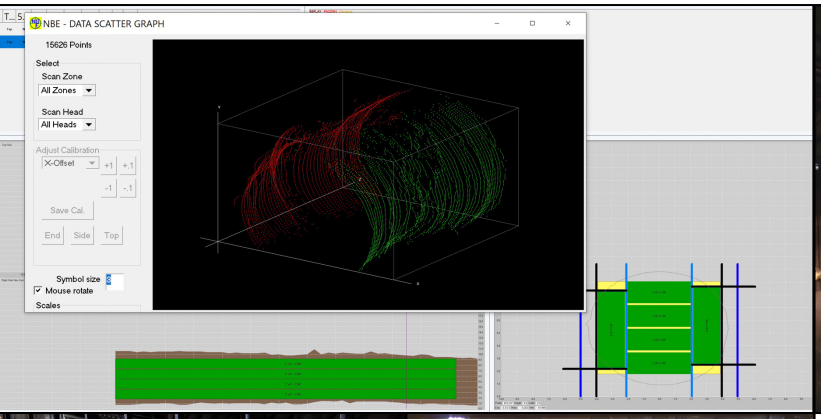
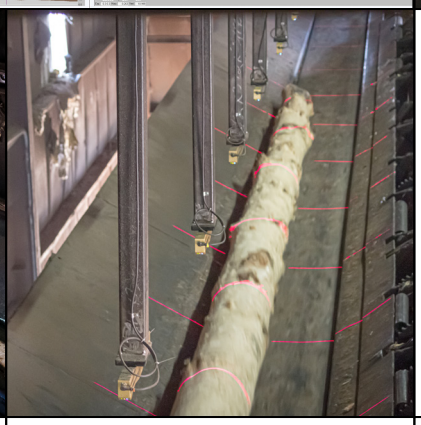
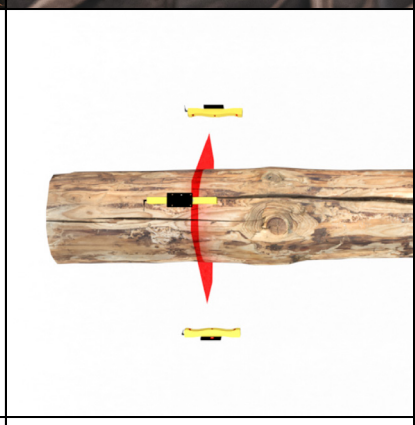
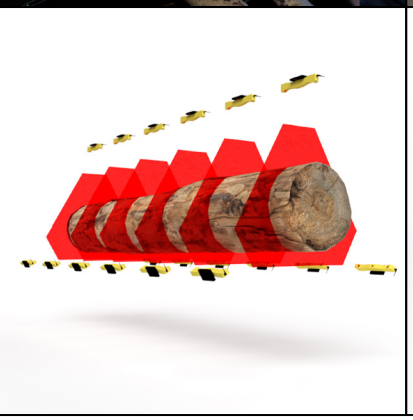
Log Bucking / Merchandizing Optimizer

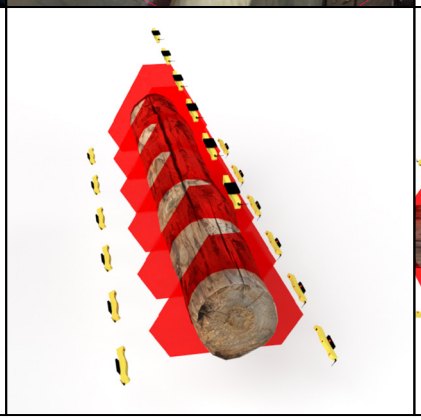
A full-stem length log is scanned by a 3D scanner. The optimizer computer calculates a solution of log sections to be bucked to maximize the value of the products that can be produced downstream. The iterative process involves generating dollar-driven solutions on all log lengths throughout the log in one-foot increments. By doing this dollar-driven optimization, your sawmill will get the highest ROI from individual logs.

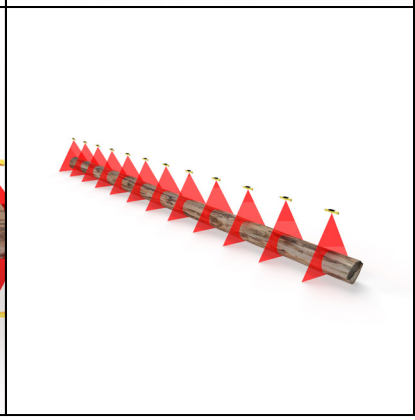








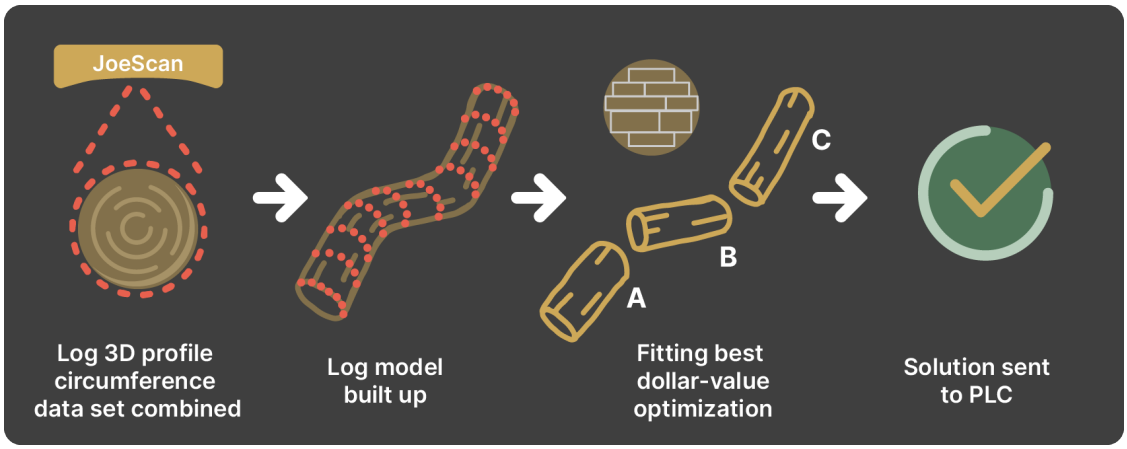




We are able to give you an optimizing solution with lineal or snapshot scanners.

 | cecilcompany.com | 503.860.3880 | robert@cecilcompany.com

Log Optimizer Process



1. Obtain 3D scanning data from scan heads.
2. Combine all cross-section data sets over the full length of the log to build a full 3D log model.
3. Optimization: iterative process to find the optimal solution which is to maximize the most valuable products.
4. The optimal bucking solution is selected and cutting parameters are sent to the merchandising machine.

Operator vs optimizer: A scanner-optimizer will produce a consistent output as the characteristics of logs are changing every day (without relying on the operator's judgment).

- Physical characteristics of the log - shape changes including bow, sweep, and cross-sectional shape.
- Operators are humans and are prone to make error. Their concentration throughout the day changes and they don't stay forever - therefore there is no consistency. It takes time to train an operator (learning curve).

Optimizing System Features

Optimization speed

Time is very limited in a log scanning system because the solution needs to be computed after the full length is scanned and before the log reaches the cutting saw. The cutting saw must have time to be positioned to make the cut. Our optimizer system is designed to get solutions very quickly, knowing that we have limited time. to train an operator (learning curve).

Multiple scan zones

Nearly all of our Optimizers can be used in a Lineal Scan configuration. In cases where a full log length of travel for the piece is not available for the scan, we can configure the scanners in multiple "Scan Zones". The Scan Zones are stacked side-by-side, with enough separation between the zones that each scan zone scans a shorter length range of the piece. At the completion of the scan process, the scans from each zone are then placed back together by the optimizer to get the full-length scan. This scan process allows the scan to be completed in a distance of travel that is considerably less than the full length of the piece being scanned.

General Features

- All NBE optimizers have tools for saving scan data, replaying saved files and assessing optimization decisions.
- The optimizer screen dashboard contains production statistics and current solution statistics.
- The supervisor computer enables the user to review past piece solutions.

User Interface of Solution Screen

Visually shows the user the piece that was scanned and the solution that has been computed. The table included with solutions for each scanned piece, allowing the operator to review current and recent solutions.

Historical Solution Analysis

We save the recent scanned pieces in the history for your review to be able to evaluate your system performance.

Windows-based system

The Optimizer software runs on a standard Desktop PC on a Standard Windows Operating System and is fully customized to each sawmill application:

- Each system features 2 identical computers: an Optimization Computer, and a Supervisor Computer.
- Optimizer Computer is devoted full time to dollar-driven, real-time optimization.
- Supervisor Computer provides Windows-based simulations and solution parameter editing.
- Supervisor Computer serves as a "built-in" spare to the Optimizer Computer.
- The Supervior Computer is not required for production.

Resources

- To learn more about the depth of how the 3D scanners capture the data, visit: joescan.com
- To learn how the NBE Optimizer performs calculations, visit: Lineally Scanned and Snapshot Scanned Log Systems (http://www.millsmart.com/log.html) and Lineally Scanned Log Bucking Systems (http://www.millsmart.com/buck.html).

How Log Bucking Optimizer helped others

Robert Cecil put an optimizer on a double quad for us first, and then later, one on our existing bucking line. We have purchased a third and that is on a board edger. With very little input from us, Robert was able to come in and make the optimizer perform exactly as we expected it. And after a little time when we wanted something extra, one telephone call, and he was able to remotely make changes to solve a new problem. I would definitely recommend Robert to anyone wanting sawmill optimization.

Andy Pollard | VP at Pollard Lumber Co., Inc.