	<ul style="list-style-type: none">• e.g. general PIK instrumentation concept• e.g. set up an international scientific advisory committee for the SSRS-4 project• ...

Consortium: 19 partners = all beneficiaries

13 European beneficiaris	6 Russian beneficiaris
DESY	NRC KI
Jülich	PNPI
FAIR	JINR
HZG	IAP RAS
TUM	BINP
European XFEL	IC RAS
ILL	
ESS	
ESRF	
ELI-DC	
CEA LIDyL	
CERN	
MAX IV Lab	
→ Associated partners?	→ Associated partners?



6 Russian Projects

> CREMLIN targets at **all 6 Russian megascience projects**:

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

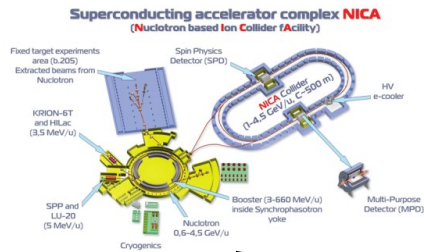
> Implementation until 2020

> PIK; NICA; IGNITOR: already being financed

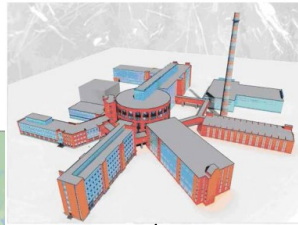


Landscape Russian Megascience

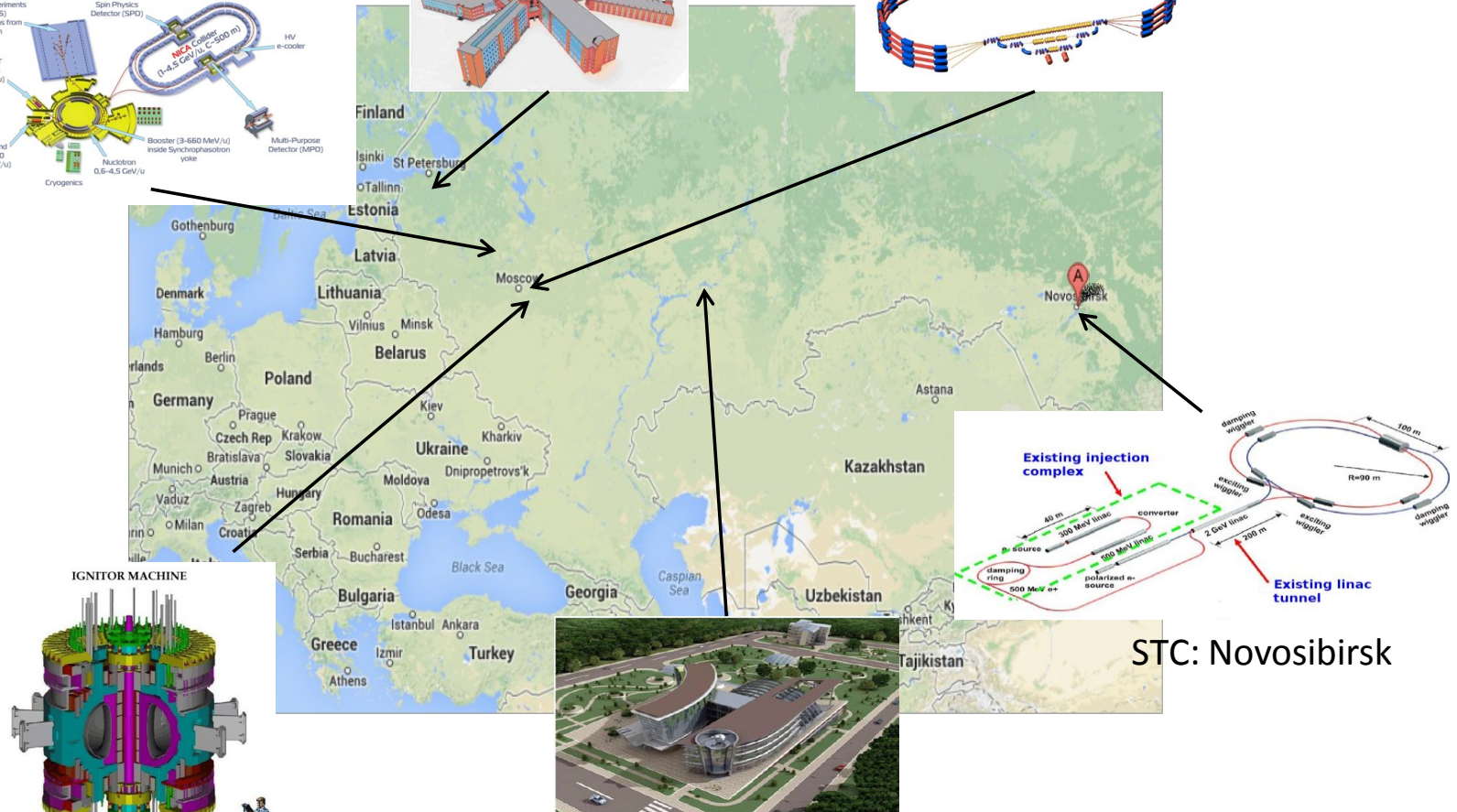
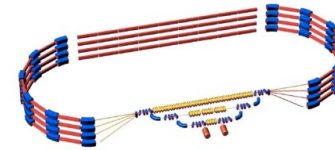
NICA: Dubna



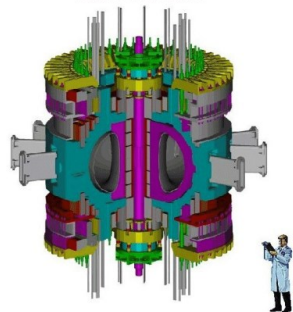
PIK: Gatchina



SSRS-4: Moscow

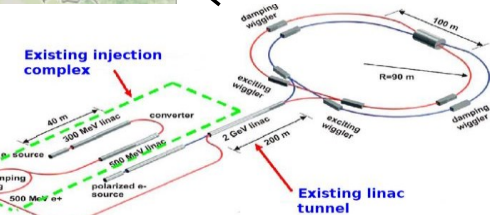


IGNITOR MACHINE



Fusion IGNITOR: Troitsk, Moscow

Hi-Power Laser XCELS: Nizhniy Novgorod

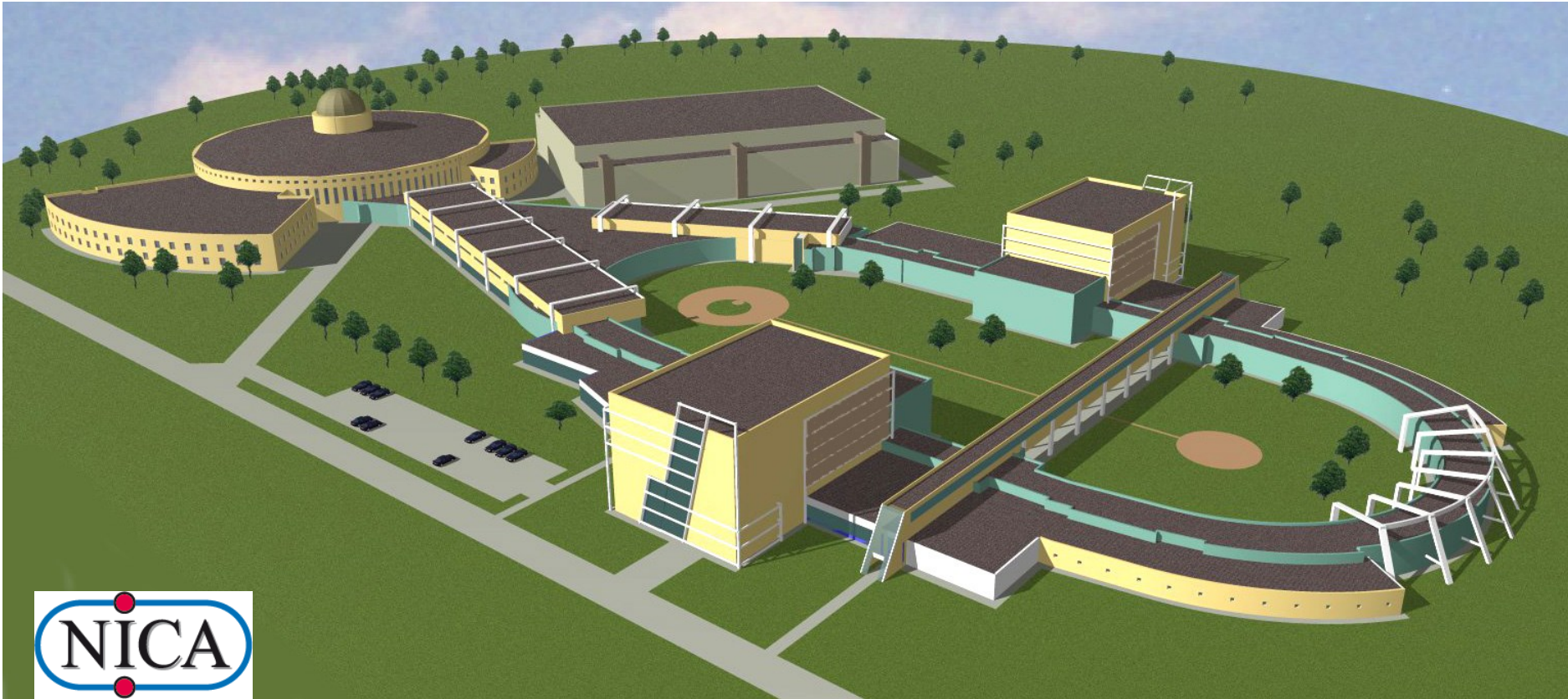


STC: Novosibirsk

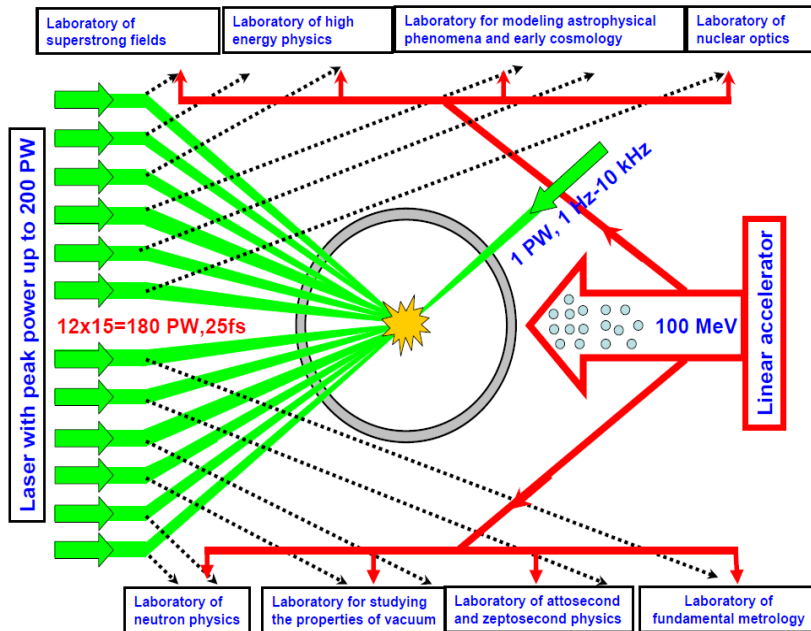
PIK Facility at PNPI Gatchina



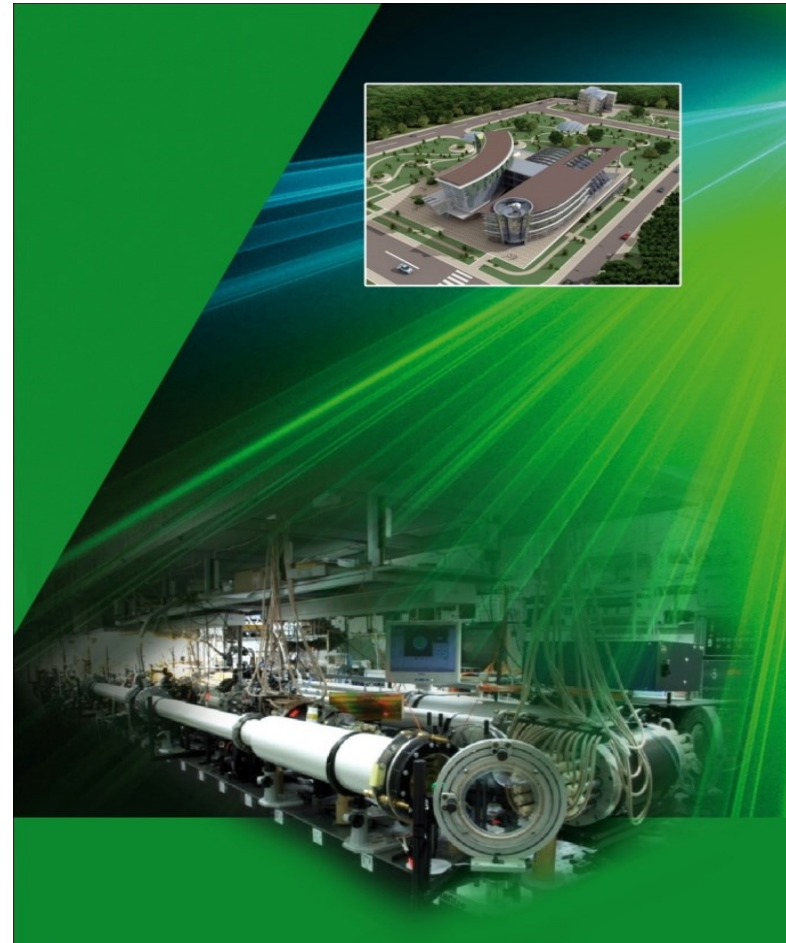
NICA Facility at JINR Dubna



XCELS Facility at IAP



The schematic of the future XCELS facility

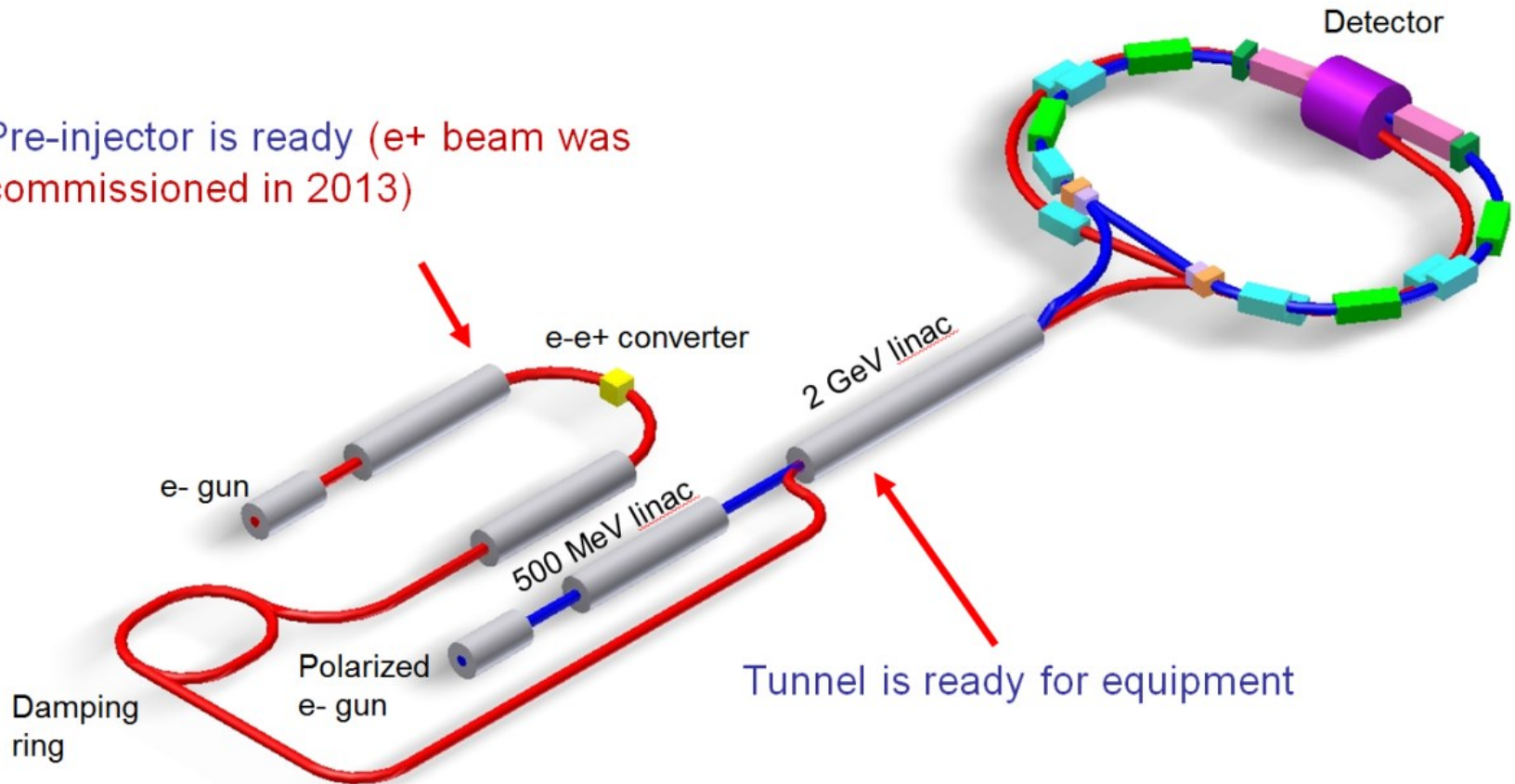


The available laser complex

The general view of the prospective XCELS site (picture on top)

STC Facility at BINP

Pre-injector is ready (e^+ beam was commissioned in 2013)

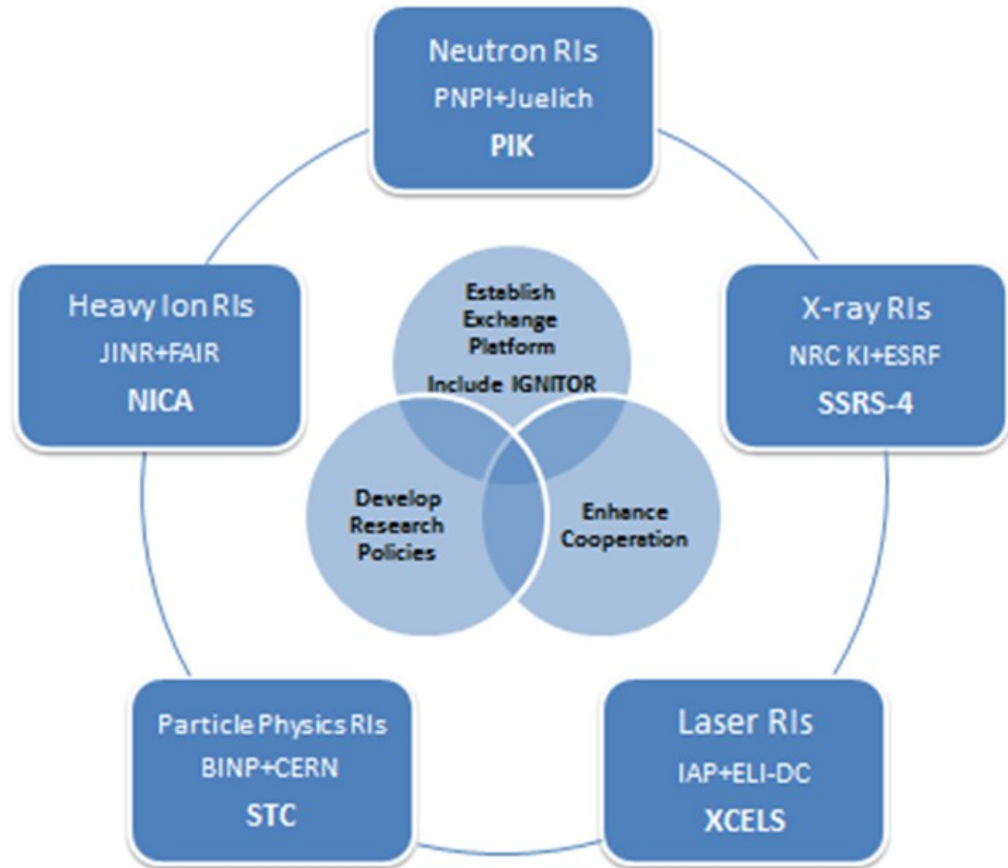


The 2 Way Approach

5 **thematic** work packages

plus

2 **horizontal** work packages



Work Packages I: Horizontal WPs

■ **WP2: Exchange Platform**

DESY; NRC KI

Provide a mutual learning platform on e.g. internationalisation, open

Invite IGNITOR to benefit from findings

Support science-to-policy interface

Promote exchange on data sharing, data access and big data mana

Establish links to other EU-Russian STI cooperation frameworks



■ **WP8: Communication and dissemination; innovation; education & training**

NRC KI; DESY; ILL; ESS

Provide a project website

Journalists' trip to NICA and PIK facilities

Explore potentials for innovation, industrial use and technology transfer around the Russian projects

Organise thematic summer schools such as RACIRI

www.raciri.org

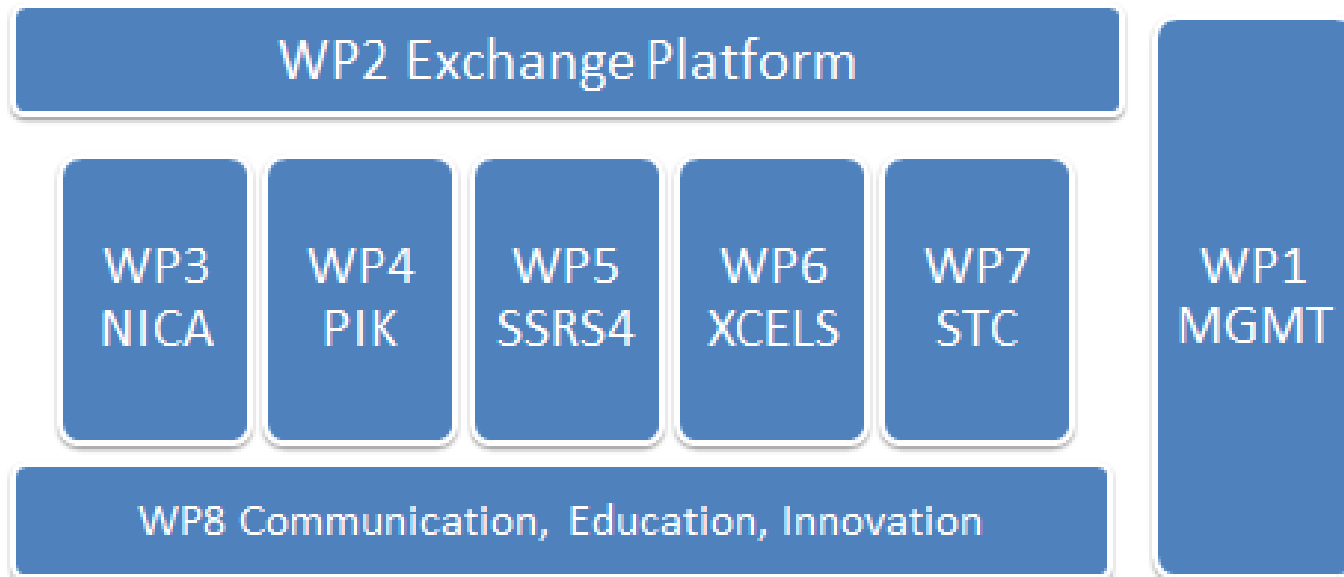


Work Packages II: Thematic WPs

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 plus: HZG; TUM; ILL; ESS
WP5	Science cooperation with the SSRS-4 synchrotron radiation source in the field of photon science	ESRF; NRC KI plus DESY; EU.XFEL; IC RAS; Lund MAX IV
WP6	Science cooperation with XCELS in the field of high power laser research	ELI-DC; IAP RAS plus CEA
WP7	Science cooperation with the Super tau-charm factory STC in the field of lepton colliders	CERN; BINP



CREMLIN WP set-up at a glance



Project Duration: 36 months
1.9.2015 - 31.08.2018

Consortium Board (CB): General Assembly

- „ultimate decision-making body“
- All 19 Partners (Beneficiaries) have appointed one member of the CB
- CB Meetings at least annually

Project Management Board (PMB): Executive Board

- Shall monitor the effective and efficient implementation of the project
- Seeks consensus among the Parties; reports to CB
- PMB Meetings at least quarterly

Science Policy Advisory Board (SPAB)

- External distinguished European and Russian experts in science and politics
- To be established until M4 (= Milestone M1)
- Allowed to participate in CB meetings

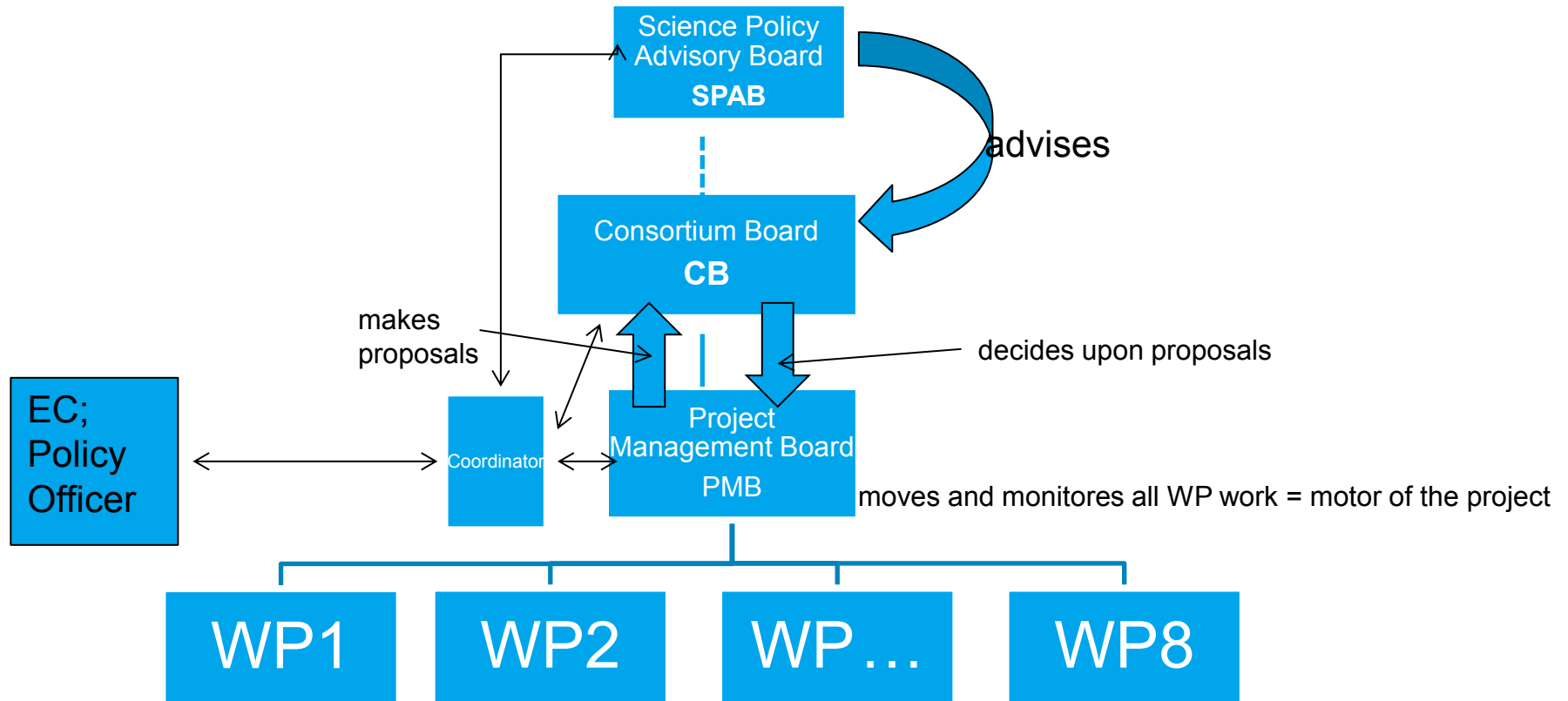
Coordinator:

- Intermediary between Parties and EC
- Collecting, reviewing, submitting all reports
- Submit to EC all Deliverables, Milestones
- Submit to EC all financial statements
- Administer financial distribution
- Chair all CB, PMB and SPAB meetings
- ...



CREMLIN Governance

...and this is how we will work:



Within WP2 cross-links will be established to other relevant platforms & projects, e.g.

- > ESFRI Roadmap
- > SFIC: Strategy forum for international S&T cooperation
- > ERA.Net RUS Plus (FP7): joint funding
- > SINE2020 (H2020): Science and Innovation with Neutrons in Europe 2020
- > EUCALL (H2020): European Cluster of Advanced Laser Light Sources
- > IRI: Ioffe Röntgen Institute as a bilateral platform
- > ...

CREMLIN Environment: Ioffe Röntgen Institute



Joint Research
- e.g. German-Russian Calls



Joint Education
- e.g. RACIRI Summer Schools



Joint Infrastructure Development
- e.g. CREMLIN Project
- e.g. German-Russian Beamlines
- e.g. KIT+INR: KATRIN



CREMLIN Environment: RACIRI

- WP8: linking CREMLIN with next RACIRI Summer Schools



Achievements First Year

WP#	what	When	responsible
WP2	<ul style="list-style-type: none"> ✓ set-up of SPAB (MS1) ✓ Workshop: Exchange on Big Data Handling ✓ ... 	M4 = Dec 2016 M13 = Sep 2016	DESY; NRC KI
WP3	<ul style="list-style-type: none"> ✓ „several workshops“? (technical issues...) ✓ Strategy for improved access at NICA ✓ Production readiness review for detector platform (MS3) 	M12 = Sep 2016	JINR FAIR; JINR
WP4	<ul style="list-style-type: none"> ✓ training programme on neutron instrumentation (D4.1) ✓ PIK Instrumentation Concept (MS5) ✓ Mapping user demands neutron (D4.1) 	M6 = Feb 2016 M9 = May 2016 M9 = May 2016	PNPI Jülich HZG
WP5	<ul style="list-style-type: none"> ✓ Mapping user communities SR (D5.1, 5.2) 	M14 = Oct 2016	ESRF; NRCKI
WP6	<ul style="list-style-type: none"> ✓ Technological issues 100PW-class lasers 	M18 = Feb 2018	IAP
WP7	<ul style="list-style-type: none"> ✓ Set-up international expert team lepton colliders (MS7) ✓ Data management platform for lepton colliders (MS8) ✓ Workshop on technical challenges for STC (D7.1) 	M4 = Dec 2016 M8 = Apr 2016 M12 = Aug 2016	CERN CERN BINP
WP8	<ul style="list-style-type: none"> ✓ Training module junior management staff for RIs (D8.2) 	M18 = Feb 2017	NRC KI; DESY

Thank you very much!

