RTG AUTOMATION

Manually sequencing and dispatching RTG/RMG jobs can lead to suboptimal decisions, since drivers and dispatchers may have a limited view of the conditions in the yard, as well as a limited understanding of the terminal's broader operational goals. When terminal conditions are complex and workers on the ground have limited visibility, automation is a cost-effective solution to ensure optimal terminal productivity.

The RTG Automation **Solution**

RTG Automation is a solution that automates both job sequencing and dispatching, and is designed to enable your terminal to take a phased approach to making the transition from a manned CHEs to remotely operated and fully autonomous CHEs. This enables you to better manage the capital investment needed for retrofitting to automation and gives you the opportunity to test and validate on a smaller scale before rolling out an entire automated fleet.

RTG/RMG planning Optimization
Independent of manned/automated RTG or RMG solution

1.
Conventional RTG

- Manual CHE block assignment
- ECN4 jobsorting and filtering
- Manual dispatching

2.
Manual RC Disconnected

- Manual CHE block assignment
- ECN4 job sorting
- RTG driver dispatching (ECN4w)
- N4-ECS integration for visualization

3.
Manual RC Connected

- Manual CHE block assignment - Basic job sorting (N4)
- Manual driver dispatching in N4
- Full N4-ECS integration
- RTG driver screen enhancements

Focus on driver experience

4.
Pooled remote driver (1 on many)

- Manual CHE block assignment
- Basic job sorting (N4)
- Automatic RTG dispatching
- RTG controller visualization and exception handling enhancements

Focus on dispatcher experience

5.
Optimized execution

- Manual CHE block assignment
- Advanced job sorting
- Automatic RTG dispatching

Focus on RTG execution optimization

Key **Benefits**

Automated optimized decision making for RTG job sequencing and dispatching, taking into account key information and the actual state of the yard.

Phased implementation of the optimization and automation modules, one RTG at a time, and parallel to your ongoing manual operations. This ensures no downtime is required while transitioning and implementing the solution.

User Friendly screens and tools assisting users proactively to prevent upcoming delays and exceptions.

RTG Automation **Includes**

- RTG Sequencer
- RTG Dispatcher
- Automated Exception Handling
- ECS integration

RTG Sequencer
Optimizes the sequencing of your RTG moves to ensure yard cranes and trucks are maximally utilized, minimizing wait times and CHE clashes. The RTG Sequencer prioritizes based on operational conditions, including customer business rules and preferred work sequences.

RTG Dispatcher
Ensures those sequenced moves are dispatched at the optimal time using job progress, truck information, and physical location in the stack. Also, RTG Dispatcher:

- Is integrated with PR-TT and decking to enable job swapping and decking refinement, which reduces rehandles and inefficient truck moves at the RTG block.

- Enables you to choose between TP and TZ dispatching. This is key for terminals that use Passive RFID gates for trucks entering the RTG block transfer zone, to maximize their productivity.

- Automated exception handling enables Outbound/Load Move Swapping to reduce truck congestion, as long as the expected terminal truck is from the same CHE pool.

ECS Integration
RTG Automation provides full integration with equipment control systems (ECS) for automated CHE.