

# EU Freight DAC Delivery Programme

Moving European Railways Forward

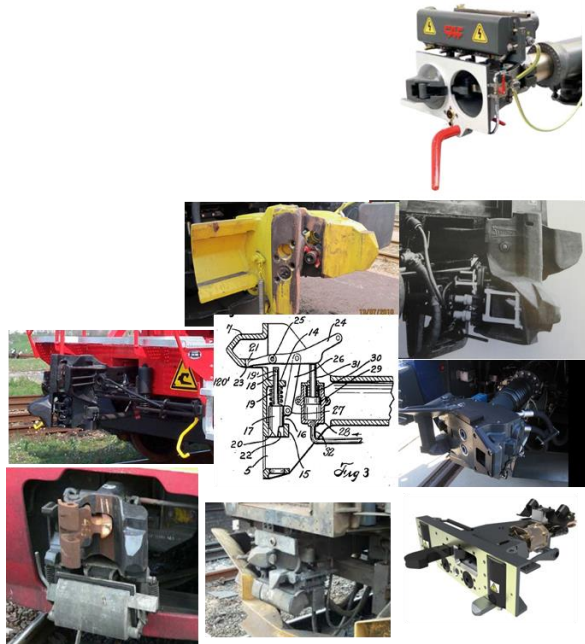
Sept 2020

# European DAC Delivery Programme



## Key Benefits

- *Increasing rail freight efficiency*
- *Increasing infrastructure capacity*
- *Delivering the “Green Deal”*



**Aim:** European DAC delivered through integrated shared programme building upon R&I results and pilots; ensuring the necessary actions for a fast, technically and economically feasible European-wide roll-out

**Target:** all freight wagons (600.000+) in Europe couple automatically latest by 2030

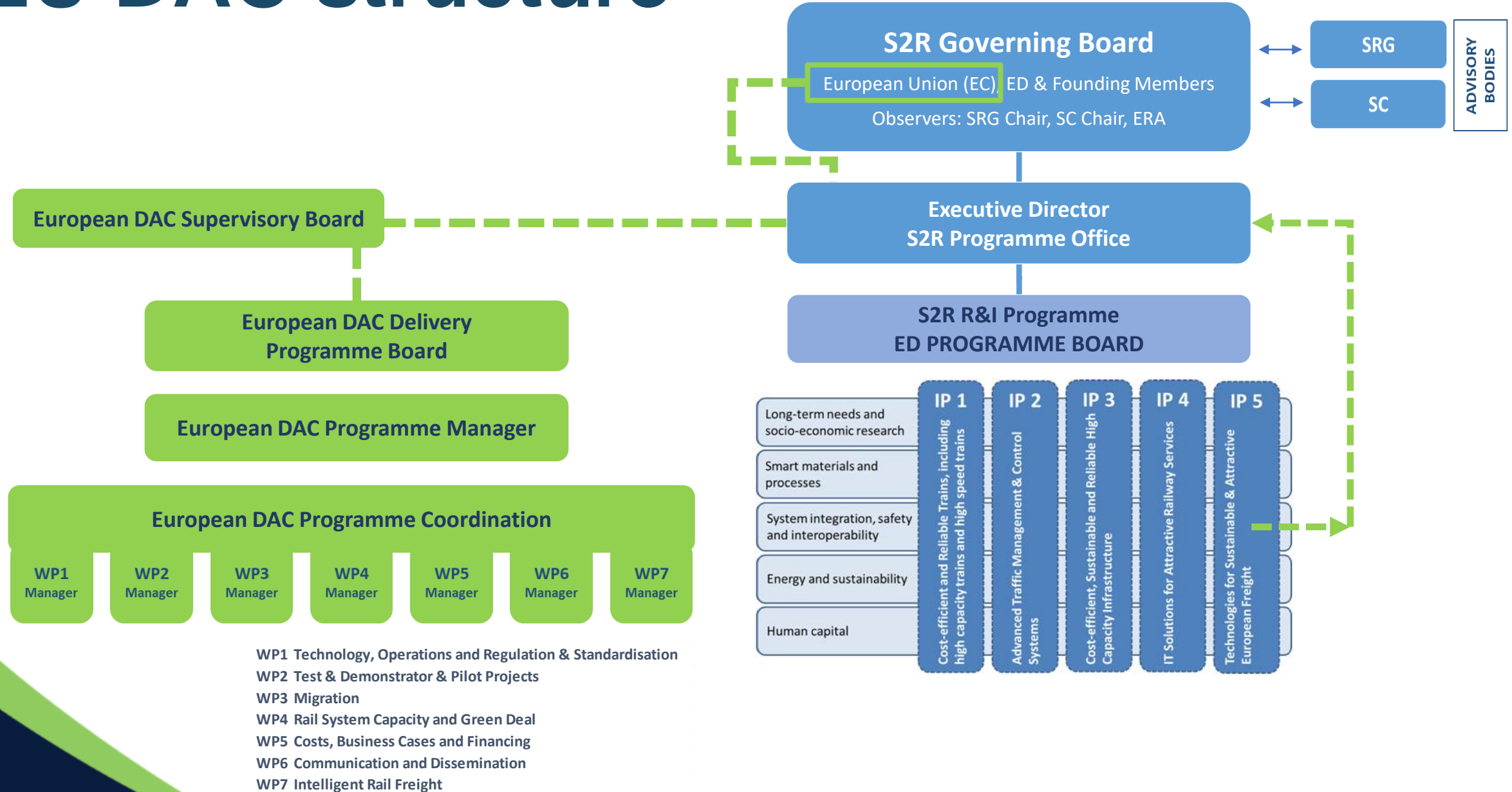
- Selection of an open, fully functional, operationally tested, safe and sustainable European DAC open model ready for industrialization and deployment
- Deliver final open design of the selected model by the end of 2021 of which interoperability and safety requirements to be incorporated to TSI, Green Deal & Digitalization Package 2022
- Produce efficient and cross-countries compatible migration and business plans
- Identify possible European funding to support the migration plan

- Shift2Rail – the most recognized, neutral and independent institutional organization capable to facilitate a common/unique working platform on “*European DAC Programme Delivery*”
- Participation of all relevant partners/players and organisations (RFF, UIP, CER, UIC, EIM, UNIFE, ...)
- Commission / DG MOVE and ERA
- Information/participation of MS

# EU DAC Types

Functionalities	Coupler version				
	Type 1	Type 2	Type 3	Type 4	Type 5
Auto. mech. coupling	✓	✓	✓	✓	✓
Auto. pneu. coupling		✓	✓	✓	✓
Auto. power coupling			✓	✓	✓
Auto. data coupling				✓	✓
Auto. mech. uncoupling					✓
Auto. pneu. uncoupling					✓
Auto. Power/Data uncoupling					✓

# EU DAC structure

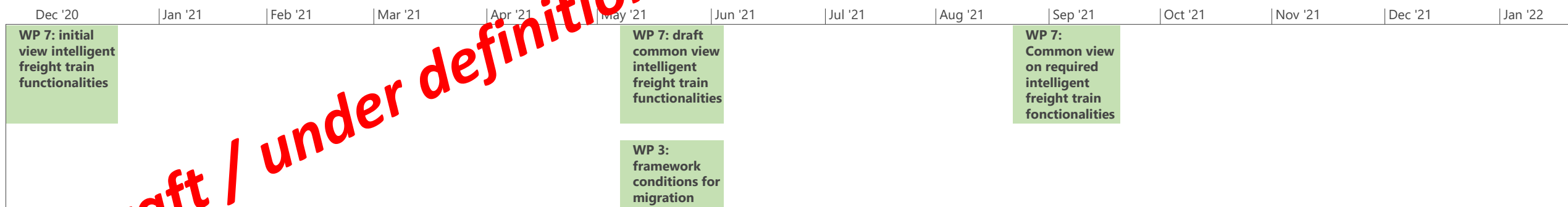
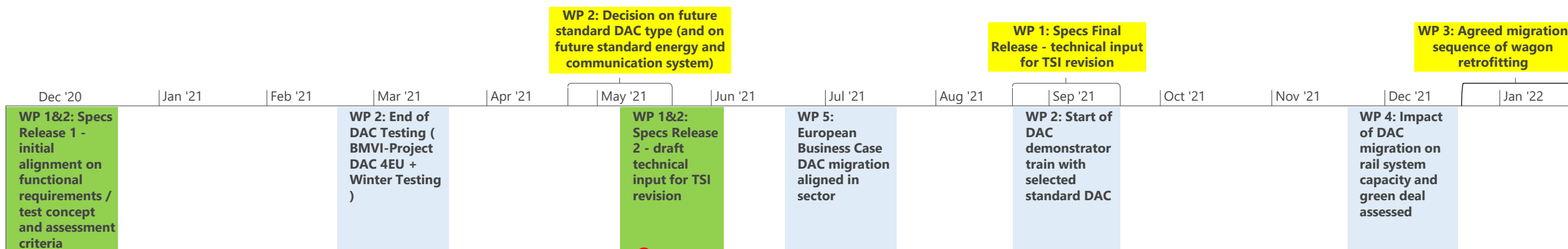


# EU DAC Governance

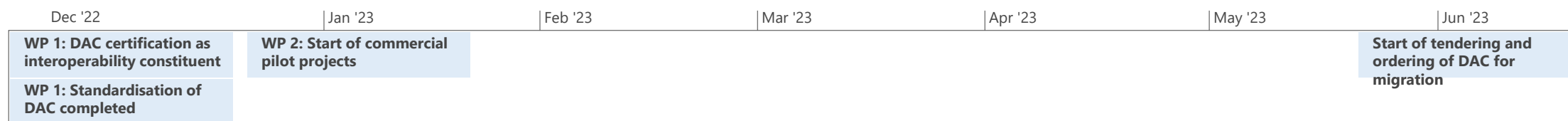


<b>Supervisory Board</b>	European Commission (Chair) European Associations representatives of the Rail Freight Sector (RFF, CER, UIC, ERFA, UIP, EIM, UNIFE, ....) ERA	Supervision of the progress of the work on the European DAC Delivery Programme Recommendations and guidelines to the European DAC Programme Board Final endorsement
<b>Programme Board</b>	[CEOs] [CTOs] of entities working on the European DAC Programme and S2R ED	Decision making body Freight operators ( DB-Cargo, Rail Cargo, Trafikverket, GreenCargo, SNCF Fret, PKP, Lineas, etc. ) Infrastructure Managers (EIM 3 / 4 proposals) Wagon Keepers (UIP 3 / 4 proposals) DAC producers (CAF, Wabtec, KB, Voith, Dellner) with clear CoI exclusions in deliberations
<b>Programme Manager</b>	Responsible of the Programme implementation and delivery	Coordinate WP works, delivery planning interface of S2R , review technical doc, incl. for future TSI approvals Chair of the Programme Coordination
<b>WPs Leaders, co-Leaders</b>	Representative of the entities involved in the different work packages takes the responsibility	Members of the Programme Coordination

# Main and critical milestones



**Draft / under definition**



# DAC | Overview Work Packages

## WP 1

### Technology, Operations and Standardisation

#### Technical Development

- Definition of technical DAC open design specifications (on use-cases considerations)
  - Functional requirements for the coupling head
  - Standardized solution regarding power supply and data communication
- Follow up Development process
- Evaluation of testing results of WP2
- A wide approach for compatibility to allow cost optimization for efficient operations (on full assembly group basis, e.g. draftgears technical harmonization) and maintenance

#### Harmonisation & Standardisation (TSI WA / TSI OPE)

- Support to ERA TWG Freight
- Creation of guidelines
- Standards (CEN, CENELEC, ETSI, industry standards UIC, etc. )

#### Operations

- Requirements and Concepts
- Harmonization of operational concept
- Definition of European production processes

## WP 2

### Testing & Demonstrators & Pilot Projects

- Evaluation of past/current DAC tests and demonstrator trains
- Definition of formal and baselined Product Acceptance Test Specifications
- Development and deployment of further test concept in two phases in close alignment with WP1:
  - Primarily technical testing of DAC functionalities and requirements of different coupler-types and producers/developers
  - Demonstrator trains for evaluation & Testing of future operation concepts and production processes

**Draft / under definition**



# DAC | Overview Work Packages

## WP 3

### Migration

- Coordinated European traffic and wagon fleet analyses (incl. traffic flows, network modelling), starting from the outputs of the results of available DAC migration strategies (e.g. DAC4EU where results will be available June)
- Definition of a sequential migration plan according to transport operations and wagon categories with regard to
  - Production capacities of DAC manufacturers
  - Workshop capacities (incl. retrofit)
  - Conversion plans
  - Wagon Producers
  - New Build production

## WP 4

### Rail System Capacity and Green Deal

- Evaluation of potentials to increase system capacities based on ECTS L3/moving block in Europe
- Scenario-based analysis of potential increase of rail modal share due to higher capacities and lower cost
- Calculation of potential contributions to the European Green deal due to traffic shifts to rail

## WP 5

### Costs, Business Cases and Financing

- Calculation of a pan-European business case (and of the resulting national ones), integrated for
  - RUs & Wagon keepers (efficiency gains)
  - Infrastructure (capacity)
  - Socio Economic aspects /Green Deal (CO2)
- Definition of funding and financing concepts in consideration of national business cases

**Draft / under definition**

# DAC | Overview Work Packages

## WP 6

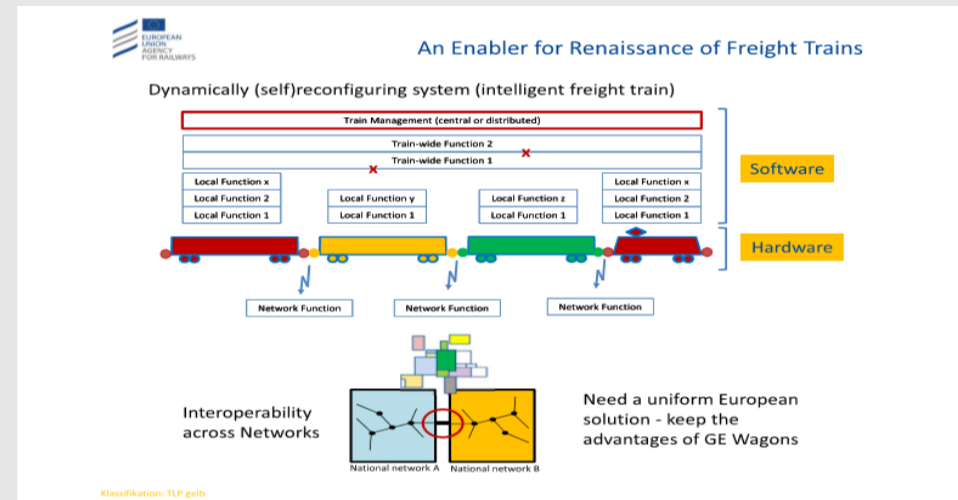
### Communication and Dissemination

- Coordination of all national and international political activities
- Shareholder/Stakeholder Management
- Campaign and definition of a consistent storyline, information material etc.

## WP 7

### Further innovation for the “Intelligent Freight Train”

- Technology scouting (DAC as enabler)
- Definition of minimum features and equipment (sensors) of the future “intelligent freight train”
- Harmonization of communication protocols in close collaboration with WP1



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# On Going connected activities



## DAC4EU BMVI

Project officially started after receiving 13Meur from German Government in June 2020 [DB / DB Cargo, SBB Cargo, Rail Cargo Group, Ermewa, GATX Rail Europe, VTG]. They are in the process of installing the couplers from four different manufacturers, in order to prepare for the DAC mechanical, pneumatic, electrical and communication test all over Europe. This test implies a freight train formation of 12 wagons coupled with DACs. Dynamic testing planned to start this autumn and last until March 2021. Phase 2 planned for demonstrator train in Europe which consist of 24 wagons with the selected DAC type; certified DAC as output, until December 2022.

## DAC Winter Tests

Will happen this winter ending in March 2021. It is organized by Trafikverket with the aid of Green Cargo. In alignment it will test all the same DACs under winter conditions, including telematics. For this purpose a train formation will be tested in marshalling yards and also in circulation through different places in Sweden. Possible phase2 is industrial business case in a real environment.

## IP5 Shift2Rail

FR8RAIL II DAC Type 4 Prototype final Test Bench Tests completed. FR8RAIL IV under study and pre-approved, will support DAC Trafikverket tests.

## ERA

Has started the TWG – Freight for the TSI Revision 2022. Sector is expected to deliver the necessary input to the agency for the adoption of the DAC in the necessary TSIs that regulate interoperability and railway approvals / authorizations in EU.

## CEN

WG for developing a new standard for “Automatic Coupler for Freight”, *focus/need on the “higher end” of technical capability/functionality of an automatic coupler for Freight (i.e. Levels/Types 4 and 5), there are still some countries who may not require these functionalities but will need the standard to support the other types also (i.e. Levels/Types 1, 2 and 3).*

**Political supports:** Berlin declaration ministries of transport, MoU of major Freight operators & keepers



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