

Exploiting Global Accelerator Network Synergies

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In Europe, a successful series of EU co-funded accelerator networks – including CARE (2004-2008), EuCARD (2009-2013), EuCARD-2 (2013-2017), and the ongoing ARIES (2017-2021) [1] – have developed the European accelerator R&D landscape into a “super-advanced community”. Among other means, this development was accomplished, through a succession of topical workshops. Many of the themes addressed by past European network workshops (e.g., pioneering workshops on slow extraction) were subsequently taken up by similar topical workshops in the US.

Figure 1 illustrates the past and ongoing European accelerator network activities [2]. In total, so far 19 projects were supported, with a total cost exceeding 305 M€, and an EC contribution 105 M€, involving more than 100 partners (labs, universities, industry) in 21 countries.

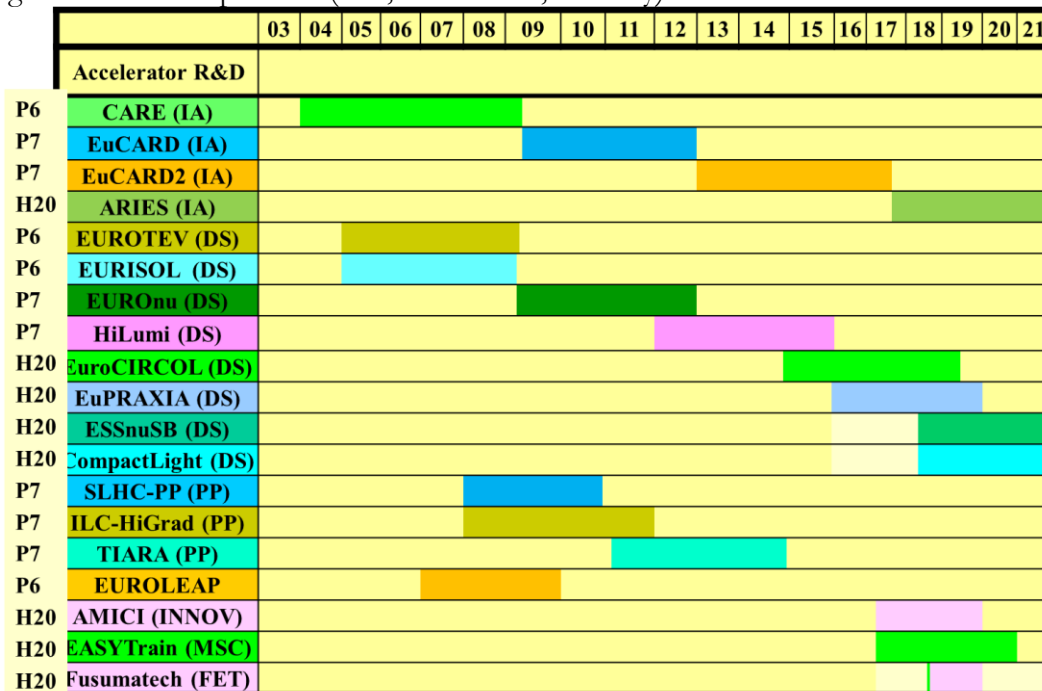


Figure 1: EU co-funded European accelerator projects coordinated by the European Steering Group for Accelerator R&D (ESGARD) [3] and Test Infrastructure and Accelerator Research Area (TIARA) [4] (from [2]) [IA: Integrating Activity; DS: Design Study; PP: Preparatory Project; INNOV: exploiting the Innovation potential of research infrastructures; MSC: Marie Skłodowska-Curie action; FET: Future and Emerging Technologies].

Using a new EU instrument, the Innovation Pilot, which is well adapted for super-advanced communities, the project “Innovation Fostering Accelerators Science and Technology” (I.FAST) [5] is being prepared. If approved by the EC, I.FAST will be launched mid-2021, and extend over 4 years. Widening the I.FAST network activity beyond the borders of Europe, and strengthening links with the North-American accelerator community will be the natural next step.

Specifically, we propose to leverage and extend the European network model in order to allow for a greater flexibility in catalysing new developments, not limited by any project scope, and to put to use the significant and complementary expertise available in the US. Widening I.FAST will also be of great benefit for the European accelerator science since it will receive new stimuli from the US community. Jointly organized US/I.FAST workshops, held either in Europe or in the US or remotely as zoom meetings, could address some of the numerous intriguing opportunities at US facilities, such as IOTA, FRIB, CBETA, LCLS-II, PIP-II, EIC, SNS Proton Power Upgrade, and SNS Beam Test Facility. Other joint topical events could explore the grand challenges identified by the Snowmass process, and help develop longer-term strategies, e.g. for muon accelerators or micro/nanostructure-based highest-gradient accelerators.

References

1. <https://aries.web.cern.ch/home>
2. R. Aleksan, TIARA Collaboration Council, June 2018.
3. <http://www.esgard.org/>
4. <http://www.eu-tiara.eu/>
5. M. Vretenar et al., “Innovation Fostering in Accelerator Science and Technology (I.FAST)”, proposal no. 101004730, submitted to the European Commission’s H2020 Call H2020-INFRAINNOV-2019-2020 (Demonstrating the role of Research Infrastructures in the translation of Open Science into Open Innovation) on 17 March 2020.