



Goal

*The PLASA project aims at significantly increasing customer experience and system robustness in the European rail sector. On the one hand, it improves **planning** activities of various stakeholders in the railway system by means of **precise railway simulation** and, on the other hand, it provides a **methodology to manage the safety of the railway system** based on risk assessment.*

Partners & S2R budget (k€)

• Deutsche Bahn AG	185
• HaCoN Ingenieurgesellschaft Mbh	19
• SNCF	29
• Thales Transportation Systems GmbH	28
• Trafikverket	43
– KTH Linked 3 rd party	(28)
• Ansaldo STS S.p.A.	44

Partner	Partner Type	Main Expertise and Contribution	WP1	WP2	WP3	WP4	WP5
DB	RU and IM	<ul style="list-style-type: none"> Comprehensive experience with operational data and usage of simulation tools Manager of a large network with a heterogeneous infrastructure in the middle of Europe with direct connections to many other European countries 	x	x	x		x
HC	IT and Railway Engineering company	<ul style="list-style-type: none"> Train planning systems and process knowledge around capacity/train planning at IMs and RUs 		x	x		
SNCF	RU and IM	<ul style="list-style-type: none"> As IM, SNCF is managing the traffic over a complex national network (urban, suburban, high speed) connected with the main European lines. As RU and IM, safety of the railway system is the main priority of the company. SNCF manages Safety continuously. 		x	x	x	
TTS	Industrial company	<ul style="list-style-type: none"> Thales already provides online planning tools as part of its traffic management system and will support the project by ensuring an efficient hand-off between the online and offline planning tools and processes, at different time horizons. 		x	x		x
TRV	IM	<ul style="list-style-type: none"> IM responsible for managing infrastructure, timetable planning process and traffic control in Sweden. Main interests is to improve methods in micro simulation and to use the capacity methods in strategic planning, tactical planning and in operational process. Knowledge about capacity planning, traffic operations, processes and planning methods. 		x	x		x
ASTS	Industrial company	<ul style="list-style-type: none"> Risk assessment of several type of Railway systems: Railway lines, Metro lines (driverless or with a driver), Tram systems 				x	x

Table 11: Main expertise of PLASA partners

Smart planning purpose

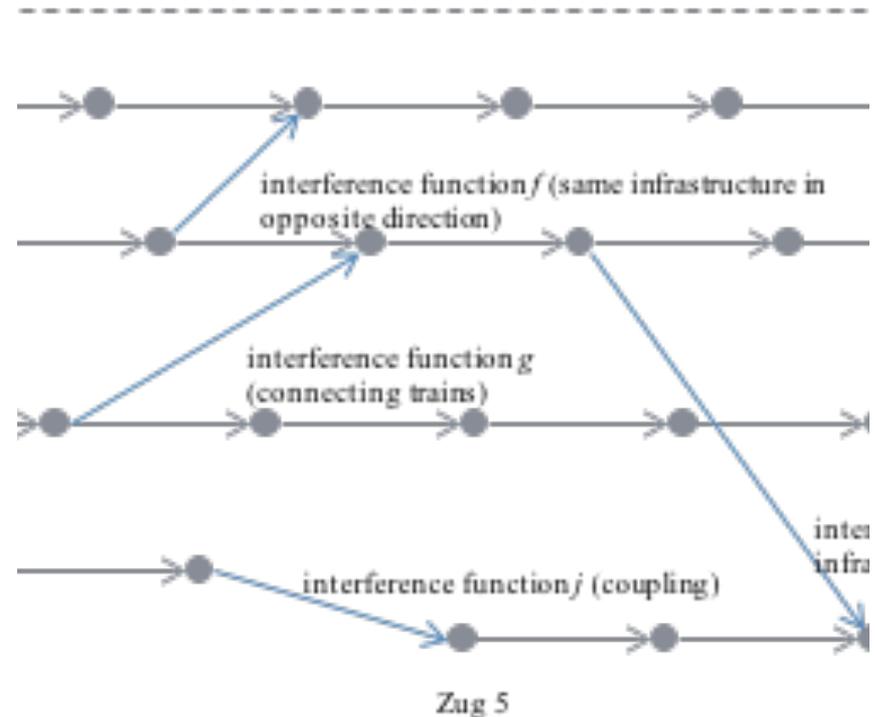
- *PLASA's sub project Smart Planning fully addresses the described impacts in the Call for Members. Firstly, PLASA will **develop a comprehensive simulation tool** with a European approach to support railway operational planning. It will help railway undertakings increase the robustness of planned timetables and therefore, lead to higher system punctuality. In particular customers will experience a significantly higher punctuality. Furthermore, it follows an integrated approach which will be suitable for cross-border connections as well and hence, facilitates the creation of the Single European Railway Area (SERA).*

Smart planning Activities

- State of the art / state of practice (TRV/KTH/DB)
- Improve range of simulation approaches
 - New stochastic concepts for modelling disruptions (DB)
 - Measurability for future planning decisions (TRV/KTH)
- Joint paper for Transport Research Arena 2018

Approach – work in progress

- Monte Carlo simulation model developed at DB Analytics
- Departures and arrivals for all trains during one day computed
- Question: When and where is a macro-level model enough, and when is a micro-level model needed?
 - Evaluation on southern main line, Sweden
 - Comparison with micro-simulation (Railsys)
 - Comparison made using socio-economic quality parameters
- Results useful on its own as well as in strategic, tactical and operational timetable planning models





PLASA

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