

APPENDIX 5 - Physics

Table A5.1 Synchrotrons considered

Short name	Organisation	Location	Start user operation	Electron Energy (GeV)	Web site	Answered
AS	Australian Synchrotron, ANSTO, Australian Nuclear Science and Technology Organisation	Australia	2007	3.0 GeV	https://www.ansto.gov.au/research/facilities/australian-synchrotron/overview	Yes
UVX LNLS	Laboratorio Nacional de Luz Sincrotron	Brazil	1997	1.37 GeV	https://www.lnls.cnpem.br/uvx-en/	Yes
CLS	Canadian Light Source	Canada	2005	2.9 GeV	https://www.lightsource.ca/beamlines.html	Yes
BSRF	Beijing Synchrotron Radiation Facility	China	1991	2.5 GeV	http://english.bsrif.ihep.cas.cn/facilityinformation/beamlinemap/201203/t20120329_83231.html	No
SSRF	Shanghai Synchrotron Radiation Facility	China	2009	3.5 GeV	http://e-ssrf.sinap.cas.cn/#	No
PF	Photon Factory	Japan	1982	PF: 2.5-GeV	https://www2.kek.jp/imss/pf/eng/apparatus/bl/	Yes
	High Energy Accelerator Research Organization, KEK			PFAR: 6.5-GeV		
SPring-8	Super Photon ring-8 GeV	Japan	1997	8.0 GeV	www.spring8.or.jp/en/	Yes
SESAME	Synchrotron-light for Experimental Science and Applications in the Middle East	Jordan	2017	2.5 GeV	http://sesame.org.jo/sesame_2018/machine-and-beamlines/beamlines	Yes

Short name	Organisation	Location	Start user operation	Electron Energy (GeV)	Web site	Answered
PLS-II	Pohang Light Source-II	Korea	2011	3.0 GeV	http://pal.postech.ac.kr/paleng/Menu.pal?method=menuView&pageMode=paleng&top=2&sub=3&sub2=1&sub3=0	No
KSRS	Kurchatov Synchrotron Radiation Source	Russia	1999	2.5 GeV	http://eng.nrcki.ru/	No
SSTRC	Siberian Synchrotron Terahertz Radiation Centre	Russia		2.2 GeV	http://ssrc.inp.nsk.su/CKP/eng/	No
SSLS	Singapore Synchrotron Light Source	Singapore	1999	0.7 GeV	http://ssls.nus.edu.sg/facility/helios2.html	No
	National University of Singapore					
NSRRC	National Synchrotron Radiation Research Center	Taiwan	TLS: 1993	TLS: 1.5 GeV	https://www.nsrrc.org.tw/english/index.aspx	Yes
			TPS: 2016	TPS: 3.0 GeV		
SLRI	Synchrotron Light Research Institute, Synchrotron Thailand Central Lab	Thailand	2003	1.2 GeV	https://www.slri.or.th/en/	Yes
ALS	Advanced Light Source, Lawrence Berkeley National Laboratory	USA	1993	1.9 GeV	https://als.lbl.gov/	Yes

Short name	Organisation	Location	Start user operation	Electron Energy (GeV)	Web site	Answered
APS	Advanced Photon Source, Argonne National Laboratory	USA	1995	7.0 GeV	https://www.aps.anl.gov/	Yes
CHESS	Cornell High Energy Synchrotron Source	USA	1979	5.3 GeV	https://www.chess.cornell.edu/science/x-ray-technology	Yes
NSLS II	National Synchrotron Light Source II, Brookhaven National Laboratory	USA	2015	3.0 GeV	https://www.bnl.gov/ps/	Yes
SSRL	Stanford Synchrotron Radiation Lightsource	USA	1992	3.0 GeV	https://www-ssrl.slac.stanford.edu/content/	Yes
ESRF	European Synchrotron Radiation Facility	Europe (France)	1994	6.0 GeV	-	Yes
ALBA	ALBA	Europe (Spain)	2012	3.0 GeV	https://www.cells.es/en/beamlines	Yes
BESSY- 2	Helmholtz-Zentrum Berlin	Europe (Germany)	1998	1.7 GeV	https://www.helmholtz-berlin.de/quellen/bessy/index_en.html	Yes
LNLS - SIRIUS PROJECT	Laboratorio Nacional de Luz Sincrotron	Brazil	https://www.lnls.cnpem.br/sirius-en/sirius-project/	

Table A5.2 Synchrotrons, not considered for analysis

Organisation	Location
International facilities - identified but not corresponding to criteria	
CAMD Center for Advanced Microstructures and Devices	USA
SURF III Synchrotron Ultraviolet Radiation Facility	USA
NSRL National Synchrotron Radiation Laboratory	China
RRCAT Raja Ramanna Centre for Advanced Technology	India
ASTF Aichi Synchrotron Radiation Center	Japan
HSRC Hiroshima Synchrotron Radiation Center	Japan
RITSUMEI Ritsumeikan University SR Center	Japan
SAGA Saga Light Source	Japan
UVSOR Ultraviolet Synchrotron Orbital Radiation Facility	Japan
SLRI Synchrotron Light Research Institute	Thailand
ILSF Iranian Light Source Facility	Iran
DELSY Dubna Electron Synchrotron	Russia
TNK Technical Storage Ring Complex	Russia
CANDLE Center for the Advancement of Natural Discoveries using Light Emission	Armenia
European RIs - corresponding to criteria but not selected	
SOLEIL Source Optimisée de Lumière d'Énergie Intermédiaire du LURE	France
PETRA III at DESY	Germany
ELETTRA Synchrotron Light Laboratory	Italy
ALBA Synchrotron	Spain
MAX IV Laboratory	Sweden
SLS Swiss Light Source	Switzerland
Diamond Light Source	United Kingdom
European RIs - not corresponding to criteria	
ISA Institute for Storage Ring Facilities	Denmark

Organisation	Location
ANKA Angstromquelle Karlsruhe	Germany
DELTA Dortmund Electron Storage Ring Facility	Germany
ELSA - Electron Stretcher Accelerator	Germany
MLS Metrology Light Source	Germany
DAFNE Double Annular Factory for Nice Experiments	Italy
SOLARIS Synchrotron	Poland

Table A5.3. Free electron lasers

Short name	Organisation	Location	Start user operation	Electron Energy	Web site	Answered
PAL XFEL	Pohang Accelerator Laboratory- X-Ray Free Electron Laser	South Korea	2016	10 GeV	http://pal.postech.ac.kr/paleng/	No
SACLA	SPRING - 8 Compact Free Electron Laser	Japan	2011	8.5 GeV	http://www.spring8.or.jp/en/ http://xfel.riken.jp/eng/	Yes
LCLS	Linac Coherent Light Source	USA	2009	15 GeV	https://cls.slac.stanford.edu/overview	Yes
European XFEL	European X-Ray Free Electron Laser	Europe (Germany)	2017	17.5 GeV	https://www.xfel.eu/facility/overview/index_eng.html	Yes
FERMI	Free Electron laser Radiation for Multidisciplinary Investigations - Elettra Laboratory	Europe (Italy)	2012	1.2 - 1.5 GeV	https://www.elettra.trieste.it/lightsources/fermi/fermi-machine/fermi-description.html	Yes
FELIX	Free Electron Laser for Infrared e Xperiments (Radbout University)	Europe (Netherlands)	2013	15 MeV	https://www.ru.nl/felix/about-felix/about-felix/felix-laboratory/	No
SHINE	Shanghai High Repetition Rate XFEL and Extreme Light Facility	China	2025	8 GeV		No
LCLS II	Linac Coherent Light Source II	USA	2020		https://cls.slac.stanford.edu/overview	No

Table A5.4 FEL not considered in the analysis

Organisation	Location
International facilities - identified but not corresponding to criteria	
ITST Institute for Terahertz Science and Technology	USA
JLAB Jefferson Lab	USA
IR Infra Red FEL Research Center	Japan
European RIs - not corresponding to criteria	
CLIO Centre Laser Infrarouge d'Orsay	France
Free Electron Laser at ELBE	Germany
TARLA Turkish Accelerator and Radiation Laboratory at Ankara	Turkey
European RIs - corresponding to criteria but not selected	
FLASH at DESY	Germany
SwissFEL Swiss Free Electron Laser	Switzerland

Table A5.5 Neutron sources

Short name	Organisation	Location	Start user operation	Beam Power (MW)	Source	Web site	Surveyed
LAHN	Bariloche Atomic Centre	Argentina	Under construction	10 MW	Reactor	http://www.lahn.cnea.gov.ar/	No
ACNS	Australian Centre for Neutron Scattering at ANSTO	Australia	2007 (OPAL reactor)	20 MW	Reactor	https://www.ansto.gov.au/research/facilities/australian-centre-for-neutron-scattering	Yes
CARR	China Advanced Research Reactor	China	2010	60 MW	Reactor	https://neutronsources.org/neutron-centres/africa-asia-and-oceania/carr.html	No
CSNS	China Spallation Neutron Source	China	2019	CSNS-I 100kW; CSNS-II 500 kW	Spallation	http://english.ihep.cas.cn/csns/chnl/99/index.html	No
CMRR	China Mianyang Research Reactor	China	2012	20 MW	Reactor	http://english.ihep.cas.cn/ls/cnss/zzsszz/201406/t20140620_123024.html	Yes
BARC	Bhabha Atomic Research Centre	India	1956	100 MW	Reactor	http://www.barc.gov.in/randd/ps.html	No
BATAN	Kartini Reactor - Yogyakarta	Indonesia	1987	15 MW	Reactor	http://www.batan.go.id/index.php/en/neutron-beam-facility	Yes

Short name	Organisation	Location	Start user operation	Beam Power (MW)	Source	Web site	Surveyed
	The GA Siwabessy Multi Purpose Reactor TRIGA Reactor						
J-PARC	- Materials and Life Science facility	Japan	2009	1 MW	Spallation Source	https://www.j-parc.jp/c/en/facilities/materials-and-life-science-experimental/	No
JRR-3	Japan Research Reactor No.3	Japan	1962	20 MW	Reactor	https://jrr3.jaea.go.jp/jrr3e/1/11.htm	Yes
PNPI	Petersburg Nuclear Physics Institute WWR-M reactor	Russia	1961 (WWR-M reactor)	18 MW	Reactor	http://www.pnpi.spb.ru/en/facilities/reactor-wwr-m	Yes
PNPI	Petersburg Nuclear Physics Institute PIK reactor	Russia	2011 First criticality at Low power, Physical start of PIK construction	100 MW	Reactor	http://www.pnpi.spb.ru/en/facilities/reactor-pik	No
HANARO	High Flux Advanced Neutron Application Reactor	South Korea	1996	30 MW	Reactor	https://www.kaeri.re.kr/mpse	Yes

Short name	Organisation	Location	Start user operation	Beam Power (MW)	Source	Web site	Surveyed
NIST	Center for Neutron Research	USA	1969	20 MW	Reactor	https://www.nist.gov/ncnr/neutron-instruments/general-info-and-layout	Yes
HFIR	High Flux Isotope Reactor	USA	Mid - 1960s	85 MW	Reactor	https://neutrons.ornl.gov/hfir	Yes
	Oak Ridge National Laboratory Neutron Sciences						
SNS	Spallation Neutron Source	USA	2006	1.4 MW	Spallation	https://neutrons.ornl.gov/sns	Yes
	Oak Ridge National Laboratory Neutron Sciences						
ISIS	Neutron and Muon Source	Europe- GB	1984	0.2 MW	Spallation	https://www.isis.stfc.ac.uk/Pages/home.aspx	Yes
BRR	Budapest Research Reactor - Budapest Neutron Centre	Europe - Hungary	1959	10 MW	Reactor	https://www.energia.mta.hu/en/content/budapest-research-reactor	Yes
FRM-II MLZ	Heinz Maier-Leibnitz Zentrum	Europe - Germany	2004	20 MW	Reactor	https://mlz-garching.de/ueber-mlz.html	Yes

Short name	Organisation	Location	Start user operation	Beam Power (MW)	Source	Web site	Surveyed
PSI-SINQ	Paul Scherrer Institut - Swiss Spallation Neutron Source	Europe - Switzerland	1996	0.8 MW	Spallation	www.psi.ch/sinq	Yes
ILL	Institut Laue-Langevin	Europe - France	1971	57 MW	Reactor	www.ill.eu	Yes
ESS	European Spallation Source	Europe - Sweden	2023	5 MW	Spallation	https://europeanspallationsource.se/	Yes

Table A5.6 Neutron Sources not considered

Organisation	Location
International facilities - identified but not corresponding to criteria	
Necsa Nuclear Energy Corporation of South Africa	South Africa
CNBC Canadian Neutron Beam Centre	Canada
LANSCE Los Alamos Neutron Science Center	USA
LENS Low Energy Neutron Source	USA
MNR McMaster Nuclear Reactor	Canada
MIT Nuclear Reactor Laboratory	USA
TRIUMF Neutron Irradiation Facility	Canada
MURR University of Missouri Research Reactor Center	USA
LN Laboratório de Metrologia de Neutrons	Brazil
IPEN Peruvian Institute of Nuclear Energy	Peru
KENS Neutron Science Division, KEK IMSS	Japan
KURRI Kyoto University Research Reactor Institute	Japan
NSL ISSP Neutron Science Laboratory, Institute for Solid State Physics	Japan
TRIGA PUSPATI	Malaysia
McMaster University	Canada
European RIs - not corresponding to criteria	
CERIC-ERIC Central European Research Infrastructure Consortium	Italy
NRCPS National Centre of Scientific research Demokritos	Greece
ESS Bilbao European Spallation Source	Spain
FRM-II-MLZ Heinz Maier-Leibnitz Zentrum	Germany
JCNS Jülich Centre for Neutron Science	Germany
HZB Helmholtz-Zentrum Berlin für Materialien und Energie	Germany
HZG-GEMS Helmholtz-Zentrum Geesthacht	Germany
IRMM Institute for Reference Materials and Measurements	Belgium
Johannes Gutenberg University	Germany

Organisation	Location
LLB Laboratoire Léon Brillouin	France
RPI Portuguese Research Reactor	Portugal
TRIGA Mark II Reactor, TU Vienna	Austria
TRIGA Reactor Infrastructure Centre	Slovenia
European RIs - corresponding to criteria but not selected	
MLZ Heinz Maier-Leibnitz Zentrum	Germany
IFE Institute for Energy Technology	Norway
MARIA - National Centre for Nuclear Research	Poland
NPI Nuclear Physics Institute	Czech Republic

Table A5.7. High power lasers

Short name	Organisation	Location	Number of Lasers laboratories	Web site	Surveyed
ELI	Extreme Light Infrastructure	Europe	distributed facility with 3 sites	https://eli-laser.eu/	No
Laserlab Europe	Laserlab Europe	Europe	33 Laser Laboratories/ 22 with access for external users	https://www.laserlab-europe.eu/transnational-access/access-facilities	Yes
ICUIL	International Committee on Ultra-High Intensity Lasers	Global	status 2019: 107 Laser laboratories World Wide	www.icuil.org	No

Table A5.8. High Magnetic Field facilities

Short name	Organisation	Location	Start user operation	Magnetic field range	Web site	Surveyed
WHMFC	Wuhan National High Magnetic Field Center	China	2014	Pulsed fields up to 90 T	http://whmfc.hust.edu.cn/english/Introduction.htm	Yes
CHMFL	Chinese High Magnetic Field Laboratory	China	2008	DC fields up to 45 T	http://english.hmfl.cas.cn/	No
IMGSL	International MegaGauss Science laboratory	Japan	2006	Pulsed fields up to 87 T	https://www.issp.u-tokyo.ac.jp/labs/mgsl/Facility_e.html	No
				Pulsed fields (destructive) up to 730 T	https://www.issp.u-tokyo.ac.jp/maincontents/history_en.html	
				DC fields up to 14 T		
HFLSM	High Field Laboratory for Superconducting Materials	Japan	1981	Continuous fields up to 31 T	http://www.imr.tohoku.ac.jp/en/about/history.html	Yes
					http://www.hflsm.imr.tohoku.ac.jp/cgi-bin/index-e.cgi?num=80318001924	
AHMF	Center for Advanced High Magnetic Field Science	Japan	2014	Pulsed fields up to 50 T	https://www.sci.osaka-u.ac.jp/en/university-facility/strong-magnetic-field-science-center/	Yes
				DC fields up to 16 T	https://www.sci.osaka-u.ac.jp/en/university-facility/strong-magnetic-field-science-center/	
NHMFL	National High Magnetic Field Laboratory (Tallahassee, Gainesville, Los Alamos)	USA	1994	DC fields up to 45 T	https://nationalmaglab.org/user-facilities/dc-field/instruments-dcfield/resistive-magnets	No
				Pulsed fields up to 100 T	https://nationalmaglab.org/about/history	
				Pulsed fields (single turn magnet) up to 300 T		
HLD	Dresden High Magnetic Field Laboratory Hochfeld-Magnetlabor Dresden	Europe (Germany)	2007	Pulsed fields up to 95 T	https://www.hzdr.de/db/Cms?pOid=10379&pNid=580	Yes

Short name	Organisation	Location	Start user operation	Magnetic field range	Web site	Surveyed
HMFL	Nijmegen High Field Magnet Laboratory (Radboud University)	Europe (Netherlands)		DC fields up to 38 T	https://www.ru.nl/hfml/use-our-facility/experimental/magnets/	No

Table A5.9. High Magnetic Field facilities not considered in the survey

Organisation	Location
International facilities - identified but not corresponding to criteria	
TML Tsukuba Magnet Laboratory (to be closed in 2018)	Japan
European RIs - not corresponding to criteria	
LNCMI-G Laboratoire National des Champs Magnetiques Intenses-DC facility	France
LNCMI-T Laboratoire National des Champs Magnetiques Intenses-pulsed facility	France

Table A5.10. Particle Physics facilities

	Organisation	Location	Start user operation	Type	Web site	Answered
	PP International facilities					
TRIUMF	Canada's particle accelerator centre	Canada	1969	single-sited	https://www.triumf.ca/technical-services	Yes
BEPC/BEPCII at IHEP	Institute of High Energy Physics	China	2007 - BEPC II	single-sited	http://english.ihep.cas.cn/chnl/18/index.html	No
J-PARC	Japan Proton Accelerator Research Complex	Japan	2009	single-sited	https://j-parc.jp/c/en/facilities/nuclear-and-particle-physics/index.html	No
B-Factory	KEK-High Energy Accelerator Research Organization	Japan	1999	single-sited	https://www.kek.jp/en/Research/IPNS/Belle/	Yes
Budker	Institute of Nuclear Physics	Russia	1958	single-sited	http://www.inp.nsk.su/budker-institute-of-nuclear-physics	Yes
SLAC	National Accelerator Laboratory	USA	1974	single-sited	https://www6.slac.stanford.edu/facilities	No
FERMILAB	Fermi National Accelerator Laboratory	USA		single-sited	http://www.fnal.gov/pub/science/particle-physics/index.html	No
RHIC	Relativistic Heavy Ion Collider Brookhaven National Laboratory	USA		single-sited	www.bnl.gov/rhic/physics.asp	No

	Organisation	Location	Start user operation	Type	Web site	Answered
SNS	Spallation Neutron Source	USA	2006	single-sited	https://www.phy.ornl.gov/overview/facilities.html	No
TJNAF - Jefferson Lab	Thomas Jefferson National Accelerator Facility	USA	1988	single-sited	https://www.jlab.org/research/science	Yes
CSNS – HEP	China Spallation Neutron Source	CHINA	2017	distributed	http://english.ihep.cas.cn/csns/doc/1999.html	No
PP European facilities						
FRM-II-MLZ	Heinz Maier-Leibnitz Zentrum	Germany	2004	-	https://www.mlz-garching.de/englisch/instruments-und-labs/particle-physics.html	Yes
PSI		Switzerland	1974 – Muons	single-sited	https://www.psi.ch/fr/ltp/facilities	Yes
	Paul Scherrer Institut HIPA/UCN, HIPA		2011 - UCN			
FZJ-COSY	Nuclear Physics Institute Jülich	Germany	1993	single-sited	https://www.fz-juelich.de/ikp/DE/Forschung/Beschleuniger/doc/COSY.html	Yes
CERN	CERN	Switzerland	1957 -(LHC 2008)	-	https://home.cern/fr/about/who-we-are/our-history#s2	Yes
DESY	Deutsches Elektronen-Synchrotron	Germany		single-sited	http://particle-physics.desy.de/	Yes

	Organisation	Location	Start user operation	Type	Web site	Answered
FAIR	Facility for Antiproton and Ion Research	Germany	Starting 2025	-	https://www.gsi.de/en/researchaccelerators/fair.htm	Yes

Table A5.11. Nuclear Research Facilities

Short name	Organisation	Location	Start user operation	Magnetic field range	Web site	Answered
iThemba Labs	Laboratory for Accelerator Based Sciences	South Africa	1987	A range of accelerators including: separated sector cyclotron; Injector cyclotrons; Tandetron; k=11 cyclotron; 6 MV tandem; low energy electrostatic accelerators	https://tlabs.ac.za/accelerators/	No
ANU	Australian National University Department of Nuclear Physics	Australia		Heavy Ion Accelerator Facility: 14 UD Pelletron electrostatic accelerator; superconducting linear post accelerator	https://physics.anu.edu.au/nuclear/research/	No
BTANL	Beijing Tandem Accelerator Nuclear Physics National Laboratory	China		15 MW tandem accelerator; 100 MeV proton cyclotron; ISOL		Yes
IUAC	Inter-University Accelerator Centre	India	1991	15 UD Pelletron; superconducting linear accelerator; low energy ion beam facilities	http://www.iuac.res.in/research/np/index.html	No
ATLAS	Argonne Tandem Linear Accelerator System	USA	1978	Superconducting linear accelerator for heavy ions	https://www.phy.anl.gov/atlas/	Yes
ELI-NP	Extreme Light Infrastructure - Nuclear Physics	Europe (Rumania)	2019	Under construction:	http://www.eli-np.ro/	Yes
				Very high intensity laser system		
				Very intense brilliant gamma (γ) beam, narrow bandwidth		
Ganil	Grand Accélérateur National d'Ions Lourds	Europe (France)	1983	Cyclotron complex: 5 cyclotrons (2 compact cyclotrons, 2 separated sector cyclotrons, 1 compact cyclotron SPIRAL ₁ for radioactive beams); SPIRAL ₂ Superconducting Linear Accelerator	https://www.ganil-spiral2.eu/en/scientists/ganil-spiral-2-facilities/accelerators/	Yes

Short name	Organisation	Location	Start user operation	Magnetic field range	Web site	Answered
JYFL	Physics Department, Accelerator Laboratory	Europe (Finland)	1993	Ion Guide Isotope Separation On-line (IGISOL); K130 cyclotron; MCC30/15 cyclotron; 1.7 MV Pelletron	https://www.jyu.fi/science/en/physics/research	Yes

Table A5.12. Nuclear Facilities not considered for the survey

Organisation	Location
International facilities - identified but not corresponding to criteria	
INT Institute of Nuclear Theory	USA
JLAB -Continuous Electron Beam Accelerator Facility	USA
NSCL National Superconducting Cyclotron Laboratory	USA
Texas A&M University Physics and Astronomy	USA
RHIC Relativistic Heavy Ion Collider	USA
TRIUMF Tri-University Meson facility	Canada
SLEG Shanghai Laser Electron Gamma Source	China
CJPL China Jinping underground Laboratory	China
HIAF Heavy Ion Accelerator Facility, Institute of Modern Physics	China
VECC Variable Energy Cyclotron Centre	India
J-PARC neutrons, muons, hadron physics	Japan
RIKEN Nishina Center for Accelerator-Based Science	Japan
RNCP Research Center for Nuclear Physics, Osaka University	Japan
JAEA Japan Atomic Energy Agency Tandem Accelerator	Japan
ELPH Research Center for Electron-Photon Science, Tohoku University	Japan
RAON Rare isotope Accelerator complex for ON-line experiments, IBS Institute for Basic Science	Korea
NICA (HE) Nuclotron – based Ion Collider Facility	Russia
FLNR (LE) Flerov Laboratory of Nuclear Reactions	Russia
CIADS Chinese Initial ADS	China
CAS Chinese Academy of Sciences HIRFL Heavy Ion Research Facility in Lanzhou	China
VECC Variable Energy Cyclotron Centre	India
HIMAC Heavy Ion Medical Accelerator, National Institute of Radiological Sciences	Japan
NewSUBARU Laboratory of Advanced Science and Technology for Industry	Japan
CABAS Center for Accelerator and Beam Applied Science Kyushu University	Japan

Organisation	Location
UTTAC University of Tsukuba, Tandem Accelerator Complex	Japan
CYRIC Tohoku University, Cyclotron and Radioisotope Center	Japan
KOMAC Korea Multi-purpose Accelerator Complex	Korea
KIST Korea Institute of Science and Technology, The Accelerator Laboratory	Korea
KIRMAS Korea Heavy Ion Medical Accelerator at Korea Institute of Radiological and Medical Sciences	Korea
ARTI Advanced Radiation Technology Institute	Korea
RAON National Center for Inter-Universities Research Facilities Electrostatic Ion Accelerator	Korea
Tandem machine at Hanoi University of Natural Science	Taiwan
Military Central Hospital 108	Vietnam
European RIs - not corresponding to criteria	
ECT* European Centre for Theoretical Studies in Nuclear Physics and related areas	Italy
COMPASS Common Muon Proton Apparatus for Structure and Spectroscopy	Switzerland
ELSA Elektronen- Stretcher-Anlage	Germany
INFN Istituto Nazionale di Fisica Nucleare	Italy
MAMI Mainzer Microtron	Germany
ALICE A Large Ion Collider Experiment	Switzerland
AD Antiproton Decelerator	Switzerland
ALTO Accélérateur Linéaire et Tandem à Orsay	France
CCB Centrum Cyclotronowe Bronowice	Poland
COSY Cooler SYnchrotron	Germany
HIL Heavy Ion Laboratory	Poland
IFIN Horia Hulubei National Institute for Physics and Nuclear Engineering	Romania
ILL Institut Laue Langevin	France
KVI-CART Center for Advanced Radiation Technology	The Netherlands

Organisation	Location
LNS Laboratori Nazionali del Sud	Italy
PSI Paul Scherrer Institut	Switzerland
European RIs - corresponding to criteria but not selected	
GSI Gesellschaft für Schwerionenforschung	Germany
ISOLDE CERN	Switzerland
LNL Laboratori Nazionali di Legnaro	Italy
ELI-NP-Extreme Light Infrastructure	Romania

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