

Dear Christian, dear railML community,

Some thoughts from the point of view of video-based infrastructure data measurement on level crossings. First of all: Our modelling concepts are far from being comprehensive and sufficient for an expert in the field of level crossings and mainly reflect the situation in Germany and Austria. We would therefore be very pleased to receive information from other countries and to have a specialist discussion.

Please note the suggestions and questions under your individual points:

Am 08.03.2018 um 17:20 schrieb Christian Rahmig:> @protectionType

> ... describes the technical protection of the level crossing

> (doubleHalfBarrier, fullBarrier, halfBarrier, lights, none)

- * singleFullBarrier [de: Vollschränke; DB Netz: LzV or mVS]
- * doubleHalfBarrier [de: doppelte Halbschränke; DB Netz: LzHH]
- * singleHalfBarrier [de: einfache Halbschränke]
- * lightsOnly [de: Lichtzeichen; Lz]
- * noBarrier (Saltire/Crossbuck only) [de: nichttechnisch gesichert/ntg, nur Andreaskreuz]
- * none (rarely, only in industrial plants or locomotive workshops) [de: ohne Andreaskreuz (selten, nur in Industriegebieten oder Bahnwerken)]

Question 1: However, a distinction between level crossings “With barriers AND lights [de-DB Netz: LzV = Lichtzeichen+Vollschränke]” and “With barriers but WITHOUT lights [de-DB Netz: mVS = mechanische Vollschränke]” does not seem possible; perhaps a different detailing would be more useful?

Question 2: What about "gates" as level crossing protection? Such gates (which sometimes blocking the railways tracks too, when not used) are common in Scotland and Ireland IMHO (see <https://www.youtube.com/watch?v=Xh8XI6t7Oqg> for an example). Shall they included into the barriers in the Middle Europeas sense or should a distinction be modelled?

> @activation

> ... describes how the level crossing is being activated (automatic (by
> train), local (by staff), remote (by staff))

* infrastructureRoute (IM will care for closing, but level crossing will activated by setting the train route under normal conditions) [de: Hp-abhängig]

* infrastructureManual (IM will care for closing, by station master or signal box/CTC operator or level-crossing attendant)

* trainAutomatic (RU will 'care' for closing [de: zugbediente Einschaltung FÜ/Lo])

* none (default value for @protectionType:nonTechnicallySecured and @protectionType:none; rarely for the others, when level crossing is available but closed forever)

> @obstacleDetection [bool]

> ... states whether the level crossing is equipped with technical system

> for object detection (radar, camera)

This causes the question of a missing (optional) attribute, therefore I suggest to avoid such a optional boolean value.

In addition, a distinction should be made or a clear description given between monitoring the functionality of the level crossing and obstacle-free detection of the intersection area.

> @opensOnDemand [bool]

> ... states whether the level crossing is by default closed for road

> transport and the barriers are opened only on demand

This causes the question of a missing (optional) attribute too. For us the use case of this attribute is not very clear in the railML 3 domain.

Best regards,

Tobias Bregulla and the whole Bahnkonzept team
