

European Freight DAC Delivery Programme

enabled by Europe's Rail

Moving European Rail Freight Forward

European DAC Day, Praha, 04 October 2022

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A photograph showing the mechanical coupling between two rail freight cars. The foreground shows the intricate metal and hydraulic components of the coupling system, including hoses and structural frames. The background shows a long freight train on tracks under a clear blue sky. The text is overlaid on the image in white boxes.

Transforming the European Rail Freight System

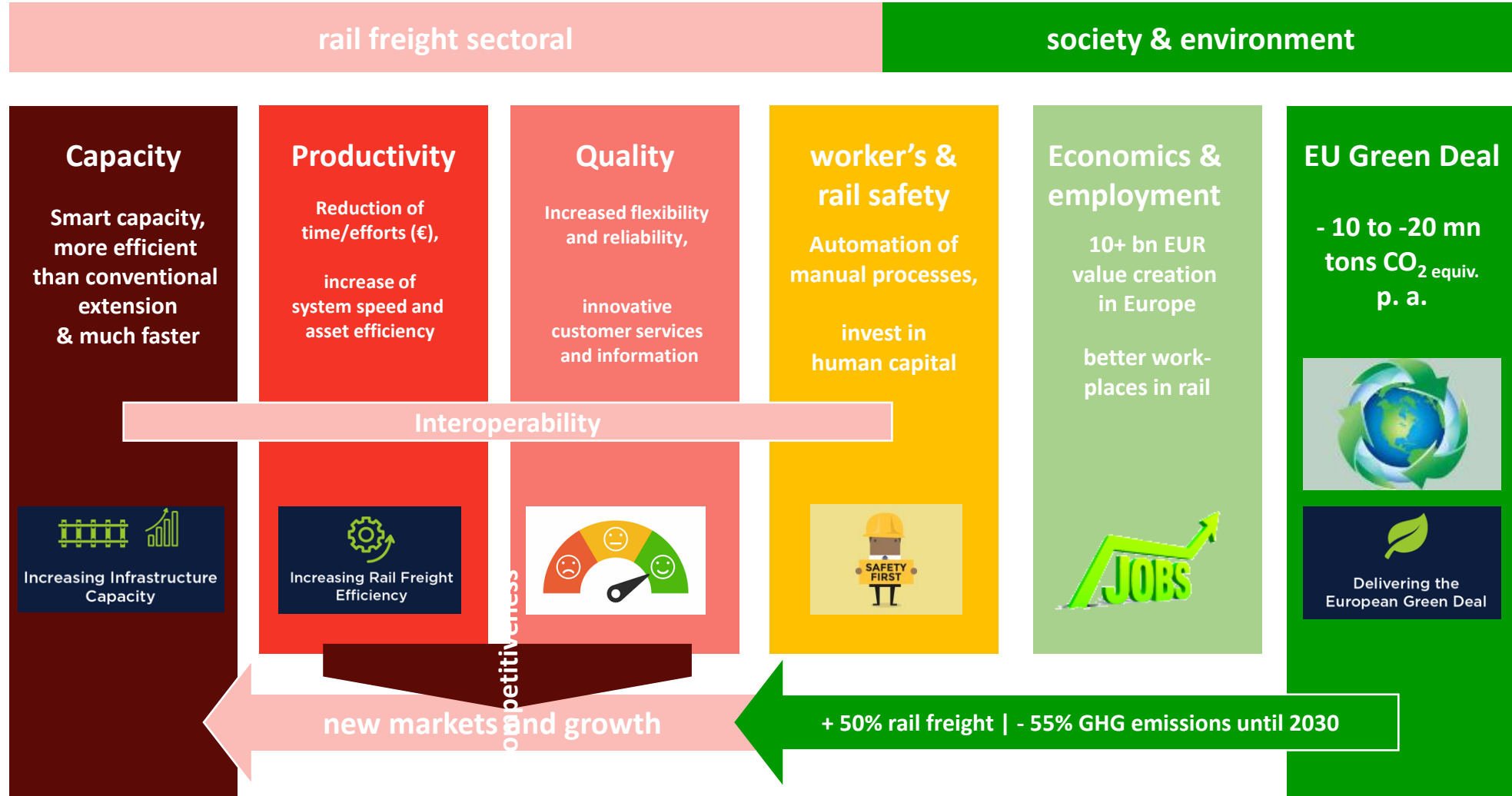
Capacity

Productivity

Quality & Safety



The DAC and automation benefits for EU



Use cases: DAC Core system and DAC applications (Full Digital Freight Train Operations)

benefits =
gains in the
processes
(time,
system time,
cost savings,
capacity,
reliability,
quality,
safety)

+ induced
modal shift

DAC Core system



- › Automated coupling & manual uncoupling and digital backbone
- › Recording of train composition
- › Automatic (remote) uncoupling
- › Heavier & longer trains (within existing infra limitations)
- › Increased payload
- › Increased speed via improved longitudinal forces

DAC train preparation



- › Automatic brake test & calculation of brake capacity
- › Automated technical wagon inspection

DAC telematics (wagon & goods monitoring)



- › Predictive / preventive maintenance
- › detection of cargo condition
- › Cargo surveillance, intrusion alarm
- › Wagon data & loading information on mobile device

DAC shunting



- › Automated parking brake
- › Draining of auxiliary air tanks
- › Automated air valve
- › Rear view camera for train driver
- › Proximity detection
- › Sound signals when train in motion

DAC train run



- › Tail light (train integrity prior OTI function)
- › Train end device (intermediate solution?)
- › Vital on train integrity (OTI), enabling ETCS L3 moving block operations
- › Increased speed via better braking performance
- › Multiple loco traction and trains up to 1500m
- › Derailment detection

DAC loading & unloading



- › Automatic loading/unloading processes (replacement of hydr/pneum components, electro-mechanical actuators for bridge plates, automated cargo securing, heating elements for defrosting, ...) via ext. energy supply
- › illumination for worker's safety & interior

Major EDDP developments

- › EDDP participation increased to more than **80 actively participating companies of 20 European countries**
- › **Scharfenberg design** selected as an EU-standard (09/21)
- › DAC in technical report of **TSI revision 2022** (05/22)
- › **DAC specification (mechanical/pneumactical & data/energy)** quite complete
- › **DAC target operational procedures** for the first use cases ready in 11/22 (first EU-harmonised basis ever)
- › **Operational DAC tests** (enabled by DAC4EU) took place in European countries
- › Development of solid and feasible **migration scenarios** (first time ever in Europe)
- › Analysis on impact on workers (worker's safety, new job profiles / skills)
- › Progress on **Cost-Benefit Analysis** (supporting a European Investment Plan for DAC)
- › Intensified **dissemination activities** (e. g. SEE/CEE)

DAC main challenges

Short-term (end of 2022)

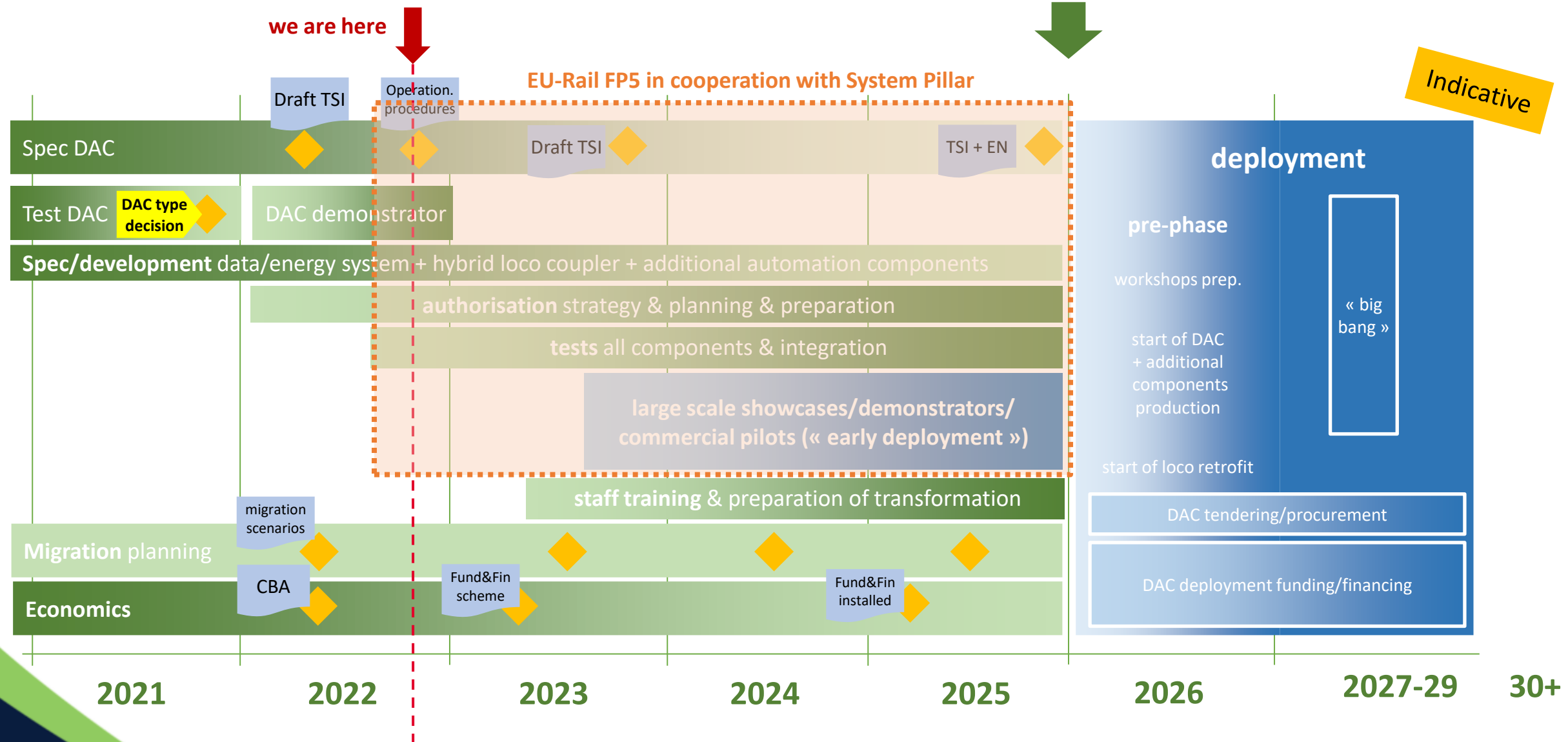
1. Target **operational procedures** (for shunting, train prep, train run)
2. **Transition** EDDP/ERJU FA5+SP
3. **Key stakeholder** outreach
4. **Detailed migration/deployment scenarios** (principles, methods/tools, target scenario, deep dive fleet analysis, starting developing a detailed deployment plan)
5. **CBA/ funding** financing model identified

Long-term (2025)

(= to be proven before investment decisions will be taken)

1. Demonstrated and proven **technical feasibility** and performance (incl. reliability, availability, safety)
2. Standardized and pre-agreed **authorisation procedures** for wagons and locos
3. Demonstration of **operational functionality** (incl. safety)
4. Positive **CBA incl. guaranteed funding** (funding/financing instruments available)
5. Solid, aligned European **migration/deployment** plan (incl. organizational set-up for synchronised deployment)
6. **Sector agreement/management** and **regulatory framework** in place

Indicative overall time plan



A single entry point for all Europe and beyond

<https://rail-research.europa.eu/european-dac-delivery-programme/>

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IP5 Projects

Delivery Programme WPs & outputs

DAC 4EU

News

Events

Resources

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.**

Key benefits

- Delivering the European Green Deal
- Contributing to the Sustainable and Smart Mobility Strategy by increasing rail freight traffic
- Increasing Rail Freight Efficiency
- Increasing Infrastructure Capacity

Target

All freight wagons (450.000 - 500.000) 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

Would you like to participate to the programme which is open for all?

Click on the button below to fill in the application form.

APPLICATION FORM



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