Safe4RAIL-2 Project

CONNECTA-2

CONtributing to Shift2Rail's **NE**xt generation of high **C**apable and safe **TCMS**. Phase 2

Safe4RAIL2

SAFE architecture for **R**obust distributed **A**pplication **I**ntegration in ro**L**ling Stock 2

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Technical Seminar on Advanced Architectures and Components for Next-Generation TCMS
January 21st 2020, Brussels

Outline

- Project Goals/Outcomes

- Consortium

- Work-Package Structure

- Project Status *(January 2020)*

Project Goals/Outcomes

1. **Networking components with deterministic communications** (<u>DbD</u>) at backbone and consist levels
   - Interoperability between two equipment manufacturers.

2. **Wireless devices:**
   - LTE devices for a wireless train backbone (<u>WLTB</u>)
   - Interoperability with CONNECTA-2 for wireless inauguration (<u>WLTB</u>)
   - Wireless communications within a consist (<u>WLCN</u>)

3. **A Heating, Ventilating and Air Conditioning (HVAC) subsystem:**
   - Integrated on top of a Functional Distribution Framework (<u>FDF</u>), together with the Drive-by-Data (<u>DbD</u>) physical layer.
   - Integrated in a virtual certification simulation framework (<u>SF</u>), including remote Hardware-In-the-Loop (<u>HIL</u>) tests.

4. Collaboration in **two laboratory demonstrators** with CONNECTA-2.

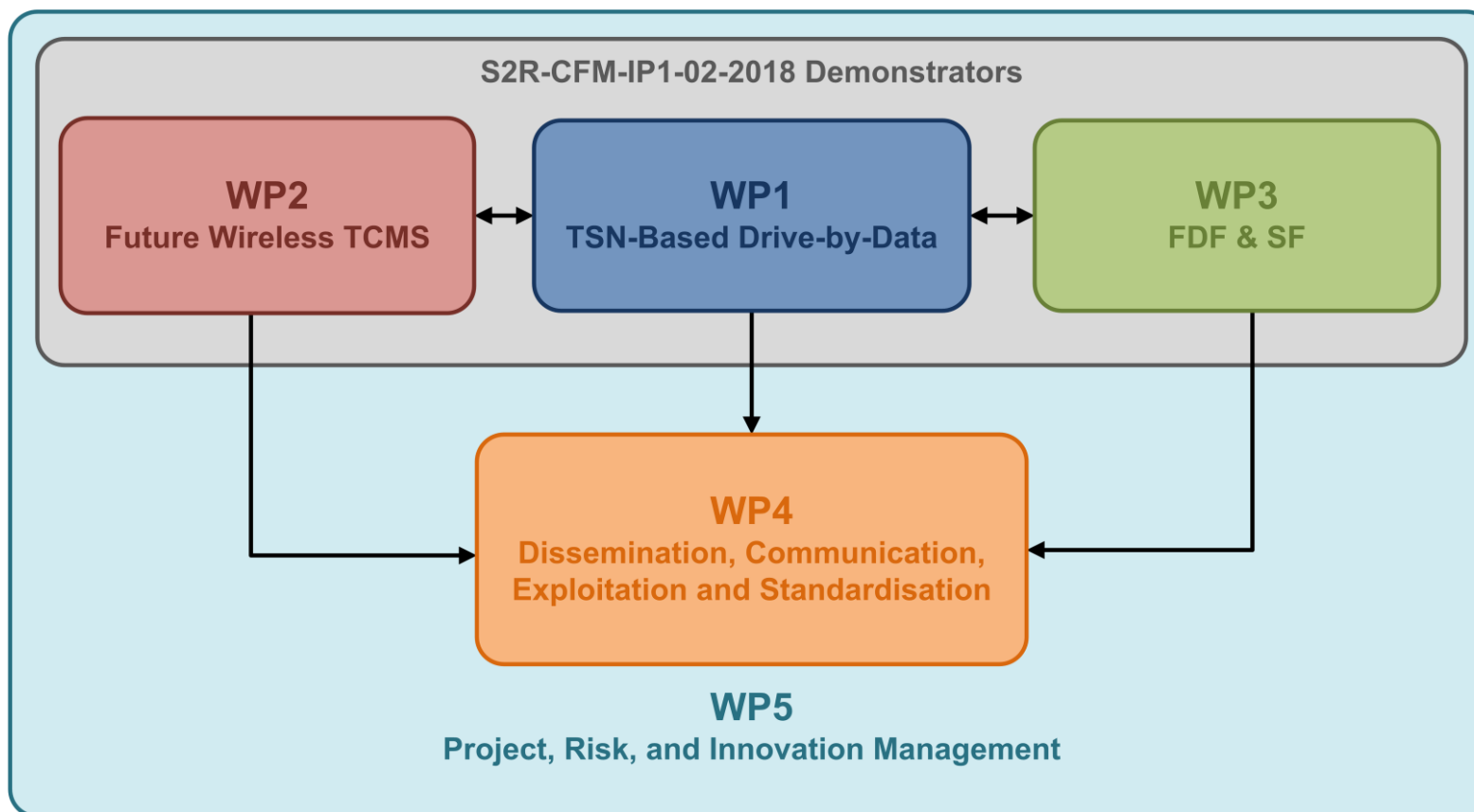5. Build strongly on Roll2Rail and Safe4RAIL projects, achieving a **significant increase in TRL**.

Consortium

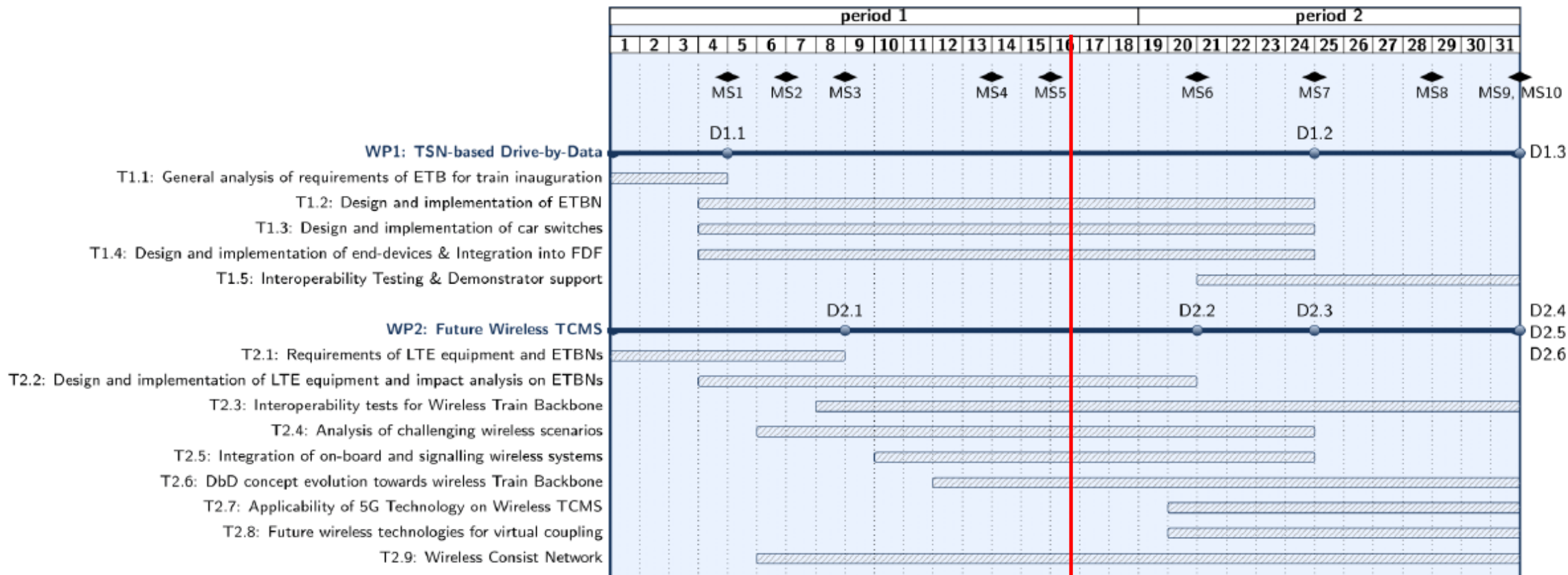| Participant No	Participant organisation name	Beneficiary Short Name	Country
1 (Coord.)	**IKERLAN** S COOP	IKL	Spain
2	**TECHNIKON** Forschungs- und Planungsgesellschaft mbH	TEC	Austria
3	**TTTech** Computertechnik AG	TTT	Austria
4	**MOXA** Europe GmbH	MOXA	Germany
5	**Westermo** Teleindustri AB	WES	Sweden
6	**EURECOM**	EUR	France
7	**ETAS** Entwicklungs- und Applikationswerkzeuge für Elektronische Systeme GmbH	ETAS	Germany
8	**Liebherr**-Transportation Systems GmbH & Co KG	LIEB	Austria

Consortium

Work-Package Description

Project Status (I)

Oct 1st 2018

Jan 21st 2020

Apr 30th 2021

Phase 1
REQUIREMENTS
(M1-M4)

Phase 2
DEVELOPMENT
(M5-M20)

Phase 3
INTEGRATION
(M21-M24)

Phase 4
SUPPORT
(M25-M31)
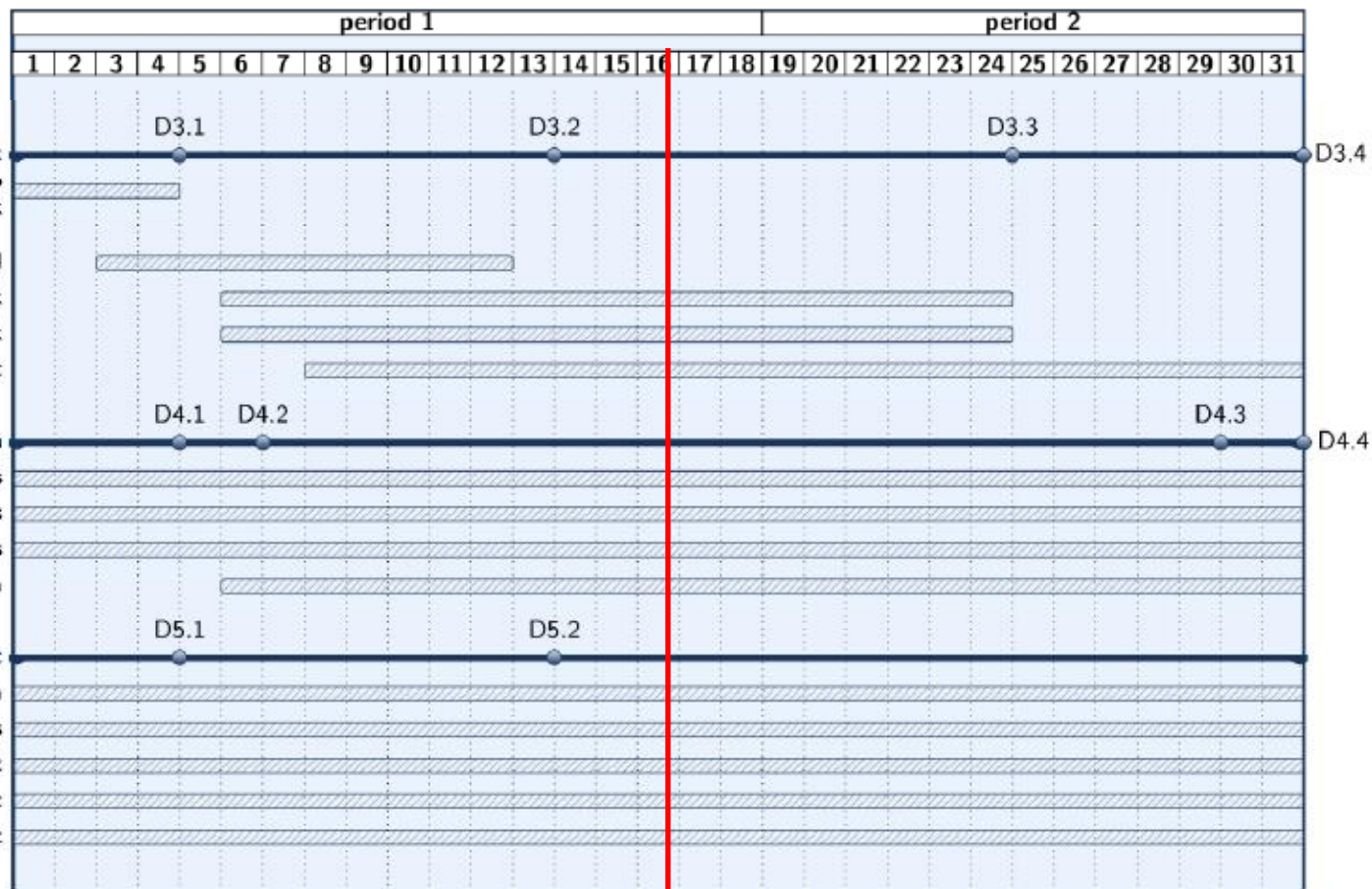
Phase 5
DISSEMINATION
(M1-M31)

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Project Status (II)
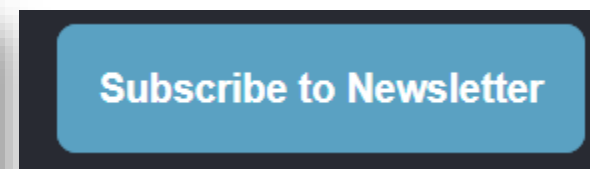
Project Status (III)

Project Status (IV)

- Requirement definition ➡ **Done**

- State-of-the-art on Wireless technologies for WLTB and WLCN ➡ **Done**

- Design of DbD network devices, WLTB equipment and HVAC subsystem ➡ **Done**

- Implementations:

  - HVAC subsystem for FDF & SF ➡ **Done**

  - DbD network devices and WLTB equipment ➡ **In progress**

  - Adapted ETBN for WLTBN ➡ **Pending**

- Integration of DbD network devices, WLTB equipment and HVAC subsystem in demonstrators ➡ **In progress**

- Support to testing on demonstrators ➡ **Pending**
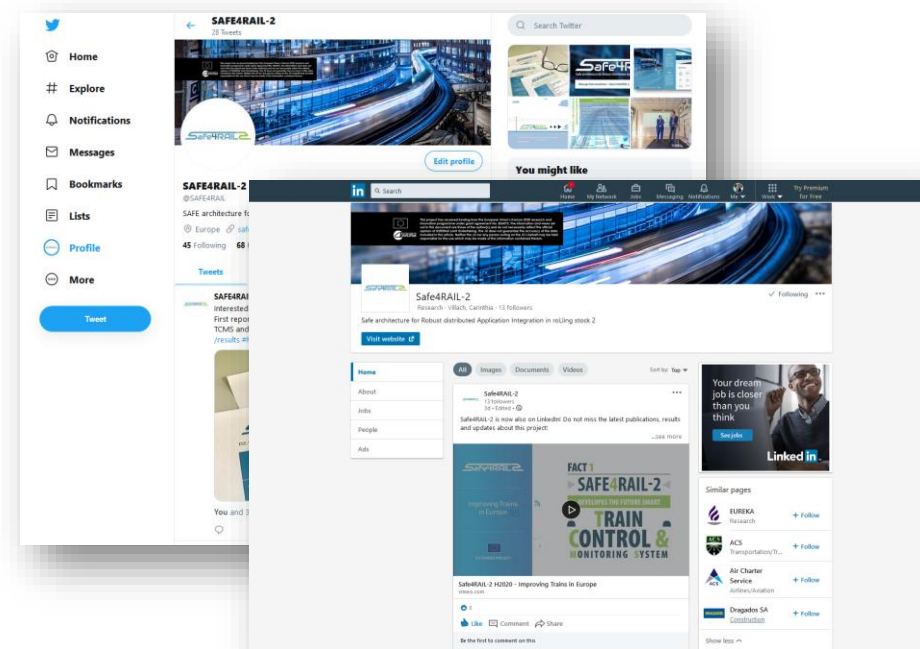
Information on Safe4RAIL-2

- Public deliverables: https://safe4rail.eu/results/deliverables

- Project Newsletter:
  - ◆ Issue 1 – Drive-by-Data
  - ◆ Issue 2 – Wireless TCMS
  - ◆ Issue 3 – FDF & SF *(upcoming)*

- Social Networks
  - ◆ Twitter: https://twitter.com/SAFE4RAIL
  - ◆ LinkedIn: https://www.linkedin.com/company/safe4rail-2

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DRIVING EMBEDDED EXCELLENCE

LIEBHERR

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CONNECTA-2

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Shift2Rail