



INTERNATIONAL UNION
OF RAILWAYS

SFERA USER GROUP

Kick-off meeting

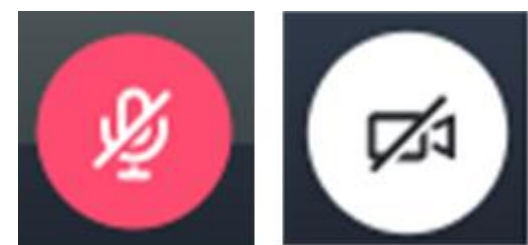
Daniele Arena, Philippe Stefanos, Sophie Serodon

UIC

15 April 2021

Welcome to the User Group Kick-Off Meeting

- Please mute your microphone and turn off your camera if you're not talking



- There will be a Q&A/Discussion session at the end, so please keep the questions for then



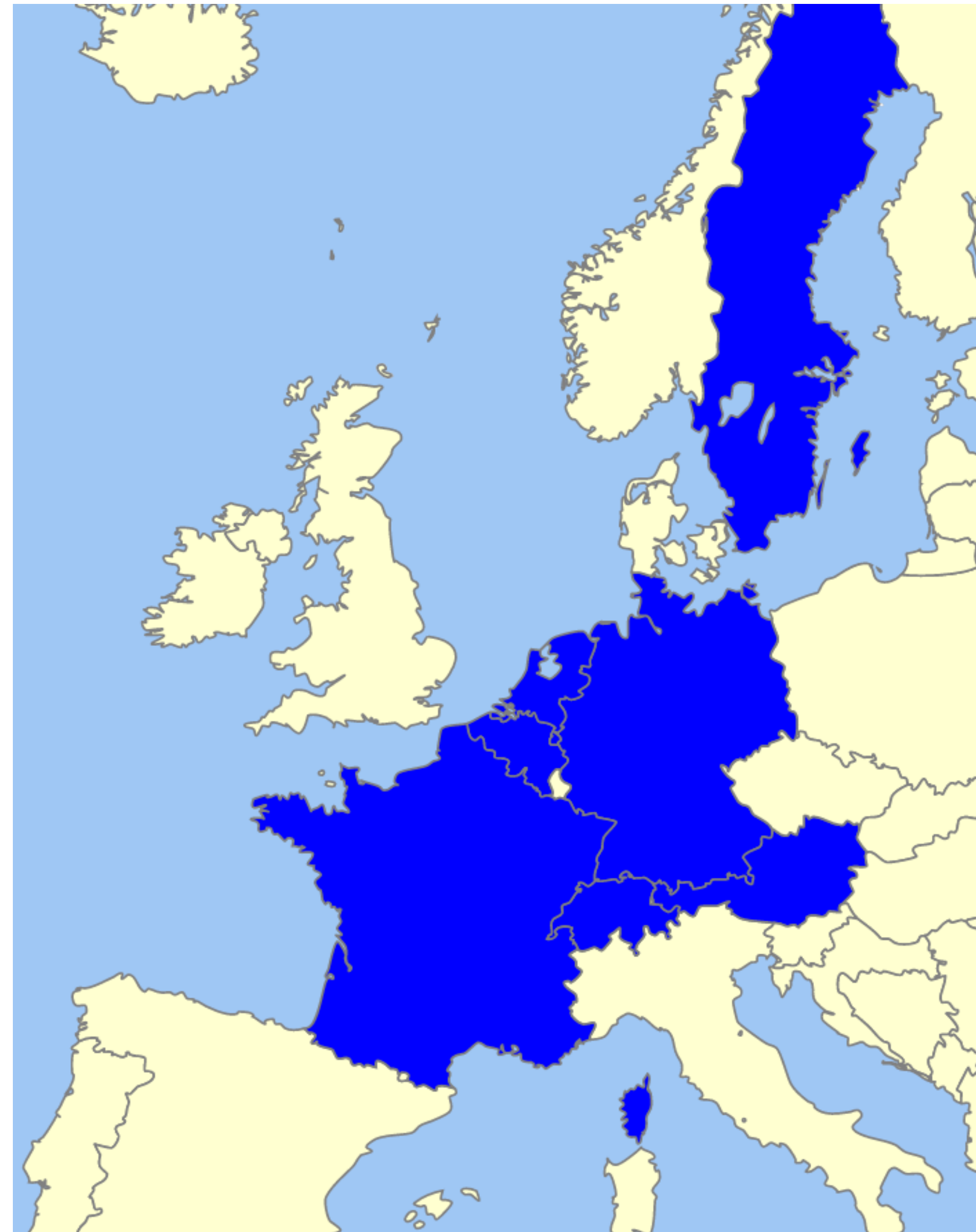
Agenda

- The SFERA Maintenance Group
- Expectations from the User Group (UG)
- Presentation of the User Group:
 - Participants
 - Objectives
 - How it works

 - Short introduction to the IRS:
 - IRS maintenance (IRS, Core Appendices, SS126)
 - Context - Aim of SFERA to fit with the dev. of AoE (TS)
- Q&A
- Next Steps for the UG

The SFERA Maintenance Group

- UIC Project
- Member railways:
 - DB
 - Infrabel
 - NMBS/SNCB
 - NS
 - ÖBB
 - ProRail
 - SBB
 - SNCF
 - Trafikverket



Presentation of the User Group:

Background

- The SFERA protocol was created on initiative of IMs and RUs at UIC
 - To harmonise DAS board-ground communications
 - To avoid vendor lock-in
 - To allow IMs to offer the same interface to all RUs
- Right from the start, the SFERA WG decided to involve stakeholders
 - Stakeholder meeting in November 2018
- Maintenance is still handled in the UIC context (i.e. member IMs, RUs)
 - But stakeholder input and feedback is essential
 - Hence the creation of the User Group, open to all



Expectations from the UG

Bart Van der Spiegel, Infrabel

User Group members are invited to:

- *introduce themselves (name, role, company)*
- *express their interest in the User Group and expectations from this collaboration (with both other User Group members and the Working Group members)*

Expectations of the User Group

- Getting knowledge/familiar of/with SFERA
- Develop a more generic product & interoperable solution based on SFERA
- Follow experience in implementing SFERA
- Inform UG about implementation and alignment (neighbours, UG members' status in implementation): Tour de table implementation
- Assess the benefits of using SFERA
- Getting support to SFERA implementation
- Follow SFERA development
- SFERA within ERA's projects

Presentation of the User Group:

- Participants

Supplier/Tech
IM/RU

ALSTOM	PROSE AG
A-Train B	Rail Systems Engineering Sdn Bhd
Bombardier Signal Germany GmbH	Railergy
CAF Signalling	Railtraxx NV
Crossrail Benelux NV	REDS S.A.
Cubris	Siemens Mobility GmbH
EVOLIT Consulting GmbH	Slovenske Zeleznice d. o. o.
INAVET GmbH	Spoorgloren
Knorr-Bremse	Transrail Sweden AB
LLC "AVP Technology"	TTG Europe Ltd

The User Group, introduction

Presentation of the User Group:

Objectives

- Provide support in implementing the SFERA protocol
- Share feedback on the IRS based on its application by the various parties
- Lower the threshold for using/facilitating the use of SFERA by exchanging experience and offering mutual support in the application of SFERA
- Initiate requests for changes to IRS 90940 to the SFERA Maintenance Group based on experience in implementations, production possibilities

Presentation of the User Group:

How it works

- The User Group meets up to four times a year, based on:
 - relevant requests, questions or difficulties
 - implementation experiences that User Group members can share
- Details in the Terms of reference:
<https://uic.org/events/irs-90940-sfera-change-requests-and-sfera-user-group>

Presentation of the User Group:

How it works

- The User Group can propose and discuss change requests (CR) to the IRS 90940
- If the User Group collegially endorses a CR, that CR will be given priority over individually submitted CRs received by the Working Group.
- (CRs can already be submitted at <https://uic.org/events/irs-90940-sfera-change-requests-and-sfera-user-group#Change-Request-submission>)

- You were invited to watch the launch webinar if not familiar with the IRS, <https://uic.org/events/uic-irs-90940-sfera-launch>
- IRS maintenance
- Context - Aim of SFERA to fit with the development of ATO over ETCS

Short introduction to the IRS



Data exchange with Driver Advisory Systems (DAS) following the SFERA protocol

IRS 90940

Short introduction to the IRS

IRS maintenance – Structure



Data exchange with Driver Advisory Systems (DAS) following the SFERA protocol

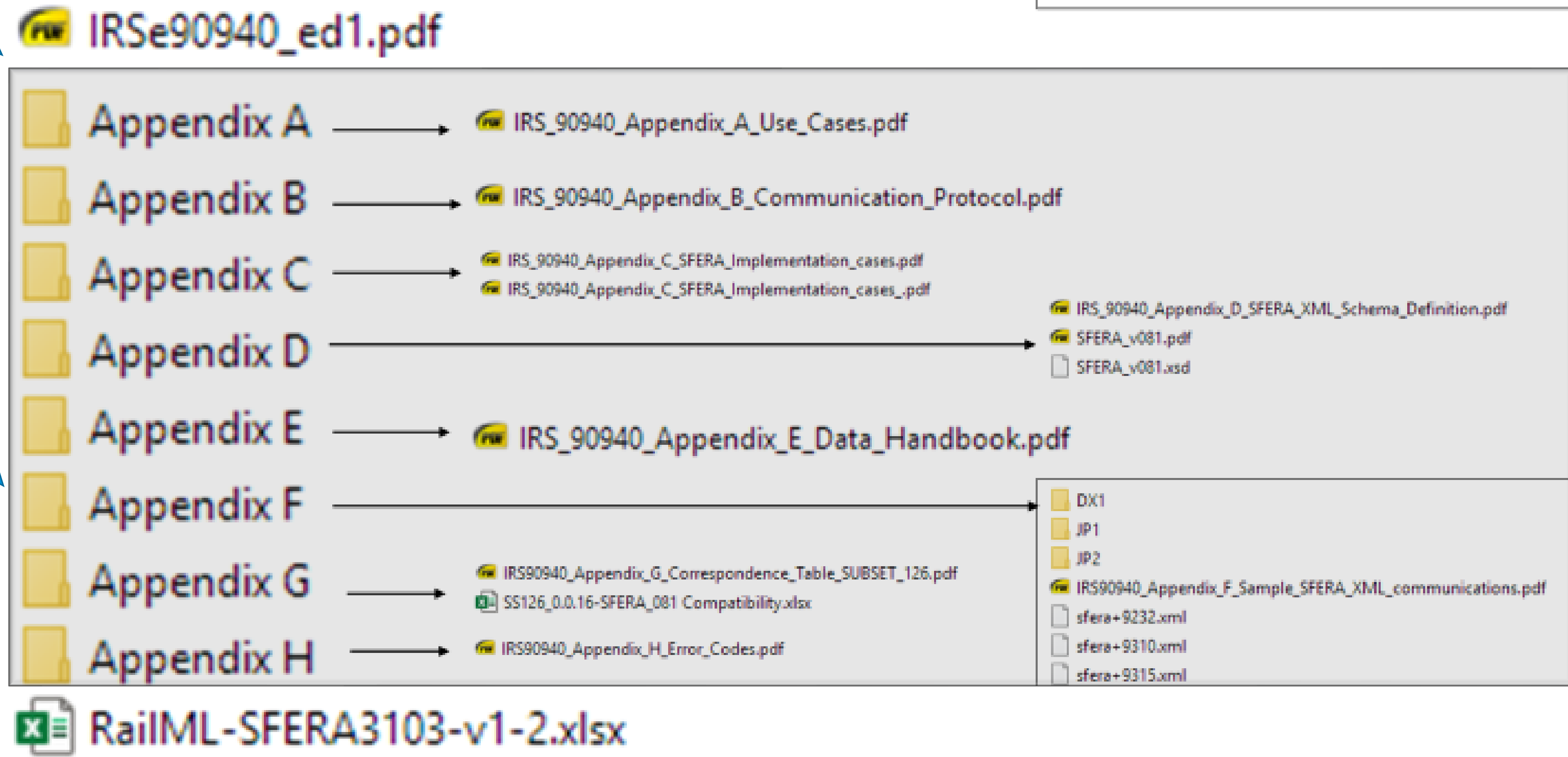
IRS 90940

- General part (general application)
- Appendices
 - Static appendices
 - Dynamic appendices

Short introduction to the IRS

IRS maintenance - Structure

- General part
- Appendices
 - Static appendices
 - Dynamic appendices
 - External document (not formally part of the IRS)



Short introduction to the IRS

IRS maintenance – IRS Core

- The IRS core document (main pdf)
 - General application
 - Internal (static) appendices
- Update process:
 - UIC Sector (technical) review
 - UIC Forum/platform (high-level) review
 - UIC Proofreading (& Translation)
 - Publication on <https://www.shop-etf.com/> (content available for free)

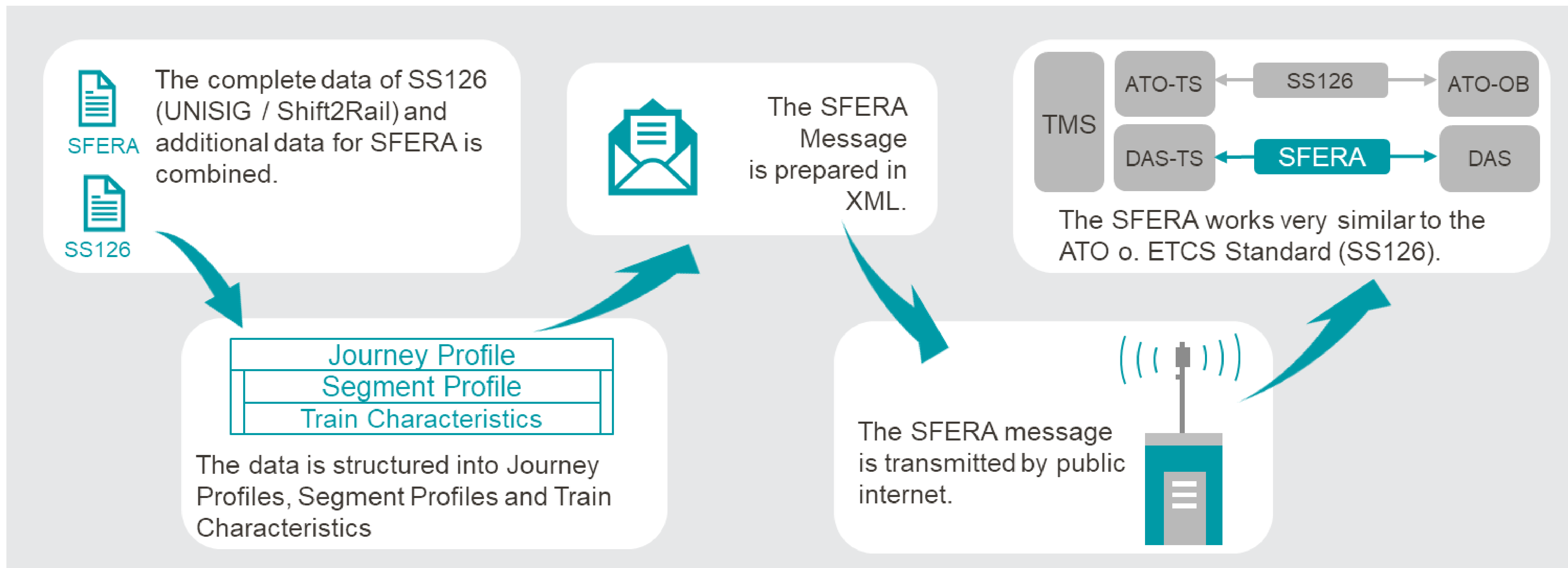
Short introduction to the IRS

IRS maintenance – Appendices

- IRS's internal (static) appendices treated as core document. (Previous slide)
- IRS's external appendices update process:
 - Platform/Forum approval if it is influencing the way the IRS has to be applied
 - Processing / Publication on [<https://appendices.uic.org/>]
 - If update is only informative: approval from WG is sufficient, goes directly to publication

Short introduction to the IRS

- IRS maintenance – Subset 126 development
DESIGNED WITH A CLEAR MIGRATION PATH TO ATO OVER ETCS.



Context

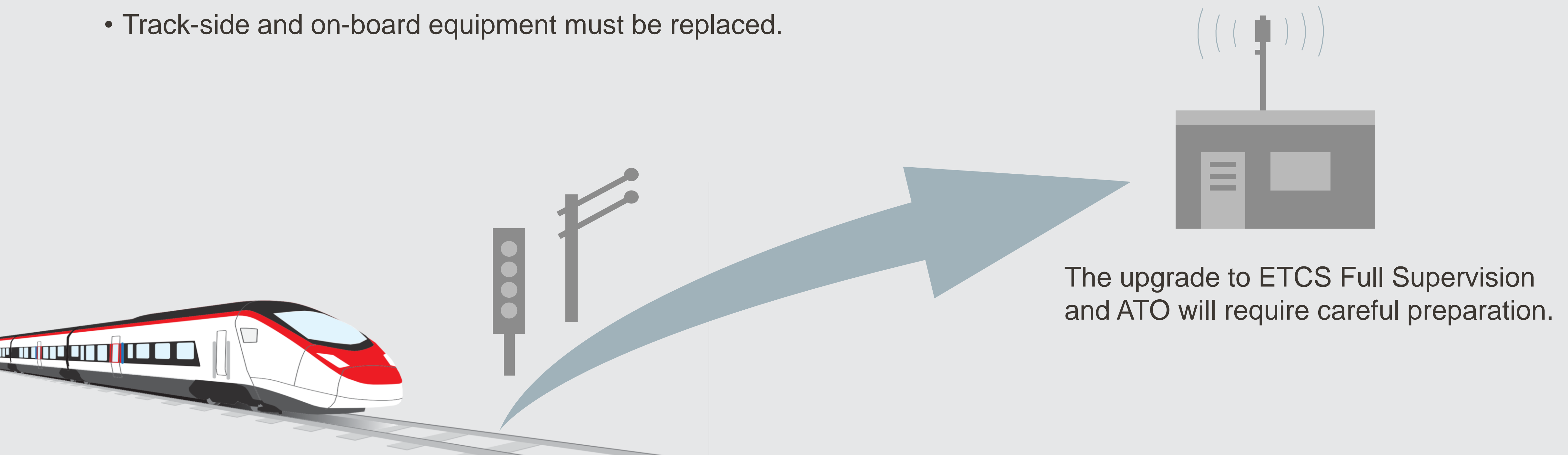
SFERA and ATO over ETCS

Thomas Sutter, SBB

ATO is Coming

Europe is Preparing for Automatic Train Operations Over ETCS.

- The railways are in the process of rolling out ETCS Full Supervision.
- This will enable ATO o. ETCS – a game changer for the Industry.
- Track-side and on-board equipment must be replaced.



The Technical Vision: Migration

SFERA is 'Laying the Rail' for ATO and Bridges the Gap Between Now and Then.

Class B ATP Systems

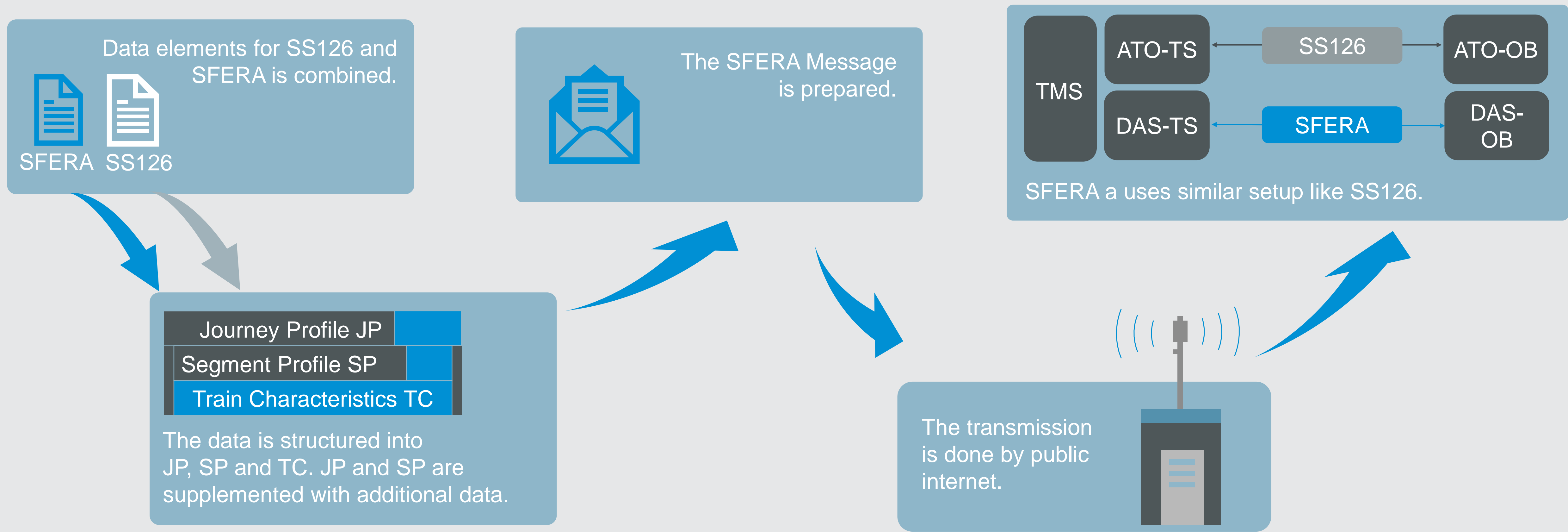
SFERA

- Enhance C-DAS and GoA1 operations
- Provide the driver with additional information in GoA1/2
- Usable on all ATP Systems (incl. ETCS L1LS)
- Simple, scalable, moderate investments
- Promotes precative preparation of data and systems for ATO
- Upgradeable and migration to ATO o. ETCS

ETCS & ATO o. ETCS

The SFERA Standard

The SFERA Standard is designed with a clear migration Path to ATO or ETCS.



SFERA Roadmap Vision

One standard for Europe.

Parallel standard phase

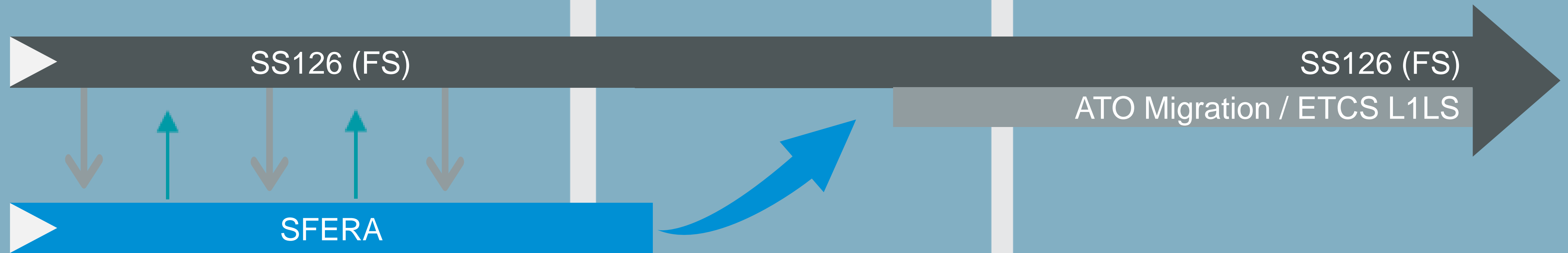
SFERA and SS126 are maintained in parallel. Changes in SS126 are integrated into SFERA. Smaller change requests for SS126 proposed by the SFERA WG.

Merging

The standards are merged into one norm.

Single standard phase

One single standard ensures interoperable DAS and ATO operations on all lines in Europe.

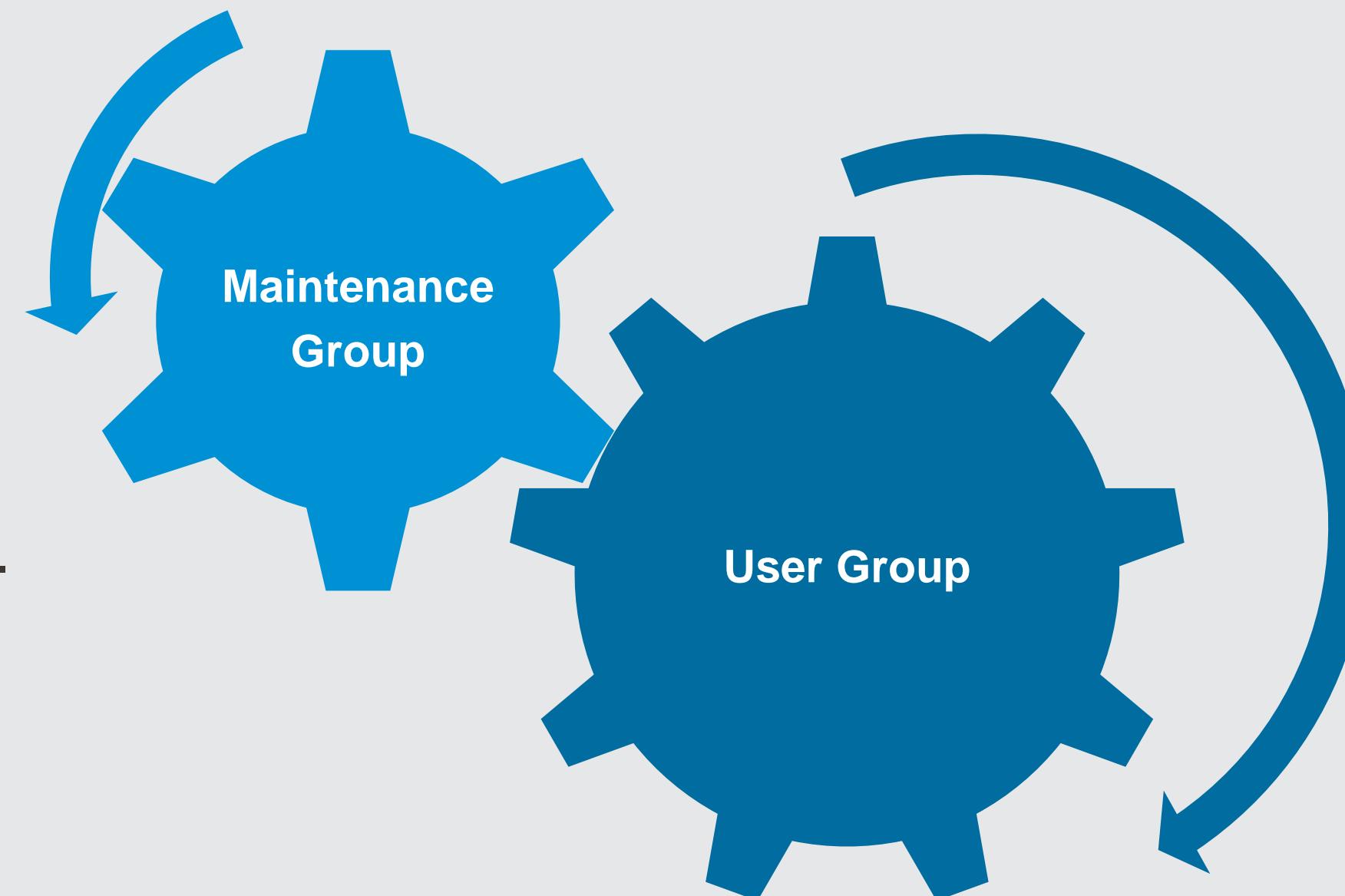


The SFERA Maintenance Structure

Two bodies to maintain the sfera standard.

Maintenance Group:

- The Maintenance Group updates the SFERA protocol.
- UIC opt-in Project.
- Meets twice a year.
- Participants must be UIC members.
- Decides on change requests.
- Leads the User Group.



User Group:

- The User Group is a platform for everybody that works with SFERA (Railways, Industry etc.).
- Organized by UIC and the Maintenance Group.
- Members discuss experiences with SFERA and help each other.
- Can draft change requests and submit them to the maintenance group.

Q&A – Discussion

- Inform UG about implementation and alignment (neighbours, UG members' status in implementation):
Tour de table – Status of implementation (each meeting)
- Details of parallel standards dev. are still to be defined.
AoE dev. is long term.
- Any company at a mature stage of implementation?
- Thalys test (2018): are there changes in SFERA working since that?
NL is currently working on a fully automated process. Accurate data at the track level. ATO experiments with the same data, good accuracy. Confirms the proof of concept.
BE is making it compatible with the current TMS system (CDAS), later with ATO.

Q&A – Discussion

How is the UK involved?

Australia is working with the UK for “Live info exchange” Linx.

For ERTMS outside Europe, SFERA could also have an outreach.

Progress of implementing SFERA in Sweden? Not yet. Pilot with CDAS atm.

IMs from the WG status?

SNCF: implementation will start with a project (expected end 2021/2022) and pilot tests.

DB: Plans to switch On-time specifications to SFERA

ÖBB: Entering dev. phase. Aiming at 2023 for test runs.

SBB: CDAS operating with proprietary interface. Planning to dev. a new CDAS. system. Analysing if will fit with SFERA or will propose CRs.

Prorail: Early stage dev.

(Cubris) Appendices alignment. Please submit a comment/CR about this.

Next Steps for the UG

Next meeting: before summer (June 2021?)

24th of JUNE 10h-12h

Proposal for content? E.g.

- Presentations on implementations
 - TB, Knorr-Bremse, questions arising from the first study
 - Crossrail, requirements from an RU
 - NS, Railtech presentation about CDAS, resulting CRs.
- Issues encountered
- Proposals for CRs
 - Cubris, appendices inconsistencies/clarification

Any proposals for topics: write to sfera@uic.org



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#UICrail

Thank you for your attention.