CLEARSY

Safety Solutions Designer

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TUTORIAL

ABZ 2021

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Using B to program the CLEARSY Safety Platform

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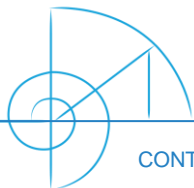
Contributers

▶ Thierry Lecomte   Slides, edition, live presentation
▶ Bruno Lavaud CS_0, C code, live presentation
▶ Patrick Péronne SK_0, Software simulator, example
▶ Lilian Burdy   B models

Resources available at https://github.com/CLEARSY/tutorial-ABZ-2021

OBJECTIVES

► Learn how to use formal method for « serious thing »

▷ More than just model, predicate and proof

► A single example (railway crossing) as a common theme

▷ Anyone knows the subject

▷ Complex enough to demonstrate the approach

► Low requirements

▷ Some knowledge of formal logic

▷ Notation introduced when required

Engine to operate the barrier

Train

Barrier

Signal to warn drivers

Announcement pedal

Freeing pedal

Road

A pedal is a device that allows the detection of the passage of any rolling stock on a given track point. The detection is either **magnetic** or **mechanical**.
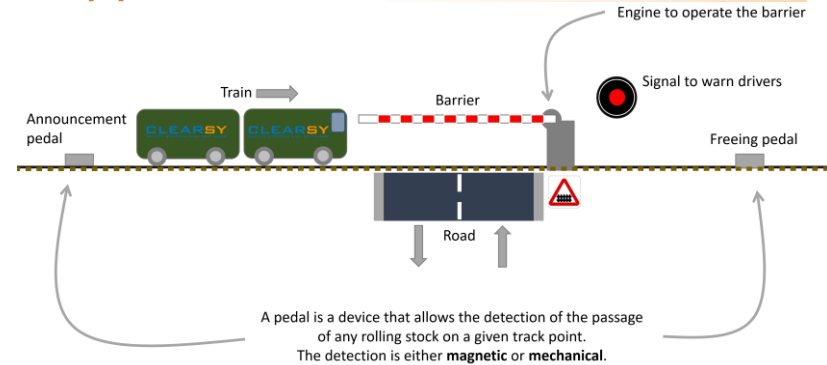
AGENDA

▶ Introduction

▷ Safety, standards & embedded systems

▷ The railway crossing example

▷ The CLEARSY Safety Platform in a nutshell

▶ The CLEARSY Safety Platform for education

▷ The starter kit SK0

▷ The software simulator (VM)

▶ The CLEARSY Safety Platform for industry