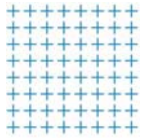


➤ FOR ALL THE TRAINS IN THE WORLD

FIF -MEDDE Info Day about IP1 SHIFT2RAIL (S2R)

By : Setha NET

FIF (Levallois Perret) 15.12.2015



IP1 S2R (ENERGY & MASS EFFICIENT TECHNOLOGIES FOR HIGH CAPACITY GREEN TRAINS)

- Défis :

- Une ré évaluation compréhensible et systémique de la structure et des équipements embarqués du matériel roulant

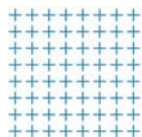
- Segments concernés : TGV, Matériel Grandes Lignes, Métro et LRV (Tramways, Métro automatique)

- Objectifs :

- Réduction de la masse, Bogies, Meilleur rendement de la Traction et du système de Freinage.

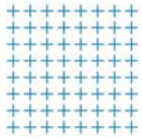
- Meilleur rendement de la consommation énergétique, limitation du niveau sonore en rapport avec le requis environnemental

- **IP Leader:** Xabier Perez (CAF) + Membres : (Alstom, Breda, BT, FT, KB, Siemens, Talgo, Vossloh, Ansaldo STS, Aerfitec, SNCF, TVK, NetworkRail)



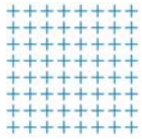
➤ Les TD de S2R IP1 (Quoi)

TD	Contenu
1.1 Traction	New traction sub-systems & components using new semi-conductor technologies and architectures to provide reliable, resilient, cost-effective, environmentally friendly and smart new power trains with reduced volume, weight and noise and improved energy efficiency and electro-magnetic compatibility.
1.2 TCMS	New generation TCMS architectures with wireless capabilities, to enhance safety & security. To increase reliability & availability & safety of train control systems. Possibility of combining TCMS equipment with on-board control-command-signalling systems.
1.3 Car Body Shell	Lighter & aerodynamic carbodyshell structures in composite materials to reduce energy consumption. Better integration of subassemblies & train subsystems to ease manufacturing processes and maintenance and repairs aiming positive effects on the life cycle costs.
1.4 Running Gear	Lght weight bogie systems due to optimised materials with reduced infrastructure/wheel wear & damage and energy loss for higher reliability & availability with lower maintenance costs reduced noise and vibration levels.
1.5 Brakes	Safer & better performing brake system with lower LCC and noise levels, and recovery of the braking energy. Environmentally-friendly brake systems and a new generation of brake control electronics. Improved adhesion management, eddy current brakes & diagnosis enhancements for easier and more cost-efficient maintenance.
1.6 Doors	New solutions for autonomous boarding of PRM to optimize the flow of passengers and enhance system capacity. To enhance energy efficiency and thermal & acoustic performances and passengers comfort.
1.7 Modular in Use	Innovative and modular design solutions for train interiors to improve passenger comfort, accessibility, noise & vibrations and attractiveness of train interiors.



➤ Les TD de S2R IP1 (Qui)

TD	Activity	TD Leader	TD Members	Start
1.0	R2R	Roll2Rail (Lighthouse Project)		2015
1.1	Traction	Laurent Nicod (Alstom Transport) laurent.nicod@transport.alstom.com	Breda, BT, CAF, Siemens, Talgo, SNCF	2016
1.2	TCMS	Javier Gortazar (CAF) jgortazar@caf.net	AT, Breda, Ansaldo STS, BT, CAF, Siemens, Vossloh	2016
1.3	Car Body Shell	Juan Manuel Ramirez (Talgo) jmramirez@talgo.com	AT, Breda, BT, CAF, TVK, Siemens, SNCF, Vossloh	2017
1.4	Running Gear	James Haynes (BT) james.haynes@uk.transport.bombar dier.com	AT, Breda, CAF, Siemens, Talgo, Vossloh, NetworkRail	2017
1.5	Brakes	Martin Deuter (Knorr Bremse) martin.deuter@knorr-bremse.com	FT, AT, BT, CAF, Siemens, TVK, SNCF	2016
1.6	Doors	Thierry Montanié (Faiveley Transport)thierry.montanie@faivele ytransport.com	BT, Siemens, KB, SNCF, Aerfitec	2017
1.7	Modularity in Use	Laurent Lasnier (SNCF) laurent.lasnier@sncf.fr	Aerfitec, DB	2017



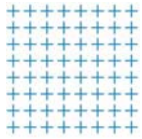
IP1 S2R TD 1.6 (Doors)

TD Doors Tasks:

- *Pre Requisites*
- *PRM Safety Doors*
- *Improved Passenger Comfort and weight & energy optimisation*
- *Integration in Syst. Platform Demonstrator*
- *Project Organization*

TD Doors Total Budget : 8,66 Mn€ dont 1,1 Mn€ en OC

Project duration : 5 years (Start 2017)

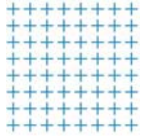


➤ IP1 S2R TD 1.5 (Brakes)

TD Brakes Tasks :

- *High Safety Brake Control (FT as Task Leader)*
 - *Adhesion Management Improvement (KB as Task Leader)*
 - *Linear Eddy Current Brakes (KB as Task Leader)*
 - *Friction Pair (Siemens as Task Leader)*
 - *Homologation Process (KB as Task Leader)*
- **TD Brakes Total Budget : 25,82 Mn€ dont 4,9 Mn€ en OC**

Project duration : 5 years (Start 2016)



Merci de votre Attention

QUESTIONS ?