



## MIGRATION STRATEGY

GSM-R / FRMCS / ETCS / ERTMS / TETRA / 5G / Signalling

### Gain a sound basis for your project planning for the introduction of new technology

A focus on the initial situation, technical/operational requirements for the technology

quattron's migration strategy provides you with a factual decision-making basis for infrastructure operators' migration costs and rolling stock, taking technical and operational safety requirements into account, on the basis of feasible scenarios. It also provides the basis for project planning for all of the necessary measures from the parties involved in the introduction of new technology.

For each migration scenario identified, we draw up a description of the vehicle modifications, the infrastructure equipment and the necessary network installations. For example, for the migration of the train control system to ECTS, we develop and compare strategic alternatives with regard to:

- Conversion of the track infrastructure from the existing Class B system to suitable ETCS equipment according to the track requirements (e.g. ECTS L2 or ETCS L1LS)
- Equipping the vehicles with ETCS and incl. specific transmission modules (STM) where applicable in addition or alternatively to the existing vehicle equipment for fault-free operation regardless of the track migration accomplished and for the maintenance of a (prior) fallback level with comparable performance data and preservation of the usability of alternative routes
- Conversion periods, dependencies, safety considerations, tests and approvals
- Regional conversions, signal box-related strategies and implementation roadmaps
- Costs for the infrastructure operators involved, vehicle operators and associations to be involved
- Consideration of cross-border traffic and network access (track use conditions)

**quattron supports you!** Our experts, with almost 20 years of experience in technology projects and applicable innovations from public infrastructure operators, support you, as a railway infrastructure company and railway undertaking, throughout the process beginning from the preparation stages in the decision-making process through determination of the migration approach to migration execution. Benefit from our extensive experience in the operational introduction of ETCS in numerous major railway projects.



Our range of services includes comprehensive support for railway operators in the introduction of new technologies and the replacement or missing technologies in the rail sector.

quattron is your partner for:

- ERTMS
- ETCS
- GSM-R
- FRMCS
- 5G
- Signalling
- TETRA

THE TECHNOLOGY TRANSFORMER

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management consulting  
GmbH

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