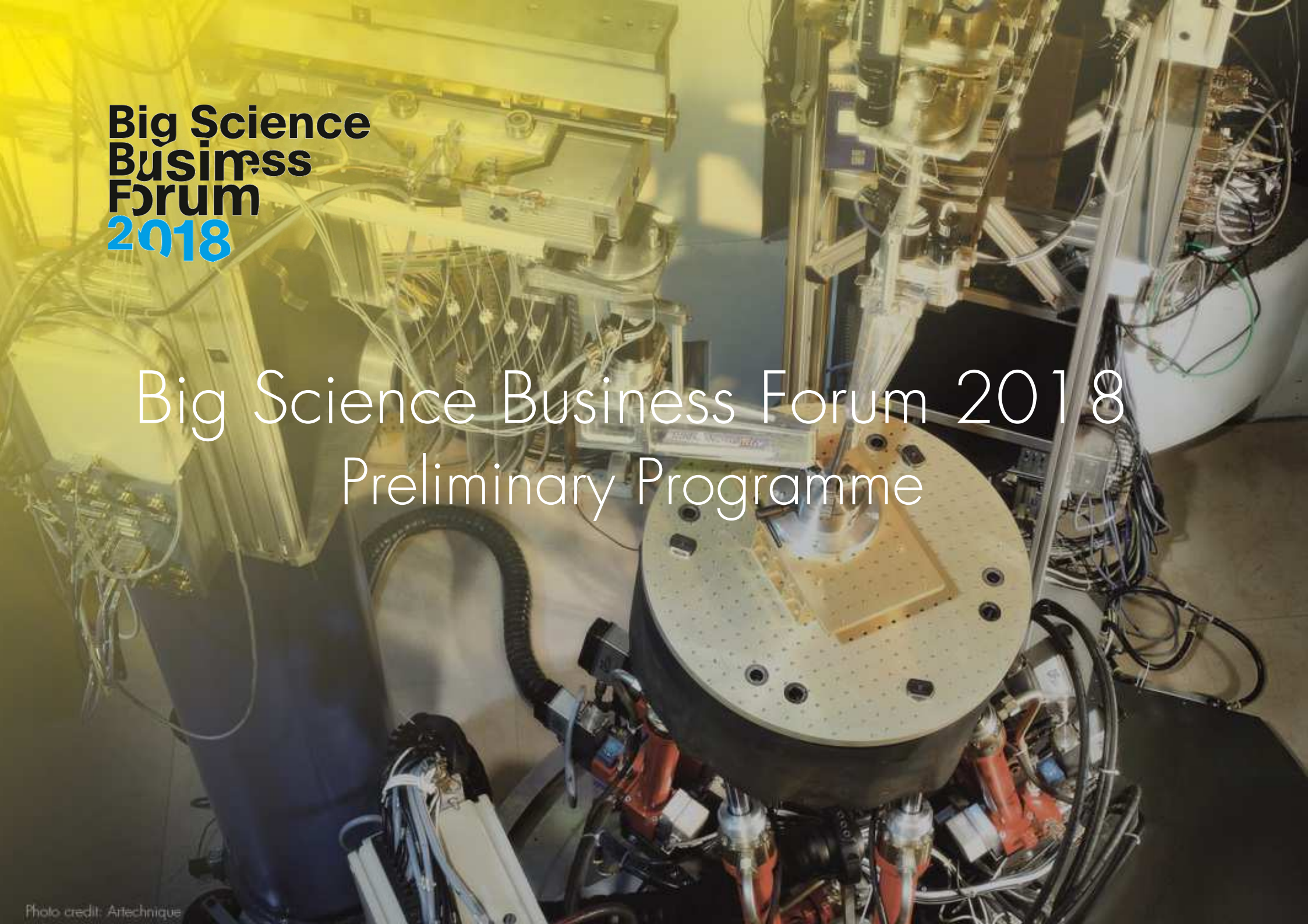

Big Science Business Forum 2018
Preliminary Programme

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Big Science Business Forum 2018

OVERVIEW

DAY 0: Monday, 26 February, 2018

	OPTIONAL PROGRAMME – TO BE ANNOUNCED LATER					
17.00	REGISTRATION OPENS					
19.00	WELCOME RECEPTION					

DAY 1: Tuesday, 27 February, 2018

07.30	COFFEE AND REGISTRATION					
09.00	PLENARY SESSION I: Welcome and presentations from the BSBF2018 partners					
10.40	COFFEE BREAK					
11.10	PLENARY SESSION I continued					
12.30	STANDING LUNCH				EXHIBITION	1-1MEETINGS
13.30	PARALLEL SESSION I					
	A1 Procurement, IPR and standards	*A2 Remote handling systems*	*A3 Cryogenic technology*	*A4 Affiliated Big Science organisations I*		
15.30	COFFEE BREAK					
16.00	PARALLEL SESSION II					
	B1 Technology transfer	*B2 Superconductivity and superconducting magnets*	*B3 Safety systems, licensing and protection of hazardous installations, access control, fire and gas detection*	*B4 Affiliated Big Science organisations II*		
18.00	END OF SESSIONS					
19.30	CONFERENCE DINNER					

DAY 2: Wednesday, 28 February, 2018

09.00	PLENARY SESSION II: Big science as a market					
10.45	COFFEE BREAK				EXHIBITION	1-1 MEETINGS
11.15	PARALLEL SESSION III					
	C1 Electrical, electronics, electromechanical and RF systems	*C2 High precision and large mechanical components – manufacturing and assembly*	*C3 Instrumentation and Control and CODAC*	*C4 Engineering methodologies and tools*		
13.15	STANDING LUNCH					
14.15	PARALLEL SESSION IV					
	D1 Diagnostics, detectors and instruments	*D2 Vacuum and leak detection technologies*	*D3 Basic material technologies and advanced manufacturing techniques*	*D4 Information and communication technologies*		
16.30	PLENARY SESSION III: Closing of BSBF2018					
17.00	END OF CONFERENCE PROGRAMME AND REFRESHMENTS					

DAY 3: Thursday, 1 March, 2018

	OPTIONAL PROGRAMME – TO BE ANNOUNCED LATER					

Big Science Business Forum 2018

CONFERENCE PROGRAMME

Day 1: Tuesday, 27 February, 2018
Tivoli Congress Centre

07.30	COFFEE AND REGISTRATION
09.00	PLENARY SESSION I: Welcome and presentations from the BSBF2018 partners
	Welcome address Søren Pind, The Danish Minister for Higher Education and Science (TBC) Sophie Hæstorp Andersen, Chairwoman of the Regional Council, Capital Region of Denmark Keynote Carlos Moedas, EU Commissioner for Research and Innovation Presentations from the Big Science Business Forum 2018 partners • CERN – The European Organization for Nuclear Research Fréderick Bordry, Director of Accelerators and Technology • EMBL – European Molecular Biology Laboratory Silke Schumacher, Director International Relations • ESA – European Space Agency Johann-Dietrich Wörner, Director General (TBC) • ESO – European Southern Observatory Xavier Barcons, Director General
10.40	COFFEE BREAK

11.10	PLENARY SESSION I continued				
	• ESRF – The European Synchrotron Radiation Facility Francesco Sette, Director General • ESS – European Spallation Source John Womersley, Director General • European XFEL – The European X-Ray Free Electron Laser Facility Robert Feidenhans'l, Managing Director and Chairman of the Management Board • F4E – Fusion for Energy Johannes Schwemmer, Director • ILL – Institut Laue-Langevin Helmut Schober, Director General				
12.30	STANDING LUNCH				
13.30	PARALLEL SESSION I				
	A1 Procurement, IPR and standards Big Science organisations have different legal status, different member states and different procurement rules. Some organisations are international inter-governmental organisations with their own procurement rules while others are subject to EU public procurement rules and their tenders are not limited to a specific number of member states. Heads of Procurement from all organisations will present their procurement rules as well as relevant information for suppliers regarding intellectual property rights (IPR, in relation to procurement) and standards.	*A2 Remote handling systems* Increasingly, Big Science organisations have areas with challenging environments - due to hazardous materials, or various types of radioactivity & radiation, or environmental constraints (such as temperature, pressure, magnetic field, vacuum) or at inaccessible locations like in space. Operations hence require specialized remote handling (RH) / robotics interventions. Solutions developed for the science community may also help to solve challenges in other markets such as manipulation of very large components, decommissioning, space, power	*A3 Cryogenic technology* Many Big Science organisations need a range of cryogenic installations and systems in order to operate superconducting magnets, detectors or other equipment requiring cryogenic (extremely low) temperatures. The technical areas of interest include: cryogenic equipment, cryogenic storage and handling, vibration reduction, remote cooling, long lifetime to reduce maintenance, cryogenic materials, structural materials at cryogenic temperatures, etc. In this session, synergies between ground and space cryogenics will also be addressed.	*A4 Affiliated Big Science organisations I (TBC)* A number of other European and national Big Science organisations will present their investments in the coming years. A list of the affiliated Big Science organisations will be published later.	EXHIBITION 1-1 MEETINGS

	Speakers: CERN, ESA, ESO, ESRF, ESS, European XFEL, F4E, ILL	generation, mining etc. The technical area includes RH mechanics, system design and engineering, tooling design, operations planning, radiation tolerant components & systems, electronics, simulation, control and testing environments. Speakers: CERN, ESA, ESO, ESS, F4E	Speakers: CERN, ESA, ESO, ESRF, ESS, F4E, ILL		EXHIBITION 1-1 MEETINGS
15.30	COFFEE BREAK				
16.00	PARALLEL SESSION II				
	B1 Technology transfer Although Big Science organisations are built for scientific purposes, their construction and operation generates a wealth of knowledge, some of which has the potential to be transferred to a broad variety of industries thereby impacting society. Representatives from all Big Science organisations will present their Technology transfer policies, opportunities and way of working with the industry. Particular areas of interest are: technology broker networks, business incubation centers, licensing, open source etc. Speakers: CERN, EMBL, ESA, ESO, ESRF, European XFEL, F4E	*B2 Superconductivity and superconducting magnets* Superconducting magnets are key components in particle accelerators and fusion energy experiments, where their primary role is to control the path and shape of beams of electrically charged particles. Progress is constantly made in the field of superconductivity and particularly the following technical areas are of interest to Big Science organisations developing future particle accelerators, colliders and fusion tokamaks: superconducting materials, superconducting RF cavities, superconducting links, magnet design and technology, cable and conductors production and test, manufacturing and testing of coils, high-temperature superconductors.	*B3 Safety systems, licensing and protection of hazardous installations, access control, fire and gas detection* Big Science organisations are typically characterized by high safety requirements to protect personnel, users, equipment, and surroundings against radiation, fire, gas, cryogenics, chemicals, heavy loads, and other hazardous items or situations. Many safety regulations and practices have some commonalities in the Big Science organisations but they are typically subjected to the regulatory requirements of the country they are based in. The technical areas of particular interest are for example: health and safety activities and legislation, radiation protection and shielding, nuclear and non-nuclear hazards, waste management and	*B4 Affiliated Big Science organisations II (TBC)* A number of other European and national Big Science organisations will present their investments in the coming years. A list of the affiliated Big Science organisations will be published later.	

		Speakers: CERN, ESS, F4E, ILL	disposal, radiological and environmental monitoring, licensing regulations, access control. Speakers: CERN, ESO, ESS, European XFEL, F4E		EXHIBITION	1-1 MEETINGS
18.00	END OF SESSIONS					

Day 2: Wednesday, 28 February, 2018
Tivoli Congress Centre

09.00	PLENARY SESSION II: Big science as a market				
	The session will include the following: • Introduction to the session – Views and experiences with the Big Science market • Presentations from 2 of the primary contractors to the European Big Science organisations • Presentations from 2 SMEs engaged with the European Big Science organisations • ILO recommendations for best practices – Interactions between Big Science organisations and industrial suppliers A roundtable with all previous speakers will then follow.				
10.45	COFFEE BREAK				
11.15	PARALLEL SESSION III				
	C1 Electrical, electronics, electromechanical and RF systems Big Science organisations have a need for both standard and highly specialized electrical, electronics, and electromechanical installations and systems. This includes power supplies, transformers, installations, assembly and wiring work. Some organisations have an additional need for particular heating or particle acceleration systems based on RF (radiofrequency) or microwave generators with associated power supplies. In others radiofrequency amplifiers and associated power supplies are used to provide energy to particle beams, which are accelerated in normal conducting or superconducting resonators.	*C2 High precision and large mechanical components – manufacturing and assembly* The building and operation of Big Science organisations relies extensively on the construction of large and complex mechanical systems such as magnet components, accelerating structures, support systems, shielding structures, and vacuum components. The needs for mechanical parts vary in terms of materials, sizes, volume, and degree of complexity; but the following technical areas are of particular relevance to most Big Science organisations: manufacturing of high to very high precision mechanical components, large machined components, pressure vessels and	*C3 Instrumentation and Control and CODAC* Big Science organisations have a particular need for high performant I&C (Instrumentation and Control) and CODAC (Control, Data Access and Communication) systems. These are used for the scientific exploitation of the facility for the data acquisition and processing of the data, and they are also used for the essential control systems for e.g. safety, machine protection, robotic systems etc. The technical areas of relevance include for example: real-time systems, SCADA (Supervisory Control and Data Acquisition, for example EPICS), electronics and FPGA design, automation, and network infrastructure.	*C4 Engineering methodologies and tools* Constructions or major upgrades of Big Science organisations require extremely rigorous methodologies to ensure the successful integration and assembly of a large number of components . It is also necessary to ensure the linking and interoperability of engineering information between the disciplines as well as between the different organisations involved in a Big Science facility. The relation between the (physical) components, the functions and the software based implementation and operation are further key elements for success. Engineering and design work is required in a broad range of domains such as: nuclear, mechanical,	EXHIBITION 1-1 MEETINGS

	Speakers: CERN, ESA, ESO, ESS, F4E	high temperature reactors, complex welded structures; as well as assembly, installation, validation and testing of the above components. Speakers: CERN, ESA, ESO, ESRF, ESS, F4E, ILL	Speakers: CERN, ESA, ESO, ESRF, ESS, F4E, ILL	electrical, cooling, civil, or geotechnical engineering. Analysis and modelling tools are also frequently used for mechanical, electromagnetic, fatigue, nuclear, fluid dynamics, failure mode analysis and many more technical areas. CAD-related technologies (CAD, Project Lifecycle Management) and design codes & standards are key technical areas, which require both in-house experience and support from the industry. Speakers: CERN, ESA, ESO, ESRF, ESS, F4E, ILL	EXHIBITION 1-1 MEETINGS
13.15	STANDING LUNCH				
14.15	PARALLEL SESSION IV				
	D1 Diagnostics, detectors and instruments Big Science organisations have a specific need for a range of diagnostics, detectors, and instruments for the scientific exploitation of the facility. The instruments are often designed by scientific and academic laboratories and universities, but the construction of these require the input from a multitude of specialized companies. The technical areas include optical components, imaging components, spectroscopic, microwave, electric & magnetic field diagnostics, particle detectors, opto-	*D2 Vacuum and leak detection technologies* Vacuum chambers and components are pervasive in Big Science organisations with particle accelerators, detectors, instrument beamlines, coating systems and more. Throughout the phases of design, construction, operation, maintenance and upgrade of high & ultra-high vacuum systems, expertise is required for: manufacturing of HV and UHV components, vacuum sealing and leak-tightness technology, vacuum control systems, interlocks & monitoring tools; coatings, surface	*D3 Basic material technologies and advanced manufacturing techniques* Big Science organisations are constantly pushing the limits in terms of materials technologies and advanced manufacturing techniques to improve the performances of their machines. The following technical areas are of high importance both for the development of current and future Big Science organisations: materials selection and testing for extreme conditions (radiation, pressure, temperature, stress, corrosion, particle bombardment, etc.), advanced manufacturing techniques (machining,	*D4 Information and Communication Technologies* Big Science organisations rely heavily on a variety of IT and scientific computing services throughout their lifecycle (design, planning, construction, operation, upgrade, decommissioning. Many organisations (particularly with user-based facilities) need to develop software and infrastructure services for data management and analysis, and technical user support. The technical areas of interest in ICT include database design, programming, and management, data indexing,	

	electronic detectors and components, and fast read-out electronics, etc. Speakers: CERN, ESA, ESO, ESRF, ESS, European XFEL, F4E	cleaning techniques, baking and outgassing procedures, and pumping systems. Speakers: CERN, ESA (TBC), ESO, ESS, European XFEL, F4E	welding, cutting, brazing, additive manufacturing, surface treatment and coating, etc.), development and testing of high temperature mechanical components. Speakers: CERN, ESA, ESO, ESS, F4E	discovery and retrieval, data access and delivery methods, hardware control interfaces, embedded software, HPC, data centre IT infrastructures, data mining and analytics tools, big-data analytics, cloud-computing, data visualization and user interfaces, data security and protection, technical user support etc. Speakers: CERN, EMBL, ESA, ESO, ESRF, European XFEL, ILL, F4E	EXHIBITION	1-1 MEETINGS
16.30	PLENARY SESSION III: Closing of BSBF2018					
17.00	END OF CONFERENCE PROGRAMME AND REFRESHMENTS					