



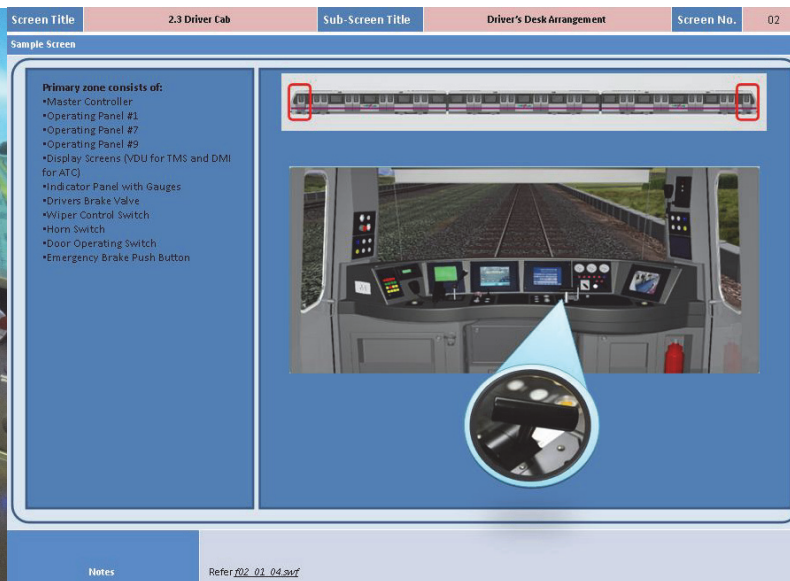
**Simulation-based Training Solutions**

## **Railway Driver Training**

Train Simulators - the most efficient way to learn and practice -  
from desktop to full mission replica cab simulators

# Railway Driver Training

Train Simulators - the most efficient way to learn and practice



"By using simulators the content and quality of train driver training could be enhancement, while at the same time training time will be reduced, and a constant high level of proficiency over the long term is guaranteed."

## Airbus DS Simulation & Training

- offers a fully comprehensive line of training products and associated tools for education and assessment of train drivers and maintenance staff
- railway driving simulators are modular and based on the same true fidelity software for desktop trainers up to full mission / full scope replica cab simulators full compatible

The train driving simulators have been optimized to be used for the practical content of reproducible exercises in a virtual world, close to a real, typical railway operational environment.

## Cost-Effective Training - Customised Solutions

Due to the high level of detail in replicating the railway vehicle in hardware and software, operational training for drivers on specific locomotives / trains and routes or cross-border training are possible, as well as introduction of operating a new fleet prior putting into service. Our train simulators have been developed to meet specific customer requirements; they cover all types of freight and passenger trains, including the respective operational procedures and signaling and train control systems.

The product portfolio includes railway simulators for locomotive hauled trains, EMUs/DMUs, multiple units, high-speed trains, as well as metros, LRVs and streetcars/trams.

The simulators are offered with any kind of signalling and safety system in operation at the individual customer, i.e. KVB, ZUB, LZB/PZU, RSC, SCMT, GSM-R bi-mode, PTC, ATO/ATC, CBTC, ECTS and ERTMS all levels, etc..

## Education, Assessment and Research

The driving simulators have been designed for training, evaluation and assessment in the following fields:

- Studying/teaching fundamentals in driver technique and practice under normal and special conditions
- Practice in correct handling, e.g. use of the brake system in various situations
- Forward-looking driving skills and hazardous awareness training
- Stress reduction training due to the influence of driver workload (heavy traffic conditions, situation-related stress patterns etc.)
- Driving in adverse conditions (different weather and track conditions, reduced visibility etc.)
- Advanced operation skills, e.g. training to handle malfunctions/incidents and operating sequences in hazardous and emergency situations



# Training Simulator Portfolio

## desktop to full mission replica cab simulators



As for any training media it is important that the trainees and the instructors can be confident in the accuracy and close-to-real-world level of detail of the simulation.

### Airbus DS Simulation & Training

- delivers simulation-based training media and systems in quality, accuracy and level of detail allowing you to reach your training goals for secure and safe operation in your real life daily work.
- field proven products cover the whole range of training media from CBT, desktop, portable part-task trainers up to full mission replica cab simulators (motion/fixed based) and maintenance trainers.

**Simulator-based training is especially suited for training situations which are impractical, difficult, dangerous or expensive to be conducted and reproduced in a live environment.**

Our simulation-based training system features e.g.:

- **Accurate and authentic simulation** of the railway vehicle and safety & signalling system
- Training on **basic vehicle operation** incl. vehicle preparation, changing end, driving skills
- **Procedure training** & handling of onboard equipment, inclusive **Communication training**
- **Route familiarisation** based on high-level of detail 3D replication of real routes
- **Fault finding, diagnosis and maintenance training.** Interactive training of **defect and emergency handling** by simulating incidents, defects, abnormal and critical situations for trainees to drill on the **recovery procedures**
- **Testing of driver competence and knowledge of Rules**, to cover application of the rules to practical situations
- Achievement of **uniformity in behavioural pattern** of all drivers
- **Certification & Licensing** of drivers
- **Decrease of equipment damage and track loading levels**
- **Increase of efficiency** and profitability of **training results** through quality and content, reduction in training time

### High Level of Detail Databases

We offer high level of detail databases, replicating the real lines in geo-graphically precise style, allowing even the conducting of route familiarisation exercises. Alternatively we provide generic routes, fully reflecting the customers signaling system.



A database editor including a large, customized library of track elements and scene objects is available to the customers.

This enables easy upgrades to adapt the databases to the evolving customer needs and to make use of the continuously growing performance of Image generators.

By means of the implemented exercise editor, the instructor can easily define appropriate driving lessons based on the student's individual skills and knowledge.

**DID YOU KNOW THAT 50% OF TRAINING TODAY IS PERFORMED ON SIMULATION MEDIA**

With its commitment and engagement in precise simulation, Airbus DS provides a valuable contribution to public safety

# Simulator Training

Realistic exercise makes the perfect driver

## Full Scale Replicas of Driver Cab and Driver Desk



In order to ensure fidelity and to provide a very realistic training environment in form, function and feel, the control desk will replicate the control desk of the real train, incorporating all the indicators & gauges, control levers, switches, flashing and audio warnings, visual and functional aspects as true to the real cabin.

Dynamic simulation of train acceleration/deceleration and movement will be realized by the means of an electrical motion system.



Replica cab and display system will be mounted on top of the motion system, providing the driver with the highest level of immersion into the simulated / virtual railway operating environment.

## Training System Features

Online setting of events and malfunctions brings further training benefits. An implemented fault-finding station allows the driver to inspect, check and operate any system of the entire train and to practice complete recovery procedures as prescribed by the train operating instructions.

Computer-aided assessment and evaluation of driver performance is supported, by the means of the instructor station facilities and functions, as well as generation of training reports and administration / management of training.

Due to the high-level of detail and accurate simulation of all train, control, safety and signalling systems operational training of drivers on specific tasks including cross border training or introduction to new fleet is possible, before real world daily operation starts.

## Benefit from our capabilities and experience



Decades of experience in developing and operating training systems, is one of our major advantages. This means that we are uniquely positioned to design, integrate and deliver platform-independent training solutions for our railway operating customers and training providers. Our goal is to support our customers in reaching their goals.

## Our Approach

- Providing platform-independent training solutions, modular and cross-organizational usable
- Covering the whole life-cycle of the systems, from design to commissioning, as well as In-Service Support (ISS) to optimize their availability during the entire operational phase

## Your Benefit – Low Risk

- With a strong background in developing and operating training systems, Airbus DS offers low-risk solutions based on modular training system design, combined with the flexibility for changing requirements.
- We guarantee high efficiency and cost-effectiveness. Airbus DS prides its self on Reliability, Safety, Attractiveness and Efficiency – a benefit to the operators and the environment.