



6TH EDITION
GLOBAL
RAIL
FREIGHT
CONFERENCE

MODAL INTEGRATION
AT THE SERVICE OF GLOBAL DISTRIBUTION

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THE « DIGITAL FREIGHT TRAIN »

THE REVOLUTION OF THE RAILWAYS FREIGHT BUSINESS

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The « DIGITAL FREIGHT TRAIN »

- FREIGHT MARKET SHARE IS RATHER LOW BETWEEN ABOUT 10 AND 20 % IN EUROPE, SLOWLY DEGRESSING OR STABLE
- LONG TERM PERSPECTIVES ARE POSITIVE TO RAIL DUE TO :
 - INTERNATIONAL AND NATIONAL ENVIRONMENTAL POLICIES,
 - ROAD CONGESTION,
 - GLOBAL EFFICIENCY ON LONG DISTANCES,
 - EXPECTED DEVELOPMENTS OF TRAFICS OF GOODS.
- BUT :
 - THE RAILWAYS SYSTEM HAS NOT YET ENTERED THE « NEW AGE » COMPARED WITH OTHERS MODES OF TRANSPORT.
 - OTHERS MODES ARE STILL HEAVILY INVESTING AND INNOVATING.

=> INNOVATION IS THE KEY !

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WHY TO INNOVATE IN THE RAILWAYS BUSINESS ?



Finding a sustainable business model



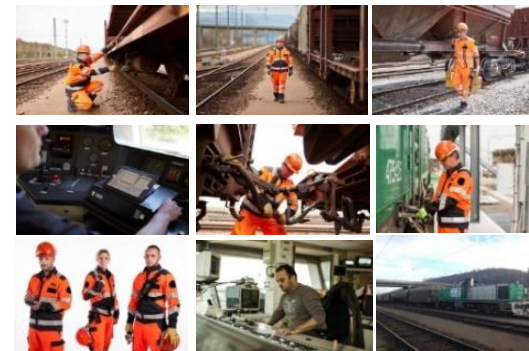
Modal shift /
Long distances Multimodality



Facing future autonomous vehicles



Need for quality and new services

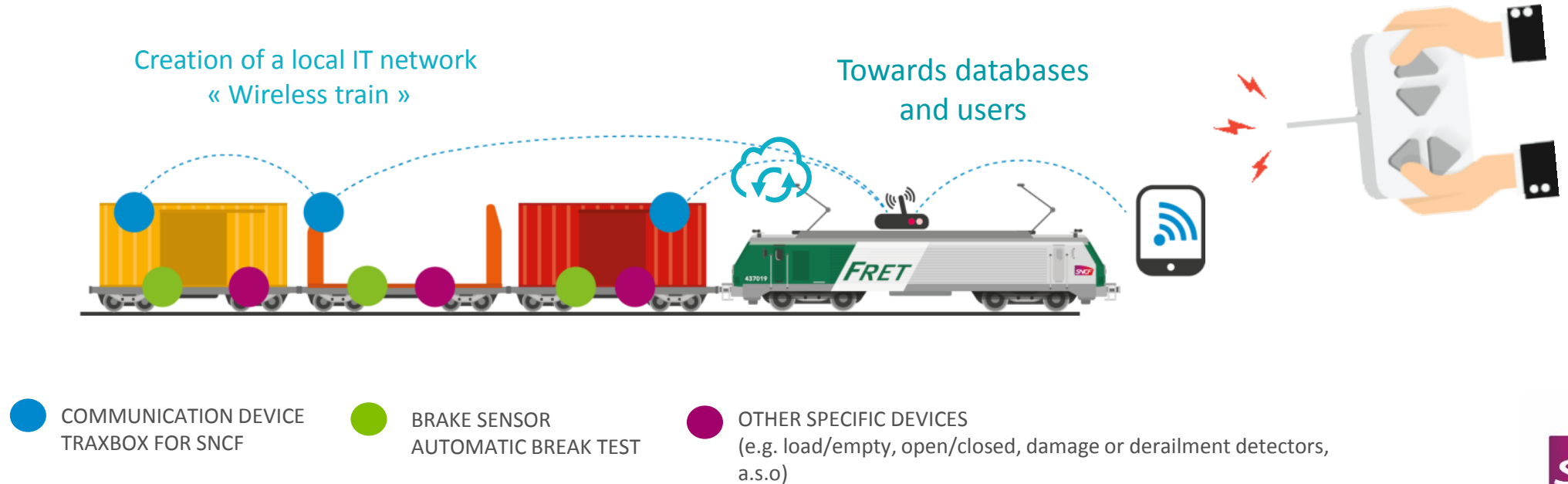


Less painful jobs / HR Attractivity
New skills

The « DIGITAL FREIGHT TRAIN »

WHAT IS THE « DIGITAL FREIGHT TRAIN » ?

A TRAIN FULLY EQUIPPED WITH ELECTRONIC DEVICES AND SENSORS,
PROVIDING **FAST AND RELIABLE AUTOMATED PROCEDURES** AND **SMART MULTI-LEVEL COMMUNICATION NETWORK**.



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- WHAT IS THE PURPOSE ?
- TO PROVIDE **NEW SERVICES, NEW ADDED VALUES AND BETTER PRODUCTIVITY** FOR ALL STAKEHOLDERS OF THE RAILWAYS SECTOR :
 - Instantaneous localization all over Europe => fleet management productivity,
 - Accurate Mileage Monitoring => improvements for maintenance management,
 - Automatic detections => progresses for safety related issues,
 - Geofencing and ETA => optimization and better integration of the Supply Chain with our customers,
 - Digitalization and automation of rail operations => Productivity, quality and efficiency.

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- HOW TO IMPLEMENT THE DIGITAL TRAIN ?
- TWO MAIN ACTORS ARE INVOLVED :
 - KEEPERS THAT EQUIPPED THEIR WAGONS FLEET WITH SENSORS TO COLLECT INFORMATIONS FOR THEMSELVES AND THEIR CLIENTS
 - Automatic communication (via GPS) between the wagons and the keepers IT systems.
 - The data collected are the property of the keeper.
 - RAILWAYS UNDERTAKING THAT OPERATE TRAINS AND ARE RESPONSABLE FOR THE SAFE OPERATION OF THE TRANSPORT FOR PEOPLE AND GOODS.
 - Need for a communication system for the « Train » itself between locomotive and wagons (provided most of the times by many keepers) to make the train becomes « digital ».

⇒ NEED FOR A **COOPERATION BETWEEN KEEPERS AND RUS**
FOR THE BEST USE OF THE DATA AND **BEST GLOBAL EFFICENCY**

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- WHAT ARE THE NEXT STEPS ?
- THE « CLEVER WAGON » IS GOING TO BE A QUICK REALITY
 - Investments are on the run.
- THE « CLEVER TRAIN » IS THE NEXT **MANDATORY** STEP.
 - Many European initiatives and strong support by the EU.
 - Many initiatives coming from the RUS :
 - SNCF strategic partnership with TRAXENS to equip 5,000 wagons with Traxbox end 2018 and SNCF already run some full « Digital Trains », including Automatic Brake Test.
 - Others main RUS such as DB, SBB or RCA are also working on the « Train of the future » with a high level of digitalization / automation.

THE MAIN ISSUE FOR THE **FASTEST AND BEST IMPLEMENTATION** :
STANDARTIZATION OF THE COMMUNICATION PROTOCOLS

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HOW TO IMPLEMENT THE DIGITAL TRAIN ?



Retrofitting of existing assets
Fewer investments mean quicker ROI !



Cooperation is the key : systemic approach, win-win model, new suppliers, business intelligence



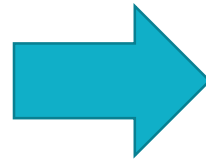
The digital revolution is a huge opportunity to reinvent our business (new methods and tools)!



Preparing in existing cooperation forums the new standards of the « Digital Freight Train »

THE SNCF « DIGITAL FREIGHT TRAIN »

- An open innovation project based on a successful story on sea containers communications protocols for T&T transposed to rail



Overview of the project

<https://vimeo.com/traxens/trainfretdigital>

« Plug n'play » equipment

<https://vimeo.com/260312763/d7c16ccc0a>

Digitalizing process: digital braking test

<https://vimeo.com/216204637/72e35e56e2>

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« DIGITALIZATION IS NOT A DESTINATION, BUT A JOURNEY »