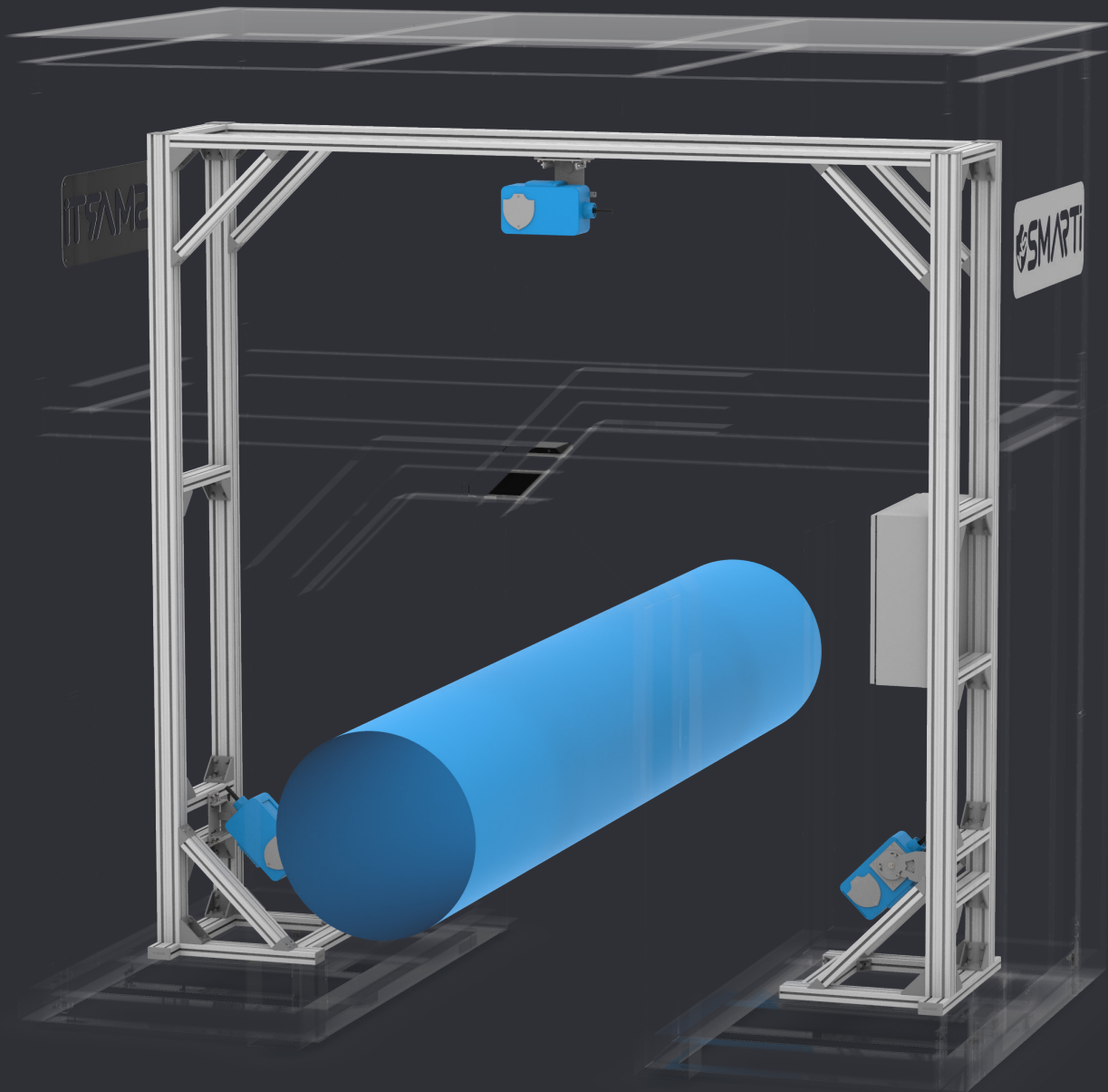




**WS 3000**

Log  
Scanner



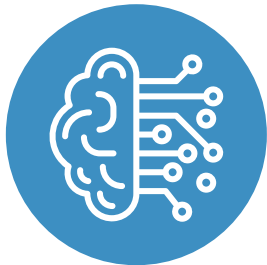


# Company Presentation



## About

**SMARTi Wood Scanning** as part of **TAB SYSTEMS Inc.** is a producer and developer of advanced AI machine vision systems for wood industry. We manufacture lumber and log scanners for cutting, sorting, grading and other multipurpose applications. Our lumber scanners support one-side or multi-side scanning with utilization of in-house developed AI algorithms for accurate defect/feature detection and classification. Optional x-ray scanning combined with advanced AI, furthermore offers insights into lumber structure, strength and hidden defects/features. Log scanners provide 3D scanning with optional x-ray feature for optimized sorting, cutting and grading.



### Cutting-edge

Class leading AI algorithms and machine vision technology in a quality solution.



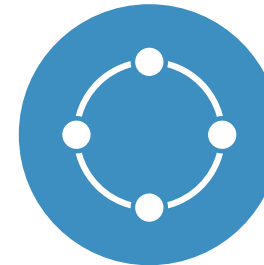
### Competitive

Market leading pricing with quality customer service for entire product/solution portfolio.



### Know-how

Team of experts from machine vision, AI/neural networks, wood industry and other fields.



### Adaptable

Customization options for detection requirements, wood species and machinery control.



### Made in Slovenia

In-house development and production of systems including software along with hardware.

# Philosophy



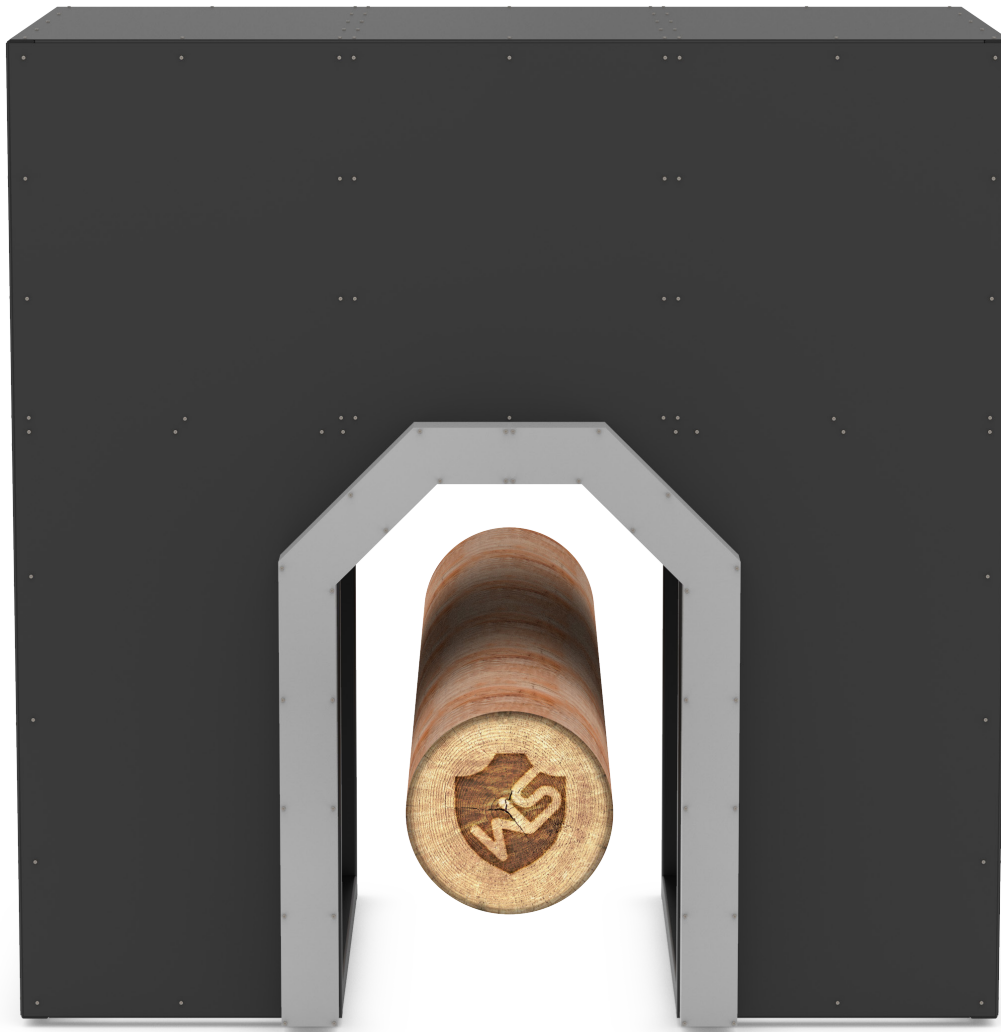
## Mission Statement

We are on a mission to constantly develop and manufacture advanced wood scanning systems to satisfy the needs of growing wood industry. Cutting-edge machine vision technology, combined with state of the art machine learning and AI algorithms provide an added value for the investment. Our solutions offer unmatched performance with increased yield, productivity and accuracy for cost efficient production process optimization.

## Vision Statement

To provide scanning solutions for optimized lumber and log processing industry with the use of cutting-edge technology. To offer advanced machine vision hardware and software solutions, supported with AI technology. To contribute to sustainability in business and natural environment by continuously developing next generation technological innovations for production processes in wood industry.

# Applications



## Log sorting and Cutting Optimization

SMARTI WS 3000 is a cutting edge 3D log scanning system with x-ray scanning option. Machine is applicable for optimized log cutting and sorting purposes. Logs are scanned with 3D machine vision technology and accurate 3D models are computed. Volume, circumference and accurate measurements present an important data for further industrial processing. X-ray scanning is an optional feature to detect inside abnormalities of logs, while also grading strength. In-house developed AI technology provides for accurate defect/feature detection and classification. Sorting parameters or desired cutting rules are set in accordance with standards or individually customized parameters. Cutting optimization assures for maximized yield output from every single log scanned.

# Sawmill Optimization



## Increase of Yield and Performance

Scanner installation ensures faster and more reliable sawmill manufacturing. Yield gains from controlling log sorting lines or optimizing log cutting patterns are substantially increased. Quality of scanning and defect/feature detection allows for higher product quality and consequentially lower processing costs. Scanning system offers value for its initial investment due to quality and performance upgrades. Machine is capable of controlling industrial sawmill lines to achieve completely automatized and optimized manufacturing. Control of machinery is autonomous and therefore eliminating the need for personal involvement. Customer support for all our products and solutions is guaranteed to enable uninterrupted production process.





# Scanner Options



## 3D Measurement

- 3D log model
- Length
- Volume
- Curvature
- Taper

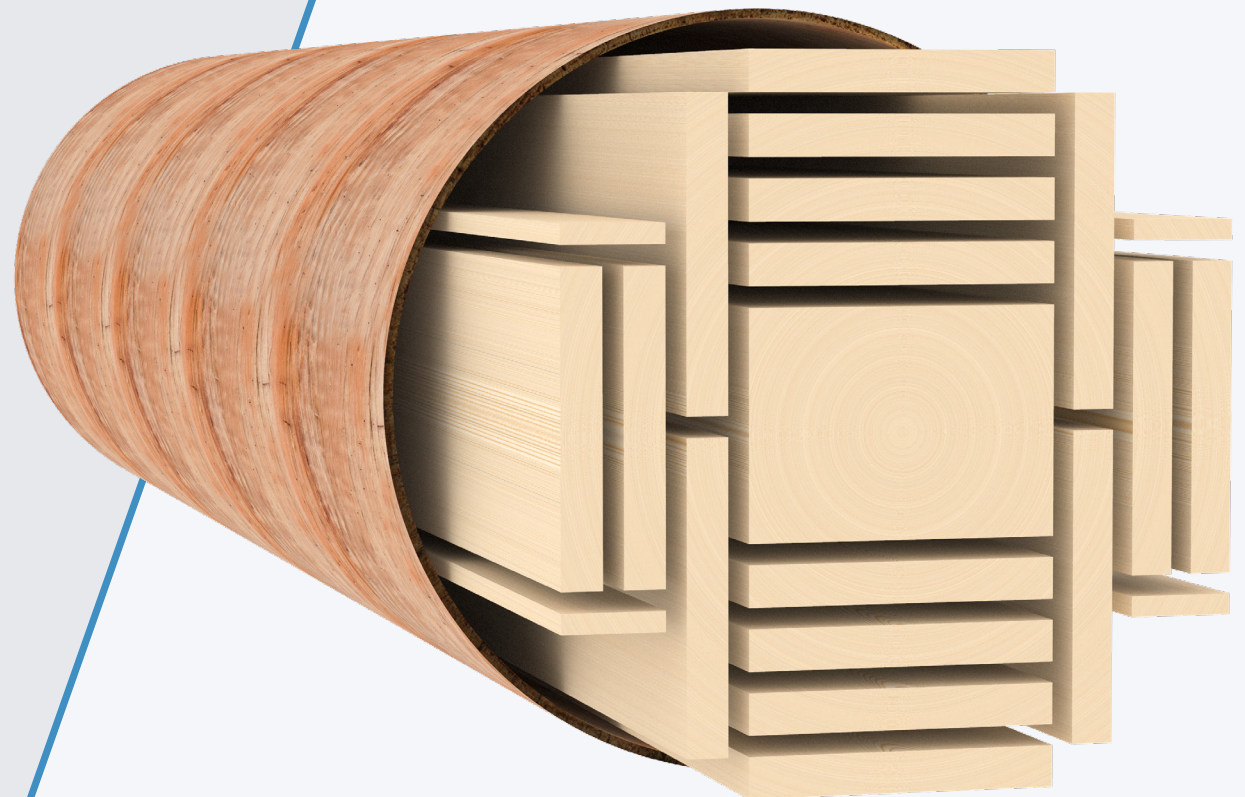
## Log Diameter

- 8 cm - 120+ cm

## X-Ray (optional)

- Bark pockets
- Resin pockets
- Pith pockets
- Internal holes
- Inside abnormalities: rocks, nails, shrapnels etc.
- Custom defect options

## Cutting Optimization

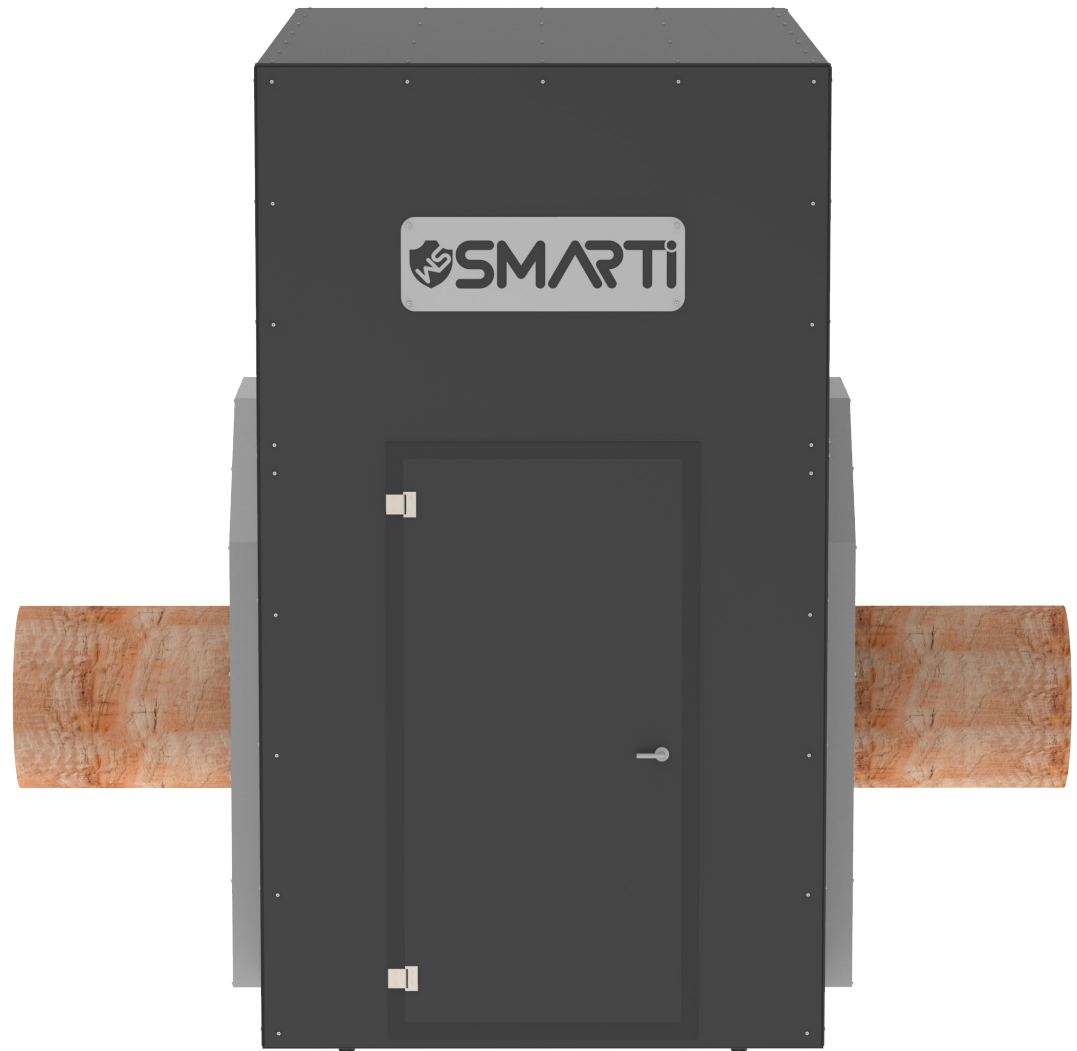


# Technology



## 3D Scanning, AI and Machine Learning

SMARTI WS 3000 is a high performance 3D scanning system. It is based on 3D vision technology to generate accurate 3D models of individual logs. Information such as volume, circumference and shape features are processed from the point cloud data. In-house developed optimization software is then applicable for obtaining optimized cutting patterns and sorting outputs. AI technology is incorporated to provide defect/feature detection and classification for x-ray data. Machine learning is based on controlled defect/feature inputs in a process called annotating or teaching the machine. Defects/features are marked or annotated on scanned x-ray images of logs. A large enough dataset represents a basis for machine learning and accurate detection AI models creation.





# Software Interface



## UI with Powerful Options

User interface is accessible via touch screen terminal for controlling the scanner. Logs are displayed in real time with length, cross section and circumference information available at any point of the 3D log model. Logs can be rotated and inspected with all the relevant data included. Information about single logs and about current production batch is presented on the home screen. In SMARTI user interface there are classifications to work sets and batches. Work set is a set of rules for cutting and sorting that are set by the user or pre-set to support desired standards. Batch represents logs that are scanned with a set of rules for specific work set from the point of starting to stopping the production. Users can access individual logs in a historical database and generate different reports for supplier or management purposes. Statistics and simulations are provided as standard. Client management and pricing strategies for individual clients can be customized within the UI. Simulations allow for adjusting batch settings and seeing would-be outputs on already scanned logs. The feature allows for experimentation without harming real production yields. Software also allows for different user rights in order to control and protect manufacturing process.



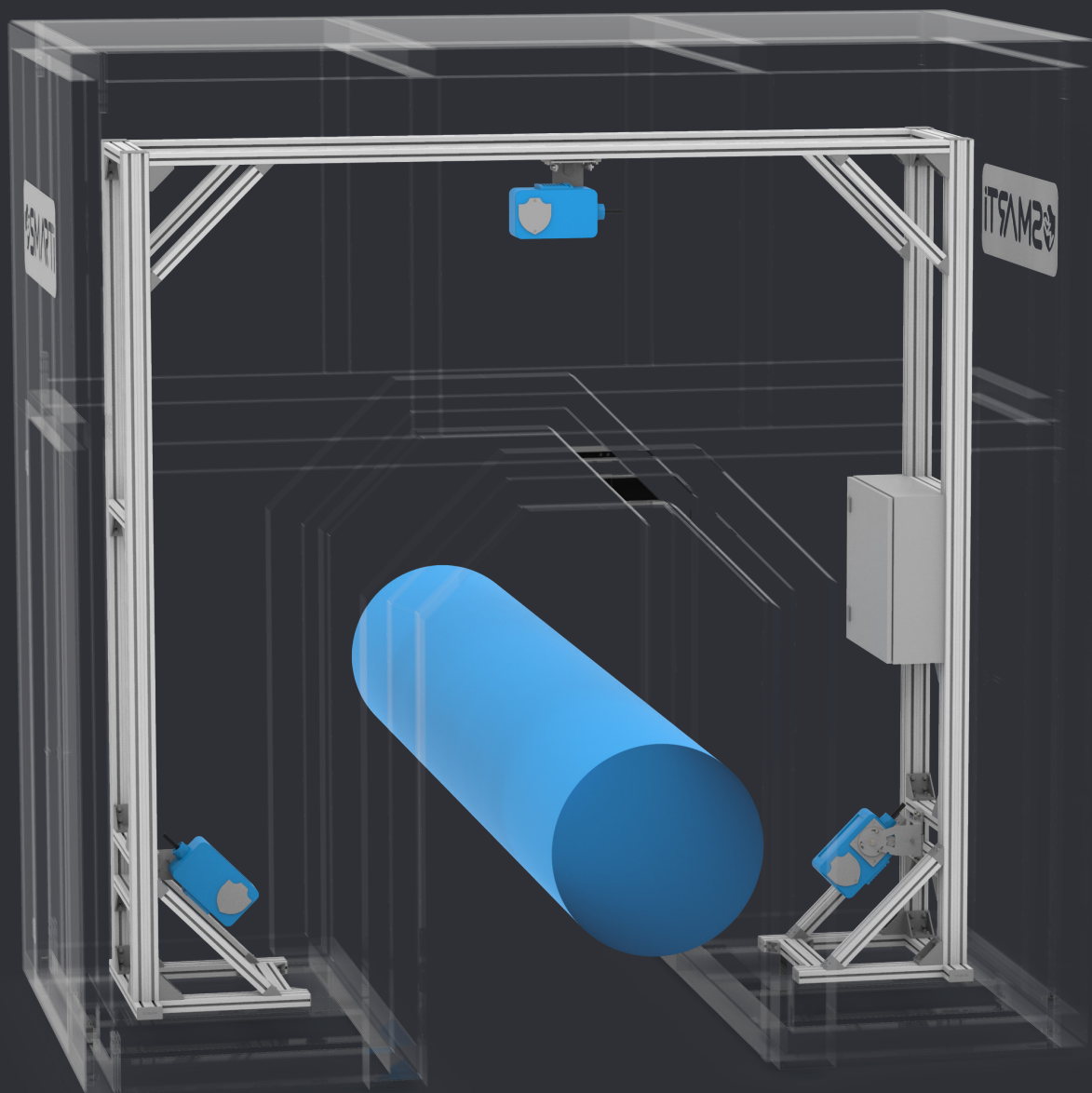
# Connectivity



## Industry 4.0 and Smart Manufacturing

SMARTI WS 3000 is an advanced machine supporting communication and control of sawmill mechanization. Log sorting and cutting according to set work set parameters represent an output of the scanner. Mechanization can be controlled via the machine to accommodate for fully automatized and optimized manufacturing processes. Multiple sorting lines and saws can be managed directly or signals can be provided from the scanner to support smart industrial production. Software architecture allows for setting up multiple scanners in one or multiple physical locations that can be managed via one central hub. Users can keep track of their production efficiently and with ease. This delivers exceptional value for data manipulation and decentralized machine control. Connectivity options are eliminating the need for third party management software solutions and therefore saving costs. Scanners are enabled to be controlled from anywhere and at any time.







# Advanced AI Wood Scanning Solutions

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