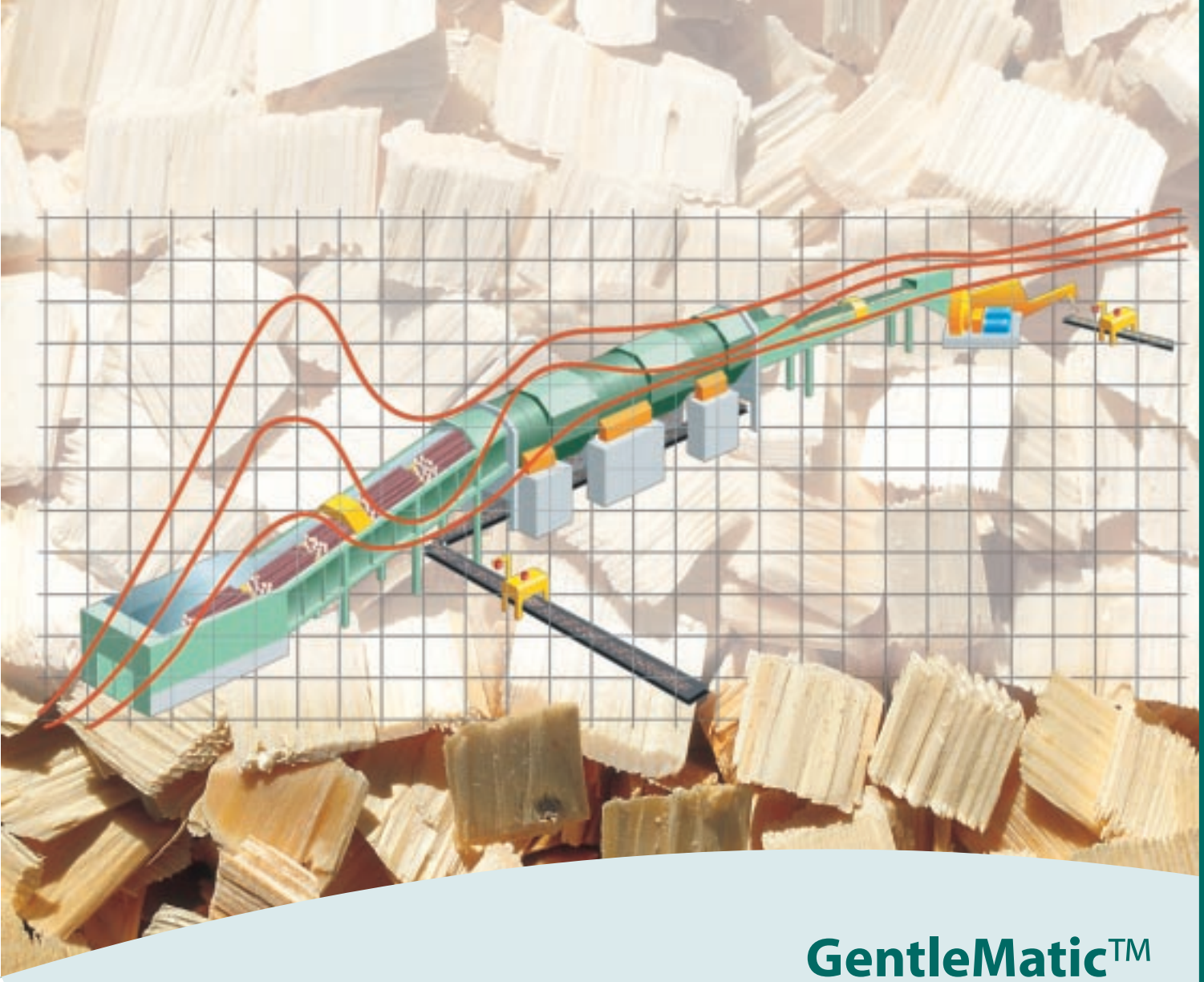


GentleMatic™

Total optimization of debarking

metso
paper

linking innovations™

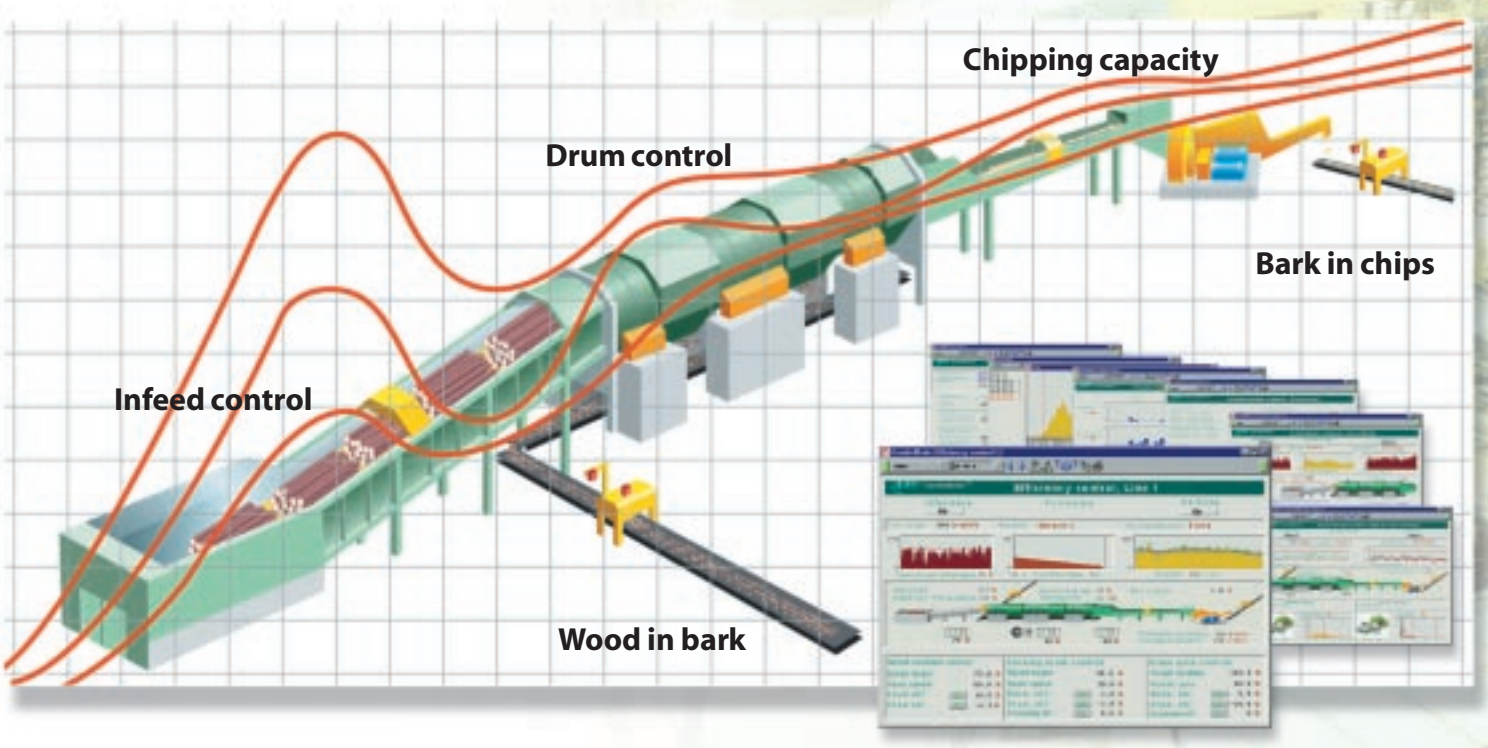
GentleMatic™ - the ultimate in debarking optimization

GentleMatic is an intelligent analysis and control system for the ultimate optimization of the debarking process. It measures critical process variables and calculates the best operating conditions for target capacity and desired chip cleanliness.

GentleMatic is an automation program that operates above the process control system. It operates independently of the automation system and can be connected to any DCS or PLC system.

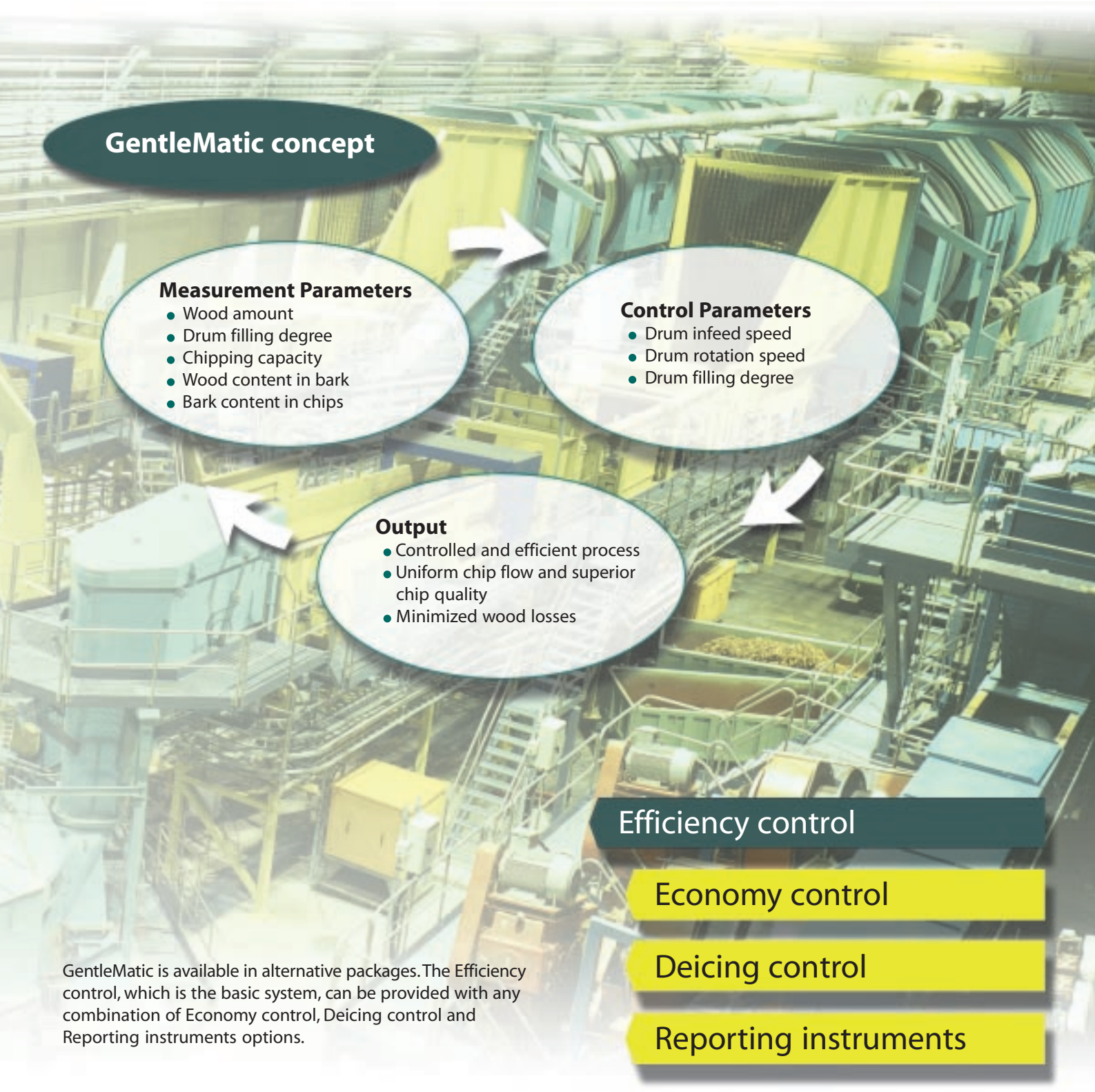
GentleMatic provides significant benefits:

- **Controlled and efficient process**
- **Uniform chip flow and superior chip quality**
- **Minimized wood losses**



GentleMatic is designed to monitor debarking process parameters such as the filling degree of the drum infeed conveyor and the barking drum, chipping capacity, quantity of wood in bark and cleanliness of chips.

GentleMatic uses these parameters to calculate the most beneficial values, controlling the speed of the drum infeed conveyor, drum rotation speed and the filling degree of the barking drum for maximum uptime and minimal wood losses.



GentleMatic is available in alternative packages. The Efficiency control, which is the basic system, can be provided with any combination of Economy control, Deicing control and Reporting instruments options.

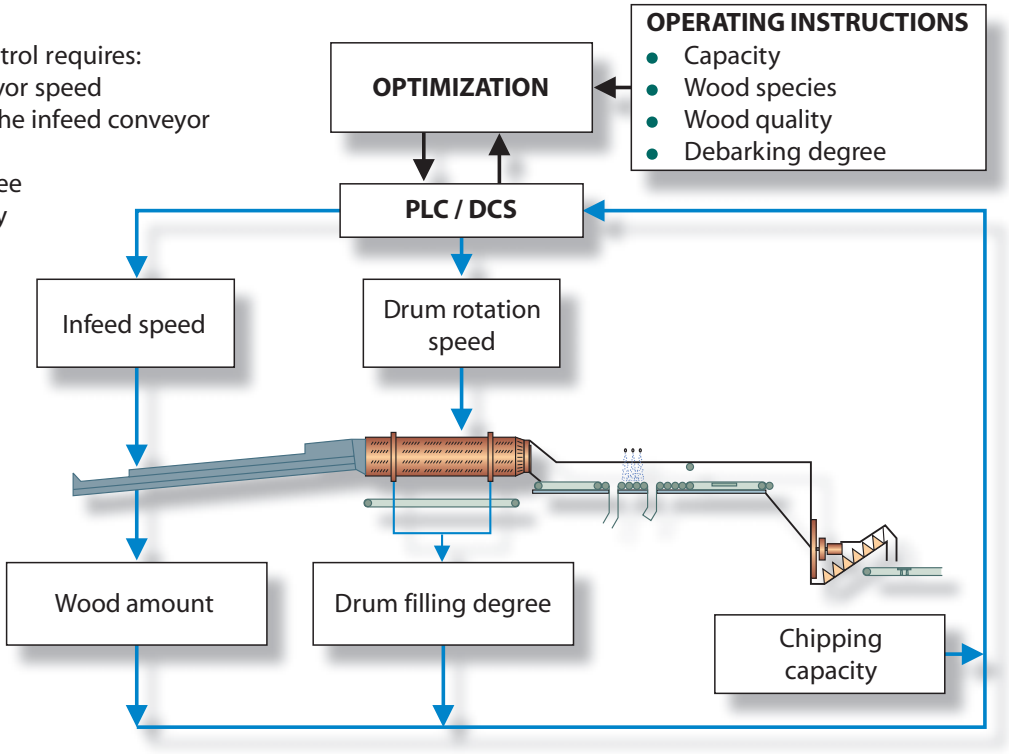
GentleMatic

GentleMatic - Efficiency control

The Efficiency control is the basis of the control systems and is designed to stabilize production.

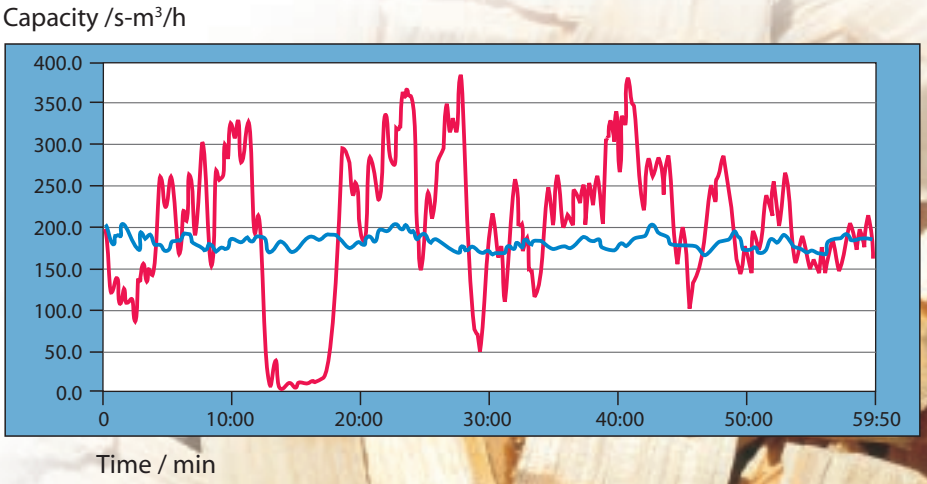
In order to operate, the Efficiency control requires:

- Control of the drum infeed conveyor speed
- Measurement of filling degree in the infeed conveyor
- Control of drum rotation speed
- Measurement of drum filling degree
- Measurement of chipping capacity



The operator controls GentleMatic from the operator window where he can choose the production, debarking program and debarking degree. A wide range of incoming wood qualities can be handled simply by choosing the right program.

In the graph the red line illustrates variations in output during one hour on manual drive. The blue line shows that the material flow is stabilized considerably when using GentleMatic.



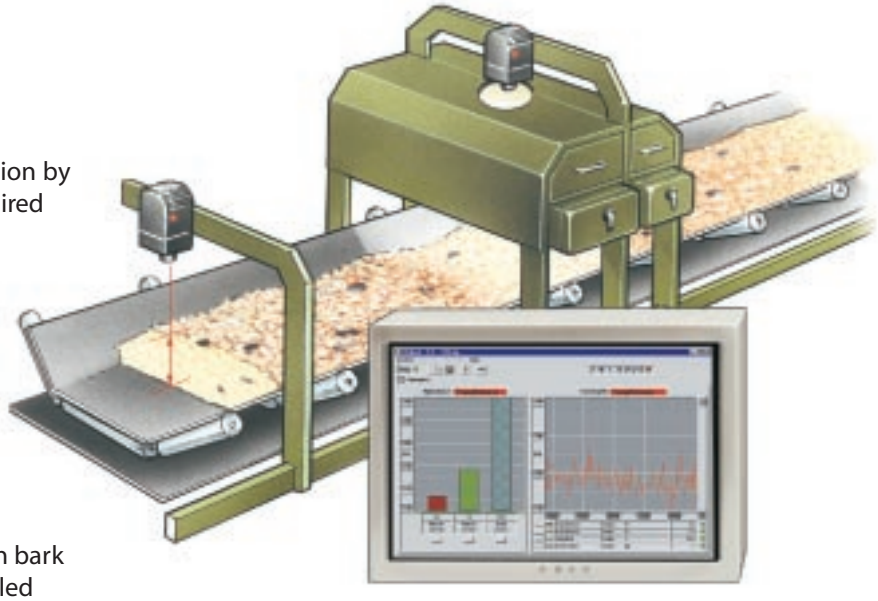
Automatic / optimized
Manual

GentleMatic - Economy control

The Economy control is designed to stabilize production by minimizing wood losses and by maintaining the required chip cleanliness.

In order to operate, the Economy control requires:

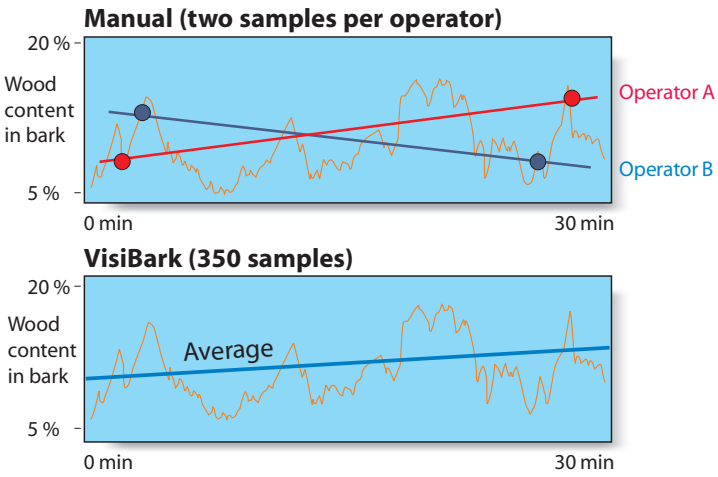
- VisiBark™ measuring device for bark line
- VisiBark™ measuring device for chipping line (Optional)



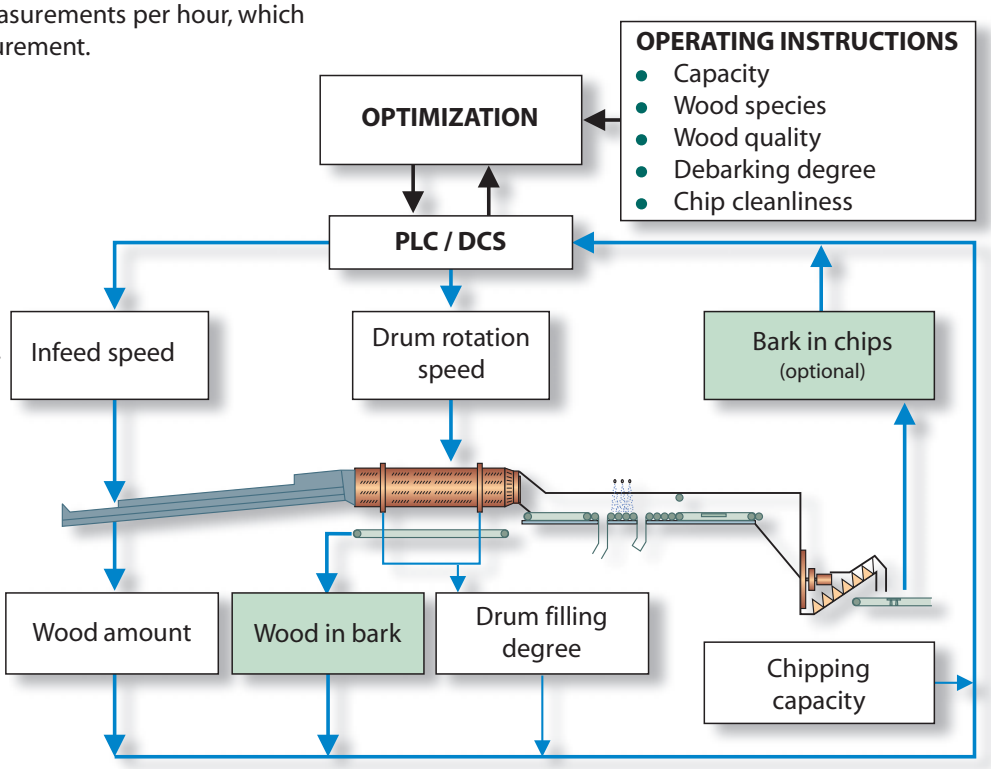
VisiBark™ is designed to measure the wood content in bark and the bark content in chips. The equipment is installed directly above the chip and/or bark conveyor. The measurements are executed online and optically direct from the material flow.

Wood losses are normally measured manually, when analysis of one sample easily takes up to a whole day. Furthermore, the wood content in bark varies a great deal during the process, so a single random sample does not necessarily represent the current situation. Continuous measurement provides the real quality factors.

The graphs beside present the above-mentioned variations in wood content in the process. The graphs are designed to illustrate the need for several hundred samples in order to assure an accurate analysis. According to the measurements taken by operator A, wood losses increased, and according to the measurements of operator B, wood losses decreased. VisiBark carries out over 700 measurements per hour, which increases the reliability of measurement.



Since VisiBark is installed directly above the conveyor, no sampling device is required, facilitating installation and maintenance. In order to operate, the measuring equipment requires a difference in color between bark and wood.



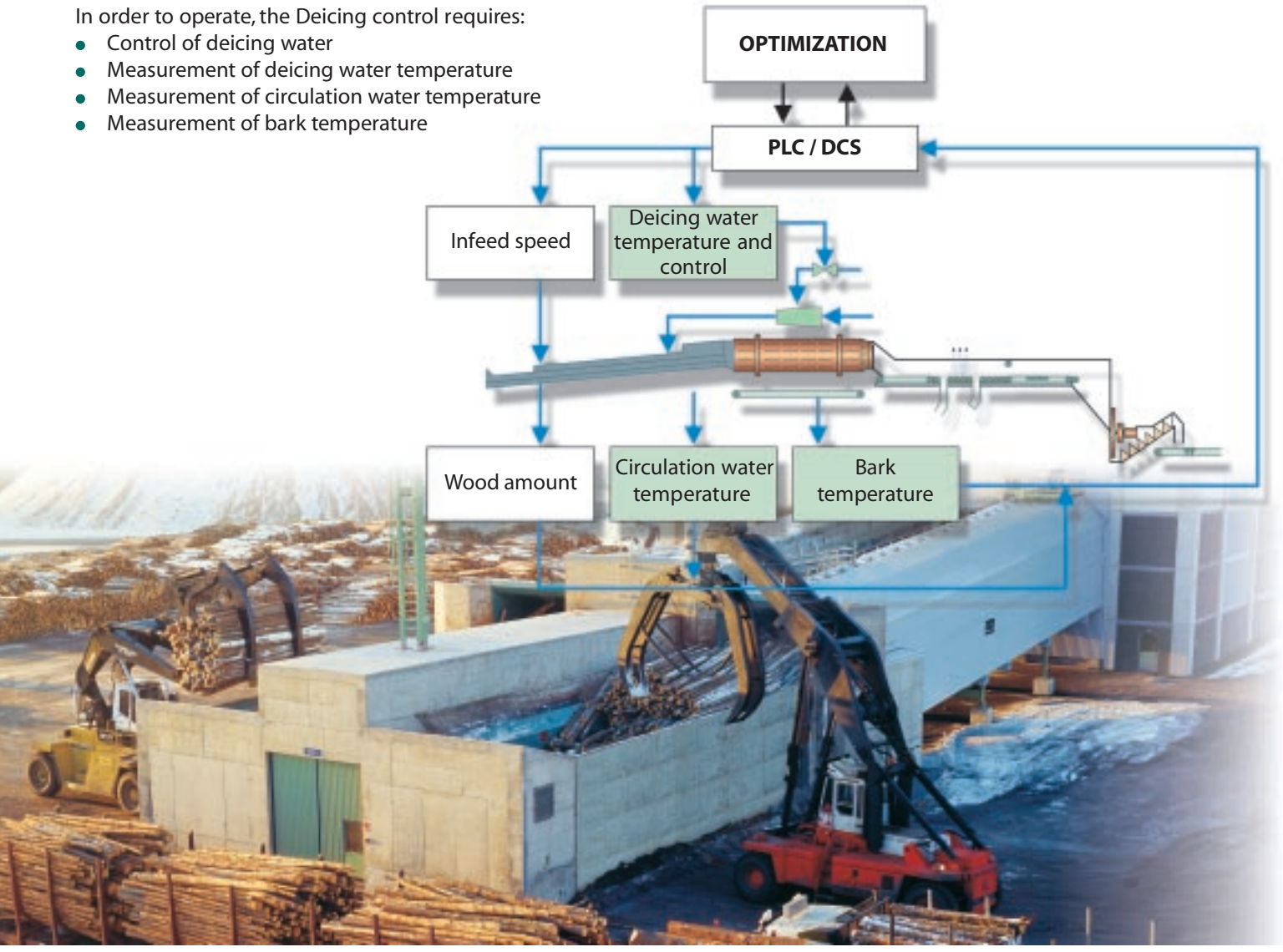
GentleMatic

GentleMatic - Deicing control

The Deicing control is designed to thaw out the log surface so that debarking can be carried out with minimum energy and effluent.

In order to operate, the Deicing control requires:

- Control of deicing water
- Measurement of deicing water temperature
- Measurement of circulation water temperature
- Measurement of bark temperature



GentleMatic - Reporting instruments

This is designed to generate reports from the GentleMatic system. Reporting can be tailored.

Examples of reports generated:

- Wood losses
- Chip cleanliness
- Loading of drum infeed conveyor

Remote access enables Metso experts to monitor the process in order to give the best available know-how.

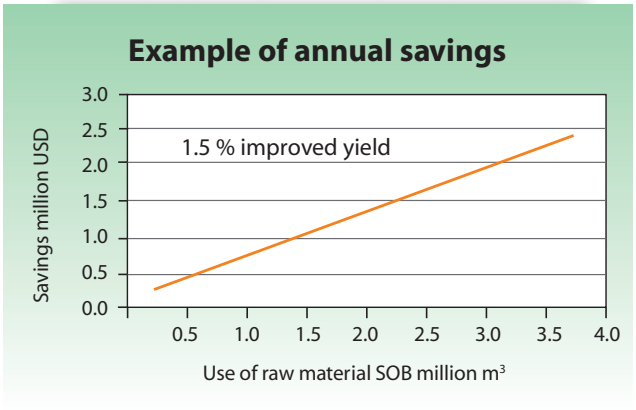
Benefits

GentleMatic - Benefits of optimization

The benefits of optimization can be viewed from many angles. One of the essential benefits of GentleMatic is that it collects continuously corrective process data for improved optimization of the system. Moreover, GentleMatic also eliminates the malfunctions caused by human error. The following gains are achieved when using GentleMatic:

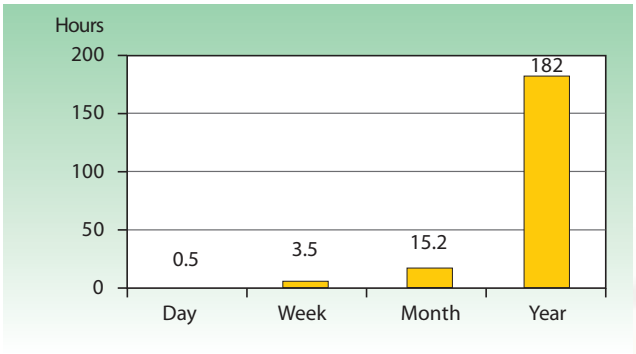
Raw material savings

Optimization aims at minimized wood losses. Raw material is the biggest individual expenditure of a mill, and therefore any decrease in its consumption is the major benefit. Even if only savings in raw material are considered, the payback period for GentleMatic is under one year.



Increased uptime

Interruption-free operation enables an increase in production rate, thanks to the increase in utilization ratio. Production goals can be achieved reliably through process optimization.



Avoiding a half-hour interruption in the process every day by means of GentleMatic translates into 182 hours more uptime per year.

Superior chip quality

The best fibers are on the wood surface. These fibers are the first to go to waste in the case of extended debarking. The VisiBark measurement device monitors chip cleanliness and wood content on the bark conveyor continuously. Therefore, retention time and efficiency are adjusted automatically, which in turn controls the bark content in chips. When operating closer to quality specifications, an ideal bark content in chips can be achieved. The optimization of debarking time guarantees superior chip quality. Uniformity and quality bring savings in the follow-up process.

Energy savings

Stability in processing assures optimal operation, resulting in energy savings.

Increased operational life

The overloading of machinery is detrimental mechanically. It goes without saying that stable loading results in savings in maintenance costs and increases operational life.

Metso Woodhandling offers the solutions of tomorrow for the wood preparation of today

The growing demand for innovative technology has increased the need for extended product development. Therefore our R&D team is constantly working on new solutions to perfect automation and optimization systems in order to facilitate today's wood preparation. Metso Woodhandling is your key to the future of wood handling technology.

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