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Federal Department of the Environment,
Transport, Energy and Communications

Federal Office of Transport

EDP and NDP's as a cause for a mandatory OBU upgrade



The challenges from the Swiss NSA point of view

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Why a mandatory Baseline 3 upgrade on the vehicles?

- Only B3 offers the harmonised braking curve model, which is a must for cross border traffic.
- Only B3 offers the functionality of ETCS Level 1 Limited Supervision which is necessary along the corridor RALP in Germany and Switzerland.
- Only B3 incorporates several CR's which will help to increase the reliability of the system.

Challenges linked to the upgrade (1)

the ETCS DMI

- For several functionalities a higher Safety Integrity Level (SIL) is requested for the B3 DMI.
 - The B2 DMI's on the existing locomotives have to be replaced.
 - Depending on the manner the ETCS DMI is structurally integrated, it is possible that in case of a failed DMI it will no longer be possible to switch easily to another available DMI (Diagnostic = SIL 0 DMI).
 - ➔ This will lower the reliability and as a consequence has a negative impact on performance.

Challenges linked with the upgrade (2)

CR 782

- B3 requires the fulfilment of CR782
 - If the CR 782 is completely implemented as requested by the SRS, it can lead to a safety or performance problem in case of unlinked balises.
 - The Federal Office of Transport will not authorise a vehicle with B3 if the CR 782 is completely implemented.
 - Until now the problem that the CR 782 introduced had also been recognised in Luxemburg and Germany

Challenges linked with the upgrade (3)

Radio Infill

- On parts of the Italian sections of the RALP corridor, ETCS Level 1 with radio infill is required.
- So far only one OBU supplier is offering radio infill.
- To solve this problem we have two options:
 - modify the transition (first priority is NTC SCMT and not ETCS), but then B3-trains would not run under ETCS control.
 - exchange vehicles at the Swiss/Italian border stations.

Challenges linked with the upgrade (4)

Authorisation process based on 2018/545/EU

- When a vehicle type authorisation is available for a vehicle type which got an upgrade to B3, the authorisation for placing each individual vehicle of this type on the market is still necessary.
- Pursuant to the practical arrangements for the railway vehicle authorization, article 34 (3) says:

*The decision of the authorising entity shall be issued **within one month** following the date of receipt of the application in case of authorisation in conformity to type in accordance with Article 14(1)(e).*

- Waiting one month (worst case) after an executed upgrade for a formal check on two (ANNEX I) documents and seven formal checks (ANNEX II) doesn't positively impact the railway business.



Conclusion

- A great willingness of all parties to cooperate in order to solve the aforementioned challenges is required
- We are forced to work together.