



Shift2Rail Joint Undertaking

2nd meeting of the User
Requirements/Implementation
and Deployment Working Group

Brussels, 15 December 2016

Provisional Agenda

1. INTRODUCTION

- Adoption of the Agenda and the MoM

2. INFORMATION ON LATEST DEVELOPMENTS AND PLANS

3. PRESENTATION OF THE ANNUAL WORK PLAN 2017

4. SUMMARY OF CONTRIBUTIONS REGARDING THE MAAP REVIEW

5. USER REQUIREMENTS AND STANDARDISATION PROCESSES WITHIN THE S2R ACTIVITIES

6. NEXT STEPS



AGENDA ITEM 1

Introduction - Roundtable

- Adoption of the Agenda
- Adoption of MoM



AGENDA ITEM 2

INFORMATION ON LATEST
DEVELOPMENTS AND PLANS

Latest developments

- Following the calls for proposals of 2015 and 2016, **all activities have started** (Call for Members: September, Open Calls: October/November).
- The **Annual Work Plan 2017** was adopted and published; submission of proposals from 10/1/2017 till 30/3/2017.
- The work on the **MAAP review** is in progress. The “Tiger Team” met twice (July, October) and input has been collected from the IPs for the first MAAP draft.

Latest developments

- **GB meetings:**
 - ✓ June: approval of the list of projects retained for funding
 - ✓ October: Adoption of the AWP 2017, and discussion for the allocation of the remaining budget for AM
- **Lighthouse** projects mid-term conference took place in November.
- Shift2Rail participated successfully at **Innotrans 2016** in September.

Ongoing activities:

- Management of current CFM/OC S2R projects (project administration, reviews, etc ...)
 - AWP2017: Preparation of evaluation and award
 - Identification of Quick-wins
 - Common Consortium Agreement
 - Strategic roadmap for standardisation and Rail Standardisation Coordination Platform for Europe (RASCOP)
 - Collaboration with other initiative JUs (fuel cells, cyber-security dedicated research)
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Satellite aspects: The S2R programme includes satellite position topics, which are also dealt by other programmes/initiatives; proper coordination should be ensured. S2R JU has met the Director of the GSA in order to coordinate these efforts and future meetings are planned.

Cybersecurity: there is a new contractual PPP in place and possible synergies should be explored; DG Move will facilitate contacts.

Communication: as digitalisation develops more and more, communication will be a key aspect for the future railways; works to be coordinated with EUAR in particular.



AGENDA ITEM 3

ANNUAL WORK PLAN 2017

(amounts in Million of EUR)	Total	Members only	Open to non-Members
Value of the Call for Proposals R&I	112.4	92.9	19.5
<i>of which:</i>			
<i>S2R Maximum Co-funding</i>	<i>60.8</i>	<i>41.3</i>	<i>19.5</i>
<i>In-Kind Contribution</i>	<i>51.6</i>	<i>51.6</i>	<i>0</i>
No of topics	17	7	10
Value of Call for tender (pantograph overhead contact line interaction)	0.7	0	0.7

Call for Proposals

- Publication Date: 10 November 2016 (no submission before 10 Jan 2017)
- **Deadline for submission: 30 March 2017**
- Planned start of activities: 1 September 2017



AWP 2017 – topics for JU members

Topic number	Topic name	Type of action / TRL	S2R co-funding
S2R-CFM-IP1-01-2017	Development of new technological concepts towards the next generation of rolling stock, applied to major subsystems such as Carbody, Running Gear, Brakes, Doors and Modular interiors	RIA, up to TRL 3/4	8 400 000
S2R-CFM-IP2-01-2017	Enhancing railway signalling systems thanks to applying satellite positioning; developing an on-board safe Train Integrity; applying formal methods approach and standardised interfaces, and enhancing Traffic Management System (TMS) functions	RIA, up to TRL 5	13 400 000
S2R-CFM-IP3-01-2017	Smart system energy management solutions and future station solutions	RIA, up to TRL 5/6	6 000 000
S2R-CFM-IP4-01-2017	Technical framework for attractive railway services	IA, up to TRL 6	4 100 000
S2R-CFM-IP4-02-2017	IP4 overall integration and demonstration	IA, up to TRL 6	1 800 000
S2R-CFM-IP5-01-2017	Real-time information applications and energy efficient solutions for rail freight	RIA, up to TRL 4/6	4 400 000
S2R-CFM-CCA-01-2017	Improving railway services for users and operators	RIA, up to TRL 4/5	3 200 000
TOTAL			41 300 000

Topic number - IP	Topic name	Expected TRL	Type of action	Indicative S2R Co-funding EUR	Complementarity
S2R-OC-IP1-01-2017	Innovative materials & modular design for rolling stock applications	4/5	RIA	3 500 000	S2R-CFM-IP1-01-2017
S2R-OC-IP1-02-2017	Tools, methodologies and technological development of the next generation of Running Gear	2	RIA	2 800 000	S2R-CFM-IP1-01-2017 S2R-CFM-CCA-02-2015
S2R-OC-IP2-01-2017	Operational conditions of the signalling and automation systems; signalling system hazard analysis and GNSS SIS characterization along with Formal Method application in railway field	3	RIA	1 800 000	S2R-CFM-IP2-01-2017 S2R-CFM-IP2-01-2015

Topic number - IP	Topic name	Expected TRL	Type of action	Indicative S2R Co-funding EUR	Complementarity
S2R-OC-IP2-02-2017	Energy harvesting methodologies for trackside and on-board signalling and communication devices. Adaptation of already existing technologies for developing a purely on-board Train Integrity	4	RIA	1 700 000	S2R-CFM-IP2-01-2017 S2R-CFM-IP2-01-2015
S2R-OC-IP3-01-2017	Smart metering and asset management of railway systems	5	RIA	2 200 000	S2R-CFM-IP3-01-2017 S2R-CFM-IP3-02-2016
S2R-OC-IP3-02-2017	Future stations and accessibility (IP1 and IP3)	3	RIA	1 200 000	S2R-CFM-IP3-01-2017 S2R-CFM-IP1-01-2017

Topic number - IP	Topic name	Expected TRL	Type of action	Indicative S2R Co-funding EUR	Complementarity
S2R-OC-IP3-03-2017	Satellite and autonomous monitoring systems' solution	5	RIA	600 000	S2R-CFM-IP3-02-2016
S2R-OC-IP4-01-2017	Smart technologies for trip tracking and improved travel companion and trip tracking	4/5	RIA	3 500 000	S2R-CFM-IP4-01-2017 S2R-CFM-IP4-02-2017 S2R-CFM-IP4-01-2015 S2R-CFM-IP4-02-2015
S2R-OC-IP5-01-2017	Real-time yard and network management	4	RIA	1 500 000	S2R-CFM-IP5-01-2017 S2R-CFM-IP5-02-2015 S2R-OC-IP5-01-2015
S2R-OC-CCA-01-2017	Smart maintenance and human capital	4	RIA	700 000	S2R-CFM-CCA-01-2017 S2R-CFM-IP4-01-2015 S2R-CFM-IP4-02-2015
TOTAL				19 500 000	

AWP2017: foreseen time plan

January - March 2017: Submission of proposals

April - May 2017: Evaluation of proposals

June 2017: GB decision - information letters to applicants

June - July 2017: Grant Agreement preparation

September 2017: Start of activities



AGENDA ITEM 4

SUMMARY OF CONTRIBUTIONS REGARDING THE MAAP REVIEW

Contributions regarding the MAAP review

During the 1st meeting of the UR-ID Working Group the members were requested to provide input through a structured questionnaire, focusing on various aspects of the current MAAP.

Input has been received by: ALE, CER_UIC, EPF, ESC, ETF, EURNEX, UIRR, UITP, UNIFE.

A concise analysis of the responses to the questionnaire is presented in the following.

- Most of the responses concluded that the current version of the MAAP **adequately addresses** the key challenges of the S2R Master Plan (capacity, reliability, costs), describing specific research elements, technical demonstrators and system demonstrators.
 - However the text is often considered as “*very long*”, “*extensive*” or “*too detailed*” and should be improved to help the reader to **easier understand** the full picture, especially in aspects such as intermodality, synergies among TDs/IPs.
 - In case of a necessity of prioritizing other lines of research the MAAP has certain inflexibility due to its heavy weight and **predetermination**.
 - In this context, more focus should be placed in certain areas, such as:
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Emphasis on :

- Human Capital (more focus on workers, human-machine interaction)
 - Digitalisation (and consequence on education/human capital)
 - Security (cyber-security)
 - Combined/ intermodal transport supply chains
 - Inter-compatibility of components (standardisation)
 - Environmental aspects (including energy efficiency, re-cycling, etc)
 - Greater attention should be paid to the CCA's like safety
 - Create knowledge of the mobility behaviour of users and non-users as basis for technical developments and innovations
 - Future generation of power semi-conductors (long term)
 - Innovative Propulsion concepts (batteries, cell fuel /hybrid for main line)
 - Freight Fleet Management
 - Urban Mobility and freight
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User needs:

- The **Market segments/specific environment identified for the SPDs** (HS/mainline, Regional, Urban/suburban, Rail freight) should be better tailor made to the market needs.
- A **bottom up approach** is missing in particular to identify the missing passengers' needs.
- **Systemic perspective in all development phases** to ensure that developments reliably operate together and guarantee maximal interoperability with the different legacy system components (including (intelligent) retrofitting).
- The programme should include the **needs of other partners** “*outside the pure railway environment*” (forwarders, shippers, etc).
- Consideration of the needs of urban rail.

Other aspects:

- The **system approach** should be the red line for the successful implementation of the S2R solutions into the market
 - While being forward-looking, S2R should concentrate as a first step on areas that will add value to the rail offer with minimum development efforts (“*quick wins*” or “*low hanging fruits*”).
 - Necessary to combine the S2R technical or platform demonstrators with the **rail freight corridors**.
 - Coordination of TDs and IPs with different timing/duration - mitigation measures may be needed for the **planning**.
 - Current challenges in Railway Sector are **not only to be solved by improved technology**.
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- The Railway Operating Community (ROC) expects S2R to deliver cheap, reliable, interoperable, inter-compatible, obsolescence-resistant products and processes, ensuring a vigorous ROC competitiveness and attractiveness of the rail system in its entirety.
- Any developments which would give shippers the ability to track their shipments and any developments that would help reduce transit times would also be most welcomed.
- ALE: integration of rail services with other modes and to ensure an attractive and seamless transport for customers of passenger and freight trains.

- UIRR:
 - ✓ S2R to deliver better (and faster) results than the previous EU research programs
 - ✓ S2R to be the major key instrument to realise the Single European Railway Area in order to guarantee a full interoperability of Combined Transport Trains in Europe
 - ✓ S2R to be the instrument of the EU to foster (and impose) the breakthrough of innovative solutions on the railway market at affordable commercial conditions.
 - ETF: more synergies between the CCA “Human Capital” and the IPs.
 - UITP: The full recognition of (sometimes) specific needs and requirements for urban rail.
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- EPF:
 - ✓ Ensure that S2R technologies that impact other modes/industries respond to the needs and demands from those modes/industries.
 - ✓ Ensure that S2R technologies are efficient technologies that respond to an end-user demand
 - EURNEX: S2R to deliver at least better results than the previous programs in terms of efficiency of the resources for research.
 - UNIFE: Railway stakeholders and their corresponding associations (not directly involved in the S2R Joint Undertaking) to be consulted during the S2R process at key stages.
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- **Pooling of ideas** guarantees that ideas with high innovative potential for the railway system will have a chance to be considered.
- While retaining a European focus, the program should develop technologies, products and expertise for a global market whose needs and requirements are best represented and articulated by a representative organisation of the **global rail sector**.
- **Coordinated** action via the S2R JU could fully mobilise the various EU funding instruments, to explore and exploit additional sources of financing for S2R and to seek for synergies between different EU funds and with private investments.



AGENDA ITEM 5

USER REQUIREMENTS AND STANDARDISATION PROCESSES WITHIN THE S2R ACTIVITIES

User requirements and standardisation processes within the S2R activities

- **Suggestions for the most efficient process to be followed concerning requirements/implementation**
- **S2R JU towards a standardisation strategy and mapping of activities impacting standardisation**
- **Mapping of requirements?**



AGENDA ITEM 6

NEXT STEPS

Next steps

- Research and Innovation beyond 2020
- Next meetings: spring and autumn 2017
- AoB