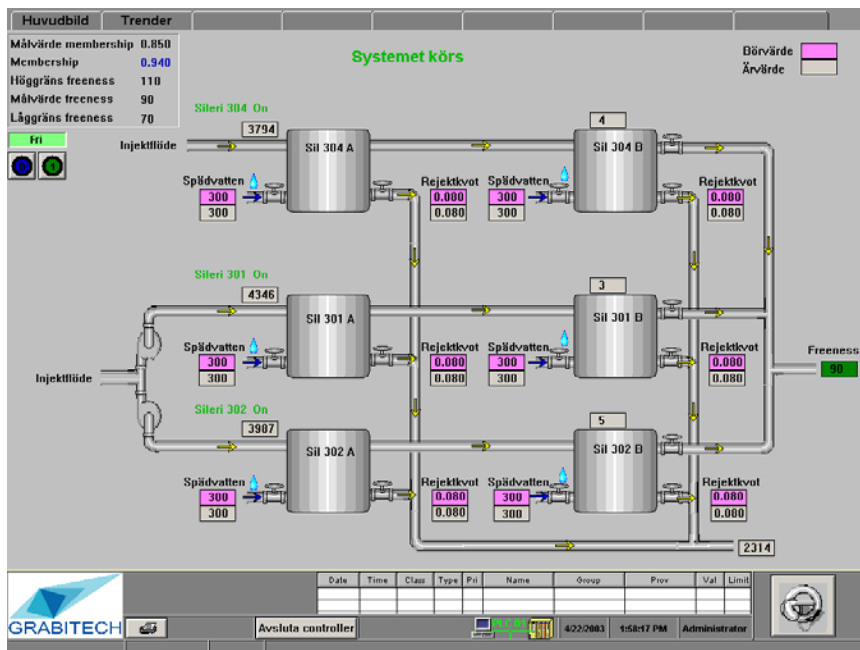
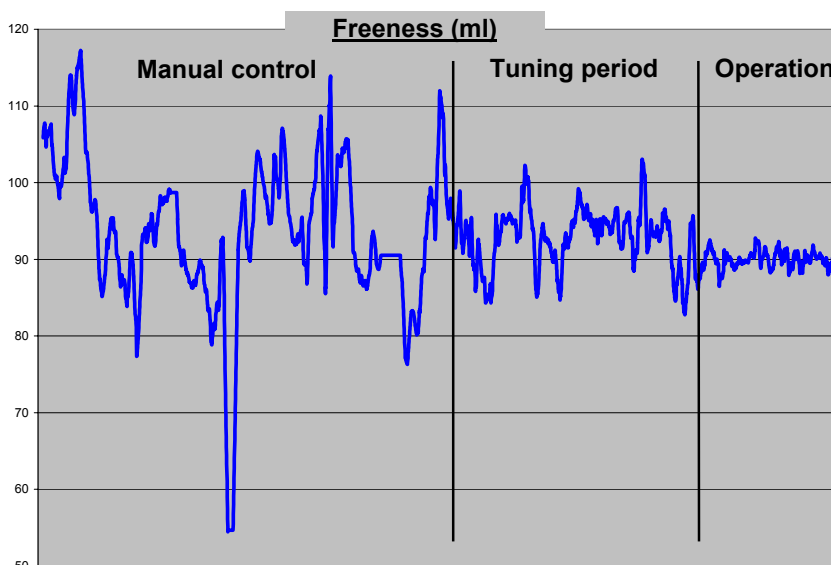


MultiSimplex Screening Controller 2.1



MultiSimplex Screening Controller main interface

- Over 50% reduction in freeness variation
- Integration into the current screening control system
- Automates the control of the screening
- Does not require a model of the screening process, but can use output from process models.
- Automatic change of optimization targets for different process cases



Reduced Freeness variation as MultiSimplex is used

Screening control

Process variations can have a large impact on product quality. The screening process is a complex process, which can be problematic when process variations are to be reduced. Many problems arise as several control- and response variables affect each other. The *MultiSimplex Screening Controller* automates the complex control of this system. *MultiSimplex* then realizes the goals of operating screenings at the most cost efficient variable settings, with low process variations.

Users can prioritize optimization targets. *MultiSimplex* then allows for adjustment of the optimization targets, as the process changes, thereby continuously improving the control of screenings on all process levels.

Application at Ortviken, Sweden

The aim of the installation of the *MultiSimplex Screening Controller* at the Ortviken plant was to improve the quality of the end product by reducing variation in Freeness. It is possible to add control and optimization of the fiber size as a means to further improve the quality of the end product.

When *MultiSimplex* was used, the standard deviation of the freeness was reduced 50%, while the target value of the freeness was kept within $\pm 1\%$.

The next stage in this project is to minimize shives, while maintaining the achieved low Freeness variation

Reference

"We are very satisfied with the positive results achieved by the installation of *MultiSimplex*. The 50% reduction of the quality variation using such simple means were results beyond expectation", Anders Gannå, Clas Elofsson, Karl-Erik Rosenholm SCA Graphic, Sweden

Technical Specification

Control Variables

Different Screenings have different control variables. The variables below are examples of variables used as *MultiSimplex* input:

- Dilution Water flows 1..n
- Reject flows 1..n

Response Variables

Different screenings have different response variables. The response variables listed below are examples that can be controlled individually, in combination or according to user priorities:

- Freeness
- Average fiber length
- Percent in fiber fraction 1..n

Result evaluation

A key function of *MultiSimplex* is the possibility to prioritize and weight different optimization goals. When the optimization goals for the response variables with highest weights are fulfilled, *MultiSimplex* then automatically transfers to fulfillment of goals with lower priority¹.

User interface

Is used for:

- Identifying *MultiSimplex* results
- Choosing process case
- Choose between manual control/*MultiSimplex* control
- Modify optimization targets
- Modify optimization criteria and configuration

Core architecture

Highly efficient screening controller algorithm executing on a PC platform. The algorithm is based on the MultiSimplex Controller algorithm. The algorithm calculates new settings for the control variables through a patented analysis of the response, resulting from changes in the control variable settings¹.

Recommended system requirements

Minimum

- 400 MHz Pentium II
- 256 MB RAM, plus 5 bytes RAM per 5K tags
- 2GB Hard Disk Space

Suggested

- 1.2 GHz Pentium III or greater
- 512 MB RAM

Operating Systems

Microsoft Windows 2000 Professional, Server or Advanced Server with SP3 or Microsoft Windows XP with SP1

System Communication

MultiSimplex can communicate with any modern control system, for example using **the following protocols**:

- DDE
- DLL
- OPC
- OLE

¹ See www.grabitech.se for detailed information.

Kontakt

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