



Minutes of Meeting
Scientific Committee of Europe's Rail Joint Undertaking

Project	SC	Date/Time	July 2022
Meeting Type:	Scientific Committee	Location:	Online meeting

Summary of the Meeting	
1	<p>Introduction, approval of the Agenda and previous MoM</p> <p>The Chairperson, Professor Angela di Febraro, welcomed the participants and thanked for their attendance to the meeting of the Scientific Committee. She introduced the Agenda which was adopted with no further changes.</p> <p>The Chairperson reminded that the minutes of previous meeting were distributed in advance. With no objections raised, the Scientific Committee adopted the Minutes.</p>
2	<p>State of Play – information from the Europe's Rail</p> <p>The executive Director, Carlo Borghini, reported on the recent activities in the Europe's Rail Joint Undertaking. He informed that the first call for proposals under the Europe's Rail programme had been concluded and the proposals were under the evaluation. The award decision was expected to be taken by the Governing Board at its meeting on 3 August 2022. He also informed the Scientific Committee that 7 proposals were received for 6 topics.</p> <p>In terms of the System Pillar, the Experts were informed that the awarding decision was distributed to the selected tenders and the contracts were expected to be signed in the coming days. The selected tender would cover the activities in the System Pillar up to 2027.</p> <p>In terms of the decision-making process, the group was informed that the last Governing Board in June 2022 adopted the administrative decisions, including Annual Activity Report 2021 and Financial Accounts 2021. Both documents would be available at the Europe's Rail website. He highlighted also the adoption of the Code of Conduct (available here https://rail-research.europa.eu/wp-content/uploads/2022/07/GB-Decision_07-2022_Annex_Code-of-Conduct_Ares.pdf).</p> <p>For the programme-related activities, the Executive Director briefly updated the Scientific Committee on the progress in the DAC programme. He also informed that the JU commissioned a common study with the railway associations – CER, ALLRAIL, and UNIFE – on the high-speed rail in Europe. The cooperation on the study was inaugurated at the Connecting Europe Days in Lyon. The objective of the study was to demonstrate the benefits</p>

and promote the high-speed railway in Europe. In term of communication, the Executive Director briefly discussed the successful WCRR in Birmingham.

3 Amendment to the Europe's Rail Work Programme 2022-2024

The Executive Director discussed the amendment to the Europe's Rail Work Programme. He presented the procedure behind, and the timeline related. As stressed, a decision on the amendment would be adopted in a written procedure with a deadline for the Governing Board, including the European Commission, set in September 2022.

The Executive Director informed the Scientific Experts that the objective of the amendment would be to introduce the text of the second call for proposals under Europe's Rail Joint Undertaking programme. The call for proposals would cover exploratory topics and FA7.

The Governing Board, the States' Representatives Group and the Scientific Committee would receive final Work Programme with a proposed amendment (in track-changes) around 25-26 July, with deadline to deliver the comments by 2 September 2022 (for Scientific Committee and States' Representatives Group).

The Executive Director underlined that the input provided by the Scientific Committee was taken into account and was incorporated to the call text. The topics that were proposed by the Scientific Committee and were not incorporated to the current call would be reflected in the following calls in years 2023-2024.

The Executive Director reminded that presentation was under confidentiality until the proposed amendment would be published on the Europe's Rail website (expected in late July 2022).

The Executive Director presented the topics for the second call for proposals under Europe's Rail programme (*for details, please refer to the presentation*)

1. New Railway station concept for green and socially inclusive smart cities
2. Bridge Dynamics
3. Easy access to Rail Freight Service offering in the EU
4. Conceptual development of Automated Multi-Modal Mobility System (POD)
5. Technological Development of Maglev-derived Systems
6. Hyperloop Industrial Roadmap and pilots
7. Exploratory research, building community of scientific research and enabling a network of PhD
8. Digital and automation enabling new railway services for passengers and freight
9. EU supply map of rail material and technologies addressing the resilience
10. DAC migration roadmap towards deployment

The Executive Director discussed the topic 7 in detail. He indicated that the topic consisted of two elements. First, funding of the doctoral theses in areas related to the Europe's Rail programme. He stressed that the list of proposed topics was indicative and could be expanded. Second, he discussed the concept of building a network of universities, research centres and other research-oriented entities to create a community of experts, with relevant know-how capable of structuring the relationship between the academia and industry. He also stressed that the topic was designed in an open way in order to allow the applicants for proposing different types of solutions. Such a European scientific community alliance could also serve as a back-up for future Scientific Committee of the Europe's Rail.

Professor François Lacôte welcomed the presentation. He shared his comments on certain topics. Firstly, he discussed the maglev technology and its feasibility (point 5). He asked if there was any technological breakthrough in maglev-derived system that would justify the topic. Secondly, he expressed his thoughts about the Hyperloop technology and its development (point 6). He pointed to the studies on the Swiss metro, which preceded works on Hyperloop and expressed his reluctance towards the feasibility of Hyperloop. Thirdly, he asked about the DAC programme. He also welcomed the concept of network of universities under point 7.

Professor Chris Nash welcomed the proposal of topics and expressed his satisfaction with addressing many gaps. He discussed the business cases related to the topics, specifically for maglev (point 5) and hyperloop (point 6). He asked if any coordination between the potential projects and their business cases was foreseen.

Professor Juan de Dios Sanz Bobi suggested to convene a dedicated session for the Scientific Committee Members and the Hyperloop Promoters. He underlined that such meeting would allow to better understand the technological state of art, as well as the current developments in maglev and hyperloop technologies.

He also discussed the proposal on the PhD studies. As stressed, the period of 36 months may not be sufficient to conclude PhD projects. He referred to the internal requirements of minimum 48 months, with some PHD projects extended to 60 months. He also gave an example of the cooperation between the industry and academia in Spain in terms of railway-related academic programmes, not always successful. He suggested to convene a meeting for universities and relevant Member States entities to discuss the possible ways of cooperation and needs. He also pointed to the lack of capacity from the universities' side to produce a sufficient number of engineers to cover the future demand of railway industry. As stressed, a large number of railway engineers would retire in the coming decade and the universities lacked capacity to cover such needs. He suggested to consider funding also for certain BA or MA programmes, or specialized courses.

Professor Christos Pyrgidis welcomed the list of topics, specially he discussed the importance of automation. He also asked if the topics on maglev (point 5) and hyperloop (point 6) should be regarded as independent topics or there would be a certain integration between them.

The Chairperson, Professor di Febbraro, thanked for incorporation of topics proposed by the Scientific Committee. She asked for clarification of how many projects would be financed per topic. She also agreed with the previous comments that the duration of PhD studies was underestimated. She also commented on the shortage of qualified staff in railway industry and endorsed the idea to explore possibilities to address this issue. She suggested to add a point on skills regarding automation and digitalization in railway to be a part of curriculum for students.

Professor Turan Söylemez commented on the universities and companies that did not have extended networks in Europe but where capable to deliver certain skills. He asked for ideas of how to address such companies and universities and incorporate them to the programme. He also agreed with the previous comments that 36 months for PhD studies would be not enough. He suggested to consider the period of 5 years.

The Executive Director reacted to the comments.

In terms of Hyperloop and maglev, the Executive Director pointed to the projects developed in Japan and China. He added that these topics under Europe's Rail programme would be of exploratory nature in order to better understand the feasibility of technology (in light of the lack of technological breakthrough in recent years). He also added that there was a technological difference between maglev and hyperloop system, including approach

to linear motors and propulsion systems. He reminded that not all Hyperloop companies applied linear motor system. Despite the differences, the link between the maglev and hyperloop existed and would be further identified and established. He also pointed to some trends in hyperloop-related technology (e.g. raising interest in freight rather than passenger systems).

In terms of a session between the Hyperloop Promoters and Scientific Committee, the Executive Director informed about the side event at InnoTrans that would be dedicated to Hyperloop. He invited the Scientific Committee to join the meeting and discuss their ideas.

The Scientific Committee agreed to share their email addresses with the organizers of the Hyperloop Promoters' meeting during the InnoTrans in Berlin.

In terms of coordination of socio-economic studies and business cases, the Executive Director informed that the JU was analysing this issue. **The JU would consider readjusting the text to address this issue and to show the need of coherence with work done in the Shift2Rail.** He also indicated that socio-economic business case would be covered by the System Pillar activities.

For PhD studies, the Executive Director agreed to remove the timeframe for projects. He added that with such approach the relevant questions would concern the number of PhD projects to be financed and the costs of such projects. He stated that having a PhD project up to 60 months could be possible. It would be also possible to have different duration for different PhD projects. **The JU would rewrite the call text accordingly to allow for maximum flexibility.**

In terms of collaboration with industry and master programme, the Executive Director underlined there was no budget available for such activities, however, it could be considered for the next calls. He agreed that the demand of railway industry would be growing, therefore, any activities promoting and attracting students to work for railway industry would be appreciated. He also pointed out that financing master programmes could be not the most efficient solution. He invited the Scientific Committee members to consider possible solutions for the future and share with the JU. He also referred to the project led by Professor di Febraro, STAFFER.

In terms of projects to be financed per topic, the Executive Director stressed that it would depend on the budget foreseen by selected projects. If a selected project did not cover the entire budget for a certain topic, then more projects could be financed. He also informed about the possibility of funding the projects from the reserve list in the next years.

Regarding the issues of networking between the companies and universities, the JU would consider an organization of a matchmaking event to integrate the entities that were not a part of the Europe's Rail. The Executive Director also stressed that the JU had always invited the JU Members to consider a geographical balance and inclusiveness in building consortia.

Professor Turan Söylemez suggested that instead of creating a new master's programme for students an alternative solution could be offering by the JU some courses which could be attended by the students from different universities. As stressed, the arrangement of such courses by the JU would attract more students.

Professor di Febraro suggested to convene a dedicated brainstorming session to discuss the ideas.

Professor Moessner gave an example of a good collaboration between the universities and the industry – the common initiative of Deutsche Bahn and German universities for continuous education courses. DB was

	<p>financially supporting such courses. He suggested to consider an idea of cross-European master’s degrees in collaboration with industry.</p> <p>Professor François Lacôte complemented his remarks on maglev. He pointed to the difference between high-speed maglev and low-speed maglev with the latter providing a better case for study.</p> <p>The Executive Director thanked for the discussion. He indicated that the comments would be reflected in the call text. He reminded that the full document would be sent around 25-26 July 2022 for consultation.</p> <p>On behalf of ERA, Torben HOLVAD informed the Scientific Committee members that the Agency would be also organizing certain training. He would provide more details about the training possibilities and dissemination activities at the next meetings.</p> <p>The JU would include a point in the Agenda for SC meeting at InnoTrans regarding the information from the ERA.</p>
<p>4</p>	<p>Scientific Advice – Mandate of the GB to the Executive Director</p> <p>The Executive Director informed the Scientific Committee that the last Governing Board on 24 June 2022 had provided him with a mandate to explore solutions for scientific advice to the Europe’s Rail programme in accordance with the provisions of the Single Basic Act. Based on the examination and after consultation with the current Scientific Committee, the Executive Director would report back to the Governing Board, either at its meeting in November 2022 or at its first meeting in 2023.</p> <p>The Executive Director presented his ideas regarding the future setup of the scientific advice. He expressed a wish to move the scientific advice from the individual assessment and evaluation of the projects towards more collective knowledge. He pointed to the potential involvement of the scientific experts in the full cycle of programme (e.g. input to the work programme, periodical evaluation). He also proposed that the future scientific advise would be more engaged in the assessment of the status of programme, for example, in a form of the yearly scientific assessment.</p> <p>The Executive Director informed that the implementation of a new setup would be a process, therefore, the current Scientific Committee would still function in the next months.</p> <p>The Chairperson, Professor di Febbraro, endorsed the proposal and expressed the support of the Scientific Committee members towards this direction.</p>
<p>5</p>	<p>Request for the Review of the ComplexTrans project</p> <p>The Executive Director confirmed that the JU identified the Scientific Committee Members in the experts’ database. Professor Chris Nash expressed his interest to contribute to the evaluation of project without payment.</p> <p>The JU would prepare contracts (during the summer period) and launch the evaluation process. As the evaluation process also included a bilateral discussion with the owners of the project, the JU would propose two dates to convene such meeting: 27 September or 3 October 2022 (between 9h00-17h00). The meeting would be conducted in a hybrid manner, with possible presence in Brussels.</p> <p>By the end of July, the JU would prepare a calendar for the project evaluation and send the invitation.</p>

	The materials would be distributed accordingly.
6	Closing remarks and AoB The next Scientific Committee meeting would be organized during the InnoTrans in Berlin on 21 September 2022. The JU would provide the Scientific Committee Members with tickets to enter the event. The Scientific Committee could claim the reimbursement of costs after the event, in accordance with the SC Rules of Procedure. The JU will inform the Scientific Committee about the arrangements closer to the date of event.

Annex

Action nr.	Action	Related Topic	Due date	Action Owner
1	SC comments on the amendment to the Work Programme 2022-2024 (written procedure)	Item 3	2 September 2022	SC
2	Revision of the ComplexTrans project	Item 5	September-October 2022 (tbc)	SC