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ANITA: Mission planning for Terminal 4.0 in place

The goal of the project partners Deutsche Bahn, MAN Truck & Bus, Hochschule Fresenius University of Applied Sciences and Götting KG has been set: as part of the ANITA project (Autonomous Innovation in Terminal Operations), fully automated trucks are to move autonomously at the container depot of DB Intermodal Services and the DUSS terminal (Deutsche Umschlaggesellschaft Schiene-Straße mbH) in Ulm Dornstadt by 2023 at the latest. The necessary circuit diagram for this has recently been in place. This translates the procedures and processes at the terminal universally for all systems involved. With this "mission planning", the vehicle development is now entering the decisive phase.

- **Hochschule Fresenius University of Applied Sciences develops software for automated vehicle deployment at Ulm terminal with Deon Digital**
- **The platform for autonomous hub-to-hub transport at the DUSS and DB IS site in Ulm is based on scientific on-site analysis and is also to be used across the site**
- **News and background information about the project are now available on the new website www.anita.digital**

"Thanks to the good fundamental work of the Hochschule Fresenius and the creation of the mission planning, we can now initiate the next development steps for our ANITA truck. This brings us ever closer to our common goal of using the autonomous truck in container handling. These project test drives will also provide us as MAN with further knowledge for the development of future autonomous driving in hub-to-hub traffic on defined routes between logistics terminals," says MAN project manager Amelie Jacquemart-Purson about the milestone that has now been reached.

Hochschule Fresenius already presented its analysis results in the summer of 2021, after the scientists led by Prof. Dr. Christian T. Haas had analysed the processes and behaviour of people and machines on site in cooperation with MAN Truck & Bus. After all, for a truck to be able to drive fully

MAN Truck & Bus is one of Europe's leading commercial vehicle manufacturers and transport solution providers, with an annual revenue of more than 9,5 billion euros (2020). The company's product portfolio includes vans, trucks, buses/coaches and diesel and gas engines along with services related to passenger and cargo transport. MAN Truck & Bus is a company of TRATON SE and employs more than 37,000 people worldwide.

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automatically in the container and DUSS terminals in Ulm in the future, it must be able to communicate with the infrastructure. Together with its partner Deon Digital, Hochschule Fresenius has now transferred these findings into a digital set of rules and programmed various modules based on a common language. "For a clear and complete communication chain, we used Deon Digital's CSL Contract Specification Language as the common language for this," explains Haas. "With this, all processes are set up as individual contracts."

The result is a complete mission planning system that links both the vehicle and the two very different IT systems of the container and DUSS terminals. Like a universal interpreter, the solution speaks the languages of all heterogeneous systems and guides the automated truck through the container handling process. This software, which is constantly being optimised, can now be used by the project partners MAN Truck & Bus and Götting in the development of the autonomous vehicle. The first test drives with the prototype truck are expected to take place in Ulm Dornstadt at the end of 2022. In the future, other DB AG container terminals in Germany will also be digitalised and automated - along a roadmap leading to the future Terminal 4.0.

"Automated transfer of loading units between our transshipment terminal and the container depot will enable combined transport to be handled even more efficiently and sustainably," explains Thomas Wunsch, Project Manager IT and Processes at DUSS. "The container depot of DB Intermodal Services also benefits from the innovation project. By integrating the autonomous truck into the real terminal processes, we are gaining valuable experience for our operations," adds Jens Präse, Head of Process Organisation at DB IS.

ANITA with new communication platform

News and interesting facts about the ANITA project are now available on the new "www.anita.digital" website. In addition to a comprehensive project description and contact details, the latest press releases as well as the project film and an explanatory video are available there. Links also lead directly to the homepages of the project partners: <https://www.anita.digital/en/>.



Captions:

P_EOT_ANITA_Mission_1

ANITA automation project: The mission planning for the use of an autonomous truck in container handling at the DUSS Terminal and DB IS Container Depot in Ulm was recently successfully completed by the project partners Hochschule Fresenius University of Applied Sciences, MAN Truck & Bus, Götting KG and Deutsche Bahn.

P_EOT_ANITA_Mission_2

As part of the ANITA project, automated trucks are to move independently at the DB Intermodal Services container depot and the DUSS terminal in Ulm Dornstadt by 2023 at the latest.

P_EOT_ANITA_Mission_3

Prof. Dr. Christian T. Haas (2nd from right) talking with employees of Hochschule Fresenius University of Applied Sciences and Deon Digital at a workshop on mission planning.