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# WS D – Generic requirements
# Deliverable D.1.4 – Catalogue of Commands and Statuses

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## Approvals

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## Section 1 – Executive Summary

One of the objectives of the INESS project is to produce a database of functional requirements for interlockings. This database contains the requirements of each participating railways, in a harmonised format and structure. From this point, a core of functionalities used by a maximum of railways will be set: this common kernel contains the common functionalities for future interlockings, including functionalities specially required by ERTMS.

In parallel of the requirements database setting, documents aiming at helping to understand the requirements and to check their correctness and their completeness are produced. The "Catalogue of Commands and Statuses" is one of them: it will enable the individual railways to understand the requirements better by having their national terms for commands and statuses mapped to the commands and statuses used in the database of functional requirements.

## Section 2 – Introduction

The aim of the INESS project is to define and develop specifications for a new generation of ERTMS compliant interlocking systems, and thus to extend and enhance the standardisation process according to the current European policies. In this context, different objectives have been defined; objectives referring to various fields such as economic, system design, safety case process or requirements engineering.

One of these objectives is to produce a database of functional requirements for interlockings. This database will contain the requirements of each participating railways (from Germany, Italy, the Netherlands, Spain, Sweden, and the United Kingdom) in a harmonised format and structure. After the capture of these national requirements, a core of functionalities used by a maximum of railways will be set: this common kernel which will contain the common functionalities for future interlockings, including functionalities specially required by ERTMS.

The first part of this report is a catalogue of all the commands that operate an interlocking system in the six national railways involved in the INESS project, with the name of each national command. Each participating railway provided the national commands, which were mapped to the commands in the database. The second part is a list of all the statuses that an interlocking system provides to external users about its operation in the six same railways (with the translations in each language). The participating railways provided translations to national terms for these statuses.

With the use of the catalogue of commands and statuses, the requirements capturing process will be more precise and unambiguous. The railway experts will be certain that they are describing the functionality of their interlocking systems correctly, as the commands and statuses which are used in the database of functional requirements can be checked with their national expressions and terms.

## Section 3 – Catalogue of commands and statuses

# 1. Objectives and methodology.

## 1.1 Objectives

The "Catalogue of Commands and Statuses" (Deliverable D.1.4) has two main objectives:

- The first one is to collect the commands that operate an interlocking system in the six national railways involved in the INESS project and then to give the name of all these commands in each of the countries. It is done from the perspective of the interlocking system and therefore includes only commands that are input directly to the interlocking system, regardless of the user or system that initiates the command.

- The second one is to collect all the statuses that the interlocking system provides to external users about its operation in the six national railways involved in the INESS project and then to translate these statuses in the different languages. It is done from the perspective of the interlocking system and therefore it includes only statuses that are output directly from the interlocking system, regardless of the target user or system.

## 1.2 Methodology

This document has been elaborated in close cooperation between UIC and the 6 railways involved in the INESS project (ADIF, BV, DB, Network Rail, ProRail and RFI) according to the following process.

A first list of commands and statuses has been set from the requirements database used in the beginning of the project and which was inherited from the Euro-Interlocking Project Baseline 8.0. The commands and statuses already in this database have been gathered in a document.

These lists have been sent to railway signalling experts from each involved railway. They were asked for commenting the lists and proposing enhancement, but also for adding commands and statuses which could be missing. Moreover they were asked to translate the statuses and to give the name of the command in their national system.

From their contributions, it became possible to establish definitive lists of commands and statuses. These lists have been checked again by the experts in order to be sure that they were consistent and then it became possible to finalize the document as a result of a collective work.

# 3. List of commands

This part contains the list of all commands that operate an interlocking system and are used in 4 of the 6 national railways involved in the INESS project, with their name in each country (the commands from DB and BV will be added in the later stage). It is written from the perspective of the interlocking system and therefore includes only commands that are input directly to the interlocking system, regardless of the user or system that initiates the command.

(Note: in the case the command is used in a country and there is no specific name, it is only reported as "Used").

| | Command User | Italy | Netherlands | Spain | U.K. |
|---|---|---|---|---|---|
| *1 Route* | | | | | |
| Acknowledge route | Signaller | | | | SLOT |
| Set route blocking | Maintainer | | VHR | | Used |
| Remove route blocking | Maintainer | | TSR | | Used |
| **1.1 Main route setting** | | | | | |
| Set main route | Signaller | IT | N, A | I, A | QR(M) |
| Set main route | Automatic route setting system | | | | QAR(M) |
| Set main route, overlap 0 | Signaller | IT+IT TBO | | | |
| Set warning route | Signaller | | | | QR(W) |
| Set drive on sight route | Signaller | IT+TX | ROZ | R | QR(PA) |
| Set conditional route | Signaller | | EB | | |
| Set STS route | Signaller | | STS | | |
| Set route for freight train | Signaller | | G | | |
| Set composite main route | Signaller | | | I | |
| Set main route to key-locked point on the line | Signaller | | | I | |
| **1.2 Shunting route setting** | | | | | |
| Set shunting route | Signaller | IST or ISTM | | M | QR(S) |
| Set shunting route to non-electrified tracks | Signaller | IST FTE or | | | |

| | Command User | Italy | Netherla nds | Spain | U.K. |
|---|---|---|---|---|---|
| | | ISTM FTE | | | |
| Set call-on route | Signaller | | | | QR(C) |
| Set maintenance route | Signaller | ISTC or ISTTM | | | |
| Accept shunting route | Shunter | | | | Used |
| **1.3 Route cancellation** | | | | | |
| Cancel route | Signaller | | H | DAI | QXS |
| Cancel residual route | Signaller | | RV | | Used |
| Emergency route cancel | Signaller | | | DEI | |
| Cancel STS route | Signaller | | H-STS | | |
| Cancel main route | Signaller | IT A or IT ANN | | | |
| Release main route | Signaller | IT+TL | | | |
| Cancel shunting route | Signaller | IST A or ISTM ANN | | | |
| Release shunting route | Signaller | IST TL or ISTM TL | | | |
| Cancel maintenance route | Signaller | ISTC A or ISTTM ANN | | | |
| Release maintenance route | Signaller | ISTC TL or ISTTM TL | | | |
| *2 Local shunting area* | | | | | |
| Set local shunting area | Signaller | ZOM | TSB | ML | |
| Withdraw local shunting area | Signaller | ZOM ANN | IB-VR | AML | |
| Emergency withdraw local shunting area | Signaller | | | EML | |
| Accept local shunting area | Shunter | | IB | | |
| Return local shunting area | Shunter | | IB | | |
| Block local shunting area | Signaller | | VHB | | |
| Unblock local shunting area | Signaller | | TSB | | |
| *3 Powered Moveable Elements* | | | | | |
| Set out of operation | Signaller | DV ES | | | |
| Return in operation | Signaller | DV ES ANN | | | |
| Remove element power | Signaller | DV DISAL | | | |
| Return element power | Signaller | DV ALIM | | | |
| **3.1 Movement** | | | | | |
| Move | Signaller | DV N/DV R | IB | AN, AI, MAG | QPQ |
| Move | Shunter | | IB | | |
| Move | Maintainer | DV N/DV R | | | |
| **3.2 Movement of occupied elements** | | | | | |

| | Command User | Italy | Netherlands | Spain | U.K. |
|---|---|---|---|---|---|
| Move occupied | Signaller | DV TB N/DV TB R | IB-B | MAE, ANE, AIE | |
| **3.3 Movement of trailed elements** | | | | | |
| Move trailed | Signaller | DV TC N/ DV TC R | | | |
| **3.4 Blocking moveable elements** | | | | | |
| Set blocking | Signaller | DV N/DV R | VHB | BA | QRDP |
| Set blocking | Maintainer | | | | Used |
| Remove blocking | Signaller | DV AUT | TSB | ABA | QXRDP |
| Remove blocking | Maintainer | | | | Used |
| Override blocking | Signaller | | | | QZRD |
| **3.5 Local element operation** | | | | | |
| Release to local operation | Signaller | | | | QR |
| Accept local operation | Shunter | | | | NCR down |
| Withdraw from local operation | Signaller | | | | QXR |
| Return from local operation | Shunter | | | | NCR up |
| Release for maintenance | Maintainer | DV RC AM ESC | | | |
| Accept release for maintenance | Signaller | DV ES IS | | | |
| Return from maintenance | Maintainer | DV RC AM INC | | | |
| Accept return from maintenance | Signaller | DV ES IS ANN | | | |
| **3.6 Point handle** | | | | | |
| Release point handle | Signaller | MMD | | | |
| Cancel release of point handle | Signaller | MMD ANN | | | |
| **3.7 Route blocking** | | | | | |
| Set ARS blocking on a powered moveable element | Signaller | | VHR-E | | |
| Remove ARS blocking from a powered moveable element | Signaller | | TSR-E | | |
| Set route blocking on a powered moveable element | Signaller | | VHR | BIA | |
| Remove route blocking from a powered moveable element | Signaller | | TSR | DIA | |
| ***4 Key-locked Moveable Elements*** | | | | | |
| Release key | Signaller | FD AUT/SC R | | AC | QR |
| Cancel key release | Signaller | FD N/ SC N | | AAC | QXR |
| Release for maintenance | Maintainer | FD RC AM ESC | | | |
| Accept release for maintenance | Signaller | FD ES IS | | | |
| Return from maintenance | Maintainer | FD RC AM INC | | | |

| | Command User | Italy | Netherlands | Spain | U.K. |
|---|---|---|---|---|---|
| Accept return from maintenance | Signaller | FD ES IS A | | | |
| Set out of operation | Signaller | FD ES | | | |
| Return in operation | Signaller | FD ES A | | | |
| **4.1 Blocking Elements** | | | | | |
| Set blocking | Signaller | | | BA | QRD |
| Set blocking | Maintainer | | | | Used |
| Remove blocking | Signaller | | | ABA | QXRD |
| Remove blocking | Maintainer | | | | Used |
| *5 Signal* | | | | | |
| **5.1 General** | | | | | |
| Set signal to stop | Signaller | SE CH | | CS | |
| Set all signals to stop | Signaller | SE CH | | | QAS |
| Block signal | Signaller | | | BS | |
| Unblock signal | Signaller | | | ABS | |
| Reclear all signals | Signaller | | | | QXAS |
| Set all signals in a group to stop | Signaller | | | | QSG |
| Reclear all signals in a group | Signaller | | | | QXSG |
| Release for maintenance | Maintainer | SE RC AM ESC | | | |
| Accept release for maintenance | Signaller | SE ES IS | | | |
| Return from maintenance | Maintainer | SE RC AM INC | | | |
| Accept return from maintenance | Signaller | SE ES IS ANN | | | |
| Set out of operation | Signaller | SE ES | | | |
| Return in operation | Signaller | SE ES A | | | |
| **5.2 Main signal** | | | | | |
| Set signal to drive on sight | Signaller | | | R | |
| Set signal to stop | Maintainer | SE RC BCH | | | |
| Accept signal replacement | Signaller | SE BCH | | | |
| Cancel signal replacement | Maintainer | SE RC BCH A | | | |
| Accept signal replacement cancellation | Signaller | SE BCH A | | | |
| **5.2.1 Automatic operation** | | | | | |
| Set signal to automatic oversetting mode | Signaller | | A | | QAU |
| Cancel signal from automatic oversetting mode | Signaller | | N | | QXAU |
| **5.3 Shunting signal** | | | | | |
| Set proceed with caution | Signaller | | | M | |
| Set signal to cancelled | Signaller | | | DAI | |

| | Command User | Italy | Netherlands | Spain | U.K. |
|---|---|---|---|---|---|
| Set out of operation | Signaller | SB ES | | | |
| Return in operation | Signaller | SB ES A | | | |
| **5.4 Line Block signal** | | | | | |
| Set signal to stop | Signaller | | | | QXS |
| Reclear signal | Signaller | | | | QS |
| Reclear all signals | Signaller | | | | |
| **5.5 Other signals** | | | | | |
| **5.6 Route blocking** | | | | | |
| Set ARS blocking on a signal | Signaller | | VHR-E-B | | |
| Set ARS blocking on a route exit signal | Signaller | | VHR-E-E | | |
| Remove ARS blocking from a signal | Signaller | | TSR-E-B | | |
| Remove ARS blocking from a route exit signal | Signaller | | TSR-E-E | | |
| Set route blocking on a signal | Signaller | | VHR-B | BS | QRD |
| Set route blocking on a route exit signal | Signaller | | VHR-E | ABS | |
| Remove route blocking from a signal | Signaller | | TSR-B | | QXRD |
| Remove route blocking from a route exit signal | Signaller | | TSR-E | | |
| Override route blocking | Signaller | | | | QZRD |
| Set ARS sub-area blocking | Signaller | | | | QRDARS |
| Remove ARS sub-area blocking | Signaller | | | | QXRDARS |
| *6 TVP section* | | | | | |
| Release for maintenance | Signaller | CDB ES IS | | | |
| Release for maintenance | Maintainer | CDB RC AM ESC | | | |
| Return from maintenance | Signaller | CDB ES IS A | | | |
| Return from maintenance | Maintainer | CDB RC AM INC | | | |
| Set out of operation | Signaller | CDB ES | | | |
| Return in operation | Signaller | CDB ES A | | | |
| **6.1 Route Blocking on a TVP section** | | | | | |
| Set route blocking on a TVP | Signaller | | | BTV | QRDT(AC) |
| Remove route blocking from a TVP | Signaller | | | ABTV | QXRDT(AC) |
| Set route blocking on a TVP | Maintainer | | | | Used |
| Remove route blocking from a TVP | Maintainer | | | | Used |
| **6.2 Axle counters** | | | | | |
| Reset of an axle counting TVP section | Signaller | TI Bca | | NCV | Q1T(REST) |
| Reset of an axle counting TVP section | Maintainer | TI Bca | | | |

| | Command User | Italy | Netherlands | Spain | U.K. |
|---|---|---|---|---|---|
| Reset acknowledge | Signaller | | | | Q2T(REST) |
| *7 Line block* | | | | | |
| Reverse travel direction | Signaller | BL RC or BL CS | IB | | |
| Emergency reverse travel direction | Signaller | BL TB | | | |
| Set travel direction to neutral | Signaller | | | AB | |
| Permit travel direction reversal | Signaller | BL CS | | | |
| Travel direction blocking | Signaller | | | PB | |
| Travel direction unblocking | Signaller | | | APB | |
| Reset line block | Signaller | | | AB | |
| Set route blocking to the line | Signaller | | | BTV | |
| Remove route blocking to the line | Signaller | | | ABTV | |
| *8 Level crossing* | | | | | |
| **8.1 Individual Track** | | | | | |
| Request activation-individual track | Signaller | | | | |
| Maintain activation after first train-individual track | Signaller | | | | |
| Request deactivation-individual track | Signaller | | | | |
| Auxiliary deactivation-individual track | Signaller | | | | |
| Permit deactivation by vehicle detection-individual track | Signaller | | | | |
| Remove auxiliary deactivation-individual track | Signaller | | | | |
| **8.2 All Tracks** | | | | | |
| Request activation-all tracks | Signaller | | IB | | |
| Request activation-all tracks | Local device operator | | | | |
| Request deactivation-all tracks | Signaller | | IB | | |
| Request deactivation-all tracks | Local device operator | | | | |
| Auxiliary deactivation-all tracks | Signaller | | | | |
| *9 Lockable devices* | | | | | |
| Release lockable device | Signaller | | IB | AI | QR |
| Cancel lockable device release | Signaller | | VHB | AN | QXR |
| Return lockable device | Local device operator | | | | Used |
| **9.1 Blocking Lockable Devices** | | | | | |
| Set blocking | Signaller | | VHB | BA | |
| Remove blocking | Signaller | | TSB | ABA | |
| Set route blocking on a lockable device | Maintainer | | | | Used |
| Remove route blocking from a lockable device | Maintainer | | | | Used |
| *10 Other Commands* | | | | | |
| **10.1 Interlocking System Control Mode** | | | | | |
| Switch to remote mode | Signaller | J | | | |

| | Command User | Italy | Netherlands | Spain | U.K. |
|---|---|---|---|---|---|
| Switch to local mode | Signaller | EDCO | | TME / TML | |
| Give to local mode | Signaller | | | L | |
| Take to local mode | Signaller | | | TML | |
| Take to remote mode | Signaller | | | C | |
| **10.2 Automatic Point Operation** | | | | | |
| Disable automatic operation of moveable elements | Signaller | DV N/DV R | | BCA | |
| Enable automatic operation of moveable elements | Signaller | DV AUT | | DCA | |
| **10.3 Automatic Route Setting** | | | | | |
| Set ARS blocking | Signaller | | | ASA | |
| Remove ARS blocking | Signaller | | | SA | |
| Enable ARS | Signaller | | | | QARSDP |
| Disable ARS | Signaller | | | | QXARSDP |
| Enable ARS | Maintainer | | | | QARSDK |
| Disable ARS | Maintainer | | | | QXARSDK |
| **10.4 Signal Intensity Level** | | | | | |
| Signal intensity level-day | Signaller | | IB | | |
| Signal intensity level-night | Signaller | | IB | | |
| **10.5 Element Heating** | | | | | |
| Point heating-automatic mode | Signaller | | | CCF | |
| Point heating-manual mode | Signaller | | | DCF | |
| **10.6 Lighting Control** | | | | | |
| Lighting on | Signaller | ID ON | | | |
| Lighting off | Signaller | ID OFF | | | |
| **10.7 Emergency alarm** | | | | | |
| Activate emergency alarm | Signaller | | | | QEA |
| Acknowledge emergency alarm | Signaller | | | | QEA(ACK) |
| **10.8 Train dispatch** | | | | | |
| Activation train ready to start indication | Platform staff | | | | TRS |
| Activate close doors signal | Platform staff | | | | CD |
| Activate right away signal | Platform staff | | | | RA |
| **10.9 Staff protection system** | | | | | |
| Release to staff protection system | Signaller | | | | QR |
| Cancel release to staff protection system | Signaller | | | | QXR |
| Release to staff protection system | Local device operator | | | | Used |
| Cancel release to staff protection system | Local device operator | | | | Used |

# 4. List of statuses

This part contains the list of all the statuses that the interlocking system provides to external users about its operation. The listed statuses exist in 5 of the 6 national railways involved in the INESS project (the statuses from BV will be listed in the later stage). It is written from the perspective of the interlocking system and therefore it includes only statuses that are output directly from the interlocking system, regardless of the target user or system.

(Note: in the case the status is used in a country and there is no specific name, it is only reported as "Applicable").

| | Term - Germany | Term - Italy | Term - Netherlands | Term - Spain | Term - U.K. |
|---|---|---|---|---|---|
| *1 Route* | | | | | |
| Route cancellation timing | Fahrstraßenauflösezeit | Attivazione temporizzazione liberazione punto | Herroeptijd | Diferímetro de la anulación de ruta | Approach locked |
| Residual route cancellation timing | | | Herroeptijd restrijweg | Applicable | |
| Approach zone occupied | Annäherungsbereich besetzt | Zona d'approccio occupata | Aankondiging bezet | Circuito de proximidad ocupado | |
| Overlap release timing | D-Weg Auflösezeit | Attivazione temporizzazione liberazione zona d'uscita | | Applicable | |
| Route monitoring conditions failed | Bedingungen für Fahrstraßenüberwachung nicht erfüllt | Mancanza condizioni di itinerario | | Applicable | |
| Route stored | Fahrstraße gespeichert | | | | |
| Route setting rejected | Fahrstraße zurückgenommen | Comando di itinerario perduto | | | |
| Entire route locked | Fahrstraße vollstandig eingestellt | Itinerario bloccato | | | Entire route locked |
| Route acknowledged | | | | | Slot received |
| *2 Local shunting area* | | | | | |
| Local shunting area not established | Örtlicher Rangierbereich nicht eingerichtet | Zona di manovra disattivata | Vrijgave rangeren niet genomen | Applicable | |
| Local shunting area established | Örtlicher Rangierbereich eingerichtet | Zona di manovra attivata | Vrijgave rangeren gegeven en genomen | Applicable | |
| Local shunting area monitoring failed | Überwachung für Ortlichen Rangierbereich erfolglos | Mancanza condizioni per attivazione zona di manovra | Grenswissel uit controle | Applicable | |
| *3 Moveable elements* | | | | | |
| 3.1 Powered Moveable Elements | | | | | |
| **3.1.1 General** | | | | | |
| Detected right | Rechtslage | Deviatoio normale | Rechts in positie | Comprobando a | |

| | Term - Germany | Term - Italy | Term - Netherlands | Term - Spain | Term - U.K. |
|---|---|---|---|---|---|
| | | | | derecha | |
| Detected left | Linkslage | Deviatoio rovescio | Links in positie | Comprobando a izquierda | |
| Detected on rail | Im Gleis erkannt | Scarpa fermacarro libera | Gedecteerd op het spoor | Applicable | |
| Detected off rail | Im Gleis nicht erkannt | Scarpa fermacarro bloccata | Gedetecteerd van het spoor af | Applicable | |
| Not detected | Nicht erkannt | Deviatoio in automatico | | Sin comprobación | |
| Trailed | Angebunden | Tallonato | Opengereden | | |
| Blocked | Gesperrt | Bloccato | Verhinderd | Bloqueado | Collared |
| Failed | Gestört | Perdita di controllo | | Applicable | |
| Artificially set right | Mit Hilfstaste in Rechtsstellung gebracht | | | | |
| Artificially set left | Mit Hilfstaste in Linksstellung gebracht | | | | |
| Released for local point operation | Für örtliche Bedienung frei gegeben | | Vrijgegeven | | |
| Fouled | | | | | |
| **3.1.2 Locking** | | | | | |
| Locked | Festgelegt, Verschlossen | Bloccato | | Enclavado | Locked |
| Locked as part of a main route | Im Fahrweg verschlossen | Bloccamento da itinerario | Vastgelegd in een rijweg | | |
| Locked as part of a shunting route | Im Rangierweg verschlossen | Bloccamento da istradamento | | | |
| Locked as part of an overlap | Im D-Weg verschlossen | Bloccamento di uscita | | | |
| Locked as flank protection | Als Flankenschutz verschlossen | Bloccamento laterale | Vastgelegd eiswissel | Enclavado por protección de flanco | |
| **3.1.3 Route blocking** | | | | | |
| ARS blocked left | Selbststellbetrieb links gesperrt | | Verhindering rijweg conditioneel links | | |
| ARS blocked right | Selbststellbetrieb rechts gesperrt | | Verhindering rijweg conditioneel rechts | | |
| Route blocked | Fahrstraße gesperrt | Itinerario bloccato | | Applicable | |
| Route blocked left | Fahrstraße nach links gesperrt | Bloccamento destro | Verhindering rijweg links | | |
| Route blocked right | Fahrstraße nach rechts gesperrt | Bloccamento sinistro | Verhindering rijweg rechts | | |
| 3.2 Key-locked Moveable Elements | | | | | |
| Released | Freigabe | Libero | | Applicable | Released |
| Not released | Nicht freigegeben | Bloccato | | Applicable | Not released |
| Key in place | Schlüssel nicht freigegeben | Chiave inserita | | Applicable | |
| Key not in place | Schlüssel freigegeben | Chiave estratta | | Applicable | |
| Detected right | Rechtslage | Posizione normale | | Comprobando a derecha | |
| Detected left | Linkslage | Posizione rovescia | | Comprobando a izquierda | |

| | Term - Germany | Term - Italy | Term - Netherlands | Term - Spain | Term - U.K. |
|---|---|---|---|---|---|
| Detected on rail | Aufgelegt | Scarpa fermacarro aperta | | Applicable | |
| Detected off rail | Abgelegt | Scarpa fermacarro chiusa | | Applicable | |
| Detected right and key in place | | | | | Detected right and key in place |
| Detected left and key in place | | | | | Detected left and key in place |
| Not detected | Keine Endstellung | Posizione automatica | | | Not detected |
| Trailed | angebunden | Tallanato | | | |
| Blocked | Gesperrt | Bloccato | | Bloqueado | Collared |
| Failed | Gestört | Perdita di controllo | | Applicable | |
| Artificially set right | mit Hilfstaste in Rechtsstellung gebracht | | | | |
| Artificially set left | mit Hilfstaste in Linksstellung gebracht | | | | |
| **3.2.1 Locking** | | | | | |
| Locked | festgelegt/verschlossen | Bloccato | | Enclavado | |
| Locked as part of a main route | Fahrwegelement in einer Fahrstraße verschlossen | Bloccamento da itinerario | | Applicable | |
| Locked as part of a shunting route | Fahrwegelement in einer Rangierfahrstraße verschlossen | Bloccamento da istradamento | | Applicable | |
| Locked as part of an overlap | D-Weg Element im Verschluß<br><br>im D-Weg verschlossen | Bloccamento di uscita | | | |
| Locked as flank protection | Als Flankenschutz verschlossen | Bloccamento laterale | | Enclavado por protección de flanco | |
| **3.2.2 Route blocking** | | | | | |
| ARS blocked left | durch Zuglenkung blockiert links | | | | |
| ARS blocked right | durch Zuglenkung blockiert rechts | | | | |
| Route blocked | Strecke gesperrt | Bloccamento | | Ruta Bloqueada | |
| Route blocked left | Fahrstraße nach links gesperrt | Bloccamento sinistro | | | |
| Route blocked right | Fahrstraße nach rechts gesperrt | Bloccamento destro | | | |
| 3.3 Point handles | | | | | |
| Point handle released | Handweiche freigegeben | Fermadeviatoio automatico | | | |
| Point handle not in place | Handweiche nicht in Ordnungsstellung | Perdita di controllo fermadeviatoio | | | |
| Point handle in place | Handweiche in Ordnungsstellung | Fermadeviatoio normale | | | |
| *4 Signal* | | | | | |
| Failed | gestört | Perdita di controllo del segnale | Gestoord | | |

| | Term - Germany | Term - Italy | Term - Netherlands | Term - Spain | Term - U.K. |
|---|---|---|---|---|---|
| Dark | dunkel | Segnale escluso e stabilizzato | Lamp defect | Applicable | |
| Filament failure | Lampenhauptfaden gestört | | | Fusión de Lámpara | |
| Lamp failure | Lampenstörung | Lampada spenta | | Fusión de Lámpara | Lamp out |
| Failed lamp position | Signaloptik falsch eingestellt | | Lamp defect | | |
| 4.1 Main signal | | | | | |
| Proceed aspect | Fahrtstellung | Via libera | Voorbijriden toegestaan | Aspecto Verde | Proceed aspect |
| Stop aspect | Haltstellung | Via impedita | Seinbeeld stop | Aspecto Rojo | Stop aspect |
| Drive on sight aspect | Fahren auf Sicht | Aspetto degradato | Seinbeeld rijden op zicht | Applicable | Proceed on Sight Aspect (PoSA) |
| Cancelled aspect | Signalrücknahme | | Seinbeeld vrijgave rangeren | | |
| Auxiliary aspect | Ersatzsignal/Zusatzsignal | | | | |
| Blocked | Gesperrt | | | Bloqueado | |
| All auxiliary aspects off | Alle Ersatzsignale/Zusatzsignale auf Halt | | | | |
| Signal group to stop activated | | | | | Signal Group Replacement (SGRC) |
| All signals to stop activated | | | | | All Signals On (ASOC) |
| Train Protection Warning System failed | | | | | TPWS failed |
| **4.1.1 Automatic Route Setting Mode** | | | | | |
| Automatic route oversetting enabled | Selbststellbetrieb eingeschaltet | | Applicable | | Auto Button pressed |
| Automatic route setting enabled | Automatischer Fahrstraßeneinlauf möglich | | | Applicable | |
| Automatic route setting disabled | Automatischer Fahrstraßeneinlauf nicht möglich | | | Applicable | |
| 4.2 Shunting signal | | | | | |
| Proceed aspect | Fahrverbot aufgehoben | Via libera | | Applicable | Proceed aspect |
| Stop aspect | Fahrverbot | Via impedita | | Applicable | Stop aspect |
| Proceed with caution aspect | Rangierfahrt mit Vorsichtsignal | Segnale degradato | | | |
| Cancelled aspect | Signalrücknahme | | | | |
| Blocked | Gesperrt | | | Applicable | |
| 4.3 Line Block Signal | | | | | |
| Proceed aspect | Fahrtbegriff | Via libera | | Applicable | |
| Stop aspect | Haltbegriff | Via impedita | | Applicable | Stop aspect |
| Signal set to stop by signaller | Signalrücknahme durch Bediener | | | Applicable | Signal replaced |

| | Term - Germany | Term - Italy | Term - Netherlands | Term - Spain | Term - U.K. |
|---|---|---|---|---|---|
| Blocked | Gesperrt | | | | Replacement reminder |
| 4.4 Other signals | | | | | |
| **4.4.1 Departure indicator** | | | | | |
| Departure indicator on | | Indicatore di partenza acceso | | | |
| Departure indicator off | | Indicatore di partenza spento | | | |
| **4.4.2 Indicator for tunnels** | | | | | |
| Indicator for tunnels - 'G' indication on | | | Goederenrijweg | | |
| Indicator for tunnels - 'X' indication on | | | Stop voor goederentreinen | | |
| Indicator for slopes - 'L' indication on | | | Langzaam rijden voor zware goederentreinen | | |
| Indicator for slopes - 'H' indication on | | | Stop voor zware goederentreinen | | |
| **4.4.3 Signal repeater** | | | | | |
| Main signal at stop aspect | | | | | Banner ON |
| Main signal at proceed aspect | | | | | Banner OFF |
| Main signal at proceed with unrestricted aspect | | | | | Banner "unrestricted aspect" |
| 4.5 Route blocking-signals | | | | | |
| ARS blocking on a signal | Selbststellbetrieb für Signal gesperrt | | Verhindering conditionele rijweg | Applicable | |
| Route blocking on a signal | Fahrstraße gesperrt für Signal | | Verhindering rijweg | | Collared |
| *5 TVP section* | | | | | |
| No electrification on TVP section | Gleisfreimeldeabschnitt nicht elektrifiziert | | | | |
| 5.1 Occupation | | | | | |
| Not occupied | Nicht besetzt | Cdb libero | Onbezet | Libre | Track clear |
| Occupied | Besetztanzeige | Cdb occupato | Bezet | Ocupado | Track occupied |
| Failed | Störung | | Gestoord | Applicable | |
| Blocked | gesperrt | | | Bloqueado | |
| 5.2 Locking | | | | | |
| Locked in a route | Innerhalb einer Fahrstraße verschlossen | Bloccamento da itinerario | | Applicable | Locked in route |
| Locked as part of main route | Element verschlossen als Teil einer Fahrstraße | Bloccamento da itinerario | Vastgelegd in een rijweg | Applicable | |
| Locked as part of shunting route | Element verschlossen als Teil einer Rangierfahrstraße | Bloccamento da istradamento | | Applicable | |
| Locked as part of overlap | Element als Teil des D-Weges verschlossen | Bloccamento di uscita | | | |

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|---|---|---|---|---|---|
| 5.3 Axle counter reset | | | | | |
| Axle counter reset activated | Achszählgrundstellung angeschaltet | | | Applicable | Resetting |
| Axle counter occupied after reset | Achszähler nach Grundstellung besetzt geblieben | | | | |
| Axle counter clear before reset acknowledgement | Achszählabschnitt frei vor Bedienung der Freimeldung | | | Applicable | |
| 5.4 Engineering Possession Reminder (EPR) / Special Train Reminder (STR) | | | | | |
| EPR requested | | | | | EPR requested |
| EPR applied | | | | | EPR applied |
| STR requested | | | | | STR requested |
| STR applied | | | | | STR applied |
| **6 Line block** | | | | | |
| Direction inbound | Einfahrt | Blocco orientato in arrivo | | Applicable | |
| Direction outbound | Ausfahrt | Blocco orientato in partenza | | Applicable | |
| No direction (neutral) | Nicht Richtungsbezogen | Blocco a presa di senso a riposo | | Applicable | No direction |
| Request to change direction | Anforderung zum Richtungswechsel | Richiesta Inversione di blocco | | | Request to change directio |
| Direction change not permitted | Richtungswechsel nicht erlaubt | | | | |
| Line block out of sequence | Blockstörung, Streckenblockfolge gestört | | | | |
| Signalled block section out of sequence | Blockabschnitt gestört | | | | |
| Failed | Störung | Blocco occupato | | Applicable | |
| **7 Level crossing** | | | | | |
| Level crossing not activated | Bahnübergang nicht eingeschaltet | | | | |
| Level crossing activated | Bahnübergang eingeschaltet | | | | |
| Activation request present from an activation zone | Anforderung der Einschaltung durch Einschaltbereich | | | | |
| Manual request present for all tracks | Manuelle Anforderung für alle Gleise | | | Applicable | |
| Manual request present for all tracks from level crossing operator | Manuelle Anforderung für alle Gleise vom Bediener des BÜ | | | | |
| Manual request present for an individual track | Manuelle Anforderung für ein Gleis | | | | |
| Failed non-critical | Fehler | | | | |
| Failed critical | Störung | | | | |
| Level crossing secured | Bahnübergang (örtlich) gesichert | | Overweg gesloten | Applicable | |

| | Term - Germany | Term - Italy | Term - Netherlands | Term - Spain | Term - U.K. |
|---|---|---|---|---|---|
| Level crossing activated by local switch | Bahnübergang von Hand eingeschaltet | | | | |
| Level crossing out of use | Bahnübergang außer Betrieb | Passaggio a livello escluso | | | |
| Backup power low | Ladezustand der Batteriespannung niedrig | Passaggio a livello disalimnetato | | | |
| Running on backup power | Batteriebetrieb | Passaggio a livello alimentato | | | |
| Communication failure | Übertragungsfehler | | | Fallo de comunicaciones | |
| Level crossing activated too long | Zeitüberschreitung | | Overweg gestoord | Applicable | |
| 7.1 Barriers | | | | | |
| Barriers open | Schranken offen | Barriere aperte | | Applicable | Barriers up |
| Barriers intermediate position | Schranken(bäume) keine Endlage | Barriere in manovra | | Applicable | |
| Barriers closed | Schranken geschlossen | Barriere chiuse | | Applicable | Barriers down |
| Barriers failed | Schrankenstörung | Barriere in perdita di controllo | | Applicable | Barriers failed |
| 7.2 Warning lights | | | | | |
| Warning lights on | Lichtzeichen/Blinklichtanlage ein | Segnali stradali accesi | | | |
| Warning lights off | Lichtzeichen/Blinklichtanlage aus | Segnali stradali spenti | | | |
| Warning lights disturbed | Lichtzeichen/Blinklichtanlage gestört | | | | |
| Warning lights failed | Fehler Lichtzeichen/Blinklichtanlagen | Segnali stradali in perdita di controllo | | Applicable | |
| **8 Lockable and Detection Devices** | | | | | |
| 8.1 Detection Device | | | | | |
| Device detected in position | Geräteerkennung an | | Gedetecteerd in positie | | |
| Device not detected in position | Geräteerkennung aus | | Gedetecteerd niet in positie | | |
| 8.2 Lockable Device | | | | | |
| Device detected in position | Gerät in ordungsgemäßer Position erkannt | Scarpa fermacarro in controllo | Gedetecteerd in positie | Applicable | |
| Device not detected in position | Gerät in nichtordungsgemäßer Position erkannt | Scarpa fermacarro non in controllo | Gedetecteerd niet in positie | Applicable | |
| Device released | Gerät freigegeben | Scarpa fermacarro aperta | Gegeven en genomen | Applicable | Release given |
| Device not released | Gerät nicht freigegeben | | Niet genomen | Applicable | Release normal and device detected |
| Device blocked | Gerät geperrt | Scarpa fermacarro bloccata | Bediening verhinderd | Applicable | Collared |
| Device detected closed | Gerät nicht zugelassen | Scarpa fermacarro chiusa | | | |

| | Term - Germany | Term - Italy | Term - Netherlands | Term - Spain | Term - U.K. |
|---|---|---|---|---|---|
| Device failed | | | | | |
| **_9 Other Statuses_** | | | | | |
| Signal intensity-day | Tagschaltung | | Sein niet gedimd | | |
| Signal intensity-night | Nachtschaltung | | Sein gedimd | | |
| Critical failure | Störung | | | Applicable | Critical failure |
| Non-critical failure | Fehler | | | Applicable | Non-critical failure |
| 9.1 Power supply control | | | | | |
| Emergency power on | Notstromversorgung an | Allarme alimentazione | | Applicable | |
| Batteries discharging | Batterie wird entladen | | | | |
| Batteries low | Ladezustand Batterie niedrig | | | | |
| Boosted charging on | Schnellladung an | | | | |
| Diesel generator operating | Dieselaggregat an | | | | |
| Diesel generator low fuel | Niedriger Füllzustand des Dieseltanks | | | | |
| Power supply failed | Stromversorgung gestört | | Voedingsstoring | Applicable | Power failure |
| Earth leakage | Erdschluß | | Aardlek | | Earth leakage |
| 9.2 Operational mode transitions | | | | | |
| Interlocking system remote controlled | Stellwerk fernbedient | Impianto impresenziato | | Applicable | |
| Interlocking system local controlled | Stellwerk örtlich bedient | Impianto presenziato | | Applicable | |
| Control from maintainer enabled | Bedienung durch Instandhalter nicht möglich | | | | |

# Section 4 – Conclusions

This document contains the list of the commands that can operate an interlocking system and the list of the statuses that the interlocking system can provide to external users about its operation in the countries involved in the INESS project.

With the use of the catalogue of commands and statuses, the requirements capturing process will be more precise and unambiguous as the railway experts will be certain that they are describing the functionality of their interlocking systems correctly, as the commands and statuses which are used in the database of functional requirements can be checked with their national expressions and terms.

At the end of the requirements capturing process, this report will be one of the documents which will enable checking if all the functionalities used in the different countries are covered by the database by checking the requirements against it, thus improving the quality of the requirements database.