Control
Warehouse
Transportation

USER-SPECIFIC SOFTWARE
FOR THE METAL INDUSTRY

3tn

Industriesoftware GmbH
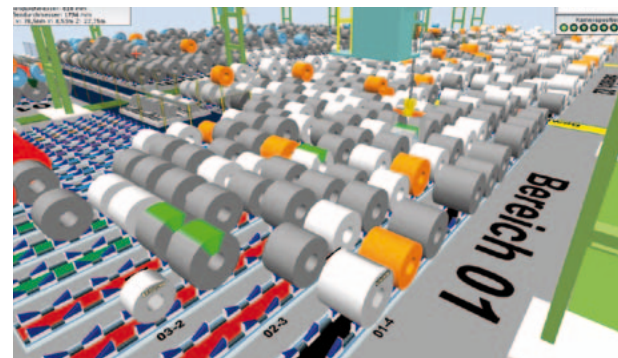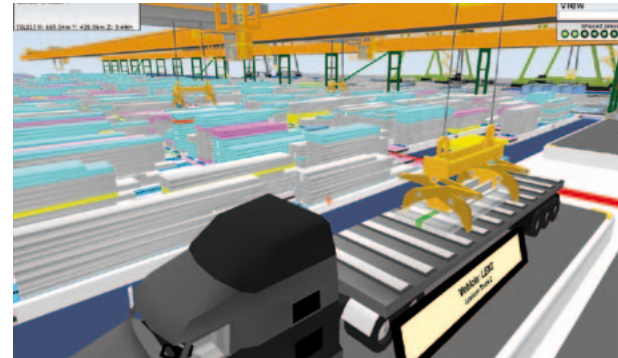
We set the course

... for efficient transportation and warehouse management.

Fast and reliable information exchange plays a crucial role in moving and storing goods. The data gathered from manufacturing and logistics systems as well as multiple sensors along the way form a complex network, which requires efficient coordination.

3tn designs and implements efficient industrial control software for transportation and warehouse processes. 3tn offers comprehensive solutions that are built on proven modules and are precisely tailored to on-site production processes and situational conditions.

In this context, 3tn focuses exclusively on the metal industry, as the tasks in storing and handling of metal are more complex compared to other industries: Products such as slabs or coils are stacked on top of one another. Furthermore, they have different dimensions. This creates a complex set of guidelines that must be followed in order to effectively transport and store these materials.

Our focus on the processes described above is a direct benefit to our customer. Our employees are familiar with user requirements and plant conditions – they recognize the relevant details. 3tn enjoys the trust of companies that are global leaders. Dozens of installed systems, many of which are fully automatic, have demonstrated proven reliability on a day to day basis within rough industrial conditions.

We start full speed ahead

… and send the correct impulses for rapid transportation.

The purpose of all 3tn products is to make metal industry processes transparent and to optimize the use of available resources. This is achieved by data linkage, application of rules, and efficient process control.
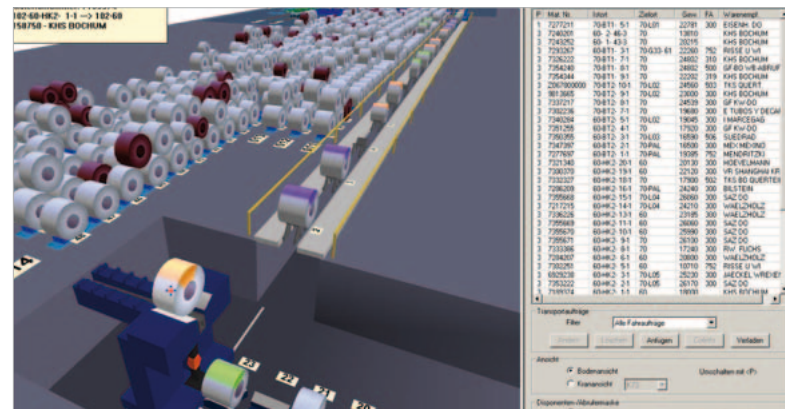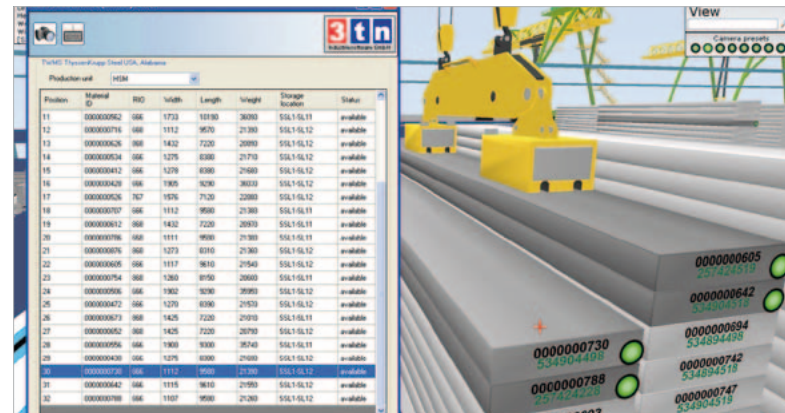
In this context, great emphasis is placed on the human interface. Simple usability, explicit and re-alistic visualization, and intuitive maintenance are given the highest priority.

Here is an example from warehouse management that supports this claim: Based on demand, cur-rent conditions, and applicable rules, 3tn's Techni-cal Warehouse Management System detects op-timum storage locations, the most efficient routes to those locations, and automatically generates the transportation orders.

Automatic online warehouse tracking provides an accurate overview of product movement and inven-tory, and increases planning reliability. Realistic 3D visualization of the warehouse from any desired per-spective makes warehouse procedures transparent.

The system is helpful to the crane drivers because they see the current situation in the work area of the crane from their perspective. Moreover, less time is necessary for signaling instructions to the crane drivers, and operators spend less time in po-tentially dangerous areas.

There are benefits to product quality as well: Each product is stored in its optimal location and there-by protected from damage due to inadequate storage. Thus, warehouse capacity and means of transportation are used at an optimum, improving material handling.
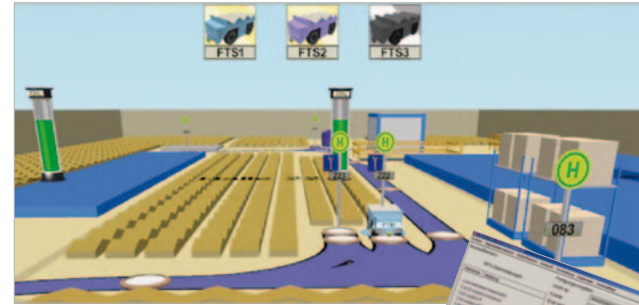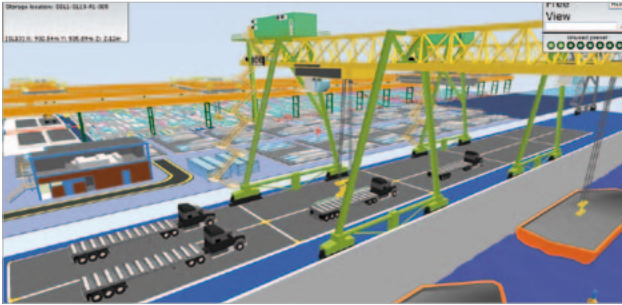
We select autopilot

… and control complex processes
securely and reliably.

Our employees are familiar with on-site conditions: manufacturing plants, material properties, transportation means, warehouse equipment, and the applicable rules and regulations.
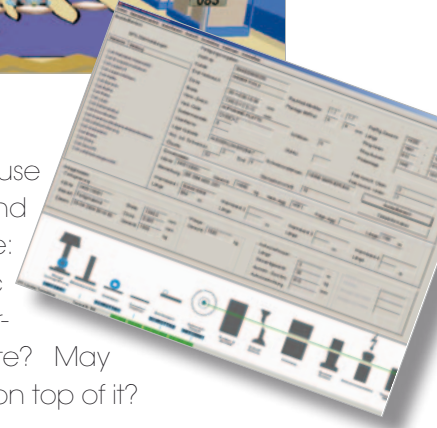
Therefore, 3tn software is optimally adapted for the conditions within the metal industry. Using their experience from numerous projects, 3tn developers consistently consider the operators' needs. Intuitive and usable programs that realistically visualize current situations result in a high level of user acceptance – a prerequisite for the success of any project.

3tn software is deployed wherever data are collected, processed, or distributed:

• Warehouse management systems determine optimum storage locations and generate appropriate transportation orders for specific factories, or entire plants – taking into considerati-on the current warehouse situations, priorities, and restrictions. For example: Where should a specific coil be stored? Is the storage location adequate? May another coil be placed on top of it?

• Inter-factory and cross-functional transport control systems optimize the use of the available motor pool; and while planning the routes they will include temporary road closures, one-way streets etc.

• Material tracking software documents manufacturing processes in production plants, e.g. in inspection lines.

• Project-specific user software organizes data flow, e.g. in the testing lab.

You land precisely on the spot

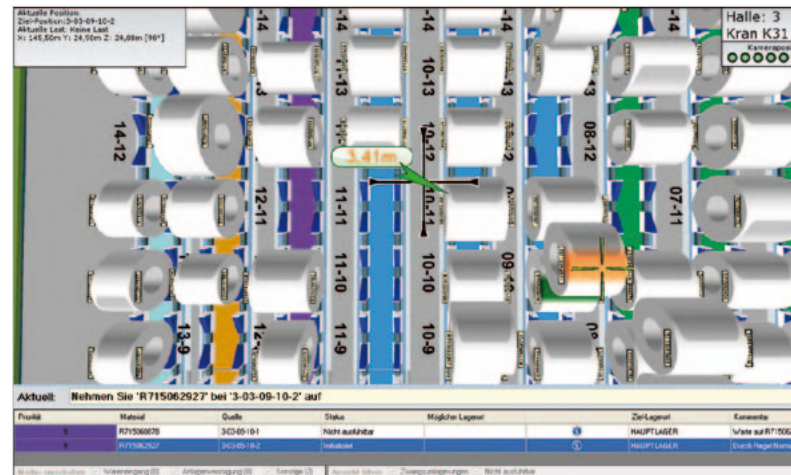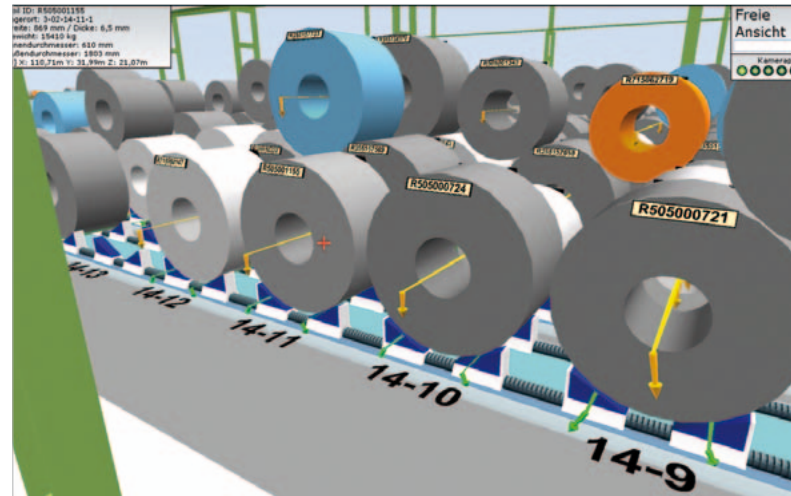### … and easily adjust to variable conditions.

We know that the general conditions in a plant often change. A new line may be activated, or a storage area may become temporarily unavailable. 3tn can easily adapt the software to meet the needs of situational conditions or circumstances.

The control parameters can be freely altered. Boundary conditions and priorities can be changed or extended at any time.

3tn consistently orientates the visualization with user needs in mind. Crane drivers see the operational area of the crane accurately from their perspective, along with additional object information that is required at any given time.

3tn software uses Service-Oriented Architecture (SOA) that allows several servers to work together. This provides high system performance and availability as well as easy maintenance. The systems are also expandable at any time – they can grow with the requirements of the customers.

The user can also enter new conditions during running operations ("at runtime") without affecting system availability.
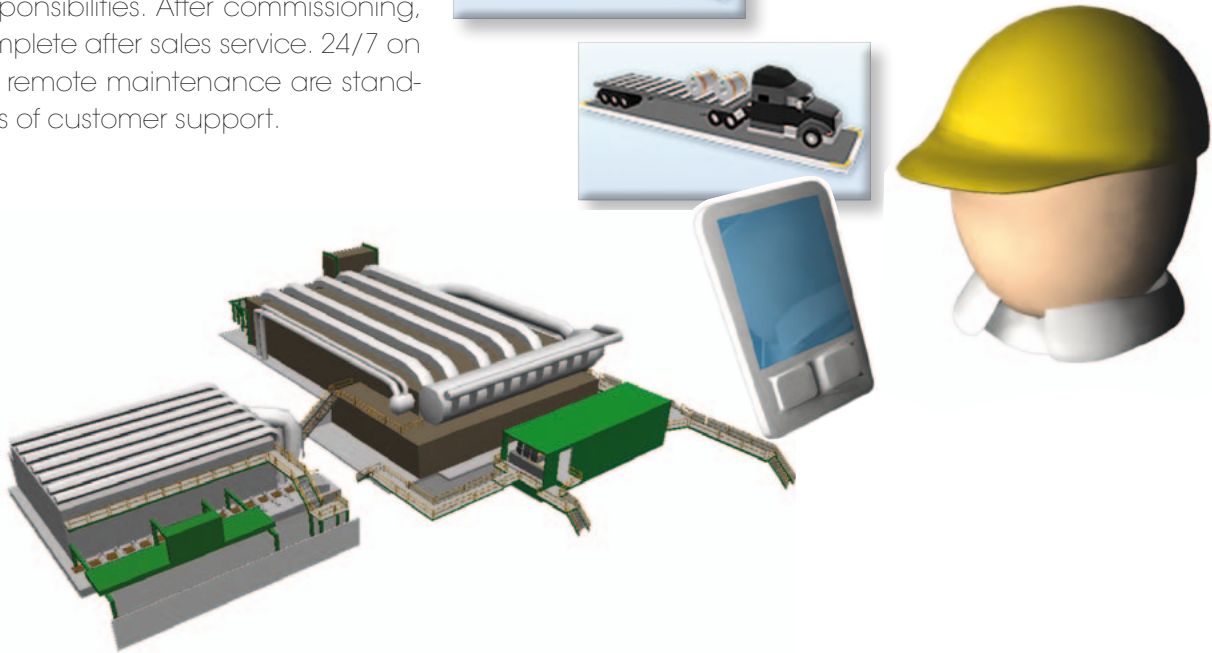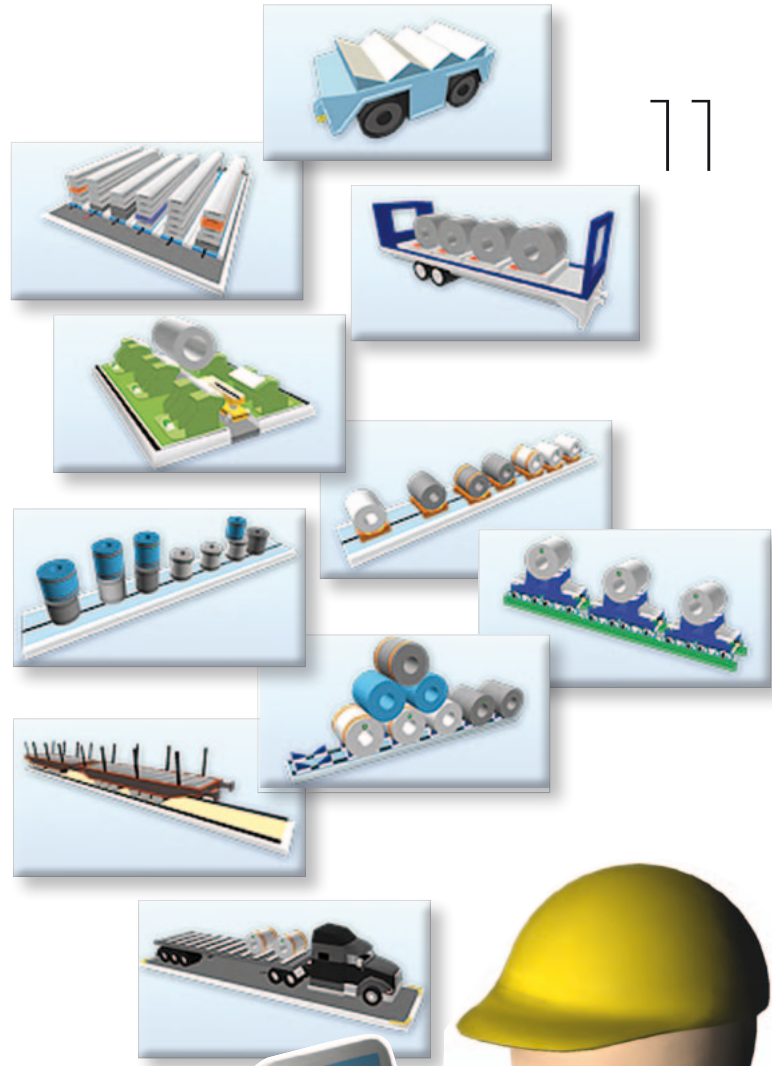
… and you can reach any position

because all components work together in perfect precision.

3tn's software is often the core of extensive production and material handling solutions where all information is gathered, processed, and implemented. This is why it has to communicate with various systems from production planning to base automation.

This requires know-how from several disciplines: crane and mechanical engineering, sensor technology, actorics, process control, RFID, WLAN, just to name a few. Knowledge of database communication and integration with ERP and MES systems is also needed.

Together with a network of well-proven partners, 3tn offers complete solutions. This provides customers with a contact person for all project issues, and defined responsibilities. After commissioning, 3tn provides complete after sales service. 24/7 on call service and remote maintenance are standard components of customer support.

About us

Thomas Niepmann and Thorsten Tönjes founded 3tn in 1999 after several years of working together on warehouse management projects in the metal industry. Their business plan was to develop customer-specific software solutions for optimizing material movement, specifically adapting to metal industry user requirements. This plan has been consistently followed ever since.

The 3tn team consists of software developers, computer scientists, electrical technicians and engineers. Their expertise covers every stage of a project, from analyses and feasibility studies, through software development, all the way to project completion, start-up, and user training. Experienced technicians ensure comprehensive after sales support and constant on-call service.

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