AUTOMATION AND SOFTWARE FOR SAWMILLS

LOG ACCOUNTING

LOG SORTING CONTROL

SAWLINE CONTROL AND OPTIMIZATION

BOARD SORTING CONTROL

DRYING KILNS AUTOMATION

AVTOMATIKA-VEKTOR

Automation&Software

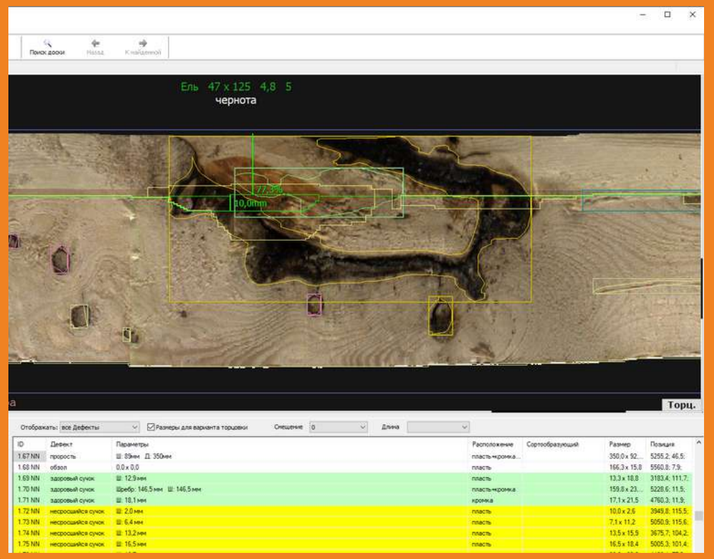
www.a-vektor.ru

ABOUT US

AVTOMATIKA-VEKTOR was organized by a group of engineers and programmers in 2009.

We work in the field of timber industry enterprises **automation**.

We help our clients to minimize downtime periods and non-production costs caused by them, to reduce raw material consumption and **to optimize enterprise control**.



- ✓ **40+ professionals** in the team
- ✓ **25+ years experience** in this field
- ✓ **200+ projects** in Russia and abroad
- ✓ **patented software and certified equipment**

SAWMILL AUTOMATION

ALL PROJECTS ARE PERFORMED INDIVIDUALLY WITH CUSTOMER'S REQUIREMENTS TAKEN INTO ACCOUNT

DESIGN

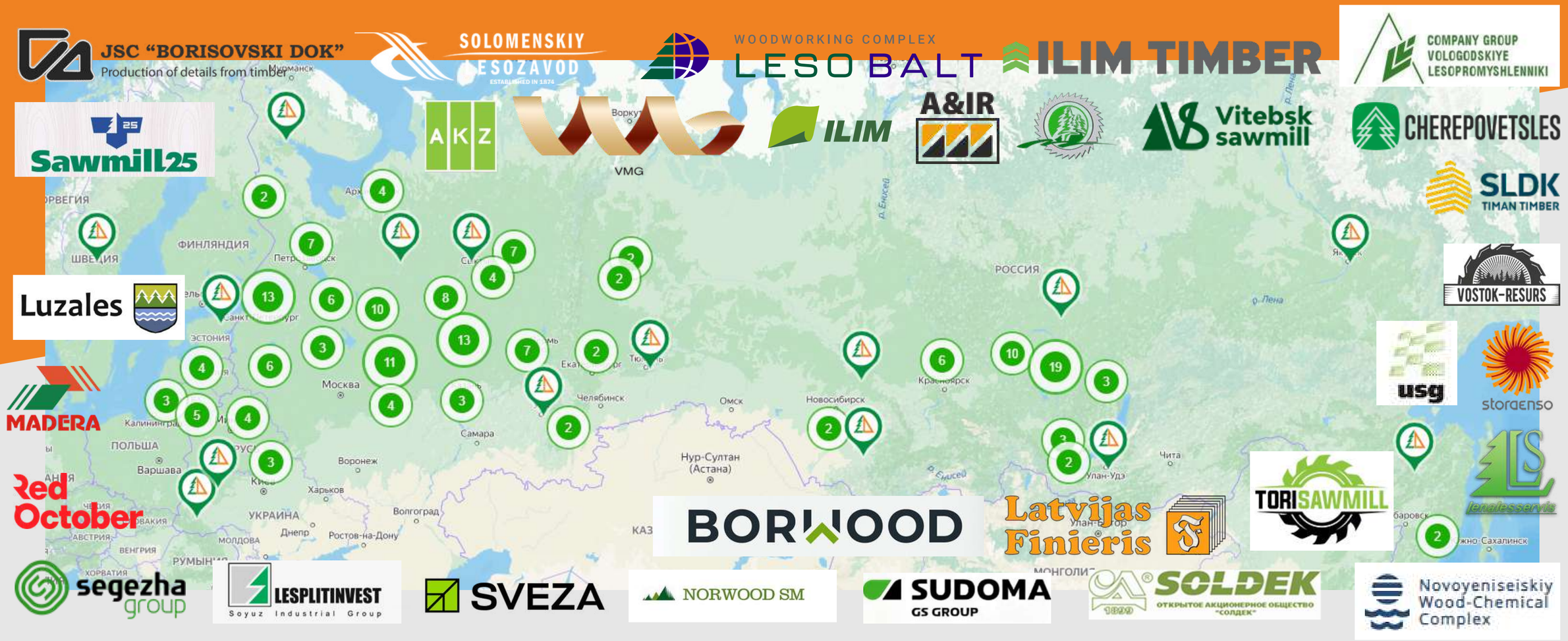
SOFTWARE DEVELOPMENT

PRODUCTION

COMMISSION

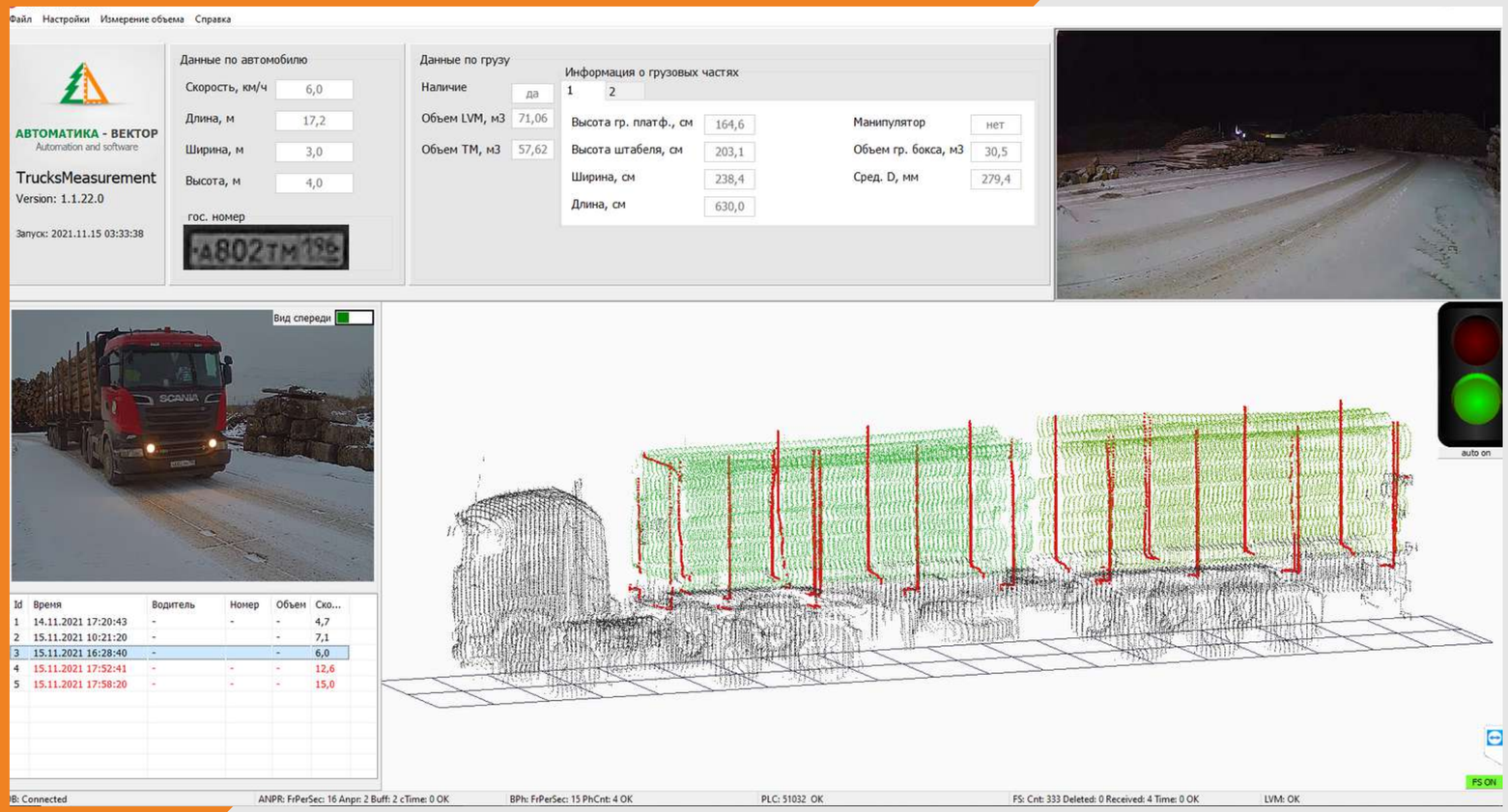
TECHNICAL SUPPORT

REFERENCES


JSC "BORISOVSKI DOK"
Production of details from timber
SOLOMENSKIY LESOZAVOD
WOODWORKING COMPLEX
LESO BALT
ILIM TIMBER
COMPANY GROUP VOLOGODSKIYE LESOPROMYSHLENNIKI
Sawmill25
AKZ
VMG
ILIM
A&IR
Vitebsk sawmill
CHEREPOVETSLES
SLDK
TIMAN TIMBER
VOSTOK-RESURS
Luzales
MADERA
usg
storaenso
Red October
BORWOOD
Latvijas Finieris
TORISAWMILL
lenalesservis
segezha group
LESPLITINVEST
Soyuz Industrial Group
SVEZA
NORWOOD SM
SUDOMA
GS GROUP
SOLDEK
Novoyeniseiskiy Wood-Chemical Complex

TRUCK INSPECTOR

SYSTEM FOR AUTOMATIC MEASUREMENT
OF TIMBER VOLUME ON TIMBER TRUCKS



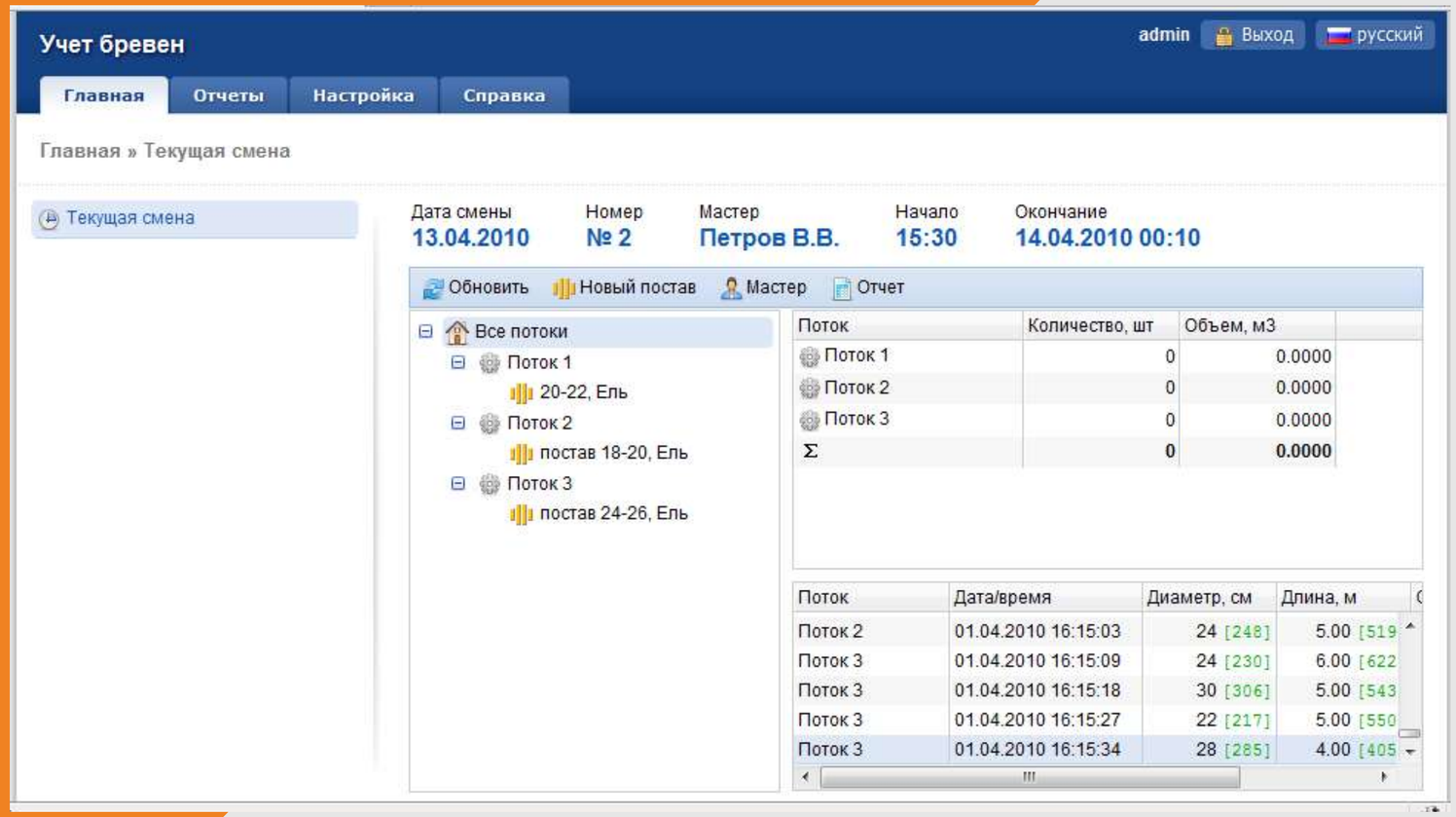
Functions

- cargo detection with filtering of the external parts of the truck (racks, manipulator, etc.)
- determination of the average diameter in a stack of logs with correction by taper
- report generation (per period and per truck)

Advantages:

- high accuracy and repeatability of measurements regardless of weather conditions and time of day
- full automation of the measurement process without timber truck stop and the constant presence of the operator
- objectivity of measurement results due to the absence of a human factor

ROUND TIMBER ACCOUNTING

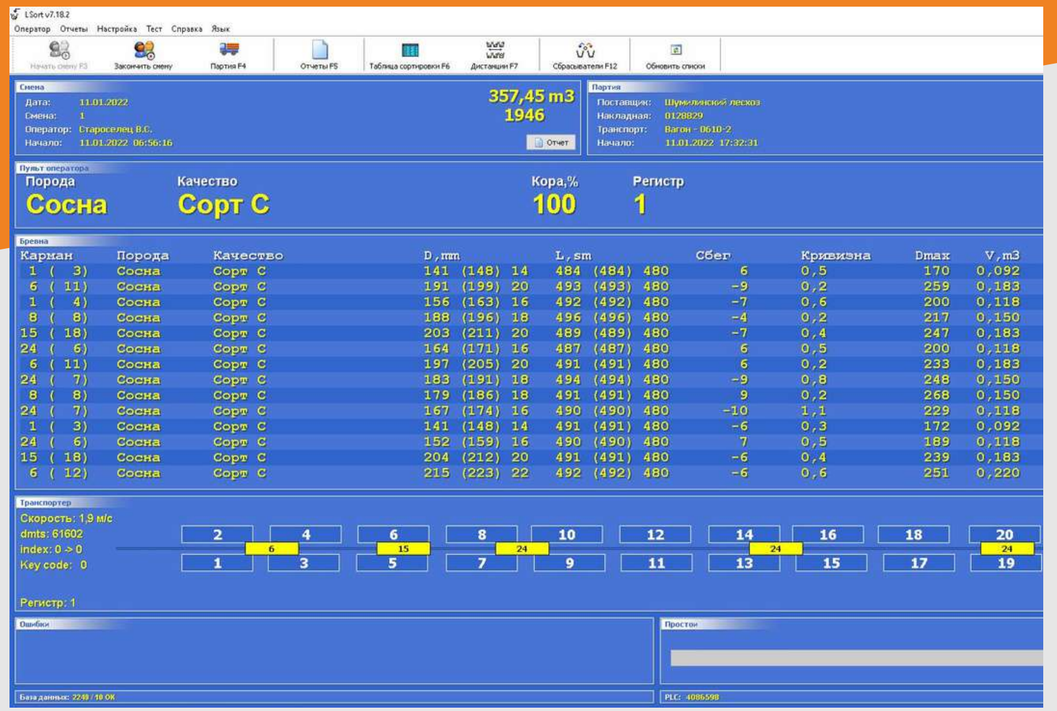


- **Prompt, accurate and objective information on number, volume, quality and dimensions of the raw material** being processed or in production.
- VECTOR log measurer allows to registrate, accumulate and store information **in real time** with minimum subjective factors when determining the geometric dimensions of logs .
- As an additional option, it is possible to connect a **data display** to the accounting system. It will show online information on the quantity and volume of roundwood received for a certain period.

LOG SORTING CONTROL SYSTEM

Delivery set:

- VECTOR log measurer
- control chair and operator's PC
- automation cabinets
- power equipment
- specialized software



Automation for all line units, process visualization, sorting accuracy improvement, advanced reporting system.

VECTOR LOG SCANNERS

VECTOR-1D

measuring logs in one plane

Main application: round timber accounting when feeding to sawing or peeling, and automation for "butt/top" log rotation.

VECTOR-3D

3D-scanner for logs

Used as a part of round timber sorting lines, sawmill control and optimization system, and for round timber accounting.

According to data obtained
from open sources,l og scanners
Vector-1D and Vector-3D measured
more than 35 million sq. m.
of round timber during 2019

The “VECTOR" system measures
EACH SECOND SQUARE METER
of sawlog in Russia

SAWLINE CONTROL SYSTEM

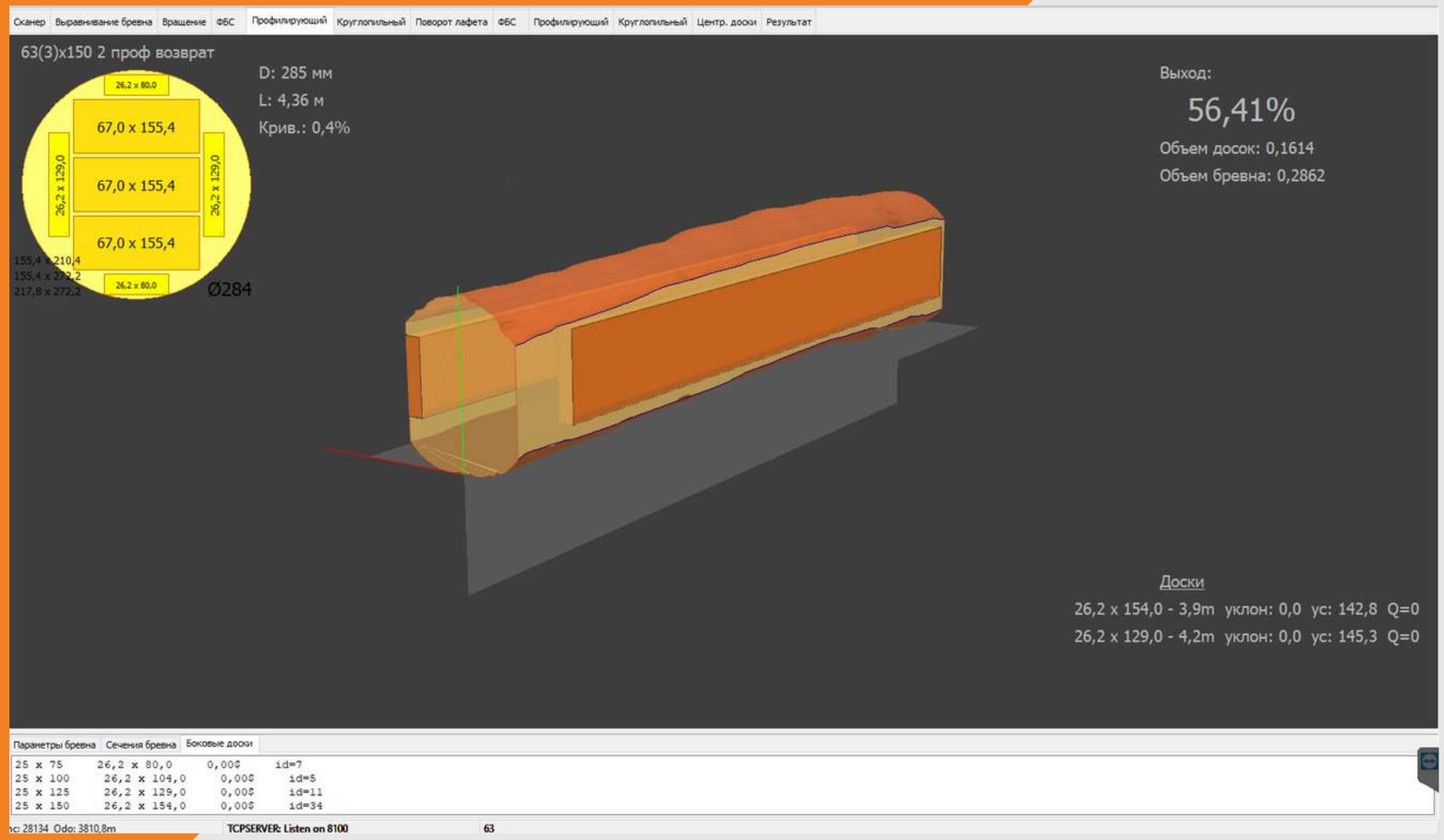
- **The Vector-3D log scanner** is mounted on the line. **The operator's place** is equipped with one or two process visualization displays, video surveillance monitors, a panel with the main controls and alarms.

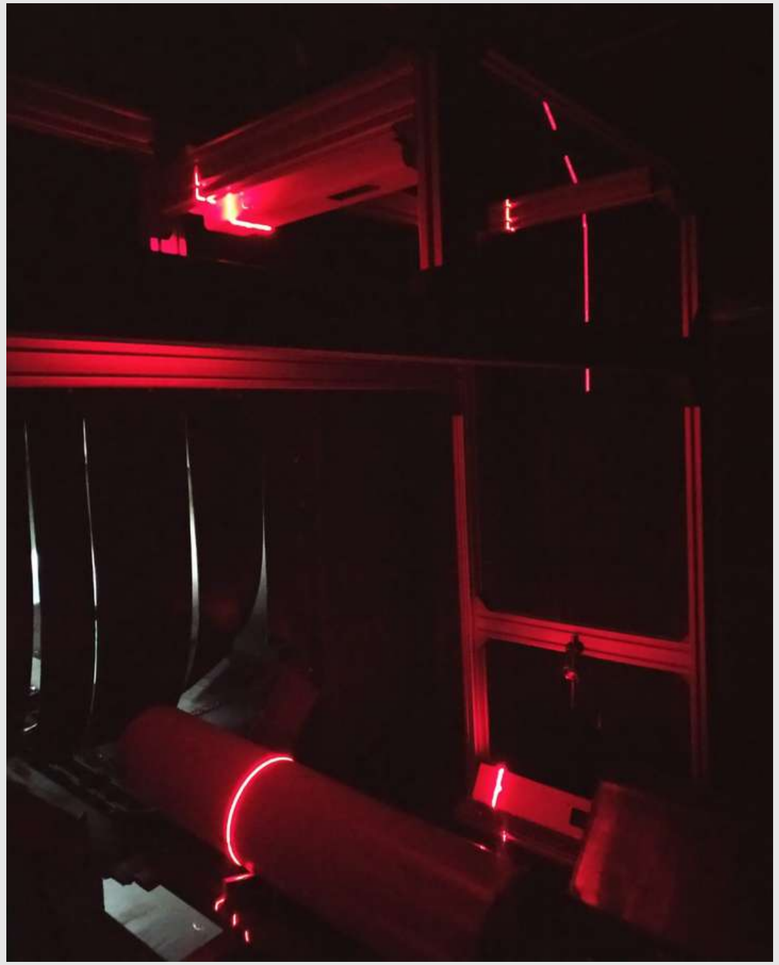
- From here operator can **control all sawline units**, perform saws positioning, track the logs and boards position on the conveyor, block emergencies .

- **Specialize software** allows to get the maximum possible yiled of lumber by calculating the optimal angle of log rotation by its curvature and optimal side boards widths.

SMARTSAW PROGRAM

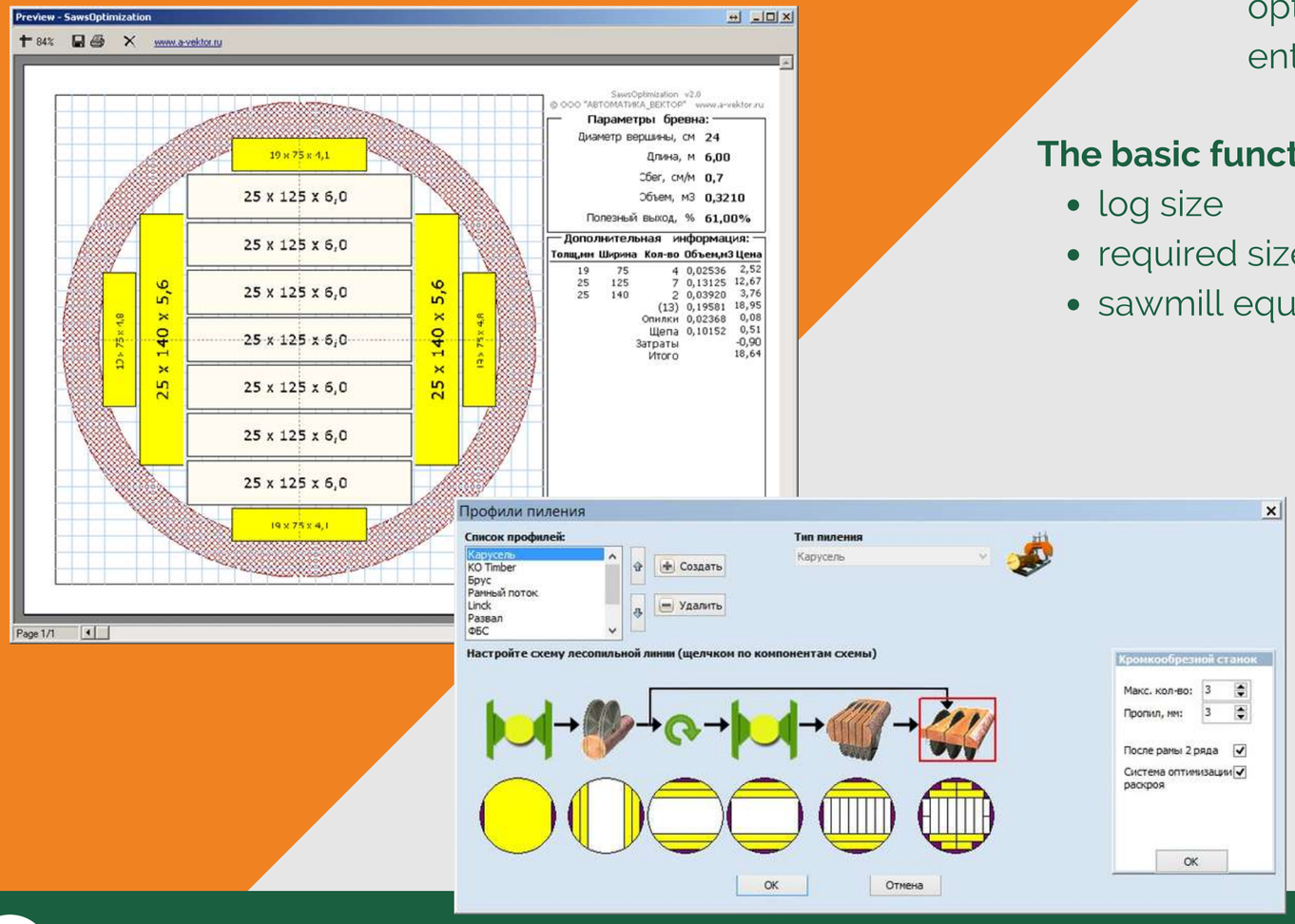
The Vector-3D log measurer gives a 3D log model, which is analyzed by **the SmartSaw optimization program**





SAWING OPTIMIZATION SOFTWARE

SawsOptimization program is created for sawmill production technologists and planners



There are several versions from the simplest one, which gives optimal cutting plans, to more complex ones, designed for large enterprises

The basic function is to calculate the optimal sawing schedules based on:

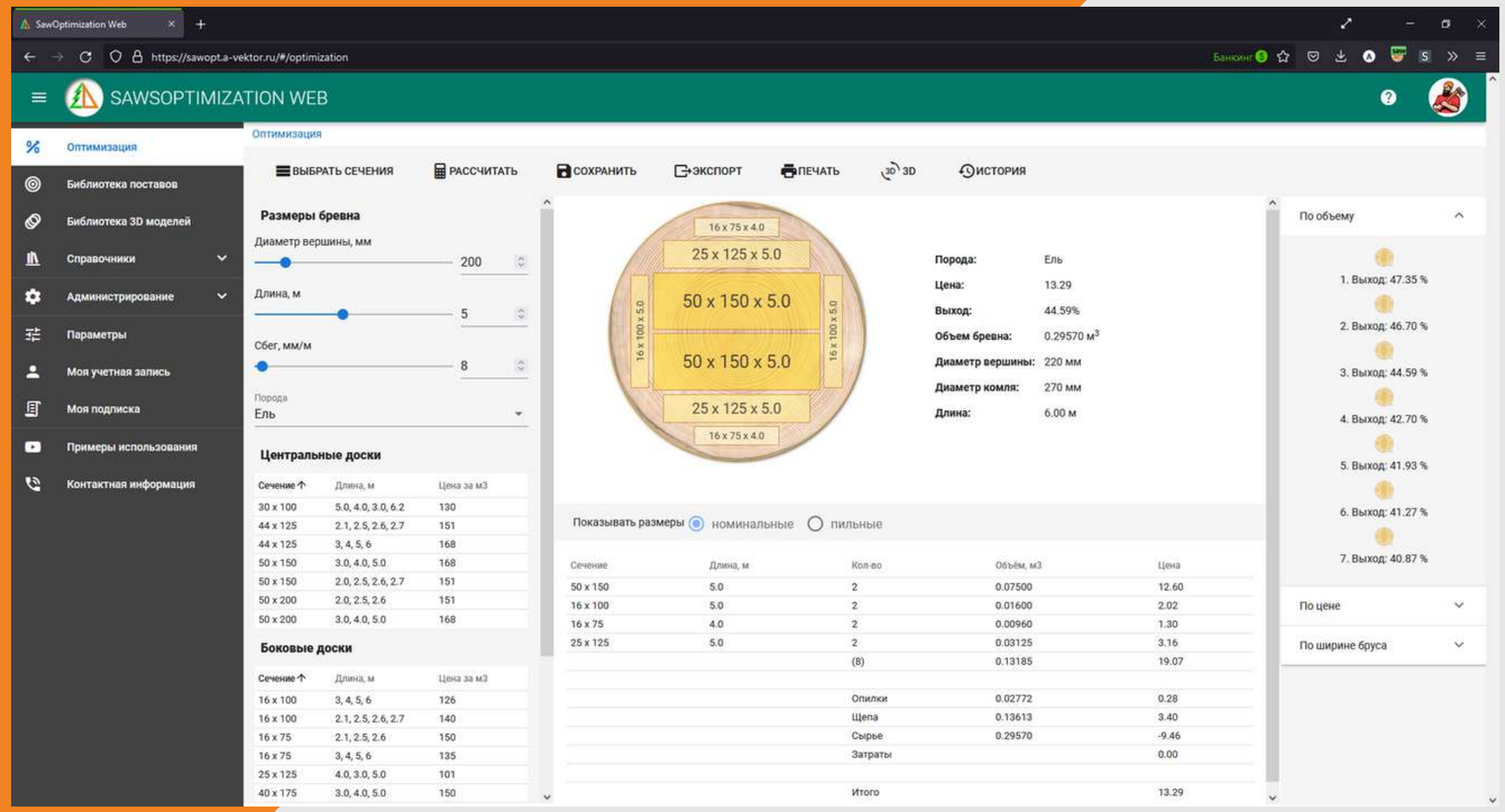
- log size
- required size of lumber and its price
- sawmill equipment characteristics

Additional features in the professional version:

- functions for planning engineers (e.g. group optimization for logs of different diameters)
- optimization by the log curvature
- optimization of log sorting by sawing schedules for achieving the maximum product output
- integration with the smart log sorting OptiGrade and the SmartSaw optimizer

SAWING OPTIMIZATION SOFTWARE - WEB VERSION

What is the difference between SawsOptimization and SawsOptimization Web?



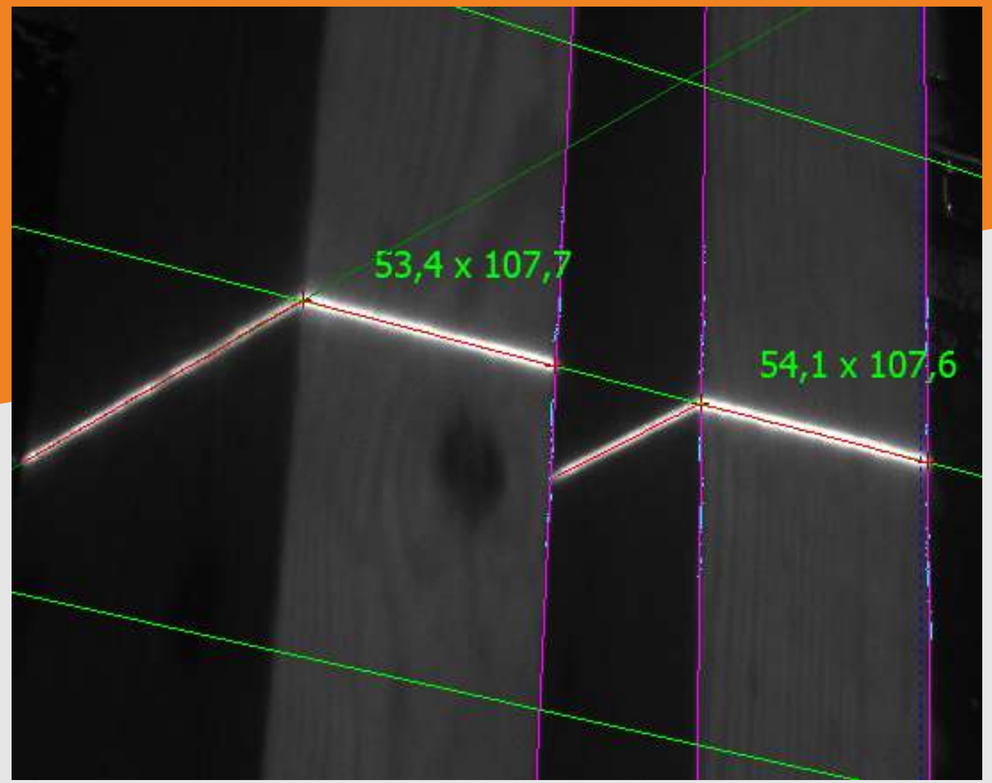
SawsOptimization Web

- is not bound to a specific computer: data is stored on the server
- allows to connect any number of users - all depends from type of your subscription
- provides all program updates immediately

BOARD SORTING CONTROL SYSTEM

- All line actuators operation control
- Implementation of automated systems for quality and wane detection
- All lumber geomteric allowances control
- Productivity increase

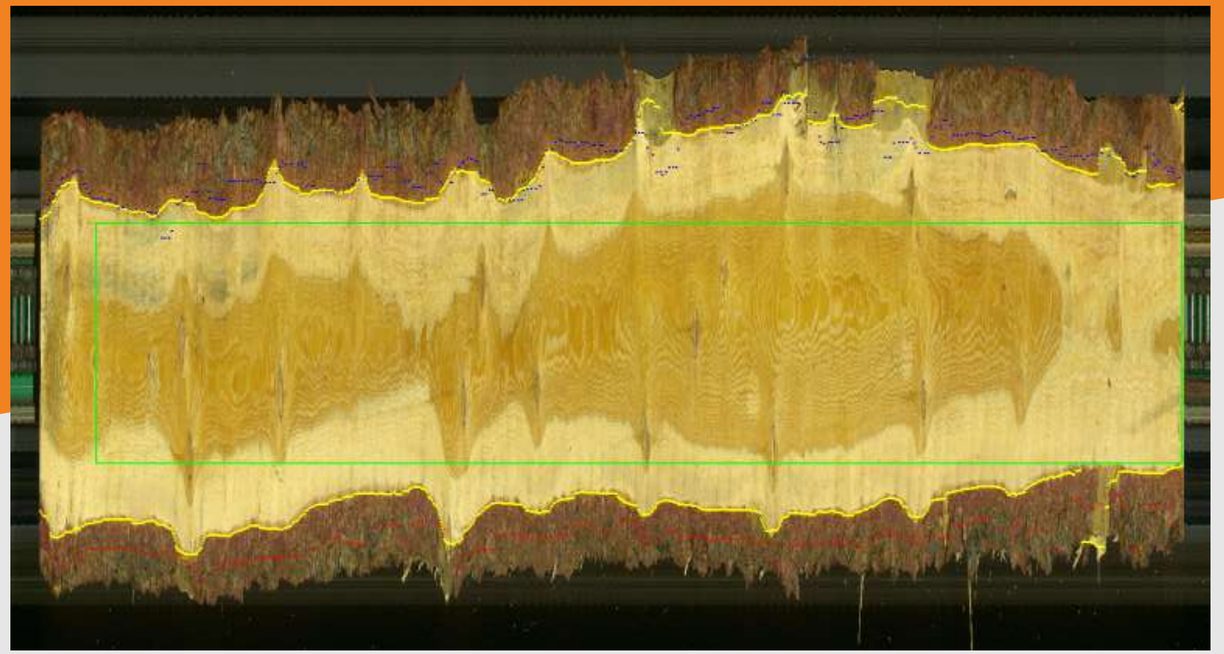
SAWLINE INSPECTOR



System for lumber sizes online control
based on the Vector-3D scannning modules and specialized software.

Measurement accuracy: +/- 0,5 mm by width and thickness.

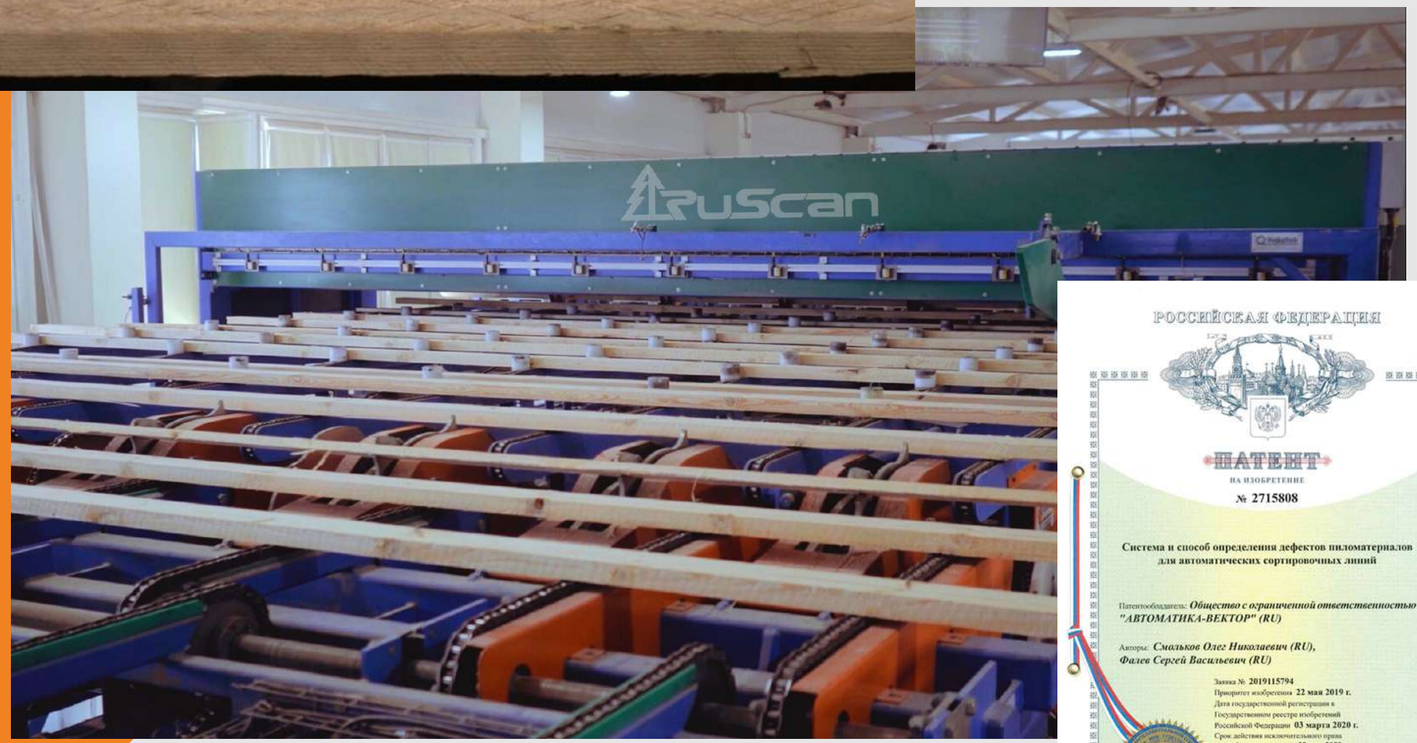
EDGER OPTIMIZER



- Efficient edger control
- Calculation of the optimal trimmimg by clear face area or finished product cost
- Coloured board scanning for exact determination of the clear face

RUSCAN 2.0

LUMBER QUALITY SCANNER
WITH RUSCAN EXPERT SOFTWARE
BASED ON NEURAL NETWORK



РОССИЙСКАЯ ФЕДЕРАЦИЯ

ПАТЕНТ
НА ИЗОБРЕТЕНИЕ
№ 2715808

Система и способ определения дефектов пиломатериалов для автоматических сортировочных линий

Патентообладатель: *Общество с ограниченной ответственностью "АВТОМАТИКА-ВЕКТОР" (RU)*

Авторы: *Смольков Олег Николаевич (RU), Фалев Сергей Васильевич (RU)*

Заявка № 2019115794
Приоритет изобретения 22 мая 2019 г.
Дата государственной регистрации в Государственном реестре изобретений Российской Федерации 03 марта 2020 г.
Срок действия исключительного права на изобретение истекает 22 мая 2039 г.

Руководитель Федеральной службы по интеллектуальной собственности *Г.П. Ивлиев*

Functions

- defect geometry search and measurement
- type of lumber assignment
- wood species deermination
- trimming optimization

Advantages:

- patented method for lumber defects detection
- 16+ board images for analyses
- Expert software based on neural network
- detection of the main lumber defects with probability from 85 to 97 %
- served by one operator
- convenient reporting system viewing via any browser
- integration with the other company products

SOFTWARE SOLUTIONS FOR EFFICIENT SAWMILL PRODUCTION CONTROL

LOG ACCEPTANCE AND SORTING

REPORTS

FINISHED GOODS WAREHOUSE

WEB-INTERFACE

DATABASE

RAW MATERIAL WAREHOUSE

SAWLINE

GREEN SORTING

DRYING KILNS

DRY SORTING

www.a-vektor.ru

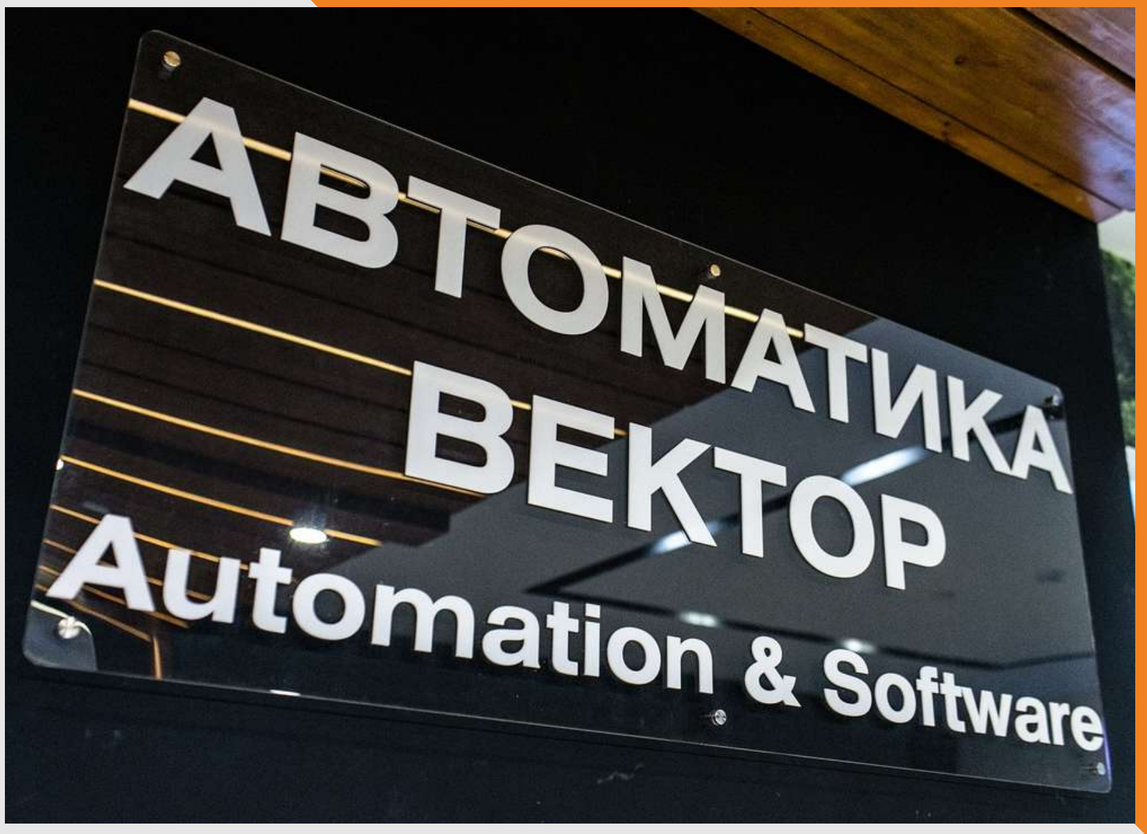
CONTACTS

Location
Novgorodsky prospekt 32, build. 4
Arkhangelsk, Russia, 163002

Phone
+7 (8182) 410330

E-mail
mail@a-vektor.ru

Web-page
www.a-vektor.ru



SOCIAL NETWORKS

instagram.com/
avtomatika_vektor

facebook.com/
avtomatikavektor