How to achieve a cost-efficient approach when deploying ERTMS

Community of European Railway and Infrastructure Companies

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Simplified SWOT of ERTMS deployment

CER
The Voice of European Railways

STRENGTHS	WEAKNESSES
• Clear Vision: **ERTMS all over the SERA**	• Benefits for railway operator are too small and too late -> ERTMS deployment is **not cost neutral**. • STI CCS 2023 does not allow a "compatible" evolution of the ETCS system: **no enhancements anymore** in a "compatible" **way in existing (SV 2.x) vehicles.**
OPPORTUNITIES	**THREATS**
• Benefits of ERTMS for railway operators (wellknown) • Less known: the **increasing return of investments** (the more advanced is the deployment, the less expensive it is, at least because of RUs' part)	• **Production capacity** is below the needs • No **stability of specification**, nor predictability (Love of innovation instead of its contribution to performance, either economic or operational) • **Subsidies mechanism** inconsistent with long term view

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ETCS Trackside

Cost drivers and mitigation

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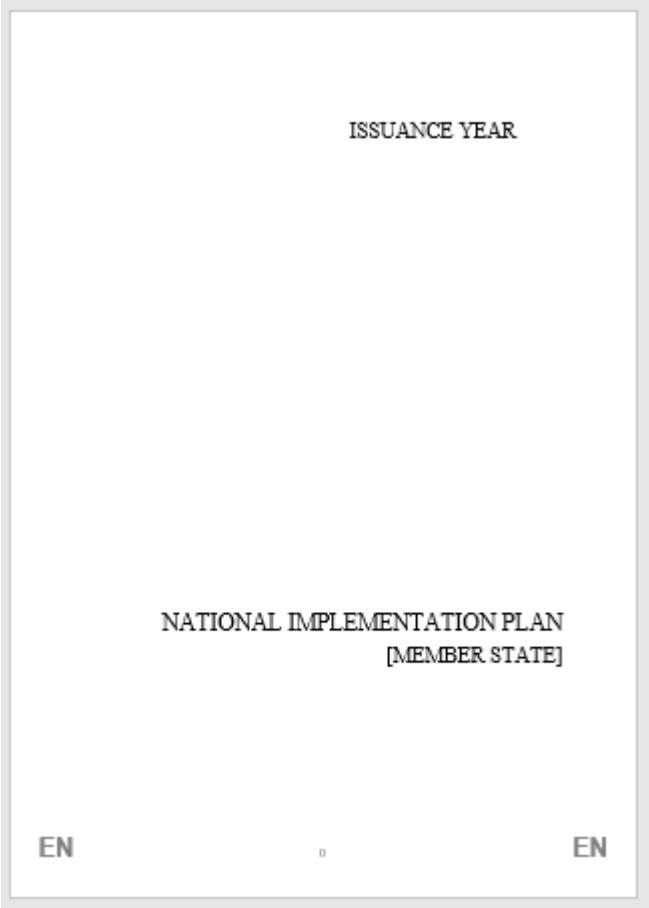
ETCS Trackside | Cost Drivers

Topic	Explanation
Infrastructure modernization for ETCS L2 readiness necessary – replace of infrastructure significantly before end of life	• Existing interlockings are not ETCS L2 ready but could still be kept in operation for years • Infrastructure is the biggest investment of the overall railway system
Replication/simulation of old Class B system functionality based on ETCS technology	• ETCS (L1) is designed in a way to keep existing class B operating rules
Integration of ETCS in existing national systems	• Interfaces to national TMS, diagnosis systems,…
Construction works in ERTMS roll out projects	• Signalling industry looking for partners

ETCS Onboard | Cost Drivers and Mitigation

Topic	Explanation
Integration of class B systems	• Complicated interfaces to old legacy class B systems • Difficult Safety Case
Integration of vehicle systems (retrofit)	• Interfacing of modified braking systems, traction systems, 3rd party TCMS systems
National non-technical requirements	• Human factors • National regulations
National homologation process	• Country specific homologation processes • Variying complexity

Recommendations / Prerequisite


ISSUANCE YEAR

NATIONAL IMPLEMENTATION PLAN
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Strategy

1. **Maximising the benefits through the right planning for each line or group of lines.**
    1. Right ETCS solution and level to be taken into consideration
    2. Get rid of Class B system operating rules and go for "ETCS only" lines
2. **Identify optimal lots for fleet fitment**
    1. Avoid to equip vehicles close to retirement
    2. ETCS only for vehicles with small fleet sizes
    3. Group several types with similar features in tender lots
3. **Helping the industry to increase its production capacity through long terms contracts**

Prerequisites / Challenges for the future

1. **Subsidy mechanism consistent with the ambition, and the needs for long term contracts.**
2. **ERTMS specification stable for 20 years? Or at least evolution that are**
    - Predictable, compatible and… Cost-effective

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