Cross Cut, Rip and Sorting
Pushing scanning to its limits

Claus Staalner

Let our Vision become parts of yours.....

My Name is Claus Staalner. We are pleased to present an overview as to why you need to embrace new technology today. We will take close look at WoodEye Vision Scanners,

My favorite subject – Why YOU need a WoodEye Scanner and if time allows, we will touch on how these animals work....

......So Lets begin at the beginning......
The Company –
Innovativ Vision AB
WoodEye was not just born yesterday.....In fact we delivered our first scanner back in 1987, which in computer language seems eons ago
Company

- 50 employees
- Head office Sweden
  - Development
  - Production
  - Installation, Training, Service
  - Sales
  - Marketing
  - Economy and administration
- Subsidiaries
  - Atlanta, USA
  - Siegen, Germany
  - WE Australia Ltd., Australia

Who are we and with whom are you dealing..........
Over 300 installations and more than 20 years in business worldwide

- Australia
- Austria
- Brazil
- Canada
- Chile
- Denmark
- Estonia
- Finland
- Germany
- Great Britain
- Italy
- Japan
- Kroatia
- Latvia
- Lithuania
- Netherlands
- New Zealand
- Norway
- Poland
- Russia
- Spain
- Sweden
- Switzerland
- Taiwan
- USA

-We are a worldwide organization with more than 300 machines in daily operation.

-All our developments and research is based within the woodworking business

-We are local – with our training, service and testing facilities soon to be located in the region we can offer you the best and fastest reaction time of anyone in our business!
What is particular unique to Wood Eye is that not only are we the oldest company {C} in the scanner business, but we are also the only Scanner company {C} of substance that specializes and work exclusive within the {C} Woodworking industry! We never changed software strategy –{C} we never changed hardware strategy – this to you means that folks buying a WoodEye 18 Years ago – can still get parts, service and support today! No-one else can do that!

This is short makes WoodEye the safe choice of a Scanner partner........
WoodEye is Global.............
Australia organization

WoodEye Australia Ltd.

New Zealand Service and Support

And WoodEye is local..........................
Here in Oceania your colleagues have graciously supported us with 13 Installations

We have been present in your market directly for the past 10 Years

We have been involved in processing Radiata for the past 10+ years both here and in South America

And we are now looking to make our presence even more prominent - offering better service and support.
Customers in Australia and New Zealand

Let’s look at where we are now.............
Claymark WoodEye Cross Cut

Order 0701,
installation 0708,
WE 4-sided with 2-sided color, 2-sided roughness detection, 2-sided thickness measurement
WE Shape,
Radiate Pine, Moulded, 70x22 to 195x50mm,
Appearance grading,
Two System TM Cross Cut Saw, System TM conveyor system,
Order 0711,
installation 0802,
WE 4-sided with thickness measurement,
Radiate Pine, Moulded, 68x19 to 200x50mm,
Appearance grading,
One used Paul Cross Cut Saw No. 11, local made conveyor system,
Order 0706,
installation 0709,
WE 2-sided with 2-sided color, 2-sided thickness measurement,
Slash Pine and Hoop pine, Moulded, 42x25 to 200x42mm,
Appearance grading, picking up structural grade from colormarks,
one Dimter 450 opticut Cross Cut Saw, Dimter conveyor system,
Order 0706,
installation 0803,
WE 4-sided with 2-sided color, 2-sided roughness measurement,
Radiata pine, Moulded, 75x24 to 200x50mm, Appearance grading,
Two Dimter 450 opticut Cross Cut Saw, Dimter conveyor system,
Pushing the limits

Investing heavily in product development
- Higher capacity and detection: 900 meters/ min
- Board control systems
- Colour and fiber analysis applications
- Increased modularization: add on sensors
- Internal crack detection
- Density measurements
- Rip scanning
- Board edging based on quality

Why WoodEye and what are we doing........?
Vida Project

- Speed 900 m/minut
- Board Control System
- KAR (Knot Area Ratio)
- Visual structure grading combined with sonic sensor for stiffness

New Development.....
WoodEye works well with Radiata for appearance grading

- Separate stain from wood
- Freekle detection
- Improved detection of false defects on dressed and rough surface
WoodEye for structural grading of radiata

- Fibre angle measurement (to be finalized 2008)
  - True angle fibre detection
  - Slope of grain
  - KAR (knot Area Ratio)
  - Density sensors
Scanning Australian Hardwoods

- Internal check detection
- Rip scanning
- Color matching
Where does the use of WoodEye Scanners Apply?

- Rip Saw Scanning and control
- Cross Cut Scanning and control
- Sorting/Grading after a Moulder/Planer
- Sawmill Grading after High Speed Planer

You have an ever increasing need for more flexibility, {Click} shorter production runs,

{Click}

faster delivery, {Click} better yields, {Click}

more utilization of your fiber.

We have machine and software solutions for many areas within your factory
Our systems are applied in {CLICK} Kitchen Cabinets

{CLICK} Flooring, like Karelia, Upo, Tarkett,

{CLICK} Furniture, Windows, Doors

{CLICK} Finger jointed construction lumber and component Mfg.
Here you see the different areas in your factories where you can use the WoodEye scanner and control what takes place in terms of

- Optimization

- Processing

- Defecting

- Material use
You are buying consistency!

WHY – Explain why....
Like here - a typical defecting line using manual marking....

-High Labor

-Lower production volume and quality variations

VERSUS
- Less labor

- More stream lines production

...and
We will apply different software tools for different client requirements, for different species, for different areas in your operation.
In fact WoodEye was the first and for the longest time the only Scanner manufacturer who used - What we refer to as MULTISENSOR technology.

What does this mean?

A basic WoodEye scanner most commonly is equipped with these tools – Read the slide
With the B & W Cam’s we find a lot of defects or objects as we would call them until they represent something we do not wish to include in our final product.
Gray scale analyze for detection of:

- Sound knots
- Black knots
- Cracks
- Dimension (width)
- Pitch pockets
- Contrast defects
- Spots

Some typical objects – READ the SLIDE
Fiber measurements

- Measure the fiber direction
- Fiber direction in normal wood is along the board
- Fiber direction in knots is out of the board
- Other types of defects also show variation in fiber “behavior”

With this tool we can detect good from bad. E.g. see the difference between a clear knot and good lumber or the difference between a grade mark and good lumber... As well as number of other interesting detection characteristic....
Fiber Analysis using lasers

The tracheid effect on a tangential wood surface. Light scatters in the wood fibers around a small laser spot forming an ellipse extended in the direction of the fibers.
A WoodEye measure the processed lumber dimensions – very accurately, using lasers and triangulation calculations.
We use profile measurement where you can control the shape coming out of the moulder and where we can compare this to a set profile for use in defecting, quality control etc.
And we measure thickness variances down to 1/64 (0.39mm) or better...for use on your face frames, door and drawer insert pieces.
We can apply true color detection capabilities for color matching, color grading or for identifying specific color flaws that may be incorporated into your grading rules.
Color is many things to many people....but some of the areas of interest could be
Benefits of Color-based Scanning

- Esthetics
- Decay
We can use and combine the measurement with a stress grader or hook up a moisture meter...and again use these results in our product optimizations.
External Sensor for Stress Grading, X-Ray

Ultra Sonic detection, Moisture control, Microwave technologies, Bow/crook/twist measurements and..... All....... Runing at normal production speeds

WoodEye

We can use a number of external sensors like e.g.

X-Ray - This may not always the best tool applied in our factories for many reasons E.g. High costs, High risks,

People liabilty and the like....and there is other and often better alternatives such as...
Ultra Sonic Detection

which performs many of the same task as what we use X-Ray for...

but a lot less expensive and a lot safer
And here – the set up in real life....

A really interesting tool for The cabinet business in particular.......
We can measure Bow, Crook and Twist and use these measurements in our optimization calculation.
Here is an example of the use of more complex grade rules where you can have different grade ruling for different surfaces within the same product.

{Click} Or an example from the cabinet component business....

An example of a WoodEye scanner at work, which would not be possible with a manual grader.
Higher yield

- You get same output with less wood input
- Especially for situations with complex rules - the scanner manage to find more optimum solutions for each board
- Just a few % savings in Yield will in most production lines represent large economical profits

-You get (CLICK) more product output

(CLICK) with same or less wood input (CLICK)

-You can now apply more complex rules like different rules for different clients
Or we can import Component drawings and place these around certain objects...again this would never be possible using manual grading or manual marking...
More even quality

- Scanners don't have Monday mornings

- Manual graders, all grade in their personal way

- Manual graders, very often, adopt the rules to the quality of the incoming wood

With a more even quality {CLICK} You will inevitably produce {CLICK} a better product that will yield a higher value {CLICK} for your customer
Board edging based on quality/
WoodEye Edger

- New product for the sawmill
  = green timber
- Optimizing based on
  geometrics as well as
  defects
- two sided scanning

WoodEye
The Rip line
A truly two sided system

Looking at both sides for optimal result
Same great interface
Standardized grading rules (NHLA)

First true NHLA Grading scanner will be delivered and installed in North America in 2008!
Here is an example of a planer grading line....

Where the scanner is performing the grading and sorting control
Here is a typical defecting line where One WoodEye scanner can control one two or 3 cross cut saws. Here the scanner will look for and identify objects like knots etc and being programmed with your desired product cutting list, the WoodEye will decide what product to make from the lumber fed to it.
Same but here shown in a one scanner

w/ One TM cut saw installation and
..And on a larger Scale;
One scanner feeding three Saws with automatic stacking {CLICK}

Out feed from scanner {CLICK}

Overview of the line {CLICK}

And into the saws........
We can go in as straight grading
WoodEye Sorter in the Saw Mill

Complete Grading up to 600 m/min

1910 ft/min +
Or the latest way of thinking.....

Board Data Control logics (BDC) – “finger printing”

.....marking, identifying and sorting
Marking cut positions and grade

Let’s look at some typical line designs for print lines

Next slide
Off-line optimizing using cut markings

Talk the slide

….or Using the latest Matrix code printing and application software....

Next slide
Or to make the confusion complete...

In a completely automated production line.

Here it could be Rip scanning and cross cut scanning

It can be grading, etc..

the possibilities are endless....
Better control of process by statistics

- Clear statistics of what is produced
- Statistics of the quality of the incoming wood
- Statistics/alarms as feedback to prior process steps like drying, moulding, splitting etc

So the scanner provides you with a better management tool...where by using a WoodEye you will now “know for sure” and BEFORE you begin the production

Versus

The system in place today, where you really “do not know” until after the facts!
More streamlined production line

• Better flow
• Better layout
• Higher speeds from less interruptions
• Better control of what to produce

By using the WoodEye you will experience a better production flow

- Have a more condensed lay-out – less space

- ...and ultimately better control over your production!
We hope to have shown you that Scanning is much more than just adding a machine.

It becomes an integrated part of how you choose to produce

-And it gives you numerous production opportunities that you would otherwise not have!

{Click}

In other words a scanner can provide you a Complete tool box for your rough mill lines
What will a WOODEYE Scanner do for YOUR CUSTOMER?

- Ensure that YOU HAVE Higher yield
- More even quality
- Less grading errors
- Better control of the process - statistics
- Savings in manpower/Labor
- Better handling of complex grading rules
- More streamlined production line
- Easier handling of changing grading rules

So why was it you have to **seriously** consider purchasing and using a WoodEye Scanner?

Read the slide.....

Which are all points that go directly to your bottom line......
I hope we have shown you why WoodEye is the most

-Safe Choice for your company

-The most simple Choice for you

-The very most flexible scanner for your operation

-The most complete scanner on the market today and

-The most valuable scanner that you can own – Period!

I hope that you have learned more about this exciting technology...and we will be around to answer any questions you may have or issues you wish to discuss in a more private setting.