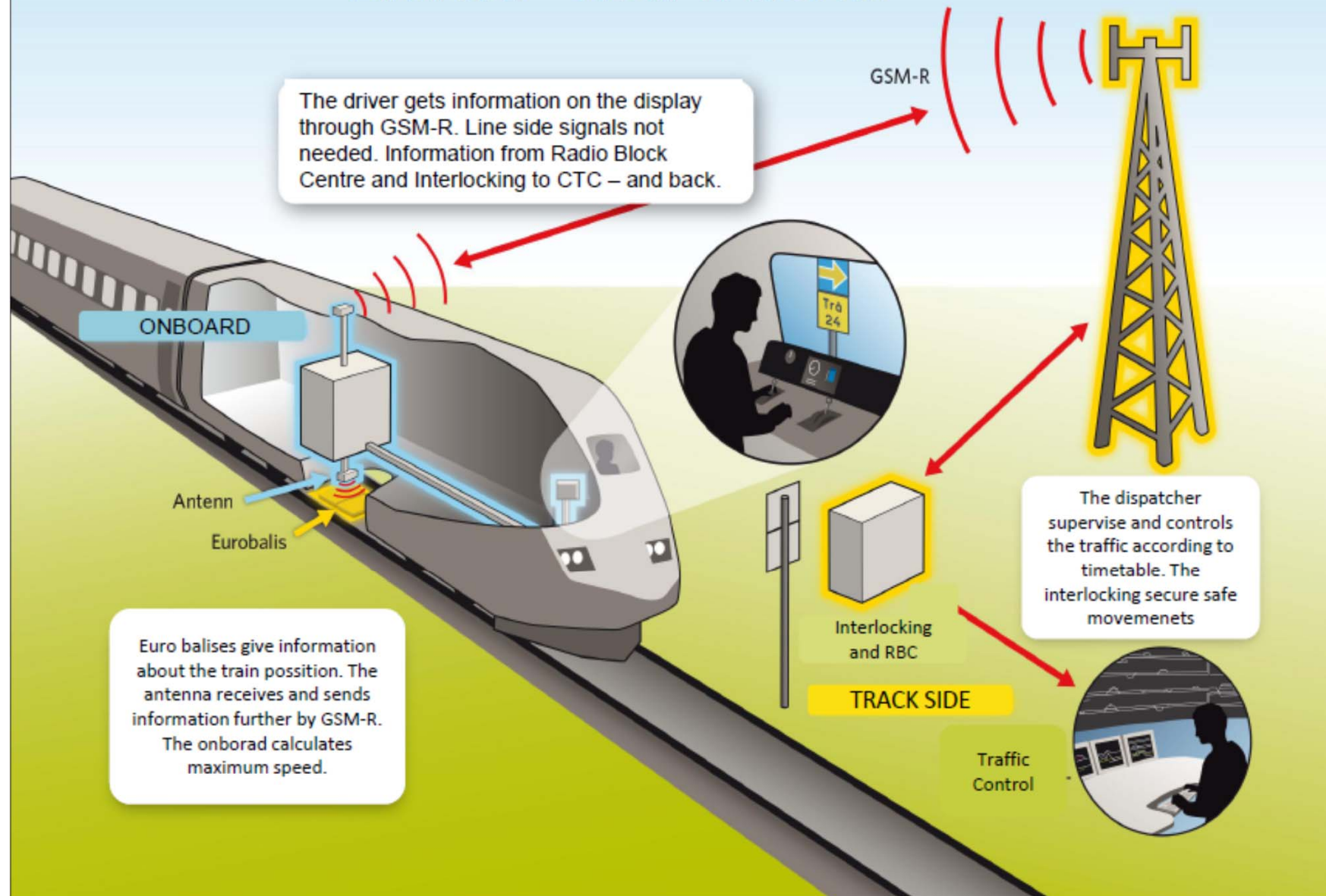


**ERTMS
standardization
DAS
2014-10-16**



TRAFIKVERKET

ERTMS - How it works



ERTMS standardization DAS - ATO over ERTMS

- ERTMS – European Rail Traffic Management System
- ERTMS versions
 - Base Line 2
 - Base Line 3
- Specification work on DAS – ATO
 - Included in Base Line 3 of ERTMS specifications
 - Work in cooperation with Unisig – ERA – ERTMS Users Group
- Different types of Specifications are used
 - Functional Interface Specification (FIS)
 - Form Fit Functional Specification (FFFIS)

ATO Operational principles

- Interoperability
- ATO over ERTMS
- Grade of Automation (GoA)

GoA1	GoA2	GoA3	GoA4
Non automated train operation	Semi-automated train operation	Driverless train operation	Unattended train operation
No ATO available	ATO available	ATO available	ATO available
Train operator in cab	Train operator in cab	Train operator on-board the train	No staff on-board the train

ATO System Architecture (Draft)

