TECH UPDATE - Log, Lumber, and Grade Optimization Systems

Autolog

Autolog has been known as a leader in transverse scanning technology since the early 1990s. Over that time, many improvements have been made to their designs to increase lumber recovery while reducing maintenance. Autolog’s transverse optimization family, which includes trimmer, cant and edger systems, is supplied with Hermary sensors.

In 2009, Autolog introduced an innovative idea: slanting the sensors to increase board edge detection. Slanted heads offer many advantages including: detection of steep edge wane; better width accuracy; slanted heads stay clear from debris and dust; and there is no need for an air cleaning system.

The first system with slanted heads was installed on a trimmer optimizer in Maine and since then, every new system sold has been supplied with slanted heads.

The same technology applies to edger and cant optimizers, the only difference being that the angle of the scanning heads is different for each system.

www.autolog.com

Springer Microtec

The Microtec CT.LOG scanner is a revolutionary solution for saw infeeds, saw lines and merchandising systems, according to the company.

CT.LOG creates a complete digital reconstruction of the internal characteristics of a log, capturing all defects, quality features and species of the log prior to breakdown. A true quality sawing pattern optimization is performed, evaluating all sawing combinations that fit the quality of the final sawn products. The optimization software determines the sawing pattern with the highest added value, and the requirements of the final product are controlled in real time according to current production requirements. This product was designed to increase the productivity of the saw line, which promotes sustainable processing of the raw material and improves the yield and the quality of the final products, says the company.

www.springer-microtec.com

USNR

USNR’s BioVision technology is advancing on the land “Down Under” with new grade scanning technology implemented at Pukepine Sawmills at Te Puke, New Zealand and AKD Softwoods at Colac, Australia.

The system recently installed at Pukepine Sawmills comprises a 6 m (20’) USNR grade scanning trimmer line featuring BioLuma 2900LVG+ four-sided scanning for full automated grading of its green lumber products.
The system at AKD Softwoods is a BioVision edger grading line. This BioVision system features a new scan frame outfitted with BioLuma 2900LV sensors. The HD laser profiling and HD visual data is fed to the system’s MillExpert software platform to maximize both volume and value recovery of structural and appearance grade products by positioning the saws based on the knot sizing permitted for structural lumber.

www.usnr.com

JoeScan

Today’s complex and demanding sawmill environments require 3-D scanning that is reliable and easy to use, which is why an increasing number of mills rely on JoeScan scanners, says the company.

The foundation of JoeScan products is summed up in four simple terms: simple, fast, accurate and reliable. Every model comes with plug-and-scan Ethernet and built-in durability that delivers accurate data in the roughest environments.

As JoeScan has perfected its products, it has also added speed and versatility. The new JS-25 X-series scanners take up to 850 profile measurements per second, with each profile containing up to 242 data points. In addition, the JS-25 X-series scanner models accommodate virtually any scanning need—indoor, outdoor, transverse or lineal. From logs to lumber, JoeScan provides dependable scanning for bucking, carriages, sharp chains, gangs, edgers, planers and more.

www.joescan.com

Halco Software Systems

Halco’s WSO is a production planning optimization system. It determines the mill’s optimal production mix, and the optimizer parameters required to produce that mix.

WSO combines SAWSIM with linear programming optimization in a proprietary iterative technique. WSO determines the operating plan that maximizes profit, considering logs to be processed, market prices, sales mix constraints and committed orders, and mill flow/bottlenecking machines.

Most mills run WSO weekly. WSO results are presented in a KPI report, which becomes the plan to which everyone is working: management knows the plan, sales knows the production mix to expect, and the mill knows their production targets. Optimizer parameters are then entered to implement the plan.

WSO maximizes profit by resolving trade-offs between recovery, sales mix, and production rate. Sales average is increased with a high-value mix that satisfies market constraints. The production rate is increased, using bottleneck machines most efficiently. Recovery is increased, eliminating doing “extreme things” to rebalance inventory.

Halco says that every company that implemented WSO at one mill has gone on to place orders for second, third, or fourth sites.

www.halcosoftware.com
ProLogic+

This year, Prologic+ officially released its new QC scanners. Being in the prototype phase from 2013 to 2014, the product range is now ready for the industry.

Starting with CQC (Cant Quality Control) and BQC (Board Quality Control) scanners, both systems analyze all kinds of defects such as surface roughness, wane balance, thickness and width variation, average sweep in real time on the cants or sideboards.

In collaboration with HewSaw with its log turner, the Prologic+ log scanner collects dense surface points and log pictures for each individual scanned log and then passes that info to the RCS (Rotation Correction System) scanner. By overlaying dense profiles and pictures previously given by the first scanner, the RCS Scanner compares the actual complete final rotation from the first rotor and if needed, adjusts or fine tunes the rotation with the second rotor, when needed.

www.prologicplus.com

Optware

The Optware-x Sawmill Enterprise System allows mills to proactively plan and optimize activities across multiple machine centres by creating a virtual model of a business.

The software works like a compass, pointing out the activities which will result in maximum profits. The technology makes it possible to add hundreds of thousands of additional profit dollars per year to the bottom line, says the company.

The model captures data from existing sawing solutions, production systems, lumber grading systems and financial systems to determine the best possible solution. The tool can be used to assist decision making in a number of areas including: which logs should be bought; how should logs be processed; how do cutting patterns affect production volumes and downstream work centres; what prices should be entered into the sawing solution tables; and what is the most profitable lumber product mix.

www.optware.com

Raptor Inc.

FX85-Q is the evolution of Raptor’s geometric scanning to full surface defect recognition on green or dry lumber.

There is no requirement to mask chainways as the integrated transfer enables the cameras to see the entire board without the need to remove images that obstruct.

The system uses profiling lasers as well as tracheid and color vision techniques to see a number of defects such as knots, pith, cracks, blue stain, rot, chalk markings and dirt.
With the tracheid technique, laser light is distorted differently depending on the properties of the wood, making it possible to detect differences in fibre angle and defects such as blonde knots.

System modularity allows the customer to begin with dimensional measurement initially and add vision/tracheid at a later date, without changing the hardware.

FX85-Q is available for edging and trimming applications.

www.raptoint.ca

VAB Solutions

VAB Solution’s constant research and development has produced a significant step forward in patent pending sawmill trimmer scanner technology, says the company.

Using a full laser line to generate grey scale imaging and differential measurements of both edges, it allows the detection of rot and decay and never before achieved width measurement precision, according to the company.

Key features are rot and decay detection on all four faces and both ends that allow accurate trimming using detailed greyscale imagery; what the company says is the best accuracy in the industry using more than 20 differential measurements on edges, allowing edge and width measurement accuracy of +/- 0.005”; high reading density by scanning the boards under a continuous laser line instead of only laser dots; scan density can be adjusted as low as 1/16” if needed; permanent calibration requiring a check only once a year; and fewer components reduce costs and future maintenance.

Canada’s Sexton Lumber will be installing this new trimmer scanner in the coming weeks.

www.vab-solutions.com

Comact

For well over a decade now, profiling heads have been an integral component of Comact primary breakdown systems, such as the DDM, as well as secondary breakdown systems, such as the TBL3.

To meet the needs of its clients aiming to operate ever more productive and profitable sawmills, Comact has improved its product offerings over the last few years. In fact, Comact has delivered various projects where profiling heads have been integrated into the twin canter (primary breakdown) in order to profile sideboards and thus limit handling, not to mention relieve existing edgers. Profiling enables reducing cutting height of the twin since logs have already been profiled. Due to the fact that saws have less material to cut through, it is therefore possible to increase edging speed by up to 25 per cent.

For a sawmill seeking to increase its throughput, this is a sizable advantage besides getting rid of those typical edger bottlenecks, says the company. Thanks to the integration of profiling heads both at primary and secondary breakdowns, Comact has managed to offer productive, profitable solutions specifically adapted to the needs of its clients.

www.comact.com
SCS

SCS says it provides the only end-to-end line of integrated moisture measurement sensors and related process optimization tools for sawmills, kilns and planers.

The transverse sensor provides moisture content data every 16 microseconds as boards pass over the sensors. Laser sensors detect boards as they pass over the sensors and apply correction factors for warp or curve sawing. Similarly, temperature sensors monitor the temperatures of boards as they pass over the sensors, applying a correction factor to ensure that there is always a strong correlation between sensor readings and true measurements, regardless of the temperature. For green lumber, moisture sorting can be used to optimize drying schedules, reducing overall drying times as well as the standard deviation of kiln charges. For dry lumber, moisture content inputs can be used by the in-line grading system to maximize grades, provide better cut-in-two solutions or minimize trim decisions.

www.scsfp.com

FinScan

With the opening of FinScan Inc. in North America, FinScan is once again consolidating its leading position in both sawmill automated grading solutions and customer support for Canadian and American sawmills.

Based on 25 years of experience, the company’s new BoardMasterNOVA scans 100 per cent of individual boards from all sides providing fast board dimensional and quality analysis. Based on required grades and market value, the system optimizes and automatically generates detailed instructions for trimming, cutting, re-edging, ripping and sorting. Technological innovations allow the system to detect biological defects and shakes/splits in a more efficient way than traditional operations.

When combined with the EndSpy and MoistSpy solutions, customers get a complete, comprehensive and fully configurable grading system. Ultimately, they achieve an optimized solution for each of their particular production runs while achieving the best possible yields.

www.finscanusa.com

Baxley

The Ecoustic board stress grader uses proven acoustical resonance technology to determine the stiffness of lumber simply, efficiently, and inexpensively, says the company.

A board’s structural strength is determined by its stiffness or modulus of elasticity, or MoE. With known density, the stiffness is proportional to the speed sound waves travel through a piece of lumber. This is the science behind the Ecoustic board stress grader.

It was developed by Calibre Equipment of New Zealand, and licensed to Baxley Equipment for manufacture in the U.S. and Canada. There are over 18 systems currently running in the U.S., and one scheduled for a March install in Canada.
The Ecoustic board stress grader is CLSAB approved and is compatible with all visual graders and manual grading systems.

www.baxleyequipment.com