

Present: Julian Birkinshaw (LBS), Matteo Cavalli-Sforza (IFAE), Kalevi Ekman (Aalto University), Sijbrand De Jong (Nijmegen), Thierry Lagrange (CERN, Chair), Joachim Mnich* (CERN), Ezri Tarazi (Technion); Giovanni Anelli, Hans Boe, Oday Darwich, Luciana Leveratto, Oscar Lillelokken, Marzio Nessi, Markus Nordberg, Saku Makinen, Claudia Marcelloni, Romain Muller, Ash Ravikumar, Tuuli Utriainen, Pablo Garcia Tello, Harri Toivonen, Laetitia Veyrat, Laura Wirtavuori.

Meeting agenda: <https://indico.cern.ch/event/984811/>.

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Th. Lagrange welcomed everyone to the 4th ISAB(-G) meeting and presented the goals and overall schedule for the meeting (Appendix 1)¹. He noted the impressive achievements of IdeaSquare in 2020 despite the drastic effects of the COVID-restrictions in that IdeaSquare had managed to engage remotely to as many [CBI](#) students as in the previous years, and the major milestone of producing the Strategy Plan for the next five years. He also underlined the importance of obtaining new EU-projects like the [Crowd4SDG](#) and the funding for [ATTRACT](#) Phase 2 which now consolidates the IdeaSquare in the heart of the CBI-like student activities integrated into the funded ATTRACT-projects, but also offering in parallel more opportunities for the CERN communities to benefit from IdeaSquare.

M. Nordberg presented an update on [GRADE](#) projects (Appendix 2). He noted that CBI has been approved as part of GRADE by the Research Board but no MoUs have been signed due to COVID. An extension of [TT-PET](#) as a new MoU has been requested and M. Nessi and M. Nordberg will discuss the matter with the Director of Research. The Research Board minutes have been added for information, and some additional points will be covered under “Deliberations”.

M. Nessi provided an update on the progress made by - and the upcoming challenges for - the Neutrino Platform² (NP, Appendix 3). He summarized the main detector development milestones and the use of the [PLAFOND](#) detector R&D framework, noting that several strands were further nurtured within the GRADE MoU-framework, a couple of which then got funded by ATTRACT. The next main challenge is building [LBNF/DUNE](#) in the US and the related detector development challenges still lying ahead. M. Nessi noted that NP has lab facilities at IdeaSquare that host a number of NP engineers and designers there, who interact with the CBI-students working on possible new uses of the technologies.

Following a question from the ISAB as to the use of new technologies coming from the *outside* for the benefit of the NP via IdeaSquare, M. Nessi confirmed that this has indeed happened, e.g. through GRADE initiatives like AUGMENT and TT-PET, and that the NP still continues doing innovation.

¹ All the material has been uploaded on the Indico-agenda page, including the minutes and recommendations made from the previous meeting, endorsed by the ISAB-G in April, 2020.

² It should be noted that the Neutrino Platform reports to another [Committee](#).

P. Tello and **R. Muller** gave an update on the status of ATTRACT Phase 2 and Crowd4SDG, and their connections with activities at IdeaSquare (Appendix 4). IdeaSquare plays an integral role in Phase 2 as a dynamic testing platform where the selected projects from Phase 1 will be scaled up to higher levels of TRL³, embedding CBI-like student projects within, based on gains from [student pilots](#) from Phase 1. This will offer the CERN community several new opportunities. IdeaSquare will be hosting student projects and hosting workshops related to innovation and a socio-economic study of ATTRACT requested by the EC. The EC has highlighted IdeaSquare on the lever of innovations hubs outside Europe such as the Hitachi and the University of Tokyo Joint Research Laboratory. The EC is interested in integrating ATTRACT – and the concept of IdeaSquare – into [EIC](#). Crowd4SDG in turn offers the EC help in policy formulation through research how targeted citizen science can be harnessed for addressing global warming. R. Muller highlighted also the benefits to CERN.

ISAB-G was interested in the type of CERN technologies Crowd4SDG projects have considered. Examples were provided from the CBI-programme, but it was acknowledged that the CERN technologies are in most cases not “plug-in-and-play”, due to their low [TRL](#). It was clarified that the students are not forced to use the [CERN technologies](#). Questions were also asked how IdeaSquare facilitates projects from Phase 1 to Phase 2 and how the CBI-activities will be built around the Phase 2 projects. The model was explained, noting that CBI-like student involvement will be mandatory in Phase 2.

L. Wirtavuori provided an update on CBI-like student activities at IdeaSquare (Appendix 5). She noted that despite the drastic COVID-restrictions that have kept IdeaSquare closed for students since early March 2020, the same amount of CBI students was nevertheless catered for remotely – in addition to running the annual program with the Royal College of Art (RCA) for some 400 students. L. Wirtavuori explained how CBI is now part of the ATTRACT program, and she summarized the results from a workshop engaging all teacher staff from the CBI-like courses, which has been used as important input for the five-year plan in the Strategy document. O. Darwin then gave his presentation on the new online tool which captures also the *process aspects* of the CBI student projects (Appendix 6).

ISAB-G asked about the CERN involvement in the CBI-courses and L. Wirtavuori explained how the interaction worked and how the KT group plays a crucial role in it. As examples, the [CERN-COVID Task Force](#) was mentioned as interacting with the students. She concluded, however, that this connection still needs to be strengthened. **G. Anelli** complemented this view by noting that this is still under experimenting and that the students are rather offered a “toolbox” of CERN technologies to choose from, rather than forcing the students to use them. L. Wirtavuori also reminded that the approach in Design Thinking starts from the user needs, only followed later by a selection of a solution-technology, opposed to the classical CERN way of first developing a technology and *then* finding possible other use for it.

S. Mäkinen gave a brief update on the progress of [CIJ](#), and the plans for two new Special Issues, one on gained CBI-experiences (Appendix 7)⁴. Although CIJ has 128 registered reviewers, severe delays took place in the review process in 2020 due to COVID, but given the circumstances, he was nevertheless pleased with the overall progress being made. He

³ The aim is to raise the [TRL](#) to about 5 by the end of Phase 2.

⁴ CIJ is provided as an in-kind contribution by TAU to GRADE, at an annual person effort of 0.3 FTE.

noted the pedagogical value of CIJ also for young researchers, offering them the opportunity to publish their first paper.

ISAB-G asked whether CIJ could report on the process and results of ATTRACT Phase 1, and S. Makinen considered that to be an excellent suggestion. Moreover, in Phase 2 the student impact in the project innovation capabilities could be reported – this could also be part of the scope of the socio-economic study in Phase 2, requested by the EC.

A. Ravikumar presented an update on KT activities in 2020 that would have been hosted at IdeaSquare and plans for 2021 (Appendix 8). He noted similar shifts to organizing courses and events online, reporting the pros, cons and learnings. A. Ravikumar then provided an update on the “Garage” concept which will, once the COVID restrictions are removed, offer at IdeaSquare coaching and support for potential entrepreneurs from CERN in terms of developing their ideas to prototype and to validate business models. He noted that a more detailed plan will be provided next year, depending on activities that can start in 2021.

ISAB-G asked how the “Garage” concept fits in the IdeaSquare “Fuzzy Front End” spectrum of innovation. A. Ravikumar, G. Anelli and M. Nordberg responded by noting that a need has been identified, supported also by literature, for offering help to early-stage tinkerers and potential entrepreneurs *well before* the creation of a start-up or moving into an incubator. IdeaSquare has suitable facilities to offer, benefiting from the combined presence of KT staff and the CBI-students.

M. Nordberg then presented the resources allocations for 2020 – 2021 (Appendix 9). He described 2020 as a dramatic year in shifting basically all activities online as of March, nevertheless maintaining a constant student flow. M. Nordberg reminded that the annual operating cost of IdeaSquare is - on average - 400 kCHF and that since 2019, costs have been included in ATTRACT, thus generating a budget carry-over that covers still 2021. He acknowledged the additional budget help made available by Th. Lagrange that made it possible for IdeaSquare to consolidate the decaying infrastructure there. In the same context, **H. Boe** presented an update on the technical activities at IdeaSquare (Appendix 10), and **L. Leveratto** commented briefly on the package produced for investors⁵, as well as an update on the Progress Report 2019 - 2020. This was then followed by a short briefing by **C. Marcelloni** on the connections between the SPARKS-program, Science Gateway and IdeaSquare

M. Nordberg proceeded then to present the Strategy Plan 2021 – 2025 (Appendix 11). He summarized the key activity drivers and resources, emphasizing that IdeaSquare operates at the “Fuzzy Front End” of the spectrum, tracing from basic research up to a “pre-incubator” level (Figure 9). He reminded that Figure 11 had been updated since the previous version distributed to ISAB-G members on December 26, 2020 and that the line “plus using overheads” had been removed as 70% of the ATTRACT Phase 2 overheads can no longer be assumed to be available to operate IdeaSquare. He reported that IPT has swiftly responded to this subsequent shortfall by submitting a 10-year comprehensive budget request for Ideasquare to the CERN management but that so far, no news has been received. In parallel,

⁵ This was addressing the ISAB-G recommendation from 2020 that IS should start to look for wealthy individuals to support the IdeaSquare activities.

discussions are taking place with ESADE to see whether a higher volume of executive management courses offered at IdeaSquare could be possible, thus bringing in more external revenues. M. Nordberg reminded that the operation costs for the current year (2021) are covered but that the situation needs to be clarified during the year. He also informed the ISAB-G about the plans of the CERN management to include IdeaSquare on the public side of the fence as part of the Science Gateway offering. Although such a move would be welcome to ease up e.g. the registration and access for the CBI-students, public access to the building needs nevertheless be restricted due to the technical nature of the building and building ownership and safety/access rules need to be clarified.

ISAB-G members had several questions and comments about structure and length of the Strategy Document, recommending a 1 - 2 page Executive Summary to be added in the beginning. It also recommended reviewing the objectives and KPIs (page 11) to avoid generating self-fulfilling prophecies.

Th. Lagrange opened the internal session of the ISAB-G and invited its members to make any comments, observations or remarks related to the presentations and, in particular, the Strategy Plan made available to ISAB-G (Appendix 12).

ISAB-G expressed its appreciation how the different activities described in the Strategy Plan had been integrated together, driven now by ATTRACT Phase 2, and also given its prospects to extend into the next EU Framework Program. If Phase 2 turns out to be as successful as Phase 1, ISAB-G considers the impact to be significant in Europe and the key role of IdeaSquare in that should not be forgotten. Despite the document being a bit “heavy”, it reads well. ISAB-G observes that despite the many challenges IdeaSquare has been facing, its activities have not shrunk in 2020, but are instead now on a convincing path to strengthen, having a clear focus on what IdeaSquare is best at, and executing an articulated set of selected choices. ISAB-G therefore wishes to pass its congratulations to the IdeaSquare team for the above achievements.

The step to now include the “Garage” in IdeaSquare as part of the innovation ecosystem is most welcome, while anchoring it firmly on the “Fuzzy Front End” of the innovation spectrum. With the above elements together, with the effective use of hybrid-format workshops between online and physical events, ISAB-G is confident that IdeaSquare will pass over the “Valley of Death”. Experiences elsewhere, like in Israel and Finland are encouraging.

ISAB-G was also pleased to see the “Invitation to Investors” (Appendix 13). Although ISAB-G acknowledges the need to remain realistic about the likelihood of (large) donations, with adequate allocated management resources, it considers that the chances of obtaining donations through the proposed strategy of “inviting for advice” are fair and worth pursuing.

ISAB-G acknowledged that IdeaSquare has set clear criteria on where and how to reduce current offerings (page 26). ISAB-G asked whether restricting commercial access to IdeaSquare would harm external revenues stream. M. Nordberg explained that typically, such events do not draw in the identified strengths of the IdeaSquare team, and “just”

offering a CERN-presence for some rental fee of a few thousand Francs was not very beneficial. Instead, when a larger role can be identified for the IdeaSquare team – like e.g. in the case of ESADE executive management program – where a similar amount can be obtained *per attendee*, the situation would be very different.

Concerning the defined goals or Key Performance Indicators (KPIs, page 29), ISAB-G recommended to give more thought to articulating the created value of IdeaSquare from a relational point of view, instead of considering value as a form of asset. That is, placing measurable emphasis on the ecosystem view, linkages IdeaSquare can build between the partners etc.

While waiting for IdeaSquare to quote examples of technologies or ideas imported from the outside to the CERN community in the next Progress Report, ISAB-G recommends to include this as a concept in the Strategy Document.

ISAB-G found the proposed integration of CIJ closer to ATTRACT ecosystem a good step, and that offering the opportunity also to junior researchers to submit to the journal is to be encouraged. Noting the challenges mentioned by S. Makinen in his presentation and given the fierce competition in the world of online publications, and that CIJ relies entirely on the goodwill of Tampere University, ISAB-G wonders whether it has the appeal and critical mass to survive. M. Nordberg explained that CIJ operates in the niche area of *experimental* innovation and it invites shorter submissions than journals in general, in the style of “Nature News”. It will now obtain more support from ATTRACT, so for the coming years it should at least survive. ISAB-G suggested this niche aspect should be made more visible in its offering.

ISAB-G had noticed throughout the presentations, that reaching into CERN remains a concern and that mobilizing people at CERN into IdeaSquare activities is a constant challenge. ISAB-G recommends IdeaSquare to explore whether, with the help of CERN HR, IdeaSquare could be promoted as an “Experiment” for Fellows and other young researchers to join on a small fraction of their time.

ISAB-G took note of the Research Board minutes (CERN-DG-RB-2020-497) concerning GRADE and IdeaSquare and asked Th. Lagrange and M. Nordberg to follow up with the Director of Research the question of rotating the ISAB-G composition, the relationship between the GRADE and ATTRACT programmes and whether the review pool in place for CIJ since several years is appropriate in terms of a reviewing scheme.

ISAB-G continued the discussion from 2020 as to its own competences available for the benefit of IdeaSquare. Possible names were raised to strengthen investor/business advice. Th. Lagrange invited ISAB-G members to come up with other possible names for its next meeting to be scheduled within the next coming few weeks.

Th. Lagrange drew final conclusions noting the significant progress made at IdeaSquare since the last review despite the COVID-restrictions and the presentation of a sound plan in the Strategy Document for the next five years. He noted the strengthened ties with the Knowledge Transfer (KT) group and the launching of the “CERN Garage” at IdeaSquare once the COVID-restrictions are removed.

Finally, Th. Lagrange thanked all ISAB-G members for their active and helpful interaction and constructive feedback. He said he will compile a list of recommendations based on the received input and share it for comments and further elaboration for the next meeting. ISAB-G members unanimously thanked Th. Lagrange for all his efforts and help as the ISAB-G Chair. He then moved to close the ISAB-G deliberations.