

# DBIS on track

DB Information Services has adapted its CommTrac bulk material tracking software for coal terminals

**D**B Information Services (DBIS) of the UK has a strong background in business, information and product control software and has developed the CommTrac application to manage the reception, storage and delivery of bulk materials.

CommTrac is used by a number of bulk terminals handling grain and aggregates in the UK including ABP Bulk Park Immingham, grain and feed terminals at the Seaforth terminal at Liverpool and Tilbury Grain Terminal in London. DBIS recently adapted CommTrac for coal handling to manage the second phase of Associated British Ports' (ABP) Humber International Terminal (HIT 2) which handles coal for BHP Billiton and power generators

DBIS is part of the DB Group which also includes DB Controls, a division that integrates variable speed drives and other equipment used in material handling and process automation. Drawing on this experience DBIS is able to offer "complete vertical competency in all information and control requirements, from management reporting to sensor level".

## Single system

With CommTrac, DBIS offers terminals a product that is based upon standard Microsoft technology and can encapsulate the operational requirements of a bulk terminal in a single system; eliminating the spread-sheet based planning that still takes place at many terminals. With a single system terminals can achieve higher efficiency, reduce the administrative burden and provide managers with more timely, accurate information.

Adapting CommTrac to the needs of a coal terminal required the addition of planning and scheduling features and these were added as separate modules. CommTrac now encompasses: vessel

reception and management, progress and stoppages, stockyard layout plans, scheduling, job set up and control, rail and barge management, weighbridge management and reporting. For the HIT 2 application CommTrac interfaces with weighing systems, automation control systems, rail schedules and accounting systems.

## Biggest development

The scheduling features were developed around scheduling software from Preactor of the UK. DBIS sales director David Trueman says this required significant coding and was the single biggest development task in extending CommTrac for coal and ore applications with large outdoor stockpiles.

At HIT 2, the system is integrated with the National Rail planning application and receives vessel information from the ABP's Port and Vessel Information System. During discharge CommTrac provides a graphical overview of the discharge process and an electronic log that uses tick boxes and drop

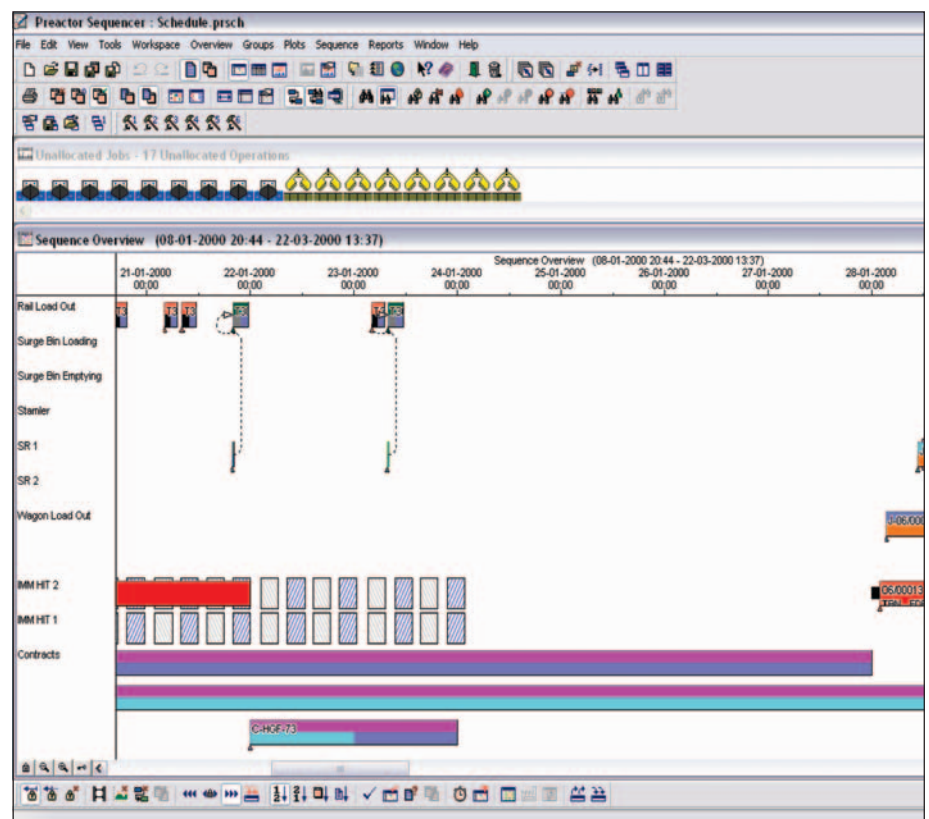
downs to speed up the event logging process and allow reports to be generated. The core of the system is the stockyard layout plan which sets the coordinates for the stacker reclaimer to optimise stockyard utilisation while maintaining segregation of individual shipments and blending requirements. An "active planning board" enables schedules to be developed in the form of GNATT charts and progress monitored as scenarios change.

The system takes into account set up times, delivery rates and other predefined process rules to ensure planning accuracy. Feedback from the control system updates progress and moves the plan back or forwards as jobs are completed. Important parameters such as route limitations and stockpile requirements are programmed into the application initially while allowing for new rules and pre-set mean times to be refined with experience to improve the planning process.

## On schedule

At HIT 2 CommTrac is integrated with equipment PLCs and SCADA (supervisory control and data acquisition) control systems to give real time information on unloading rates and workflows to the

*CommTrac incorporates Preactor scheduling software to manage scheduling and an active planning board to monitor progress*

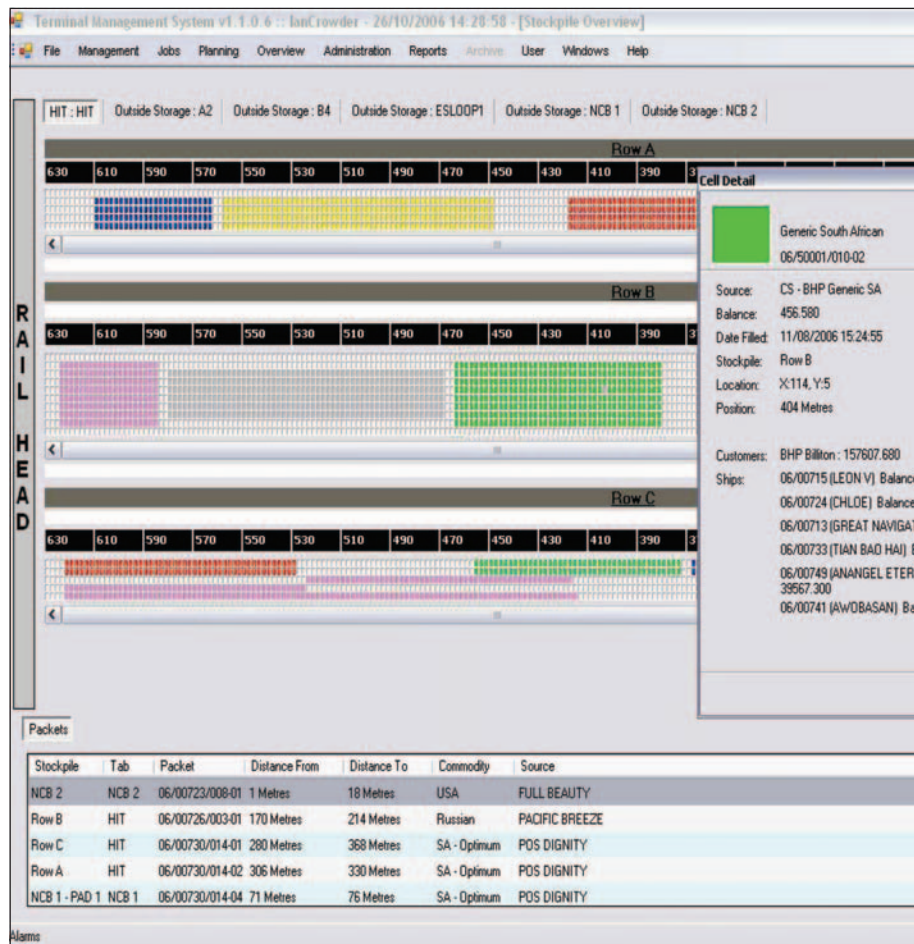


planning software. Coal volume in harbour mobile crane grabs is monitored in real time and operations' managers can use the planning board to see overall discharge rates and track berthing time against the schedule and the terminal's service commitments.

Trueman says that cargo flow monitoring can still be achieved without PLC level integration, but the benefits of real time data are such that other DBIS customers have decided to carry out a full automation and control systems upgrade to improve planning as well as machine performance.

The management and planning reports themselves are configured using the Crystal Reports reporting engine developed by Business Objects. Preconfigured reports with sort and filters are available for a range of functions including: daily discharges and stoppages, stock report, equipment utilisation, stock yard status, symmetry report and ship/train activity. For invoicing and financial reporting requirements DBIS provides two options: an interface to third party systems such as JD Edwards or Sage; or its own comprehensive invoicing system that allows billing parameters to be set for single customers.

Another issue for bulk terminals is how mobile equipment such as front end loaders is incorporated into the system. Job instruction can be provided by radio data terminals and onboard load monitoring systems can be integrated if required.



Stockyard layout plan showing segregation of individual shipments

However, the overall importance of mobile equipment varies across terminals and many decide to limit wireless coverage to certain areas rather than install infrastructure for site wide coverage. Large machinery such

as stacker reclaimers is typically hardwired to the control system.

### The benefits

Trueman says CommTrac has successfully removed the "spreadsheet culture" at HIT 2 and reduced the administrative workload while providing managers with the tools to improve terminal performance. Typically, he adds, terminals can remove a full administrative layer and save as much as 4,000 man hours by implementing a terminal management system. Significant savings in demurrage can also be achieved with CommTrac and with this alone the system can easily pay for itself.

Over time, DBIS anticipates that the system will provide ABP with a much deeper understanding of the whole facility's performance and highlight true process bottlenecks, enabling further capital investment to be more effectively targeted. For its part, DBIS has identified that data recorded by the terminal management system can be further utilised to improve the operations and equipment effectiveness and down time analysis modules are under consideration. □

An overview of the discharge/loading process is provided in graphical format

