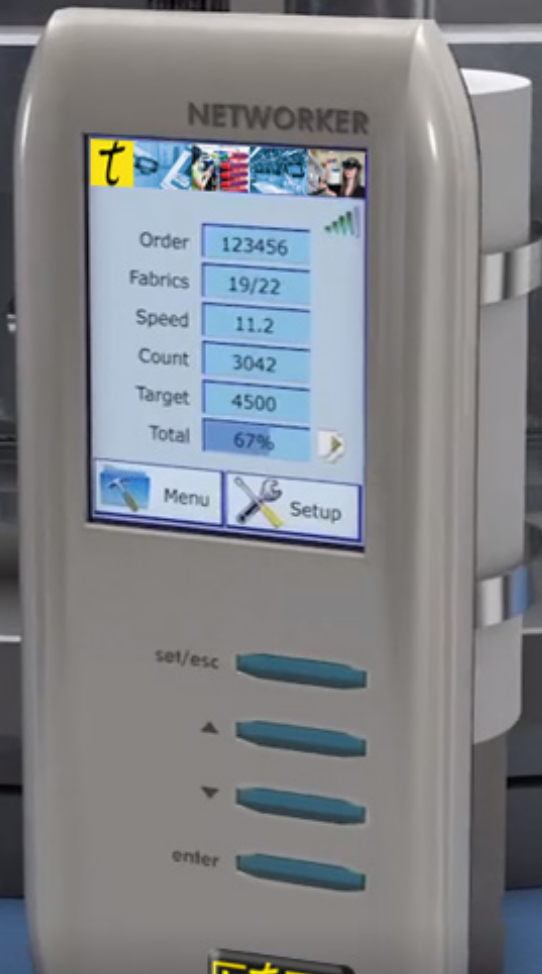


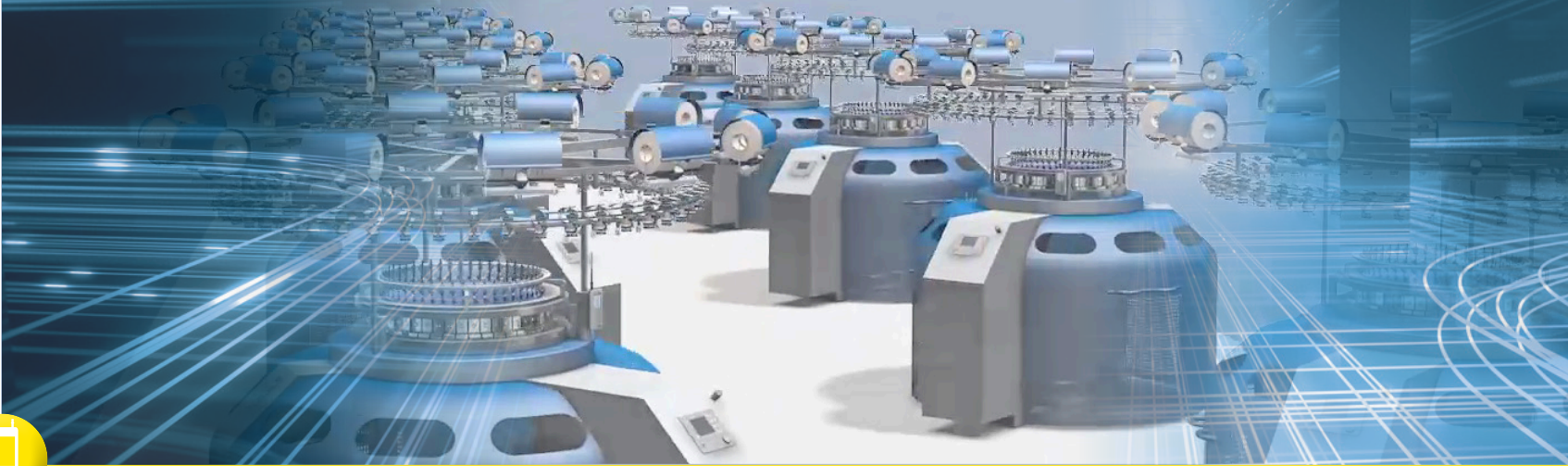
inteos

# NETWORKER

Your customised knitting solution









Halo GmbH



## Why inteos® NETWORKER? | Overview

### Available modules

-  Machine room
-  Statistics
-  Yarn

-  Articles
-  Orders
-  Setup
-  Operator

The inteos® NETWORKER is our fully integrated solution for production planning, monitoring and process management in the knitting department.

The package meets all the requirements of modern production environments and consists of two main components: The inteos® NETWORKER

machine panel covers the hardware side of things. With minimal effort, the touch-enabled control panel can be connected to circular knitting from a wide range of manufacturers.

The machine panel registers all relevant machine data and sends it to the inteos® NETWORKER software solution via WIFI.

The inteos® NETWORKER software solution collects, stores, and manages the machine data sent by the machine panel. It displays the real-time status of all machines, offers a wide array of statistical views, and handles yarns, styles, and orders to facilitate production management.

Our well-known inteos® platform and its high usability guarantee a seamless user experience handling this rich amount of data.

### **FUNCTIONALITY**

**All relevant information on the knitting factory's operations is displayed, for example:**

- *Status of the machines (RUN, STOP, ERROR, OFFLINE), machine speed, revolution counter, yarn consumption and current style/order/operator assigned to the machine*
- *The tab "statistics" displays information on the production history of each machine.*

- The tab “Log” gives a complete overview of all event logs
- The tab “Details” shows the machine’s current LFA setting, takedown time, speed, and other relevant data

## COMPONENTS

### inteos® NETWORKER machine panel

All machines integrated into our solution are equipped with our NETWORKER machine panel. Each unit has its own IP address to receive and transmit information. All information provided by the machine is gathered via the NETWORKER machine panel. From there, the data is passed on to the dedicated server running the NETWORKER software solution.



### inteos® NETWORKER software solution

The NETWORKER software solution is installed on a dedicated server. All machine data transmitted by the NETWORKER machine panel is stored in a Microsoft SQL data base.

The software gives an overview of the current situation in the knitting room as well as on order progress, machine efficiency, available machines, machine down-times and other pertinent information.

### inteos® ReportManager

- The inteos® ReportManager makes it possible to generate a wide variety of reports and statistic in a flexible and user-friendly manner.
- Label creation is easier than ever before. Scan or enter a piece code, weigh the corresponding fabric and enter the result (or skip this step
- by interfacing a “smart scale”, and a complete and printable label is automatically created by inteos®.

### Production | Plant view

- The plant view enables the transparent monitoring of machines and all required resources.
- The graphic real-time display of the machine status and the integrated alarm server identify problems immediately.
- The report generator allows for the simple and flexible preparation of reports and statistics.
- Master data for machines, personnel and shift calendar is easy and flexible to manage.

### Planning | Scheduling

- Production planning can easily be carried out with flexibility using “drag & drop” functionality.
- In determining the planned completion dates, all relevant parameters are considered – e. g. style, speed, efficiency, shift calendar etc.
- Compatibility checks ensures the selection of the most appropriate machine for each job.
- The integrated alarm server monitors the compliance with the projected completion date in all production areas.

### Connection box

The connection box is installed between knitting machine and the NETWORKER machine panel.



## YARN CONSUMPTION

### MEASUREMENT | LFA



Using specialised measuring rollers, the system measures the yarn consumption and transmits the captured data to the NETWORKER software solution.

The system is thereby enabled to calculate the exact weight of the produced fabric. The NETWORKER solution warns the user if yarn consumption exceeds the pre-set tolerance range. Included in the LFA package are measuring rollers for gauging the yarn consumption of non-elastic and elastic yarns.



Machine Room (Master Data - inteos NW)

Universal search

Machine Room

Statistics of yesterday   Statistics from the beginning of the month   Statistics from the beginning of the year

Name	Model	Gauge	Disposition	Queue	Article	Status	Target	Progress Fabric	No. of Rolls	Progress Dispo	Speed (RPM)	Yarn Consumption 1-6						Det.	Error	Duration (mm:ss)	Operator	Estimated weight (kg)	Check	Logs of Events	Room	
												1	2	3	4	5	6									
M1	Model D	24	20210031	🟢		Offline												3716:53:35			-- --	Events				
M2	Model C	20	1 A23	🟢	123456-001-000	Offline												8834:49:10			-- --	Events				
M3	Demo-Kit	20	1 A19	🟢	123456-001-000	Offline												8927:08:20			-- --	Events	1			
M4	Simulator	24	1 A26	🟢	123456-001-000	Offline												9842:05:29			-- --	Events				
A3	Model C	20	3 A01	02.09.2021 06:08	🟢	123456-001-000	Error	231/2500	9%	1/67		0	320	0	320	0	120	0	cm/rev	Yarn fe...	0:00:45	2 - Opera...	2,3	🟢 --	Events	3
A1	Model A	20	3 A02	17.11.2021 11:26	🟢	123456-001-000	Run	38/1500	3%	10/154	6%	6,3	320	0	320	0	120	0	cm/rev		0:05:18	3 - Opera...	0,6	🟡 --	Events	3
A2	Model B	20	3 A01	01.09.2021 00:35	🟢	123456-001-000	Run	202/2500	8%	1/67		18	320	0	320	0	120	0	cm/rev		0:00:30	3 - Opera...	2	🟢 --	Events	3
A4	Model D	20	1 A31	21.11.2021 22:04	🟢	000001-003-000	Run	265/1800	15%	1/167		27,3	320	0	320	0	120	0	cm/rev		0:00:05	2 - Opera...	2,4	🟢 --	Events	3
A5	Model E	20	1 A32	01.01.2000 00:00	🟢	000001-003-000	Stop	338/600	56%	1/167		0	320	0	320	0	120	0	cm/rev		0:00:25	2 - Opera...	9	🟢 --	Events	3



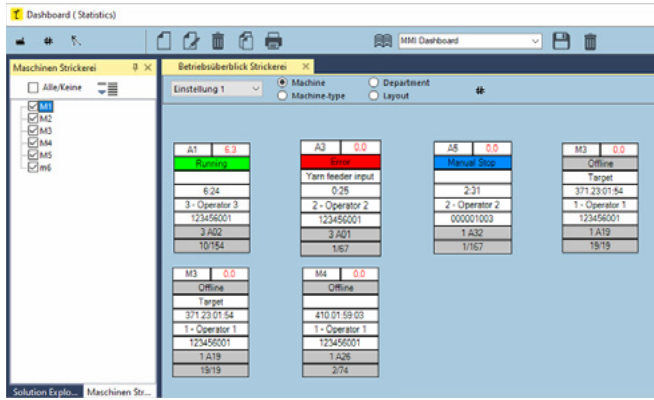
Machine room

# Machine Room

The machine room tab gives a real-time overview on the status of the production facility. Information shown on this page can be defined by the user. For instance, the table can show machine details such as starting time, order name, style name, machine status, produced number of fabric rolls and several other datapoints. For each order the system will show the expected time of completion.

## Dashboard

The dashboard provides users with a user-friendly and intuitive graphical overview of the machinery's real-time status. Each tile represents a machine and can be configured according to the customer needs.



Dashboard

Ereignisliste - Maschine:

Period from: 02.11.2020 to 04.11.2020

Events:  Run  Stop  Offline  Defect

Duration (s):  Update

Date/time	Event	Comment	Lap	Fabric	Disposition	Duration	Shift	Operator
03.11.2020 16:14:49	Run		73	1-A35-008	1A35	00:11:54	O-Z	Operator 1
03.11.2020 15:11:28	Error	Target	198	1-A35-007	1A35	01:03:20	O-Z	Operator 1
03.11.2020 14:49:05	Run		58	1-A35-007	1A35	00:22:23	O-Z	Operator 1
03.11.2020 14:41:16	Offline		55	1-A35-007	1A35	00:07:49	O-Z	Operator 1
03.11.2020 14:32:10	Run		5	1-A35-007	1A35	00:09:06	O-Z	Operator 1
03.11.2020 14:29:58	Offline		4	1-A35-007	1A35	00:02:12	O-Z	Operator 1
03.11.2020 14:28:13	Run		0	1-A35-007	1A35	00:01:50	O-Z	Operator 1
03.11.2020 07:24:44	Error	Target	198	1-A35-006	1A35	07:03:24	O-Z	Operator 1
03.11.2020 07:04:20	Offline		71	1-A35-006	1A35	00:00:30	O-Z	Operator 1



Event log

Check result for machine M5

	Article	Machine	Current Tolerance
Yarn cons. Unit	cm/rev		
Yarn consum. 1	0		%
Yarn consum. 2	0		%
Yarn consum. 3	558		%
Yarn consum. 4	0		%
Yarn consum. 5	0		%
Yarn consum. 6	0		%
Speed RPM	80	6	44 %
Target	2000	25000	88 %

Check setup

Article tolerance	Machine tolerance	Deactivate	Article
0 %		<input type="checkbox"/>	<input type="checkbox"/>
0 %		<input type="checkbox"/>	<input type="checkbox"/>
1 %		<input type="checkbox"/>	<input type="checkbox"/>
0 %		<input type="checkbox"/>	<input type="checkbox"/>
0 %		<input type="checkbox"/>	<input type="checkbox"/>
0 %	Yarn consum.	<input type="checkbox"/>	<input type="checkbox"/>
5 %	Speed RPM	<input type="checkbox"/>	<input type="checkbox"/>
5 %	Target	<input type="checkbox"/>	<input type="checkbox"/>

Default

Check

## Event log

This view shows a chronological list of events for each machine. Each event that occurs is registered in the database and displayed with date, type and detailed description. It is also possible to see at which turn of the fabric roll the event occurred - including the corresponding order reference, fabric number, shift and operator.

## Check

The "Check" view is accessible via a link in the "Machine Room" menu. It shows a real-time comparison between the target data specified for each item and the actual data received from the machine.

If the data deviates and / or does not correspond to the specified tolerance range, this is indicated by a warning message marked in red. The tolerance range can be defined separately for the yarn consumption, the speed and the fabric take-off.

Statistics (Master Data - inteos NW)

Universal search

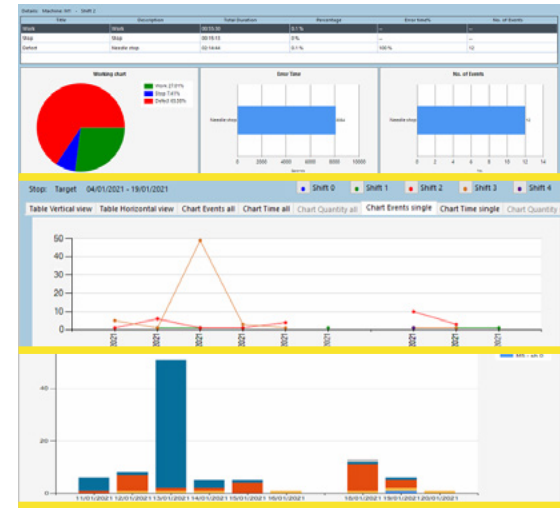
Statistics Stop Statistics

Report: Start date: 01.01.2021 - End date: 31.01.2021

	Shift	Revs.	No. of Rolls	Run-time	Stop Time	Average Speed (RPM)	Weight (kg)	Defects	Stops	Operator	Overbound event	Efficiency
Total	All	51712	104	5:15:00:04	12:02:56:54	6,4	505,2	0	126			52%
Shift Subtotal	0	4538	6	12:00:00	3:00:00:00	6,3	36,3	0	6			14%
Shift Subtotal	1	11340	10	1:06:00:00	2:12:00:00	6,3	90,7	0	10			33%
Shift Subtotal	2	12983	20	1:08:57:26	2:09:20:44	6,6	150,3	0	38			36%
Shift Subtotal	3	13778	66	1:12:02:38	3:17:36:10	6,4	155,3	0	70			39%
Shift Subtotal	4	9073	2	1:00:00:00	12:00:00	6,3	72,6	0	2			37%
A5 - Manuf. E Model E	2	12205	20	1:07:56:11	2:00:11:10	6,4	150,3	0	22			40%
A5 - Manuf. E Model E	3	13750	66	1:11:59:59	3:16:27:26	6,4	155,3	0	66			39%
A5 - Manuf. E Model E	1	11340	10	1:06:00:00	2:12:00:00	6,3	90,7	0	10			33%
A5 - Manuf. E Model E	4	9073	2	1:00:00:00	12:00:00	6,3	72,6	0	2			37%
A5 - Manuf. E Model E	0	4538	6	12:00:00	3:00:00:00	6,3	36,3	0	6			14%
M1 - Manuf. A Model A	2	778	0	01:01:15	09:09:34	12,7	0	0	16			10%
M1 - Manuf. A Model A	3	28	0	00:02:39	01:08:44	10,6	0	0	4			4%
M1 - Manuf. A Model A	1	0	0	00:00:00	00:00:00	0	0	0	0			
M1 - Manuf. A Model A	4	0	0	00:00:00	00:00:00	0	0	0	0			



Standard statistics



Downtime statistics

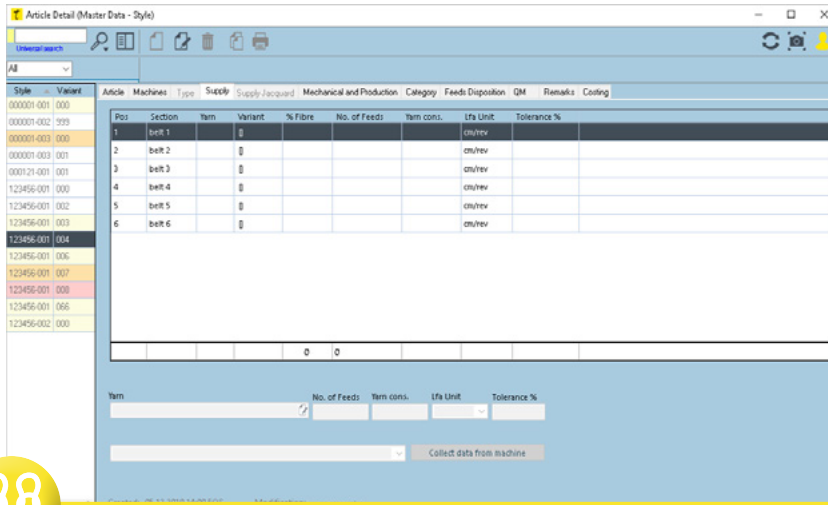
# Statistics

In the statistics view, the user can define a freely selected period of time by means of a drop-down menu and choose which data is included in the report. The report can include

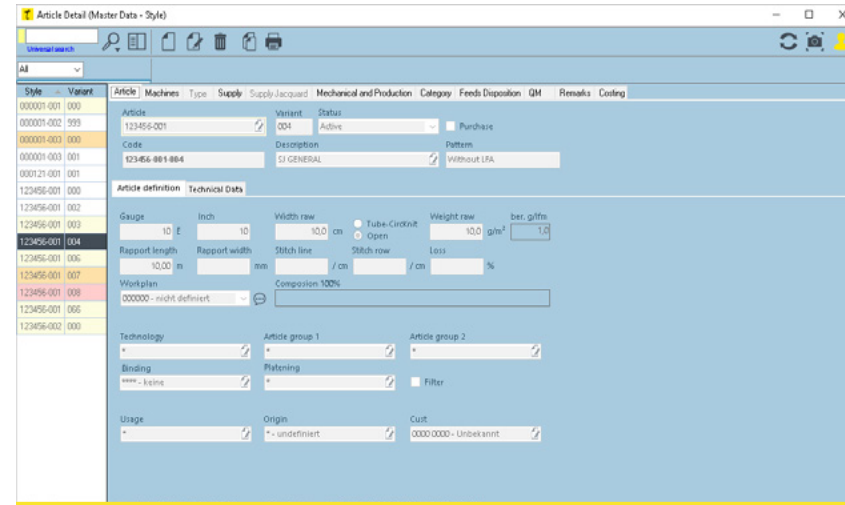
- all machines
- a single machine
- a machine group
- the machine operator

## Downtime statistics

Individual statistics can be generated for different downtime events. The data can be displayed either as a graph showing the total downtime duration or per machine including the number of downtime events and the total machine downtime. Various diagrams help to visualise the data thereby generated.



Style – order page



Style - main page



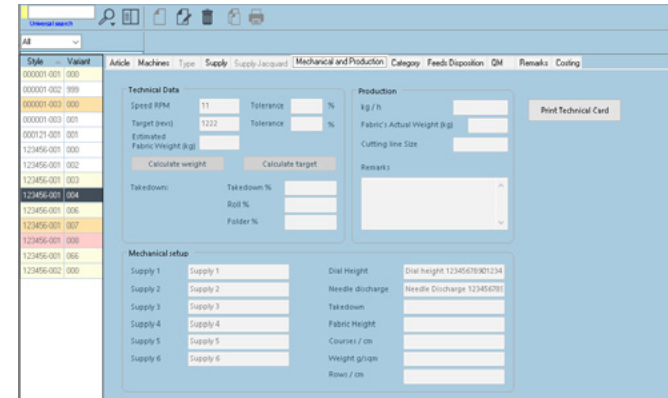
# Style

## Style | Edit

In the first tab of the “Style” view, data such as “Name” or “Description” is entered. In the second tab, the articles can be assigned to specific machines that meet the individual requirements of an order. Up to 6 belts can be accessed and the technical parameters can be defined independently. The resulting data allows the calculation of the theoretical fabric weight.

## Style list

All styles created in the system are displayed in the style list. At a glance, the operator can see style code, style description, which machines are available for production and whether the style is currently in production. As long as the style is not in production, the parameters can be edited, or the complete style can be changed. Of course, a search function is included.



Style - mechanical and production

Standard statistics

Order creation

# Orders

## Order list

The order page shows a list of all orders in the system. The individual columns can be sorted according to a wide variety of criteria. They provide an overview of the current status of the order (ready, in queue, running, completed) and other relevant data - e.g. the customer, the weight and the starting time and calculated end date of the production order.

For all orders that are in running status, detailed information can be accessed via the magnifying glass, e. g. current order progress or estimated time of completion.

Role details



Ms-Nr (ID)	Ms-Typ	RPM	Name	Manufacturer	Model	Diameter	Gauge	Needles	Printer	No. c
1	SJ	30	M1	Mayer	Mayer	22	24	1656	1	84
2	SJ	30	M2	Pilotelli	Pilotelli	30	20	1960	1	78
3	SJ	30	M3	Orizio	Demo-Kit	30	20	2064	2	86

Machine Nr. (ID)	1	Diameter	22	Category 1	A
Machine-type	SJ - SJ	Gauge	24	Category 2	
ID Name	M1	Needles	1656	Category 3	
IP Address	192.168.2.1	No. of Feeds	84	Printer	1
Manufacturer	Mayer	Type	Single Cylinder	Color	
Model	Mayer	Target stop	from machine	Article LFA required	LFA required
Year	2014	Maintenance Interval (Hours)	20000	Status	Active
RPM	30	Option	Networker	Group	2,1
		GTN IP Adresse		Room	

Machine registry

Group	n	Abbreviation	Description	Maintenance	Statistics	Countable	Password 1	Pa
Custom stop group 1	1	Stop 1.1	M. without Eff.	✓				
Custom stop group 1	2	Stop 1.2	M. with Eff.	✓	✓			
Custom stop group 1	3	Stop 1.3	Enum.			✓		
Custom stop group 2	1	Stop 2.1	Pass. 1				✓	
Custom stop group 2	2	Stop 2.2	Pass. 2					
Custom stop group 3	1	Stop 3.1	M. with Eff. + Enum.	✓	✓	✓		

Group	Custom stop group 1	Abbreviation	Stop 1.1	Description	M. without Eff.
Options	<input checked="" type="checkbox"/> Maintenance <input type="checkbox"/> Efficiency <input type="checkbox"/> Countable <input type="checkbox"/> Password1 <input type="checkbox"/> Password2				

Custom stops



# Setup

## Setup – Machine registry

Here the administrator creates machines that are integrated into the NETWORKER software solution. The relevant parameters can be selected and descriptive text added - e.g. "single or double jersey circular knitting machine", manufacturer, model or information on needles and cam parts.

The colours of the machines in the machine room dashboard can also be set here.

## Setup – User rights

This menu is used to assign user rights. It is only accessible to the system administrator. By assigning user rights, the administrator can decide who is allowed to view, edit, change or delete data in the various main menus.

## Setup – Shift administration

In the shift administration, the work shifts can be defined independently for each working day. Up to 4 shifts with different groups are possible. For each group, an operator can be assigned to the machines.

Calendar and machine-assignments

Activity: Weaver

Shift: A Valid from: Saturday 29/02/2020

S	Valid from	# m...
A	Sa. 29/02	6
B	Sa. 29/02	6
C	Sa. 29/02	6
D	Sa. 29/02	6

M1	Gr.-01	Operator 1
M2	Gr.-01	Operator 1
M3	Gr.-02	Operator 2
M4	Gr.-02	Operator 2
M5	Gr.-03	Operator 3
M6	Gr.-03	Operator 3

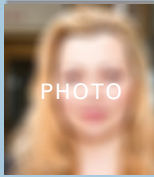
  

Gr.-01 (2 Ma.)	Gr.-02 (2 Ma.)	Gr.-03 (2 Ma.)
Operator 1	Operator 2	Operator 3

Operator assignment

Personal Nr.  Badge No.  Networker ID

Name  Color

Remarks  Photo 

Operator creation

Machine

Search for:  Period  Job

Period:  Yesterday  Current week  Current month

Start date  End date

Show orders  Show rolls

Duration over-bound

Operator statistics



# Operator Management

## Operator management

In operator management, machine operators are assigned to machines for their respective shift. In the statistics area, the operator's activities can be displayed and analysed and evaluated according to various criteria.

A database lists all created operators and allows individual entries to be created and changed for individual operators.

Schichtdefinitionen | Calendar | **Personel-assignment - Machine-groups**

S	Valid from	# m...
A	Sa. 29.02	6
B	Sa. 29.02	6
C	Sa. 29.02	6
D	Sa. 29.02	6

Shift:  Valid from:

M1 Gr.-01  
Operator 1

M2 Gr.-01  
Operator 1

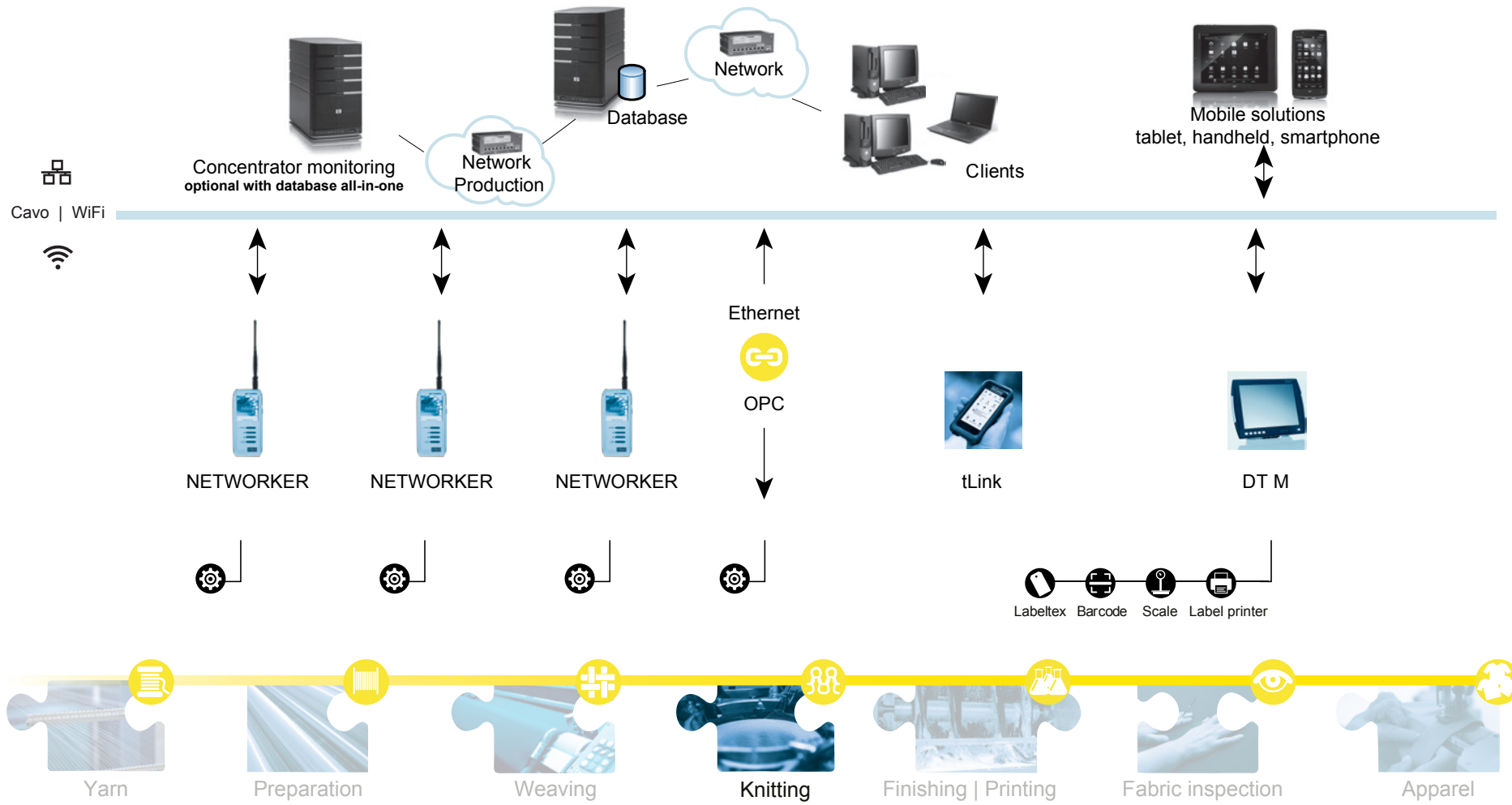
M3 Gr.-01  
Operator 1

M4 Gr.-02  
Operator 2

M5 Gr.-02  
Operator 2

m6 Gr.-02  
Operator 2

Operator assignment





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