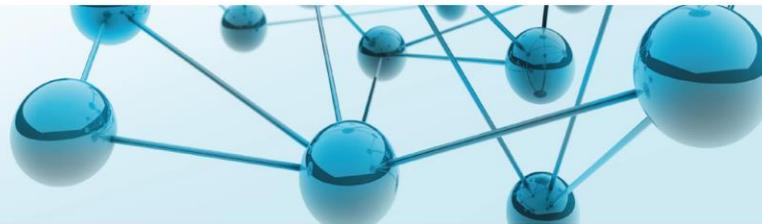




Trans-Atlantic Modelling and Simulation for Cyber-Physical Systems



VALIDATION WORKSHOP FOR THE TAMS4CPS STRATEGIC RESEARCH AGENDA FOR COLLABORATION

16 November 2016, Brussels



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Agenda

TAMS4CPS Validation Workshop		
09:00	Registration	
09:15	Welcome, Introduction and Project Overview	Michael Henshaw, LU Sabine Hafner-Zimmermann, SEZ
09:30	Keynote presentation on present and future trans-Atlantic collaboration	Haydn Thompson, THHINK
10:10	Tour de table – brief introduction of participants	All participants
10:30	Presentation of future Modelling & Simulation (M&S) for CPS research opportunities identified in TAMS4CPS	Michael Henshaw, LU
11:00	Coffee Break	
11:15	Presentation of mechanisms and good practices for trans-Atlantic collaboration & discussion	Sabine Hafner-Zimmermann, SEZ
12:00	Prioritisation of research opportunities	All participants
12:15	Lunch	
13:15	Introduction to afternoon activities; Interactive parallel sessions	Michael Henshaw, LU Sabine Hafner-Zimmermann, SEZ All participants
14:15	Feedback into plenary, group discussion and consolidation	Plenary
15:30	Coffee Break	
15:45	Identification and discussion of recommendations on future trans-Atlantic M&S for CPS collaboration	All participants
16:30	Wrap-up, feedback and next steps	Michael Henshaw, LU Sabine Hafner-Zimmermann, SEZ
16.45	End	

A network diagram in the top left corner consisting of several blue spheres of varying sizes connected by thin blue lines, representing a network or collaboration structure.

Mechanisms and good practices for trans-Atlantic research collaboration

Sabine Hafner-Zimmermann
Steinbeis-Europa-Zentrum, Karlsruhe

16 November 2016, Brussels

Collaboration - policy context

Increasing speed of change in economy and society

Tackling Grand societal challenges needs new policy approaches

➤ **Smart innovation governance**

Improving innovation governance thus increasing national/EU economic performance by collaboration among industrialised nations, both within Europe and beyond

➤ **Re-industrialising/digitising European industry**

➤ Increased need for international collaboration: scientific excellence, global value chains, open innovation, regional competitive advantage, smart specialisation: **take stock of knowledge available elsewhere**

➤ EU-US collaboration has always been a priority with a long track record

CPS as one of the key enabling technologies vital for a leading position of EU science and innovation benefits considerably from trans-Atlantic collaboration

M&S of CPS an important cornerstone of enhancing CPS development and application: natural field of interest/relevance for EU-US collaboration

To increase the speed of development in this field **industry activities need to be underpinned by public support**, e.g. by Horizon 2020

Collaboration mechanisms

Mechanisms need to be chosen carefully taking into account aims and objectives to be reached and be tailored to suit the individual needs of all parties involved.

1. Establishment of **high-level bilateral agreements**, elaboration of a joint and agreed agenda and setting up working groups to implement agreements
2. Establishment of **thematic, targeted funding programmes** with relevance to the respective STI policies (e.g. aligned to Grand Challenges)
3. **Joint calls, twinning of research projects, and co-fund schemes** open to the respective partners (single pot, reciprocity)
4. Facilitating **US participation in mainstream H2020** projects
5. Funding of **joint workshops, conferences** or series of seminars as well as travel support to conferences
6. supporting the **mobility of researchers, staff exchange**, fellowships to students, trans-Atlantic training and education approaches.
7. **Access to research infrastructure**, sharing of equipment, such as joint development and funding of open platforms, test beds and living labs to increase strategic, long-term collaboration
8. Enhancing the **visibility of EU/US programmes**
9. Support to **technology transfer, sharing of knowledge and application-oriented cooperation**
10. Enhancing **framework conditions for trans-Atlantic collaboration**

Numerous examples of successful collaborations: good practices

BILAT USA 2.0



BILAT USA 4.0



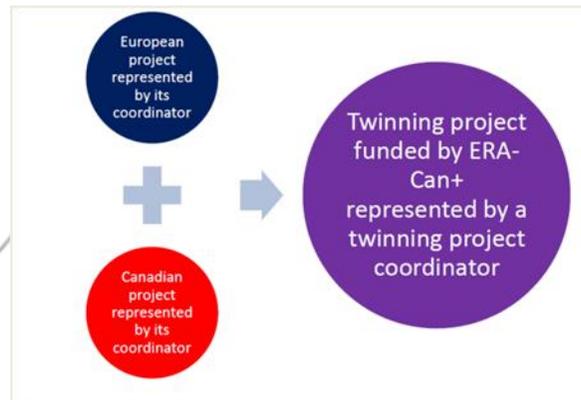
DISCOVERY
Europe-North America Dialogues for ICT Cooperation



ERA-Can+



European Institute of Innovation & Technology



Fostering collaboration/incentives

- **Scientific excellence**, access to expertise
- Establishment of **networks**, sharing of knowledge and ideas
- Collaboration between academic partners: equal basis, less close to market
- Opening up **markets**
- **Agreed agendas/priorities and joint collaboration mechanisms** facilitate large-scale collaboration (EU-NIH Health): long-term strategic collaboration is a PLUS
- **Easy access to low-level collaboration** such as staff exchange, joint workshops, collaboration of existing projects (by twinning/teaming),...
- **Comprehensive information** on funding possibilities, e.g. via NCPs
- Mutual **trust** is the most important facilitator to collaboration (established by low-cost, early-stage, low-level activities)
- **Complementarity and Reciprocity** is a clear incentive to collaboration
- Active project management
- The US have a clear interest in collaboration with Europe! „If partners are good it's worth the hassle with EC administrative issues“.

„Where there is a need to collaborate, companies will find ways and means to collaborate“

Hindering collaboration/barriers

- “**Distance** is a challenge”
- Lack of (joint) “parallel” coordinated **funding** (More dedicated EU-US calls): „Expecting the US participation to fund itself is not a viable method“
- **No Sustainability** of projects/activities: sound business model, both public and industry support needed
- **Framework conditions:**
 - 1) Information gaps with regard to existing funding programmes, funding mechanisms;
 - 2) Difference in applicable laws and jurisdiction, information gaps in understanding of legal, administrative and financial issues;
 - 3) Administrative burden, different implementation rules: better framework conditions and simplification needed (to be seen how New Implementing Arrangement is working);
 - 4) with regard to researcher exchange: signing of research agreements (esp. with regard to handling of IP issues) is much too slow;
 - 5) Issues of standards, IP and knowledge ownership are perceived as hindering but no general obstacle: „a battle of standards needs to be avoided“;
 - 6) no joint strategic priorities.

“Trans-Atlantic collaboration is not about money crossing the ocean in the first hand, it’s about successfully implementing joint projects...”

Recommendations identified so far

- Strengthen synergies and framework conditions; Overcome policy fragmentation;
- Better EU-MS coordination of activities; Facilitation of policy dialogues on international cooperation;
- Reinforce the international dimension of ERA;
- Better coordinating EU-US RTDI policies and programmes
- Our fast-developing, **highly networked society needs new approaches**: smaller scale, top-down & bottom-up activities; knowledge sharing and network-building; project clustering as the new crowd sourcing; need for flexible cooperation schemes; enhanced support to mobility of researchers;
- **Joint activities are worth the money**. Thus, **more dedicated EU-US calls** needed
- Use **international organisations/networks as enablers and facilitators** to foster collaboration
- **Improving framework conditions** for cooperation:
 - 1) better coordinating RTDI policies and programmes, identification of dedicated fields of cooperation, setting-up implementation mechanisms and activities.
 - 2) establishing support mechanisms to collaboration, improved exchange of information on funding possibilities, bodies and partners (e.g. NCPs for H2020 information);
 - 3) lowering administrative burden/implementation rules of programmes.

Recommendations identified so far:

M&S for CPS

M&S for CPS-specific:

- US federal agencies more focused toward applied research are easier aligned to H2020 objectives and should be targeted for co-ordinated calls, e.g. National Laboratories such as Sandia. Calls should be highly co-ordinated and criteria for selecting projects well-aligned.
- Encourage companies and applied research organisations to set up cooperations with international high-tech industry networks such as the Industrial Internet Consortium.

Highlights from the TAMS4CPS theme workshops:

- Access to sufficiently rich datasets to validate models and simulations: setting up of testbeds that can be used for existing CPS and may form a building block towards new CPS in the future. Establishing links between appropriate European and US partners to federate existing **testbeds** and establish new ones collaboratively.