Appendix to **IRS 90940**

2nd edition, September 2022 **Last update 01/07/2022**

Original

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

Appendix F

Sample SFERA XML Communications

This appendix:
- is updated regularly,
- corresponds to the above date of update.

INTERNATIONAL UNION OF RAILWAYS

Appendix F – Sample SFERA XML Communications

1 Sample SFERA XML Communications

The samples are provided separately as XML files.

1.1 SFERA_B2G_RequestMessage_handshake

In this example the on-board device sends a request to the trackside, telling the trackside that it is able to drive in GOA1 mode in S-DAS or C-DAS. In the attributes of the HandshakeRequest it says that it is able to send the Status Report and to receive relatedTrainRequest.

1.2 SFERA_G2B_ReplyMessage_handshake

In this example the trackside responds with the driving mode that it is going to use, C-DAS-O.

1.3 SFERA_B2G_Request_JP_request

In this example there is a journey request for train Number 9358 on 2022-01-04.

1.4 SFERA_G2B_Reply_JP_request

The trackside sends a Journey Profile for Train 9358 on 2022-01-04.

A number of things to note in this example:

- List of Segment Profiles (in this case Segments 1, 2 and 3).
- For the station Hil track 1, the exact timing point is set.
- For the station Had track 2, only the stopping zone is set and the application must select the right timing point.
- There is an additional speed restriction back to 90 km/h.
- There is a temporary signal constraint specifying a return to 40 km/h and this speed must be reached at Position 3865 in this segment.
- There is a reference to Train Characteristics, Train_6 in this example

1.5 SFERA_B2G_Request_SP_request

In this example there is a Segment Profile request for SPs 1, 2 and 3.

1.6 SFERA_G2B_Reply_SP_request

This is the reply to the request for SPs 1, 2 and 3.

A number of things to note in this example:

In SP 1:

- Timing points and stopping zones are set to represent a specific train and station.
- Virtual balises which can be used for positioning.
- Signal, NetworkSpecificParameters are used for the signal. Some signals represent a maximum speed or announce that speed.
- Simple example of gradients and curves.

SP 2:

- There is a powerless section at Position 1086 in this segment.

SP 3:

- A speed profile is set for an ETCS track. - The next Infrastructure Manager is set.

1.7 SFERA_G2B_Reply_JP_request_9310, SFERA_G2B_Reply_JP_request_9315 and SFERA_G2B_Reply_JP_request_9232

Complete JP Profiles for the Belgian part of trains running between the Netherlands and France.

- The 9310 train is a high-speed train running from Amsterdam to Paris.
- The 9315 train is a high-speed train running from Paris to Amsterdam.
- The 9232 train is a normal train running from Amsterdam to Brussels.

1.8 SFERA_B2G_StatusReport_JP_inUse

In this example there is confirmation that the JP for Train 9358 on 2022-04-01 is in use.

1.9 SFERA_G2B_Request_TC_request

In this example there is a request for Train Characteristics from train to ground.

1.10 SFERA_G2B_Reply_TC_request

The trackside sends a reply with some Train Characteristics.

1.11 SFERA_G2B_EventMessage_JP_update

This is an update for the Journey Profile for Train 9358 on 2022-04-01. The JP version is increased and Had_2 is changed from stopping point to passing point.

1.12 SFERA_B2G_StatusReport-SingleCI / SFERA_B2G_StatusReport-MultipleCI_Message

Example of sending a status report from train to ground using the Common Interface.

1.13 SFERA_G2B_EventMessage_RelatedTrainInformation

Example of the related train information.

1.14 SFERA_G2B_EventMessage_CDASC_coastingAdvice

This is a coasting advice from DB Netz, traffic management centre Hannover, for Train 4711 of Company 0815 due to energy optimisation. The train should coast on Line 6100 from kilometre 248,6 (station Schwarzenbek) to kilometre 253,4 until it reaches 160 km/h, which is 70 km/h less than line speed. The advice is valid on 22 January 2022 from 02:15:22 to 02:17:07. As the “abs”-elements contain the same information as the other elements, there are no changes of line speed in-between.

1.15 SFERA_G2B_EventMessage_CDASC_constantSpeedAdvice

This is advice to drive at lower speed than line speed. It goes from DB Netz, traffic management centre Hannover, to Train 47011 of Company 0815 due to another train in front of it. The train should lower its speed on Line 1732 from kilometre 83,6 to kilometre 86,8 (distant signal in station Edesheim (Leine) Süd) to 60 km/h, which is 40 km/h lower than line speed. This advice is valid on 22 January 2022 from 12:53:21 to 12:57:04. As the “abs”-elements contain the same information as the other elements, there are no changes of line speed in-between.