



Federal Ministry
of Transport



Theme: Redefining Next-Gen Infrastructure through Data, Intelligence, and Resilience

May 1st, 2026, 10.30 – 11.30

Session 2: Integrated Digital Solutions

for Road and Highways Infrastructure Lifecycle Management

Innovations and Strategies in Germany for the Digital Transport Infrastructure

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German Federal Ministry of Transport

www.bmv.bund.de



Policy Goals for the Digital Transformation of Infrastructure Provision

Key:

Supporting the digital transformation of the infrastructure,
planning and construction sector through advancing
deployment of BIM, Digital Twins and Data Management

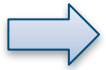


Digital Transformation in Infrastructure – envisaged Impacts

Contributing to:



Enhanced efficiency and reducing emissions across the entire life cycle of infrastructure, public, commercial and residential buildings



Extending the overall data space for infrastructure and buildings



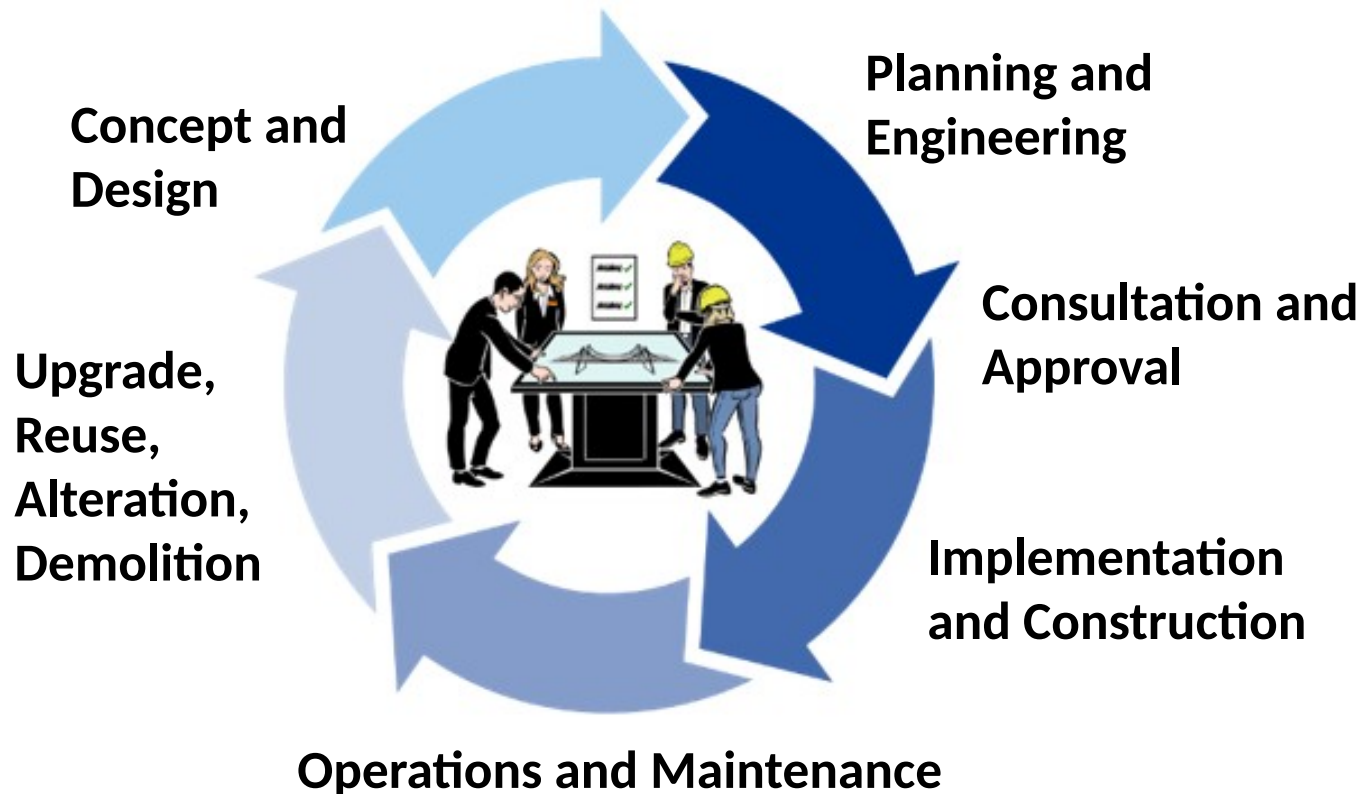
Improved public consultation processes in planning and transport



Supporting market participation of SMEs and international competitiveness of Construction Companies and Developers



Digitalization across the entire Infrastructure Life Cycle





From BIM to Digital Twins – Initiatives to support the Digital Transformation of Planning, Construction, Maintenance and Management of Infrastructure



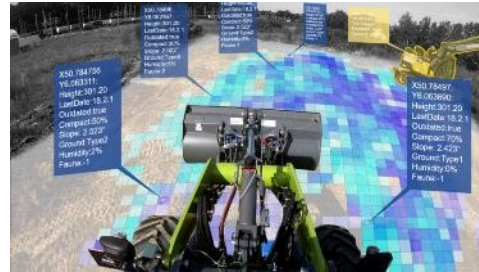
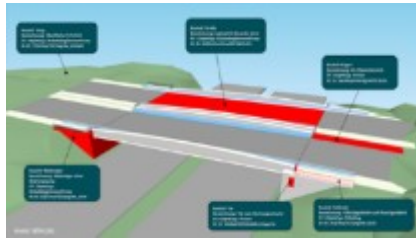


Establishing Digital Twins and comprehensive digitalization in Infrastructure Management – crossing the bridge between research and practical deployment

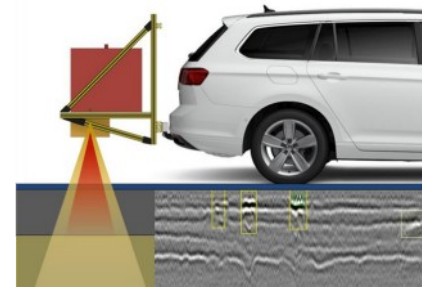


Financial support and leeway for innovative AI projects

2022.12.05 | Digital Matters



RWTH Aachen



TU Kaiserslautern

Project Profiles:

<https://www.bmv.de/DE/Themen/Digitales/mFund/Projekte/mfund-projekte.html>

mobilithek



Blue Planet Studios/Shutterstock.com



Stadtmarketing- und Wirtschaftsförderungsgesellschaft Dormagen mbH



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Catalyzing Data Innovations in Mobility and Transport - thematic Programme Areas

Data Access

- Enable access to existing data sources
- Open up new data sources
- Improve usability of data sources

Data based Applications

- Develop applications based on existing and new data sources
- Take into account economic potential and societal use

Data Governance

- Explore societal aspects:
- Economic effects
 - Political implications
 - Legal framework

Topics covered:

Topics of the Federal Ministry of Transport (e.g. mobility, infrastructure) and related themes (e.g. environment, demographics, smart cities)



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BIM-Implementation Strategies at Federal Level in Germany

Stufenplan Digitales Planen und Bauen

Einführung moderner, IT-gestützter Prozesse und Technologien bei Planung, Bau und Betrieb von Bauwerken

BIM-Strategie
Implementierung von Building Information Modeling (BIM) im Vorstandsressort Infrastruktur der Deutschen Bahn AG

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Masterplan BIM Bundesfernstraßen

Digitalisierung des Planens, Bauens und Betriebes im Bundesressort Infrastruktur, die Verkehrs-Infra- & Logistik-Mobilität & (B)M - Gesamtlösung

Implementierungsstrategie BIM-WSV 2030

BIM-Maßnahmen für die Wasserstraße

Masterplan BIM für Bundesbauten

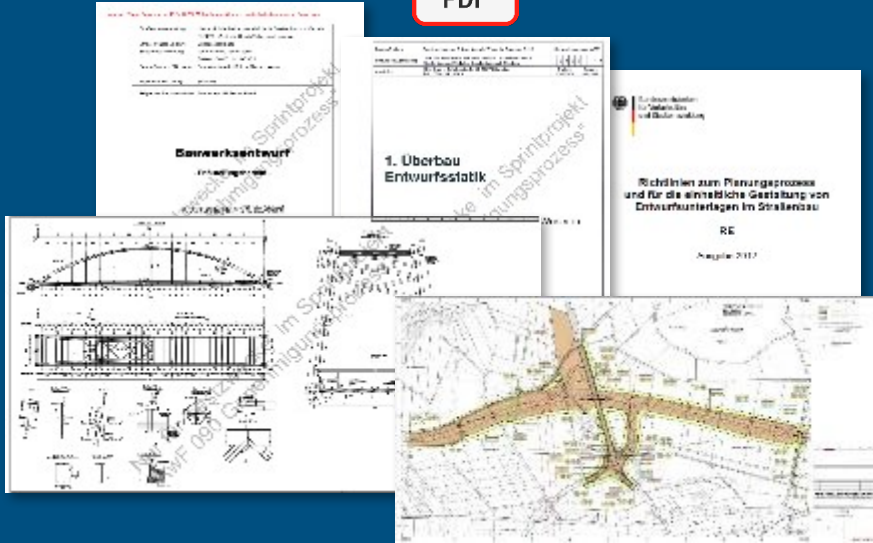


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Digitalization of the Approval Process: BIM-CDE for Federal Transport Authorities



PDF





From BIM Deployment to Digital Twins

...From the design and construction stage of new projects to the entire life cycle of (existing) facilities

...from static inputs and sources to comprehensive (real-time) operational data and analysis

...extending the focus from buildings and objects to users and other data sources and inputs



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Stocktaking: Map of Digital Twin Projects in Germany

<https://www.bmv.de/SharedDocs/DE/Artikel/DG/digitale-zwillinge-infrastrukturpraxis.html>

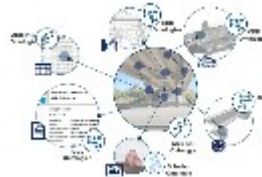
Examples:

Digital Twin for **Predictive Maintenance** of the Köhlbrand Bridge in Hamburg

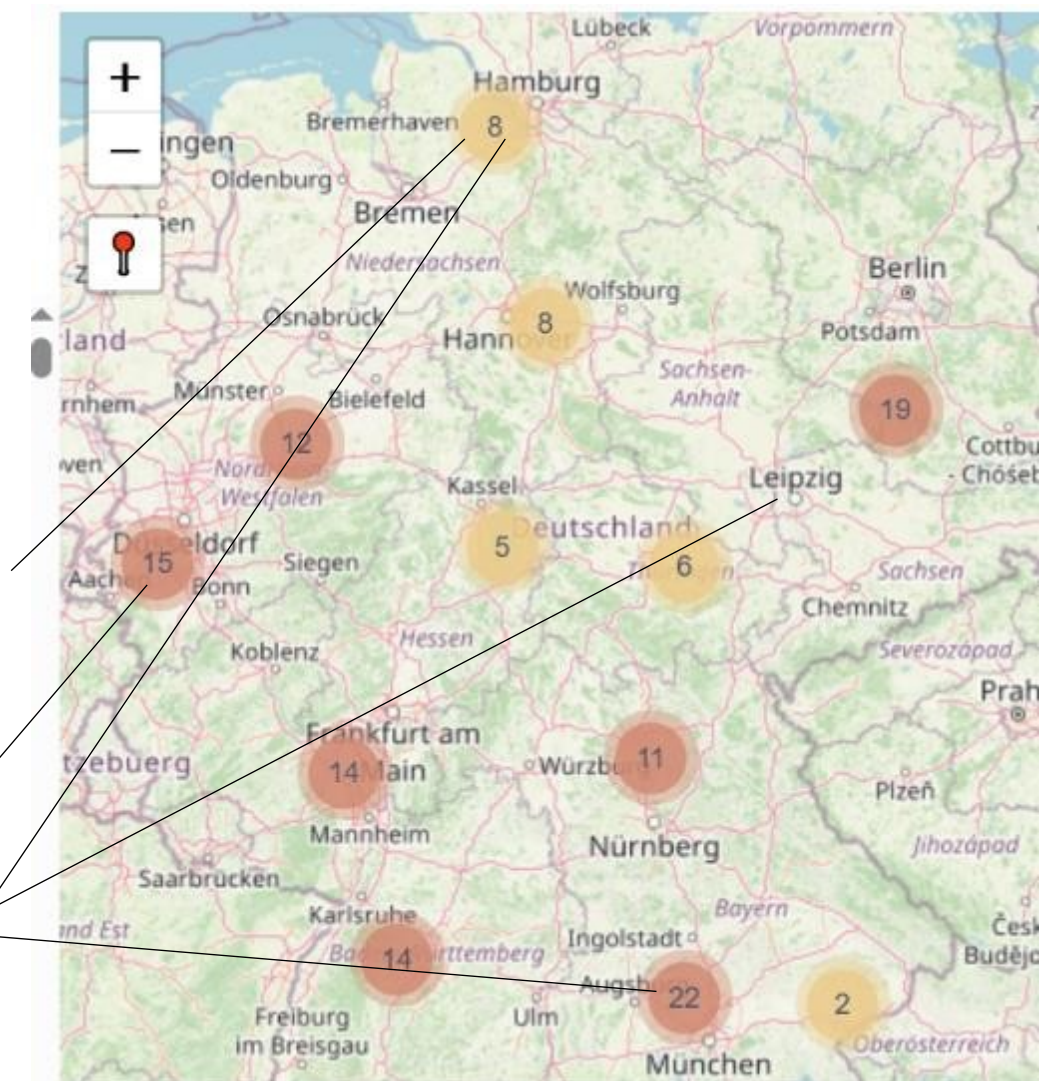


TwinGen

Digital Twins Technologies for Infrastructure Maintenance



Urban Digital Twin of the city of Munich, embedded in the larger Connected Urban Twins project with Hamburg and Leipzig



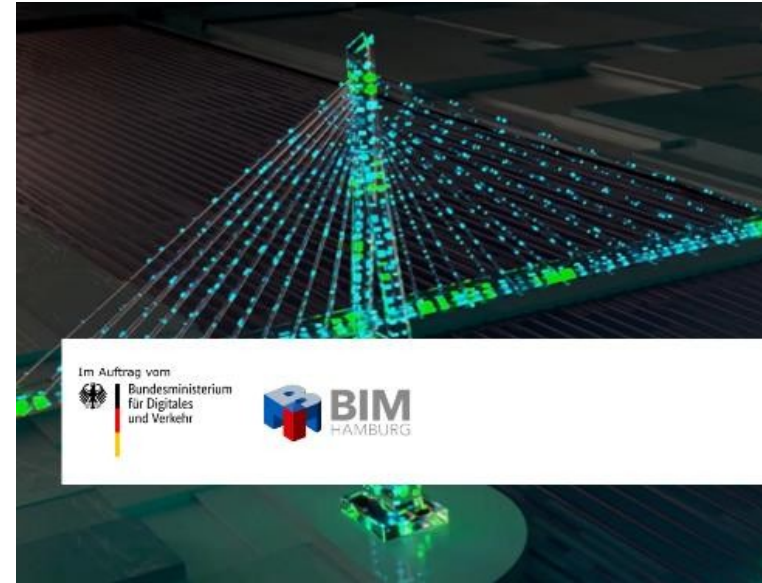


Digital Twins in Practice at Federal Level

**Towards a Digital Twin Masterplan for
Federal Roads - Kick-off March 30th 2026**



„Real Life Digital Twin Laboratory“
<https://digitalerzwilling.bundesfernstrassen.de/>





Target Groups and Partners for establishing a Data Ecosystem in the Transport Field

- Individuals
- Associations

- Startups/
Entrepreneurs
- SMEs and big
companies
- Trade associations

- Universities
- Non-university
research
institutions

- Federal, State, Local
Authorities and
institutions
(potentially with R&D
functions)



Partnerships and networks incorporating a wide range of stakeholders



Networking and Knowledge Exchange

- Online Workshop Series featuring the BIM-Portal, targeting different user groups
- Online consultation and training events for BIM practitioners on technical BIM topics
- Online Workshops featuring Digital Twins (potential applications and pilot projects)

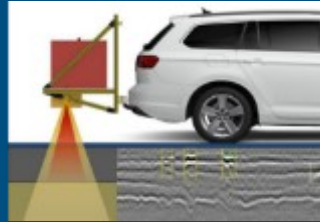


Wissing and Geywitz kick-start platform to support digital planning, construction and operation





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Thank you for your attention !

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EasyDigiTwin2