PSI Transcom GmbH

Reliable Driving Operations through Harmonised Workshop and Depot Management

Reliability, quality, efficiency and sustainability are pivotal challenges facing public transport companies. Consequently, companies that link all the related processes in an optimised way have an advantage. The co-ordination of operations and workshops holds great potential and benefits all involved.

Ensuring daily operations, meeting passengers' increasing quality demands, and reducing costs: transportation companies are facing many and varied challenges which are almost impossible to meet without the support of information technology. The integrated interaction of the various departments and IT systems is more crucial now than ever before. This is the only way to leverage all areas of potential. Depot management systems (DMS) play a key role here.

For example, a DMS can be used to order and block vehicles for workshop tasks and to classify the vehicles' operational capability at the same time. Up to now, however, the selection of vehicles for delivery to the workshop has usually been carried out solely via the data-carrying (master data) systems such as those from SAP, Microsoft Dynamics NAV or Maximo which

A DMS monitors and controls all processes in a depot, from vehicle arrival and supply through repair and storage.

follow standardised rule-based maintenance or cleaning intervals.

These systems do not know or take the on-site operational situation into account when planning. Even special workshop resources that may be relevant to a job are not included in the selection process. This is further complicated by the fact that detailed planning of work processes in the workshop itself is frequently done manually using analogue planning tables.

In simple terms, this means:

Workshop activities and operational requirements are characterised by numerous media discontinuities and lack co-ordination.

The consequence: vehicle bottlenecks are more likely and the utilisation of workstations and employee capacities in the workshop is uneven. A look at practice shows that vehicles which cannot be processed due to a lack of resources are nevertheless reserved for processing by the workshop on a daily basis. This means that vehicles are unavailable for dispatch (damaged in some way that prevents their use) on a regular basis, causing bottlenecks for no reason.

Operational Business Has Priority

Therefore, considerable potential can be leveraged by automating and harmonising these processes. A system that is also aware of the operational situation in the depot should be introduced to take over the planning of workshop orders. In this context, it makes sense to expand the depot management system used, which builds a bridge between the workshop, operations and the systems used in each case.

In addition to interfaces for importing and exporting workshop orders, planning resources and fault information, a corresponding add-on module should also include a graphic planning table. It provides an overview of the current occupancy of the workstations in the workshop and utilisation of employee capacities.

For instance, if a vehicle is needed for operational purposes, the DMS can overwrite the leading system's workshop order and postpone it so that the timing suits. In parallel, it can reserve another vehicle for the workshop based on the known, operational requirements and thereby ensure utilisation of the workstations and employee capacities. This enables the extended workshop management to take account of the numerous unplanned orders that come in throughout the day and allows for continuous readjustment of the solution calculated statically in the morning.

Automatic Job Planning Ensures Optimum Capacity Utilisation

The **Qualicision** optimisation module, which is part of **PSItraffic/DMS**, facilitates the optimised automatic scheduling of orders, taking various – even conflicting – parameters into account.

This allows criteria to be assigned different priority levels during vehicle selection. Ensuring operational running is always top priority. As such, this criterion is to be regarded as a restriction: if a vehicle is in high demand in operations due to operational circumstances and the earmarked deadline has not yet been exceeded, it cannot be set aside for the workshop.

In contrast, criteria such as compliance with specified maintenance, inspection and cleaning intervals, as well as the requirement to utilise the workshop's capacity evenly are assigned different priority levels in the decision-making process. These criteria may be defined individually, depending on the availability of resources, especially those such as work statuses, personnel or tools. Finally, the process of finding solutions is completely automatic and the module only generates reports if conflicts which cannot be resolved automatically arise. These conflicts are automatically postponed to the future to allow the employees in charge to search for solutions and respond in a non-pressurised manner.

Solutions that monitor the current operational situation in real time and reliably provide vehicles for scheduled workshop appointments using optimisations have an advantage.

Thus, the previous planning of work steps manually using an analogue planning table in the workshop can be replaced by a digital Gantt display.

It provides an overview of work status occupancy as well as the utilisation of employee work capacities. Work orders can also be manually assigned to days in table format and via suitable dialog boxes, as well as in combination with existing assignments.

Integrated Workshop Management Ensures Driving Operations

By integrating operational workshop management into the DMS, vehicles and required work can be consistently tracked within one system. This eliminates the need for paper documents and manual data transfers to a second system. More precise planning and short response times prevent vehicle shortages, which in turn ensures that the driving operations run smoothly.

The use of intelligent decision-making software also allows for the balancing of conflicting goals and the calculation of balanced results. The simultaneous transition from manual work scheduling to an automated system in the workshop also helps optimise the utilisation of individual work statuses and employee capacities. Additionally, connections to existing workshop management systems, for example those for commercial processing, can be maintained.

Your benefits with PSItraffic/DMS

- Transparency at the depots
- Vehicle parking and assignment in real-time based on Qualicision
- Improved vehicle availability
- Reduction of the vehicle reserve
- Optimised vehicle supply (cleaning, sanding, refuelling)
- Manual, semi or fully automatic vehicle dispatching
- Use of standard interfaces
- Integration with AVMS (Automatic Vehicle Management System)
- Integrated quality management system

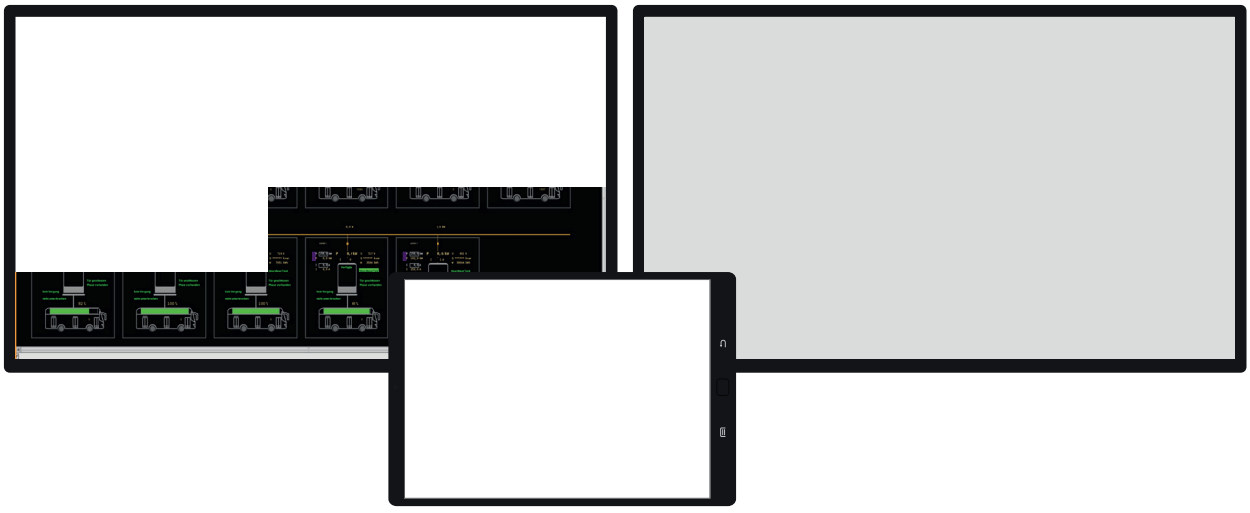
More Room for Manoeuvre

Linking operations and the workshop via an operational workshop management module opens up considerable efficiency potential. A particularly valuable aspect is the integration of a multi-criterion decision-making aid that allows companies to individually prioritise and weight the planning parameters that are relevant to them.

This solution, which is currently unique on the market, provides transport companies with investment security for existing IT systems in the workshop.

PSI

Electric Buses
Depot and Charging Management
plus Personnel Dispatching:
All from a Single Source



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