

TRANS_{RAIL BUSINESS}
FORMING

BOOM



BOOM RAIL SOLUTIONS

The comprehensive ECM solution designed for the railway industry

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SOFTWARE EXPERTISE BLENDS WITH RAILWAY KNOW-HOW

“We talk Rail“

“We talk Rail“ is more than a slogan — it’s a commitment. We understand the industry, we excel in technology, and we unite both to craft sustainable and efficient solutions.

Standard and individual solutions

We provide both standard and customized solutions designed to meet your specific needs. Our team of industry and software experts will find the best solution for your requirements.



Maintenance management?

While others may do similar things - the rail industry is our area of expertise!

For 30 years, we have specialized in developing software solutions for the international railway industry. Our extensive experience from numerous client projects has established us as a leading provider of software in vehicle, workshop, operations, infrastructure, and control center management. Our comprehensive solution covers various aspects throughout the life cycle of rail vehicles or infrastructure.

PROCESS OPTIMIZATION WITH BOOM: REDUCED DOWNTIMES FROM STABLING TO RECOMMISSIONING

6 Facts on how Boom Rail Solutions help reduce the downtime of your vehicles:

-  Exceptional seamlessness of Boom Rail Solutions
-  Integration of ECM roles into the maintenance process
-  Providing only required information for each process step
-  Seamless communication and documentation exchange
-  Proactive planning of maintenance activities
-  Optimization of stabling durations, material needs, fleet management, and more

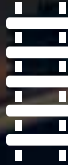
WHO BENEFITS FROM THIS?



Passenger transport



Cargo



Infra-structure



Workshop



Urban public transport



Track construction



Manufacturer

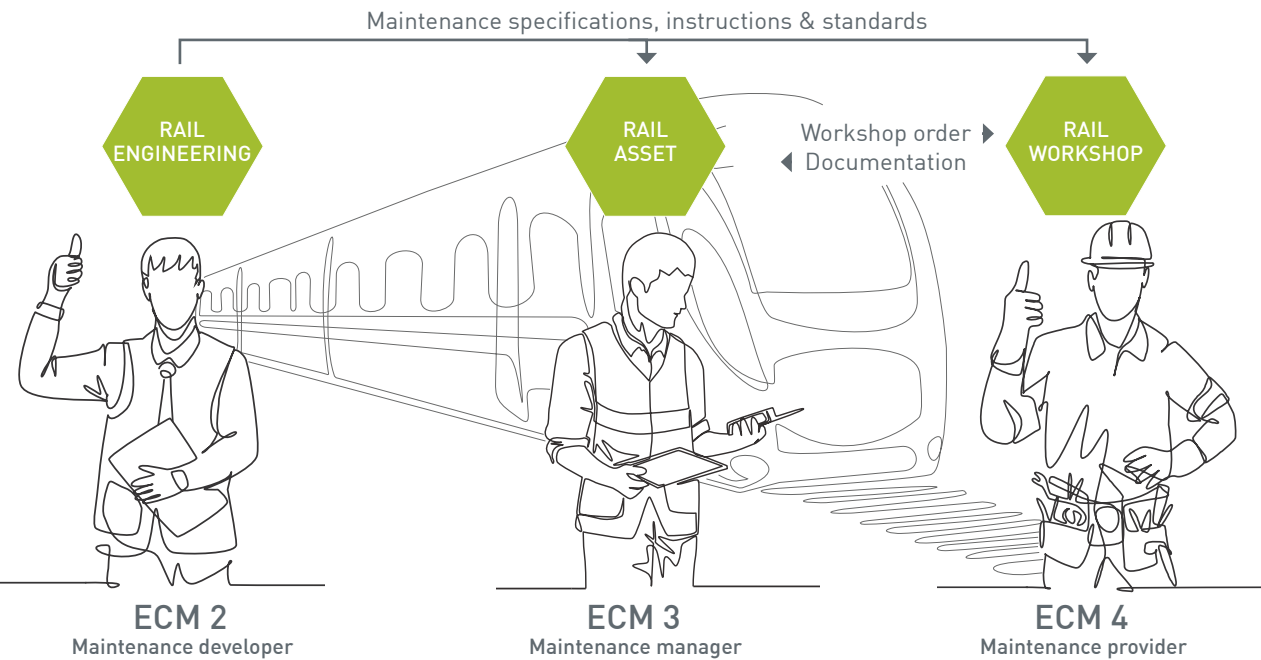


Lessor

EFFICIENTLY ENSURING ECM COMPLIANCE

Businesses are confronted with numerous requirements under the ECM regulation that are challenging to manage without digital support. Our software solutions offer an effective way to mitigate these challenges. They alleviate administrative burdens, decrease error rates, ensure traceability, and assist ECM roles 2, 3, and 4 in meeting ECM guidelines.

ECM PER DESIGN



ECM requirements vs. time management:
Boom makes ECM 2019/779 manageable

EMPOWERING YOUR FUTURE ON-PREMISES OR IN THE CLOUD: BRS: MODULAR, SIMPLE, FLEXIBLE & ECM-BASED

The Boom Rail Solutions (BRS) represent a comprehensive digital process solution that aids companies in both strategic and operational maintenance. Tailored specifically to the needs of the railway industry, these solutions adhere to industry standards and norms. Continuous technical and thematic development ensures the solution remains up-to-date. Our development strategy emphasizes maximum standardization and necessary customization, which has a beneficial effect on investment costs and development time for our clients.





Manu-
facturer

Owner

Lessor

Operator

FOCUS ON THE VEHICLE
RAIL ASSET

ECM 3: Manageability & efficiency

Optimal maintenance planning
(corrective | preventive | condition-based | user-based)

Efficient planning of workshop visits considering deployment schedules and maintenance requirements, alongside precise forecasting of upcoming maintenance dates.

Complete traceability

The vehicle life cycle file contains all events related to the rail vehicle that are relevant for maintenance and required by the ECM regulation.

360° view on the rolling stock

Rail Asset provides a comprehensive view on rail vehicles and their components throughout the year, covering technical, logistical, and commercial aspects for thorough management and monitoring.

THE RAIL-SPECIFIC
ASSET MANAGEMENT FOR

- ROLLING STOCK
- COMPONENTS
- INTANGIBLE ASSETS

Structured damaged vehicle management

Incorporating damage codes ensures accurate and thorough recording of incident reports, enhancing maintenance and condition management efficiency.

Integration of third-party systems

Benefit from interfaces to ERP systems as well as importing wheelset measurement data, meter readings, mileage data, incident reports, and other information.

BENEFITS WITHIN THE ORGANIZATION

Users and decision-makers benefit from Rail Asset and its extension modules



Asset manager (ECM 3)

- Support in ECM responsibility
- Optimal maintenance planning
- Documentation according to standard
- Life cycle cost optimization
- Continuous thematic and technical development of the solution
- Mean time to repair optimization

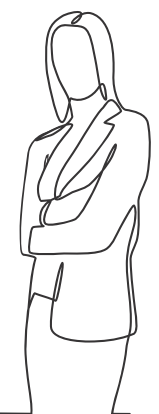


Executive board

- Customized reports as the basis for investment decisions
- Pilot workshop provides investment security
- Cost savings through process optimization of up to 20%
- Data foundation for risk management

Fleet manager

- Vehicle availability up to 100%
- Minimization of downtime
- Increase in customer satisfaction



Information technology

- Continuous development of the solution by Boom (both technically and thematically)
- Cloud or on-premises deployment options
- Scalability
- Integration with third-party systems
- ISO 27001:2022 certification
- Resource-efficient implementation process



NORM-BASED WHEELSET MANAGEMENT[EN 15313]

Boom's wheelset management is designed to ensure compliance with international norms and standards. It meticulously and effectively monitors, assesses, and enhances the condition and performance of rail vehicle wheelsets.

Data import
Limit value tables
Trend analysis
Calipri Traceability
Instrument interface
Data quality Demand simulation
Predictive Maintenance
Data visualization

INCREASE IN EFFICIENCY THROUGH AUTOMATION STANDARD INTERFACE TO CALIPRI

The "Wheelset Management" module is an add-on for Rail Asset, specifically designed to manage wheelsets of rail vehicles according to EN 15313 standards. Integration of a standard interface to the Calipri measuring device enables

Boom's Wheelset Management to automatically transfer measurement data to Rail Asset and directly linking it with the corresponding wheelset. Embedded limit value tables in the solution provide clear guidance on necessary actions.



Holistic mapping

Complete digital model of all wheelsets



Wear forecast

Significant improvement in planning



Interface to instruments

Import support for different measuring systems



Improved use of the material

Optimization of maintenance cycles for demand and capacity planning



Embedded limit value tables

Limit values provide information on mileage reserve



Traceability

Installation documentation at asset and component level

WEAR PROGNOSIS OF THE ROLLING STOCK FROM MEASUREMENT TO DEMAND

The Boom Rail Solutions enable visibility into the difference between typical, expected, and actual wear curves – thus enabling prediction. Atypical load and wear profiles based on routes and usage can also be applied to

vehicles and fleets. This introduces new possibilities for optimizing remaining service life, planning deployments effectively, and the timely procurement of spare materials.



ECM COMPLIANCE IN WORKSHOPS

RAIL WORKSHOP

ECM 4: Predictability & manageability

The paperless workshop

Boom Rail Solutions facilitate a largely paperless process, from order acceptance and planning to digital mobile execution and paperless documentation. Among other things, this is achieved through:

- Seamless connection: Rail Workshop and Rail Asset
- Integrated resource planning
- Checklist-based order processing
- Interfaces with equipment and measurement tools
- Interfaces with existing systems (e.g. ERP)

Focusing on your core business

By streamlining information and documentation exchange, we reduce your administrative workload. Our solution ensures that essential information is available exactly where and when you need it.

THE LEAN & CLEAN MAPPING OF THE WORKSHOP PROCESS

The solution for integrated and independent workshops as well as mobile service teams

Rail Workshop is designed for diverse target groups facing the same goal and similar challenges: reducing lead times, increasing capacity, and ensuring optimal workshop utilization.

No user-based licensing model

Our pricing is determined by the required features, regardless of whether you need to connect five or 5,000 users. This approach ensures flexibility and cost predictability.

BENEFITS WITHIN THE ORGANIZATION

Users and decision-makers benefit from Rail Workshop and its extension modules



Workshop manager

- Support in ECM responsibility
- Improved planning and tracking
- Efficient resource utilization
- Optimal capacity and utilization planning
- Mobile access capabilities
- Optimization of stabling and lead times



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- Data foundation for risk management

Technician

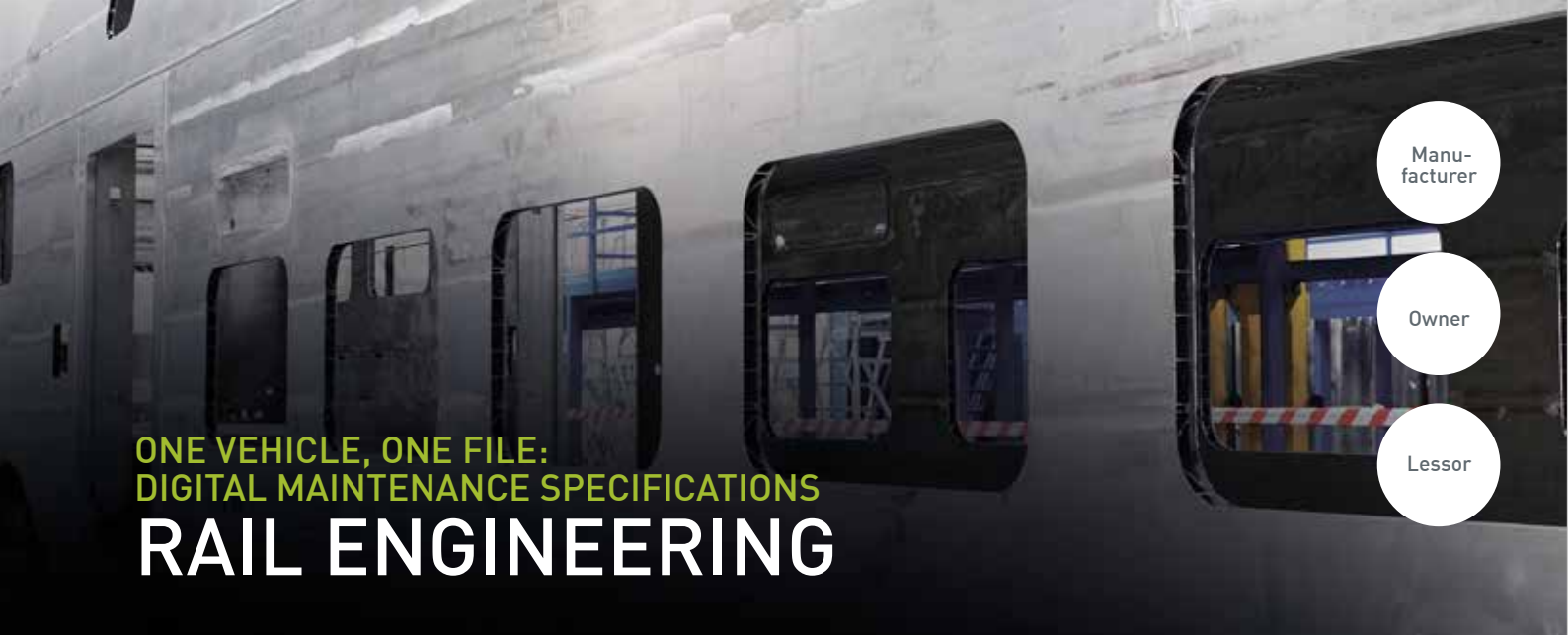
- Reduction of administrative tasks by up to 20%
- Reduced waiting times
- Mobile order processing
- Integrated material and time bookings
- Access to real-time information
- Efficient, digital documentation



Information technology

- Continuous development of the solution by Boom (both technically and thematically)
- Cloud or on-premises deployment options
- Scalability
- Integration with third-party systems
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- Resource-efficient implementation process





Manu-
facturer

Owner

Lessor

ONE VEHICLE, ONE FILE:
DIGITAL MAINTENANCE SPECIFICATIONS
RAIL ENGINEERING

ECM 2: Development & manage-
ment of guidelines

With Rail Engineering, maintenance developers oversee the entire life cycle of vehicles, ensuring the safety of technology and operations. The module facilitates compliance with ECM regulations and offers extensive functionalities for managing:

- Vehicle categories / series
- Component structures
- Maintenance types
- Maintenance strategies
- Damage catalogs
- Work processes
- Checklists
- Bill of materials
- Qualifications
- Types of tools

Rail Engineering facilitates system-level oversight of vehicles and the ongoing refinement of maintenance guidelines derived from monitoring. Additionally, the system ensures detailed documentation of tests, reconstructions, and modifications.

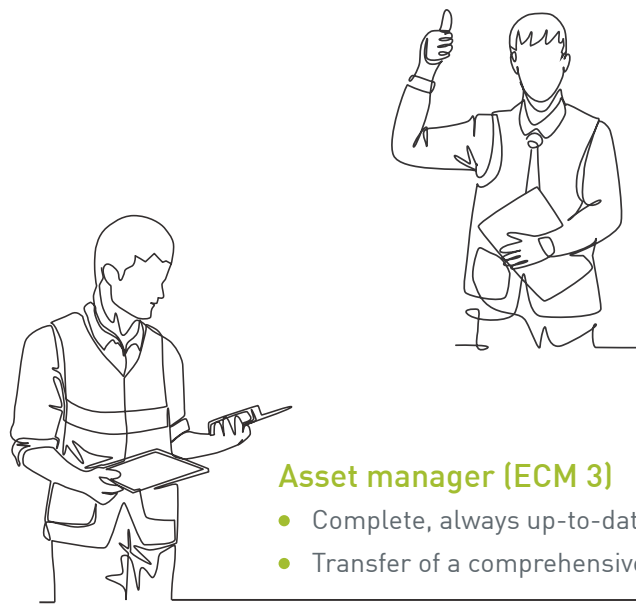
DIGITAL MAPPING OF
**MAINTENANCE
REGULATIONS** FOR
PROPER MAINTENANCE

**Benefits of an integrated solution -
from ECM2 to ECM 3 to ECM 4**

Integrating the Rail Asset and/or Rail Workshop modules with Rail Engineering allows for seamless distribution and real-time updates of technical vehicle data and maintenance guidelines. Maintenance developers also benefit from continuous information flow ensured by this integration.

BENEFITS WITHIN THE ORGANIZATION

Users and decision-makers benefit from Rail Engineering and its extension modules



Maintenance developer

- Support in ECM responsibility
- Real-time asset information
- System-level support for monitoring
- Detailed documentation of tests, reconstructions and modifications
- Optimization of Mean Time to Failure

Asset manager (ECM 3)

- Complete, always up-to-date ECM 2 requirements
- Transfer of a comprehensive vehicle file



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Workshop manager

- Complete, always up-to-date ECM 2 requirements



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Operator

OPTIMAL TRANSPORT CONTROL IN
RAIL FREIGHT MANAGEMENT

RAIL OPERATIONS

>10% More efficient in
train preparation

By providing targeted information and integrating employees based on their roles, processes surrounding train operations can be greatly optimized. This approach enables companies to expedite train preparation processes by at least 10%.

Management and administration of transport
requirements

Rail Operations is a comprehensive solution for systematically receiving transport requests and managing operational workflows.

Support TSI compliance

Rail Operations' underlying processes adhere to current railway regulations and are continually updated to remain current with industry standards.

PROCESS-DRIVEN WORKFLOWS &
STRUCTURED INFORMATION FOR
YOUR TRAIN OPERATIONS

Efficient system support for operational
processes related to train operations



Clear visualization of the train
composition



Optimization of the operating process
through status-dependent process steps



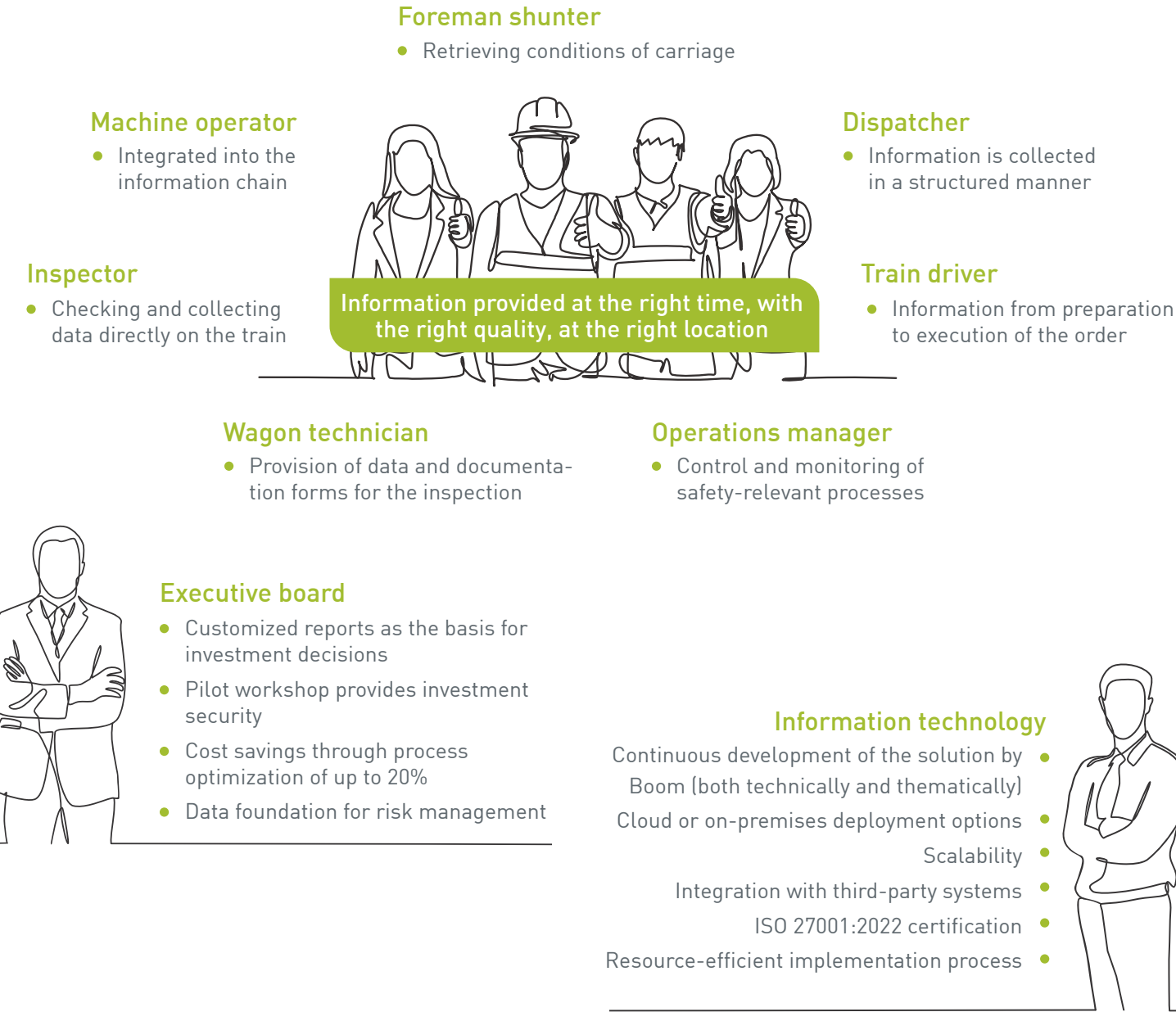
Creation of transport documents
(wagon list, brake note, consignment note)



Easy to create GCU damage
reports

BENEFITS WITHIN THE ORGANIZATION

Users and decision-makers benefit from Rail Operations and its extension modules



SEAMLESS COMMUNICATION FOR INCIDENT,
DAMAGE, AND CONDITION REPORTS

RAIL MESSAGING HUB

Operator

Infra-
structure

The central hub for all reports in railway operations

A lean and automated incident management system is crucial in order to keep the entire process as short as possible, from reporting and processing through to rectification. The Rail Messaging Hub acts as a central hub where all reports converge and are automatically forwarded to the relevant departments to ensure fast processing.

Targeted Information Distribution

The Rail Messaging Hub increases transparency and the level of information regarding disruptions and deviations within the company. It also reduces the effort required for information distribution by utilizing pre-configured message templates.

INTEGRATED CROSS-ECM REPORTING AND TROUBLE- SHOOTING PROCESS

Fulfillment of statutory reporting and documentation obligations

-  Correct reporting with all the necessary information
-  Generation and function-oriented assignment of message templates
-  Verification through complete documentation along the reporting process
-  Feedback to message creator

BENEFITS WITHIN THE ORGANIZATION

Users and decision-makers benefit from Rail Messaging Hub and its extension modules



Control center manager

- Increased transparency in the event of incidents and deviations
- Reduction of the effort involved in distributing information



Executive board

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Message creator

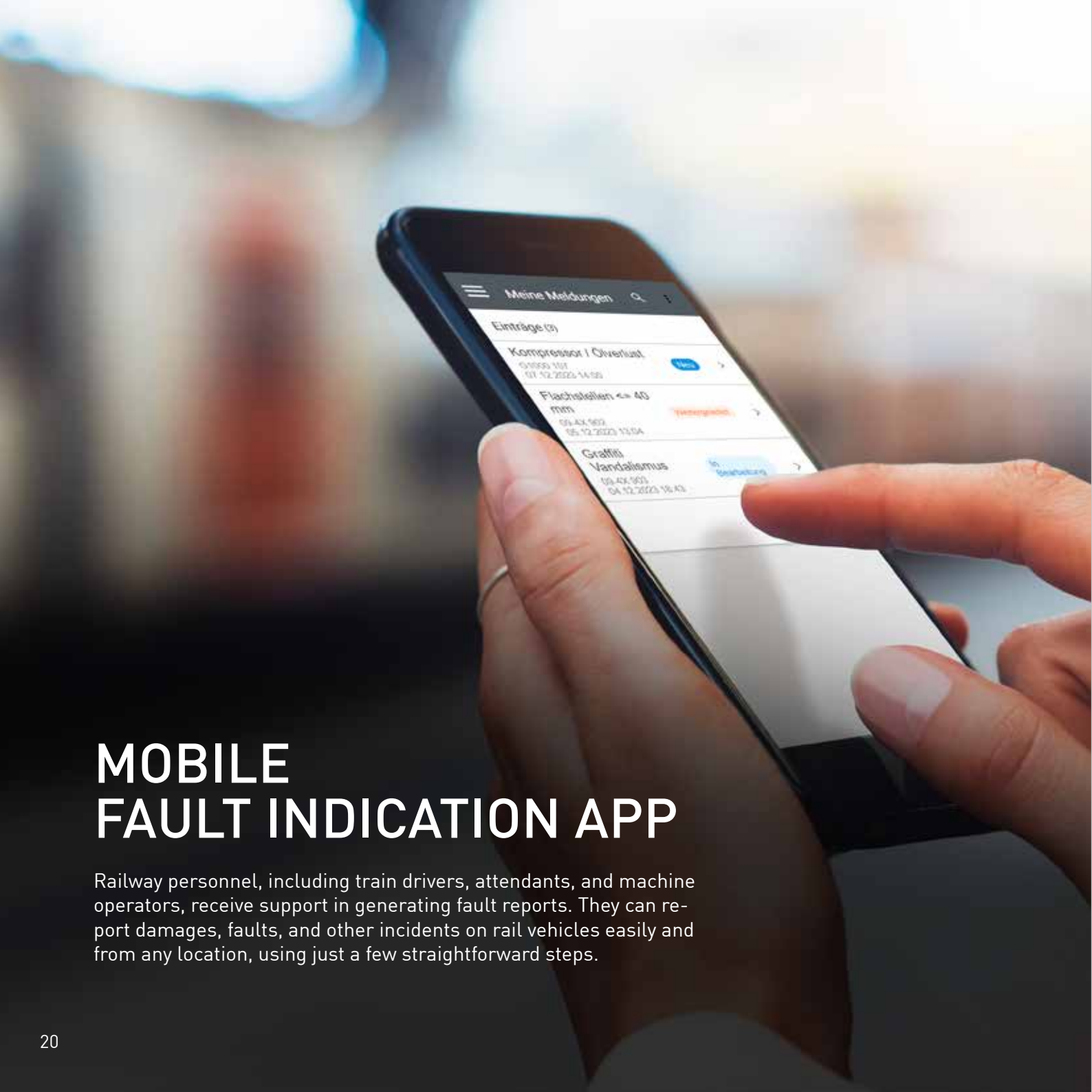
- Support for the quick and easy creation of reports
- Structured forwarding of information
- Notification of the report creator about the report status



Information technology

- Continuous development of the solution by Boom (both technically and thematically)
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MOBILE FAULT INDICATION APP

Railway personnel, including train drivers, attendants, and machine operators, receive support in generating fault reports. They can report damages, faults, and other incidents on rail vehicles easily and from any location, using just a few straightforward steps.

EVERY MESSAGE FINDS ITS PLACE EFFICIENCY IN THE REPORTING PROCESS

The mobile fault indication app offers a comprehensive list of essential vehicle data, including vehicle details, component structure, catalogue of irregularities, and standard limitations. This helps the reporter provide all necessary information accurately. Furthermore, the app enables vehicle identification through QR codes,

assigns GPS positions, and allows for the addition of supplementary images. Once submitted, the report is automatically sent to the Rail Messaging Hub, synchronized, and distributed to relevant personnel. The system prevents duplicate reports by displaying previously logged issues for each vehicle to other staff members.



Platform-independent
Android or iOS



Can be extended as required
The application can be expanded in terms of content and organization



Flexible for IT environments
Cloud or on-premises version



Open interface to third-party systems
Increasing the flexibility and interoperability of the application



Manufacturer-independent use
Vehicle manufacturer not relevant



Enormous scalability
>40,000 active users

FLEXIBLE AND SCALABLE: EXPANDABILITY - IN TERMS OF CONTENT AND ORGANIZATION

The flexible expandability of the application, both in terms of content and organization, makes it a forward-thinking all-round solution. By integrating handover logs or duty schedules, it enhances workflow efficiency

and offers users additional functionalities. Moreover, the application can be configured to fit the infrastructure or other business areas, facilitating flexible adaptation to the company's individual needs and developments.

OUR STEP TOWARDS A COMPREHENSIVE SOLUTION

OUR JOINT VENTURES

Together with our joint venture partners, we are deepening our focus on infrastructure and track management. Leveraging the synergy of our own

expertise and the specific domain knowledge of our partners, we are developing solutions precisely tailored to the needs of these industries.

INFRASTRUCTURE

voestalpine DIGITAL TRACK MANAGEMENT

voestalpine Digital Track Management is a joint venture between voestalpine Railway Systems GmbH and Boom Software AG. The company aims to revolutionize the maintenance of infrastructure in the railway and public transport sectors. At the heart of our mission is the development of a digital twin that integrates real-time data

with precise predictions, providing maintenance recommendations based on the condition of the facilities. Our solutions feature a paperless, modular structure, real-time data capabilities, and clear traceability of assets, components, and maintenance activities conducted.



TRACK CONSTRUCTION

RAILium MACHINE MANAGEMENT

Together, Rhomberg Sersa Rail Group and Boom Software AG have established "RAILium" to provide software support for central processes in the operation of track construction machines. RAILium connects all areas of machine-based track construction, ensuring efficient process execution, seamless workflows, and smooth informa-

tion flow between departments. Additionally, it offers support in the area of ECM. The functionalities covered by RAILium include:

- Machine management
- Deployment planning
- Personnel and competency management
- Transport management



RAILWAY
SYSTEMS
by voestalpine

zentrak
ASSET & MAINTENANCE
MANAGEMENT



RAILium.
Machine Management

Setting Machine Management
On Track.



BOOM RAIL SOLUTIONS - USED INTERNATIONALLY

OUR CUSTOMERS ALL OVER EUROPE RELY ON OUR SOLUTIONS



CUSTOMER VIEWS

WHAT OUR CUSTOMERS SAY

"We greatly appreciate Boom's approach and welcome the fact that we are actively involved in the development process in order to further develop the standard together with Boom. This benefits not only us, but also other workshops."

RAILPOOL
LOKSERVICE

"Boom's comprehensive standard solution allows us to manage our processes more efficiently and respond swiftly when needed. We are particularly impressed with their approach to customer-specific adaptations, which are implemented quickly and cost-effectively through complete customization."

SALZBURG LINIEN

"The project team at Boom has been a competent partner from start to 'finish' — from the initial pilot workshop and the implementation phase to ongoing support and product development. As a customer, we feel thoroughly supported and understood."

STRABAG

"Boom understood our requirements precisely throughout the entire process and collaborated with us to develop a workshop solution that not only meets our needs and processes but is also 100% ECM-supporting. Additionally, it enhances usability in our daily workshop operations – and all within an impressively short time frame."

LOCMASTA
LOCOMOTIVE MAINTENANCE STATION

INTELLIGENT DAMAGE WAGON MANAGEMENT FOR OPTIMAL ROUTING



© Deutsche Bahn AG / Oliver Lang

Fully automated routing of over 200,000 freight wagons to the correct workshop

For DB Cargo AG, the systematic routing of its freight wagons to the appropriate workshops is of central importance. The extensive rail network and the large number of wagons result in complex logistical requirements that complicate the maintenance process. DB Cargo AG has identified significant potential for optimization in this area, which is why this process is an integral part of its digitalization strategy.

As part of this strategy, DB Cargo AG commissioned Boom Software to digitalize and optimize the entire process of damaged wagon management – from damage recording and

workshop management to recommissioning. DB Cargo AG provided the system requirements for its intelligent damaged wagon management, while Boom Software was responsible for its development and implementation in line with these specifications.

In this project, a customized solution was developed for DB Cargo AG, with the primary goal of maximizing the availability of freight wagons by minimizing the downtime of each individual wagon.

COMPLETE ECM- COMPLIANT DOCUMENTATION IN THE WORKSHOP



© ETL Lokservice GmbH

Maximum efficiency in meeting ECM requirements

The drive-in locomotive workshop “LOCMAS-TA”, which opened in 2022, has been using the workshop solution “Rail Workshop” from Boom Software since its official commissioning. The company’s aim was to implement a software solution for its workshop before the upcoming certification audit in order to realistically represent the future working environment in the workshop during the audit.

Given the tight schedule, the company opted against developing custom software and instead looked for a standard solution that would be ready for immediate use in its basic functiona-

lity and requires only minimal adaptation time. One of the defining factors was that the selected standard solution should fully cover all essential core processes and at the same time place a strong focus on the ECM regulation.

With Rail Workshop, Boom’s digital workshop management system, the entire process from incoming inspection to operational release is carried out in accordance with ECM specifications. This not only facilitates order planning, but also optimizes the work processes on the vehicle and lead times.

COMPLETE LIFE CYCLE MANAGEMENT OF ROLLING STOCK

national express

© National Express Rail GmbH

Central master data administration and consistent documentation

Reliability and fleet availability play a central role at National Express Rail GmbH in order to ensure uninterrupted operations. Their vehicles are maintained by external workshops.

At National Express, maintenance management is handled digitally using a solution from Boom Software. The core elements include central master data administration and comprehensive documentation of maintenance activities. In addition to fundamental data such as UIC and serial numbers, commissioning date and manufacturer, all built-in meters on the vehicle are logged. The

entire structure of the components, including their master data, is also fully documented. This allows the company to maintain a comprehensive overview of the condition of the vehicles and generate maintenance orders based on both the manufacturer intervals and condition reports.

National Express Rail GmbH always has complete and up-to-date life cycle files for its vehicles. In the event of incidents, the company can react quickly and thus promote trouble-free operation.

RELIEF FOR EMPLOYEES FOR A STRONGER FOCUS ON THE CORE BUSINESS

© Northrail GmbH

Intuitive software for Northrail and Northrail Fahrzeugverwaltung

Northrail and Northrail Fahrzeugverwaltung needed a comprehensive digital transformation to ensure ECM-compliant technical documentation and to manage maintenance activities for rail vehicles in a timely and regulatory-compliant manner including the planning, scheduling, and execution of these activities.

Boom Rail Solutions was chosen primarily due to its exceptional level of standardization, which aligns seamlessly with ECM regulations. For Northrail and Northrail Fahrzeugverwaltung, opting for standard software offe-

red significant benefits, including the fact that – compared to a customized solution – far fewer personnel resources were required for development. Additionally, this choice allowed for a shorter project timeline, enabling faster implementation and quicker realization of operational improvements.

As a result of the transition to Boom Rail Solutions, existing work processes relating to administrative activities have been simplified and the number of clicks involved in handling technical documentation has been reduced.

BOOM SOFTWARE

International software company with
more than 30 years of experience



Established
1995



Employees
100



Turnover
11 million



Certification
ISO 27001:2022



Business Units
Public transport
Manufacturing Industry
Service Management



Joint venture partners
voestalpine Railway Systems
Rhombert Sersa Rail Group



Headquarters
Leibnitz, AT

Offices
Graz, AT
Oldenburg, DE

YOUR ADVANTAGES WITH BOOM SOFTWARE



30 years
experience



Standard &
customized solutions



Integrated
solution



Modular
design



Simplicity and high
usability



Ready to meet
ECM conformity



Quick realization of a
prototype in a one week
pilot workshop



Field-tested, lean, swift
and resource-saving im-
plementation process



Simple adaptability
through total
customizing approach



Scalability



Cloud or on-premises



Continuous updates in
terms of features and
technology



Professional support



Committed to security
(ISO 27001 certified)



Multilingual



Strong international
partner network

Boom

RAIL
SOLUTIONS

TRANS_{RAIL BUSINESS}
FORMING

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