

# Hit Rail: Support to Interoperability

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**6<sup>th</sup> Regional TAF TSI Workshop – Poland, Estonia, Latvia, Lithuania**

**12<sup>th</sup> - 13<sup>th</sup> September 2017**

**Urząd Transportu Kolejowego (UTK)**

**Aleje Jerozolimskie 134, 02-305 Warsaw**

**Eurocentrum Office Complex**

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# Hit Rail's presentation

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# Hit Rail : born to interconnect railways

## Enabling Connectivity and Interoperability for the European Railways

Interconnecting the main actors within the European Railways Community, HIT Rail is a foundation for international passenger, freight and infrastructure railway services.



- is a **non-profit making** company, expert in rail **connectivity** and **interoperability** issues
- was created in 1990 to professionally manage the Hermes network already in use for railways **since 1978**
- is a **railway sector organization**, observer in the main international EUAR/TSI groups (TAF/TAP CCM, TAF/TAP implementation Cooperation Groups, TAF regional workshops)
- cooperates with all other sector organizations (**UIC, Raildata, RNE, UIP, UNIFE, etc.**) in order to jointly provide services to the freight railway sector
- has developed an international prestige in guaranteeing a **reliable** and **up to date application to application data transfer service**
- has constantly stayed in the **vanguard of international data communication** technologies, migrating to the newest ones (IP, MPLS) as soon as consolidated.
- Open to all and applying fair cost recovery pricing system.

## A company owned by Railways: IMs, RUs

**ADIF** - Spain

**CD** – Czech Republic

**DSB** - Denmark

**EVRY** - Sweden

**FSI** - Italy

**MAV** - Hungary

**ÖBB** - Austria

**SBB CFF FFS** - Switzerland

**SNCB** - Belgium

**SNCF**- France

**SZ** - Slovenia

**ZSR** - Slovakia



**Hit Rail services are used by more than 50 small and large RUs/IMs, newcomers and incumbents, making up the Hermes community**

**Adif, ATOC, Captrain, CD, CD Cargo, CFL, CFR, DB, DB Netz, DB Cargo, DBSRNL, Eurostar, HZ Cargo, HZPP, Infrabel, Inrail, Lineas, Lokomotion, MAV Start, Network Rail, NMBS/SNCB, NS International, ÖBB, **PKP Cargo**, **PKP Intercity**, ProRAIL, Raildata, Rotterdam Rail Feeding, RCA, RCH, Renfe, RFI, RhB, RNE, RZD, SBB, SBB Cargo International, SJ, SNCF, SNCF Fret, SZ, TCDD, THALYS, Trenitalia, UIC, UZ, VR, ZS, ZSR, ZSSK, ZSSK Cargo.**

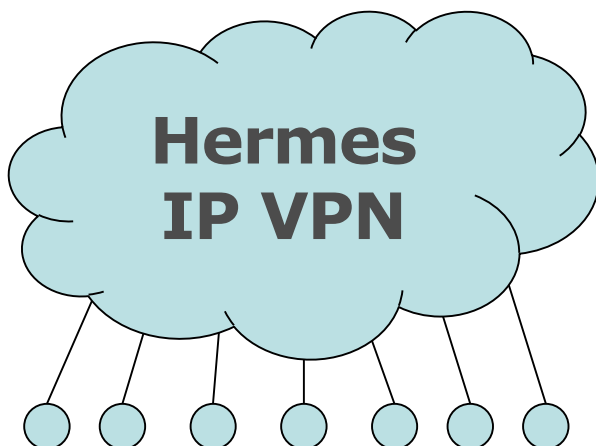




# Connectivity and Interoperability

Hit Rail offers to the Hermes community an ecosystem composed of two main services:

## Connectivity



**One connection connects to all**

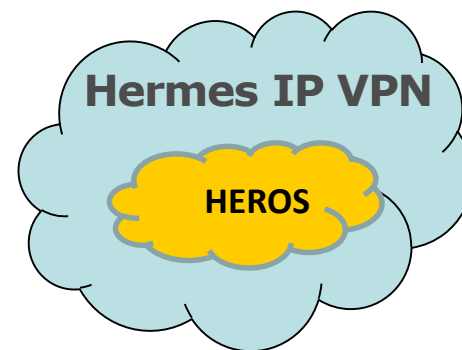
## Interoperability

### HEROS (HERmes Open Services)

MQ  
WS  
FTP  
SMTP



FLAT  
XML



MQ  
WS  
FTP  
SMTP



FLAT  
XML

**Members can use their own  
channel protocols, file formats, versions**

# IP VPN network is our connectivity model

- For **international business critical applications**, the IP Virtual Private Network (VPN) model is the best connectivity option.
- The Hermes IP VPN model provides guaranteed **response times**, better **performance** and **reliability** and specific **Service Level Agreements (SLA)** for the customers.
- For non-business critical applications or small users, access to the Hermes IP VPN via Internet using **IPSec** protocol is also possible.
- The Hermes IP VPN is also a perfect match of the **cloud technology**. The integration of a secure network and a protected virtual environment where data and applications can be stored and reached from everywhere offers a **flexible and scalable** solution.
- The Hermes IP VPN is a very secure environment with a proven **record of no external intrusion**. To make its customers aware of the cyber-crime risks, Hit Rail hosts on **4<sup>th</sup> October in Brussels** a free of charge conference. Details and registration on [www.hitrail.com/events/cyber-security-for-railways-conference-2017](http://www.hitrail.com/events/cyber-security-for-railways-conference-2017)



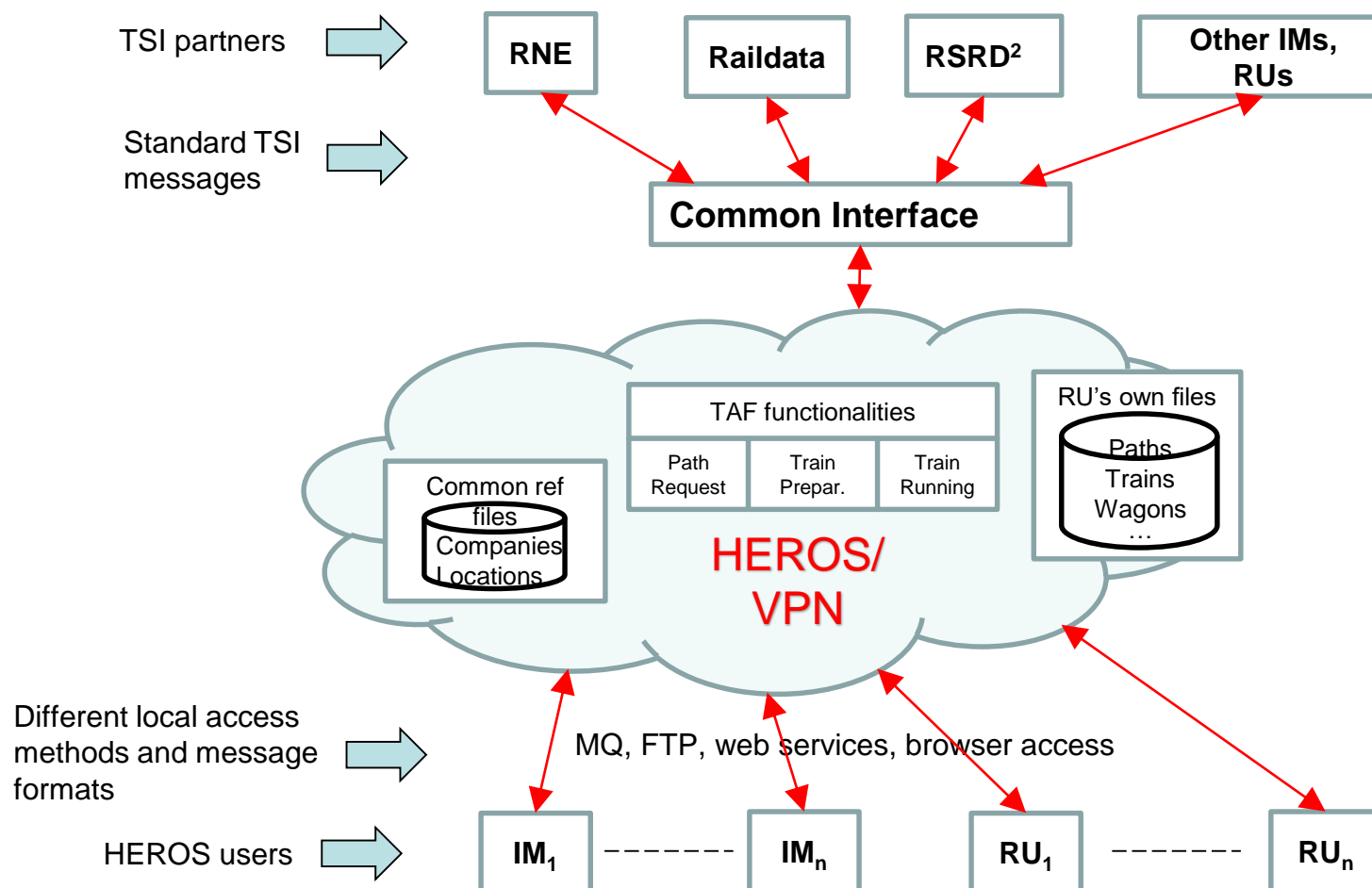
# The HEROS Interoperability Solutions

- HEROS is a **value added set of interoperability solutions** integrated in the Hermes Ecosystem, designed to help users achieve **interoperability** and **compliance** with **TAF** and **TAP TSI**
- It connects systems using different technologies **transparently** and in **real time**, ensuring **integration** with the tools of other key actors and sector organisations (e.g. **RNE**, **Raildata** and **UIP**)
- HEROS offers a **cloud based platform**, accessible via a simple web access tool, allowing freight RUs to:
  - Communicate with IMs (national traffic) and RNE (international traffic) for RU to IM data exchanges.
  - Interact with the larger freight RUs (specially Raildata members) at national and international level for RU to RU data exchanges.
- HEROS is Hit Rail's proposal for the RUs who are subject to the TAF TSI Regulation, but do not have the expertise, time or money to develop their own full IT solution.





# TAF in the Cloud concept



HEROS offers **three** solutions for the exchange of data between RUs and IMs, and between RUs and RUs:

- **HEROS Path Request** application (**PR**) allowing RUs to perform the entire four stage bid and offer process for the **request of paths from any IM** (who supports TAF)
- **HEROS Train Running** application (**TR**) providing the RUs with a continuous update of services on the day based on information from IMs
- **HEROS Train Preparation** application (**TP**) creating the **TSI Train Composition** to be sent to the IM as required

In addition to the TAF compliant Train Composition message, HEROS can also manage, in integrated way, the similar UIC **Hermes 30 message (H30)**, used to **pre-advise** the train **consist data** for international freight trains, offering in this way a solution to the **RU – RU** interaction too

# HEROS Path Request App

Hit Rail has developed a web application **allowing an RU to request a path** from an IM

- It allows RUs to bid in TSI format to any connected IM, and allows IMs to become TSI compliant by connection to their path allocation systems
- It allows for **reuse** of previous messages and templates
- It's compliant with the TSI **four stage bid and offer process** (request, offer, acceptance, confirmation)
- It uses the **TAF messages** for path request, path details, path details refused, path confirmed, path cancelled, path not available and receipt confirmation, path details with status 'booked'
- **Compliance of HEROS messages with the official TAF TSI data catalogue has been verified and assessed by the EUAR**

# HEROS Train Running App

Hit Rail has released a **Train Running** application providing the RUs with a **continuous update of services** on the day.

The App performs the following functionalities:

- It automatically creates a copy of the **train timetable** of the day
- The RU receives **reports on the running** of its international trains from RNE TIS, and of its domestic trains directly from the local IM
- The RU receives **reports on the delays** of its trains from the same actors as above
- When an IM becomes aware of **service disruption**, the App receives the **Train Running Interruption message** and updates the App with details
- A **map display of the services** is under preparation



# HEROS Train Preparation

- HEROS Train Preparation app is already able to process H30 data and it will be extended to create the TAF **Train Composition** message
- It will combine the **H30 data** (received from previous RU or captured) with **Path Request data**, and Train Composition will be sent to respective IM
- **Version 2 of the message H30** will make the transformation into Train Composition much easier
- In addition, Hit Rail developed a **converter of Hermes H30 messages** between different XML versions and different communication protocols
- UIC's H30 message is used by about 40 RUs, both national and private. **Different versions** of H30 messages are in use
- Maintaining different versions is expensive and source of possible errors. The HEROS **H30 converter** can help an RU wishing to support only one version.



# Works and projects under way (1)

- Since 2016 Hit Rail is providing **consultancy to Alstom**, the Italian SW house implementing certain areas of the EU's **TAF** regulation (Common Interface, Train Running, Short term Path request) in the systems of **RFI** (Rete Ferroviaria Italiana)
- Based on this positive collaboration, Hit Rail and Alstom signed a **strategic cooperation agreement**, in order to work together on joint customer projects to develop, implement and test systems that enable compliance with the TAP and TAF Regulations
- The two companies are currently discussing with various partners a proposal to be submitted in a next CEF call, for the ICT support of **intermodal freight management in the ports of Rotterdam and Genova** (European freight corridor #1)
- A similar strategic cooperation agreement is in place between Hit Rail and Raildata, where Raildata concentrates mainly on **RU to RU** interaction, and Hit Rail on **RU to IM**



## Works and projects under way (2)

- In 2016 Hit Rail and Informatica Feroviara, daughter company of the Romanian IM CFR, submitted to INEA a project intended to **implement the whole set of TAF TSI messages** in the Romanian rail environment
- The proposal was approved, but unfortunately before signature of the Grant Agreement Informatica Feroviara withdrew, due to internal organizational changes
- Hit Rail is **holding contacts to implement similar common national TAF solutions** (locally adapted) in Italy (Mercitalia), Belgium (Lineas), Austria (RCA) and France (SNCF Fret)
- The intention is to **cover all the processes** involved in the rail freight business.
- Partnership is under discussion with the local Infrastructure Manager, the incumbent freight operator and the small or medium local freight operators



# Thank you for your attention

I will be glad to meet you in the **Market Place** at the end of the workshop, for a **Real life demonstrator** of our solutions

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