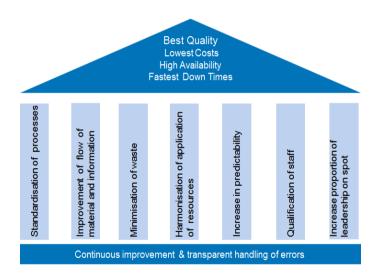
About Lean Management:

Lean Management was originally developed by the automotive industry and has become increasingly popular in the production and maintenance of rail vehicles in the recent years.

The appropriate application of methods such as e.g. process and value stream analysis, Kaizen events or shopfloor management enhances the efficiency of processes and workflow in workshops.



"In the long term, the consistent improvement of our workshop processes due to the application of lean management methods will lead to a noticeable reduction in lead times of ICE maintenance."

Ulrich Bauer, DB Fernverkehr, Projekte Flottenvorhaltung und -behandlung P.FBW1

Our Concept

We offer support in the implementation of lean and appropriate structures to increase your operational efficiency regarding any of your core processes as well as management and support processes.

Take advantage of our well-proven and practical 3-step approach:



Screening / Quick Check / Analysis

- Process and shift support
- Data collection via evaluation matrix
- Visualisation and identification of potentials for improvement



Derivation / fields of action

- Performing workshops to identify areas of activity
- Selection and prioritisation of fields of action
- Definition of measures



Implementation support

- Coordination of processes and change management
- Verification of sustainability
- Coaching and training of executive management & employees

Our Methods

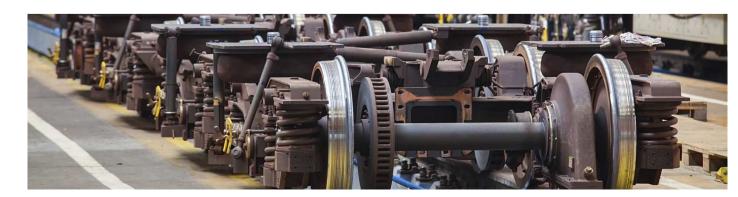
Besides being experts in railway technology, our staff brings along a wide range of methodological know-how, especially regarding:

- 5S / 5A
- 7+1 types of wasting
- Value stream and process analysis & design
- Shopfloor Management
- Kaizen / CIP
- Workplace design
- Optimisation of material flow / Kanban
- System of indicators (BSC)
- Multi Moment Analysis
- Structured problem-solving process

Why implement Lean Management?

Market requirements for quality, cost and adherence to schedules have increased considerably. As a result, parts of the established measures to reduce costs are no longer sufficient to remain competitive.

This is where Lean Management comes in. It helps to reduce down times and simultaneously to improve quality while reducing waste and focusing on customer needs.



Exemplary results from recent projects

Optimisation of a general inspection according to BOStrab regulations of LRVs

> Reduction of the lead time by 25%

Restructuring the quality assurance of a metro workshop

➤ Increase in quality by 30%

Shopfloor-Management for an EMU regional rail workshop

➤ Increase in productivity by 30%

Analysis of workshops for on-site maintenance for High Speed EMU

- Identification of more than 40% of nonproductive activities
- Creation of over 20% additional track capacity during night shift

Space capacity analysis for an LRV workshop

Increase of more than 40% in space capacity to store spare parts

Our 'Operation and Maintenance' department will be glad to provide you with further information or a non-binding consultation.

Markus Krippner
Director ,Operation and Maintenance'
Phone +49 611 20506 140
Markus.Krippner@de.tuv.com

Köln

Am Grauen Stein 51105 Köln Tel. +49 221 806-1835

Berlin

Schillstraße 9–10 10785 Berlin

Frankfurt

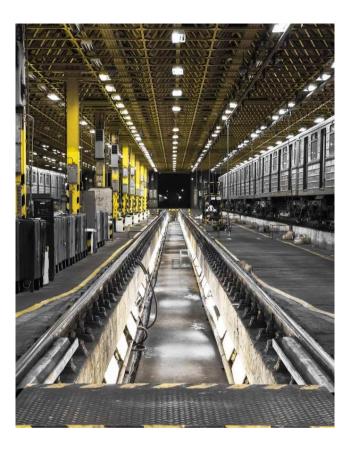
Lyoner Stern, Hahnstraße 70 60528 Frankfurt am Main

Wiesbaden

Gustav-Stresemann-Ring1 65189 Wiesbaden



TÜV Rheinland InterTraffic GmbH Am Grauen Stein 51105 Cologne www.tuv.com



Shopfloor & Lean Management in Rail Transport

Consulting and Implementation in Maintenance and Production

www.tuv.com

® TÜV, TUEV and TUV are registered trademarks. Utilisation and application requires prior approval.

