AUTOMATION&ELECTRONICS

International System Integrators

Millwide Software, Optimization & Control Solutions

35
28th July 2021
A&E 35 Years

A&E NEWSLETTER
2021

1 PIKE LUMBER PROJECT USA

THE PROJECT

Pike Lumber in the USA Automation & Electronics USA provided an updated controls and optimization package to retrofit the customer's existing headrig.

The system utilized 6 x JoeScan JS25-X6B scanners allowing for a full log profile after 6" of travel. A&E headrig optimizer, LogView, provides both MOF and BOF solutions on a fully configurable operator interface.

On the controls side A&E was able to provide the customer with a cost-effective solution by reutilizing most of PLC system while upgrading to an L8le ControlLogix PLC.

This project was commissioned in 2021 by Joe Korac

2 JIM C HAMER PROJECT USA

THE PROJECT

JIM C HAMER in the USA - Automation & Electronics USA provided a control system for a 40 Bin Sorter.

The control system utilized a ControlLogix PLC platform in unison with a Delta motion controller for the hydraulic fence.

This system used AccuTally which is the culmination of years of research & development which have led it to become one of the most dependable and expansive tally software systems on the market. AccuTally is fully contained within the PLC system allowing for no interruptions due to computer updates/ failures. ***This project was commissioned by Joe Korac***

3 NWH HOPWOOD USA

THE PROJECT

NWH HOPWOOD- This system is a optimized short infeed lineal edger that the customer needed updated due to failing scanners that were getting more and more difficult each year to replace.

This project was commissioned in 2020 by Joe Korac and Alex Trapski

A&E worked with the customer to develop a solution that would be both cost effective and efficient while also updating any outdated components to the latest to provide years of usability and support. The existing system used a control Logix platform so A&E provided a new 1756-L81e PLC and updated the operator console and HMI. A&E utilized a Delta RMC150 for control of the hydraulic axis to allow for high precision control of the saws and pickers which is vital on a lineal system that has a slewing and skewing sawbox.
On the scanning side A&E provided 10 x JS-25-X6B JoeScan heads (5 x each side), this provided for a full board scan after 6" of travel.

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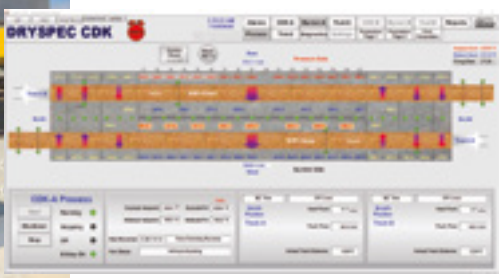
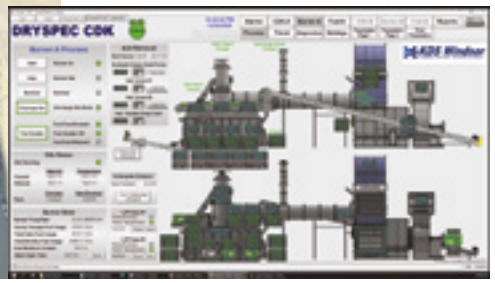
4 WEYERHAEUSER HOLDEN USA

THE PROJECT - HOLDEN CDK

The Dryspeck CDK system commissioned at Weyerhaeuser Holden in late 2020 was the first to control both the kiln and burner equipment.

The burner system was developed over several months to provide flexible control of all of the dampers and blowers. These can be individually configured in real-time to change how they are controlled to achieve stable temperature control. The system also includes a daily report which displays the kiln drybulb and wetbulb temperature, push distances, burner fuel usage and monthly burner stack open time. ***This project was commissioned in 2020 by Joe Korac and Alex Trapski***





5 NWH MARIENVILLE USA

THE PROJECT

NWH MARIENVILLE - This system was an optimized 3 saw edger with grading deck. For this project A&E was tasked with updating an outdated controls and optimization system by providing a turnkey solution.

The control system is powered by a 5069 series Compact Logix in unison with a Delta motion controller for control of all the hydraulic axis. On the optimization system A&E provided its latest edger optimization software using the all new JoeScan JS-50wx which provides high resolution scanning to allows for consistent and accurate solutions. Bowed boards are typically an issue for top only scanning system like this but not with A&E optimization utilizing the latest technology to detect bowed boards and flatten the data for an accurate and reliable solution.

This project was commissioned in 2020 by Joe Korac and Alex Trapski

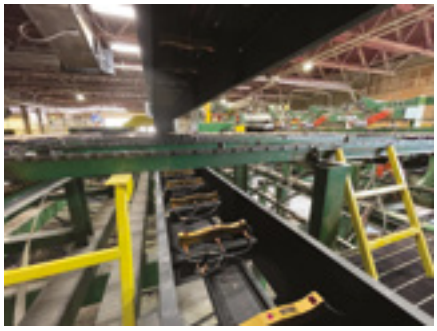
6 GUTCHESS EDGER CORTLAND USA

THE PROJECT

THE GUTCHESS EDGER in Cortland NY - is a lugged transverse optimized Edger. For this system A&E worked with on-site engineers to develop a solution that modernized the control system while minimizing downtime.

To accomplish this A&E supplied prewired PLC components mounted to a DIN rail that the customer would then bolt directly into their existing panels for a quick and seamless installation. In regards to optimization A&E provided a new scan frame complete with 18 x JS-50wx JoeScan heads.

This project was commissioned in 2020 by Joe Korac and Alex Trapski

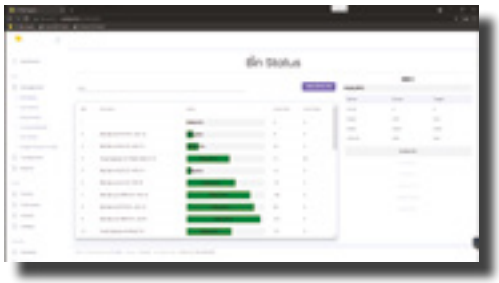




7 WHEELAND LUMBER CO USA

THE PROJECT

WHEELAND LUMBER - This project was a turnkey sorter controls and MCP project.

Although this was a used sorter, the control system was unusable after years of sitting in a field and spare parts being utilized in other parts of the mill. A&E was tasked with developing a turnkey control system and MCP. For this system we utilized an Allen-Bradley ControlLogix PLC platform with Kinetix 5700 servo drives for precision control. This system was also unique as we integrated panel view HMI in lieu of traditional hardwired bin boxes and a remote tablet for full control over the sorter which eliminated much of the wiring requirements that most sorters require.



This project was commissioned in 2020 by Joe Korac

8 WHITEHEADS TIMBER SALES MT GAMBIER SOUTH AUSTRALIA

THE PROJECT

New boiler for Whiteheads Timber Sales - Whiteheads had been burning gas to heat their Timber kilns, but in 2018 they went to the market seeking a wood fired boiler system that would perform well in all seasons using wet sawdust as the only fuel.
The successful bidder was Dettinger Project management based in Oregon USA.

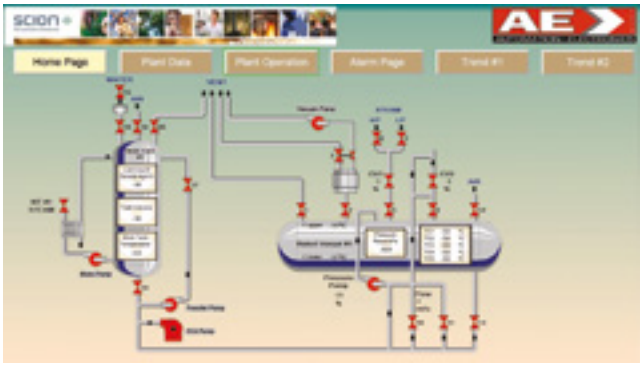
The 5mW steam plant utilized a rotary fuel drier to pre-dry the sawdust using the exhaust gas from the boiler. Automation & Electronics were chosen to provide the boiler control system and the Motor Control Centre. A&E's "BoilerView" system is currently running three Dettinger boilers, all feature Oxygen monitoring and trim. Allen Bradley Compact Logix PLC equipment was chosen along with AB Factory Talk View SCADA.


9 SCION - ROTORUA NEW ZEALAND

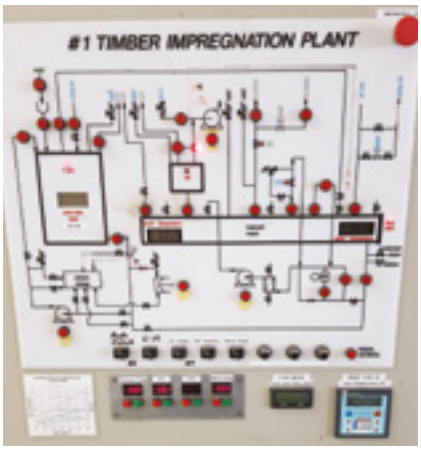
THE PROJECT

Scion Rotorua Treatment Plant Upgrade - Scion operate a timber impregnation pilot plant, for research, consultancy and testing purposes.
The plant is designed to simulate not only current commercial timber treatment processes, but to also operate above current industrial limits for the purposes of research.

Essentially the plant consists of a main pressure vessel, two liquid store tanks, and associated pumps, sensors and valves.
Plant control is effected through either a manual control panel or through a personal computer (PC) based supervisory control and data acquisition program (SCADA) which has been developed by Automation & Electronics using the Factory Talk View SCADA package on a New Windows 10 PC
The SCADA package is link via Ethernet to a new Allen Bradley Compact Logix PLC which is communicating to existing SLC I/O via an SLC Ethernet comms module.
The SCADA pages supplement the existing manual control panel, and provide trends and alarms to run the Treatment plant.
As requested by the customer, we have programmed the PLC code in “function Block”
A&E Project Manager - Rainer Ansorge



Pic below: manual control panel



10 MT POKAKA NEW ZEALAND

THE PROJECT

Mt Pokaka
In 2020 Automation & Electronics successfully updated controls on the Coopers machine in Mt Pokaka.

COOPER MACHINE COMPANY INC.

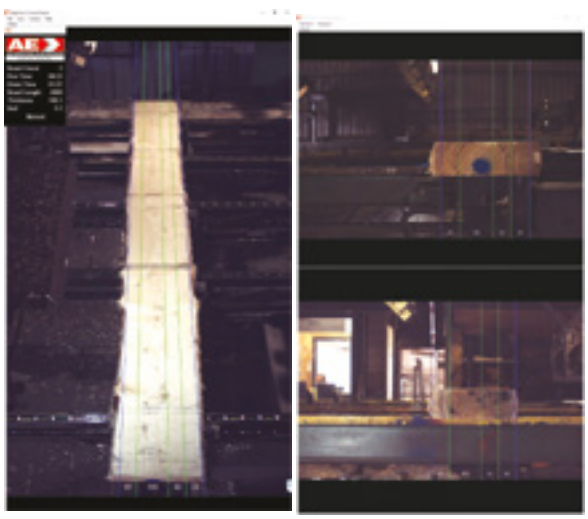
We also managed to also get the horizontal edger saws slewing for the cut which has achieved longer boards and increased recovery.

A spokesman from Mt Potaka stated that they are very pleased with the result .

11 PENROSE PINE AUSTRALIA

THE PROJECT

Penrose Pine EdgerView™ Upgrade
EdgerView™ is an operator interface for saw operators that provide predrawn movable saw lines on a live video image.



Edger-View™ replaces previous laser based systems and is suitable for installation directly on an edger infeed or on an edger pre-positioner.
The PLC sends data relating to the positions of the saws to the Edger-View PC, this then calculates where the saw lines should be displayed on the screen and the lines are overlaid on the live-video image being sent to the monitor by the camera.
Additional information such as each cut size is also displayed.
Penrose Pine had a previous vision system which was upgraded to the latest generation EdgerView, incorporating new high resolution Ethernet solid state cameras for simplistic interface.
A&E Project Manager - Rainer Ansorge

NEW KILN CONTROL PROGRAM

DRYSPEC BDK (Batch Dry Kiln)

Windsor Engineering asked A&E to update their Dryspec Kiln Control Program for batch kilns, and after much discussion it was decided that all the functionality of the Kiln Control Program would now reside in the PLC as opposed to a PC software program.

This provides increased reliability and makes ongoing updates straightforward either by A&E remotely or by site controls staff.
We have spent the last six months writing the code and developing the SCADA screens, the first install is taking place in Queensland now, with second system scheduled for installation in the South Island for January 2022.

The SCADA software is Allen Bradley “Factory Talk View” and the PLC program can be run on either Allen Bradley Compact or Control Logix.
The program can be made available to all on site who require access through an internal web page from your web browser.

If you are thinking about upgrading your kiln controls and would like further information about Dryspec BDK please talk to Keith Haigh at A&E or Mike Hampton at Windsor Engineering.

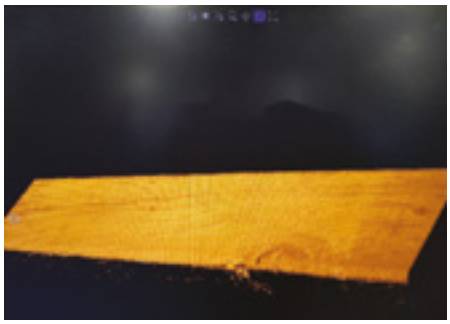
AUTOMATION & ELECTRONICS SCANNER INFO

ARE YOU GETTING THE MOST OUT OF YOUR SCANNER?

Over many years now we have been installing laser 3D geometric scanning systems in all sorts of applications throughout the world and we always run into obstacles that affect the results so let’s take a look at some of the does and don’ts.

The first criteria is obtaining good scan data, so think of data density as a number of geometric points that a scanner collects in given area. In general, higher the density provides the optimizer a more complete image. Data density is crucial to identify wane in boards and if it’s not high enough steep angle wane can hide in the bind spots between the scan data points. Data is defined as points per millimeter or by the spacing between the data points in fractions of a millimeter both across and along the board or log.
In earlier years, multipoint lasers were used with 25mm or more separation between lasers, however in later years, sheet of light lasers have provided higher resolution which is determined by the camera sensor resolution. Data density is actually scan speed which is the rate the scanner takes snapshots as the board or log travels through the scan zone. In board scanning you ideally want to scan all four faces of a board to find wane on leading and trailing edges. Almost all scanners nowadays use EtherNet for high-speed communications to the Optimizer.
Seeing the data is important so the site should ensure the scanning environment is suitable, free of obstacles that interfere with the scan zone and also no direct sunlight which reduces the ability of the camera to read the laser data due to light filtration. Reflected light also affects the scanner and we have experienced tools, steel pipes and even aluminum ladders been left on the floor under a scan zone resulting in large spikes of light been detected and disrupting the actual profile.

ABOVE: Actual Board



ABOVE: Hi Density Scan Data

Board or log stability is also essential through the scan zone - any bounce or jostle, roll will be interpreted in the geometry. The resolution of modern scanners will often be small compared to added wear or mechanical error in your system but remember when it comes to Optimizer accuracy all these other accuracy errors add up.

So key factors that affect accuracy are, board stability, scanner calibration, scanner frame design (i.e., no bent steel, vibrating or warping due to temperature extremes delivers inaccuracies) also chain encoders errors can introduce accuracy issues.” Your never more accurate than your worst component”.
Obtain better data requires design consideration around chain flights and chain spacing depending on the application. Narrow chain races are preferred for transverse scanning whilst still ensuring there is enough strength in the transfer to maintain stability.
The introduction of vision-based grade scanning also introduces further complexities around data and scanner setup and design which is a separate topic on of its own.
In essence a quality scanner should provide reliability over many years provided the scanner is maintained.
This means keeping the sensors clean and in calibration, maintaining the chains and support structures and checking cables and connectors. Remember also not to weld in a scan zone without disconnecting and covering the scanners or damage may occur.
Left unmaintained, any system will begin to see performance degradation over time so its important to take care of your investment.
(Some extracts care of Joescan Inc) by Automation & Electronics NZ Ltd

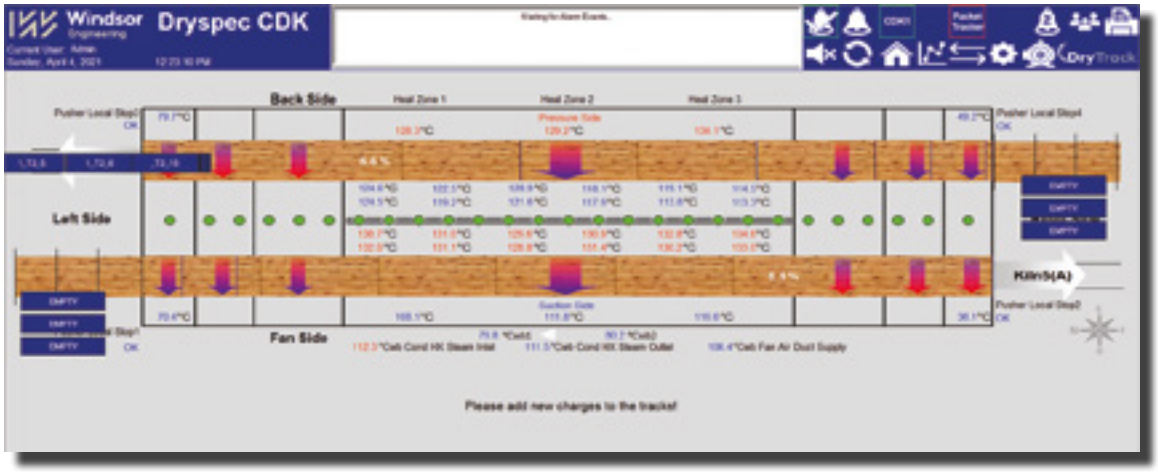
NEW WINDSOR KILN EXCEEDS EXPECTATIONS

The first of two Windsor Continuous Drying Kilns (CDKs) at the OneFortyOne plant in Mt Gambier commenced production on the 30th of March 2021.
This CDK replaces two older batch kilns that will be demolished shortly.

Each Windsor CDK has a drying capacity of 240,000m3/yr and is already exceeding expectations. The CDK is over 80m long and uses 16 barg high pressure steam from two existing biomass boilers.
Noise restrictions gave way to the development of the Windsor Quiet Mode (WQM) addition to the proven Dryspec CDK control system. Due to the local environment further attenuation measures were added to the design to allow the CDK to operate at full production 24/7. Even the site staff have mentioned they can't hear the kiln when it is running.
Windsor Packet Tracking (WPT) for CDKs was also developed and implemented on this project and is integrated with the SAP stock control system OneFortyOne already have on site. Packet Tracking ensures complete traceability of individual packets of lumber dried.

The installation of a Windsor CDK during a global pandemic hasn't come without its challenges. It has taken a great amount of help from the OneFortyOne site project team and various contractors to get the kiln completed.
Windsor, Automation and Electronics (A&E) and the site project team commissioned the CDK with minimal delays. Collectively a huge effort, with much appreciation to and from the site team.
Now, we are focusing on the second CDK! Further details can be found on the OneFortyOne's website:
https://onefortyone.com/16million-dollar-upgrade-to-produce-more-timber-using-less-energy-at- jubilee-sawmill/

Windsor Engineering



"We are thrilled with the efficiencies we have already gained since our 1st CDK commenced operation at the start of April.
The successful start-up of the kiln achieved the guaranteed push rates in the 1st 4 weeks of operation, reinforcing our decision to continue our partnership with Windsor after such successful batch kilns.
The Covid pandemic definitely added a different perspective to what was already quite a challenging project; installing 2 x 80m long CDK's without interruption to existing production flow. We did have a false start in March 2020, the New Zealand team returned home once we knew international borders were closing. Thankfully they were able to return in November 2020 and didn't stop work until the job was completed, including working right through Christmas.
The level of commitment shown by the Windsor team, build contractors of Carol & Guy and Dries from A&E as well as Skye was very impressive, they all did an exceptional job in trying circumstances.
The OneFortyOne Jubilee Sawmill team can't wait to see what the 2nd CDK achieves for our operation - it will be a game changer for us.

Thanks Windsor" - Paul Hartung, General Manager, Jubilee Sawmill Mount Gambier, OneFortyOne

NEW JOESCAN JS-50 WX SCAN HEAD
SAWMILL SCANNER

Scanning

New 3D scanner receives warm welcome

Sawmill scanning experts JoeScan has launched its latest JS-50 WX model scanner. A successful beta program saw scan heads put through the paces in mills across North America.

The JS-50 WX is being praised as a do-it-all sawmill scanner, with current installations covering machine centers from bucking lines to transverse edgers to trimmers.

"In order to facilitate the greatest range of options we tested the JoeScan's against a number of other considerations and decided to standardize on the JS-50 WX as part of our core offering," says Joe Korac, President at Automation and Electronics USA.

"With our optimizing platform's current projects requiring Log Merchandising, Whole Log Breakdown, Gang, Edger and Trimmer optimizers; the JS-50's unique attributes made it an excellent fit for all our customers' needs."

Automation & Electronics have been utilizing JoeScan JS-50 heads as part of the development of their NextGen Platform for Geometric Optimization, including this optimized trimmer.

Simplicity is the big advantage

Making scanners easier to install and maintain is the primary focus of the newest member of the JoeScan family. Sawmill-first features like Power over Ethernet single cable connectors and an intuitive new mounting bracket are aimed at simplifying the scanning experience for installers and operators alike. The API interface has been re-designed from the ground up to make the task of integrating JoeScan hardware with optimizer software as quick and easy as possible.

Early adopters have also been impressed by the next-gen performance and JoeScan's well-earned reputation for reliability.

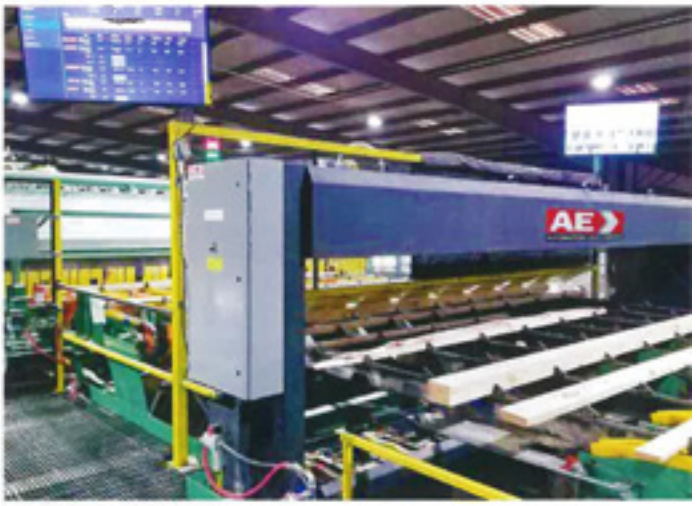
● JoeScan senior business development manager Blake DeFrance

"The new scan head delivers accurate high-density range data, quality 'Laser Imaging' data for inspection of visual defects and knots, and scan rates sufficient for high-speed systems," says Steve Fletcher, Director of Optimization at Timber Automation. "JS-50 WX provides us all this in a compact, reliable package. There is built-in redundancy with two cameras, and the 5-year warranty gives peace of mind to our customers."

A fresh face

To help introduce their new scanner to the industry at large, JoeScan has hired a new Senior Business Development Manager, Blake DeFrance. Blake brings with him over 20 years of industrial automation experience and a passion for forging partnerships.

"I'm thrilled to join such a dedicated and talented team," says DeFrance. "My #1 goal at JoeScan is to help our optimizer and OEM partners get sawmills the scanning solutions they need."



● A high density scanner in operation in the United States.

The JS-50 WX is just the latest innovation from a company that has dedicated itself to the sawmill industry for the last 20 years. JoeScan views JS-50 WX as the herald of a new age in sawmill scanning.

"The reception has been great so far, and we're really excited to expand the benefits of this platform through the parts of the mill not covered by our new WX model," adds DeFrance. "If someone is scanning it in a green mill, planer mill, or veneer mill, we want to find a way to make that process simpler and more reliable for them."

Work has already begun on developing a single camera variant of the JS-50 WX that will offer many of the benefits in an even smaller package. JoeScan invites anyone that shares their vision of simpler, more reliable sawmill scanning solutions to contact Blake DeFrance at Blake.DeFrance@joescan.com

AUTOMATION & ELECTRONICS
NEW STAFF

A&EUSA WELCOMES NEW STAFF MEMBER

Welcome to: Jordan Rowe

JOB DESCRIPTION AT A&E: Controls Project Engineer

Previous Job History/Education:
In Jordan's own words: "I graduated from the University of Illinois in 2012 with a Bachelor of Science in electrical engineering. Afterwards, I worked in phosphate manufacturing for food and pharmaceutical applications in Chicago, IL at a company called Innophos Inc. I was a part of the operations group where I handled site electrical and controls maintenance. I moved into managing upgrade and reliability projects, such as packaging machinery installations, waste water neutralization systems, and obsolete controls upgrades. In 2017, I moved to Asheville, NC with my girlfriend to become an electrical project engineer for Low and Bonar, which is a global manufacture of textiles and high-performance materials. There I managed machinery installations for non-woven extrusion and processing lines, controls upgrades for obsolete automation and distributed control systems, and managed the portfolio of site electrical upgrade projects. In 2020, I received my project management professional certification (PMP). In 2021, I left Low and Bonar to take on the position of Controls Project Engineer for A&E USA. In this role, I aim to help the US team in continuing to provide top quality solutions in the saw milling industry".

Family Details: I live with my girlfriend Joanna in a house we bought in 2019.

Interests: Renovating and improving the house (all I have done for the last few years!), travelling, hiking, and exploring Asheville.

AUTOMATION & ELECTRONICS
AWARDED CERTIFICATE

ROCKWELL AUTOMATION

APAC MACHINE BUILDER CERTIFICATE PRESENTED TO A&E

Rockwell Automation

Rockwell Automation

pic: Brian Smith (Director A&E) receiving certification from Rockwell Automation Directors

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