

Minutes of Meeting – 12th meeting of the Scientific Committee of Shift2Rail
Shift2Rail Scientific Committee

Project:	SC	Date/Time:	23 October 2019 10:00-13:00
Meeting Type:	Scientific Committee	Location:	S2R JU premises, Brussels
Meeting Coordinator:	Valerie Lorgé	Issue Date:	

Summary of the Meeting	
Topic	
Item 1	<p>Introduction and welcome of the two newly appointed SC members</p> <p>The SC Chairperson and the S2R JU Executive Director welcomed the participants to the 12th meeting of the Scientific Committee (SC) and welcomed the new members, Professor Peter Vervest and Professor Oliver Michler. A brief tour de table was organized. Professor Vervest introduced himself; he is professor of information management and networks at the Department of Technology and Operations Management, Rotterdam School of Management, Erasmus University, specializing in the use of digital technologies to enable transport and logistics. The SC Chairperson welcomed Mr Vervest, and indicated his expertise in digitalization would certainly prove valuable for the SC. The S2R JU ED stressed in this respect that S2R is moving strongly towards digitalization and automation.</p> <p>The ERA observer also attended the meeting.</p>
Item 2	<p>Approval of the meeting Agenda and previous MoM</p> <p>The agenda of the meeting was approved.</p> <p>The minutes of the previous meeting were approved, with a request for additional change correcting the location of the ERA Conference on ERTMS, which took place in Valenciennes on 15-17 October 2019.</p>
Item 3	<p>Conflict of Interest: declarations</p> <p>The declarations for Conflict of Interest (Col) of the S2R JU Governing Board <u>Decision n°07/2018</u> were available in the meeting room. The members of the SC signed the declarations and handed them in to the Secretariat.</p>
Item 4	<p>State of play – information from the SHIFT2RAIL JU</p> <p>Latest developments and ongoing activities</p> <p><i>Please refer to the PowerPoint presentation</i></p> <p>The S2R JU Executive Director indicated that the results of the <u>S2R JU 2019 call</u>, launched with a</p>

deadline of 18th June 2019, were decided by the S2R JU Governing Board on 4 September 2019. The [Governing Board Decision 07/2019](#) was published on the S2R JU website and all counterparts were informed. The redress procedure ran until 4 October. The Executive Director emphasized that 48 proposals were received for a total value of €148.6 Million, with 116.7 Million co-funding available. 43 Open Call proposals were received, which represents a 34% increase compared to last year. One OC topic was not covered: *Support to the development of technical demonstrators for the next generation of brake systems (TD1.5)*. The respective €2 Million will be transferred to the 2020 budget. The final recommendation will therefore be the following:

- CFM, 6 Projects, €130.9 Mio (co-fund €57.6 Mio)
- OC, 11 Projects, €17.7 Mio (co-fund €17.2 Mio)

The Executive Director provided the SC members with the 2019 call related statistics for the 2019 members' call, the open call, SME participation, country applicants, and requested EU contribution versus budget received. The statistics reveal, *inter alia*, a high participation of SMEs in the 2019 call, a less than optimal participation from Eastern European countries, as well as the fact that funding is largely in Member States whose operators are active in S2R. The Executive Director stressed the need for solutions to be found under S2R2 to attract entities established in the EU-13.

The Executive Director indicated that under IPX, (CFM-IPX and CCA), the topic 'Definition of the S2R Conceptual Data Model' seeks to develop a S2R-CDM conceptual model, defining a unified hierarchical structure representing the components of the railway system, identifying the relations between them and providing a common language and data dictionary to describe them, without license fees as free and open standard like LINUX. This should allow the inclusion of complementary modelling initiatives in a collaborative effort (e.g. BIM, RTM, Eulynx, railML, TAP/TAF, IP4 ontology based modelling approach), avoiding competing and overlapping models.

The LINX4Rail proposal (ranked n°1 proposal) will develop the new concept of "functional system architecture", in coordination with IP2 and IP5.

A new project addressing language barriers for drivers will also be developed. The rest of the open call proposals should aim to support the CFM projects in achieving the highest TRL.

The list of 2019 activities were presented, including the upcoming Governing Board of 14 November 2019, which will address, *inter alia*, the adoption of the AWP 2020, of the revised MAAP Part B and developments on S2R2.

As regards participation in events, the ED mentioned the R&I days end of September, the regional cooperation workshop on 9 October, the S2R Dialogue at the Digital Transport Days in Helsinki on 7 October - which was a success with record turnout at the dedicated S2R session and panels. He indicated that automation was at the core of the discussions.

The S2R JU ED furthermore indicated that the key messages of the ERA conference on ERTMS held in Valenciennes on 15-17 October were to decommission the class B system, and that CCSTSI for 2022 is the first step, based on the game changers developed in S2R (5G, automation, satellite positioning, moving blocks). He indicated 5G should be used in the future, but the question remains

	<p>as to which type (5G-R, or commercial, or both). Regarding satellite positioning, the possibility of continuous positioning is also being looked into. The second step will concern the wider CCS, i.e. how the rail system is operated. In this respect, the LINX4RAIL proposal represents the focal point of these various aspects. The ED also indicated that a tender is on-going in this respect (S2R JU tender S2R.19.OP.01 on railway operators, staff and passengers expertise https://shift2rail.org/participate/procurement/ongoing-calls-for-tender/).</p> <p>The Vice-Chairperson stressed that the rail network is not yet completely equipped with ERTMS. The compatibility of the current partially deployed ERTMS with the future system should be taken into account. The ED answered that the ERTMS Action Plan takes this into consideration; ERTMS needs to be deployed in a European network, otherwise it will be too costly. The baseline has to be harmonized.</p> <p>Professor Pyrgidis underlined that it is crucial a long-term strategic vision for the future be embedded in policy, in light of the contradictions amongst various technological innovations. The ED indicated that in this respect, the ERRAC vision has been developed, as well as the revised S2R MAAP Part B. He also agreed some questions need to be answered, e.g. should more dedicated freight corridors be developed with less passengers on them; can the EU capitals be connected with high speed networks? He stressed a common baseline should be used - ideally ERTMS level 3, and new innovations can be introduced based on this.</p> <p>Professor Söymelez indicated choices have to be made between automated and autonomous and a decision on thresholds in this respect will prove necessary.</p> <p>Professor Nash indicated there is an economic case for high speed rail only in case of dense traffic. There is a strong economic case for ERTMS when it is necessary to renew existing signalling. The ED highlighted the need for S2R2 to also introduce a chapter on business cases and economic models.</p> <p>Professor Salander indicated more tracks are necessary but that the decision-making process in Germany is lengthy and fragmented. She highlighted the support of the public is also needed to accomplish the shift from road to rail, mentioning the occasional reluctance of the public in light of noise and vibrations. The ED underlined that many S2R JU projects are being developed as regards noise and vibrations, but that it is challenging to reduce noise beyond a certain level.</p> <p>Professor Juan De Dios stressed the need to support freight with digitalisation.</p> <p>Professor Vervest mentioned the example of the Rotterdam port, emphasizing the importance of interconnection and physical and managerial interoperability of the systems, especially in the logistics field.</p> <p>The ERA observer stressed the prominence of developing a system perspective in transport.</p>
5	<p>Election of the new SC Chairperson and Vice-Chairperson</p> <p>As the mandates of the current SC Chairperson and Vice-Chairperson came to an end, the election process for the new Chairperson and Vice-Chairperson were organized.</p>

	<p>Members of the Scientific Committee interested in submitting their candidacy to the positions of Chairperson or Vice-Chairperson were invited to do so by 14 October 2019. According to the SC Rules of Procedure, candidates to the positions of Chairperson or Vice-Chairperson put forward their candidacy themselves, or were proposed as candidates by other representatives.</p> <p>The candidacies for the positions of Chairperson and Vice-Chairperson were the following:</p> <ul style="list-style-type: none">- For the position of Chairperson:<ul style="list-style-type: none">• Professor Angela di Febraro- For the position of Vice-Chairperson:<ul style="list-style-type: none">• Professor Jana Pieriegud• Professor Juan de Dios Sanz Bobi• Professor Peter Vervest <p>All candidacies, accepted by the candidates themselves, were put to a vote among SC members during the Scientific Committee meeting on 23 October 2019. A secret ballot was used and the vote took place by consensus.</p> <p>The outcome of the vote is the following: <u>the newly elected Chairperson is Professor Angela di Febraro and the newly elected Vice-Chairperson is Professor Juan De Dios Sanz Bobi</u>. They are elected for a period of three years, starting 1/1/2020 until 31/12/2022, which may be renewed.</p> <p>The ED warmly thanked Professor Lacôte for his proactive and valuable contribution to the SC of the S2R JU over the past years.</p>
Item 6	<p>Update on the AWP2020</p> <p>The Executive Director underlined that the final version of the AWP2020 was sent to the SC and is scheduled for adoption at the GB of 14 November 2019.</p> <p>He mentioned that the AWP2020 was overbooked by 10 Million Euros compared to the available budget, with a subsequent need for prioritization. Three criteria were identified in this respect: i.) the focus on delivering technological demonstrators, taking into consideration Innotrans 2020; ii.) a shift of focus to activities that have reached TRL 7; and iii.) the continuation of other activities with a lower TRL, to bridge towards the next programme. The final decision on the prioritization will also take place at the Governing Board of 14 November.</p> <p>References to the Green Deal were introduced in the AWP2020, as well as an action plan to reduce the S2R JU carbon footprint.</p> <p>Input on the AWP2020 can still be sent by the SC members until 6 November.</p> <p>The Executive Director further indicated that the 2020 call will be launched end of 2019 or beginning of 2020, with the possibility of a mini-call end of 2020. If resources are still available during 2021-2024, they will be used to bridge the gap between the two programmes.</p>

	<p>Related presentations will take place at the info-day in Brussels on 10 December, the regional info-day in Israel on 17 December, and the info-day in Paris.</p>
Item 7	<p>S2R2 preparatory process, Horizon Europe state of play</p> <p>The ED emphasized that S2R2 will be negotiated alongside the other partnerships, with a common timeframe and alignment of policy priorities. Beginning of 2020, clarity will be gained on the form of partnerships, and throughout 2020, the content will be elaborated. The budgetary lines are still under discussion.</p> <p>The Impact Assessment on S2R is on-going, with a public consultation running until 6 November. The ED exhorted the SC members to answer the public consultation. During the summer of 2019, an Inception Impact Assessment was published. Feedback provided by stakeholders revealed a strong opinion in favour of an institutionalized partnership. Contributions from various stakeholders in different Member States were provided, as well as from one Member State (Germany). He further indicated that the Impact Assessment should be finalized by early 2020, by which time the form of the new partnership will be clearer. The final report of the consultant on the Impact Assessment will be ready on 23 December. The impact assessment will be submitted to the Regulatory Scrutiny Board (RSB) in January 2020, which will formulate recommendations to the attention of the European Commission on the establishment of S2R2. Inputs regarding content will be fed into the Commission proposal - including the Master Plan and the technical content on partnerships. The S2R2 Regulation will be sent to the Council in the first quarter of 2020, with a decision normally by 31/12/2020. The aim will be to ensure a smooth transition from S2R to SR2 and a start of operations in 2021.</p> <p>Concerning the governance structure, there is a shared view of maintaining Scientific Committees in all JUs, as well as a suggestion of sharing a Scientific Committee amongst JUs, e.g. common to S2R, FCH, Sesar.</p> <p>As regards the adoption of the Multi-Annual Financial Framework (MFF), a set-back was encountered, as the outcome of the last meeting of the European Council revealed a vote of 20 Member States against the MFF proposal. The next vote is scheduled in March 2020. Nonetheless, if the process is delayed, the transition will not be impacted, since according to the S2R basic act, S2R is in operation until December 2024.</p> <p>Regarding Horizon Europe, current discussions on the budgetary envelope oscillate between a 6% cut to a 30% cut. The Chairperson indicated that the last meeting of the Transport Programme Committee revealed a final budget of around 80 billion Euros, and a revised configuration whereby JU representatives will be invited to present their activities in the programme committees.</p> <p>A strategic decision should be taken on Horizon Europe by the end of 2019, with a public consultation at stakeholder level covering Horizon Europe and partnerships which are not institutionalized partnerships.</p>

	<p>S2R requested a doubling of the current level of funding, in order to ensure increased levels of financing for blue sky, fundamental research, a higher degree of involvement of the scientific community and of start-ups, and large-scale testing demos to include more EU-13 countries.</p> <p>Furthermore, the ED provided participants with details on two on-going studies: i.) a study focussing on the form of partnerships and encompassing operational elements, coordinated by DG RTD; and ii.) a study aimed to feed the future technical content of the Master Plan, coordinated by DG MOVE. SC members should be contacted to provide their input to the latter.</p> <p>Moreover, regarding the legal form, the ED underlined that an institutionalized partnership provides a competitive advantage and the added-value of guaranteeing dialogue and transparency.</p>
<p>Item 8</p>	<p>Presentation on hyperloop developments, by Professor Juan De Dios Sanz Bobi</p> <p><i>Please refer to the PowerPoint presentation</i></p> <p>Professor Juan De Dios delivered a presentation on “hyperloop: technical challenges and actions in Europe”. He concluded by suggesting S2R explore the advantages of hyperloop in the rail users community.</p> <p>A debate ensued amongst the SC members regarding the advantages and disadvantages of hyperloop technology (financial, safety, psychological, etc.), and the differences between geographical markets. The Vice-Chairperson shared his doubts regarding the innovative aspect of hyperloop, underlining that the idea has been developed by the company Swissmetro in 1992, and thereafter abandoned in 2009. He also indicated that in his view the technology is not economically sustainable nor environmentally friendly. The ED stated that hyperloop constitutes a disruptive innovation, in the sense that it captures a part of the market that is not covered by the current market. He put forward the question of whether Europe should take the lead in creating the opportunity for the market uptake, if the technology works on a large-scale.</p>
<p>Item 9</p>	<p>Information on on-going/planned railway R&I activities</p> <p><i>Please refer to the PowerPoint presentations</i></p> <p>During the last States Representatives Group meeting held on 23 September, the representatives from Switzerland, Austria and Germany presented various developments and initiatives in their respective countries in the field of rail R&I.</p> <p>The representative from Switzerland provided a presentation on the ongoing activities in Switzerland on ERTMS. The conceptual phase of “SmartRail 4.0” / Railway Operation 25 will last until 2020. The next phase will prepare the modular rollout, which will be starting around 2025.</p> <p>The Austrian representative and SRG Chairperson presented the-ongoing national railway and innovation activities in Austria.</p>

	<p>Professor Salander, as the newly appointed Director of the German Centre for Rail Traffic Research at EBA (DZSF), presented the core tasks and structure of this Centre established by MOT in May 2019 in Dresden as an independent scientific body acting at the interface between science, the railway sector and policy. Its main tasks are to give scientific support to the German government in all railway related issues, to implement research results into practice, to support national and international standardization as well as to coordinate existing national railway research activities. The aim is to support interoperability, fill existing gaps per specific departmental research, bring together existing testing facilities to avoid parallel developments, and retain and develop expertise of the sector and NSAs.</p> <p>The ED underlined that S2R stands ready to cooperate with DZSF.</p>
<p>Item 10</p>	<p>Future Events</p> <p>The Executive Director presented the various events S2R will be participating in or hosting in 2019 and 2020. For the remainder of 2019, these include the following: the 12th WCRR in Tokyo on 28 October, the S2R Israeli Info Day on 17 December in Jerusalem, the S2R Info day on 10 December in Brussels as well as a S2R info day in Paris. The 12th WCRR in Tokyo on 28 October will include a dedicated S2R stand and the official launch of the catalogue of solutions as well as the S2R website encompassing all Technology Demonstrators for all IPs linked to Work Packages and deliverables, in the presence of the EU Ambassador to Japan, as well as a number of other EU Member State Ambassadors to Japan.</p> <p>The key 2020 events include TRA in Helsinki end of April, TEN-T in Croatia on 13 May and Innotrans 2020 in Berlin on 22-25 September.</p> <p>The ED indicated that S2R JU is accompanying the S2R2 process with the organization of various workshops (e.g. workshop on the future of S2R held in Pardubice in April 2019, the two Governing Board workshops on S2R2, etc.) and events, inter alia the Digital Transport Days in Helsinki, with the hosting of a side-event on railway, the S2R JU info day of 10 December, TRA 2020, TEN-T days in May 2020 and Innotrans 2020 under the German Presidency. He mentioned that the German Ministry of Transport will organize an event on S2R in 2020.</p>
	<p>AOB and conclusions</p> <p>Next meeting:</p> <ul style="list-style-type: none"> • The 13th S2R SC meeting will be held on Wednesday 29 April in TRA in Helsinki • The 14th SC meeting will be held on Wednesday 23 September in Innotrans in Berlin <p>The ED invited the SC members to send proposals for topics of interest for the next SC meeting.</p>

Annex

Agenda 11th meeting SC (adopted)

Action nr.	Action	Related Topic	Due date	Action Owner
1	Provide S2R JU presentation	Item 4	Done after meeting	JU
2	Provide Hyperloop presentation	Item 8	Done after meeting	JU
3	Provide SRG representatives presentations	Item 9	Done after the meeting	JU
4	SC members to send proposals for topics of interest for the next SC meeting	Item 11	February 2020	SC members
5	Registration in H2020: SC members should indicate whether they want to engage as experts in the review of projects. For this, they should register in the H2020 database.	Item 11	End 2019	SC members
5	Share catalogue of solutions	Item 10	After official launch at WCRR	JU