PTFE
Plataforma Tecnológica Ferroviaria Española

Asamblea de la Plataforma Tecnológica Ferroviaria Española

Madrid, 30 de noviembre de 2016

PROYECTO DYNAFREIGHT

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Ingeniería de Desarrollo
Stadler Rail Valencia

GOBIERNO DE ESPAÑA
MINISTERIO DE ECONOMÍA Y COMPETITIVIDAD

Secretaría Técnica:
Technical Secretariat:
FUNDACIÓN DE LOS FERROCARRILES ESPAÑOLES

STADLER GENERAL SHORT PRESENTATION

Madrid, 30 Nov 2016

STADLER

DIVISIONS

DIVISION
SWITZERLAND

Stadler Bussnang
1700 employees

Stadler Altenrhein
950 employees

Stadler USA
15 employees

DIVISION
GERMANY

Stadler Pankow Berlin
1000 employees

Stadler Pankow Velten
40 employees

Stadler Reinickendorf
60 employees

DIVISION
CENTRAL EUROPE

Stadler Polska
800 employees

Stadler Praha
50 employees

Stadler Minsk
450 employees

DIVISION
SPAIN

Stadler Valencia
900 employees

ERION
30 employees
ERION France
20 employees

DIVISION
COMPONENTS

Stadler Winterthur
220 employees

Stadler Stahlguss
120 employees

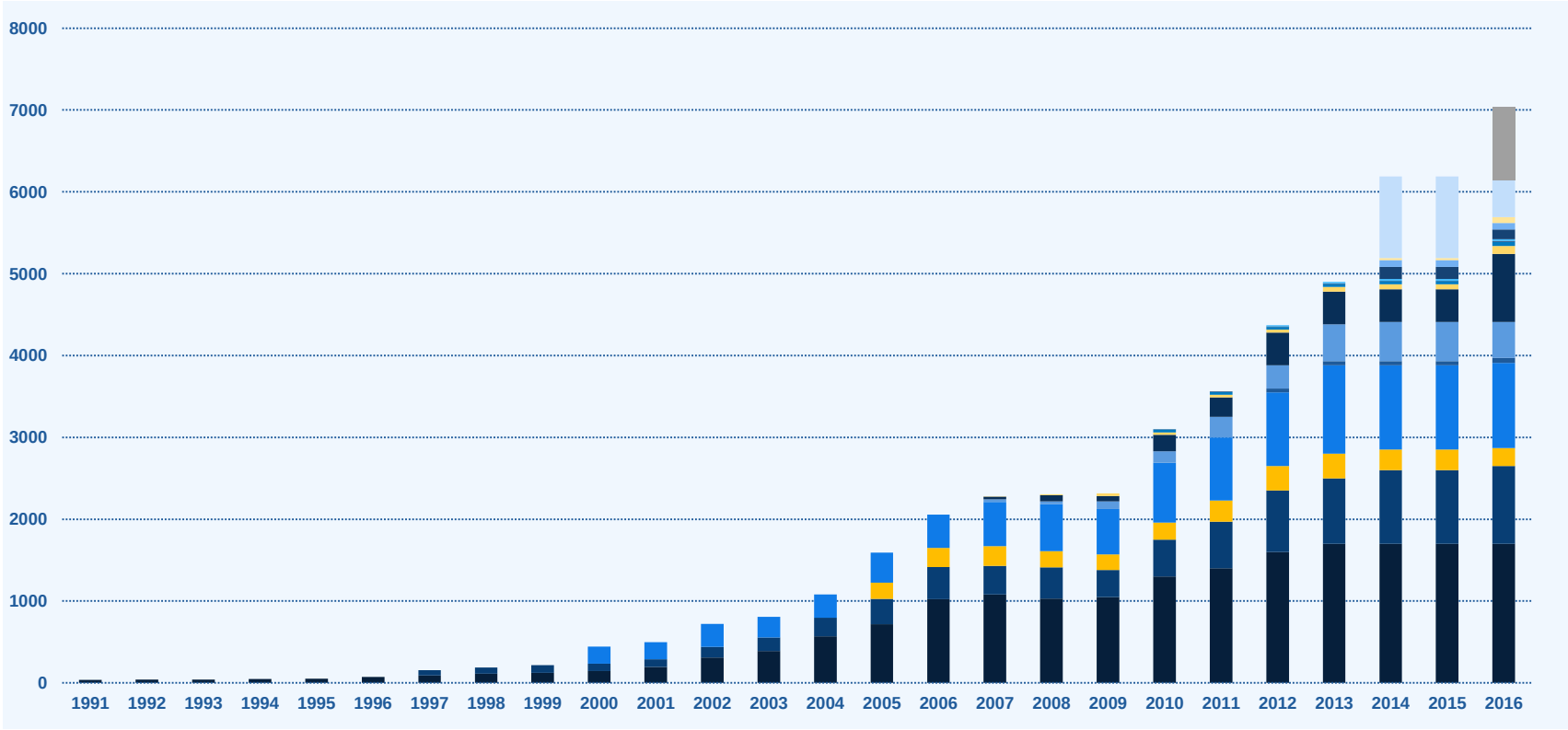
Stadler Szolnok
370 employees

DIVISION
SERVICE

Stadler Austria
20 employees
Stadler Switzerland
70 employees
Stadler Algeria
100 employees
Stadler Hungary
70 employees
Stadler Italy
10 employees
Stadler Netherlands
80 employees
Stadler Poland
30 employees
Stadler Sweden
20 employees

Consolidated turnover 2016 (budget): ca. 2,2 Mrd. CHF | | Employee number (budget, FTE): approx. 7000

EMPLOYEE DEVELOPMENT
STADLER RAIL GROUP



MARKET SEGMENTS

SEGMENTATION			MODULAR CONCEPTS Adhesion engines		TAILOR-MADE CONCEPTS Adhesion and rack engines	
URBAN						
LRV	Tram	≤80 km/h				
	Tram Train	≤100 km/h				
Metro	Metro	≤100 km/h				
RAILWAY VEHICLES						
DMU	Regional rail	≤140 km/h				
EMU	Regional rail	≤160 km/h				
	Intercity	≤200 km/h				
	High-speed	≤250 km/h				
	Very high-speed	>250 km/h				
Locomotives	Mainline locomotives diesel/dual/elektric					
	Shunters/special purpose vehicles					
Coaches	Passenger coaches and sleepers					
	Freight wagons					

STADLER RAIL VALENCIA

STADLER

STADLER RAIL VALENCIA S.A.
SITE HISTORY

More than a century of experience putting visionary solutions on track.

STADLER RAIL VALENCIA S.A.
PRODUCTS AND SERVICES

Locomotives

- Diesel-Electric
- Dual-mode
- Electric
- Shunting

Passenger rail vehicles

- Tramways
- Train-trams
- Metros

Bogies

- BoBo and CoCo bogies for locomotives
- Bogies for all kind of passenger trains

Services

- Locomotives and Passenger trains
- Own vehicles and vehicles of other manufacturers

Europe´s leading manufacturer of DE mainline locomotives and tram-trains



Dienstfahrt
VMS
432

4331A
FGV


Direct Rail Services
68002


A001

4014
NJ TRANSIT

AFRO4001

www.rsag-online.de
607

330

1402


Innovative technical solutions for improved train DYNAmics and operation of longer FREIGHt Trains

STADLER

DYNAFREIGHT
PROJECT IN SHORT

Budget: **999,822.50€**

Partners: **10**
Project Coordinator: UNIFE
Technical LEADER: STAV

Duration: **20 months**

Starting date: **Nov 2016**

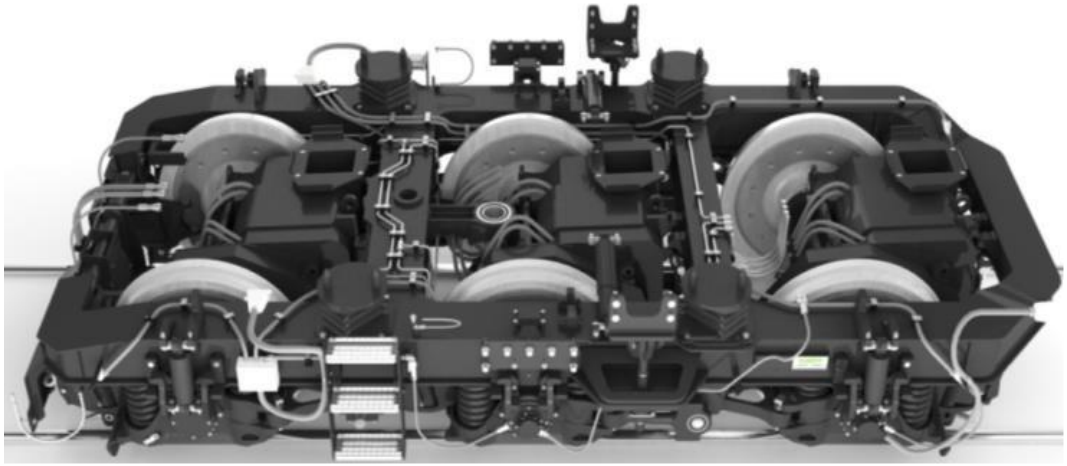
End date: **Jun 2018**

DYNAFREIGHT
MAIN GOAL

The final goal is to provide the necessary inputs for the development of the next railway freight propulsion concepts within IP5 of Shift2Rail.

DYNAFREIGHT
TECHNICAL OBJECTIVES

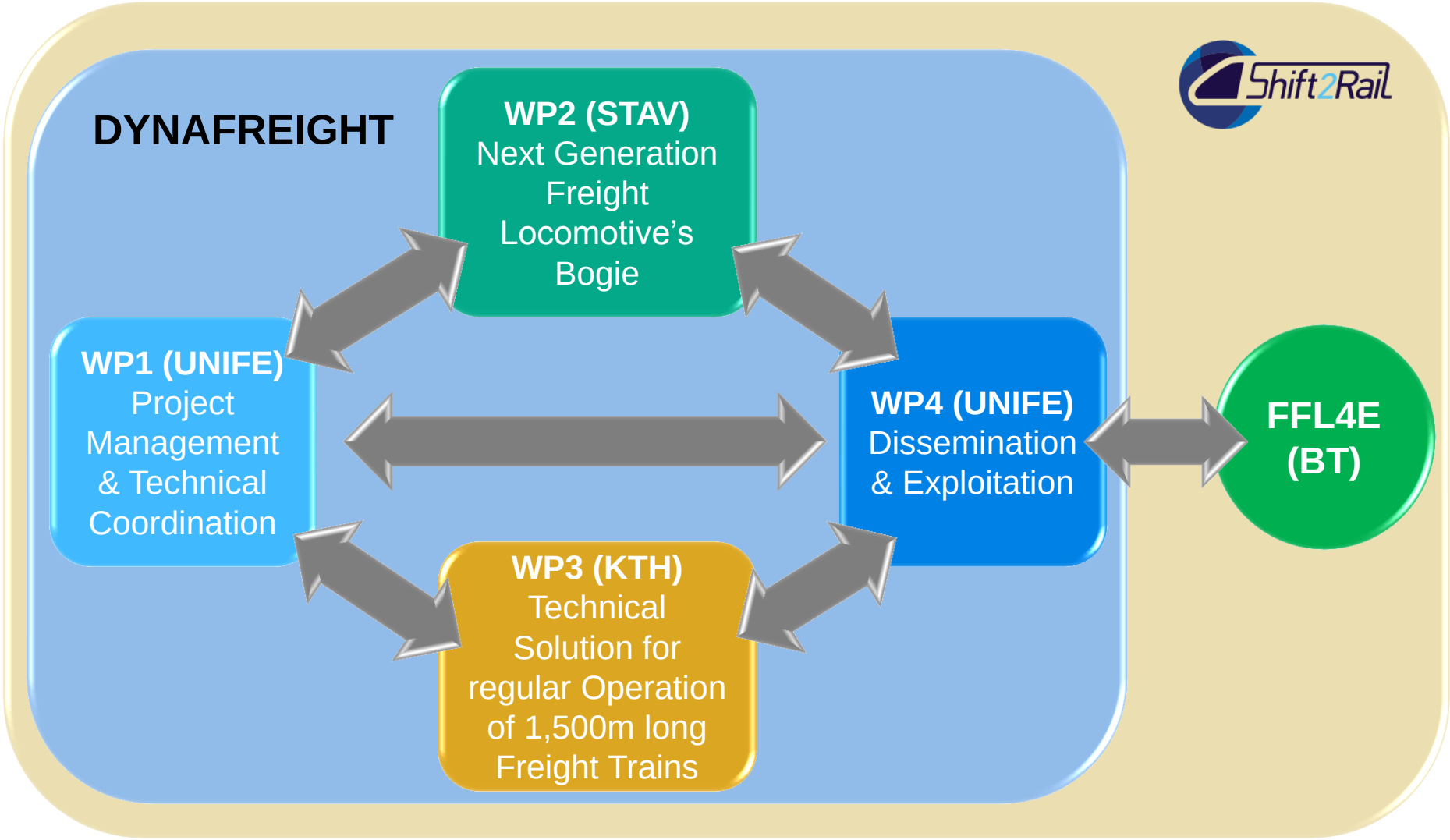
- **Next Generation of Freight Locomotive's Bogie:** To specify, design and develop new concepts to be applied on future freight locomotive bogies (3-axle bogie).
  - Identification and evaluation of lighter materials to be used in a freight environment for bogie components.
  - To study and develop noise concepts to reduce the overall noise level caused by freight running gear.
  - To analyse passive steering and active mechatronic systems for improved curve negotiation.
  - To monitor the most maintenance-costly bogie elements, in order to reduce LCC.



DYNAFREIGHT
TECHNICAL OBJECTIVES

- **Increase of train length**: to develop a technical solution for the regular operation of **up to1,500m long freight trains.**
  - To define and implement functional, technical and homologation requirements for a radio remote controlled traction and braking system.
  - To propose safety precautions in train configuration and brake application by analysing and simulating the longitudinal forces and the derailment risk.
  - To identify adaptions needed in the infrastructure for the operation of long freight trains up to 1,500m, which will be operated as double trains.

DYNAFREIGHT
PROJECT STRUCTURE

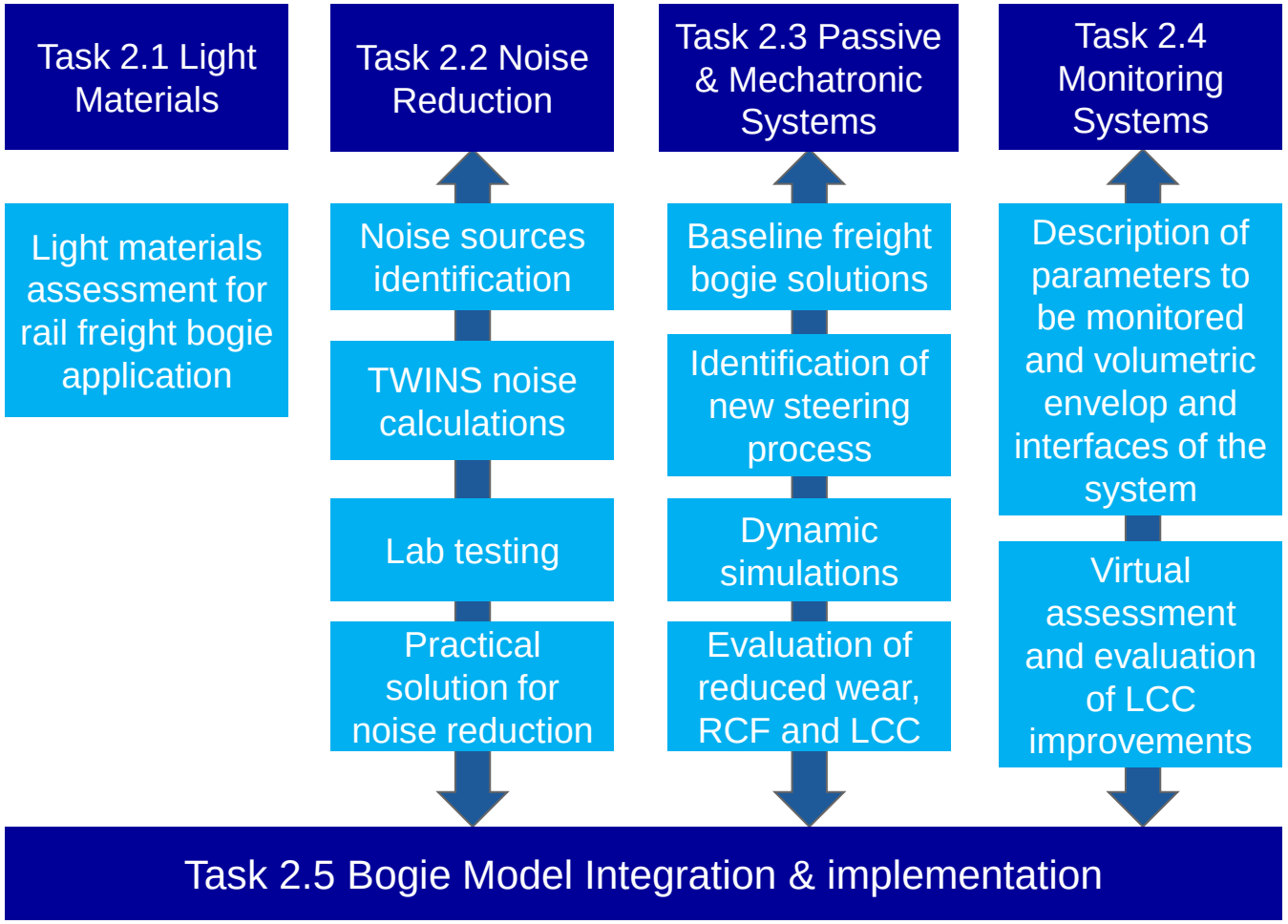


DYNAFREIGHT

WP2 - Next Generation of Freight Locomotive's Bogie

- Objective: To specify, design and develop new concepts to be applied on future freight locomotive bogies.
- Lead of WP2: STAV
- 6 partners: HUD, KTH, LRS, POLIMI, STAV & TUB
- Total MM: 53
- Deliverables: 5
- Duration: 20 months
- Tasks:
  - Task 2.1 Light materials assessment for rail freight bogie application (HUD)
  - Task 2.2 Noise reduction (TUB)
  - Task 2.3 Passive and mechatronic steering systems (POLIMI)
  - Task 2.4 Monitoring systems (STAV)
  - Task 2.5 Bogie Model Integration and Implementation (STAV)

DYNAFREIGHT
WP2 - STRUCTURE

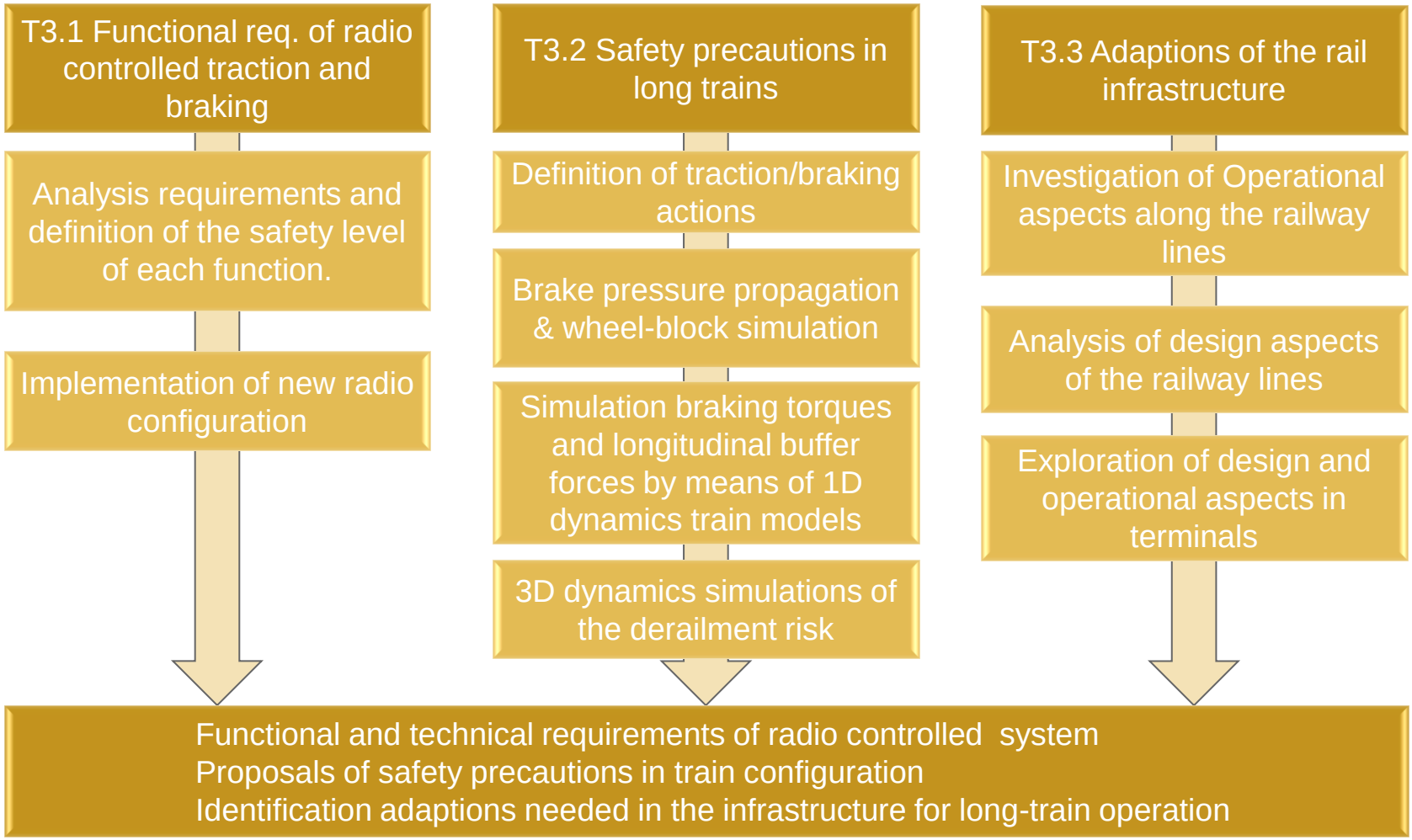


DYNAFREIGHT

WP3. Technical Solution for operation of 1,500 m Long Freight Trains

- Objective: Increase freight train length, developing a technical solution for the regular operation of up to1,500m long freight trains.
- Lead of WP3: KTH
- 8 partners: ADIF, FIT, HUD, KTH, LAIRD, POLIMI, STAV & TUB
- Total MM: 36,5
- Deliverables:
- Duration: 20 months
- Tasks:
  - Task 3.1 Functional requirements of radio controlled traction and braking (STAV)
  - Task 3.2 Safety precautions in train configuration and brake application (KTH)
  - Task 3.3 Adaptions in the rail infrastructure for long-train operation (ADIF)
- Closed cooperation with FFL4E project

DYNAFREIGHT
WP3 - STRUCTURE



DYNAFREIGHT
GENERAL TIMELINE

	DYNAFREIGHT EU PROJECT	LEADER	Collab. Partners	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18	M19	M20
WP1	**Project Management and Technical Coordination**	**UNIFE**	**FIT, STAV**																				
WP2	**Next Generation of Freight Bogie Locomotive**	**STAV**																					
Task 2.1	Light materials assessment	**HUD**	STAV																				
Task 2.2	Noise reduction	**TUB**	Lucchini, HUD, STAV																				
Task 2.3	Passive and mechatronic steering systems	**POLIMI**	TUB, KTH, STAV																				
Task 2.4	Monitoring systems	**STAV**	KTH, POLIMI, Lucchini																				
Taks 2.5	Bogie Model Integration and Implementation	**STAV**	HUD																				
WP3	**Technical solution for regular operation of 1,500 m trains**	**KTH**																					
Task 3.1	Functional req. of radio controlled system	**STAV**	ADIF, LAIRD																				
Task 3.2	Safety precautions in train configuration and brake	**KTH**	POLIMI, TUB, STAV																				
Task 3.3	Adaptions in the rail infrastructure for long-trains	**ADIF**	HUD, FIT, TUB																				
WP4	**Dissemination & Exploitation**	**UNIFE**	**FIT, HUD, STAV**																				

DYNAFREIGHT
EXPECTED IMPACTS

- Main planned outcomes:
  - Improved performances: traction, speed, running dynamics and wheel/rail efforts
  - Reduced rail freight noise at the source
  - Enhance capacity / traffic throughput with the operation of longer trains
  - Reduced of operation and maintenance costs (reduce wheel and rail wear, smarter maintenance, etc.)

THANK YOU
FOR YOUR ATTENTION.