AUTOMATION&ELECTRONICS

Precise Control

International Systems Integrators

## Newsletter Volume 1-2012

# Waverley Sawmills Carriage Upgrade

Waverley Sawmills were faced with a dilemma of no support for their existing Carriage Setworks system so Sawmill Manager Peter Martin contacted A&E pre Christmas about the possibility of upgrading their existing Jaymor Setwork. The Carriage sizing system comprised of a hydraulic cylinder with encoder feedback on a Setshaft Carriage. The intention was to add in a new Slabber and modernize the control system at an affordable cost but have provision for future expansion to incorporate full independent knee control and possibly Scanning in the future.

A&E Solution was to provide a new Setworks PLC based Setworks using Allen Bradley CompactLogix PLC and interfaced to Delta RMC 2 channel controller for servo positioning. The existing small hydraulic pack was replaced with a Brevini Motor & Gearbox which was mechanically linked to the Setshaft and control interface via a Powerflex VSD with breaking back to the PLC. A temposonic feedback transducer housed within a dummy cylinder provides accurate position feedback. The second Delta channel was able to be connected to the Slabber hydraulics cylinder.

Waverley are now in good shape for the future as the EtherNet capability enables remote support and ability to add a Scanning system combined with the modular design of the Delta card permits addition of further channels should they ever decide to go with full independent Knee control.

## SEE US AT ...

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## A&E USA
## Welcomes Jeff Harper
**to our Sales & Management team**

Jeff has significant industry experience and is based in Louisiana. If you are an existing A&E USA client or have enquires regarding A&E USA solutions for your sawmill please contact Jeff on;

**318 243 5974 Or email jeff @automationelecusa.com**

Current projects in the USA include a new 3D Carriage Optimizer & Controls for a sawmill in Wisconsin and new Windsor Technology Continuous Drying Kiln for a Sawmill in Louisiana, we hope to update you on these projects once they are fully commissioned in our next issue.

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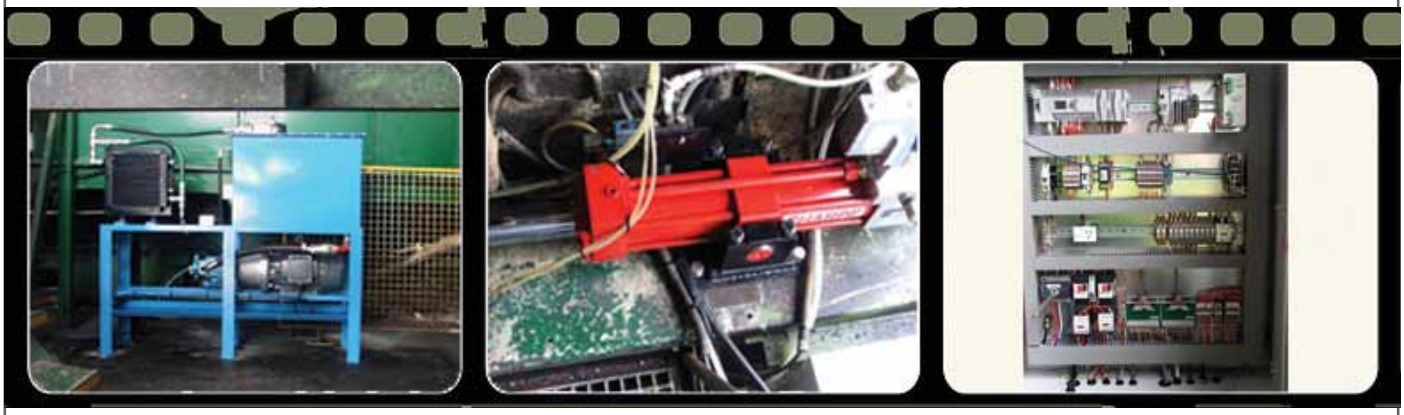
**Client:** Taranaki Pine **Project:** Resaw Setworks Upgrade

OUT WITH THE OLD !

IN WITH THE NEW!

The old system had come to the end of its life and was causing inaccuracy. The comprised of a series of step cylinders and incremental sets by varying a combination of fixed increment combinations and had stood the test of time. The decision was made to go to a more accurate servo positioning system with infinite sizing closed loop hydraulic control.

Over Waitiangi Weekend in the first week of February A&E Carried out a Resaw Setwork upgrade at Taranaki Pine, this consisted of a new Allen Bradley MicroLogix Controller combined with new Sharp Servo hydraulic cylinder and New hydraulic powerpack. The combination of infinite programmable setting and precision repeatability now give Taranaki the added recovery and accuracy they desired.



*Above : Hydraulic Powerpack* *Sharp Servo Hydraulic Cylinder* *PLC Control System*

## Client: S A Relf & Sons Pty Ltd Hardwood Sawmillers

## Project: Install New Gibson Edger

Early this year A&E were contracted by Australian Sawmill Machinery Manufacturer A E Gibson & Sons Pty Ltd to supply our latest EdgerView Operator interface and Setworks control for their new six moving saw Edger. The new Edger featured Gibsons new telescopic Arbor which was integrated to A&E's Setworks PLC via a RMC 150 Delta 6 Axis servo controller. The latest generation of EdgerView featured new high resolution Gigabit EtherNet digital cameras.

The installation was commissioned in conjunction with Gibson at the S A Relf & Sons Hardwood Sawmill in Bulahdelah New South Wales.

S A Relf are suppliers of Kiln dried flooring & Decking, Building grade, Fence & Pallet Lumber.

# Continuous

## Drying Kiln System Launched

This new Windsor CDK (continuous drying kiln)was commissioned in October for Southern Pine Products at their Stillwater facility.

Its is the first of its type in New Zealand and is drying appearance grade timber for export markets around the world. Automation and Electronics were responsible for the Dryspec kiln control system and for the interface with Drytrack moisture content management. These advanced computer control systems manage the entire drying and conditioning process within the chambers and continually monitor timber progress through the kiln.

Glenn Purcell of A&E was on site to test and commission the equipment and train operators prior to Client hand over.

A&E have completed the Dryspec control systems in 4 cdk projects with Windsor in the USA.

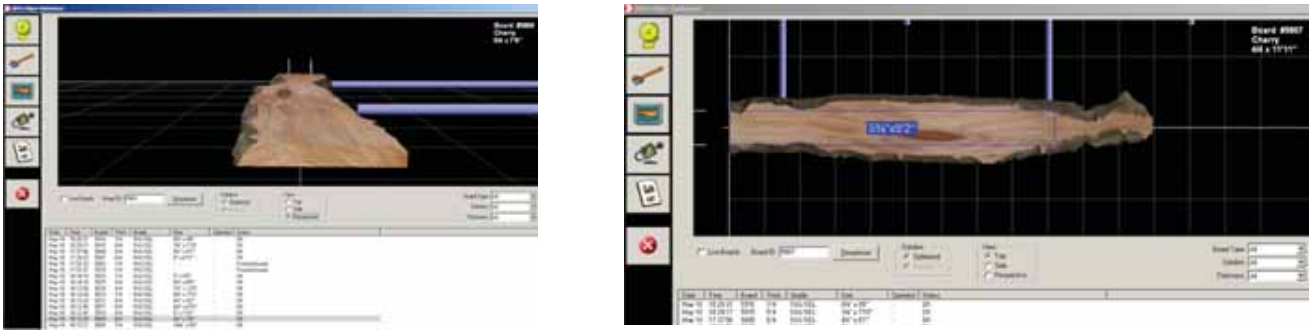
# A&E Continuing to Invest in R&D

**We all know Research & Development is costly, however, to keep at the leading edge of the market we must continue to evolve our products and adapt to customer applications.**

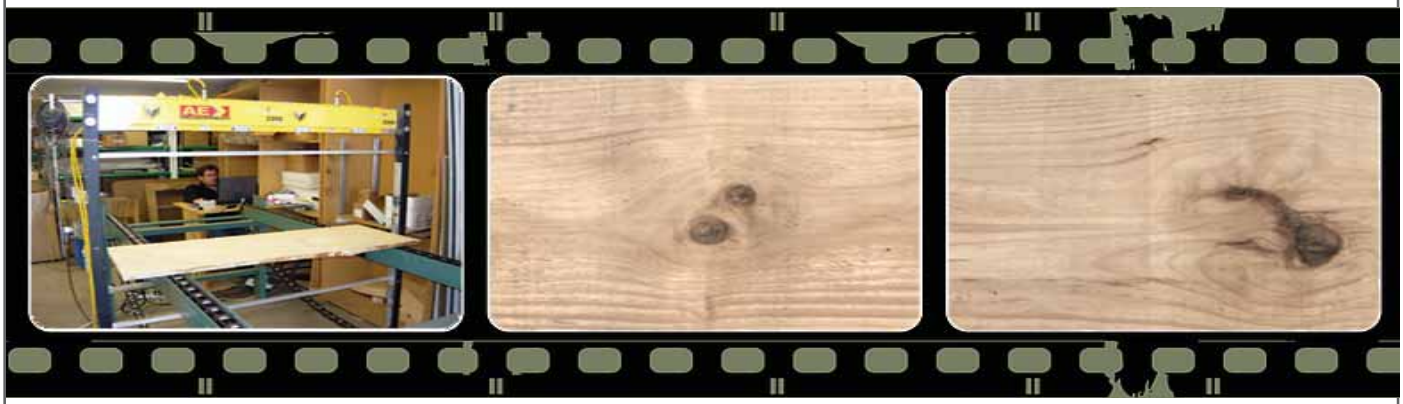
Some of the ongoing development currently being pursued at A&E includes the following:

**Knot & Defect detection in Green rough sawn lumber.**

We have made some good progress capturing board images using the Latest Chromoscan 3350 Sensors, the LMI Chromoscan combines high resolution image capture with true shape 3D laser high density scanning. A&E Edger Optimiser already incorporates the Chromoscan 3D modelling and once we have combined the image capture capability we will be able to add detection for, grade, defects and splits into the optimisation system.



*Above: A&E Edger Optimiser 3D Images using high density Laser profiling*



*Above : A&E Workshop Test bench with LMI Chromoscan 3350 Sensors and some image capture results*

# Log End Detection

Another on going project is log end detection. A&E has already proven we can detect fluro crayon marks on log ends and geometrically position the log around this coordinate in our 3D optimization software, we are now moving into enhanced image recognition without marking the log end for boxing of Pith zones and offsetting Cant positions within the solution based on the defect zone. Most lineal log feeds and End Doggers are achievable however live on log Carriage is where the greatest challenge lies.

# A&E NEW product update

## MTS TEMPOSONIC

Lately the most common and normally stocked versions of probes use a D6 connector hanging from a 1 ft. cable hanging from the probe head. This is called connector option FD1; see picture below: This is because the standard 'built in' D6 connectors not very robust, and if it becomes damaged one must replace the entire probe. Whereas, with the FD1 option, if the D6 connector on the hanging cable is damaged, it can be replaced with a new connector. Having the connector separated from the probe head by the 1 ft cable also isolates vibrations from the probe to the connector better which makes loosening of the connector from the field connector on the 'supply' cable less likely.

*For example* the part number for a high vibration transducer is:

**GHT0420UFD1BFE2**

**We will be recommending clients change to this version in the future where possible.**

## SCANMEG NEW P TYPE PHOTOCELL FOR HARSH AREAS


Following on from the success of the original P Series Photocell, ScanMeg recently released the new version with some great additional features. A few of the features include;

The new P Series features a fast disconnect lockable mounting bracket and quick disconnect connector, simple and easy to change during production.

Indexable bracket –3 positions makes for easier install on substeel.

Better resolution down to 1/4 inch or 3mm.

25 foot range.

Preselected programs (6) for latch, sensitivity, min. object size etc.

Totally waterproof emitter & receiver.

Designed for high vibration areas.

## EASY CONVERSION FOR PLC 5 USERS


Clients with large racks of the older Allen Bradley PLC5 Series now have a fast reliable replacement option when it comes to installation time and minimizing downtime. The Bulletin 1492 provides 1771 PL5 users with a rack mounted backplane for fast installation. Simply unplug the wiring arms off the PLC5, Remove the PLC 5 Chase. Mount in the new 1492 Wiring conversion backplane and reconnect the existing PLC 5 wiring arms. Next close the cover and mount the new ControlLogix PLC on top of the Backplane lid.

The 1492 Wiring arms plug directly into your ControlLogix PLC and the installation is complete. Also if you experience a problem when commissioning the new PLC for any reason you have the backstop of plugging the PLC 5 if time is running short.

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# Wheeland Lumber

## Upgrades with A&E Controls and Optimisation

***Story Courtesy of Paul Miller Jnr - National Hardwood Magazine USA***

*Jeff (left) and Ray (Right) Wheeland seen here with the new A&E control system.*

Liberty, PA – Wheeland Lumber Company Inc, based here, recently installed Automation Electronics (A&E) controls and optimization for their optimized board edger.

Wheeland Lumber installed an optimized board edger over ten years ago and the system was due for an upgrade. Wheeland Lumber's President and CEO, Ray Wheeland, placed an order with A&E USA for new controls and optimization on their two re-saw edger and sharp chain-feed system. This upgrade included new controls with new scanning technology from LMI (3155 scanning heads) with IRIS Edger software from A&E USA.

Wheeland's upgraded system runs DynaVision Croma + scan 3155 heads with laser spacing at one third of an inch, compared to every three inches on the DynaVision M6 heads. This is ten times the data for higher recovery solutions.

**"To put things in perspective as for the improvements this new equipment has made, we are now scanning every 32nd of an inch, instead of every three to four inches."**

"We had the first optimization in 2000, and we had it for eleven years" Wheeland explained. "To put things in perspective as for the improvements this new equipment has made, we are now scanning every 32nd of an inch, instead of every three to four inches. Another advantage of the A&E equipment is that we can purchase it locally, right off the shelf. So, if you have problems you can be back up and running quicker". The set-works hardware utilized Allen Bradley Compact-Logix for PLC controls and Delta RMC44 for motion control. All of the PLC and motion controls are off-the shelf components, which give Wheeland the security and freedom of purchasing any control parts from their local supplier. This differs from most providers that use proprietary components or PC based controls, forcing the customer to buy all replacement parts from the original source.

A&E USA IRIS software includes functions like: wane crush; push/pull solutions; and re-optimization of processed boards. Simple changes to the setup parameters are obtained by selecting the current parameters and adding or subtracting percentages or dollar values. "You can run as many species or cutting plans as desired," A&E's sawmill consultant and President, Tracy Goss said. "The information is stored online and on offline files: this is particularly beneficial because our engineers are able to access the information and make changes from anywhere using VPN web access, if the system were to encounter problems. An additional feature of our system is the ability to apply grade rules to different thicknesses as well as different grades." A&E USA supplied Wheeland with a new operator console that was designed around the old console with additional options for servo control and an in-feed and out-feed roller timing within the operator HMI. "We were also able to create a more consistent lumber line on the boards being delivered from the headrig, as well as additional improvements on operating functions, such as reverse function on the in-feed chains helping the overall safety of the machine along with more consistent timber processing." Goss continued. Wheeland's previous edger had a manual solution for reprocessing boards that may have a grade rip within the board. This was retained and the operating process was improved on speeding up the operator time. A second operator console was installed with a Sure-Grip hand control, enabling the operator to look at the board and operate the guide override by using one hand control, increasing the quality of the decision with a faster process. A&E USA customizes controls around the existing I/O of the project. This enables additional functions like VFD and additional operating functions to be added by PLC programming. If systems are run through PC based systems then your options are limited to the supplier's product. The edger is a close coupled scanning to in-feed application, the system before the upgrading was causing non-solution on many boards on a daily basis. The new changes have solved these constraints, which has not only increased recovery and reliability but also increased the edger throughput by obtaining solutions for every board that is processed. Overall, Goss said that A&E USA is very happy with the installation. "Over time, more small changes will make the system smarter and more efficient," he explained. "Working with Ray, Derek and the team at Wheeland Lumber has been a pleasurable experience. A big thanks goes to Jeff Wood and Mark Dibble for their help on this project, you guys helped make this a big success for A&E USA." A&E has been in the controls business for over 25 years. "In the last three years we have broken into the US market by purchasing the exclusive rights to the Silvatech Corporation," Goss said "A&E USA opened an office in Ruston, Louisiana to service their US customer base. "We specialize in completing projects from servicing the smallest electronic devices to complete turnkey projects, including the management of sub-contractors. A&E has over 600 systems working around the world and growing every year' For more information visit www.automationelecusa.com. Wheeland Lumber Company Inc is a fourth generation family owned business. The firm offers Ash; Basswood; Cherry; hard and soft Maple, Red and White Oak; Poplar and Walnut Hardwood lumber. Specialized services include: Kiln dried lumber; clear strips; surfacing two sides; gang ripping/parallel sawing; straight line ripping; optimized cross-cut; moulding and millwork; edged and face glued products; end matching; cabinet parts and flooring.

**For more information visit www.wheelandlumber.com.**

*(Above) Typical A&E Board information screen*

(Above) The upgrade included new controls together with the new Iris Edger software scanning technology LMI (3155 scanning heads) from A&E USA.

The upgrade included new controls with new scanning technology from LMI (3155 scanning heads) with IRIS Edger software from A&E USA.

*A&E's Board information screen is shown here*

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