
Subject: Possession Mgmt Use-Case

Posted by [Stefan Wegele](#) on Fri, 29 Oct 2021 15:14:26 GMT

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Dear all,

in IS-workgroup we collect use-cases for TrafficManagementSystems. One of them is "management of possessions" with the description below.

Here we are interested in feedback on how to organize this in context of RailML: ignore, IS, or a dedicated domain.

Best regards
Stefan

Use-Case description

Possession is a takeover of responsibility for a part of railway network from the "train operator" to the PICOP (Person In Charge Of Possession).

The objective of a possession is to ensure safe construction/maintenance works on the railway infrastructure. The safety is ensured by a set of safety measures:

- Temporal speed restrictions around the construction work (including neighbour tracks if needed)
- Closed tracks for most of the trains except the specific once.
- Specific position of the switches (similar to flank protection)

Possession management is safety relevant as any failure could result e. g. in a collision of passenger train with a construction train with > 1000 involved people.

Possession undergoes a specific life cycle (here the default "path"):

- It is planned by the maintenance system, defining elements to be worked on and additional definitions (e. g. used machines) which could influence the required safety measures.
- The safety measures are planned by a signalling specialist.
- Timetable planning department defines time intervals for activation, as well as rules for disturbed case (e. g. let Train 1002 pass if delayed less than 5 minutes).
- Train operator modifies planned time intervals according to the expected traffic situation, e. g. by postponing start of possession.
- When the PICOP and his team arrive at possession area
 - o He safely identifies his location, to prevent activation of wrong possession
 - o Requests the activation of Possession
 - o The train operator verifies,
 - * That timetable requirements for disturbed case are implemented (train 1002 has passed)
 - * No unexpected trains are inside of the possession area
 - o Train operator activates the speed restrictions defined in Possession.SafetyMeasures
 - o Train operator puts switches in positions defined in Possession.SafetyMeasures
 - o Train operator verifies all the safety requirements defined in Possession are fulfilled
 - o Train operator notifies the PICOP about the possession activation
 - o PICOP and his team start working
- After PICOP finished the work
 - o He ensures, that his team has left the possession area and it is ready for operations
 - o He requests the train operator to finish possession
 - o Train operator

- * releases blocked switches
- * removes temporal speed restrictions
- * closes the possession

To make the life more complicated, the lifecycle of possessions can vary:

- possession can be stopped and reinstated later
 - two possessions can be assigned to one PICOP
 - one big possession could be split into two small ones, without deactivation/reactivation phase
 - PICOP could require to move possessed switches to check their proper function.
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