

banedanmark



# ORF

## Operational Rules for fjernbane

ORF-21-1 valid from 30.07.2021

## Changes since previous version

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IN.54

**Change per 2021-07-30:**

Introduction:

- various factual corrections.

Roles:

- the requirement that a guest must have an instruction in writing has been changed to an instruction have to be given
- the requirement that one must not simultaneously perform the roles of Signaller and Infrastructure coordinator has been removed, as it is important that two with signaller competencies perform respective controls things that are put into the system
- various factual corrections.

Definitions:

- definitions for catenary revised. So far, there is only very little technical help from the signalling system, so therefore definitions have been rewritten to fit a more manual process. In general, definitions have been rewritten to fit in with what we already know from the existing system and SR75. So even though the change looks extensive, it is in fact very small change compared to what the staff already know and are trained in
- description of advanced functionality that is not present is written out of various definitions
- the definition of NL-mode has been deleted as it is not used in Denmark
- the definition of IS-mode has been changed so that it reflects that it is the onboard is isolated and not a mode like the others
- it is defined that trains may be moved one meter when splitting
- the requirement for operational train radio is changed to apply only when the train is equipped with one for safe and fir for service
- the format of PICOP-ID has been removed
- the maximum train length for G-braked trains has been added
- the description of passive ETCS stop marker is added to the definition of ETCS stop marker
- the definition of Operational Instruction has been updated regarding how an Operational Instruction can be revoked and how field D is to be used
- use of leading 99 is added to the definition of train radio
- in addition various factual and linguistic corrections.

Procedures:

- procedures for catenary revised. So far, there is only very little technical help from the signalling system, so therefore procedures have been rewritten to fit a more manual process. In general, procedures have been rewritten to fit in with what we already know from the existing facilities and SR75. So even though the changes looks extensive, in reality it is very small the change compared to what the staff already know and are trained in.

Of the changes can be mentioned in particular:

- 1) The entire procedure for requesting a planned catenary isolation is written into the establishing procedure instead and is therefore deleted as an individual procedure
- 2) All descriptions of integration with the signalling system have been deleted or rewritten into manual processes
- 3) Procedures for emergency catenary isolation have been rewritten to fit current practice
  - description of advanced functionality that is not present is written out of various procedures
  - a procedure has been added that describes how to drive between possessions and/or shunting areas
  - the procedure for establishing possessions without handheld terminal has been updated regarding how position is confirmed
  - when a temporary speed restriction is activated, a requirement has been added to check whether the planned fit with what is displayed on the signalling control display
  - the procedure for temporary speed restriction changed so that it is not necessarily the Signaller who plans it in the system. This applies to the planning of driving a working unit

- the procedures for establishing temporary shunting areas are adapted to the implementation in TMS

- when handing over and lifting a possession, a requirement for a note in the logbook has been added

- the approach to handing out Operational Instructions 2 and 7 is adapted to the way it is done for Operational Instruction 1

- the procedures for driving between Fjernbane and S-bane have been changed to suit the technical solution

- in addition, various clarifications, consequential corrections, factual and linguistic corrections.

Communication:

- the examples of how a Signaller and a Driver should identify themselves have been removed, as it is the content and not the wording that is important.

Rules for Working in the Infrastructure:

- added that it is allowed to turn a lift crane in a Signaller protected area.

Appendix:

- missing Hazard warning plates added.

## Reader's instructions

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IN.2 Throughout the document the reader will notice that symbols have been used to identify certain statements.

IN.3  Procedure symbol. The symbol indicates that a Railway Undertaking procedure exists to support ORF e.g. procedures ensuring safe parking of rolling stock is a procedure put in place by the Railway Undertaking (RU).

**Change per 2021-07-30:**

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IN.4  Procedure symbol. The symbol indicates a procedure issued by the Infrastructure Manager.

IN.5  System restrictions. The symbol is used to provide information concerning system functionality, e.g. if a Driver fails to control the train to a standstill at an End of Authority, the onboard system will command a brake intervention.

## Area of validity

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IN.45 ORF apply to driving of trains, shunting and operation and maintenance, on the parts of the Fjernbane infrastructure equipped with ETCS and on shunting areas adjacent to these areas.

Exceptions to ORF will be described by location specific description or "supplerende sikkerhedsbestemmelser" applicable to these areas.

**Change per 2021-07-30:**

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Exceptions to ~~these Operational Rules~~ORF will be described by location specific description or "supplerende sikkerhedsbestemmelser" applicable to ~~the~~these areas.

## Roles

RF.1

### Signaller

RF.2

#### DEFINITION

The Signaller works within the traffic control centre and is responsible for the day-to-day management and coordination of all operations within the area controlled by the Signaller. The Signaller must cooperate with all relevant parties to perform these duties.

The Signaller controls the operation of trains and maintenance operation in a designated control area by the use of the traffic management systems.

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The Signaller controls the operation of trains and maintenance operation in a designated control area by the use of the traffic management systems.

~~The Signaller must not perform the role of O&M coordinator simultaneously.~~

RF.38

### O&M coordinator

RF.39

#### DEFINITION

The O&M coordinator (Operations and Maintenance) is responsible for supervising the status of the infrastructure. The O&M coordinator is responsible for overall coordination of maintenance and fault correction and for ensuring that the relevant staff is called in for various tasks such as undetected points, axle counter faults, broken rails or balise errors.

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~~The O&M coordinator must not perform the role of Signaller simultaneously.~~

RF.57

**Visitor**

RF.58

DEFINITION

A Visitor is a person assigned to perform a task within the safety distance of 4 metres from the nearest rail, but with a special permission to deviate from the requirement of possessing a valid railway ID card. A Visitor always receives an instruction and is always accompanied by a staff.

**Change per 2021-07-30:**

A Visitor is a person assigned to perform a task within the safety distance of 4 metres from the nearest rail, but with a special permission to deviate from the requirement of possessing a valid railway ID card. A Visitor always receives a ~~written~~ instruction and is always accompanied by a staff.

RF.117

**Person responsible for operational rules**

RF.118

The Person responsible for operational rules has the responsibility of ORF and additional instructions in connection with these. The Person responsible for operational rules has the right to interpret ORF as well as the additional provisions in connection with these.

The Person responsible for operational rules ensures that new or updated rules and derogations for existing rules are processed and submitted to the Danish Civil Aviation and Railway Authority with a request for approval.

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## Definitions

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OR.DEF.683

### DMI symbols and marker boards

OR.DEF.211

### Indicated running level

OR.DEF.212

#### DEFINITION

The active running level is indicated on the DMI by a level indication. The level indicates how the train is supervised and the operational rules that must be applied by the Driver.

The route book contains information identifying the level of the train control system for the infrastructure.

#### Responsibilities

OR.DEF.213

Driver

When the symbol for running in level 0 is displayed you must observe operational rules for the level 0 area.



OR.DEF.214

Driver

When the symbol for running in level ATC (Automatic Train Control) is displayed you must observe operational rules for the level ATC area.



OR.DEF.215

Driver

When the symbol for running in level 2 is displayed you must observe ORF.



#### **Change per 2021-07-30:**

When the symbol for running in level 2 is displayed you must observe ~~operational rules for the level 2 area~~ ORF.

OR.DEF.216

Driver

You must bring the train to a standstill and inform the Signaller when the level indicated on the DMI is not consistent with the infrastructure you are occupying.

OR.DEF.431

### ETCS stop marker

OR.DEF.432

DEFINITION

An ETCS stop marker indicates the end location for authorities to move and to demarcate shunting areas, possessions, and level crossings.

An ETCS stop marker shows a yellow arrow pointing at the track for which it applies and is associated with a marker containing a unique identifier.

The location of ETCS stop markers is indicated in the Route Book and on the signalling control display.

When an ETCS stop marker is placed in front of a level crossing it will be equipped with an additional marker indicating the ID number of the level crossing.

ETCS stop markers are only passed on movement authorities, an Operational Instruction authority or when authorised by a Shunter.

ETCS stop markers may be passive. This means that they cannot be used for route setting or as a delimitation of a possession or a temporary shunting area. Passive ETCS stop markers are not equipped with RFID-tag (Radio-frequency identification). Passive ETCS stop markers are marked in the infrastructure with white reflective tape with the text "Ingen RFID" and have a special marking in the Route Book and on the signalling control display.

**Change per 2021-07-30:**

An ETCS stop marker ~~is placed trackside to identify~~ indicates the end location for authorities to move and to demarcate shunting areas, possessions, and level crossings.

An ETCS stop marker shows a yellow arrow pointing at the track for which it applies and is associated with a marker containing a unique identifier.

The location of ETCS stop markers is indicated in the Route Book and on the signalling control display.

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Responsibilities

OR.DEF.433

**Driver**

You must only allow your train or vehicle to pass an ETCS stop marker when authorised by a movement authority, an Operational Instruction or by the responsible Shunter.



If you identify that the ETCS stop marker at the limit of your authority when running on an Operational Instruction authorisation is missing, you must bring your train to a standstill and request further instructions from the Signaller.

If you identify that an ETCS stop marker is missing or obscured, you must always inform the Signaller.

OR.DEF.598

**Fouling point**

OR.DEF.599

DEFINITION

The fouling point indicator is placed where two tracks intersect or converge onto each other and indicates the minimum distance necessary to the neighbouring track in order for any rolling stock to stay outside the safe gauge of the neighbouring track.

**Change per 2021-07-30:**

The fouling point indicator is placed where two tracks intersect or converge onto each other and indicates the minimum distance necessary to the neighbouring track in order for any ~~train or rolling vehicle~~ stock to stay outside the safe gauge of the neighbouring track.

The fouling point is marked by a fouling point indicator.

Responsibilities

OR.DEF.600

Driver

When you are parking rolling, you must ensure that no part of the rolling stock is located between the fouling point indicator and the point to which it belongs.



**Change per 2021-07-30:**

When you are parking ~~your train or vehicle~~ rolling, you must ensure that no part of the ~~train or rolling vehicle~~ stock is located between the fouling point indicator and the point to which it belongs.

OR.DEF.305

**Isolate onboard**

**Change per 2021-07-30:**

~~IS-mode~~ isolate onboard

OR.DEF.306

DEFINITION

Isolation of the onboard is done by the Driver when failures on the onboard prevents further movements with active onboard. When isolated the interface between the onboard and the brakes is completely bypassed.

Maximum permitted speed with isolated onboard is 40 km/h.

No indications are available on the DMI when the onboard is isolated.

Movements with isolated onboard are done as unsupervised movements authorised by the Signaller on an Operational Instruction or by the Shunter for shunting movements. Trains are only moved with isolated onboard as far as practicable and never as part of normal service.

Reinstating the onboard after isolation is only done by a maintainer.

**Change per 2021-07-30:**

~~IS-mode (Isolation mode) of the onboard driving is done used by under the onboard Driver failure when conditions failures when on the onboard has prevents been further isolated movements and with active onboard. When isolated the interface between the onboard and the brakes completely bypassed. No onboard supervision of train movement is available in completely IS-mode bypassed.~~

~~Maximum permitted speed in with IS-mode isolated onboard is 40 km/h.~~

~~A clear indication of the onboard being isolated is available to the Driver. A train in IS-mode will be indicated on the signalling control display as a train with isolated onboard.~~

~~No indications are available on the DMI when in the IS-mode onboard is isolated.~~

~~Movements in with IS-mode isolated onboard are done as unsupervised movements authorised by the Signaller on an Operational Instruction from or by the Signaller Shunter for shunting movements. Trains are only moved in with IS-mode isolated onboard as far as practicable and do not never forms part of the normal service. To exit IS-mode~~

~~Reinstating the onboard must after isolation reinstated is only done by a maintainer.~~

Responsibilities

OR.DEF.307

Driver

When the onboard is isolated, you must only move your train according to Operational Instructions received from the Signaller, or according to authority provided by the Shunter.

When driving with isolated onboard you must observe the conditions of on sight.

**Change per 2021-07-30:**

When the onboard is isolated, you must only move your train according to Operational Instructions received from the Signaller, or according to authority provided by the Shunter.

When driving in with IS-mode isolated onboard you must observe the conditions of on sight.

OR.DEF.206

**Acknowledge Level Transition**

OR.DEF.207 DEFINITION Level transitions must be acknowledged where the Driver is required to perform safety related operations that would have been performed by the previous signalling system.

If the Driver does not acknowledge the change in supervision, the onboard will perform a brake intervention.

Responsibilities

OR.DEF.208 **Driver** When the symbol requesting an acknowledgment of entry into level 0 is displayed on the DMI you may acknowledge and then apply the operational rules for the Level 0 area.



OR.DEF.209 **Driver** When the symbol requesting an acknowledgment of entry into level ATC is displayed on the DMI you may acknowledge and then apply the operational rules for the Level ATC area.



OR.DEF.210 **Driver** When the symbol requesting an acknowledgment of entry into level 2 is displayed on the DMI you may acknowledge and then apply ORF.



**Change per 2021-07-30:**

When the symbol requesting an acknowledgment of entry into level 2 is displayed on the DMI you may acknowledge and then apply ~~the operational rules for the Level 2 area~~ ORF.

OR.DEF.54 **NL-mode**

OR.DEF.55 DEFINITION Not used in Denmark

**Change per 2021-07-30:**

~~NL-mode (Non Leading mode) is when one or more traction units are mechanically, but not electrically coupled to the leading traction unit and a Driver is required to control the non-leading traction unit.~~

~~The onboard will not supervise movement authorities but only display information on speed and track conditions on~~ Not the used DMI in Denmark

Responsibilities

OR.DEF.56 **Driver** Deleted



**Change per 2021-07-30:**

~~You may only select NL-mode when instructed by the Driver of the leading cab to provide additional traction as an assisting Driver.~~

~~You are responsible as Driver of the non-leading traction unit for obeying the orders associated to track conditions when they are displayed on the DMI, but it is the Driver of the leading traction unit who has the overall responsibility for driving the train. Deleted~~

OR.DEF.448

**SB-mode**

OR.DEF.449

DEFINITION

SB-mode (Standby mode) is the default standby mode of the onboard. SB-mode cannot be selected by the Driver but is entered automatically on closing the desk or exiting SH-mode.

Train awakening is performed from SB-mode. Onboard train data can be entered and updated by the Driver when in SB-mode.

In SB-mode, the train is supervised against runaway movements.

Responsibilities

OR.DEF.450

Driver

When the symbol on the DMI indicates the train is in SB-mode you must not attempt to move the train.



You may, however, move the train up to 1 metre in SB-mode when it is required for joining or splitting of the train.

**Change per 2021-07-30:**

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You may, however, move the train up to 1 metre in SB-mode when it is required for joining or splitting of the train.

OR.DEF.593

**Electrical unit stop marker**

OR.DEF.594 **DEFINITION** The electrical unit stop marker is a marker placed in the catenary system or at trackside to indicate to the Driver that from the location of the marker and beyond, the catenary power supply ends.

At locations with multiple directions, and one direction leads into a track without catenary power, the electrical unit stop marker is supplemented with an arrow indicating the direction to which the marker applies.

**Change per 2021-07-30:**

The electrical unit stop marker is a marker placed in the catenary system or at trackside to indicate to the Driver that from the location of the marker and beyond, the catenary power supply ends.

At locations with multiple directions, and one direction leads into a track without catenary power, the electrical unit stop marker is supplemented with an arrow indicating the direction to which the marker applies.

~~Tracks with no catenary power can be identified in the route book.~~

Responsibilities

OR.DEF.601 **Driver** You must as far as possible bring your electrical powered unit to a standstill before any pantograph passes the electrical unit stop marker.



In case you identify that the pantograph(s) will pass the electrical unit stop marker, you must immediately lower the pantograph(s).



OR.DEF.222 **Start of ETCS-signalling**

OR.DEF.223 **DEFINITION** The start of ETCS-signalling is the location at which signalling is transferred from lineside signals to ETCS-signalling.

Responsibilities

OR.DEF.224 **Driver** When passing the location of the start of ETCS-signalling marker you must observe ORF.



**Change per 2021-07-30:**

When passing the location of the start of ETCS-signalling marker you must observe ~~operational rules for the level 2 area~~ORF.

OR.DEF.226 Signaller

You must coordinate train movements from the start of ETCS-signalling marker.

Authority over the transition area is shared between the two Signallers controlling the adjacent track sections.

OR.DEF.227

**UN-mode**

OR.DEF.228 DEFINITION

Driving in UN-mode (Unfitted mode) is used for driving in an area not equipped with ETCS or ATC. Rules for driving in UN-mode are not contained in ORF.

UN-mode only supervises to a ceiling speed set to 120 km/h and is a driving mode used for driving in a level 0 area. UN-mode cannot be selected by the Driver but is entered during start of mission when level 0 is selected or following transition into a level 0 area.

Route book and location specific descriptions will give information on permissible speed limits.

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UN-mode only supervises to a ceiling speed set to 120 km/h and is a driving mode used for driving in a level 0 area. UN-mode cannot be selected by the Driver but is entered during start of mission when level 0 is selected or following transition into a level 0 area.

Route book and location specific descriptions will give information on permissible speed limits.

Responsibilities

OR.DEF.229 Driver

You must control your train according to the operational rules of the level 0 area as long as you remain in the level 0 area. The symbol for UN-mode on the DMI indicates that only a ceiling speed of 120 km/h is supervised by the onboard.



OR.DEF.694

**Failed Train**

OR.DEF.479

**Failed train marking**

OR.DEF.480

**DEFINITION**

The failed train marking is a signalling system function applied by the Signaller to the train running number of a failed train. Once applied, the signalling system will shorten any movement authority associated with the train.

When the failed train marking is activated, it is indicated to the Signaller on the signalling control display.

**Change per 2021-07-30:**

The failed train marking is a signalling system function applied by the Signaller to the train running number of a failed train. Once applied, the signalling system will shorten any movement authority associated with the train. ~~The signalling system will avoid routing trains into gridlock around the failed train as far as practicable, and will suggest possible production plan updates.~~

When the failed train marking is activated, it is indicated to the Signaller on the signalling control display.

OR.DEF.695

**Infrastructure**

OR.DEF.606

**Marker board**

OR.DEF.607

**DEFINITION**

A marker board is placed in the infrastructure to provide information to staff.

Only marker boards defined in ORF are relevant to the operational railway.

Other marker boards can be found in the infrastructure. The layout of these marker boards does not resemble any of the marker boards defined in ORF. The location specific descriptions may contain information about the meaning of marker boards not defined in ORF.

**Change per 2021-07-30:**

A marker board is placed in the infrastructure to provide information to staff.

Only marker boards defined in ~~the Operational Rules~~ ORF are relevant to the operational railway.

Other marker boards can be found in the infrastructure. The layout of these marker boards does not resemble any of the marker boards defined in ~~the Operational Rules~~ ORF. The location specific descriptions may contain information about the meaning of marker boards not defined in ~~the Operational Rules~~ ORF.

OR.DEF.323

**Level crossing**

OR.DEF.324

**DEFINITION**

A level crossing is where a road and the railway intersect at the same level.

The position and the protection status of level crossings in interlocked areas, are indicated on the signalling control display. Controls are provided for the Signaller to operate the level crossing if needed.

The locations of level crossings in interlocked areas are indicated in the Route Book.

All level crossings can be operated from a local control box. The local control box is used in case of failures, fault correction or planned maintenance. The level crossing status "protected" is indicated by a light in the local control box.

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**Responsibilities**

OR.DEF.657

**Shunter**

You must observe from the indication in the local control box that the level crossing is protected before authorising a shunting movement to pass a level crossing in a possession or temporary shunting area.

OR.DEF.410

**Passenger and staff crossings**

OR.DEF.411

DEFINITION

Warning systems exist at some staff crossings and passenger crossings, to provide a warning to passengers or staff crossing the track about approaching trains.

Passenger crossings indicates where passengers are permitted to cross the track to get to the opposite platform. For crossings equipped with a warning system, red warning lights and warning sound will warn the passengers about approaching trains. For crossings not equipped with a warning system, signs are placed to remind passenger to look for approaching trains.

Staff crossings are used by railway staff to use. Staff crossings can be provided with yellow flashing lights indicating to the railway staff that a train is approaching.

The warning system is not guaranteed to provide a warning and railway staff needs to be vigilant to approaching trains at all times.

A non activated warning system will be detected by the signalling system and a temporary speed restriction of maximum 40 km/h will automatically be imposed at the crossing. The Driver will be informed via a text message which will be displayed along with the movement authority if a warning system is not activated. The signalling system will inform the O&M coordinator and the Signaller about failures in a warning system.

**Change per 2021-07-30:**

Warning systems ~~are placed~~exist at some staff crossings and passenger crossings, ~~on the trackside~~, to provide a warning to passengers or staff crossing the track about approaching trains.

Passenger crossings ~~are placed at platforms~~indicates where passengers are permitted to cross the track to get to the opposite platform. For ~~passenger~~ crossings equipped with a warning system, red warning lights and warning sound will warn the passengers about approaching trains. For ~~passenger~~ crossings not equipped with a warning system, signs are placed to remind passenger to look for approaching trains.

Staff crossings are ~~placed on the trackside~~used forby railway staff to use. Staff crossings can be provided with yellow flashing lights indicating to the railway staff that a train is approaching.

The warning system is not guaranteed to provide a warning and railway staff needs to be vigilant to approaching trains at all times.

A non activated warning system will be detected by the signalling system and a temporary speed restriction of maximum 40 km/h will automatically be imposed at the crossing. The Driver will be informed via a text message which will be displayed along with the movement authority if a warning system is not activated. The signalling system will inform the O&M coordinator and the Signaller about failures in a warning system.

Responsibilities

OR.DEF.412      **Driver**                      When passengers have to cross a passenger crossing to leave your train, or to get to it, you must be vigilant to other trains approaching the crossing and if necessary warn the passengers.

OR.DEF.706      **All**                                      You must be vigilant to approaching trains at all times, regardless of the indication of the warning system.

OR.DEF.668

**Handheld terminal operated point**

OR.DEF.669

DEFINITION

Handheld terminal operated points can mark the entrance to a non interlocked area. A handheld terminal operated point is protected by the signalling system in the correct lie to allow for supervised movements in the interlocked area.

The location of handheld terminal operated points is indicated in the Route Book and on the signalling control display.

In order to throw the point using the handheld terminal, the Signaller will establish a temporary shunting area. In case the handheld terminal is not available, a handheld terminal operated point can be thrown by the Signaller, when a temporary shunting area is established.

Handheld terminal operated points can also be thrown by maintainer using a hand crank after permission from the Signaller.

**Change per 2021-07-30:**

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Handheld terminal operated points can also be thrown by maintainer using a hand crank after permission from the Signaller.

Responsibilities

OR.DEF.670

**Signaller**

Before throwing a handheld terminal operated point from the Traffic control centre you must contact the Shunting area manager and request a visual inspection of the point to ensure that no rolling stock occupies the point.

OR.DEF.708

**Maintainer**

You must obtain permission from the responsible Signaller before using a hand crank to throw a handheld terminal operated point.

OR.DEF.709

**Signaller**

Before you permit a Maintainer to throw a handheld terminal operated point using a hand crank you must ensure that it is safe to do so.

OR.DEF.696

## Infrastructure Conditions

OR.DEF.483

### Location specific description

OR.DEF.484

#### DEFINITION

The location specific description is a supplement to ORF.

Location specific descriptions contain the additional instructions necessary for day to day operation at specific and defined geographical locations. The location specific descriptions will only be necessary for persons operating within the defined geographical locations.

#### **Change per 2021-07-30:**

The location specific description is a supplement to ~~the operational rules~~ ORF.

Location specific descriptions contain the additional instructions necessary for day to day operation at specific and defined geographical locations. The location specific descriptions will only be necessary for persons operating within the defined geographical locations.

OR.DEF.366

### Temporary speed restriction

OR.DEF.367

#### DEFINITION

A temporary speed restriction is a speed restriction implemented in the signalling system used to reduce the speed of trains. Temporary speed restrictions can be used to protect people, trains or infrastructure.

A temporary speed restriction is planned and supervised by the signalling system.

A temporary speed restriction that is active is indicated on the signalling control display and on the onboard DMI.

Information about temporary speed restrictions relevant to unsupervised movements are provided to the Driver by the Signaller or Shunter.

#### Responsibilities

OR.DEF.368

#### Signaller

You must provide the Driver of an unsupervised movement with information of temporary speed restrictions below 40 km/h for the location where movements are authorised.

OR.DEF.369

#### Signaller

You must inform the Shunting area manager of temporary speed restrictions below 25 km/h inside a possession or temporary shunting area, and the Shunter if the speed restriction applies in a part of a route for shunting.

**Change per 2021-07-30:**

You must inform the ~~Shunter~~Shunting area manager of temporary speed restrictions below 25 km/h inside a possession or temporary shunting area, ~~or~~ and as the Shunter if the speed restriction applies in a part of a route for shunting.

OR.DEF.370 **Shunter**

You must provide the Driver of a shunting movement with information of temporary speed restrictions below 25 km/h for the location where movements are authorised.

OR.DEF.684

**Catenary**

OR.DEF.473

**Earthing**

OR.DEF.474 DEFINITION

Earthing is the operation of placing a conductive connection between the overhead wire and an earthing point. This ensures that any voltage present in the isolated catenary section, is limited to a safe level.

Earthing is used to protect people working in an area from traction voltage being applied by mistake.

**Change per 2021-07-30:**

Earthing is the operation of placing a conductive connection between ~~a metallic surface (in particular: the overhead wire)~~ and an earthing point. This ensures that any voltage present in the ~~protected~~isolated catenary section, is limited to a safe level.-

Earthing is used to protect people working in an area ~~(e.g. a worksite)~~ from traction voltage being applied by mistake.

OR.DEF.276

**Catenary isolation**

OR.DEF.277 DEFINITION

A catenary isolation is shutting off power to one or more catenary sections.

A catenary isolation does not necessarily require a possession. A catenary isolation only affects electrical rolling stock, diesel powered rolling stock may continue running.

**Change per 2021-07-30:**

A catenary isolation is shutting off power to one or more catenary sections.

A catenary isolation does not necessarily require a possession. A catenary isolation only affects electric electrical traction rolling units stock, diesel powered trains rolling stock may continue running.

~~A catenary isolation is communicated between the catenary management system and the signalling system. The signalling system automatically avoids routing electric traction units into catenary isolations as far as possible.~~

Responsibilities

OR.DEF.658

Signaller

You must ensure that electrical rolling stock are not authorised to move into an area without catenary power in the interlocked area.

**Change per 2021-07-30:**

You must as far as possible ensure that electrically powered electrical rolling trains stock are not authorised to move into an isolated area without catenary power in the interlocked area.

OR.DEF.467

**Catenary management system**

OR.DEF.468

DEFINITION

The catenary management system is an independent system used by the Catenary manager to control and monitor the catenary system on the Banedanmark network.

**Change per 2021-07-30:**

The catenary management system is an independent system ~~for controlling and used monitoring by the catenary system on the~~ Catenary Banedanmark manager network.

~~The to catenary control management and system monitor makes the catenary power status information available system to on the signalling Banedanmark system network.~~

OR.DEF.278

**Planned catenary isolation**

OR.DEF.279 **DEFINITION** A planned catenary isolation is produced in advance by the Banedanmark Catenary planning department.

Details of planned catenary isolations are available as individual catenary isolation documents with a unique ID number.

**Change per 2021-07-30:**

A planned catenary isolation is produced in advance by the Banedanmark Catenary planning department.

Details of planned catenary isolations are available as individual catenary isolation documents ~~and are available through the signalling system identified with by a~~ unique ID number.

OR.DEF.686

## Driving

OR.DEF.1

### DMI

OR.DEF.2

### DEFINITION

The DMI (Driver Machine Interface) is a screen that is a part of the onboard train control system. The DMI is installed in the Driver's desk to enable communication between the train control system and the driver.

The DMI indicates to the Driver the necessary signalling information to allow for supervised train movements.

For fully supervised movements the DMI will display an authority to move. For all other movements the DMI will display the driving mode indicating to the Driver under which conditions the train must be driven.

### Responsibilities

OR.DEF.3

### Driver

You must observe information displayed on the DMI and react as instructed in ORF. You must control the speed of the train to the lowest permissible speed, taking into consideration the information provided on the DMI and any other restrictions from persons authorising the movement or from location specific restrictions.

You must consider a failed DMI or an unreadable DMI as a failure in the onboard train control system.

If you have reason to believe that the information displayed on the DMI is faulty or not intended for your train, you must bring the train to a standstill and contact the Signaller.

**Change per 2021-07-30:**

You must observe information displayed on the DMI and react as instructed in ~~the operational rules~~ ORF. You must control the speed of the train to the lowest permissible speed, taking into consideration the information provided on the DMI and any other restrictions from persons authorising the movement or from location specific restrictions.

You must consider a failed DMI or an unreadable DMI as a failure in the onboard train control system.

If you have reason to believe that the information displayed on the DMI is faulty or not intended for your train, you must bring the train to a standstill and contact the Signaller.

OR.DEF.552

## **Backwards movement**

OR.DEF.553

### DEFINITION

A backwards movement is to intentionally move the train in the opposite direction to the active cab. Backwards movements are used in case a train has overrun a stopping location, or has mistakenly been routed in the wrong direction.

Backwards movements are only used when it is not possible to drive the train from the forward facing cab of the movement.

Passenger trains do not perform backwards movements.

Backwards movements are normally performed in SH-mode, but may in special cases be performed with an isolated onboard if the Driver has been forced to isolate the onboard.

A backwards movement is performed when the Driver remains in the lead cab and receives authority from the Signaller by the use of the Backwards movement authorisation form.

See Book of forms, Backwards movement authorisation, for layout.

**Change per 2021-07-30:**

A backwards movement is to intentionally move the train in the opposite direction to the active cab. Backwards movements are used in case a train has overrun a stopping location, or has mistakenly been routed in the wrong direction.

Backwards movements are only used when it is not possible to drive the train from the forward facing cab of the movement.

Passenger trains do not perform backwards movements.-

Backwards movements are normally performed in SH-mode, but may in special cases be performed ~~in~~with IS-mode ~~an~~ isolated onboard if the Driver has been forced to isolate the onboard.

A backwards movement is performed when the Driver remains in the lead cab and receives authority from the Signaller by the use of the Backwards movement- authorisation form.

See Book of forms, {Backwards movement authorisation} , for layout.

OR.DEF.697

## Level Transition

OR.DEF.427

### Level 0

OR.DEF.428

#### DEFINITION

Level 0 is the name given to an area of track that is not controlled by ETCS or ATC trackside equipment. The rules for driving in a level 0 area are not contained in ORF.

**Change per 2021-07-30:**

Level 0 is the name given to an area of track that is not controlled by ETCS or ATC trackside equipment. The rules for driving in a level 0 area are not contained in ~~these Operational Rules~~ORF.

OR.DEF.687

## Preparing a mission

OR.DEF.113

### Safe and fit for service

DEFINITION

Safe and fit for service determines if the rolling stock is qualified to be included in a train performing supervised movements.

Safe and fit for service centres around two states:

1. Safe - the rolling stock does not pose a threat to other trains and/or the infrastructure
2. Fit - the rolling stock is able to comply with the planned mission.

The minimum requirements for a train to classify as safe and fit for service are:

Safe:

- conditions for specific rolling stock use permit are met. This includes checking that the following is functioning:
  - a) onboard
  - b) train radio (if fitted)
  - c) front end indication
  - d) rear end indication
  - e) audible warning device (checked according to internal Railway Undertaking procedures)
- freight cargo securely loaded (if applicable)
- brakes tested and in working order
- all units in the train are connected to the continuous braking system
- the brake percentage of the train is at least 50 (exempting snow ploughs)
- the front and rear units have automatic brakes (exempting snow ploughs).

Fit:

- tunnel checks performed (if applicable)
- brake performance is compatible with the scheduled mission
- trained personnel needed for the scheduled mission is available
- train consist is compatible with the scheduled mission
- train speed compatible with the scheduled mission
- train length compatible with the scheduled mission.

Documentation available in the lead cab:

- ORF
- route book
- book of forms
- timetable.

In order to be safe and fit for service a train must fulfill both the requirements of ORF as well as any other requirements resulting from other sets of rules that may apply to the scheduled journey of the train.

**Change per 2021-07-30:**

Safe and fit for service determines if the rolling stock is qualified to be included in a train performing supervised movements.

Safe and fit for service centres around two states:

1. Safe - the rolling stock does not pose a threat to other trains and/or the infrastructure
2. Fit - the rolling stock is able to comply with the planned mission.

The minimum requirements for a train to classify as safe and fit for service are:

Safe:

- conditions for specific rolling stock use permit are met. This includes checking that the following is functioning:
  - a) onboard
  - b) train radio (if fitted)
  - c) front end indication
  - d) rear end indication
  - e) audible warning device (checked according to internal Railway Undertaking procedures)
- freight cargo securely loaded (if applicable)
- brakes tested and in working order
- all units in the train are connected to the continuous braking system
- the brake percentage of the train is at least 50 (exempting snow ploughs)
- the front and rear units have automatic brakes (exempting snow ploughs).

Fit:

- tunnel checks performed (if applicable)
- brake performance is compatible with the scheduled mission
- trained personnel needed for the scheduled mission is available
- train consist is compatible with the scheduled mission
- train speed compatible with the scheduled mission
- train length compatible with the scheduled mission.

Documentation available in the lead cab:

- ~~these Operational Rules~~ ORF
- route book
- book of forms
- timetable.

In order to be safe and fit for service a train must fulfill both the requirements of ~~these Operational rules~~ ORF as well as any other requirements resulting from other sets of rules that may apply to the scheduled journey of the train.

OR.DEF.865

## Train length

OR.DEF.866

### DEFINITION

The train length is measured in metres and is the full length of the train including working traction units.

The maximum permitted train length for R-braked trains is 400 metres.

The maximum permitted train length for P-braked trains is:

- 400 metres, when the speed is above 120 km/h
- 600 metres, when the maximum speed is 120 km/t
- 835 metres, when the maximum speed is 100 km/t.

The maximum permitted train length for G-braked trains is 835 metres.

#### **Change per 2021-07-30:**

The train length is measured in metres and is the full length of the train including working traction units.

The maximum permitted train length for R-braked trains is 400 metres.

The maximum permitted train length for P-braked trains is:

- 400 metres, when the speed is above 120 km/h
- 600 metres, when the maximum speed is 120 km/t
- 835 metres, when the maximum speed is 100 km/t.

The maximum permitted train length for G-braked trains is 835 metres.

OR.DEF.688

## Shunting

OR.DEF.160

### Temporary shunting area

OR.DEF.161

DEFINITION

A temporary shunting area is an interlocked area temporarily set up to allow shunting operations. The boundary of a temporary shunting area is marked by two or more facing ETCS stop markers. The time period allowed for the temporary shunting area is agreed between the Signaller and Shunting area manager before the temporary shunting area is established.

In locations, where shunting in temporary shunting areas often occurs, the most commonly used areas may be defined in the location specific descriptions by a name or number.

A temporary shunting area is always under the responsibility of a Shunting area manager.

Points in the temporary shunting area are released for the Shunting area manager to control via the handheld terminal, if not locked for safety reasons. If the handheld terminal is not available, the Shunting area manager requests the Signaller to throw the points inside the area.

**Change per 2021-07-30:**

A temporary shunting area is an interlocked area temporarily set up to allow shunting operations. The boundary of a temporary shunting area is marked by two or more facing ETCS stop markers. The time period allowed for the temporary shunting area is agreed between the Signaller and Shunting area manager before the temporary shunting area is established.

In locations, where shunting in temporary shunting areas often occurs, the most commonly used areas may be defined in the location specific descriptions by a name or number.

A temporary shunting area is always under the responsibility of a Shunting area manager.

Points in the temporary shunting area are released for the Shunting area manager to control via the handheld terminal, if not locked for safety reasons. If the handheld terminal is not available, the Shunting area manager requests the Signaller to throw the points inside the area.

Responsibilities

OR.DEF.164

Signaller

You must agree the boundaries and timing of the temporary shunting area with the Shunting area manager.

All movements in and out of the temporary shunting area must be coordinated between you and the Shunting area manager.

OR.DEF.166 **Shunting area manager** You must agree the boundaries and timing of the temporary shunting area with the Signaller. When the temporary shunting area is established you are in charge of that particular area of infrastructure.

All movements in and out of the temporary shunting area must be coordinated between you and the Signaller.

OR.DEF.167 **Shunting area manager** You must regulate shunting movements within the temporary shunting area to be conducted safely.

OR.DEF.698

## Possession

OR.DEF.574

## PICOP ID

OR.DEF.575 **DEFINITION** The PICOP ID is used to identify the PICOP and is assigned by Banedanmark once the PICOP has obtained competence to act as a PICOP.

### Change per 2021-07-30:

The PICOP ID is a ~~unique ID used number to identifying~~ identify the PICOP and is assigned by Banedanmark once the PICOP has obtained ~~railway competences~~ competence to act as a PICOP.

OR.DEF.690

## Terms

OR.DEF.417

## Book of Forms

OR.DEF.418 **DEFINITION** All Operational Instruction forms and other forms referenced in ORF are collected in a Book of Forms contained in Appendix A of ORF.

All the forms contained in the Book of Forms can be identified by an Operational Instruction number or a name.

### Change per 2021-07-30:

All Operational Instruction forms and other forms referenced in ~~the Operational Rules~~ ORF are collected in a Book of Forms contained in Appendix A of ~~the Operational Rules~~ ORF.

All the forms contained in the Book of Forms can be identified by an Operational Instruction number or a name.

OR.DEF.493

## Rolling stock

OR.DEF.494      DEFINITION      Rolling stock is the collective name for the wheeled railway equipment that moves on the rails and meets the minimum requirements for railway operation.

Rolling stock is considered electrical when the pantograph is raised and in contact with the overhead wire.

**Change per 2021-07-30:**

Rolling stock is the collective name for the wheeled railway equipment that moves on the rails and meets the minimum requirements for railway operation.

Rolling stock is considered electrical when the pantograph is raised and in contact with the overhead wire.

OR.DEF.888      **Legacy signaller**

OR.DEF.889      DEFINITION      Legacy signaller is the term used for the role in level 0 or level ATC which corresponds to Signaller in ORF.

**Change per 2021-07-30:**

Legacy signaller is the term used for the role in level 0 or level ATC which corresponds to Signaller in ~~these~~ Operational Rules ORF.

OR.DEF.645      **Signaller protected area**

OR.DEF.646      DEFINITION      A Signaller protected area is an area of the infrastructure for which the Signaller uses available signalling controls to provide safe conditions for unplanned short-term access to the tracks or violation of the safety distance for machinery.

The Signaller protected area is applied in a situation where this is immediately necessary outside of a possession. Signaller protected areas can be used in situations requiring e.g. Emergency services access to tracks, for Drivers to clamp points, for Drivers to inspect trains or if the safety distance for machinery is violated. In a Signaller protected area it is not allowed to perform maintenance or infrastructure work.

**Change per 2021-07-30:**

A Signaller protected area is an area of the infrastructure for which the Signaller uses available signalling controls to provide safe conditions for unplanned short-term access to the tracks or violation of the safety distance for machinery.

The Signaller protected area is applied in a situation where this is immediately necessary outside of a possession. Signaller protected areas can be used in situations requiring e.g. Emergency services access to tracks, for Drivers to clamp points, for Drivers to inspect trains ~~et~~ or if the safety distance for machinery is violated. ~~In a Signaller protected area it is not used allowed for to perform~~ maintenance or infrastructure work.

OR.DEF.589

## Traction unit

OR.DEF.590

### DEFINITION

Traction unit is the collective term used for self-propelled rolling stock and covers locomotives, train sets, rail tractors and rail driven machinery.

Traction units are considered electrical when the pantograph is raised and in contact with the overhead wire.

**Change per 2021-07-30:**

Traction unit is the collective term used for self-propelled rolling stock and covers locomotives, train sets, rail tractors and ~~workingrail units~~ driven machinery.

Traction units are considered electrical when the pantograph is raised and in contact with the overhead wire.

OR.DEF.691

## Train Radio

OR.DEF.179

## Train Radio

OR.DEF.180

**DEFINITION**

The train radio is the primary tool for voice communication between the Driver and the Signaller, or between the Driver and the Shunter.

The Driver can select between two states in the train radio, either "Train" or "Shunting".

A number is entered into the radio, or automatically transmitted from the onboard, to identify the train radio to the radio system. For movements according to and in connection to the timetable the number will be the train running number, for other movements it will be a fixed number assigned to the traction unit or the train running number with "99" in front.

Information on the radio network is available in the Route Book.

**Change per 2021-07-30:**

The train radio is the primary tool for voice communication between the Driver and the Signaller, or between the Driver and the Shunter.

The Driver can select between two states in the train radio, either "Train" or "Shunting".

A number is entered into the radio, or automatically transmitted from the onboard, to identify the train radio to the radio system. For movements according to and in connection to the timetable the number will be the train running number, for other movements it will be a fixed number assigned to the traction unit or the train running number with "99" in front.

Information on the radio network is available in the Route Book.

**Responsibilities**

OR.DEF.181

**Driver**

You must ensure the train radio is updated to the correct network following the crossing of a country border. If you are engaged in an emergency call you must postpone updating the network until the emergency call is concluded.

You must ensure that the number entered, or automatically transmitted from the onboard, in the radio is consistent with the timetable. If you are not running a scheduled movement you must enter the fixed number assigned to the traction unit.

If it is not possible to update the radio with the correct number you must inform the Signaller, using any means available.



OR.DEF.685

**Degraded operation**

OR.DEF.233

**Operational Instruction**

OR.DEF.234

DEFINITION

An Operational Instruction is an instruction issued by the Signaller to the Driver to ensure safe operation when this cannot be provided by the signalling system.

An Operational Instruction must only be issued when the train is at a standstill and never past more than one ETCS stop marker at a time.

An Operational Instruction may be transmitted as verbal instructions for the driver to write down or handed out physically on paper to the Driver.

An Operational Instruction must not be transferred from one Driver to another Driver.

When an Operational Instruction has been issued it is valid until the movement is completed and the train has reached the end of authority, until it is revoked by an Operational Instruction 4, or a new Operational Instruction referring to the authorisation number of the previous Operational Instruction using "Additional instruction".

An Operational Instruction will state:

- which train it is issued to
- the time and date it was issued
- from where it is issued
- the location where it is valid
- a clear, precise, unambiguous instruction
- an authorisation number.

Field D is used when the position of the train is at a kilometer reference in a location with two or more tracks next to each other.

**Change per 2021-07-30:**

An Operational Instruction is an instruction issued by the Signaller to the Driver to ensure safe operation when this cannot be provided by the signalling system.

An Operational Instruction must only be issued when the train is at a standstill and never past more than one ETCS stop marker at a time.

An Operational Instruction may be transmitted ~~physically on paper or~~ as verbal instructions for the driver to write down or handed out physically on paper to the Driver.

An Operational Instruction must not be transferred from one Driver to another Driver.

When an Operational Instruction has been issued it is valid until the movement is completed and the train has reached the end of authority ~~or~~, until it is revoked by an Operational Instruction 4, ~~explicitly~~ or a new Operational Instruction referring to the authorisation number of the previous Operational Instruction using "Additional instruction".

An Operational Instruction will state:

- which train it is issued to
- the time and date it was issued
- from where it is issued
- the location where it is valid
- a clear, precise, unambiguous instruction
- an authorisation number.

Field D is used when the position of the train is at a kilometer reference in a location with two or more tracks next to each other.

Responsibilities

OR.DEF.235

Driver

When you receive an Operational Instruction you must check that the Operational Instruction refers to your train and, if relevant, its current location.

**Change per 2021-07-30:**

When you receive an Operational Instruction you must check that the Operational Instruction refers to your train and, ~~you~~ if relevant, its current location.

- OR.DEF.236 **Driver** When you receive an Operational Instruction it takes precedence over other indications presented on the DMI except when a lower permitted speed or a lower release speed is displayed.
- OR.DEF.237 **Signaller** You must issue the Operational Instruction to be executed as close as sensible to the affected area and only when the necessary conditions are met.

OR.DEF.238

### Operational Instruction 1

OR.DEF.239

#### DEFINITION

Operational Instruction 1 is a permission to pass an end of authority using either SR-mode or with isolated onboard. It is used when the signalling system cannot issue a movement authority.

In addition to the general information contained in an Operational Instruction, the Operational Instruction 1 also specifies:

- exact location/identity of the end of authority that is allowed to be passed
- relevant speed restrictions below 40 km/h
- additional relevant instructions.

Additional relevant instruction is e.g. on a failed level crossing.

See Book of forms Operational Instruction 1 for layout.

#### **Change per 2021-07-30:**

Operational Instruction 1 is a permission to pass an end of authority using either SR-mode or ~~IS-mode~~ with isolated onboard. It is used when the signalling system cannot issue a movement authority.

In addition to the general information contained in an Operational Instruction, the Operational Instruction 1 also specifies:

- exact location/identity of the end of authority that is allowed to be passed
- relevant speed restrictions below 40 km/h
- additional relevant instructions.

Additional relevant instruction is e.g. on a failed level crossing.

See Book of forms {Operational Instruction 1} for layout.

OR.DEF.297

### Electric traction unit restriction

OR.DEF.298

**DEFINITION**

Electric traction unit restriction is a restriction to ensure that electric traction units are not routed into tracks without a catenary system or where the catenary system is reported as isolated.

For supervised movements the electric traction unit restriction is managed by the signalling system. Route setting for trains identified as electric traction unit(s) into tracks without a catenary system or with a catenary system reported as isolated will require a specific Signaller override.

For unsupervised movements the electric traction unit restriction is managed by the Signaller.

Tracks not equipped with a catenary system are marked by electrical unit stop markers and point position indicators.

**Change per 2021-07-30:**

Electric traction unit restriction is a restriction to ensure that electric traction units are not routed into tracks without a catenary system or where the catenary system is reported as isolated.

For supervised movements the electric traction unit restriction is managed by the signalling system. Route setting for trains identified as electric traction unit(s) into tracks without a catenary system or with a catenary system reported as isolated will require a specific Signaller override.

For unsupervised movements the electric traction unit restriction is managed by the Signaller.

Tracks not equipped with a catenary system are indicated in the route book and marked by electrical unit stop markers and point position indicators.

## Procedures

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1947		<b>Normal operation</b>
2014		<b>Awakening with invalid or unknown position</b>
2015	Precondition	The Driver has pressed the Start button. The position stored by the onboard cannot be validated by the signalling system.

**Change per 2021-07-30:**

The Driver of a train outside a possession or shunting area has pressed the Start button. The position stored by the onboard cannot be validated by the signalling system.

2016	Purpose	To authorise the Driver to begin a mission using SR-mode on an Operational Instruction 7.
2017	Driver, Signaller	 <p>When the position stored by the onboard cannot be validated by the signalling system it is not possible to issue an FS MA or OS MA to the train. A press of the start button will cause the signalling system to automatically offer the Driver to acknowledge a change to SR-mode.</p> <p>The Signaller is informed via the signalling control display about train's whose position cannot be validated by the signalling system.</p> <p>The position status of the train is checked when the train passes over a balise and receives a position update from the signalling system.</p>
3710	Driver	If the symbol "Acknowledge SR-mode" is indicated on the DMI after pressing the start button, the Driver must inform the Signaller.
2018	Signaller	When the Driver informs that a movement authority was not provided to the train after pressing the start button, the Signaller must in co-operation the Driver establish the location of the train.
2021	Signaller	<p>When the correct location of the train has been established the Signaller must ensure that:</p> <ol style="list-style-type: none"> <li>1. Allocate the correct train running number to the indication of the train on the signalling control display</li> <li>2. Moveable elements in the track section where authority to move on Operational Instruction 7 will be valid are detected in the correct lie and prevented from further throwing or any moveable elements in the track section where authority to move on Operational Instruction 7 will be valid are safe to pass according to the procedure Infrastructure fault - Handling of an undetected point that is not trailed, Infrastructure fault - Handling of a trailed point or location specific description</li> <li>3. The track section where authority to move on Operational Instruction 7 will be valid is unoccupied, unless the Signaller requires the train to enter an occupied track section, a possession or a shunting area</li> <li>4. No other trains have authority to move within or into the track section where authority to move on Operational Instruction 7 will be valid</li> <li>5. No other trains have authority to move within or into the track section which follows the track section where authority to move on Operational Instruction 7 will be valid, unless the Operational Instruction 7 will apply to an occupied track section, a buffer stop, a possession or a shunting area</li> <li>6. Instruct the Driver to complete an Operational Instruction 7.</li> </ol>

**Change per 2021-07-30:**

When the correct location of the train has been established the Signaller must ensure that:

1. Allocate the correct train running number to the indication of the train on the signalling control display
2. ~~Set a~~ Moveable route elements in the track section where authority to move on Operational Instruction 7 will be valid are detected in the correct lie and prevented from further throwing or any moveable elements in the track section where authority to move on Operational Instruction 7 will be valid are safe to pass according to the procedure [Infrastructure fault - Handling of an undetected point that is not trailed], [Infrastructure fault - Handling of a trailed point] or location specific description
3. The track section where authority to move on Operational Instruction 7 will be valid is unoccupied, unless the Signaller requires the train to enter an occupied track section, a possession or a shunting area
4. No other trains have authority to move within or into the track section where authority to move on Operational Instruction 7 will be valid
5. No other trains have authority to move within or into the track section which follows after the track section where authority to move on Operational Instruction 7 will be valid, unless the Operational Instruction 7 will apply to an occupied track section, a buffer stop, a possession or a shunting area
46. Instruct the Driver to complete an Operational Instruction 7.

2023	Driver	The Driver must complete the Operational Instruction 7 according to the Signaller's instructions. The Driver is then permitted to acknowledge SR-mode and perform the movement as instructed.
2026	Driver	When the train reaches the next ETCS stop marker, or the location specified on the Operational Instruction, and a movement authority is received, the Driver may continue according to the indications in the DMI.  If the train reaches the nex ETCS stop marker, or the location specified on the Operational Instruction, and no movement authority is received, the Driver must press the Start button to request a movement authority.
3787	Signaller	If the train has reached the next ETCS stop marker or the location specified on the Operational Instruction, and it is still not possible to issue a movement authority to the train, the Signaller must apply the procedure Degraded operation - Authorised passing of the end of authority.
1990		<b>Beginning a mission</b>
1991	Precondition	The train is in SB-mode. Onboard train data entry has been successfully completed and the Driver is ready to begin the mission.
1992	Purpose	To supply the Driver with an appropriate driving mode according to train location.

**PROCEDURE**

- 3084 Signaller, Driver  When the signalling system registers a Start button from a train not yet on a mission, the signalling system will if possible provide the train with an OS MA, if the train is located in or at the entrance to the interlocked area. The OS MA will be updated when the conditions for an FS MA are met.
- 1993 Driver To request a movement authority the Driver must press the Start button.
- The Driver must **NOT** press the start button if there are other trains between the front end of the train and the first ETCS stop marker.
- 3085 Driver If a movement authority has not been received at the departure time indicated in the timetable, the Driver must contact the Signaller and request further instructions.
- 1996 Signaller If the Signaller receives a request for an authority to move, the Signaller must provide the train with the relevant authority to move.
- If it is not possible to grant a movement authority the Signaller must inform the Driver about an alternative departure.

**Change per 2021-07-30:**

If the Signaller receives a request for ~~a movement an~~ authority to move, the Signaller must ~~as far as possible~~ provide the train with the relevant authority to move.

~~If the Signaller receives an alternative is train not departure possible suggestion to from grant the a signalling movement system, authority the Signaller must acknowledge the suggestion or produce and implement update of inform the production plan through manual route setting or use of Driver production about plan an update alternative functions departure.~~

- 1997 Signaller If the expected train is indicated with an invalid or unknown position on the signalling control display, the Signaller must initiate the procedure Normal operation - Awakening with invalid or unknown position.
- 2030 **Train departure**
- 2031 Precondition A supervised train is at a standstill. A driving mode is displayed on the DMI.
- 2032 Purpose Ensure that trains are issued with movement authorities according to the timetable, and inform the Signaller when a movement authority is not available as expected.

**PROCEDURE**

- 2033 Driver The Driver must check that a movement authority is displayed on the DMI and that it is consistent with the departure time of the train.
- 2034 Driver If the Driver does not have a movement authority displayed on the DMI where one is expected, and there is no obvious reason for it to be withheld, the Driver must contact the Signaller.

2036	Signaller	<p>If the Signaller receives a request for an authority to move, the Signaller must provide the train with the relevant authority to move.</p> <p>If it is not possible to grant a movement authority the Signaller must inform the Driver about an alternative departure.</p>
<div style="border: 1px dashed gray; padding: 10px; background-color: #f0f0f0;"> <p><b>Change per 2021-07-30:</b></p> <p>If the Signaller receives a request for <u>a movement an authority to move</u>, the Signaller must <u>as far as possible</u> provide the train with the relevant authority to move.</p> <p>If <del>the Signaller receives an alternative train not departure possible suggestion to from grant the a signalling movement system, authority</del> the Signaller must <u>acknowledge inform the suggestion or produce and Driver implement about an update to the production plan through manual route setting or use of production plan update alternative functions departure.</u></p> </div>		
3556	Signaller	<p>If a Driver reports that the train does not have a movement authority, the Signaller must investigate possible causes and set the conditions to allow a movement authority to be sent to the train.</p> <p>If it is not possible to send a movement authority, the Signaller must apply the procedure Degraded operation - Authorised passing of the end of authority.</p>
2037	Railway Undertaking	<p> The Railway Undertaking must have procedures to ensure safe train departure at the time specified in the time schedule.</p>
2038	Driver	<p>When a movement authority is indicated on the DMI, the Driver must initiate Railway Undertaking procedures for train departure at the time specified by the Railway Undertaking.</p>
3743	Driver	<p>Before the train departs, the Driver must check if there is a passenger crossing located between the front end of the train and the first ETCS stop marker.</p> <p>If there is a passenger crossing located between the front end of the train and the first ETCS stop marker, the Driver must assume that the warning system is not activated and pass the crossing with caution.</p>
2047	<p><b>Arrival at scheduled stop</b></p>	
2048	Precondition	<p>The train is approaching a scheduled stopping location.</p>
2049	Purpose	<p>Stopping correctly at the stopping locations that are optimal for passenger loading at platforms, and at the end of authority for working units and freight trains.</p> <p>Avoid obstructing moveable elements or track sections behind the train.</p>
<p><b><u>PROCEDURE</u></b></p>		
2050	Driver	<p>The Driver must control the train to a standstill at the scheduled stopping location as indicated in the timetable.</p>

2051	Railway Undertaking		The Railway Undertaking must have procedures enabling the Driver to always stop at the most optimal location according to the relevant type and length of rolling stock. The stopping procedures must ensure that track sections and moveable elements behind the train are not obstructed unnecessarily.
2052	Driver		Where the scheduled stopping location is not at the end of authority indicated on the DMI, the Driver must control the train to a standstill at the correct location along the platform according to Railway Undertaking procedures.
2053	Driver		Where the scheduled stopping location is at the end of authority indicated on the DMI, the Driver must control the train to a standstill at the end of authority according to Railway Undertaking procedures.
2054	Driver		If the Scheduled stopping location is technical, the Driver must control the train to a standstill at the end of authority.
2055	Driver		Deleted
<p data-bbox="667 835 967 869"><b>Change per 2021-07-30:</b></p> <p data-bbox="667 898 1374 994"><del>When the train reports to the signalling system that it is at a standstill, information contained in the production plan will determine the next operational step.</del> Deleted</p>			
2056	Driver		If the next operational step is to continue as a train the Driver must initiate the procedure Normal operation - Train departure or Normal operation - Beginning a mission.
			If the next operational step is not to continue as a train the Driver must initiate the procedure Normal operation - Rolling stock is not continuing as a train or Shunting - Prepare shunting movement.
			If the next operational step is unknown the Driver must apply the procedure Normal operation - Next operational step unknown.
2070			<b>Next operational step unknown</b>
2071	Precondition		The train is at a standstill but not in a depot or at a stabling track. The timetable does not contain any further operations for the train.
2072	Purpose		Update timetable to resume or end the mission of the train.
			<b><u>PROCEDURE</u></b>
2073	Signaller		Deleted

**Change per 2021-07-30:**

~~When the production plan contains no further operations for a train the signalling system will inform the Signaller. The signalling system may in some case also shorten the remaining movement authority and release any route associated with the train.~~ Deleted

2074	Signaller		The Signaller must decide the next operational step required and inform the Driver if this deviates from any pre-agreed plan.
2075	Signaller		To resume or end the mission of the train the Signaller must update the production plan or use manual route setting.
2076	Driver		The Driver must accept any valid changes to the pre-agreed plan as informed by the Signaller.
3292			<b>Handling of TR-mode</b>
3293	Precondition		A train has entered TR-mode and the emergency brake is applied.
3294	Purpose		Resume driving after entering TR-mode.
			<b><u>PROCEDURE</u></b>
3295	Driver, Signaller		<p>When a train exceeds the authority supervised by the onboard, or an unsafe condition arises either in the signalling system or detected by the onboard, or an emergency stop is issued from the signaller the onboard will enter TR-mode. When the onboard enters TR-mode, the emergency brakes will be applied bringing the train to a standstill. When the train is at a standstill the onboard automatically changes into acknowledge TR-mode.</p> <p>Trains entering into TR-mode are indicated to the Signaller on the signalling control display.</p>
3296	Signaller		When a train has entered TR-mode due to exceeding its authority and poses a danger to other movement in the area, the Signaller must apply the procedure Emergency - Stop trains and vehicles from entering hazardous area.
3297	Driver		When the train enters TR-mode, the Driver may acknowledge TR-mode once the train is at a standstill.
3298	Driver, Signaller		<p>When the Driver acknowledges TR-mode the onboard changes from TR-mode to PT-mode and the symbol indicating PT-mode is displayed on the DMI.</p> <p>Once in PT-mode, the emergency brake is released enabling the Driver to continue once a new movement authority is received.</p>

3299	Driver	<p>When the Driver has acknowledged TR-mode the Driver must determine the reason for the entry into TR-mode and inform the Signaller.</p> <p>If the entry into TR-mode is caused by an onboard failure the Driver must apply the procedure Train failure - Train and/or onboard failure during a mission.</p> <p>If the train is required to be moved the Driver must request the Signaller for permission to proceed.</p>
3300	Signaller	<p>When the Signaller is informed of an entry into TR-mode, the Signaller must determine if the train has entered TR-mode as a result of exceeding its own authority or if it is caused by another reason.</p> <p>If the train has exceeded its own authority, the Signaller must apply the procedure Incidents - Reporting incident.</p> <p>If the train has been stopped because an emergency stop was sent, the Signaller must only allow the train to continue driving when it has been verified that it is safe to do so.</p> <p>If the train must continue driving, the Signaller must request the Driver to press the Start button.</p>
3586	Driver	<p>When requested by the Signaller, the Driver must press the Start button to request a movement authority from the signalling system. The Driver must report to the Signaller if a movement authority is received.</p>
3302	Signaller	<p>If the train enters TR-mode entering or exiting a possession, temporary or permanent shunting area the Signaller must obtain further information from the Shunter or PICOP before permitting the train to be moved.</p>
3587	Signaller	<p>If the Driver reports that a movement authority is received, the Signaller may allow the Driver to continue driving according to the movement authority.</p> <p>If the Driver reports that no movement authority is received, the Signaller must ensure that:</p> <ol style="list-style-type: none"> <li>1. Moveable elements in the track section where authority to move on Operational Instruction 2 will be valid are detected in the correct lie and prevented from further throwing or any moveable elements in the track section where authority to move on Operational Instruction 2 will be valid are safe to pass according to the procedure Infrastructure fault - Handling of an undetected point that is not trailed, Infrastructure fault - Handling of a trailed point or location specific description</li> <li>2. The track section where authority to move on Operational Instruction 2 will be valid is unoccupied, unless the Signaller requires the train to enter an occupied track section, a possession or a shunting area</li> <li>3. No other trains have authority to move within or into the track section where authority to move on Operational Instruction 2 will be valid</li> <li>4. No other trains have authority to move within or into the track section which follows the track section where authority to move on Operational Instruction 2 will be valid, unless the Operational Instruction 7 will apply to an occupied track section, a buffer stop, a possession or a shunting area</li> <li>5. Instruct the Driver to complete an Operational Instruction 2.</li> </ol>

**Change per 2021-07-30:**

If the Driver reports that a movement authority is received, the Signaller may allow the Driver to continue driving according to the movement authority.

If the Driver reports that no movement authority is received, the Signaller must ensure that:

1. Moveable Checkelements that in the route track issection set where authority to move on Operational Instruction 2 will be valid are detected in the correct lie and prevented from further throwing or any moveable elements in the track section where authority to move on Operational Instruction 2 will be valid are safe to pass according to the procedure [Infrastructure fault - Handling of an undetected point that is not trailed], [Infrastructure fault - Handling of a trailed point] or location specific description
2. The track section where authority to move on Operational Instruction 2 will be valid is unoccupied, unless the Signaller requires the train to enter an occupied track section, a possession or a shunting area
3. No other trains have authority to move within or into the track section where authority to move on Operational Instruction 2 will be valid
4. No other trains have authority to move within or into the track section which follows the track section where authority to move on Operational Instruction 2 will be valid, unless the Operational Instruction 27 will apply to an occupied track section, a buffer stop, a possession or a shunting area
35. Instruct the Driver to complete an Operational Instruction 2.

3301	Driver	<p>The Driver must complete the Operational Instruction 2 form as instructed by the Signaller.</p> <p>When the Operational Instruction 2 is completed, the Driver may acknowledge SR-mode and proceed according to information contained in Operational Instruction 2.</p>
3303	Signaller	<p>If no further movements are required the Signaller must instruct the Driver to close the driving desk by means of Operational Instruction 2 using the additional instructions section.</p>
3224		<h3>Parking in an interlocked area</h3>
3225	Precondition	<p>A need for an unplanned parking in an interlocked area has occurred.</p>
3226	Purpose	<p>To ensure the parking does not affect the timetable and ensure the production plan is updated to reflect the changes.</p>
		<h3><u>PROCEDURE</u></h3>
3227	Railway Undertaking	<p> The Railway Undertaking must have procedures describing how the Driver can perform a safe parking of rolling stock in an interlocked area. This includes correct application of parking brakes for the concerned rolling stock to prevent any unintentional movement.</p>

3228	Driver	<p>The Driver must request the Signaller for permission to park a train.</p> <p>The request must contain:</p> <ul style="list-style-type: none"> <li>- train length,</li> <li>- track number</li> <li>- expected parking duration</li> <li>- reason for parking.</li> </ul>
3230	Signaller	<p>The Signaller must assess the request and decide if it can be approved.</p> <p>If the request can be approved, the Signaller ensure it is noted in the Signaller log and inform the Driver. The Signaller may then issue a movement authority.</p> <div style="border: 1px dashed gray; padding: 10px; margin-top: 10px;"> <p><b>Change per 2021-07-30:</b></p> <p>The Signaller must assess the request and <del>test</del><u>decide if using it</u> <del>can be approved.</del>  <u>can be approved.</u></p> <p>If the request is <del>can be approved,</del> <u>acceptable</u>, the Signaller <del>may ensure it is noted in the production Signaller plan, log and inform the Driver, and</del> <u>may then</u> issue a movement authority <del>to the parking track.</del></p> </div>
3231	Signaller	<p>If the request cannot be approved, the Signaller must inform the Driver and agree on an alternative.</p> <div style="border: 1px dashed gray; padding: 10px; margin-top: 10px;"> <p><b>Change per 2021-07-30:</b></p> <p>If the request cannot be approved, the Signaller <del>may produce an alternative parking suggestion.</del></p> <p>If <del>no other alternatives are</del> <u>must possible</u> <del>inform the Signaller</del> <u>Driver</u> <del>must and reject</del> <u>agree the on parking an request</u> <del>alternative.</del></p> </div>
3232	Driver	<p>When the train has arrived at the agreed parking track, the Driver must secure the parked rolling stock against any unintended movements according to Railway Undertaking procedures.</p>
3151		<p style="color: #4F81BD;"><b>Planning a working unit move</b></p> <div style="border: 1px dashed gray; padding: 10px; margin-top: 10px;"> <p><b>Change per 2021-07-30:</b></p> <p><del>Signaller planning</del> <u>Planning</u> a working unit move</p> </div>
3152	Precondition	<p>The Driver of a safe and fit working unit has identified the need for an impromptu move.</p>
3153	Purpose	<p>Planning the working unit move and updating the production plan in the signalling system.</p>

**PROCEDURE**

- 3154 Driver If the deadline for ordering a movement with the planning department has expired, the Driver may contact the Signaller and request a working unit move.
- The Driver must complete the information required by part A of request Working unit movement form and use this to communicate the request to the Signaller.
- 3155 Signaller When a Driver requests a working unit move the Signaller must complete part A of request Working unit movement form as instructed by the Driver.
- 3156 Signaller If the request involves driving out of the level 2 area, the Signaller must ensure that the Legacy signaller is contacted and the movement is agreed.
- Change per 2021-07-30:**

If the ~~requested move~~request involves ~~entering~~driving another out ~~Infrastructure of manager's~~the network level 2 area, the Signaller must ~~contact~~ensure that the adjacent ~~Legacy Signaller~~signaller and is ~~arrange~~contacted the and ~~timing~~the of movement this move ~~is~~ agreed.
- 3157 Signaller  The train running number is assigned as part of the planning. When the the planning is approved, the production plan is automatically updated in the signalling system.
- Change per 2021-07-30:**

The train running number is assigned ~~by~~as part of the Signaller ~~planning~~. When the Signaller~~the~~ approves~~planning~~ the ~~is~~ schedule ~~approved~~, the production plan is automatically updated in the signalling system.
- 3158 Signaller The Signaller must ensure that the mission is planned in the signalling system.
- Change per 2021-07-30:**

The Signaller must ~~assign a train running number~~ensure and that ~~the~~the ~~prepare~~mission ~~is~~ schedule~~planned~~ in the production ~~signalling~~ ~~plan~~system.
- 3159 Signaller When the mission has been planned in the signalling system, the Signaller must ensure that part B of the form "Request working unit movement" is completed and then contact the Driver to dictate the information on the form.

**Change per 2021-07-30:**

When the ~~schedule mission~~ has been ~~prepared~~ planned by the Signaller ~~signalling system~~, the Signaller must ~~complete the details of the movement~~ ensure using that part B of the form "Request working unit movement" is completed and ~~instruct~~ then contact the Driver to dictate the information on the form.

3160 Driver When the Driver has completed part B of form Request working unit move the Driver may apply procedure Normal operation - Enter onboard train data.

3163 **Signaller handling changes to operation**

3164 Precondition The Signaller is aware of the need to perform a change to planned operations.

3165 Purpose To ensure the change is either handled by the Signaller according to service agreements or by the Signaller requesting instructions from the Network manager.

**PROCEDURE**

3166 Infrastructure Manager  Banedanmark has service agreements with Railway Undertakings defining standard responses to deviations in planned operations.

**Change per 2021-07-30:**

Banedanmark has service agreements with Railway Undertakings defining standard responses to deviations in planned operations.

~~The service agreements are used as an input to the signalling system. Changes to the production plan proposed by the signalling system are aligned with the service agreements and no additional approval from the Railway Undertaking is required.~~

3168 Signaller  Manual route setting can be used for last-minute re-scheduling by requesting a route for the concerned train.

Any changes made by manual route setting will be automatically reflected in the production plan.

3169 Signaller If the change can be handled according to the service agreements the Signaller must update the production plan.

If the change cannot be handled according to the service agreements the Signaller must inform the Network manager.

3557 Signaller If the change in the production plan results in a change in the trains mission, or a change in the scheduled stopping locations, the Signaller must ensure that the Driver is informed about the changes.

3170 Signaller If the change in the production plan results in an altered train sequence to adjacent Infrastructure Managers, the Signaller must inform the adjacent Signaller about the change in train sequence.

If the change in the production plan results in an altered train sequence for a train entering or exiting a depot, the Signaller must contact the person controlling the depot and coordinate necessary changes.

3593 Signaller The Signaller must ensure that the Signallers affected by the change are informed.

3458 **Crossover**

3459 **Shunting from Fjernbane to S-bane**

**Change per 2021-07-30:**

~~Unsupervised crossover~~ Shunting from Fjernbane to S-bane

3460 Precondition A vehicle is ready to perform a shunting movement from Fjernbane to S-bane.

**Change per 2021-07-30:**

~~The technical conditions for issuing a movement authority are not available. A train vehicle is ready to perform an unsupervised shunting crossover movement~~ from Fjernbane to S-bane.

3461 Purpose For the Signaller to ensure adequate protection for the area and subsequently authorise the Shunting Area Manager to allow a shunting movement to S-bane in cooperation with the S-bane Signaller.

**Change per 2021-07-30:**

For the Signaller to ensure adequate protection for ~~the route area~~ and subsequently authorise the ~~Driver~~ Shunting Area Manager to ~~cross allow over a shunting movement~~ to S-bane in cooperation with the S-bane Signaller.

**PROCEDURE**

3462 Shunting area manager The Shunting area manager must contact the Signaller and request a temporary shunting area in order to cross over to S-bane.

**Change per 2021-07-30:**

The ~~Driver~~ Shunting area manager must contact the Signaller and request ~~authority~~ a temporary shunting area in order to cross over to S-bane.

3463 Driver, Signaller



Deleted

**Change per 2021-07-30:**

~~Banedanmark has location specific descriptions defining the location used as end of authority in relation to unsupervised crossovers on Operational Instruction. If relevant, the location specific description also defines the release of interlocked points protecting the crossover location between Fjernbane and S-bane.~~  
Deleted

3464 Signaller

When the Signaller is requested by a Shunting area manger to establish a temporary shunting area in order cross over to S-bane, the Signaller must contact the S-bane Signaller controlling the area and arrange the timing of the crossover.

The Signaller must inform the Shunting area manager about the planned timing.

**Change per 2021-07-30:**

When the Signaller is requested by a ~~Driver~~Shunting area manger to establish a temporary shunting area in order cross over to S-bane, the Signaller must contact the S-bane Signaller controlling the area and:

- arrange the timing of the crossover.
- ~~- request movement protection~~
- ~~- The request~~Signaller must endinform of the authorityShunting location area on manager about the S-baneplanned networktiming.

3870 Shunting area manager

**Change per 2021-07-30:**

The Shunting area manager must ensure that a temporary shunting area is planned starting from the position of the vehicle to the transition point towards S-bane according to the procedure [Shunting - Planning a temporary shunting area].

3871 Shunting area manager

**Change per 2021-07-30:**

Before the planned timing for the shunting movement the Shunting area manager must establish the temporary shunting area according to the procedure [Shunting - Establish temporary shunting area with a handheld terminal] or [Shunting - Establish temporary shunting area without a handheld terminal].

3465 Signaller

When the S-bane Signaller has confirmed that the vehicle is allowed to shunt to S-bane the Signaller must give the Shunting area manager permission to shunt to the transition point towards S-bane.

**Change per 2021-07-30:**

~~When the S-bane Signaller has confirmed that movement protection has been applied and the any vehicle ends of allowed authority to location shunt is to received, S-bane the Signaller must apply the procedure [Degraded operation – Authorised passing of give the end Shunting of area authority].~~

~~The manager Signaller permission must to ensure shunt that to the end of authority location agreed transition with point the towards S-bane Signaller is stated on the Operational Instruction.~~

3531 Shunter

When the vehicle is at a standstill at the transition point, the Shunter must contact the S-bane Signaller in order to get instructions on how to continue the shunting.

**Change per 2021-07-30:**

~~When the Driver vehicle has is completed at a standstill at the movement transition as point, instructed the by Shunter must contact the S-bane Signaller the in Driver order must to observe get the instructions Operational on Rules show of to S-bane continue the shunting.~~

3481

**Shunting from S-bane to Fjernbane**

**Change per 2021-07-30:**

~~Unsupervised crossover~~ Shunting from S-bane to Fjernbane

3482 Precondition

A vehicle is requested to perform a shunting movement from S-bane to Fjernbane.

**Change per 2021-07-30:**

~~The technical conditions for issuing a movement authority are not available. A train/vehicle is requested to perform an unsupervised shunting crossover movement from S-bane to Fjernbane and the timing is agreed.~~

3483 Purpose

For the Signaller to ensure adequate protection for the area to enable the S-bane Signaller to authorise the train or working unit to perform a shunting movement to cross over to Fjernbane.

**Change per 2021-07-30:**

~~For the Signaller to ensure adequate protection for at the route area to enable the S-bane Signaller to authorise the train or working unit to perform a shunting movement to cross over to ~~the~~ Fjernbane.~~

**PROCEDURE**

3484 Signaller



Deleted

**Change per 2021-07-30:**

~~Banedanmark has location specific descriptions defining the location used as end of authority in relation to unsupervised crossovers on Operational Instruction. If relevant, the location specific description also defines the release of interlocked points protecting the crossover location between Fjernbane and S-bane. Deleted~~

3485 Signaller

When the S-bane Signaller requests that a vehicle crosses over to Fjernbane, the Signaller must plan a timing with the S-bane Signaller.

**Change per 2021-07-30:**

When the S-bane Signaller requests that a train/vehicle crosses over to ~~the~~ Fjernbane, the Signaller must:

- ~~1. Identify the end of authority stated in the location specific descriptions.~~
- ~~2. Protect the movement according to the procedure [Degraded operation – Authorised passing of the end of authority].~~

~~The Signaller plan may a the timing inform with the S-bane Signaller about the end of authority for the movement.~~

3866 Shunting area manager

**Change per 2021-07-30:**

The Shunting Area Manager must ensure that a temporary shunting area is planned according to the procedure [Shunting – Planning a temporary shunting area].

The temporary shunting area must start at the system border from S-bane.

3867 Shunting area manager

**Change per 2021-07-30:**

Before the planned timing for the shunting movement the Shunting Area Manager must establish the temporary shunting area according to the procedure [Shunting – Establish temporary shunting area with a handheld terminal] or [Shunting - Establish temporary shunting area without a handheld terminal].

3868 Signaller

**Change per 2021-07-30:**

When the temporary shunting area is established the Signaller may allow the S-bane Signaller to authorise the shunting movement of the vehicle to the transition point to Fjernbane.

3486 Shunting area manager

When the vehicle is at a standstill by the transition point to fjernbane the Shunting Area Manager must contact the Signaller to request permission to cross the system border from S-bane.

**Change per 2021-07-30:**

When the Drivervehicle hasis completedat a standstill by the movementtransition aspoint instructedto byfjernbane the S-bane Shunting Signaller,Area Manager must contact the DriverSignaller mustto applyrequest procedurepermission [Normalto operation cross -the Entersystem onboardborder trainfrom data]S-bane.

3869 Signaller

**Change per 2021-07-30:**

When the Shunting Area Manager confirms that the vehicle is at a standstill at the system border from S-bane the Signaller must give permission to cross the transition point from S-bane and shunt to the temporary shunting area.

2731		<b>Degraded operation</b>
2732		<b>Authorised passing of the end of authority</b>
2733	Precondition	It is not possible to issue a movement authority. The train is at a standstill and voice communication has been established between the Driver and the Signaller.
2734	Purpose	For the Signaller to ensure adequate protection to allow the train to continue driving and authorise the Driver to pass the end of authority by use of Operational Instruction 1.
		<b><u>PROCEDURE</u></b>
2735	Driver	The Driver must report current location to the Signaller and request authority to proceed.
2736	Signaller	<p>When the Signaller has exhausted all possibilities for issuing a movement authority, the Signaller must protect the continued driving of the train and authorise the Driver to proceed past the end of authority and to the next ETCS stop marker, or other unambiguous location.</p> <p>To allow the continued driving of the train, the Signaller must ensure that:</p> <ol style="list-style-type: none"> <li>1. Moveable elements in the track section where authority to move on Operational Instruction 1 will be valid are detected in the correct lie and prevented from further throwing or any moveable elements in the track section where authority to move on Operational Instruction 1 will be valid are safe to pass according to the procedure Infrastructure fault - Handling of an undetected point that is not trailed, Infrastructure fault - Handling of a trailed point or location specific description</li> <li>2. The track section where authority to move on Operational Instruction 1 will be valid is unoccupied, unless the Signaller requires the train to enter an occupied track section, a possession or a shunting area</li> <li>3. No other trains have authority to move within or into the track section where authority to move on Operational Instruction 1 will be valid</li> <li>4. No other trains have authority to move within or into the track section which follows the track section where authority to move on Operational Instruction 1 will be valid, unless the Operational Instruction 1 will apply to an occupied track section, a buffer stop, a possession or a shunting area.</li> </ol>
2737	Signaller	<p>The Signaller must assess if any of the following restrictions apply to the continued driving of the train on Operational Instruction 1:</p> <ul style="list-style-type: none"> <li>- unusual transport restrictions,</li> <li>- electric traction unit restriction,</li> <li>- restrictions specified in location specific descriptions.</li> </ul>
2738	Signaller	If a level crossing is located between the train and the end of authority of the Operational Instruction 1, the Signaller must apply the procedure Degraded operation - Passing a level crossing without a movement authority.
2739	Signaller	If the Signaller requires the train to enter an occupied track and it is not according to the timetable, the Signaller must inform the Driver (if relevant) of the occupying train that another train is to approach.

- 3772 Signaller If the Signaller wants to authorise the train into a possession or shunting area, the Signaller must first contact the PICOP or Shunting area manager (if relevant) and request permission for the movement.
- 2740 Signaller When the continued driving of the train is protected, the Signaller must instruct the Driver to complete an Operational Instruction 1. The Operational Instruction 1 must include (as required):
- any speed restriction below 40 km/h
  - information about any occupied track
  - information about any level crossing not protected
  - stopping location if it is not the next ETCS stop marker
  - information about possessions or shunting areas.
- 2743 Signaller The Signaller must ensure that the continued driving of the train remains protected until one of the following conditions is fulfilled:
- the train has reached the end of authority of Operational Instruction 1 and has changed into supervised driving
  - the Operational Instruction is revoked by an Operational Instruction 3
  - the Driver reporting that the train is at a standstill at the end of authority of Operational Instruction 1 without a movement authority.
- 2744 Driver When the Operational Instruction 1 is completed, the Driver must check the location of the end of authority of the Operational Instruction 1 either by using the Route Book or by local area knowledge.
- The Driver is then authorised to press override to enter SR-mode and proceed to the next ETCS stop marker, or the location instructed, using the information contained in the Operational Instruction 1.
- If the movement ends in a possession or shunting area, the Driver may only start the movement according to Operational Instruction 1 when the movement inside the area has been agreed with the PICOP or Shunting area manager. The Driver must immediately after entering the area make sure that the onboard changes to SH-mode.
- 2745 Driver If Operational Instruction 1 contains additional information of a level crossing not protected, the Driver must proceed on sight with a maximum of 10 km/h, while using sound signal "Warning", until the lead cab has passed the level crossing.
- The Driver may omit the use of sound signal "Warning", when staff present at the level crossing is applying the hand signal "road traffic, stop".

**Change per 2021-07-30:**

If Operational Instruction 1 contains additional information of a level crossing not protected, the Driver must proceed on sight with a maximum of 10 km/h, while using sound signal "Warning", until the lead cab has passed the level crossing.

The Driver may omit the use of sound signal "Warning", when staff present at the level crossing is applying the hand signal "road traffic, stop".

3563			<b>Speed restriction</b>
3564			<b>Activate planned temporary speed restriction</b>
3565	Precondition		A temporary speed restriction has been planned in the signalling system.
3566	Purpose		To establish the temporary speed restriction to ensure that all supervised trains are supervised according to the temporary speed restriction, and updating the Signaller log.
3783	Infrastructure manager		<p>Banedanmark has a procedure to ensure that the Signaller has access to an overview of all planned temporary speed restrictions within their area of responsibility. The list contains as a minimum the following information:</p> <ul style="list-style-type: none"> <li>- speed restriction ID</li> <li>- applicable speed</li> <li>- start and end location of the speed restriction (in kilometres)</li> <li>- expected start and end timing</li> <li>- reason for the speed restriction.</li> </ul>
3784	Maintainer		<p>When the Maintainer wishes to activate a planned temporary speed restriction, the Maintainer must contact the Signaller and request activation.</p> <p>The request must contain the speed restriction ID, applicable speed and the location.</p> <div style="border: 1px dashed black; padding: 10px; margin-top: 10px;"> <p><b>Change per 2021-07-30:</b></p> <p>When the Maintainer wishes to activate a planned temporary speed restriction, the Maintainer must contact the Signaller and request activation.</p> <p>The request must contain the speed restriction ID, <u>applicable speed and the location.</u></p> </div>
3568	Signaller		<p>When the Maintainer requests the activation of a planned temporary speed restriction, the Signaller must check that the requested speed restriction ID is shown on the overview of planned temporary speed restrictions.</p> <p>Prior to activating the speed restriction, the Signaller must ensure that:</p> <ul style="list-style-type: none"> <li>- no supervised trains are currently running in the area</li> <li>- the Driver of any unsupervised movement in the area is informed when the speed restriction is below 40 km/h</li> <li>- the Shunter of any shunting movement in the area is informed when the speed restriction is below 25 km/h.</li> </ul>

**Change per 2021-07-30:**

When the Maintainer requests the activation of a planned temporary speed restriction, the Signaller must check that the requested speed restriction ID is shown on the overview of planned temporary speed restrictions.

Prior to activating the speed restriction, the Signaller must ensure that:

- no supervised trains are currently running in the area
- the Driver of any unsupervised movement in the area is informed when the speed restriction is below 40 km/h
- the Shunter of any shunting movement in the area is informed when the speed restriction is below 25 km/h.

~~When the listed conditions are met, the Signaller must activate the speed restriction in the signalling system.~~

3840 Signaller

**Change per 2021-07-30:**

The Signaller must then check that the indication of the speed restriction on the signalling control display is consistent with the planning. If the indication is consistent with the planning, the Signaller must activate the speed restriction in the signalling system.

If the indication of the speed restriction on the signalling control display is NOT consistent with the planning, the Signaller must ensure that the speed restriction is updated in the signalling system according to the planning.

3569 Signaller

When the temporary speed restriction is activated and indicated on the signalling control display, the Signaller must make an entry in the Signaller log. The entry must include the applicable speed, name of the person requesting the activation of the speed restriction and the location where the speed restriction applies.

3570 Signaller

If the Signaller knows that the planned temporary speed restriction is not needed, or is faulty, the Signaller must reject the request and inform the O&M coordinator.

2699

**Handling an unplanned speed restriction**

2700 Precondition

The need for an unplanned speed restriction is reported to the Signaller.

2701 Purpose

Ensuring that trains do not run in the affected area at a speed greater than the unplanned speed restriction.

**PROCEDURE**

2704	Signaller	When the need for an unplanned speed restriction is reported by anyone other than the O&M coordinator, the Signaller must bring all movements in or into the affected area to a standstill.
2703	Signaller	When the need for an unplanned speed restriction is reported by the O&M coordinator, the Signaller must: <ol style="list-style-type: none"> <li>1. Revoke existing movement authorities in or into the area</li> <li>2. Disable automatic route setting into the affected area</li> <li>3. Bring relevant unsupervised movements to a standstill.</li> </ol>
2705	Signaller	The Signaller must ensure that all supervised trains inside or entering the affected area remain at standstill until such time the speed restriction is implemented in the signalling system.
2706	Signaller	If the unplanned speed is lower than the maximum permitted speed for unsupervised movements the Signaller must ensure that all unsupervised movements inside or entering the affected area remain at standstill until the Drivers are informed about the unplanned speed restriction according to the procedure Speed restriction - Inform Driver of an unplanned speed restriction.
3786	Signaller	The Signaller must ensure that the speed restriction is planned according to the procedure Speed restriction - Implementing an unplanned speed restriction.

**Change per 2021-07-30:**

The Signaller must ~~plan~~ensure that the speed restriction is planned according to the procedure [Speed restriction - Implementing an unplanned speed restriction].

2709		<b>Implementing an unplanned speed restriction</b>
2710	Precondition	The need for an unplanned speed restriction has been reported to the Signaller.
2711	Purpose	Ensuring that the unplanned speed restriction is planned as a temporary speed restriction and activated in the signalling system.
		<b><u>PROCEDURE</u></b>
2712	Signaller	When a need for an unplanned speed restriction is reported, the Signaller must obtain information about the reason for the speed restriction and the location that it must apply.

2713	Signaller	<p>If the speed restriction is reported by staff with relevant technical competences, the Signaller must ensure that the speed restriction is planned in the signalling system according to the reported location and speed. The planning must include the reason for the speed restriction which will be shown on the Driver's DMI as a text message.</p> <p>If the speed restriction is reported by anyone other than staff with relevant technical competences, the Signaller must ensure that the speed restriction is planned with a ceiling speed of 10 km/h, and an additional 200 metres either side of the reported location. The planning must include the reason for the speed restriction which will be shown on the DMI as a text message.</p>
<p><b>Change per 2021-07-30:</b></p> <p>If the speed restriction is reported by staff with relevant technical competences, the Signaller must <del>plan</del><u>ensure that</u> the speed restriction <u>is planned</u> in the signalling system according to the reported location and speed. The planning must include the reason for the speed restriction which will be shown on the Driver's DMI as a text message.</p> <p>If the speed restriction is reported by anyone other than staff with relevant technical competences, the Signaller must <del>prepare</del><u>ensure that</u> the speed restriction <u>is planned</u> with a ceiling speed of 10 km/h, and an additional 200 metres either side of the reported location. The planning must include the reason for the speed restriction which will be shown on the DMI as a text message.</p>		
2716	Signaller	<p>When the speed restriction is planned, the Signaller must ensure that it is checked and approved by another person with competences as a Signaller.</p> <p>The Signaller must then finally approve and activate the speed restriction.</p>
2717	Signaller	<p> When the speed restriction is approved by the Signaller, the speed restriction is ready for activation according to the planned starting time.</p>
2718	Signaller	<p>When the speed restriction is activated, the Signaller must ensure action is taken to restore the infrastructure according to procedure Infrastructure fault - Correcting infrastructure fault.</p>
3774	<p><b>Handling of an unplanned speed restriction in a transition area</b></p>	
3775	Precondition	<p>The need for an unplanned speed restriction in a transition area has been reported to the Signaller.</p>
3776	Purpose	<p>Ensuring that the speed of the train does not exceed the speed restriction when passing the transition point.</p>

**PROCEDURE**

3778	Infrastructure Manager		<p>Banedanmark has procedures to ensure that speed restrictions which occur in a transition area is always extended across the transition point to ensure that the speed of the train does not exceed the speed restriction when passing the transition point.</p>
3779	Signaller		<p>When the need for a speed restriction is reported between the “Start of ETCS-signalling” marker and the first ETCS stop marker, the Signaller must apply the procedure Speed restriction - Handling an unplanned speed restriction to ensure that no trains or vehicles exceed the speed restriction.</p> <p>The Signaller must contact the Legacy signaller responsible for the area on the other side of the transition area and request that the speed restriction is also established in the neighbouring system.</p> <p>The Signaller ensure that the speed restriction is planned in the signalling system according to procedure Speed restriction - Implementing an unplanned speed restriction. The Signaller ensure that the speed restriction is planned to start at the “Start of ETCS-signalling” marker and end at least 50 meters after the opposite facing “Start of ATC-signalling” or “End of ETCS-signalling” marker.</p> <div data-bbox="638 869 1500 1624" style="border: 1px dashed black; padding: 10px;"> <p><b>Change per 2021-07-30:</b></p> <p>When the need for a speed restriction is reported between the “Start of ETCS-signalling” marker and the first ETCS stop marker, the Signaller must apply the procedure [Speed restriction - Handling an unplanned speed restriction] to ensure that no trains or vehicles exceed the speed restriction.</p> <p>The Signaller must contact the Legacy signaller responsible for the area on the other side of the transition area and request that the speed restriction is also established in the neighbouring system.</p> <p>The Signaller <del>must then ensure plan</del> that the speed restriction is <u>planned</u> in the signalling system according to procedure [Speed restriction - Implementing an unplanned speed restriction]. The Signaller <del>must ensure plan</del> that the speed restriction is <u>planned</u> to start at the “Start of ETCS-signalling” marker and end at least 50 meters after the opposite facing “Start of ATC-signalling” or “End of ETCS-signalling” marker.</p> </div>
3780	Signaller		<p>When the need for a speed restriction is reported between the “Start of ATC-signalling” or “End of ETCS-signalling” marker and the first main signal, the Signaller must apply the procedure Speed restriction - Handling an unplanned speed restriction to ensure that no trains or vehicles exceed the speed restriction.</p> <p>The Signaller must then ensure that the speed restriction is planned in the signalling system according to procedure Speed restriction - Implementing an unplanned speed restriction. The Signaller must ensure that the speed restriction is planned to start 50 metres before the “Start of ATC-signalling” or “End of ETCS-signalling” marker and end at the opposite facing “Start of ETCS-signalling” marker.</p>

**Change per 2021-07-30:**

When the need for a speed restriction is reported between the “Start of ATC-signalling” or “End of ETCS-signalling” marker and the first main signal, the Signaller must apply the procedure [Speed restriction - Handling an unplanned speed restriction] to ensure that no trains or vehicles exceed the speed restriction.

The Signaller must then ~~plan~~ensure that the speed restriction ~~is planned~~ in the signalling system according to procedure [Speed restriction - Implementing an unplanned speed restriction]. The Signaller must ~~plan~~ensure that the speed restriction ~~is planned~~ to start 50 metres before the “Start of ATC-signalling” or “End of ETCS-signalling” marker and end at the opposite facing “Start of ETCS-signalling” marker.

3818 Signaller

Before granting an authority to move past the last ETCS stop marker towards the transition point, the Signaller must inform the Driver that the speed restriction in the transition area is also valid past the transition point.

The Signaller may omit informing the Driver when the Legacy signaller has confirmed that the speed restriction is managed from the transition point.

3799 Driver

When the Driver is informed via the DMI, or on an Operational Instruction, about a temporary speed restriction which is valid up to the transition point, the Driver must assume that the speed restriction is also valid beyond the transition point, unless other information is received.

3514

## Incidents

3498

### Signaller protected area requested by staff

3499 Precondition

An unplanned need, not related to an emergency, to allow staff short-term access to the track or violation of the safety distance for machinery has occurred.

**Change per 2021-07-30:**

An unplanned need, not related to an emergency ~~or infrastructure works~~, to allow staff short-term access to the track or violation of the safety distance for machinery has occurred.

3500 Purpose

To set up safe conditions to protect the area requested.

### PROCEDURE

3501	All	<p>The person identifying the need to have an area protected must contact the Signaller and request the protection.</p> <p>The request must include name and telephone number (if possible) of the person requesting protection, location, area to be protected and description of situation.</p>	
3502	Signaller	<p>When requested to protect an area the Signaller must assess the information to determine the area needed. The Signaller may decide to refuse the request.</p> <p>The Signaller must have in mind that the person requesting the protection may have a limited local knowledge of the area in question.</p>	
3503	Signaller	<p>The Signaller must take appropriate measures to safeguard the area requested. This may include making the necessary arrangements with the Shunting area manager.</p>	
3504	Signaller	<p>When the area is protected, the Signaller must inform the person requesting the protection about the boundaries of the area.</p>	
3795	Signaller	<p>The Signaller must ensure that an entry is made in the Signaller log detailing the signaller protected area.</p>	
3505	Signaller	<p>The Signaller must only remove protection after receiving a report from the person who requested the protection, that the need for protection is no longer required.</p>	
2977	<b>Emergency</b>		
2846	<b>Emergency brake activated by person</b>		
2847	Precondition	<p>Emergency brake is activated by a passenger or train crew member.</p>	
2848	Purpose	<p>To examine the reason for the activation and how to proceed if possible.</p>	
<b><u>PROCEDURE</u></b>			
3089	Driver	<p>If a train is braked without the Driver applying the brake, the Driver must:</p> <ul style="list-style-type: none"> <li>- inform the Signaller</li> <li>- provide an estimate for the time needed for examination</li> <li>- examine the reason for the brake application.</li> </ul> <p>The Driver must expect any movement authority to be shortened immediately.</p>	
2849	Infrastructure Manager		<p>Banedanmark has defined non-stopping areas. Location specific descriptions will contain information on what the Driver must do in event of receiving an emergency brake application inside a non-stopping area.</p>
2850	Railway Undertaking		<p>The Railway Undertaking must have procedures for handling an emergency brake activation inside a non-stopping area. This must include enabling the Driver to override the emergency brake application when within a non-stopping area. The route book will indicate the location of non-stopping areas.</p>

2851	Driver		If the train is inside a non-stopping area, the Driver must override the emergency brake activation and react according to the location specific description.
2853	Signaller		Deleted
<div style="border: 1px dashed gray; padding: 10px; background-color: #f0f0f0;"> <p><b>Change per 2021-07-30:</b></p> <p><del>When a train is marked with the failed train marking, the signalling system will attempt to shorten any movement authority associated with the train. The signalling system will avoid routing trains into gridlock around the failed train and will suggest possible production plan updates.</del> Deleted</p> </div>			
2854	Signaller		When the Signaller is informed of an unplanned standstill the Signaller must mark the train with the failed train marking, and use the information on an expected timeframe for fault investigation to update routing of trains to minimise impact to the timetable.
2855	Driver		<p>If the situation can be resolved with no restrictions, the Driver must inform the Signaller. When the Signaller has been informed, the Driver may request a movement authority.</p> <p>If the situation can be resolved but requires restrictions, the Driver must inform the Signaller about the restrictions. When the Signaller has been informed, the Driver may request a movement authority.</p> <p>If the situation requires the train to be kept at a standstill, the Driver must contact the Signaller.</p>
2856	Signaller		If the Driver requests a new movement authority with no information on restricted train capabilities the Signaller must remove the marking of "failed train" to allow a new movement authority for the train.
2857	Signaller		<p>If the Signaller is informed by the Driver that the train has restricted capabilities the Signaller must:</p> <ol style="list-style-type: none"> <li>1. Update the timetable according to the procedure Normal operation - Signaller handling changes to operation</li> <li>2. Remove the failed train marking to allow a new movement authority for the train.</li> </ol>
2858	Signaller		If the Signaller is informed by the Driver that the train is not to be moved the Signaller must initiate the procedure Train failure - Assisting a disabled train.
2171			<b>Infrastructure work</b>
2182			<b>Request planned possession with handheld terminal</b>
2183	Precondition		The PICOP has arrived at the site and is ready to initiate a planned possession.
2184	Purpose		Indicating that the PICOP is ready at the site, and determining if the possession can be established as planned.

**PROCEDURE**

- 2185 PICOP The PICOP must use the handheld terminal to request the planned possession.
- 2186 Signaller , PICOP  The signalling system can only activate a temporary shunting area if all elements of the area are not locked by a route, or by an overlap, or reserved by another established temporary shunting area or possession.

**Change per 2021-07-30:**

The signalling system can only ~~start~~activate a ~~possession~~temporary shunting area if all elements of the ~~possession~~area are not ~~used~~locked by a route, ~~or by~~ an overlap, or ~~used~~reserved by another ~~active possession~~ ~~or~~established temporary shunting area ~~or~~possession.

- 3722 Signaller When the signalling system requests to establish a possession, the Signaller must assess if there are any conditions preventing the possession from being established as planned.
- If the possession can be established as planned, the Signaller must accept the request from the signalling system.
- If the possession cannot be established as planned, the Signaller must reject the request from the signalling system and contact the PICOP.

2192 **Establish possession with handheld terminal**

- 2193 Precondition The PICOP is at the possession site and has requested a planned possession using the handheld terminal. The possession request has been assessed and accepted by the Signaller.
- 2194 Purpose Establish a planned possession.

**PROCEDURE**

- 2195 Signaller  When the Signaller has accepted the possession request, the signalling system will commence the possession protection requirements and present the possession to the Signaller on the signalling control display and request the Signaller to confirm. The possession protection requirements are implemented once the Signaller has confirmed the possession.
- 2196 Signaller When the Signaller is presented with the possession on the signalling control display, the Signaller must check that the possession data indicated on the signalling control display is consistent with the possession planning.

- If the possession data indicated on the signalling control display is consistent with the possession planning, the Signaller must confirm that the possession protection requirements can be implemented.

- 3725 Signaller If the possession data indicated on the signalling control display is **NOT** consistent with the possession planning, the Signaller must reject the possession and as far as possible plan a new possession in co-operation with the PICOP.

2198	Signaller , PICOP		Once the Signaller has confirmed the possession and the protection requirements are implemented, the signalling system will request the PICOP to prove their location according to possession data. The possession cannot be established until the PICOPs location has been proven correctly.
2199	PICOP		When requested by the signalling system, the PICOP must prove their location by scanning an RFID-tag (Radio-frequency identification) at an ETCS stop marker, or other infrastructure object associated with the possession.
2200	Signaller , PICOP		Scanning an ID-tag not associated with the possession will result in the PICOP receiving an error message on the handheld terminal.
2201	PICOP		If the PICOP cannot prove their location correctly, the PICOP must inform the Signaller.
2202	Signaller , PICOP		When the location of the PICOP is proven correctly, the signalling system will establish the possession and send a message to the handheld terminal confirming to the PICOP that the possession is established.
3789	Signaller		The Signaller must ensure that the establishing time and possession data is recorded in the Signaller log.
2203	PICOP		When the handheld terminal indicates that the possession is established, the PICOP must note the time in the PICOP log. The PICOP must then setup worksite protection.

**Change per 2021-07-30:**

When the handheld terminal indicates that the possession is established, the PICOP must note the time in the PICOP log. The PICOP must then setup worksite protection.

2206			<b>Establish possession without handheld terminal</b>
2207	Precondition		The PICOP has arrived at the site and is ready to initiate a planned possession. A handheld terminal is not available.
2208	Purpose		Indicating that the PICOP is ready at the site and, if possible, establishing the possession as planned.
			<b><u>PROCEDURE</u></b>
2209	PICOP		When the PICOP is ready to initiate the planned possession in an interlocked area, the PICOP must contact the Signaller to request the planned possession. The request must contain: <ul style="list-style-type: none"> <li>- possession ID number</li> <li>- PICOP ID</li> <li>- PICOP mobile phone number</li> <li>- location in the infrastructure.</li> </ul> <p>If the possession is outside the interlocked area and a Shunting area manager is present on site, the PICOP makes the arrangements with the Shunting area manager.</p>

2210	Signaller	<p>When the Signaller is contacted by a PICOP requesting a planned possession, the Signaller must assess if there are any conditions preventing the possession from being established as planned.</p> <p>If the possession can be established as planned, the Signaller must manually request the possession in the signalling system.</p> <p>If the possession cannot be established as planned, the Signaller must contact the PICOP and inform about the reason for the rejection.</p>
2211	Signaller	<div style="display: flex; align-items: center;">  <div style="flex-grow: 1;"> <p>The signalling system can only activate a temporary shunting area if all elements of the area are not locked by a route, or by an overlap, or reserved by another established temporary shunting area or possession.</p> </div> </div> <div style="border: 1px dashed gray; padding: 10px; margin-top: 10px;"> <p><b>Change per 2021-07-30:</b></p> <p>The signalling system can only <del>start activate</del> a <del>possession</del> <u>temporary shunting area</u> if all elements of the <del>possession</del> <u>area</u> are not locked by a route, or by an overlap, or <del>used</del> <u>reserved</u> by another established <del>possession or a temporary shunting area</del> <u>or possession</u>.</p> </div>
3726	Signaller	<p>When the Signaller is presented with the possession on the signalling control display, the Signaller must check that the possession data indicated on the signalling control display is consistent with the possession planning.</p> <p>If the possession data indicated on the signalling control display is consistent with the possession planning, the Signaller must confirm that the possession protection requirements can be implemented.</p>
3727	Signaller	<p>If the possession data indicated on the signalling control display is NOT consistent with the possession planning, the Signaller must reject the possession and as far as possible plan a new possession in co-operation with the PICOP.</p>
3724	Signaller	<div style="display: flex; align-items: center;">  <div style="flex-grow: 1;"> <p>The possession is established when the Signaller has approved it.</p> </div> </div>
3790	Signaller	<p>The Signaller must ensure that the establishing time and possession data is recorded in the Signaller log.</p>
2212	Signaller	<p>When the possession is approved, the Signaller must request the PICOP to prove their location.</p> <div style="border: 1px dashed gray; padding: 10px; margin-top: 10px;"> <p><b>Change per 2021-07-30:</b></p> <p>When the possession is approved, the Signaller must <del>instruct the PICOP about the possession boundaries and timing arrangements.</del> <u>request</u> the PICOP that the possession is established and include <del>the</del> <u>to</u> <del>time</del> <u>prove</u> <del>of their</del> <u>establishment location</u>.</p> </div>
3838	PICOP	

**Change per 2021-07-30:**

After request from the Signaller, the PICOP must prove their location in the infrastructure by reading the ID-number on the plate of an ETCS stop marker associated with the possession.

3839 Signaller

**Change per 2021-07-30:**

When the PICOP has proven their location correctly, the Signaller must inform the PICOP that the possession is established (including establishing time) and inform about the boundaries of the possession and planned end time.

2213 PICOP

When instructed by the Signaller that the possession is established, the PICOP must register the name of the Signaller as well as time and date of establishing the possession in the PICOP log. The PICOP must then setup worksite protection.

2229

**Possession handover with handheld terminal**

2230 Precondition

A relieving PICOP is ready to take over responsibility of an active possession. Both the responsible PICOP and the relieving PICOP have handheld terminals available.

2231 Purpose

Handing over responsibility of a possession between two PICOPs, and ensuring data is transferred to the signalling system.

**PROCEDURE**

2233 PICOP

Before responsibility of a possession can be handed over, the relieving PICOP must obtain all relevant information about the possession from the responsible PICOP.

2234 PICOP

Using the handheld terminal, the relieving PICOP must select the unique possession ID number and request possession handover.

2235 PICOP



The handheld terminal allows the relieving PICOP to request a possession handover. The handheld terminal of the responsible PICOP will indicate the request and require an acknowledgement.

2236 PICOP

When presented with a possession handover request, the responsible PICOP must decide if it is appropriate and convenient for the handover to take place. Using the handheld terminal the PICOP must either accept or reject the request.

2237 PICOP



If the responsible PICOP accepts the possession handover request, the signalling system automatically updates the possession data in the Signaller log and sends out a message to both PICOPs confirming the change in responsibility.

If the responsible PICOP rejects the possession handover, a rejection message is sent to the handheld terminal of the relieving PICOP.

2238	PICOP	<p>Once the relieving PICOP receives a confirmation message on the handheld terminal, responsibility for the possession is transferred and the relieving PICOP becomes the PICOP responsible for the possession. The PICOP must note the time in the PICOP log.</p>
<p><b>Change per 2021-07-30:</b></p> <p>Once the relieving PICOP receives a confirmation message on the handheld terminal, responsibility for the possession is transferred and the relieving PICOP becomes the PICOP responsible for the possession. <u>The PICOP must note the time in the PICOP log.</u></p>		
2239	PICOP	<p>If the relieving PICOP receives a rejection on the handover request the relieving PICOP must contact the responsible PICOP to negotiate conditions for handover.</p>
2243		<p><b>Possession handover without handheld terminal</b></p>
2244	Precondition	<p>A relieving PICOP is ready to take over responsibility of an active possession. Either of the PICOPs, or both, are without a handheld terminal.</p>
2245	Purpose	<p>Handing over responsibility of a possession between two PICOPs, and ensuring data is transferred to the signalling system.</p>
<p><b><u>PROCEDURE</u></b></p>		
2246	PICOP	<p>Before responsibility of a possession can be handed over, the relieving PICOP must obtain all relevant information about the possession from the responsible PICOP.</p>
2247	PICOP	<p>The relieving PICOP must contact the Signaller and request the possession handover. If the possession is outside interlocked areas and a Shunting area manager is assigned to the area, the PICOP informs the Shunting area manager.</p> <p>The request must contain:</p> <ul style="list-style-type: none"> <li>- possession ID number</li> <li>- relieving PICOP ID</li> <li>- relieving PICOP mobile phone number.</li> </ul>
2248	Signaller	<p>When the PICOP contacts the Signaller to request a possession handover, the Signaller must update the possession data in the Signaller log and in the signalling system.</p>
<p><b>Change per 2021-07-30:</b></p> <p><del>A</del>When PICOPthe willPICOP contactcontacts the Signaller to request a possession handover. <del>The</del>the Signaller must <del>then obtain and record</del>update the PICOP ID and mobile phone <del>possession number</del>data of in the new PICOP into the <u>Signaller possession log data</u>and in the signalling system.</p>		

2250	Signaller		<p>When the possession data in the Signaller log and the signalling system is updated, the Signaller must inform the relieving PICOP about the time when responsibility for the possession is handed over.</p>
<p><b>Change per 2021-07-30:</b></p> <p>When the <u>possession data in the Signaller log and</u> the signalling system is updated, the Signaller must inform the relieving PICOP about the time when responsibility for the possession is handed over.</p>			
2251	PICOP	<p>The relieving PICOP assumes responsibility of the possession when the Signaller has confirmed that details have been recorded. The relieving PICOP must then contact the PICOP to confirm the transfer in responsibility.</p>	<p>Both PICOP's must register the date and time of possession handover in their PICOP logs.</p>
3797	PICOP	<p>Where the PICOP has a handheld terminal available, the PICOP must use it to request the control of the possession be transferred from the signalling system to the handheld terminal.</p>	
2254	<p><b>End possession with handheld terminal</b></p>		
2255	Precondition	<p>Infrastructure work has been completed and information about any restrictions in the use of the infrastructure is passed on to the Signaller. The PICOP has a handheld terminal available.</p>	
2256	Purpose	<p>Ensure that the responsibility of the infrastructure is handed back to the Signaller.</p>	
<p><b><u>PROCEDURE</u></b></p>			
2259	PICOP	<p>When the PICOP has determined that the infrastructure is cleared and safe to be handed back into operations, according to the rules for working in infrastructure, the PICOP must remove the worksite protection.</p>	
2261	PICOP	<p>The PICOP must end a possession by selecting the appropriate possession ID number on the handheld terminal and scan an RFID-tag (Radio-frequency identification) at an ETCS stop marker, or other infrastructure object associated with the possession.</p>	
2262	PICOP		<p>Scanning a tag not associated with the possession will result in an error message.</p>
2263	Signaller , PICOP		<p>When a request to end a possession is received from the handheld terminal, the signalling system will run a diagnostics test of the infrastructure and log any detected errors.</p> <p>The signalling system will present any detected errors to the Signaller on the signalling control display and request the Signaller to accept or reject to end the possession.</p> <p>If the request to end the possession is accepted it will be indicated on the handheld terminal.</p>

2265	Signaller	<p>When a request to end a possession is displayed on the signalling control display, the Signaller must decide if the possession can be ended as requested.</p> <p>The Signaller must either accept or reject the request.</p>
2264	PICOP	<p>When the handheld terminal indicates that the request to end the possession has been accepted the PICOP is relieved of responsibility for the infrastructure. The PICOP must note the time in the PICOP log.</p>
<p><b>Change per 2021-07-30:</b></p> <p>When the handheld terminal indicates that the request to end the possession has been accepted the PICOP is relieved of responsibility for the infrastructure. <u>The PICOP must note the time in the PICOP log.</u></p>		
3791	Signaller	<p>The Signaller must ensure that the time the possession was ended is recorded in the Signaller log.</p>
2266	PICOP	<p>If an end of possession request is rejected due to detected infrastructure errors the PICOP must contact the Signaller to negotiate conditions for ending the possession.</p>
2297	<b>Catenary isolation</b>	
2298	<b>Plan catenary isolation</b>	
2299	Precondition	<p>A need for a catenary isolation has been identified.</p>
2300	Purpose	<p>To ensure that the catenary isolation is properly planned in respect to the timetable. If needed all agreements with Railway Undertakings are made to make a changed timetable.</p>
<b><u>PROCEDURE</u></b>		
2301	Infrastructure Manager	
		<p>Banedanmark has procedures in place describing cooperation and responsibility of the roles involved in producing a planned catenary isolation.</p>
		<p>Minimum operational requirements of a catenary isolation (the catenary department might have further requirements):</p>
		<ul style="list-style-type: none"> <li>- unique ID-number</li> <li>- time</li> <li>- affected catenary section(s).</li> </ul>
2967	Infrastructure Manager	
		<p>Banedanmark has a procedure describing that the Banedanmark operations planner must evaluate all requests for a catenary isolation and record the result of the evaluation.</p>

**Change per 2021-07-30:**

Banedanmark has a procedure describing that the Banedanmark operations planner must evaluate all requests for a catenary isolation and record the result of the evaluation.

~~Operational details of the catenary isolation request are loaded into the signalling system and the signalling system is used to do this evaluation.~~

2968 Infrastructure Manager



Deleted

**Change per 2021-07-30:**

~~Banedanmark has a procedure describing that the Banedanmark operations planner must evaluate a catenary isolation request using the signalling system and reject a catenary isolation request if the proposed catenary isolation cannot be accommodated within the timetable or the possible changes to the timetable.~~  
~~Deleted~~

2969 Infrastructure Manager



Deleted

**Change per 2021-07-30:**

~~Banedanmark has a procedure describing that the Banedanmark operations planner must notify the Catenary manager when a planned catenary isolation has been accepted and registered with the signalling system. The catenary isolation report is issued by the catenary management system with a unique ID-number.~~  
~~Deleted~~

2304

**Deleted**

**Change per 2021-07-30:**

~~Request planned catenary isolation~~  
~~Deleted~~

2305 Precondition

Deleted

**Change per 2021-07-30:**

~~A catenary isolation has been planned.~~  
~~Deleted~~

2306 Purpose

Deleted

**Change per 2021-07-30:**

~~The Catenary manager requests permission from the Signaller to set up a planned catenary isolation and the Signaller performs an operational assessment.~~Deleted

**PROCEDURE**

2307 Infrastructure Manager



Deleted

**Change per 2021-07-30:**

~~Banedanmark has a procedure in place describing the checks needed to ensure that any work associated with planned catenary isolation are safely carried out.~~Deleted

2309 Catenary manager

Deleted

**Change per 2021-07-30:**

~~The Catenary manager must obtain permission from the Signaller before isolating catenary.~~Deleted

2310 Signaller

Deleted

**Change per 2021-07-30:**

~~When the Signaller is requested by the Catenary manager to authorise a planned Catenary isolation, the Signaller must use the production plan to assess if the timing of the catenary isolation can be carried out as planned.~~Deleted

2313 Signaller

Deleted

**Change per 2021-07-30:**

~~If the Signaller wants to use an alternative timing for the catenary isolation the Signaller must plan and coordinate the update in cooperation with the Catenary manager.~~Deleted

2315 Signaller

Deleted

**Change per 2021-07-30:**

~~If the Signaller chooses to reject a request for a Catenary isolation the Signaller must inform the Catenary manager.~~Deleted

2319

## Establish planned catenary isolation

2320 Precondition

The Catenary manager is ready to establish a planned catenary isolation.

**Change per 2021-07-30:**

~~A planned catenary isolation has been requested by the~~The Catenary manager and the Signaller has assessed ready that to the establish request a planned operationally catenary acceptable isolation.

2321 Purpose

Assess if the planned catenary isolation can be performed as planned and establish the isolation.

**Change per 2021-07-30:**

~~To Assess establish if a the planned catenary isolation and can provide be technical performed protection as planned the and signalling establish system the isolation.~~

### PROCEDURE

3856 Catenary manager

**Change per 2021-07-30:**

The Catenary manager must contact the Signaller and request permission to establish a planned catenary isolation. The request must include a specification of the catenary isolation ID, location and an identification of catenary sections where the power will be isolated.

2322 Signaller



Deleted

**Change per 2021-07-30:**

~~The signalling system will present information on the planned catenary isolation to the Signaller and request Signaller approval.~~  
Deleted

3857 Signaller

**Change per 2021-07-30:**

When the Signaller is requested by the Catenary manager to authorise a planned Catenary isolation, the Signaller must assess if there are any conditions which prevents the catenary isolation from being established as planned.

3858 Signaller

**Change per 2021-07-30:**

If there are any conditions which prevents the catenary isolation from being established as planned, the Signaller must inform the Catenary manager about the reason for the rejection and, if possible, agree on an alternative timing for establishing.

2323 Signaller

The Signaller must ensure that no electrical rolling stock has authority to move in, or into, the area where the planned catenary isolation will be established.

**Change per 2021-07-30:**

The Signaller must ensure that ~~there are~~ ~~no electrical rolling~~ ~~electrically stock~~ ~~powered~~ ~~has traction~~ ~~authority~~ ~~units~~ ~~to~~ ~~approaching~~ ~~move~~ ~~or~~ ~~in~~ ~~running~~ ~~or~~ ~~within~~ ~~into~~ the area where the planned catenary isolation is ~~will~~ ~~requested~~ ~~be~~ established.

2324 Signaller

If there is **NO** electrical rolling stock in the area, the Signaller may authorise the Catenary manager to establish the catenary isolation.

**Change per 2021-07-30:**

The ~~if~~ Signaller ~~there~~ ~~may~~ ~~is~~ ~~accept~~ ~~NO~~ ~~and~~ ~~electrical~~ ~~acknowledge~~ ~~rolling~~ ~~the~~ ~~stock~~ ~~request~~ ~~in~~ ~~for~~ ~~the~~ ~~area~~, the ~~catenary~~ Signaller ~~isolation~~ ~~may~~ ~~if~~ ~~authorise~~ ~~no~~ ~~the~~ ~~electrically~~ Catenary ~~powered~~ ~~manager~~ ~~traction~~ ~~to~~ ~~units~~ ~~establish~~ ~~will~~ ~~the~~ ~~be~~ catenary affected isolation.

2326 Signaller

If there is electrical rolling stock in the area, the Signaller must contact the relevant Railway Undertakings to request that the pantographs are lowered and all electrical trains in the area close down their driving desks.

**Change per 2021-07-30:**

If ~~electrically powered traction~~ there units is willelectrical berolling affectedstock byin the-caterary isolationarea, the Signaller must contact the relvant Railway UndertakingUndertakings to request that affectedthe trainspantographs are closed downlowered and pantographsall areelectrical loweredtrains asin appropriate the area closes down their driving desks.

2327 Railway Undertaking



The Railway Undertaking has procedures ensuring lowering and reporting on lowered pantographs when requested.

2328 Signaller

When confirmation from the Railway Undertakings is received that electrical rolling stock in the affected area has lowered their pantographs and all electrical trains have closed their desks, the Signaller may authorise the Catenary manager to establish the catenary isolation.

**Change per 2021-07-30:**

When confirmation from the Railway ~~Undertaking~~Undertakings is received that ~~electrically powered~~electrical tractionrolling unitsstock in the affected area ~~are closed down and pantographs are~~has lowered the Signaller maytheir acceptpantographs and acknowledgeall theelectrical requesttrains forhave aclosed Catenarytheir isolation-desks. The the Signaller mustmay record authorise the requestCatenary inmanager to establish the Signaller catenary legislation.

2329 Signaller



Deleted

**Change per 2021-07-30:**

~~The acceptance entered by the Signaller is compared to other dependencies in the signalling system.~~

~~The signalling system provides electric traction unit restriction for the relevant sections and indicates this to the Signaller or the signalling system rejects the request.Deleted~~

2330 Signaller

Deleted

**Change per 2021-07-30:**

~~When the signalling system indicates that electric traction unit restriction has been provided, the Signaller may authorise the Catenary manager to isolate the power.~~

~~The Signaller must then ensure that the catenary isolation is noted in the Signaller log.Deleted~~

3859 Signaller

**Change per 2021-07-30:**

The Signaller must ensure that the establishing time of the catenary isolation and other relevant information is recorded in the Signaller log.

2332 Infrastructure Manager



The FKI contains instructions ensuring the safe isolation of catenary, and instructions ensuring the safety of work crews, including catenary worksite protection.

2331 Catenary manager

When the Catenary manager receives authorisation from the Signaller the Catenary manager may isolate the power to the catenary sections specified in the agreed catenary isolation plan.

3595

**Electrical rolling stock in earthed area**

**Change per 2021-07-30:**

Electrical ~~traction rolling unit~~ stock in earthed area

3596 Precondition

Electrical rolling stock has entered into an earthed area.

**Change per 2021-07-30:**

~~An electrical~~ Electrical traction rolling unit ~~stock~~ has entered into an earthed area.

3597 Purpose

Ensuring that all earthing arrangements are checked and fit for purpose before work continues.

**PROCEDURE**

3598 Signaller

If electrical rolling stock has entered into an earthed area, the Signaller must immediately inform the PICOSS and the Catenary manager.

Informing the PICOSS is done via the PICOP when a possession is established in connection with the catenary isolation. When no possession is established in connection with the catenary isolation, the information is provided via the Catenary manager.

**Change per 2021-07-30:**

If ~~an electrical traction~~rolling unit~~stock~~ has entered into an earthed area, the Signaller must immediately inform the ~~PICOP~~PICOSS and the Catenary manager.

Informing about the PICOSS is done via the ~~incident~~PICOP when a possession is established in connection with the catenary isolation. When no possession is established in connection with the catenary isolation, the information is provided via the Catenary manager.

3599 PICOSS

When the PICOSS is informed that electrical rolling stock has entered into an earthed area, the PICOSS must ensure that all work is stopped immediately.

The PICOSS must ensure that the work is not continued until the Catenary manager has reported that it is safe to do so.

**Change per 2021-07-30:**

When the PICOSS is informed that ~~an electrical traction~~rolling unit~~stock~~ has entered into an earthed area, the PICOSS must ensure that all work is stopped immediately.

The PICOSS must ensure that the work is not continued until the Catenary manager has reported that it is safe to do so.

3600 Catenary manager

When the Catenary manager is informed that electrical rolling stock has entered into an earthed area, the Catenary manager must instruct the Catenary field leader to check all earthing arrangements in the isolated area and report back.

**Change per 2021-07-30:**

When the Catenary manager is informed that ~~an electrical traction~~rolling unit~~stock~~ has entered into an earthed area, the Catenary manager must instruct the Catenary field leader to check all earthing arrangements in the isolated area and report back.

3601 Catenary manager

When the Catenary field leader has reported that all earthing arrangements are checked and found fit for purpose, the Catenary manager must inform the Signaller that work can continue.

2343

**End catenary isolation**

2344 Precondition

The work task taking place under catenary isolation has ended.

2345 Purpose

To safely restore electrical power to the relevant catenary sections.

**Change per 2021-07-30:**

To safely restore electrical power to the ~~isolated~~relevant section  
catenary sections.

**PROCEDURE**

2346 Infrastructure Manager



The FKI contains instructions describing how and when electrical power can be safely restored to isolated catenary sections.

2347 Catenary manager

The Catenary manager may restore electrical power to one or more catenary sections when the Catenary field leader confirms that work has ended and the earthing arrangements have been removed. The Catenary manager must inform the Signaller when electrical power has been restored.

**Change per 2021-07-30:**

The Catenary manager may restore electrical power to ~~one~~  
~~isolated~~or more catenary ~~section~~sections when the Catenary field leader confirms that work has ended and ~~the earthing safe arrangements to have been removed~~. The Catenary manager must inform the Signaller when electrical power has been restored.

2350 Signaller

When the Signaller is informed by the Catenary manager that electrical power has been restored, the Signaller must inform any Railway Undertaking with electrical rolling stock in the area that the catenary isolation has been ended.

**Change per 2021-07-30:**

When the Signaller is informed by the Catenary manager that electrical power has been restored, the Signaller must inform any Railway Undertaking with ~~electrically powered~~electrical units ~~rolling affected stock by~~in the isolation area that the catenary isolation has been ended.

2351 Signaller

The Signaller must ensure that the end time of the catenary isolation is recorded in the Signaller log.

**Change per 2021-07-30:**

~~When the Catenary manager confirms that the catenary isolation has ended, the Signaller may remove the catenary isolation protection.~~

The Signaller must ensure that the end time of the catenary isolation is ~~noted~~recorded in the Signaller log.

2352 Signaller When the catenary isolation has ended the Signaller may resume normal operation with electrical rolling stock.

**Change per 2021-07-30:**

When the catenary isolation has ended the Signaller may resume normal operation with ~~electrical~~ electrical units ~~rolling~~ stock.

2355 **Emergency catenary isolation**

2356 Precondition The need for an immediate catenary isolation has occurred.

**Change per 2021-07-30:**

~~A fault or other~~ The need for an immediate catenary isolation has been detected by the catenary system or an observer ~~occurred~~.

2357 Purpose Perform an emergency catenary isolation to reduce the risk of injury to people or damage to trains, vehicles or infrastructure.

**Change per 2021-07-30:**

Perform an emergency catenary isolation to reduce ~~likelihood~~ the risk of injury to people, or damage to trains, vehicles or infrastructure.

**PROCEDURE**

2358 Catenary manager The Catenary manager must assess in which catenary sections the power must be isolated and then ensure that the isolation is performed.

When the power is isolated, the Catenary manager must inform the Signaller.

**Change per 2021-07-30:**

~~When a~~ The fault ~~Catenary or manager~~ must malfunction ~~assess has in been~~ which detected ~~catenary in~~ sections the catenary ~~power system~~ must the ~~be~~ Catenary ~~isolated~~ manager ~~and~~ must then ensure that the ~~catenary management system~~ isolation ~~has~~ is ~~isolated~~ performed.

When the ~~affected~~ power ~~section~~ is ~~automatically~~.

The ~~isolated~~ the Catenary manager must inform the Signaller.

2359 Catenary manager Deleted

**Change per 2021-07-30:**

~~When a fault has been detected by an observer and reported to the Catenary manager, the Catenary manager must assess the situation to decide if an emergency catenary isolation is needed.~~

~~If an emergency catenary isolation is needed the Catenary manager must ensure that the affected section is isolated manually.~~

~~The Catenary manager must inform the Signaller. Deleted~~

2361 Signaller



Deleted

**Change per 2021-07-30:**

~~If an emergency catenary isolation has been performed in a catenary section the signalling system will automatically impose electric traction unit restriction for the affected area.~~

~~The emergency catenary isolation will be indicated to the Signaller on the signalling control display. Deleted~~

2362 Signaller

When the Signaller has received information about an emergency isolation in one or more catenary sections, the Signaller must ensure that all driving in the area is stopped by applying the procedure Emergency - Stop trains and vehicles from entering hazardous area.

If there is electrical rolling stock in the area, the Signaller must contact the relevant Railway Undertakings and inform that the pantographs must be lowered and all electrical trains in the area must close down their driving desks.

**Change per 2021-07-30:**

When the Signaller has received information about an emergency isolation in one specific or more catenary sections, the Signaller must:

1. Ensure that all movement authorities issued driving to the affected area are revoked
2. Revoke all Operational Instructions is approaching stopped or by within the affected area
3. Ensure that no Operational procedure Instructions [Emergency will - be Stop issued trains into and or vehicles within from the entering affected hazardous area
- 4].

If Ensure there shunting is movements electrical rolling stock in the affected area are, stopped the and Signaller relevant must PIGOPs contact and/or the Shunting relevant area Railway managers Undertakings are and instructed inform about that the situation

5. Contact pantographs relevant must Railway be Undertakings lowered and request that affected all electrical unit trains in the area are must closed close down, and pantographs their are driving lowered desks.

3860 Signaller

**Change per 2021-07-30:**

The Signaller must inform the Catenary manager when all driving in the area has been stopped.

3861 Signaller

**Change per 2021-07-30:**

The Signaller must ensure that the establishing time of the emergency catenary isolation and other relevant information is recorded in the Signaller log.

3862 Catenary manager

**Change per 2021-07-30:**

When the Signaller reports that all driving in the area has been stopped, the Catenary manager may allow earthing arrangements to be performed.

2366

**Emergency catenary isolation requested by Emergency services**

2367 Precondition The Emergency services has requested the Network manager for an emergency catenary isolation for the sake of their work. The Network manager has informed the Catenary manager. All driving in the area has been stopped.

**Change per 2021-07-30:**

AnThe Emergency services has requested the Network manager for an emergency catenary isolation hasfor been the requested sake byof thetheir Emergencywork. servicesThe viaNetwork manager has informed the NetworkCatenary manager. All driving in the area has been stopped.

2368 Purpose Ensure safe working conditions for the Emergency services.

**PROCEDURE**

2369 Infrastructure Manager  Banedanmark has procedures in place to direct all Emergency services communication to the Network manager, who will then distribute the information to the appropriate Signaller.

2373 Infrastructure Manager  Banedanmark defines in the FKI procedures allowing specially trained Emergency services personel to setup earthing arrangements in order to speed up fire-fighting and rescue actions upon receiving confirmation that all movements are at a standstill and the power is shut-off.

3863 Catenary manager

**Change per 2021-07-30:**

The Catenary manager must use the information provided from the Network manager to assess in which catenary sections the power must be isolated and then ensure that the isolation is performed.

When the power is isolated, the Catenary manager must inform the Signaller and request a confirmation that all driving in the area has been stopped.

2370 Signaller When the Catenary manager reports that an emergency catenary isolation has been performed, the Signaller must check if there is any electrical rolling stock in the area.

If there is electrical rolling stock in the area, the Signaller must contact the relevant Railway Undertakings and inform that the pantographs must be lowered and all electrical trains in the area must close down their driving desks.

**Change per 2021-07-30:**

~~When requested by the Network Catenary manager to reports setup that an emergency catenary isolation has been performed, the Signaller must: check if there is any electrical rolling stock in the area.~~

~~1-If Ensure there that is all electrical movements rolling stock in the requested area, are the brought Signaller to must a contact standstill, the and relevant that Railway all Undertakings movements and approaching inform that the requested pantographs area must are be prevented lowered from and entering~~

~~2-all Request electrical an trains emergency in catenary the isolation area from must the close Catenary down manager their driving desks.~~

3864 Signaller

**Change per 2021-07-30:**

The Signaller must ensure that the establishing time of the emergency catenary isolation and other relevant information is recorded in the Signaller log.

3865 Catenary manager

**Change per 2021-07-30:**

When the Signaller is informed about the emergency catenary isolation and all driving in the area has been stopped, the Catenary manager may allow earthing arrangements to be performed. The permission is given via the Network manager.

2371 Catenary manager

Deleted

**Change per 2021-07-30:**

~~When requested by the Signaller to perform an emergency catenary isolation the Catenary manager must ensure that power is isolated in the requested catenary sections and confirm this to the Signaller. Deleted~~

2372 Signaller

Deleted

**Change per 2021-07-30:**

~~When the Catenary manager confirms that the emergency catenary isolation has been established the requested catenary sections, the Signaller must inform the Emergency services via the Network manager that all movements are at a standstill, and the emergency catenary isolation is established.~~Deleted

2788			<b>Train failure</b>
2789			<b>Train and/or onboard failure during a mission</b>
2790	Precondition		A train and/or onboard failure has been detected by the Driver.
2791	Purpose		Informing the Signaller of the failure and update of the production plan to incorporate failure related changes.
2792	Railway Undertaking		<p>The Railway Undertaking must have procedures, for handling train and/or onboard failures, enabling Drivers to:</p> <ul style="list-style-type: none"> <li>- bring trains back into service including any necessary restriction on train capabilities</li> <li>- determine if the train is not to be moved</li> <li>- determine need to isolate the onboard.</li> </ul>
2793	Driver		When at standstill the Driver must inform the Signaller of expected timeframe for failure investigation/attempt at failure correction. The Driver must expect any movement authority to be shortened immediately.
3770	Driver		If the investigation of the failure requires the Driver to leave the cab, the Driver may request the Signaller to provide additional protection by applying the procedure Incidents - Signaller protected area requested by staff.
2794	Signaller		Deleted

**Change per 2021-07-30:**

~~When a train is marked with the failed train marking the signalling system will attempt to shorten any movement authority associated with the train. The signalling system will avoid routing trains into gridlock around the failed train and will suggest possible production plan updates.~~Deleted

2795	Signaller	<p>When the Signaller is informed of an unplanned standstill the Signaller must mark the train with the failed train marking, and ensure that the route associated to the failed train is released.</p> <p>The Signaller must use the information on an expected timeframe for fault investigation to update routing of trains to minimise impact to the timetable.</p>
2796	Driver	<p>The Driver must examine the train to determine the failure.</p> <p>If the failure can be resolved with no restrictions the Driver must inform the Signaller.</p> <p>If the failure can be resolved but restrictions must be applied, the Driver must inform the Signaller about the restrictions.</p> <p>If the failure can only be resolved by the Driver isolating the onboard the Driver must inform the Signaller before isolating.</p> <p>If the train cannot be moved, the Driver must inform the Signaller.</p>
3771	Driver	<p>If the Driver during the investigation needs to inspect the loading of a wagon, the Driver must ensure that the inspection can be done without violating the protective distance as well as ensuring, that no part of the wagon or its load has come into contact with the catenary system</p> <p>If the conditions listed above cannot be met, the Driver must inform the Signaller that the inspection of the load cannot be performed unless the Catenary manager has reported that the power is switched off, and that earthing arrangements has been put in place.</p>
2797	Signaller	<p>If the Driver requests a new movement authority with no information on restricted train capabilities the Signaller must remove the failed train marking to allow a new movement authority for the train.</p>
2798	Signaller	<p>If the Signaller is informed by the Driver that the train has restricted capabilities the Signaller must:</p> <ol style="list-style-type: none"> <li>1. Update the timetable to incorporate and minimise the effect of the restricted capabilities according to the procedure Normal operation - Signaller handling changes to operation</li> <li>2. Remove the failed train marking to allow a new movement authority for the train.</li> </ol>
3549	Signaller	<p>If the Signaller is informed by the Driver that the onboard is isolated the Signaller must initiate the procedure Train failure - Isolate onboard.</p>
2799	Signaller	<p>If the Signaller is informed by the Driver that the train is not to be moved the Signaller must initiate the procedure Train failure - Assisting a disabled train.</p>

3329

## Shunting

**Change per 2021-07-30:**

3826

## Shunting between possessions or shunting areas

**Change per 2021-07-30:**

Shunting between possessions or shunting areas

3827 Precondition

**Change per 2021-07-30:**

Two possessions or shunting areas, or a possession and a shunting area, is located right after each other, separated by one or more axle counter sections. There is a need to drive a train or vehicle from one area to the other.

3829 Purpose

**Change per 2021-07-30:**

Make the required agreements between the two Shunting area managers (referred to as Shunting area manager A and B) and the Signaller and perform the shunting movement.

**PROCEDURE**

3831 Shunting area manager

**Change per 2021-07-30:**

The Shunting area manager must contact the Signaller and request permission for a train or vehicle to perform a shunting movement to the neighbouring area.

3832 Signaller

**Change per 2021-07-30:**

After request from Shunting area manager A, the Signaller must contact Shunting area manager B and request permission for a train or vehicle to perform a shunting movement into the area.

When Shunting area manager B has given permission, the Signaller must, as far as possible, protect the shunting movement between the two areas.

The Signaller must then inform Shunting area manager A that the shunting movement can be started.

3833 Shunting area manager

**Change per 2021-07-30:**

When the Signaller has given permission to start the shunting movement, the Shunting area manager must inform the Shunter.

3834 Shunter

**Change per 2021-07-30:**

Before the shunting movement is started, the Shunter must contact Shunting area manager B and request that relevant information, which effect shunting movements inside the area, is handed over.

3835 Shunter

**Change per 2021-07-30:**

The Shunter must inform Shunting area manager B when the train or vehicle has arrived in the area.

3836 Shunting area manager

**Change per 2021-07-30:**

Shunting area manager B must inform the Signaller when the train or vehicle has arrived in the area.

3847

## Planning of a temporary shunting area

**Change per 2021-07-30:**

Planning of a temporary shunting area

3848 Precondition

**Change per 2021-07-30:**

The need for a temporary shunting area is identified. The area is not planned in advance.

3849 Purpose

**Change per 2021-07-30:**

Planning of a temporary shunting area and agreeing the boundaries and timing of the area.

**PROCEDURE**

3851 Shunting area manager

**Change per 2021-07-30:**

The Shunting area manager must contact the Signaller and request a temporary shunting area. If the requested area is defined in the location specific description, the Shunting area manager must use the area name or number from there to specify the boundaries of the area.

The request must contain a specification of:

- location
- the ETCS stop markers marking the boundaries of the area
- timing

3852 Signaller

**Change per 2021-07-30:**

The Signaller must ensure that the temporary shunting area is planned in the signalling system according the request of the Shunting area manager.

The Signaller must also ensure that the planning is checked and approved by another person with competences as a Signaller.

If the area cannot be planned as requested, the Signaller must inform the Shunting area manager and, if possible, plan an alternative.

3853 Signaller



**Change per 2021-07-30:**

The ID-number of the temporary shunting area is assigned when the area is planned in the signalling system.

3854 Signaller

**Change per 2021-07-30:**

When the temporary shunting area is planned in the signalling system, the Signaller must inform the Shunting area manager about area ID-number and the planned timing arrangements.

3408 **Establish temporary shunting area with handheld terminal**

3409 **Precondition** The Shunting area manager is ready to establish a planned temporary shunting area and a handheld terminal is available.

**Change per 2021-07-30:**

~~The need to establish a temporary shunting area has been identified. The temporary shunting area manager has and a handheld terminal is available.~~

3410 **Purpose** Establish a planned temporary shunting area.

**Change per 2021-07-30:**

~~Establish a planned temporary shunting area and communicate the boundaries and timing of the area.~~

**PROCEDURE**

3412 **Shunting area manager** The Shunting area manager must use the handheld terminal to request the planned temporary shunting area.

**Change per 2021-07-30:**

~~The Shunting area manager must use the handheld terminal to request the planned temporary shunting area. The request must contain an estimate of the time needed.~~

3413 **Signaller** 

The signalling system can only activate a temporary shunting area if all elements of the area are not locked by a route, or by an overlap, or reserved by another established temporary shunting area or possession.

**Change per 2021-07-30:**

~~Requests for temporary shunting areas will be indicated on the signalling control display and will require the Signaller acceptance prior to the areas being established.~~

The signalling system can only activate a temporary shunting area if all elements of the area are not locked by a route, or by an overlap, or reserved by another established temporary shunting area or possession.

3414 Signaller

Before the Signaller approves the request to establish a temporary shunting area, the Signaller must assess if any conditions exist which prevent the area from being established as planned.

**Change per 2021-07-30:**

~~WhenBefore the Signaller is requested byapproves the signalling systemrequest to accept the establishment ofestablish a temporary shunting area, the Signaller must ensure that no Operational Instruction movements are authorised in the area.~~

~~The Signaller must then assess if the establishment of the area will affect any other traffic in the area. If no other traffic in the area is affected, the Signaller must accept the establishment of the temporary shunting area.~~

~~Ifconditions otherexist trafficwhich inprevent the area will be affected, the Signaller must use the signalling system to produce an alternative timingfrom forbeing establishingestablished theas area planned.~~

3841 Signaller

**Change per 2021-07-30:**

When the temporary shunting area is indicated on the signalling control display, the Signaller must check that the indication of the area is consistent with the planning.

If the indication on the signalling control display is consistent with the planning, the Signaller must approve the establishing of the area.

3842 Signaller

**Change per 2021-07-30:**

If the indication of the temporary shunting area on the signalling control display is NOT consistent with the planning, the Signaller must reject the establishing of the area and as far as possible re-plan the area in co-operation with the Shunting area manager.

3415 Shunting area manager



When the temporary shunting area is established it will be indicated on the handheld terminal and result in points within the temporary shunting area being released for local control by the handheld terminal.

**Change per 2021-07-30:**

~~When the establishment of a temporary shunting area has been accepted by the Signaller established this~~ it will be indicated on the handheld terminal and result in points within the temporary shunting area being released for local control by the handheld terminal.

3793 Signaller

The Signaller must ensure an entry in the Signaller log when the temporary shunting area is established.

3416 Shunting area manager

The Shunting area manager must assume responsibility for the temporary shunting area when the handheld terminal indicates that the requested temporary shunting area has been established.

3417 Shunting area manager

Deleted

**Change per 2021-07-30:**

~~If the handheld terminal presents the Shunting area manager with a changed suggestion for the timing of the temporary shunting area, the Shunting area manager must assess the suggestion and either accept or reject the suggestion.~~ Deleted

3418 Signaller

Deleted

**Change per 2021-07-30:**

~~If the suggested timing change of the temporary shunting area is rejected, the Signaller must either suggest a second change to the requested timing or reject the request.~~ Deleted

3419 Shunting area manager

Deleted

**Change per 2021-07-30:**

~~If the handheld terminal indicates a rejection of the request for a temporary shunting area, the Shunting area manager may submit a new request or seek advice from the Signaller.~~Deleted

3422 **Establish temporary shunting area without handheld terminal**

3423 **Precondition** The Shunting area manager is ready to establish a planned temporary shunting area.  
No handheld terminal is available.

**Change per 2021-07-30:**

~~The need for a temporary shunting area has been identified. The ready Shunting area establish manager does planned not temporary have shunting area.~~  
No handheld terminal is available.

3424 **Purpose** Establish a planned temporary shunting area.

**Change per 2021-07-30:**

~~Establish a temporary shunting area and communicate the boundaries and timing of the area.~~  
Establish a planned temporary shunting area and communicate the boundaries and timing of the area.

**PROCEDURE**

3426 **Shunting area manager** The Shunting area manager must contact the Signaller and request the establishing of the planned temporary shunting area.  
The request must contain a specification of:

- area ID-number.
- location where the area must be established
- Shunting area manger ID
- radio ID or mobile phone number

**Change per 2021-07-30:**

The Shunting area manager must contact the Signaller and request the ~~establishment~~establishing of the planned temporary shunting area.

The request must contain a specification of:

- ~~--Shunting area manager ID-number.~~
- radio location ID where and/or the mobile area phone number must be established
- ~~-location in the infrastructure/predefined~~Shunting area manger ID
- estimation radio of ID the or time mobile needed phone number

3427 Signaller



The signalling system can only activate a temporary shunting area if all elements of the area are not locked by a route, or by an overlap, or reserved by another established temporary shunting area or possession.

**Change per 2021-07-30:**

The signalling system can only activate a temporary shunting area if all elements of the area are not locked by a route, or by an overlap, or reserved by another established temporary shunting area or possession.

~~An established temporary shunting area will be indicated on the signalling control display.~~

3428 Signaller

The Signaller must manually request the temporary shunting area in the signalling system.

Before the Signaller approves the request to establish a temporary shunting area, the Signaller must assess if any conditions exist which prevent the area from being established as planned.

**Change per 2021-07-30:**

~~When the Signaller is requested by the Shunting area manager to establish a temporary shunting area, the Signaller must ensure that no Operational Instruction movements are authorised in the area.~~

~~The Signaller must then assess if the establishment of the area will affect any other traffic in the area. If no other traffic in the area is affected, the Signaller must manually establish request the temporary shunting area and inform the Shunting area manager about the timing of the area and log the details of the Shunting area manager in the signalling system.~~

~~If other traffic in the area will be affected, Before the Signaller must use approves the signalling system request to produce an alternative timing establish for a establishing temporary the shunting area and inform, the Shunting area manager.~~

~~The Signaller must ensure an assess entry if in any the conditions Signaller exist log which when prevent the temporary shunting area is from being established as planned.~~

3843 Signaller

**Change per 2021-07-30:**

When the temporary shunting area is indicated on the signalling control display, the Signaller must check that the indication of the area is consistent with the planning.

If the indication on the signalling control display is consistent with the planning, the Signaller must approve the establishing of the area.

3844 Signaller

**Change per 2021-07-30:**

If the indication of the temporary shunting area on the signalling control display is NOT consistent with the planning, the Signaller must reject the establishing of the area and as far as possible re-plan the area in co-operation with the Shunting area manager.

3845 Signaller

**Change per 2021-07-30:**

The Signaller must inform the Shunting area manager when the temporary shunting area is established. The boundaries of the area must be included in the message.

The Signaller must ensure that an entry is made in the Signaller log.

3429	Shunting area manager	The Shunting area manager must assume responsibility for the temporary shunting area when the Signaller confirms that the area has been established.
3430	Shunting area manager	Deleted

**Change per 2021-07-30:**

~~If the Signaller suggests an alternative timing of the temporary shunting area, the Shunting area manager must assess the suggestion and either accept or reject.~~ Deleted

## Communication

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CO.2		<b>Introduction</b>
CO.3	All	<p>It is of vital importance for the safety of the railway that communication between the roles defined by ORF ensures that the right people communicate and that the right understanding of messages are achieved. To avoid any confusion only necessary communication is allowed. Brevity is important, and message exchanges should be kept as clear and concise as possible.</p>
		<p><b>Change per 2021-07-30:</b></p> <p>It is of vital importance for the safety of the railway that communication between the roles defined by <del>these Operational Rules</del> ORF ensures that the right people communicate and that the right understanding of messages are achieved. To avoid any confusion only necessary communication is allowed. Brevity is important, and message exchanges should be kept as clear and concise as possible.</p>
CO.4	All	Think before you initiate a message exchange; know what you want to say and if it is a lengthy message, write it down if necessary before initiating the message.
CO.5		<b>Language</b>
CO.6	All	All communication mandated by ORF must be conducted in Danish. Messages must be short and unambiguous. The terminology of ORF must be used and where standard phrases are prescribed their use is mandatory.

**Change per 2021-07-30:**

All communication mandated by ~~the Operational rules~~ ORF must be conducted in Danish. Messages must be short and unambiguous. The terminology of ~~the Operational rules~~ ORF must be used and where standard phrases are prescribed their use is mandatory.

CO.7	All	Names, numbers and identifiers are never to be abbreviated.
CO.29		<b>Message structure</b>
CO.31		<b>Identification and request</b>
CO.32	All	When communicating you must make sure you are communicating to the right person. Before transmitting any safety message other than an emergency message the persons who are going to communicate must identify themselves. The identity of receiver and sender of safety messages must be clearly stated.
CO.33	All	The valid possible identifications of receiver and sender of safety messages are: <ul style="list-style-type: none"> <li>- name of TCC</li> <li>- train running number</li> <li>- name of Railway Undertaking</li> <li>- user role and name.</li> </ul>
CO.163	Signaller	Deleted <div style="border: 1px dashed black; padding: 10px; margin-top: 10px;"> <p><b>Change per 2021-07-30:</b></p> <p><del>Signallers must identify themselves by the following message:</del>  <del>"This is (identity or location where traffic is controlled)". Deleted</del></p> </div>
CO.164	Driver	Deleted <div style="border: 1px dashed black; padding: 10px; margin-top: 10px;"> <p><b>Change per 2021-07-30:</b></p> <p><del>Drivers must identify themselves by the following message:</del>  <del>"This is train (number) at/in (position)". Deleted</del></p> </div>
CO.34	All	The identification to be used if several valid identities exist, is the one that most clearly identifies the function, identity and context of the sender and receiver.
CO.35	All	When you communicate any safety message other than emergency messages you must ensure that the identity of the person you are communicating with is clearly and unambiguously identified.
CO.36	All	When you initiate a communication exchange you must always state the reason for the exchange before commencing transmission of the message. The reason must clearly identify if the communication is a safety message exchange.
CO.45		<b>Use of radio and phone</b>
CO.46	All	When you receive a call from one of the users defined in ORF you must as far as it is safe and practicable to do so answer the call immediately. When you receive a call you must always evaluate if the call can be answered without diverting your attention from other safety critical tasks.

**Change per 2021-07-30:**

When you receive a call from one of the users defined in ~~the Operational rules~~ORF you must as far as it is safe and practicable to do so answer the call immediately. When you receive a call you must always evaluate if the call can be answered without diverting your attention from other safety critical tasks.

CO.47

**Train radio**CO.48 Driver  
Signaller

Safety messages between Signaller and Driver must take advantage of the train radio whenever available. Safety messages exchanged via radio must be exchanged verbally and never using any text capability of the radio.

CO.49 Driver

Whenever a Driver becomes aware that a train radio has failed, or if the train is not fitted with a train radio, the Driver must inform the Signaller and provide the number of a mobile phone that the Driver can be reached on if available.

**Change per 2021-07-30:**

Whenever a Driver becomes aware that a train radio has failed, or if the train is not fitted with a train radio, the Driver must inform the Signaller and provide the number of a mobile phone that the Driver can be reached on if available.

CO.58

**Logging of communication**

CO.59 All

All communication must be expected to be logged and all voice communication recorded. The logs and recordings can be used for incident investigation and in anonymized form for education purposes without further notification.

CO.60 Signaller

The Signaller must record all relevant safety messages in the Signaller log unless the information is automatically recorded in the Signaller log, or another automated system.

CO.61 Signaller

When communicating with a person not performing the role of a user within ORF and the communication takes place on a device that is recorded the Signaller must inform the person of the conversation being recorded.

**Change per 2021-07-30:**

When communicating with a person not performing the role of a user within ~~the Operational rules~~ORF and the communication takes place on a device that is recorded the Signaller must inform the person of the conversation being recorded.

TW89		<b>Safety distances</b>
TW95		<b>Safety distances for machinery, equipment and tools</b>
TW96		<b>General conditions</b>
TW97	PICOSS	<p>The safety distance towards an operational railway must only be violated if there is a possession in the track concerned. If a Signaller protected area is applied in the area concerned, a short-term violation may be permitted, e.g. for turning around with a lift or crane.</p>
<p><b>Change per 2021-07-30:</b></p> <p>The safety distance towards an operational railway must only be violated if there is a possession in the track concerned. <del>This applies if always, a even Signaller #protected #area is only applied for in the area concerned, a short-term period violation of may time be permitted, e.g. for turning around with a lift or crane.</del></p>		
TW98	PICOSS	<p>All equipment and tools must be placed outside the safety distance ensuring that it cannot on purpose or by accident fall or slide into a position where it can cause damage to the infrastructure, trains, fences or shieldings.</p>
TW141		<b>Catenary system</b>
TW164		<b>Catenary isolation protection</b>
TW229		<b>Electrical rolling stock in earthed area</b>
<p><b>Change per 2021-07-30:</b></p> <p>Electrical <del>traction rolling unit</del> <u>stock</u> in earthed area</p>		
TW230	Catenary field leader Catenary manager	<p>If the Catenary field leader is informed by the Catenary manager that electrical rolling stock has entered into an earthed area, the Catenary field leader must check all earthing arrangements in the isolated area. When all earthing arrangements are checked and found fit for purpose, the Catenary field leader must report to the PICOSS and the Catenary manager that it is safe to continue the work.</p>
<p><b>Change per 2021-07-30:</b></p> <p>If the Catenary field leader is informed by the Catenary manager that <del>an electrical traction rolling unit</del> <u>stock</u> has entered into an earthed area, the Catenary field leader must check all earthing arrangements in the isolated area. When all earthing arrangements are checked and found fit for purpose, the Catenary field leader must report to the PICOSS and the Catenary manager that it is safe to continue the work.</p>		