

# Major suppliers join forces on Russian sawmill

*Huge Russian sawmill projects are steadily emerging and the demand for the supply contracts for such ventures is becoming fierce. Only recently, three European groups began delivering the technology for a 1 million m<sup>3</sup>/y sawmill, currently being constructed in Siberia.*

**By Chris Cann**

Some 500 km from the regional centre of Krasnojarsk – in Boguchany, near the Siberian river Angara in Russia – civil works for a big softwood sawmill began late last year on an area of 4 km. State-owned enterprise Kraslesinvest is in charge of the build, which will see a modern, automated sawmill with a capacity of up to 1 million m<sup>3</sup>/y of logs appear in the heart of one of Russia's many rich forestry districts.

Projects such as this are on the

increase and as Russia imports primarily European and North American expertise for such jobs, the profile of international sawmill suppliers amongst the previously undisturbed Russian forestry sector, is growing.

The main suppliers of equipment for the Kraslesinvest mill are Austrian group Holtec, German manufacturer EWD, and Finnish company, Jartek. Holtec is supplying logyard and sawmill infeed equipment, EWD is delivering a profiling line with a speed of 150 m/minute, while

Jartek will supply three timber sorting lines and drying chambers. The completion of the sawmill is scheduled for spring this year, but that is just the first stage of the development.

In a later execution stage, the sawmill capacity will be doubled, which will be followed by construction of another major wood processing complex. The secondary complex will house a pulp mill with an annual capacity of 1 Mt and further production

lines for wood-based building materials. Kraslesinvest estimated the future raw wood requirements to feed the massive wood processing complex at about 8 million m<sup>3</sup>/y.

The logyard, Holtec's primary responsibility, comprises a sorting line with 80 boxes and a state-of-the-art x-ray scanner – the first of its kind in Russia. The EWD profiling line is fed by two lines, each with a Valon Kone debarker and turning device. Each of the mentioned companies are responsible for their part including the installation and its coordination.

Holtec started its deliveries in March last year, with more than 50 fully loaded trucks having left the workshop by the end of the year. Arriving at the East Sea, the loads are shipped to Riga, where they are transferred onto the Trans-Siberian rail system for delivery. The biggest loads for Holtec were three tandem step feeders for log separation.

*The EWD line at Arkaim*

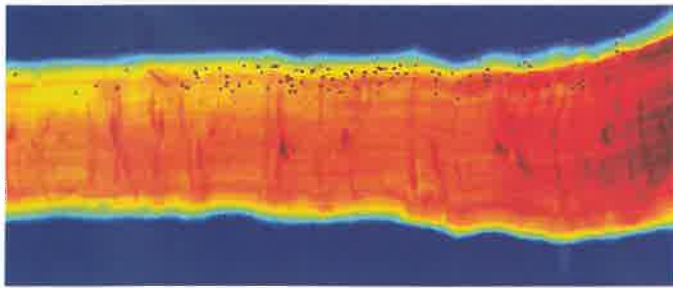


*Dr Antti Kari with the scanner at Ligna*



*Trucks on the way to the East Sea harbour loaded with Holtec equipment*

Scanning result of log with shots



For the Austrian log handling specialist, the logyard and sawmill infeed contract with Kraslesinvest the 11th of such magnitude in

Russia over the past few years covering both sawmill and wood-based panel sectors. Apart from the Kraslesinvest project, Holtec

will supply a log crosscut and sorting line for ILIM's Bratsk development this year. That logyard is part of a pulp project worth about \$700 million. All projects realised in the past were private projects.

"Russia is one of our most important markets," Holtec General Manager Alexander Gebele told *International Forest Industries*. "There seems to be a genuine preparedness to invest by

Russian groups looking to establish worldclass wood processing businesses. Our current projects in Russia show that there is a great demand in high-quality solutions for the sawmill and wood-based panel industry in the east of the Ural."

There are two green sorting lines provided and installed by Jartek. Each line has a Comact loader (one piece feeder), automatic quality grading with

## Suppliers work in harmony on x-ray scanning system

The x-ray scanning system Holtec has employed for its part in the Kraslesinvest project – the logyard has a log sorter with 80 boxes and an x-ray-scanning-system analysing all larch logs for sorting into individual branch categories – was not an individual effort. Far from it, in fact. And the company speaks glowingly of development partners with whom it was able to produce what it believes has evolved into an industry-leading piece of equipment.

Holtec's CT-x-ray scanning system was the result of a cooperation between the Austrian, Finnish group Bintec and German company, Jorg Elektronik, and was first presented at the Ligna last year. The technology in various forms has been working successfully for more than 10 years in Scandinavia but this is the first time it has been installed in Russia in its highly sophisticated state.

"Every partner focuses on its own competences," Holtec's Gebele said. "Jörg Elektronik supplied the optical scanning part in terms of a 3D-laser scanner and Bintec the x-ray scanner CT Wood-X.

"Bintec is the pionier and market leader in the range of x-ray-scanning for logs. Bintec created the basis for the x-ray-technology referring CT-scanning through the dissertation of Dr Antti Kari in 1996. In 2002, Bintec supplied the first CT-scanner with four x-ray sources to UPM. In the meantime, UPM installed five x-ray-scanning systems. Forty million m<sup>3</sup> of logs have been scanned by Bintec since then. That's more logs than Germany

annually cuts. Another major sawmill and Bintec customer is Stora Enso."

Holtec, meanwhile, is responsible for the mechanical and electrical components as well as for the infrastructure of the total system. The company integrates the x-ray-scanner into a "reliable and required conveying system" and makes the sales, as well as looking after the project management for systems in Middle and Eastern Europe.

Owing to the rough conditions expected in the logyard, the three partners chose an approach with fixed x-ray sources. Tests with three, four and six x-ray sources were completed, which showed that four x-ray sources was the most efficient solution in relation to cost and benefit. The relevant data for creating a practicable 3D-model can be generated by four planes – more detailed data are not practical for daily work.

"The optical log measurement has been standard for many decades," Gebele said. "The measuring method has been improved continuously, however, many quality features cannot be determined by a mere look at the enveloping surface. Due to the increasing raw material costs as well as an increasing scarcity of resources, log optimisation is becoming more important. In this course, the requirement for receiving information about the inner log has become the priority."

He said the sawmill industry had been long asking for the "glassy" log – the scanning of quality features such as knots, annual rings etcetera provides a

high potential for savings. Using these data, the value creation can be controlled in the sawmill by aligning the log qualities to the corresponding sawing patterns at the earliest possible stage.

When this is possible, assortments with a higher profit margin can be sorted directly at the logyard. Rejections in the later part of the process thereby decrease. By using a quality matrix, it is possible to set individual parameters. In times of log shortages and increasing raw material costs, a better utilisation of logs is increasingly important.

"The optical scanning systems have been maxed out in the last few years," Gebele said. "Realistically, a further improvement is not possible. A look inside the log and the evaluation of the inside quality of the log is the next dimension. The return-on-investment is made primarily by a specific sawing of logs."



The test installation at Holtec goes smoothly ahead of shipment to Russia

The x-ray system can be individually configured for each application.

**Analysis includes:**

- quantity/quality of knots
- density/elasticity moduls
- detection of stones and metal
- scanning of annual rings.

**Technical data:**

- log length from 3-25 m
- log diameter 100-500 mm
- line speed typically 100-250 m/minute.

### Bintec x-ray evolution

**1989:** Wood-X CT industrial development consortium established by UPM, Stora Enso and Finnforest.

**1989-94:** Wood-X CT technical feasibility studies carried out.

**1996:** Dissertation about basic research (University Olulu, Finland).

**1995-11:** First industrial pilot Wood-X CT with three directions implemented, tested and evaluated from a business point of view in three sawmills. Conclusion showed that four directions was optimum for speed and accuracy requirements of the sawmill, taking into account the investment costs.

**2002:** First Wood-X CT 4D in Europe was delivered.



The EWD chipper canter FZ5

“Kraslesinvest estimated the future raw wood requirements to feed the massive wood processing complex at about 8 million m<sup>3</sup>/y



cameras, 50 +50 sorting bins, automatic stick distribution, and automatic dry load handling system.

Jartek has also taken on responsibility for drying technology and has installed 12 drying lines, eight tunnel lines (progressive kilns), and four chamber lines (2-stage kilns) coordinated under a semi-automatic drying process. Once dry, the sawnwood products undergo automatic quality grading with cameras and are divided over 50 sorting bins for both modular and free-length cutting.

Installation of the Jartek equipment was delayed slightly because of other inhibiting construction works on site but began in October and was not expected to affect the commissioning date.

Jartek has completed significant installations all over the world, including major Russian deals, but, despite not forwarding any numbers, was confident this deal had set a new record.

“As far as we know, this is biggest single deal that anyone has made in Europe or Asia since 90s,” the Finnish supplier speculated.

“We delivered a similar complement of equipment – greensorting lines, drying and drysorting – to an UST-KUT customer, TSLK 3, in 2007, but that order was not as sophisticated. The greensorting was more manual, the drying was with drive-in chambers, though the drysorting technology was roughly the same.

“Over 2008 to 2011, we supplied Arkaim in Vanino with very similar green sorting and dry

sorting lines but did not deliver a drying system. Those two and the Kraslesinvest project are the biggest deals with which we’ve been involved.”

EWD was also involved in the Arkaim installation, where it supplied a very similar heavy duty profiling line. Basic features of the unit include a profiling line for up to eight profiled sideboards; final cut with vertical and horizontal double arbour circular saws; log diameter range of 100-550 mm; feed speed of 50-150 m/minute; installed electrical power of 5.5 MW; and a total weight of 600 t.

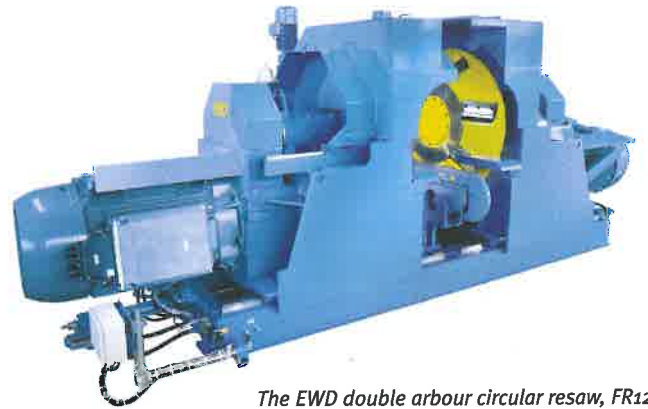
EWD had delivered all pieces to site by late in 2011 and had begun its part of the installation by the end of the year.

The Kraslesinvest deal is the type of contract all the industry’s leading suppliers are pushing to get their hands on. The fact that this major deal has gone to three proven groups with a track record in Russia is no coincidence. It is not always easy to do business in the East and as certain supplies build their reputations for excellence, others may be left behind.

It will be interesting to watch over the next five years how many of North America and Europe’s established providers, who are yet to get a foot in the Russian door, deal with the prospect of losing out in one of the world’s most prospective marketplaces. This is not something over which Holtec, Jartek and EWD will be losing too much sleep.



Our current projects in Russia show that there is a great demand in high-quality solutions for the sawmill and wood-based panel industry in the east of the Ural – Holtec’s Alexander Gebele



The EWD double arbour circular resaw, FR12



EWD double arbour circular reducer saw, DWK



The EWD profiling unit, FR15

