



INFRABEL

ERA
ERTMS Congress

MBS

Pascal Heyvaert, TL, I-AM.253

Serge Verhaeghe, I-AM.253

25/04/2024

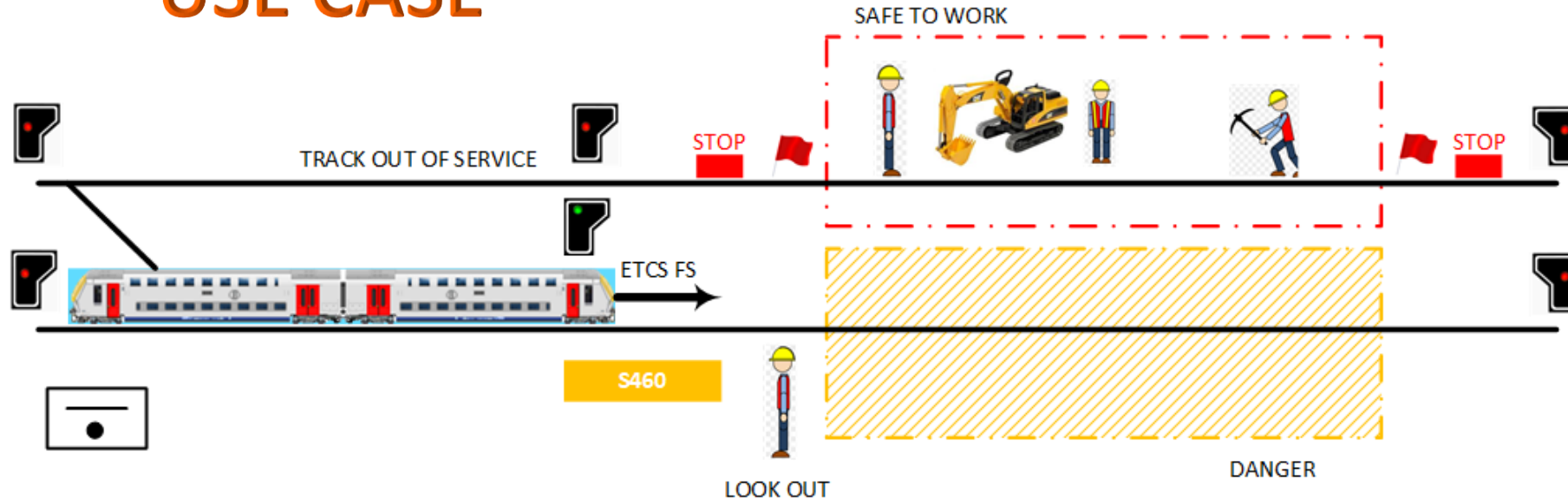




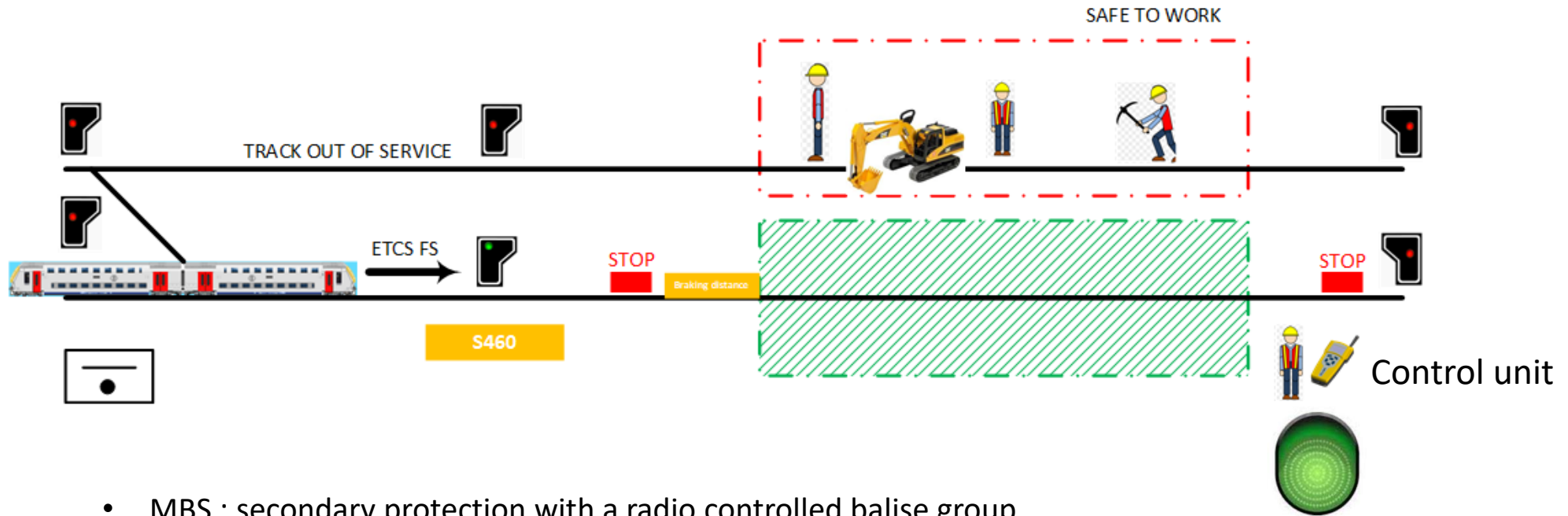
- 2018 Issue/Challenge: could it be possible to stop a train from a distance in case of an emergency?
- Main req: fast and easy to install, radio controlled, stop trains in TBL1+ and ETCS L1 & L2, mobile
- System is called MBS (Mobile Balise Stop)



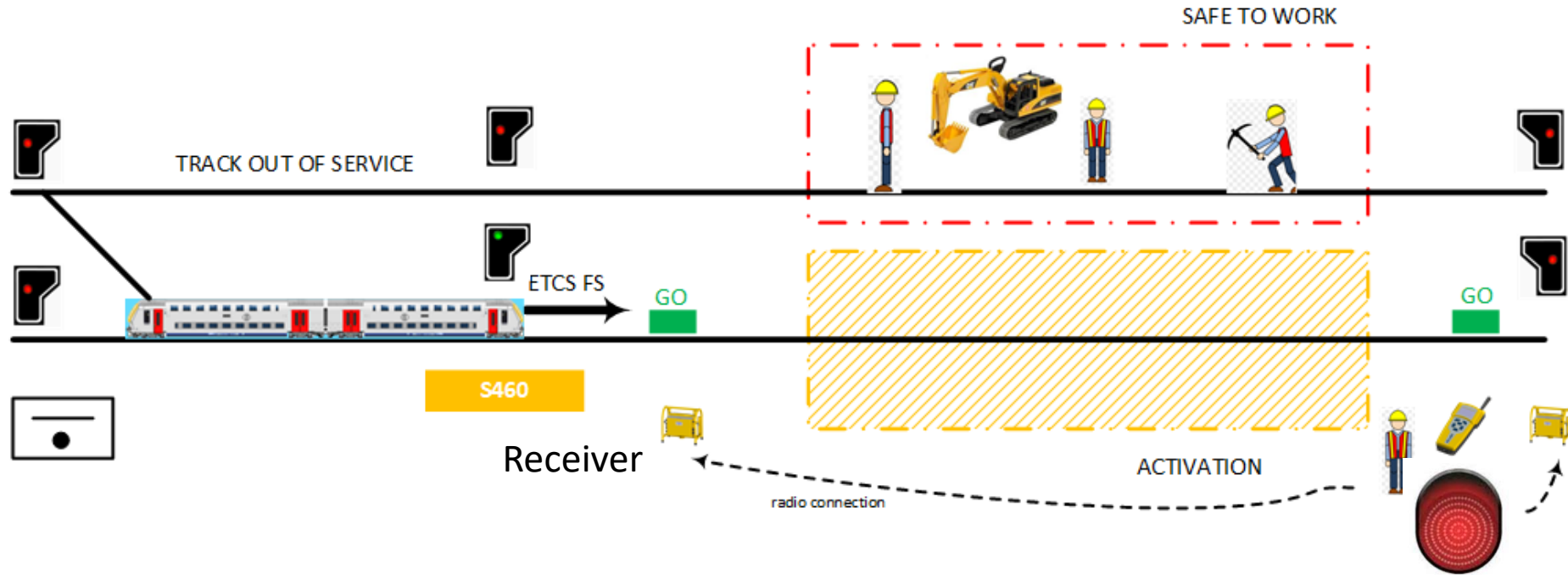
USE CASE



- Actual situation: communication procedures between the signalling box and a look out are used to protect an area with train traffic nearby a work area (operational procedure S460)
- The signaller can open a signal unintentionally (eg. the orange area is not evacuated yet)
= **POTENTIAL RISK**
- There is a need for an additional protection system
- The additional system must be compliant for ETCS/TBL1+ trains



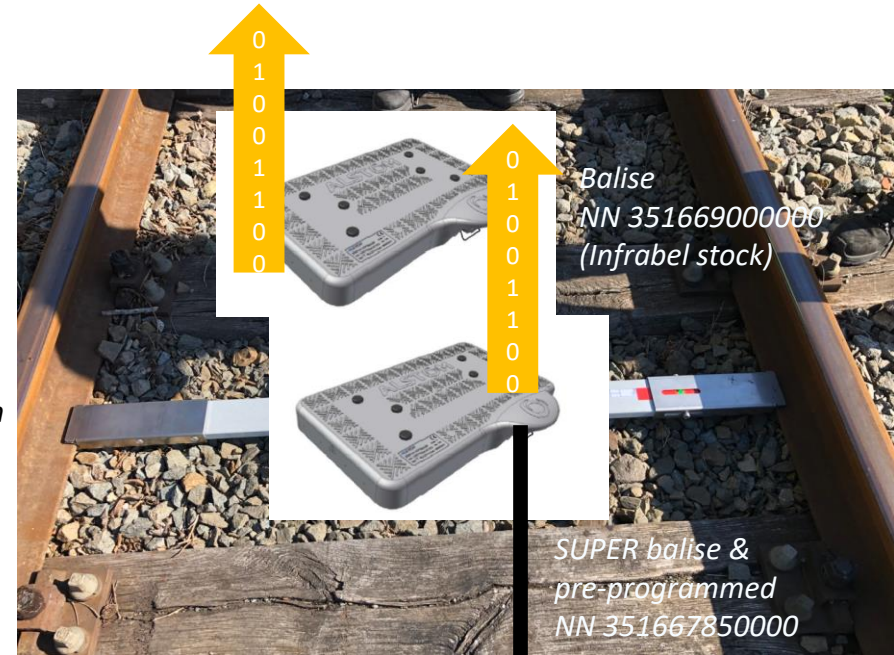
- MBS : secondary protection with a radio controlled balise group
- The balise group must be installed at emergency braking distance (depending on the line speed)
- The balise group sends a STOP telegram (TBL1+ RNP, ETCS L1 MA=0, ETCS L2 => L1)
- Green feedback led on the MBS control unit



- When a train is announced, the lookout evacuates the work area
- The lookout gives the release command on the MBS control unit (red feedback led)
- The lookout confirms the evacuation to the signalling box
- The balise group sends an “empty” telegram

Framework contract Alstom: 4600006184
 Framework contract Zöllner: 4600006153

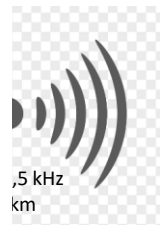
Temporary universal beam
 NN 351669280000
 (Infrabel production)



Autonomy
 min 4h



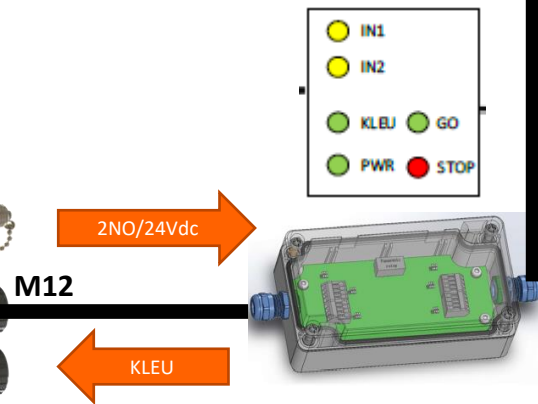
COBRA Radio control unit
 NN 351667800000



Autonomy
 min 46h



COBRA Radio receiver
 NN 351667810000



Junction box
 NN 351667870000

Installation time
 <5min



Q&A