

Reducing hardware, travels and CO₂ emissions.

Offering: Remote Testlab/RTL

Action Area: Virtual Connection replacing physical – E-Work

Contact & Info: [Whitepaper Remote Testlab](#)



Sustainability Challenges in Manufacturing

- A significant share in a manufacturer’s traveling activities occur to realize on-premise testing of software running on electronic control units (ECU’s)
- Usual testing binds human resources, is cost-intensive and leads to large carbon emissions of the company
- It also requires hardware that is specifically manufactured for that purpose and is therefore another cost and carbon driver

Our Solution

- RTL is a web application that allows remote testing of real physical test units
- Test units are accessed via the Open Telekom Cloud
- Testing processes can be automated through test automation and robot touch gestures
- Resources can be saved: people, hardware, transportation of test units and experts

Client Enablement Potential

Reducing CO₂ emissions through remote testing:

(test person does not have to travel around anymore via flight, car, etc.)

Avoidance of test unit transport because no **hardware needs to be shipped** (via flight, ship, truck, etc.)

Reducing hardware:

Less test units necessary (you can test 24/7 on one unit)

A detailed and exemplary impact measurement was done, please contact us for further information

Product Carbon Footprint

- Detailed Impact Analysis along whole value chain shows: low product-related carbon footprint

→ No additional hardware required for testing and 100 % developed based on renewable energies

Customer References:

Automotive OEM

Supported Sustainable Development Goals:



Reducing fuel consumption and CO₂ emissions.

Offering: Low Carbon Mobility Management/LCMM

Action Area: Avoid unnecessary “waste” Mobility – Smart Logistics
Contact & Info: Sustainable traffic management



Sustainability Challenges in TT&L

- Fuel consumption and time as main levers to save costs in transport, logistics & fleet
- Transport Sector responsible for 25% of global CO₂ emissions and related air pollution
- Complying with EU Green Deal: decrease carbon emissions by 55 % by 2030, as compared to 2019

Our Solution

- LCMM measures vehicles in motion reflecting road characteristics and driving behavior
- Fuel reductions can be achieved through individual driving recommendations in app or laptop, and through an eco-drive training and the time-related route optimization
- Thus, LCMM provides an efficiency profile, which is fully compliant to the methodology described in the ISO/DIS-standard 23795-1

Client Enablement Potential



Average of
- **10% fuel consumption**

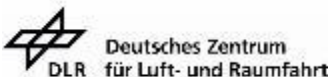
Savings for lightweight commercial vehicles:
 Monthly - **82,79 € per truck**
 Monthly - **206 kg CO₂ per truck** on Ø distance
+100.000 km duration of brake linings

Time savings :
through feature of route and tour optimization

Product Carbon Footprint

- Detailed Impact Analysis along whole value chain shows: low product-related carbon footprint
 → No additional hardware required, standard electricity need of app
 → 100 % developed based on renewable energies

Customer References:



Supported Sustainable Development Goals:



Offering: Environmental Sustainability Strategy

Action Area: Strategy to reduce CO₂ emissions – consulting and implementation support
Contact & Info: Sustainability consulting



6 steps strategy to reduce CO₂ emissions within companies



Sustainability Challenges of Companies

- Companies will play an important role in achieving the EU's net zero emissions target by 2050; therefore, Sustainability strategies that meet the requirements of regulators, customers and investors will continue to grow in importance
- Comprehensive approach to measure CO₂ emissions as a starting point for reduction and internal and external fact-based reporting and communication
- Transparency about the greatest potential levers for reducing CO₂ emissions

Our Solution

- Evaluation of CO₂ emissions of a company's whole value chain
- Identification of ambitions, optimization levers and measures for significant CO₂ reduction potentials
- Anchoring environmental sustainability into the overall company strategy and enable all relevant stakeholders to promote it

Customer References:



Client Enablement Potential



Enablement of environmental sustainability ...

In processes For customers With employees In society

Transparency on CO₂ emissions and support in implementing measures to reduce CO₂ emissions in scope 1, 2 and 3 according to the GHG Protocol (sector-specific approach) within the exemplary levers:

Green IT & Energy	Supplier Management	Smart Mobility	Digital Products & Solutions	Smart Production / Manufacturing	New Normal
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Product Carbon Footprint

- Consulting and implementation support can be realized completely virtually to avoid travel-related CO₂ emissions
- Consultants use existing infrastructure, which runs on electricity generated by 100% renewable energies

Supported Sustainable Development Goals:





Offering: SAP Cloud Services

Action Area: Low Carbon IT-Setup – Cloud Enabling

Contact & Info: Cloud Solutions for SAP

#GREEN MAGENTA | SUSTAINABLE BUSINESS AND PRODUCTION WITH EMISSION FREE CLOUD SERVICES

Customer's Sustainability Challenges

- On-premise SAP systems are not only cost-, time- and resource-intensive, but they are usually responsible for high CO₂ emissions
- On-premise SAP systems are oversized because of spare capacity, unused data and peak load sizing, therefore they are usually never fully utilized
- Complying with EU Green Deal: reduce the greenhouse gas emissions by at least 55 % until 2030, as compared to 1990 levels
- Lacking transparency regarding carbon footprint of products & improvement potentials

Our Solution

- Partly or full migration of classic or on-premise SAP systems into Public/Private Cloud operation models, combined with hardware refresh or the migration to SAP S/4HANA.
- End-to-End SAP Services that cover ITIL processes & services, application maintenance and infrastructure management.
- We offer the flexibility of our Private & Public SAP Platform with our ZERO OUTAGE and Run-on-Satisfaction guarantee.

Customer References:



Client Enablement Potential



On average **8 t carbon footprint reduction** pro customer in cloud

Study: British Telecom 3:1 carbon abatement methodology 2020

SAP operation with **75% less servers** conserve **natural resources**

T-Systems 20+years of experience with SAP Managed Services

SAP PCFA* supports clients to **optimize their Carbon Footprint** in their operation

* SAP PCFA = Product Carbon Footprint Analytics

Time & energy savings through zero outage

<https://www.t-systems.com/de/en/digital/integration-and-reliability>

Carbon Footprint of our SAP Cloud Solutions

- Detailed Impact Analysis along entire value chain shows that we provide high quality SAP-services with **less energy and fewer IT- and human resources**
- Our Cloud infrastructure uses **100% renewable energy**

Supported Sustainable Development Goals:



Reducing fuel consumption and CO₂ emissions.

Offering: Airport Collaborative Decision Making

Action Area: Avoid unnecessary time and fuel consumption – Smart Airport

Contact & Info: Digitalization of the airports ecosystem



Sustainability Challenges for Airports

- Fuel consumption and time as main levers to save costs and reduce CO₂ emissions for airports
- Global aspirational goals for the international aviation sector (responsible for ~65 % of fuel consumption in aviation) of 2% fuel efficiency improvement every year until 2050 and carbon neutral growth from 2020 onwards*

Our Solution

- Airport CDM is a concept that facilitates intense collaboration between all stakeholders, using improved quality and more timely exchange of information. Another result in better capacity management.
- Fuel reductions can be achieved through improved pre-departures sequencing, resulting in taxi-out time savings and reduced delays in air traffic flow management (ATFM)

Client Enablement Potential



Average of - 92kg CO₂ per departure
(29 kg fuel consumption savings per departure)

Taxi time: 9% fuel consumption (1 min) savings per departure
ATFM Delays: 14% fuel consumption (2.5 min) savings per departure

Time savings through optimized flow and resource management

Product Carbon Footprint

- Detailed Impact Analysis along whole value chain shows **low software-related carbon footprint** (average of 0,09 kg CO₂ per departure)
→ Existing airport infrastructure (servers, screens) can be used.

Customer References:



... with more than 224 Mio passengers (2019) in total

Supported Sustainable Development Goals:



T · · Systems · Let's power higher performance

Remark: all data have been gathered in the framework of a product impact analysis, which holistically considers a product's whole value chain. Calculation is based on A320 with CFM 65-7B engine
* <https://www.icao.int/environmental-protection/Pages/climate-change.aspx>