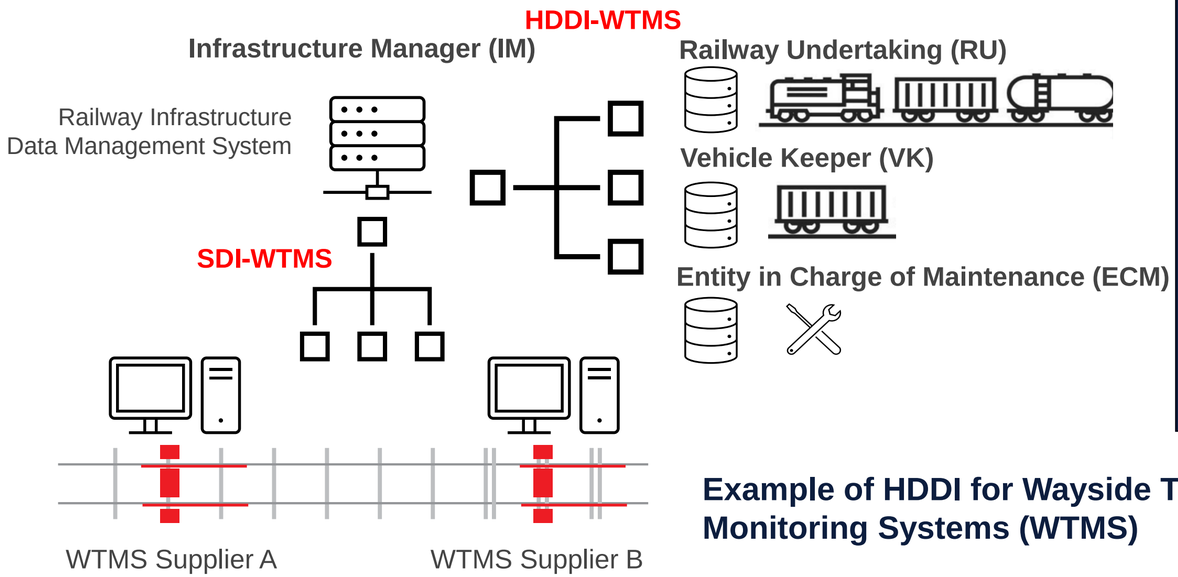
Task 5 – HERD (Projected outputs for the next three years)

Task 5 investigates the Use Cases for Diagnostic Data Harmonisation and designs the specifications of HDDI as a standardised method for how the intended data is provided to the data user.

- The **harmonisation** ensures the comparability of railway asset diagnostic data.
- HDDI can **be implemented at different levels** in the diagnostic data chain depending on the specific use case (UC).
- The **harmonised diagnostic data** consists of asset related data:
  - The measurement data of the parameters of the use case specific railway component or system.
  - The diagnostic data represent the time-dependent condition of the intended asset component or system.
  - The specified meta-data needed to generate the diagnostic information.
  - The specified diagnostic outcome for asset management.

The purpose of HDDI is to ensure the compatibility of use-case specific data generated by different systems, suppliers and/or in different European countries to improve railway asset management and to generate sustainable benefits for all stakeholders. Each UC HDDI specification is generated for the specific use case.



Example of HDDI for Wayside Track Monitoring Systems (WTMS)

STIP v2 Projected outputs

• **Harmonised Diagnostic Data Interface Template (2026)**	**STIP_164 2025** — **Harmonised Diagnostic Data Interface (HDDI) - Template**
• **HDDI for wheel monitoring diagnostic data (2026)**	**STIP_165 2026** — **HDDI for wheel monitoring diagnostic data**
• Task 5 - **HDDI for track profile diagnostics (2027)**	**STIP_167 2027** — HDDI for track profile diagnostics
• Task 5 - **HDDI for pantograph diagnostics (2028)**	**STIP_168 2028** — HDDI for pantograph diagnostics

Projected outputs not listed as STIP topics

- Analysis of the UC in the approved UC-set, collection of the data-user and data-provider needs, generates drafts of the HDDI
- Support to IP FP3/WP7 to prepare the implementation plan of HDDI-demonstrator in FP3/WP7 Wave1 (2026)
- User needs for diagnostic data harmonization collected by video gates (relevant for FP5, too)
- Support to IP FP3/WP7 to develop and implement the HDDI-WTMS demonstrator (2027-2028/29)
- Collection, analysis and recommendation of the UC specific meta data

Task 5: HERD

Emilia Andreeva-Moschen *(ÖBB-Holding AG)* **– Railway Lead**
Jens Kilian *(voestalpine)* **– Supplier Lead**

Lead STIP Deliverables

- STIP 164: HDDI specification template – 2025
- STIP 165: completion of the HDDI-WTMS specification – 2026
- STIP 167: first draft of the HDDI-OnBoard-Monitoring specification – 2027
- STIP 168: first draft of the HDDI-Panthograph specification – 2028

Outcome depends on the budgeted resources (FTE per year).

Deliverables Request for Service (SC2.4)

D01 Aligned UC 1 demonstrator specification for a Pilot implementation - Q2 2025 –in progress

D02 Processing of new Use Cases – Q3 2025

Latest Achievements, Challenges and Design Decisions *(to be filled periodically by the domain)*

Latest Achievements: The following achievements have been accomplished by the HERD-domain:

- **Achievement #1:** HERD topic has been accepted to be implemented in the Wave 2-Call of Innovation Pillar.
- **Achievement #2:** Dissemination: Attendance at @Modern Rolling Stock Conference in Graz (1 presentation and 3 participants).
- **Achievement #3:** Deeper alignment with IP/FP3/WP7 regarding participation in Wave 1.
- **Achievement #4:** Metadata for harmonisation is under evaluation.
- **Achievement #5:** HDDI-WTMS (SDI-WTMS) structure draft is available.
- **Achievement #6:** Definition of set of criteria to evaluate the existing best practice relevant for Use Case 2.

Domain Current challenges: The domain is facing the following challenges:

- **Challenge #1:** Lack of expertise in data processing of the wheel-set diagnostic data.
  - *Mitigation action: SBB and OEBB are looking for experts who can support.*

Expected outcomes for sector review in the next 3 months

- **Risk assessment and risk mitigation plan**
- **Completion of synergies evaluation**