



INTERNATIONAL UNION
OF RAILWAYS

AFRICAN REGION WEBINAR OF THE 26TH OF NOVEMBER 2020

Activities of The ROLLING STOCK sector of UIC

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Sector Expert Teams dashboard

SET 13

Rolling Stock Maintenance
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SET 12

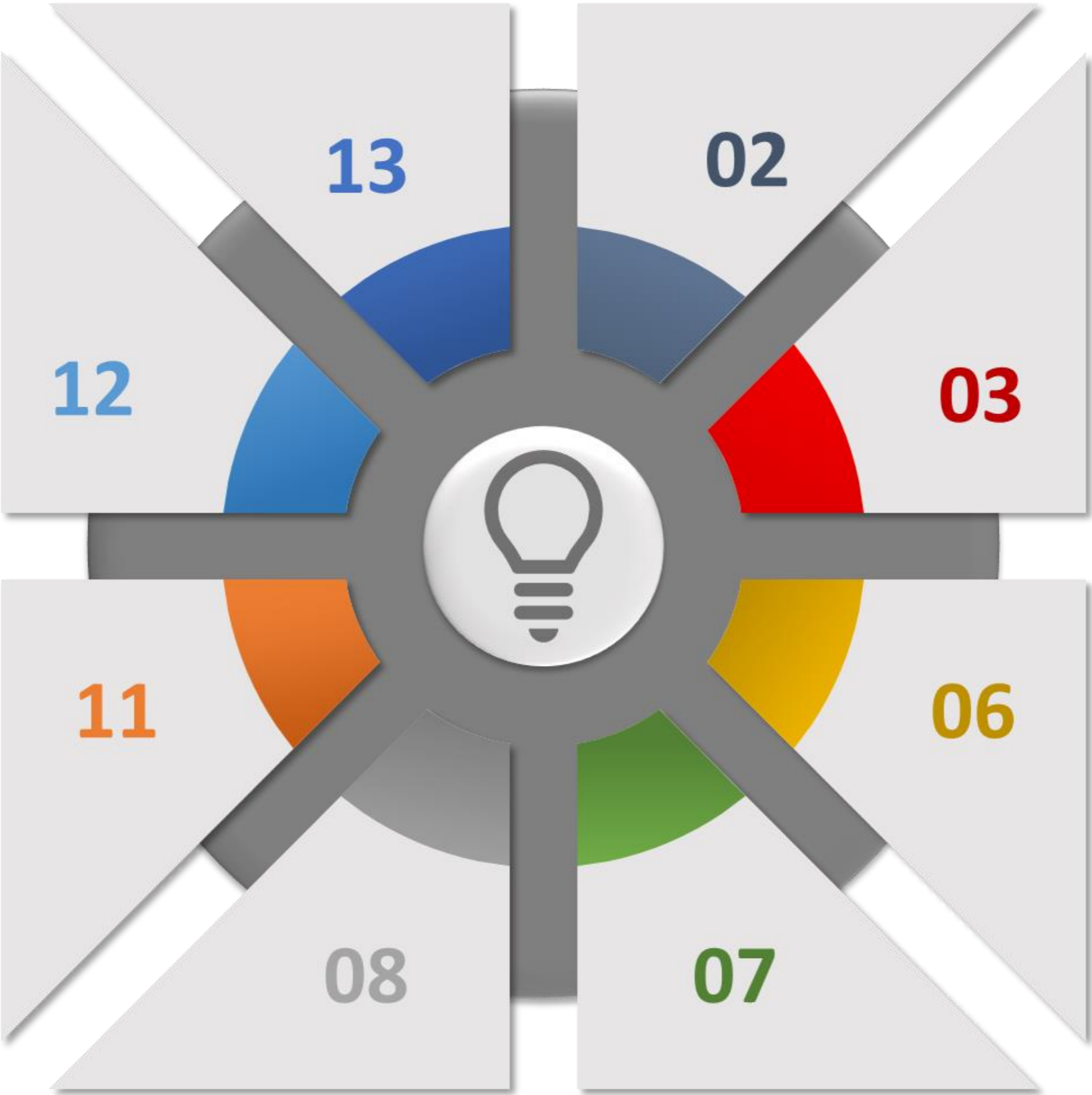
Diesel
Jaromír Bittner (CD)

SET 11

Traction
Bo Chen (CARS)

SET 08

Data Comm. And Driver's Cab
Zhao Hongwei (CARS)



SET 02

Passenger Related Items
Kai Chen (CRRC SRI)

SET 03

Freight Related items
Eric Lambert (CFL)

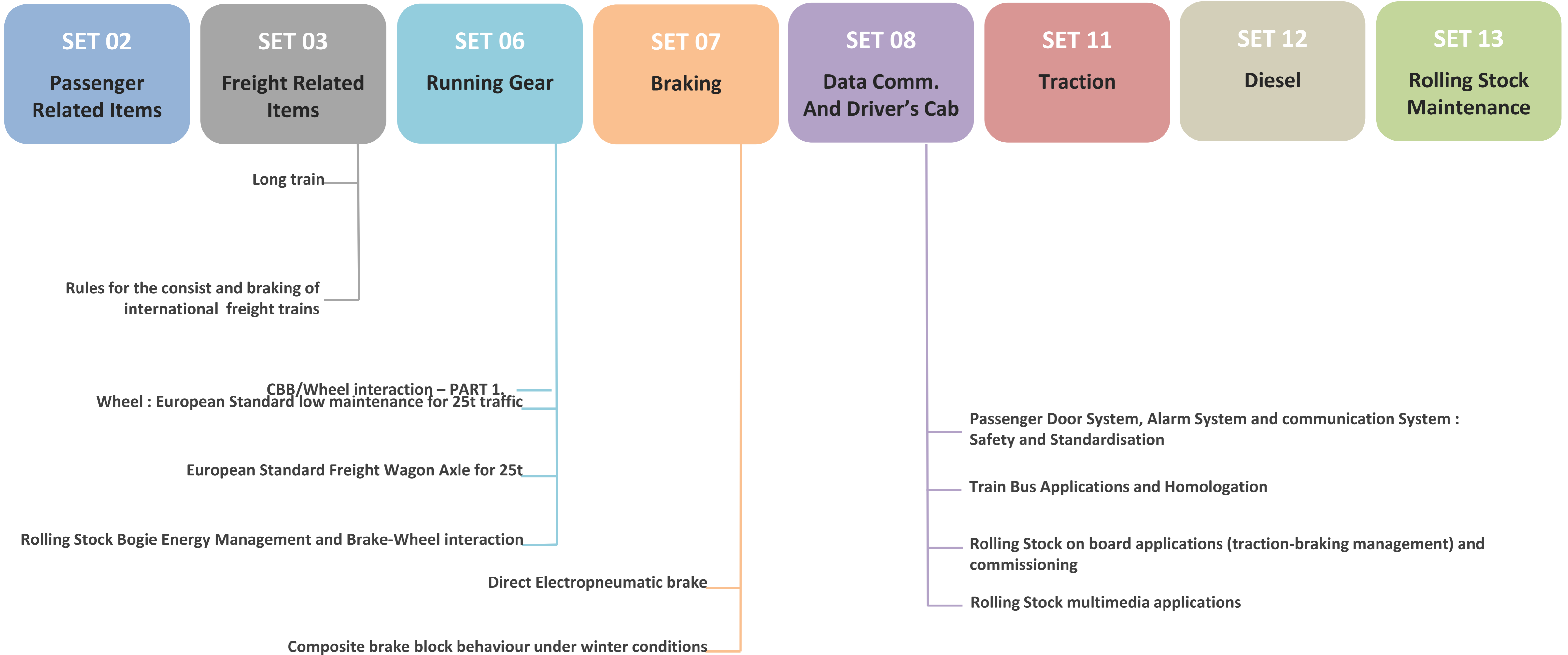
SET 06

Running Gears
Frédéric Desgaches (SNCF)

SET 07

Braking
Frank Minde (DB)

The UIC Rolling Stock Sector - 12 Ongoing Projects

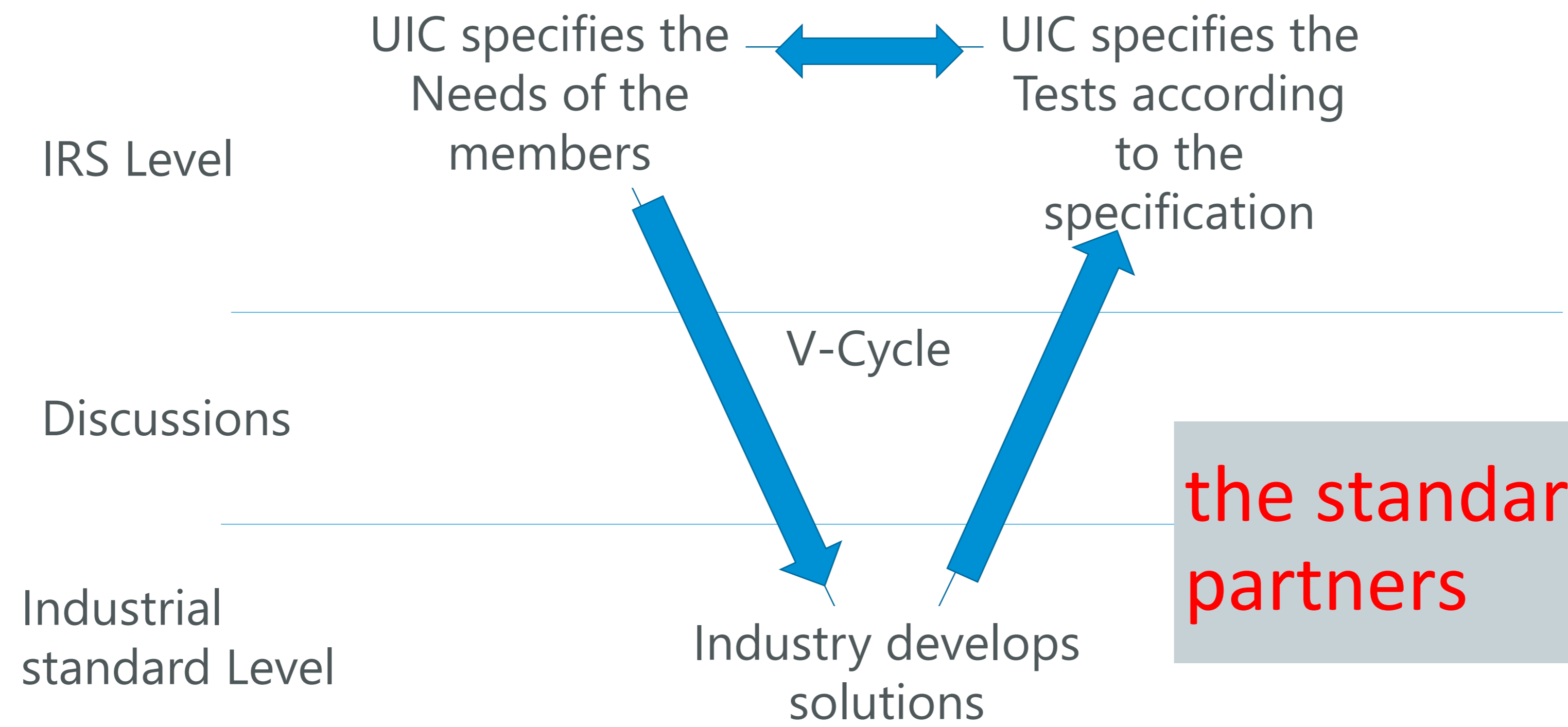


Railways is a global system

Technique: the physical limits, physical risks

Operation: how will it be operated? Impact on costs, availability ... what are the aims of the RUs or IMs

Industrial constrains, costs



the standard bodies are partners

Active expert groups: our ongoing WG

Passenger coaches

- Doors,
- TCMS
- Dumpers

Wheels

- Methods for risk analyses and LCC calculation on mechanical parts of RS
- Thermomechanical tests

Data communication, drivers cabin

- Proposal of standard for a new train network
- Specification of the TCMS function using the trains network

Freight

- Gauge: static and dynamic gauges to exchange trains between networks
- Combined transport coding of wagons, swap bodies and containers

Braking

- Definition of tests of components
- Labelling of CBB, brake disks and pads, ...

diesel

- Labelling of diesel engines(LCC) thinking into account the level of pollution in the exhausts
- Replacement engines

On going work (examples given during the RSS)

SET_03 – Freight related items

The two projects aim the improvement and harmonisation of cross-border traffic for more profitable freight business. **We work within Unified**

Braking Scheme project with XRail. The aim of this project is to have IM & NSA alignments for the RU implementations in 2020/21.

PROJECT	STATUS	HIGHLIGHTS
<p>RULES FOR THE CONSIST AND BRAKING OF INTERNATIONAL FREIGHT TRAINS</p> <p><i>Introduction of new technical parameters (e.g. LL composite brake blocks, control valves, ...);</i> <i>Definition and validation of a statistic tool for the creation of virtual trains compliant with current UIC 421 flowchart .</i></p>	<p>The statistical tool was defined and the tests for its validation were completed.</p>	<p>The report will be finalized by the end of 2019;</p> <p>A draft of the IRS 50421 is expected for March 2020.</p>
<p>LONG TRAINS</p> <p><i>Simulation of the in-train forces with the use of TrainDy software with various distributed traction configurations, various load distributions, various types of wagons and with a maximum length of 1500m.</i> This project is linked to the Shift2Rail “Marathon” project</p>	<p>The simulation programme is finished, Final Report is under drafting</p>	<p>The report will be published by the end of march 2020</p>

SET_06 – Running gear (1/2)

PROJECT	STATUS	HIGHLIGHTS
<p>EUROPEAN STANDARD FREIGHT WAGON AXLE FOR 25 T (ESFA)</p> <p><i>Development of a new harmonised axle ensuring effective maintenance at low cost</i></p>	<ul style="list-style-type: none"> ▪ The design of the axle was completed ▪ The TSI certification of the axle was achieved ▪ The IRS was drafted 	<p>The publication of the new IRS 50510-6 is expected by March 2020.</p>
<p>WHEEL EUROPEAN STANDARD LOW MAINTENANCE FOR 25T</p> <p><i>Development of a new standardised wheel design compatible with ESFA axle decreasing maintenance and purchasing costs</i></p>	<p>The specifications of the wheel has been defined and sent to manufacturers.</p>	<p>A wheel manufacturer decided to participate providing two wheels.</p>

PROJECT	STATUS	HIGHLIGHT
<p>ROLLING STOCK BOGIE ENERGY MANAGEMENT AND BRAKE WHEEL INTERACTION</p> <p><i>Identification of additional requirements for the homologation of CBB related to the Brake and Wheelset subsystems</i></p>	<p>The analysis of the requirements for CBBs and axles was finalised.</p> <p>The GAP analysis of the open points on the basis of the previous analysis was finalised.</p>	<p>The final draft of the report is under drafting and will be available by the end of October 2019</p>
<p>COMPOSITE BRAKE BLOCK-WHEEL INTERACTION</p> <p><i>Definition of the proper conditions of use of CBBs to allow their appropriate and safe use in the future and to make the necessary complements and changes to the UIC leaflets, guidelines, EN and TSI requirements</i></p>	<p>The project is focused on :</p> <ul style="list-style-type: none"> •Theoretical analysis, •Definition of train and laboratory tests programme to perform, •Organisation of the second part of the project involving the Sector. 	<p>The project will start during the fourth quarter of 2019 when the results of the JNS “Broken wheels” analysis and of the GAP analysis will be available</p> <p>Kick-off meeting?</p>

SET_07 – Braking (1/2)

We work within Unified Braking Scheme project with XRail. The aim of this project is to have IM & NSA alignments for the RU implementations in 2020/21. SET_07 therefore works on 50455-1

PROJECT	STATUS	HIGHLIGHTS
<p>DIRECT ELECTROPNEUMATIC BRAKE</p> <p><i>The aim of the project is the creation of an IRS which set up the requirements:</i></p> <ul style="list-style-type: none"> ▪ <i>to define the functional requirements and interfaces for rescuing/towing trains equipped with direct EP brake;</i> ▪ <i>to ensure compatibility between rescuing/towing units and rescued/towed units;</i> ▪ <i>to maintain/improve the safety level when using direct EP brake</i> 	<p>Draft IRS text endorsed by SET 07 IN July 2019;</p> <p>CARS didn't agree with the text of clause 4.5.2 concerning the compatibility between rescuing locomotive and rescued train (compatibility with UIC brake system).</p>	<p>Common resolution meeting to be organised by RSD</p> <p>Still necessary?</p>

PROJECT	STATUS	HIGHLIGHTS
<p>CBB BEHAVIOUR UNDER WINTER CONDITIONS</p> <p>Definition of the safe conditions for the use of CBB in the <i>harsh weather conditions</i> typical of Nordic Countries, considering:</p> <ul style="list-style-type: none"> ▪ the analysis of the reports of the occurred incidents, ▪ the results of the CBB winter tests mad by Nordic railway operators and NSAs, ▪ the proposals of mitigation operational measures made by Nordic railway operators. 	<p><i>The first test campaign was characterized by really hard and harsh Winter conditions in Finland, which led to completely iced up bogies.</i></p> <p><i>In these conditions, it was almost not possible to produce reliable answers for the questions in combination with composite brake blocks.</i></p> <p><i>Besides, the wagons suffered from an unnormal low efficiency (even though they were in their normal maintenance interval).</i></p>	<p><i>The draft Report of the first Winter Test in 2018/2019 was shown to the Project Group on October the 31st.</i></p> <p><i>The tests performed by VR are not enough to give any final answer to the questions raised from the Nordic Countries concerning the winter properties of CBBs.</i></p> <p><i>2 complementary tests will be performed in winter 2019/2020.</i></p> <p>SWEDISH NSA, GREEN CARGO AND UIC-DB SYSTEM.</p> <p><i>A specific drag-braking device is used on the ETCS equipped locomotives. (-5bar on the main pipe every 5mn). The brake stopping distance from 100 to 0 kph will be measured 4 times every hour. Disk braked</i></p>

PROJECT	STATUS	HIGHLIGHTS
<p>PASSENGER DOORS’ SYSTEM, ALARM SYSTEM AND COMMUNICATION SYSTEM</p> <p><i>Aims of the project are:</i></p> <ul style="list-style-type: none"> ▪ the definition of the minimal operation requirements profiles for Door, Passenger Alarm and Passenger Communication System. ▪ the unification of the different interfaces of the train access door system and of the on-board alarm and communication systems. ▪ the improvement and simplification of technical and operation management of doors subsystems. 	<p>The final draft IRS 50111 was finalized by SET 08.</p> <p>The first draft IRS 50105 was defined by SET 02.</p>	<p>The final draft of IRS 50111 was submitted to RSS for endorsement by 15/11/2019;</p> <p>The first draft of the IRS 50105 will be updated by SET 02, considering the new IRS 50111.</p>
<p>TRAIN BUS APPLICATIONS AND HOMOLOGATION</p> <p><i>Development of a test bench for the certification of on-board applications of the rolling stock</i></p>	<p>Two test benches were delivered, and the doors application was installed</p>	<p>The test benches will be updated following the approval of the joint UIC-IEC document and of the IRS 50511</p>

SET 08 – Data communications and driver’s cab (1/3)

PROJECT	STATUS	HIGHLIGHTS
<p>TCMS FUNCTION INTERFACE</p> <p><i>The aim of the project is the definition of the common operating rules and of the requirements on the interfacing to the TCMS of railway vehicles.</i></p>	<p>Following the comments received from the members, the draft IRS 50500, on the standardisation of TCMS functions, the minimum requirements of subsystems and the subsystems interface was updated by SET 08.</p>	<p>The updated draft of IRS 50500 was:</p> <ul style="list-style-type: none"> ▪ endorsed by RSS (07/10/2019); ▪ sent to RSF for approval in writing by 15/11/2019.
<p>ROLLING STOCK MULTIMEDIA APPLICATIONS</p> <p><i>The aim of the project is the analysis of the multimedia on-board rolling stock applications in order to identify and define the possible operators’ interfaces and their industrial implementation</i></p>	<p>The UIC-IEC joint group:</p> <ul style="list-style-type: none"> • has defined the document “UIC-IEC multimedia passenger communication _ Overall services” • The document on the functional and architectural levels for visual and audible information outside and inside the train and passenger and train stall intercom calls” will be finalised by December 2019 	<p>SET 08 will start drafting a new IRS in 2020</p>

SET 08 – Data communications and driver’s cab (1/3)

PROJECT	STATUS	HIGHLIGHTS
<p>ROLLING STOCK ON BOARD APPLICATIONS (TRACTION-BRAKING MANAGEMENT) AND COMMISSIONING</p> <p><i>The aims of the project are the identification and revision or definition of the interfaces between the UIC and IEC standards, harmonising them, detecting the open points , proposing the needed change requests and providing conditions for Traction, Remote control, Braking and (tele)Diagnostics of vehicles and trainsets;</i></p>	<p>The activity of the UIC/IEC Joint Group is focused on HVAC.</p>	<p>The first draft of the common document has been developed; date expected for its finalisation December 2019</p> <p>SET 08 will start drafting a new IRS in 2020</p>



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Thank you for your kind attention.