AMICI WP3

Hans Weise / DESY

Workshop & Kick-off Meeting

Jan. 17 – 18, 2017

AMICI WP3 Overview

Work Package Number	3	Start Date or Starting Event			1	
Work Package Title	**Cooperation**					
Participant number	1	3	4	5	6	7
Short Name of Participant	CEA	**DESY**	INFN	IFJ PAN	CNRS	STFC
Person/months per participant	4	10	2	6	2	3
Start month	1 (01/2017)			End month	30 (06/2020)	

	WP leader	WP.1 leader	WP.2 leader	WP.3 leader
WP3 Cooperation	H. Weise DESY	M.-A. Maynard CEA	A. Szeliga IFJ PAN	R. Wichmann DESY

Main WP3 contacts					
	INFN	3.1	3.2	3.3	David Mascali
	CNRS	3.1	3.2	3.3	Sebastian Bousson
	STFC	3.3			Peter McIntosh (tbc)

see also slide 15

AMICI WP3 Objectives

The **overall goal** of this Work Package is to

- *define the **conditions of the coordination of Technological Infrastructures (TI)** in the area of accelerators and superconducting magnets*

- in order
  - *to **harmonize their operation** and*
  - ***increase their efficiency**,*
  - *to **adapt to the development** of present and future European Research Infrastructures and*
  - ***establish a co-innovation platform with industry**.*

- Eligibility criteria for the participation and networking of TIs will be investigated in detail, in order to
  - **finally propose an appropriate coordination model**.

AMICI WP3 Objectives (cont.)

- It is anticipated that
  - *cooperation between existing major and active TIs can be used for the **formation of a core group**,*
  - *with the incorporation of **flexible links to smaller TIs** as being an essential mechanism for improving innovation and support to smaller research centres and also universities.*
- Possible **links to industrial partners** will also be identified with the aim to fostering innovation and competitiveness.
- TIs can **foster innovation potential through cooperation**, but also by **initiating collaboration** to achieve shared objectives.
- This targeted network can support **temporary exchange of highly qualified personnel**; as innovative expert teams should have access to dedicated TIs for education and training purposes.

- The **elaboration of a consortium agreement** reflecting the goals of the overall Cooperation program will be sought.

WP3.1: Definition of eligibility criteria

(**CEA**, DESY, INFN, CNRS)

Task WP3.1, under the lead of CEA Saclay, will investigate, identify and appropriately summarize the eligibility criteria for the envisaged network.

- This task will elaborate and define the conditions of eligibility for an **accelerator or sc magnet European infrastructure** to be eligible in the core group of large European Technological Infrastructures.

- The selection will be based on
  - **technical spread, accessibility, innovation and**
  - **industrial opportunity criteria**

  to avoid clustering a too large number accelerator and magnet based facilities
  to allow for strong integration and impact of TI activities.

WP3.1: Definition of eligibility criteria

(**CEA**, DESY, INFN, CNRS)

- Large scale accelerator projects like LHC, European XFEL, ESS, EURISOL, ELI, and others, require the **setting-up of new and dedicated TIs**, both at Research Centres and in industry.
- The demand for **high technology products**, built to **excellent quality standards**, leads to the use of such dedicated TIs.
- **Examples** are large clean rooms used to prepare and assemble superconducting accelerator components, but also specially designed test stands for superconducting accelerator magnets.
- Usually many years of development, collecting knowledge from researchers working at **cutting-edge technology frontiers**, are required to define the requirements for such new and innovative TIs.
- Often the hardware set-up needs to perfectly match sophisticated assembly or testing procedures. Thus the implementation happens at the Research Centres first, and is only sometimes duplicated in industry.
- Larger TIs are usually related to long-term R&D programs or to the larger scale production of accelerator components.

WP3.1: Definition of eligibility criteria

(**CEA**, DESY, INFN, CNRS)

- A network **fostering** the **innovation potential** of TIs requires the well thought-out assortment of a core group. AMICI will use a **topical concentration** on the area of **production and testing of accelerator components and beam transport magnets.** TIs to be considered should be of large scale, i.e. **clear visibility of the infrastructure in the community is required**; ***what is the best way to increase visibility?***
- **Sustainability of TIs** offering highest innovation potential is also a clear eligibility criterion. Since innovation requires not only an associated technical work environment, but **also** its **intellectual abilities**, such that **larger teams working at external infrastructures should similarly be considered as a TI**. The mentioned topical concentration will support the limitation on direct participation, but integration of smaller TIs e.g. at Universities in an associated way can be foreseen.
- Fostering innovation in the frame of AMICI will have a cultural & societal impact. **Technology transfer from Research Infrastructures (RIs) to** small and medium size **industry** specialized on building accelerator components is self-evident and has a long tradition at the core-group RIs.
- AMICI will be used to **investigate and define also eligibility criteria for the association** of either **selected key-players from industry and/or of an industrial forum** formed by future science projects.

WP3.2: Networking and coordination model

(**IFJ PAN**, CEA, DESY)

- Organizations have a **networking relationship** when they **exchange information** in order to help each individual organization **do a better job**. Already the least amount of commitment and time from organizations can in itself have significant and positive results.
- Organizations have a **coordinating relationship** when they **modify** their **activities** so that together, they provide better services to their constituents. Coordination helps fill in the gaps and also helps prevent service duplication. A coordinating relationship requires more organizational involvement, time, and trust than a networking relationship.

All AMICI core group members are **integrated in collaborative efforts**, either project related or as a consequence of long-term R&D programs.

Thus **a networking relationship exists but AMICI will promote a more systematic analysis of how to improve the actual situation.**

WP3.2: Networking and coordination model

(**IFJ PAN**, CEA, DESY)

- The existing network has obviously varying mesh-size and with the inevitable closure of accelerator projects, these ties are fundamentally at risk of being lost.
- The diversity of small project funding requires improved communication.

Thus **common and somewhat regular meetings** can help **to advertise capabilities of TIs**; here we see **duties of the AMICI core group; TI communication objectives to be checked**

- possible *common product lines*,
- *future technology application areas*, but
- also *services and exchange of expert teams* can be simultaneously addressed.
- An updated database can inform about recent achievements and opportunities.
- Last but not least, an *AMICI calendar* will summarize the participation (planned as well as happened) of network members in auctions, conferences, trade fairs etc.

AMICI will develop a coordination model for the use of the considered major TIs, including defining standards for the use by external users. **Coordination is seen as**

- providing *assistance in searching for R&D partners* (booklet to present Tis; which WP?)
- supporting the *selection of objectives* (outlining trends, future tasks), and
- fostering the definition of *standards* commonly used in the accelerator community.

WP3.3: From cooperation to collaboration: elaboration of a collaboration agreement model

(**DESY**, CEA, INFN, CNRS, STFC)

All AMICI core-group members base their actual **cooperation or project driven collaboration** on a **variety of written agreements or contracts**. Since most activities are temporarily funded, sustainability is not always guaranteed.

- AMICI will **study existing general collaboration agreements** and use the expertise of the involved legal experts to **harmonize such agreements** with the goal to ease the later definition of attachments dealing with technical developments.

- Innovation brings **technology transfer**, and the latter **requires license agreements** – either with license fees or royalty arrangements. In many cases **concerted actions** would be preferable and definitely help with respect to the AMICI goals.

WP3.3: From cooperation to collaboration: elaboration of a collaboration agreement model

(**DESY**, CEA, INFN, CNRS, STFC)

- **Cooperation** of both Research and Technical Infrastructures **is of utmost importance for the success in building large challenging accelerator projects.** Duplication is costly, thus sharing of work is a well-established method. This usually works for international accelerator projects. Nevertheless, during the R&D phase, parallel action is required since the innovation speed needs to be sufficiently high. Thus similar TIs may exist, even as a result of effective and efficient cooperation.

- **Collaboration** within a project **is often seen as the work breakdown and usage of different TIs at different places**. Aiming for innovation collaboration **should also be seen as the mixing and integration of expert teams.** Thus AMICI will identify possibilities to exchange work forces in order to
  - further distribute knowledge,
  - common standards and practices
  - and training protocols.

WP3.3: From cooperation to collaboration: elaboration of a collaboration agreement model

(**DESY**, CEA, INFN, CNRS, STFC)

Task WP3.3 will study the path from successful cooperation to collaboration.

- *Existing bi- or multilateral agreements* between AMICI members and with other partners *will be studied in detail*.
- Results of an investigation *how to harmonize such agreements* within the core group of large Technical Infrastructures will be reported after 18 months.
- Based on this improved collaboration of the core group the path from cooperation to collaboration i.e. *exchange of expertise* in the frame of common projects organized within AMICI *will be investigated*.

The **definition of dedicated programs** for either common TI developments and/or improvements, or training programs possibly including industrial partners will be done.

Deliverables and Milestones

Deliverables

D3.1: Report defining the eligibility criteria for accessing to the core group of large TIs (M18).
D3.2: Report on the networking and coordination model (M30)
D3.3: Report about the proposed model of collaboration agreement (M30).

Milestones

M3.1: First version of the report on eligibility criteria (M9)
M3.2: First version of the report on Networking and Coordination Model (M12)
M3.3: Collection and analysis of existing bi- or multilateral agreements between AMICI members and with other partners (M18)

Actions

Start the actual work in all tasks now, use video conferencing every 6 weeks, meeting in person every 6 months (incl. annual meeting).