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Outline



SiCam Profile



Measurement Technology



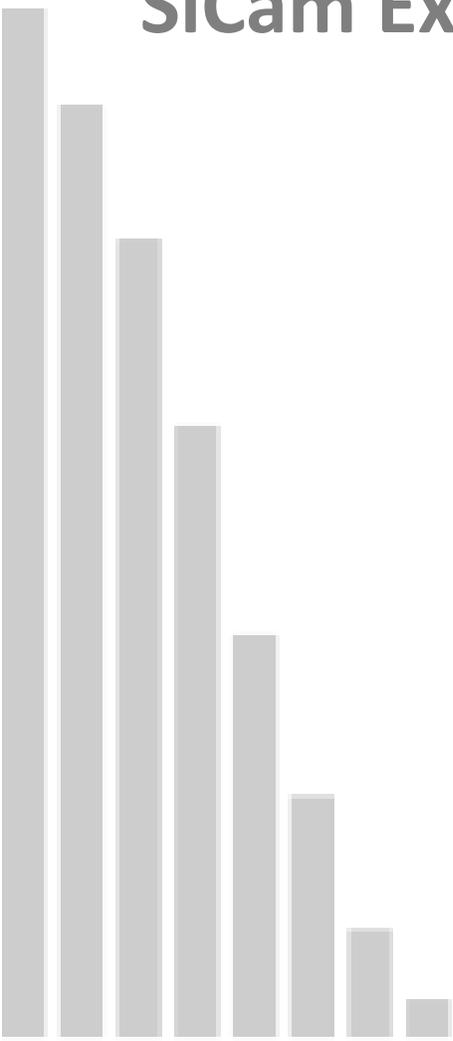
Closed Loop Systems



Value & Payback



SiCam Expertise



- Dedicated Lumber **Size Control** Systems
- Industry Wide **SPC** Training
- Manufactured Defect **Analysis**
- Intelligent **Closed Loop** Systems

Founded in 1990

Trusted Industry Leaders in Quality Control

Manual Tools



“Touch the Wood”

Realtime Scanning

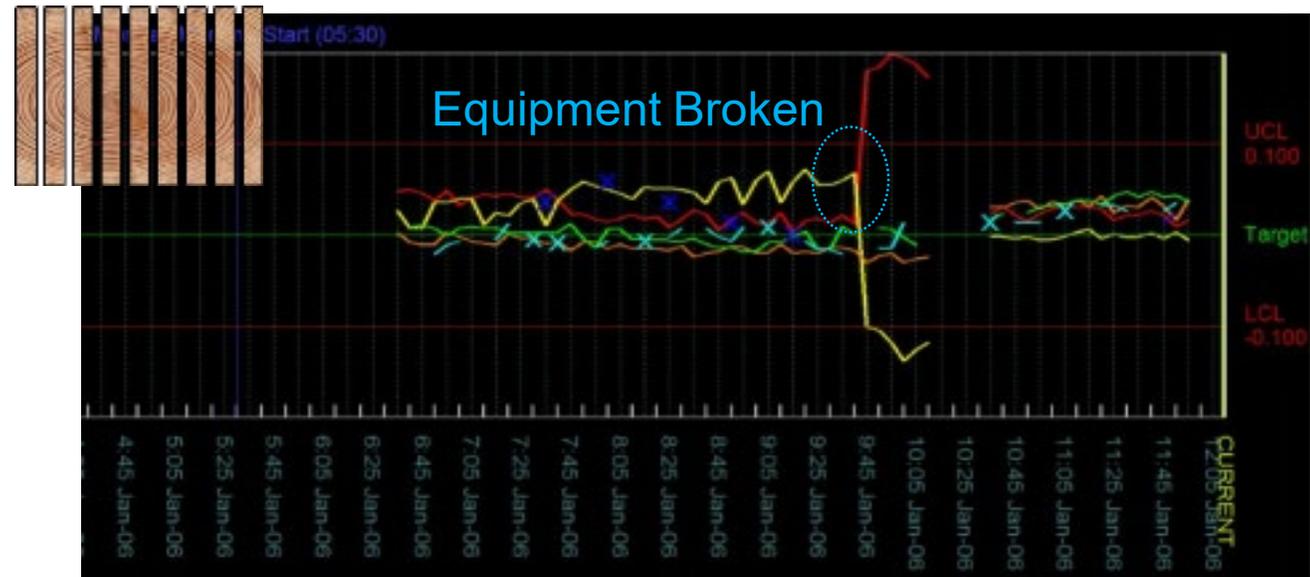


“Scan the Wood”

Intelligent Adjustments

Control Performance

- | Eliminate “Special Variation”
- | Identify issues quickly
- | Alarm and Stop!



Improve Performance

- | Reduce “Common Variation”
- | Identify trends/opportunities
- | Automatically Adjust Equipment



Quality Control

| Caliper and Laser Measurement Systems

Trending Information

| Focus on equipment behavior

Industry Training

| Corporate Partnerships and Mill Training



LSIZE



Primary



Secondary



Trimmer



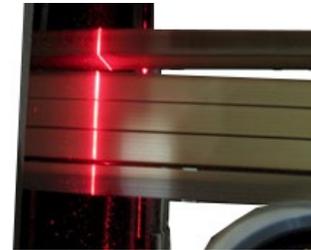
*Wireless Caliper
Handheld Computer*



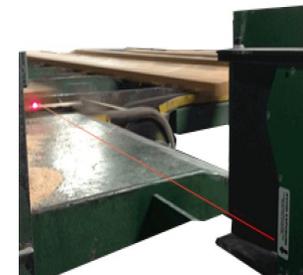
*Cant Width
Sideboard Thick
Small Log Line
Opening Face
Closed Loop*



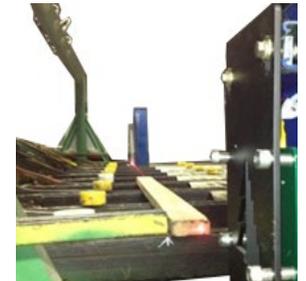
*Board Width
Edge Wane
Positioner Error
Closed Loop*



*Board Thick
Edge Wane*



*Fence Accuracy
Paddle Analysis*



*Length Gauge
PET Accuracy
Piece Drop out*



MEASURE

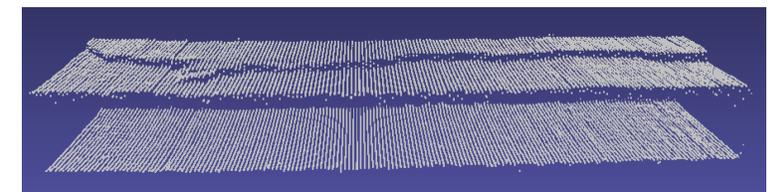
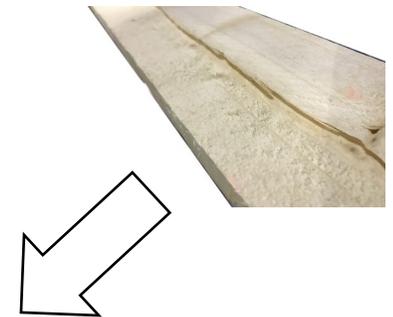
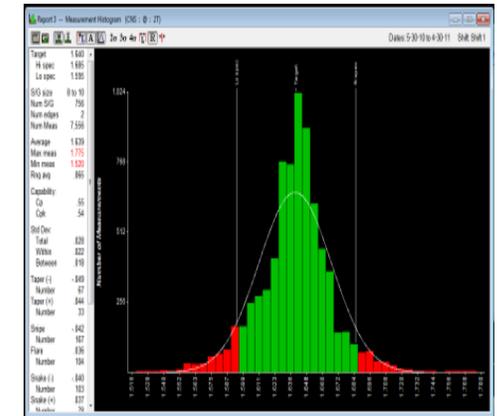


- LSIZE Caliper Size Control
- Machine Specific Scanning
- Integrate with Existing Systems
 - Optimizer Data
 - Theoretical Faces
 - Saw Deviation Monitoring

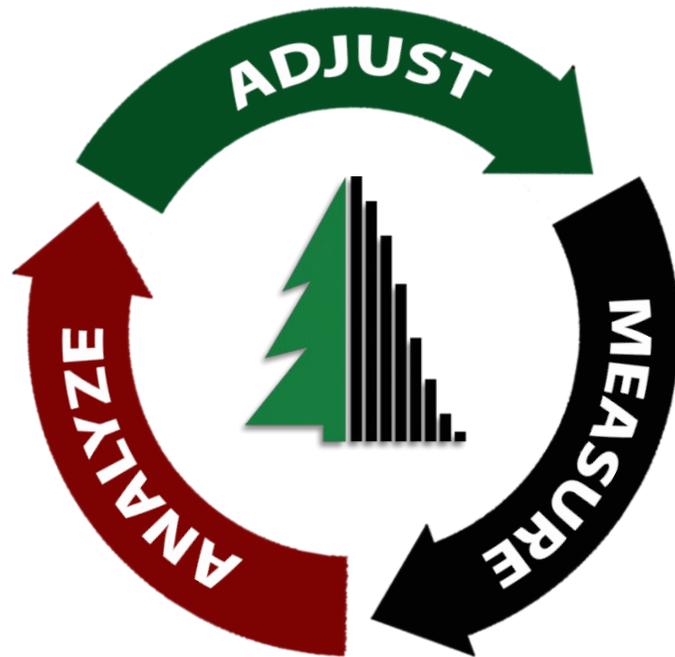


ANALYZE

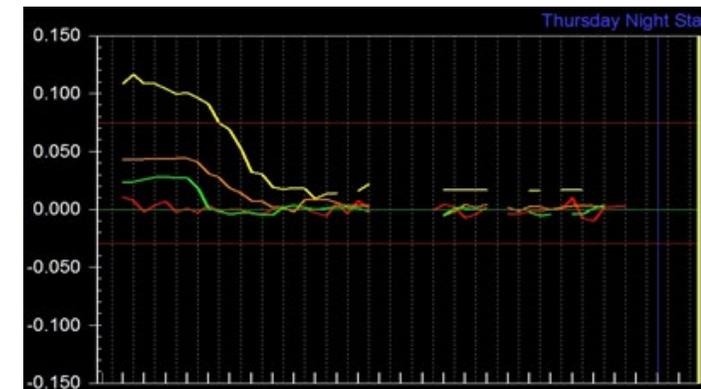
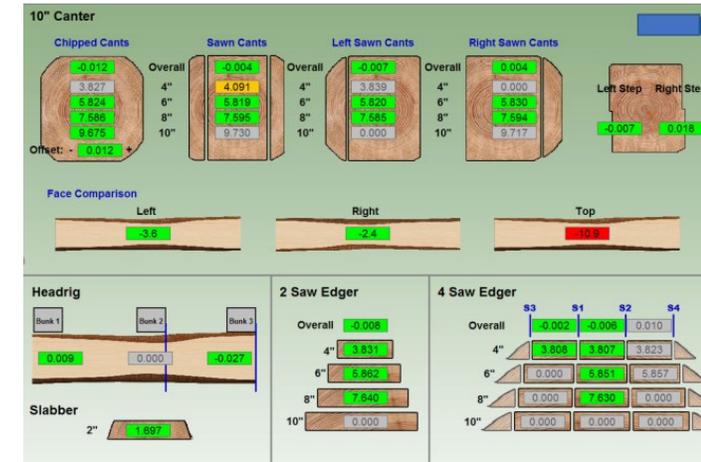
- Interpret Key Quality Indicators
 - Size & Standard Deviation
 - Key Performance Indicators
- Sawmill Size & Shape analysis
- Identify Manufacturing Defects
- Trend Machine Behavior



ADJUST



- Custom Feedback
 - Operators & Production
 - Quality Control
 - Management
- Intelligent Systems
 - Automatically Adjust
 - Preventative Maintenance
 - Predict Machine Behavior



Profile

Technology

Closed Loop



Mill Dashboard

Live Data

Historical

Operator Dashboard



Measure

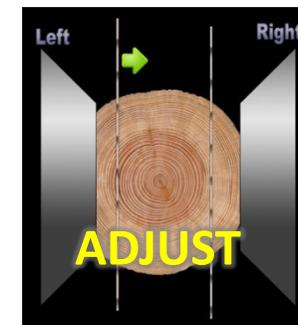
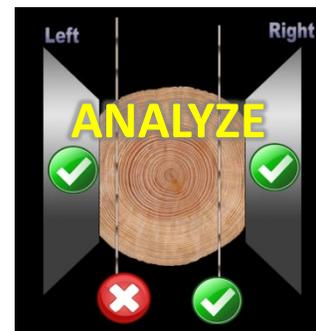
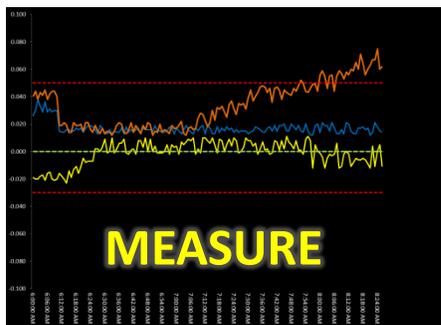
- | Measure and Trend Size Performance
- | Measure and Trend Face/Wane Performance

Analyze

- | Determine Correct Equipment to Adjust
- | Minor Adjustments to Maintain Performance

Adjust

- | Move Cutting Tools to Maintain Size/Quality
- | Track Adjustments Over Time



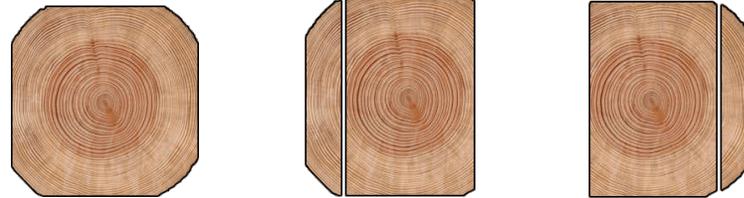
Size Control | Measure Sizes By Sawline
| Trend and Reset Values after Adjustments



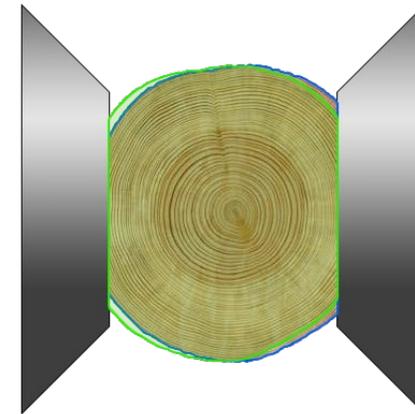
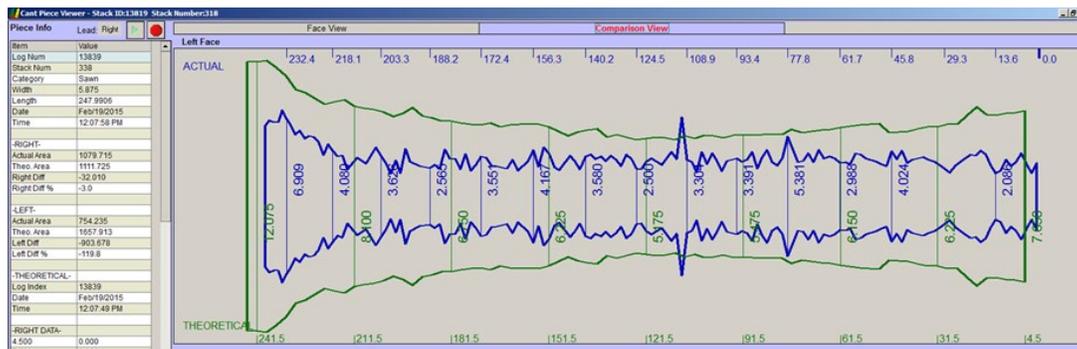
Chip Cant

Left Sawn Cant

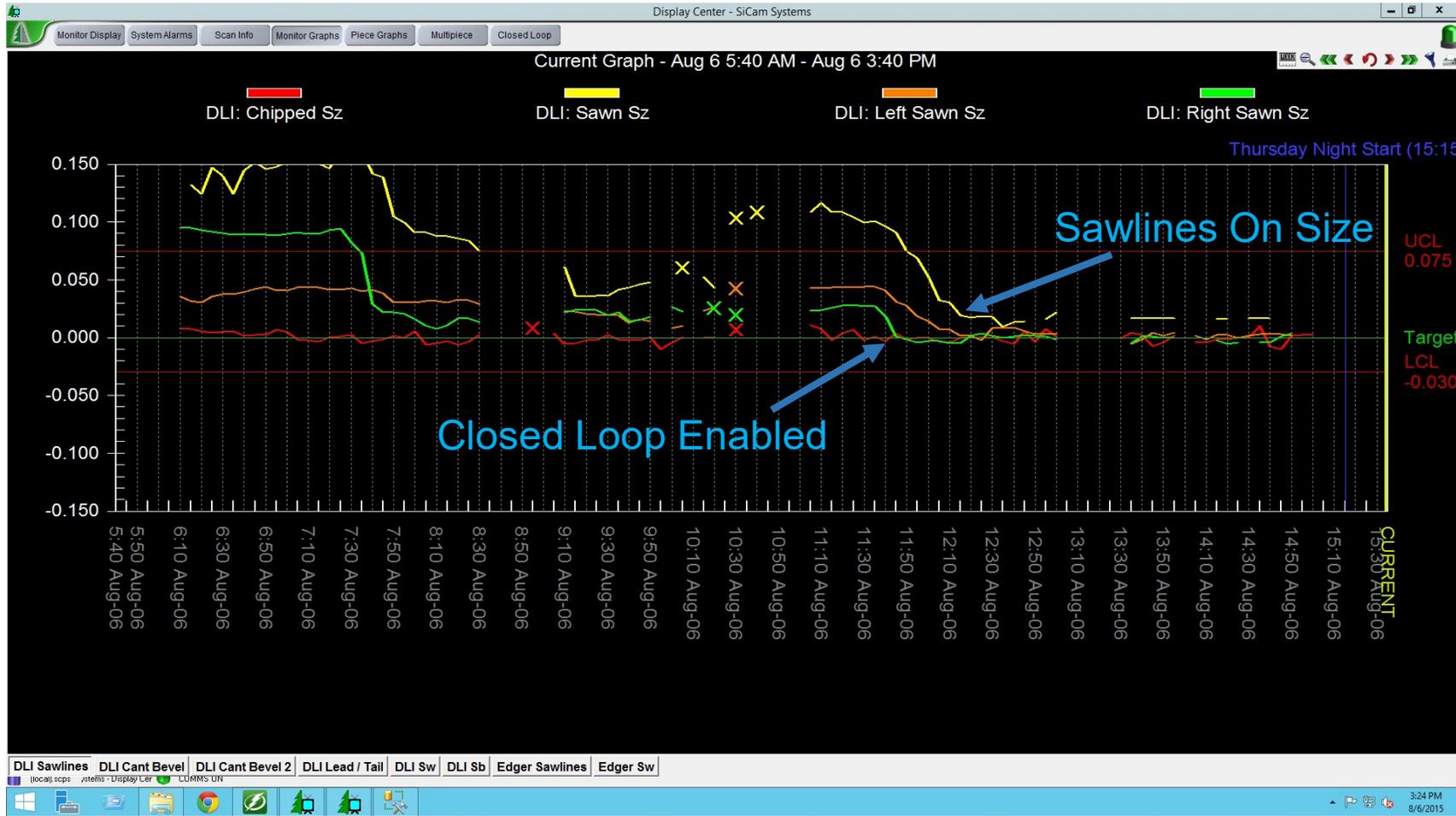
Right Sawn Cant



Open Face | Ensure Chip Faces are Balanced or Match Optimizer



Size Control | Measurement trends by Sawline (CNS)



Primary Breakdown

| **Canter, Bandmill MPX**

| Primary source of widths

| Measure: *Cant Width, Open Face, Sideboard Thickness*



Secondary Breakdown

| **Board Edger MPX**

| Often neglected or can run offsize without notice

| Measure: Board Width, Board Wane, Positioner error



Trimmer

| **Fence Verification SPX**

| Primary source of length issues

| Challenging to diagnose



* Cut Closer to Target or Target Size Reduction Opportunity

Canter Twin (DLI)

VARIABLES		
Target Size Reduction	(in.)	0.010
Cut Closer to Target	(in.)	0.010
Depth of Cut	(in.)	9.00
Length of Cut	(ft.)	16
Sawlines		1
Pieces /shift		5,000
Shifts /yr.		500

0.020" Opportunity

Board Edger

VARIABLES		
Target Size Reduction	(in.)	0.010
Cut Closer to Target	(in.)	0.015
Depth of Cut	(in.)	1.70
Length of Cut	(ft.)	16
Sawlines		1.70
Pieces /shift		8,500
Shifts /yr.		500

0.025" Opportunity

Cost Benefit Analysis Summary (Recovery Analysis)

Company:

Site: Some Division

Date: October 9, 2018

Machine Center	Gross Benefit	Added Process Cost	Net Benefit
1. Canter Twin (DLI)	\$125,100.00	-\$15,000.00	\$110,100.00
2. Board Edger	\$85,363.38	-\$10,235.42	\$75,127.96
Total:			\$185,227.96

Additional Payback Items
Closed Loop
Closed Loop

Global Variables
 Shifts Per Year: 500
 Lumber Price (\$ /MFBM): \$375.00
 Chip Price (\$ /BDU): \$50.00



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