



C-THRU4.0

Manufacturing Execution System

Process Technologies Group, Inc.

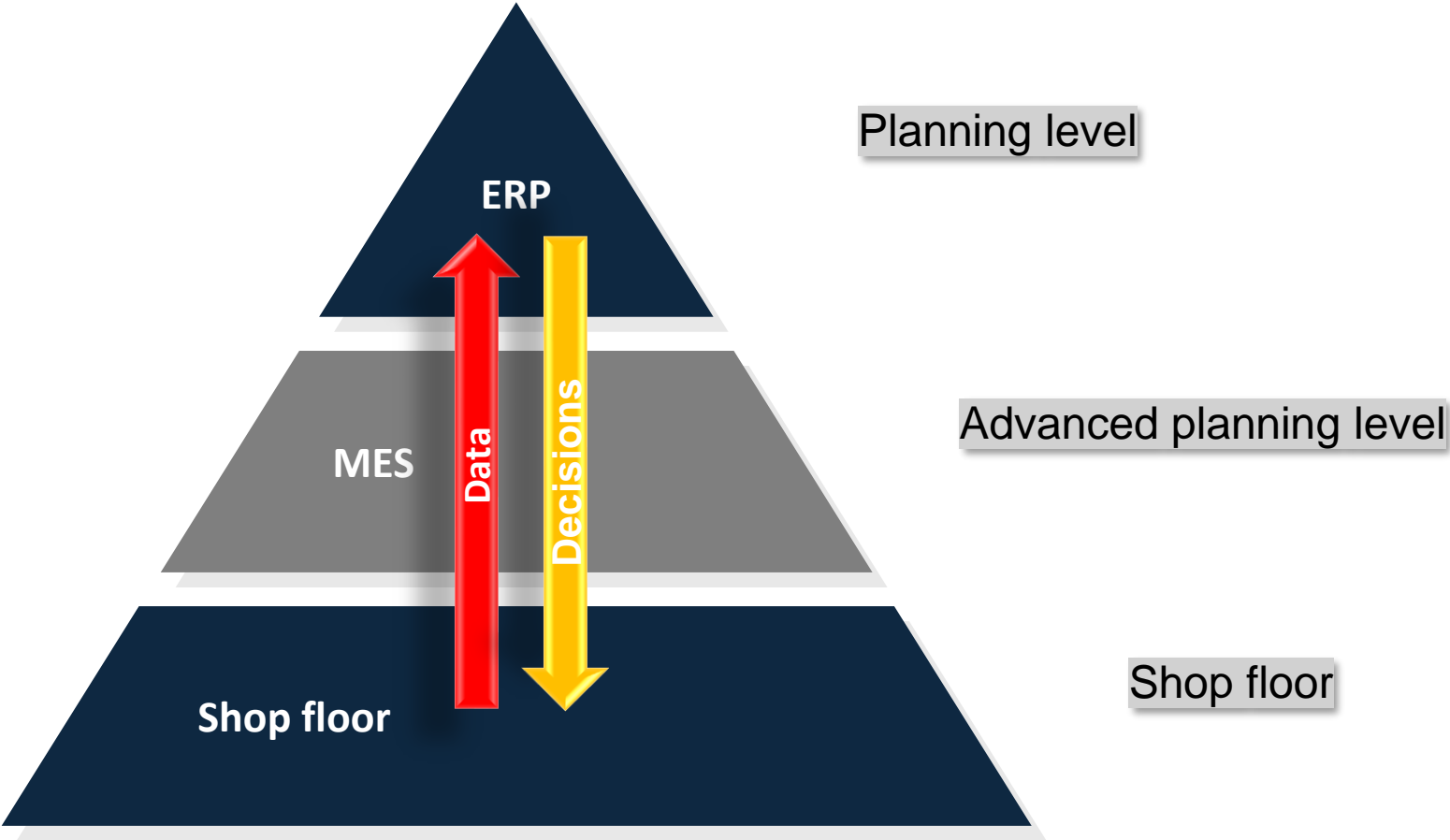
What means MES?

A **Manufacturing Execution System** (MES) is a multilayered manufacturing management system and serves as interface between the shop floor and the planning level.

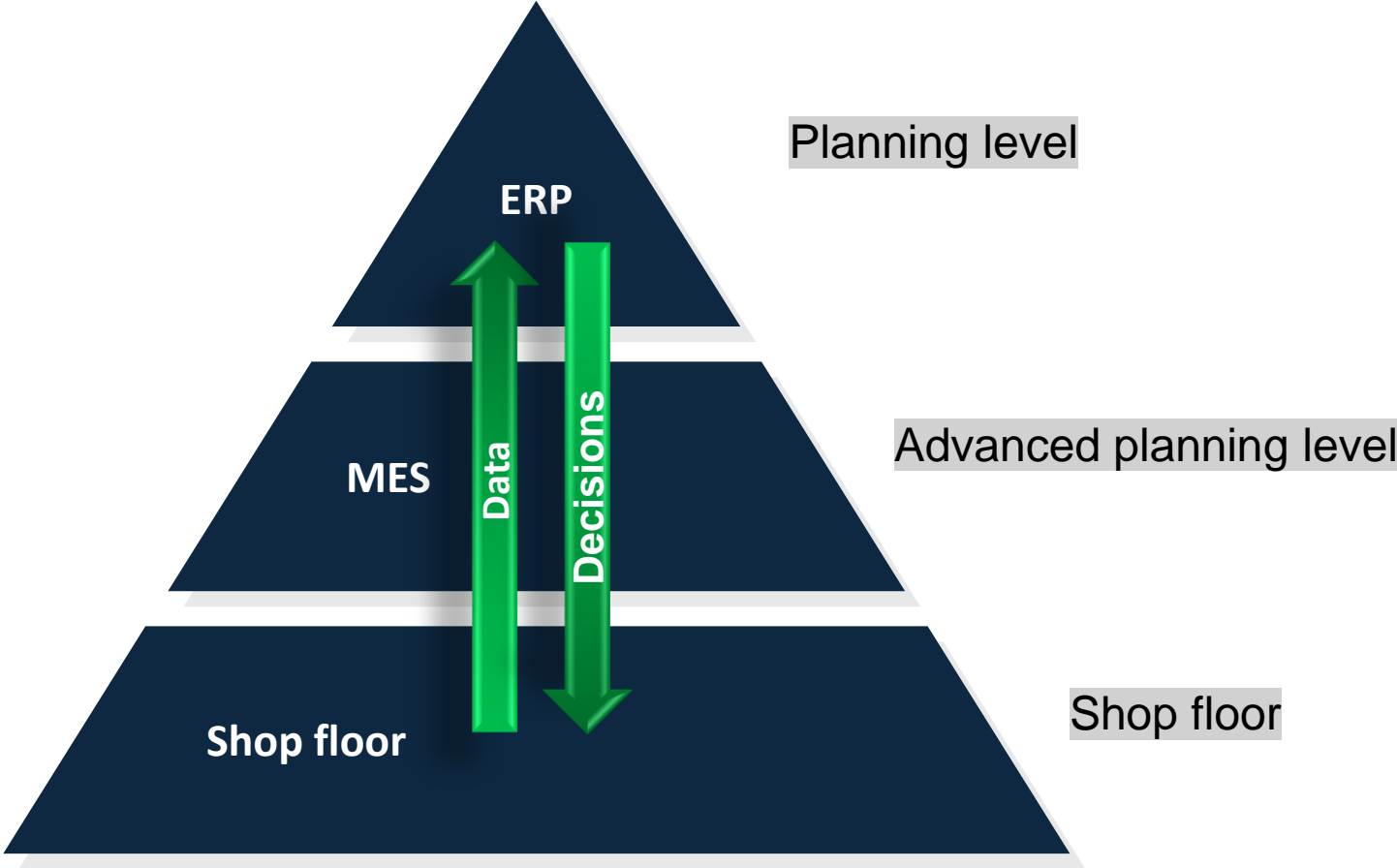
Through a direct and independent connection of the machinery the system offers reliable real time data and reports at the touch of the button.

The link to the ERP and CAQ systems provides the access to the production planning level and the order management. The result is the closing of the workflow circuit and an efficient optimization and performance increase of the company.

MES integration



MES integration



Industry sectors



Automotive



Aviation



Machining



White goods



Electronics



Construction

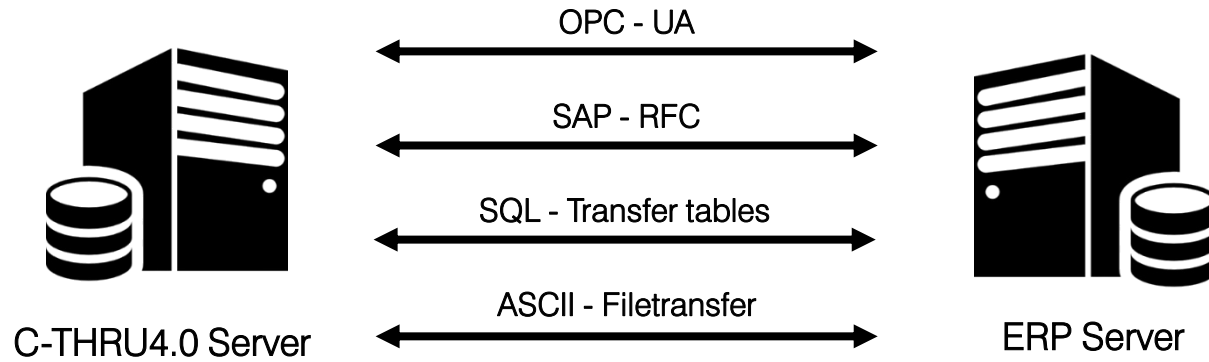


Energy

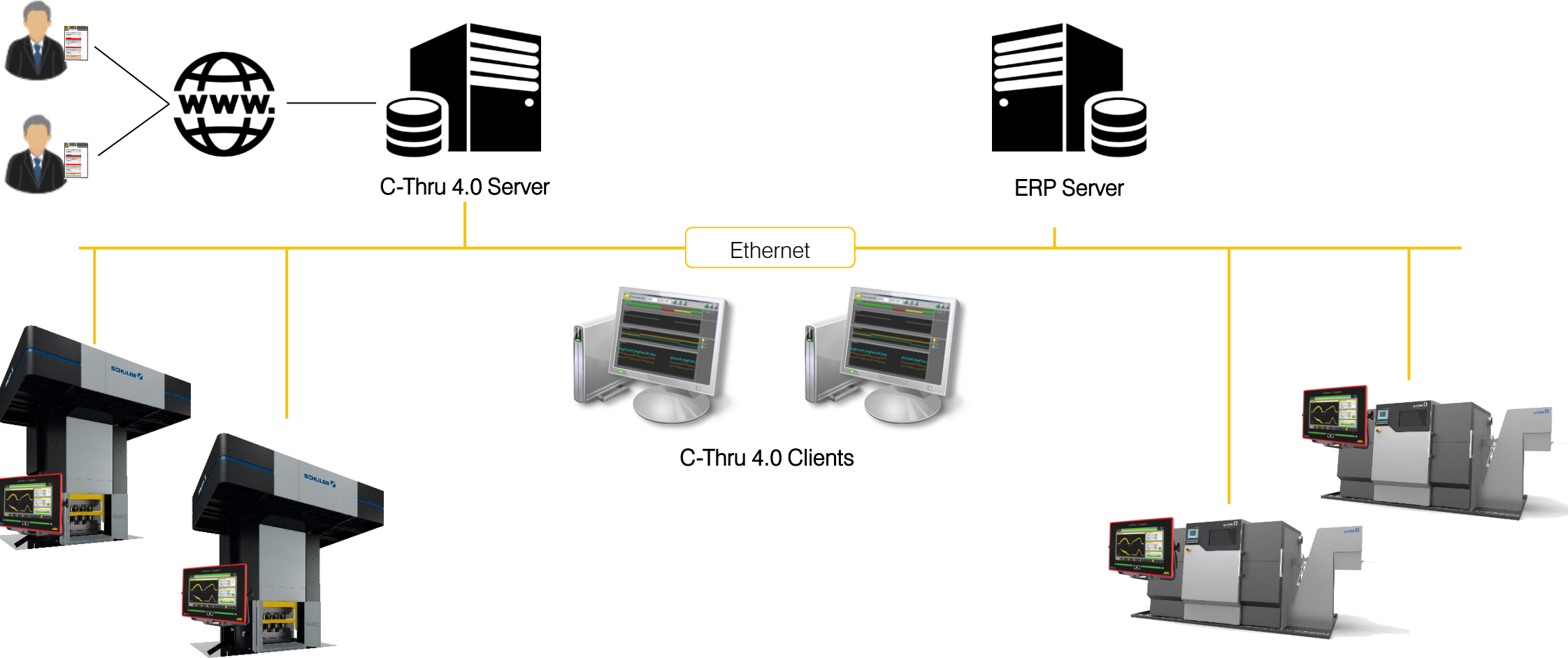


Furniture

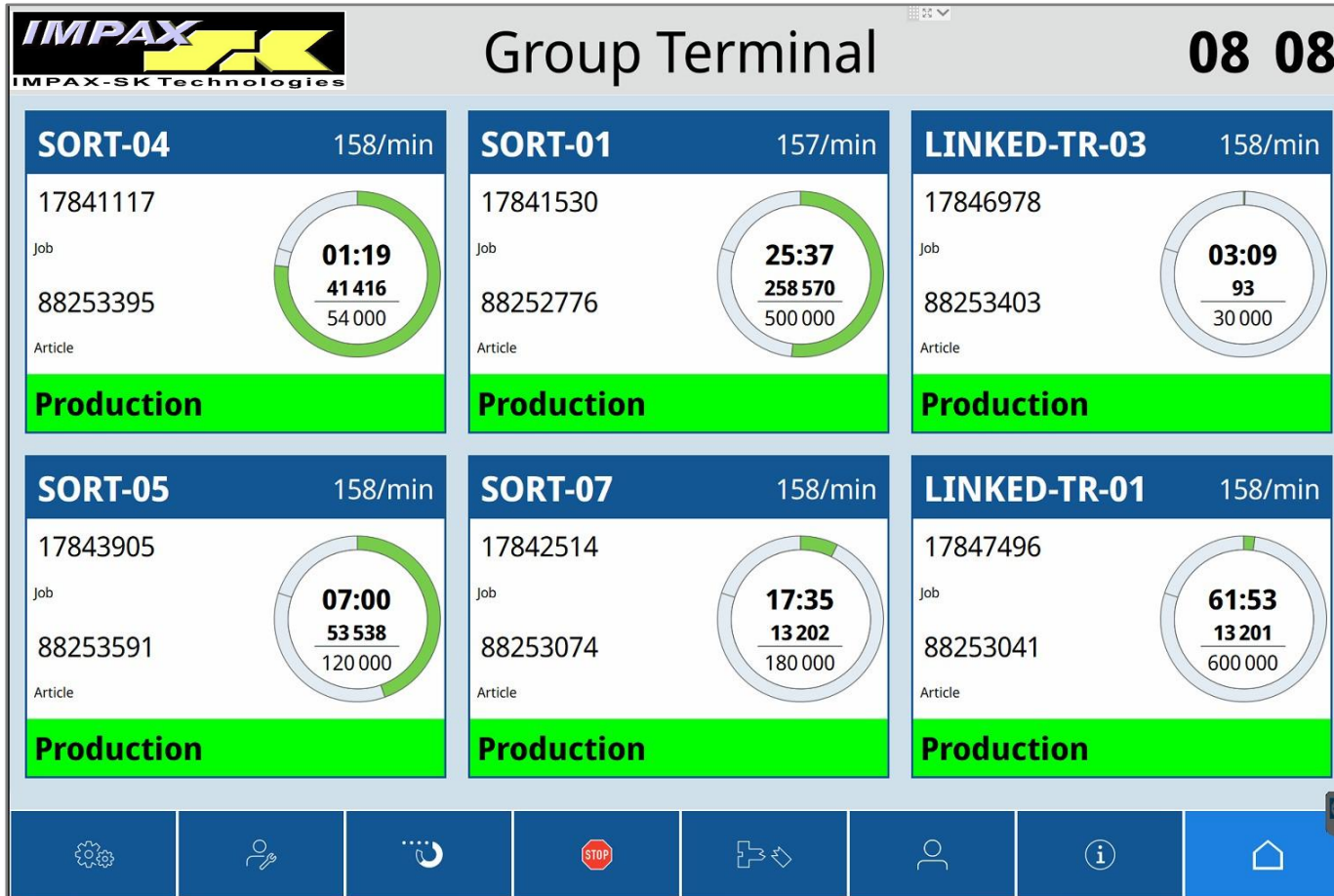
C-THRU4.0 and ERP communication



C-THRU^{4.0} System Layout MES software



C-THRU4.0 group terminal software



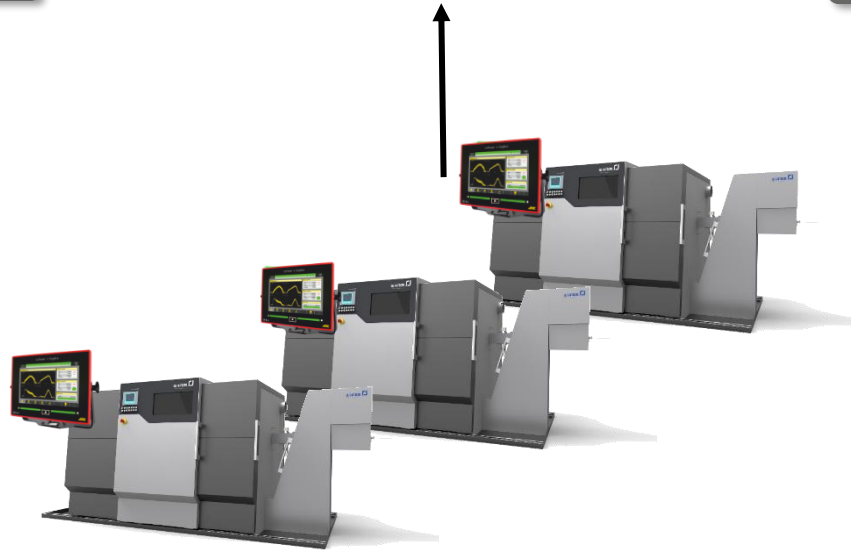
Scope of services available in C-THRU4.0

Available

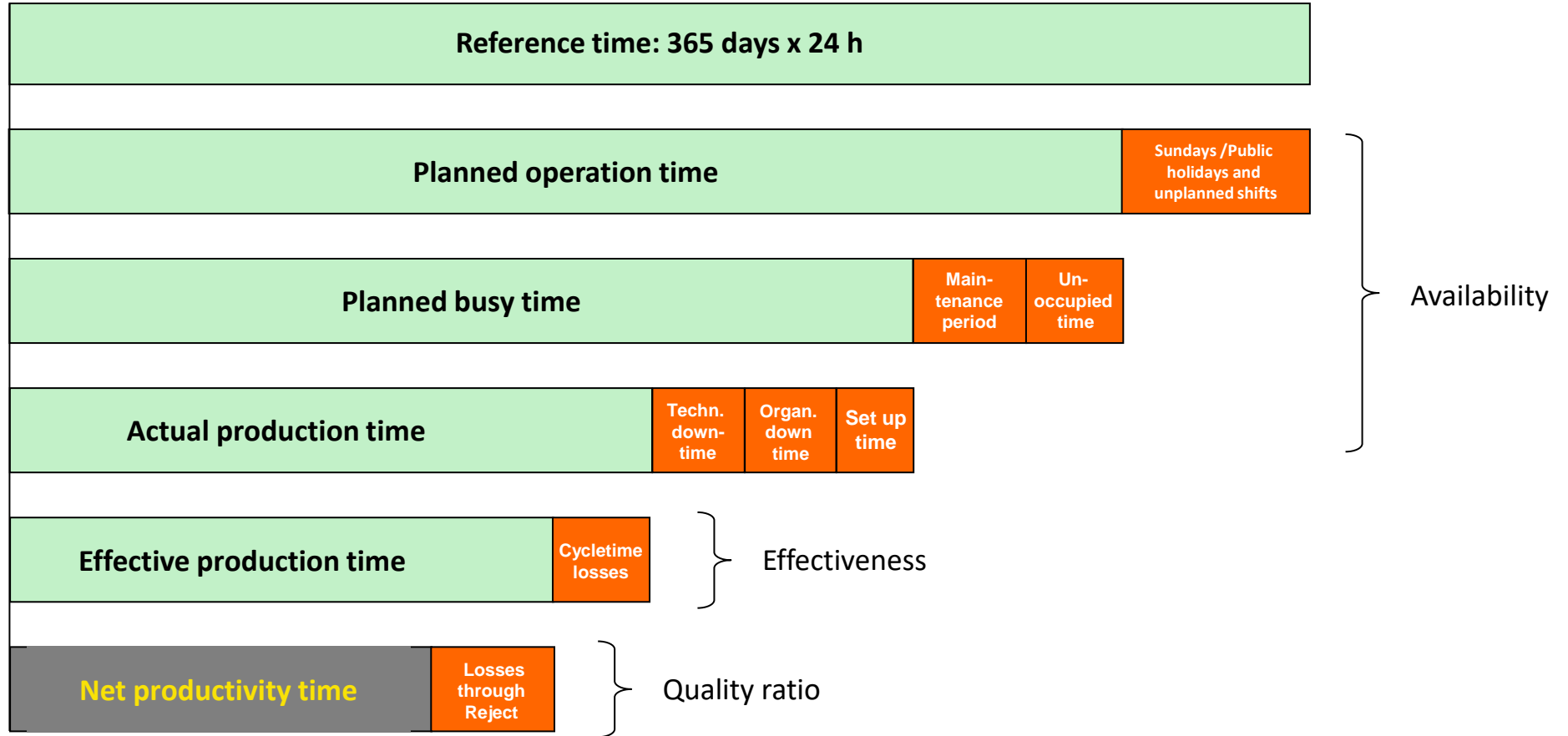


C-THRU4.0 Server

Coming soon



C-THRU4.0 KPI management



C-THRU4.0 Key performance indicators

OEE – Availability, Effectiveness and Quality ratio

NEE – Availability without setup, Effectiveness and Quality ratio

Down time and frequency per 1,000 parts

Setup efficiency / ratio

Time loss through power deviation

⇒ Referring to Machine, shift or order level

Production steps C-THRU4.0



C-THRU4.0 Server

The entire process is documented to the second and can be evaluated immediately.



C-THRU4.0 machine overview

The screenshot displays the C-THRU4.0 MES Client interface. On the left, a grid of machine status cards is shown for various departments (T1-B, T1-YY, X1-SDDC-1, X3-SDDC-103, X5-Test, X7-Test, SK500, SK800). A green arrow points from the X7-Test card in the grid to a larger, detailed view of the X7-Test machine on the right.

The detailed view for X7-Test includes the following information:

- Job number:** 2023-103
- Work step:** 10
- Part number:** Test_01
- Part name:** Test_01
- Charge:** (empty field)
- Production seit 0.13 [hh:mm]** (highlighted in green)
- Revolutions [1/min]:** 214.3
- Job progress:** 30.94 % (with progress bar)
- Employee:** ----
- Planned quantity [parts]:** 25000
- Scheduled start / end:** 6/12/2023 12:00 AM / 6/12/2023 12:00 AM
- Actual [parts]:** 7734
- Start / calculated end:** 6/15/2023 4:21 PM / 6/15/2023 9:58 PM
- Scrap [parts]:** 1
- Utilization d. [%]:** 73.47 % (with progress bar)
- Scrap [%]:** 0.01
- Utiliz.dg.-set-up [%]:** 73.47 % (with progress bar)
- Remaining [parts]:** 17266
- Output efficiency [%]:** 358.10 % (with progress bar)
- Remaining time [hh:mm]:** 4:47
- RPM efficiency [%]:** 357.17 % (with progress bar)

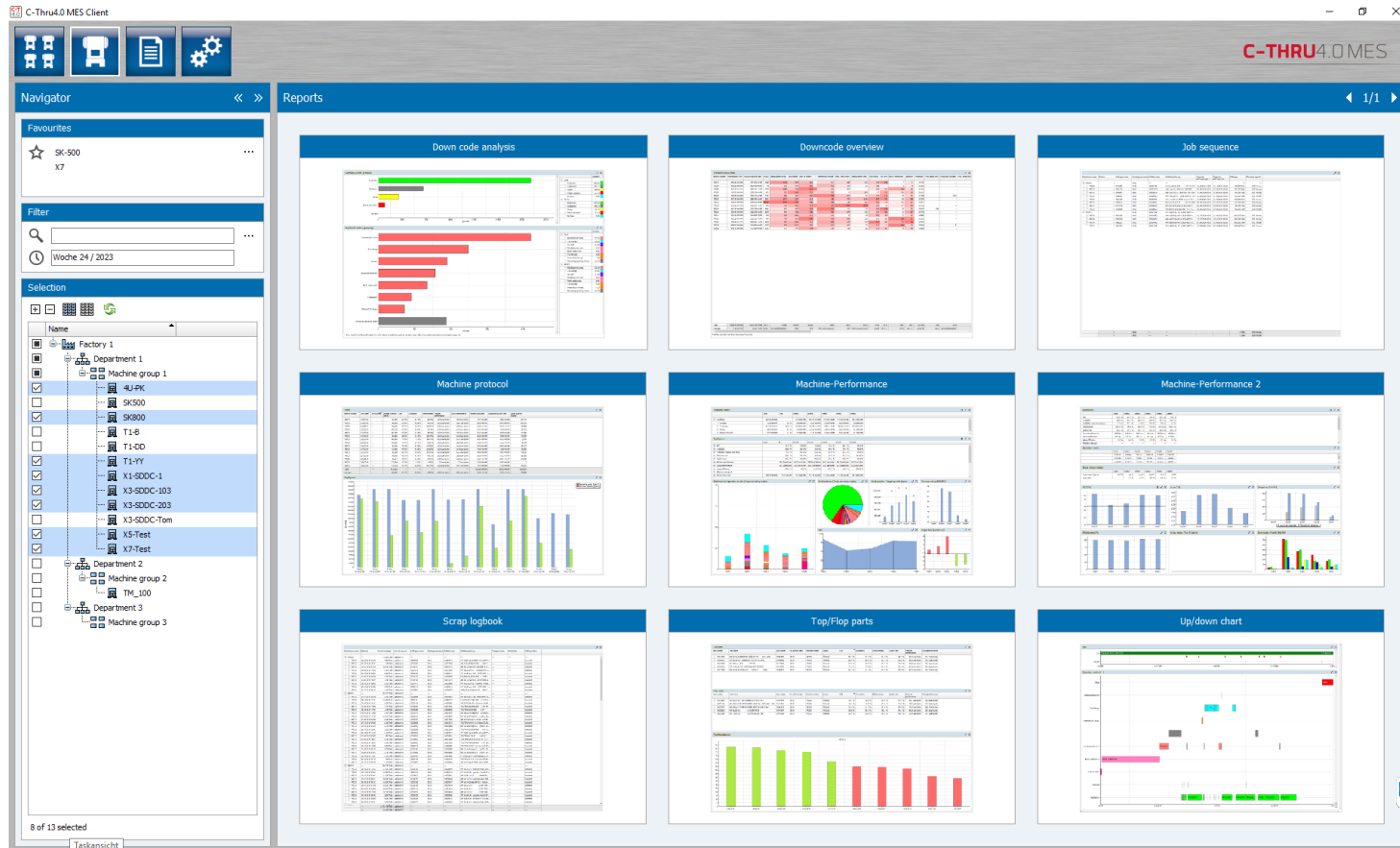
At the bottom of the detailed view, there is a table comparing performance metrics across different shifts:

Shift	Actual [parts]	Utiliz.dg.-set-up [%]	Output efficiency [%]
current	19582	50.26 %	353.66 %
previous	32096	30.69 %	361.96 %
penultimate	0	--- %	--- %

At the bottom right of the interface, there are several icons: a bar chart, a line graph, a double-headed arrow, and a V&C logo.

- Online machine status
- Online controlling
- Customizable machine templates

C-THRU4.0 report overview



- Overview reports
- Individual favorites
- Easy user cockpit

C-THRU4.0 Reports – machine downtime

C-Thru4.0 MES Client

C-THRU4.0 MES

Navigator

Favourites

- SK-500 x7

Filter

6/15/2023

Selection

- Factory 1
 - Department 1
 - Machine group 1
 - 4L-PK
 - SK800
 - T1-B
 - T1-DO
 - T1-YY
 - X1-SDDC-1
 - X3-SDDC-103
 - X3-SDDC-203
 - X3-SDDC-Tom
 - X5-Test
 - X7-Test
 - Department 2
 - Machine group 2
 - TM_100
 - Department 3
 - Machine group 3

8 of 13 selected

Down code analysis

Overview (autom. grouping)

Category	Duration
Total	20:33 h:mm
Unplanned	20:33 h:mm
Production	9:17 h:mm
Setup	0:01 h:mm
No data	0:00 h:mm
Planned Standstill	0:00 h:mm

Unplanned (autom. grouping)

Category	Duration
Total	8:49 h:mm
Unknown	8:49 h:mm
Not active	5:45 h:mm
Tool	3:03 h:mm
No tool	2:11 h:mm
No material	0:22 h:mm
Repair	0:17 h:mm
No operator	0:06 h:mm

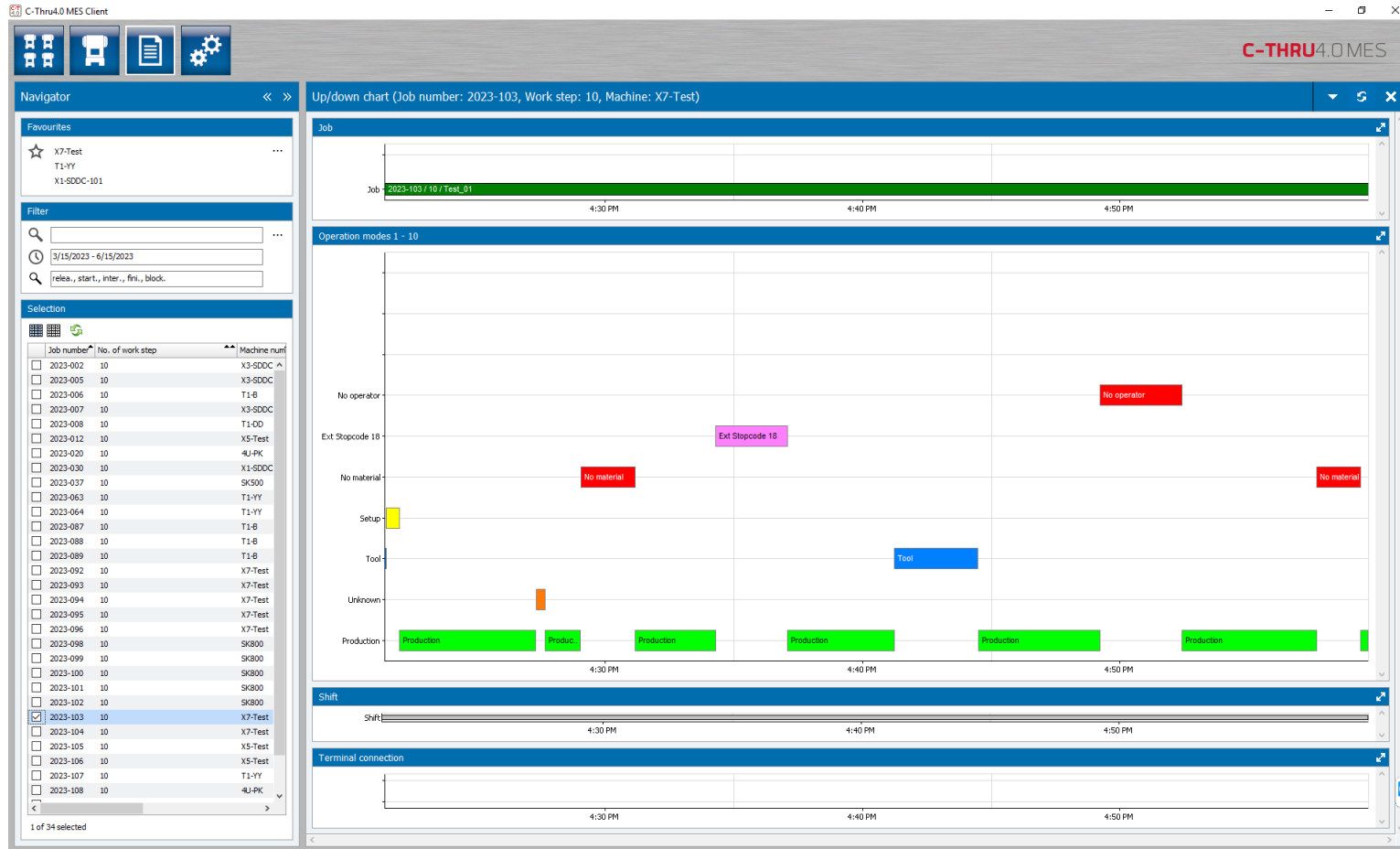
Production (autom. grouping)

Category	Duration
Total	9:17 h:mm
Production	9:17 h:mm

Setup (autom. grouping)

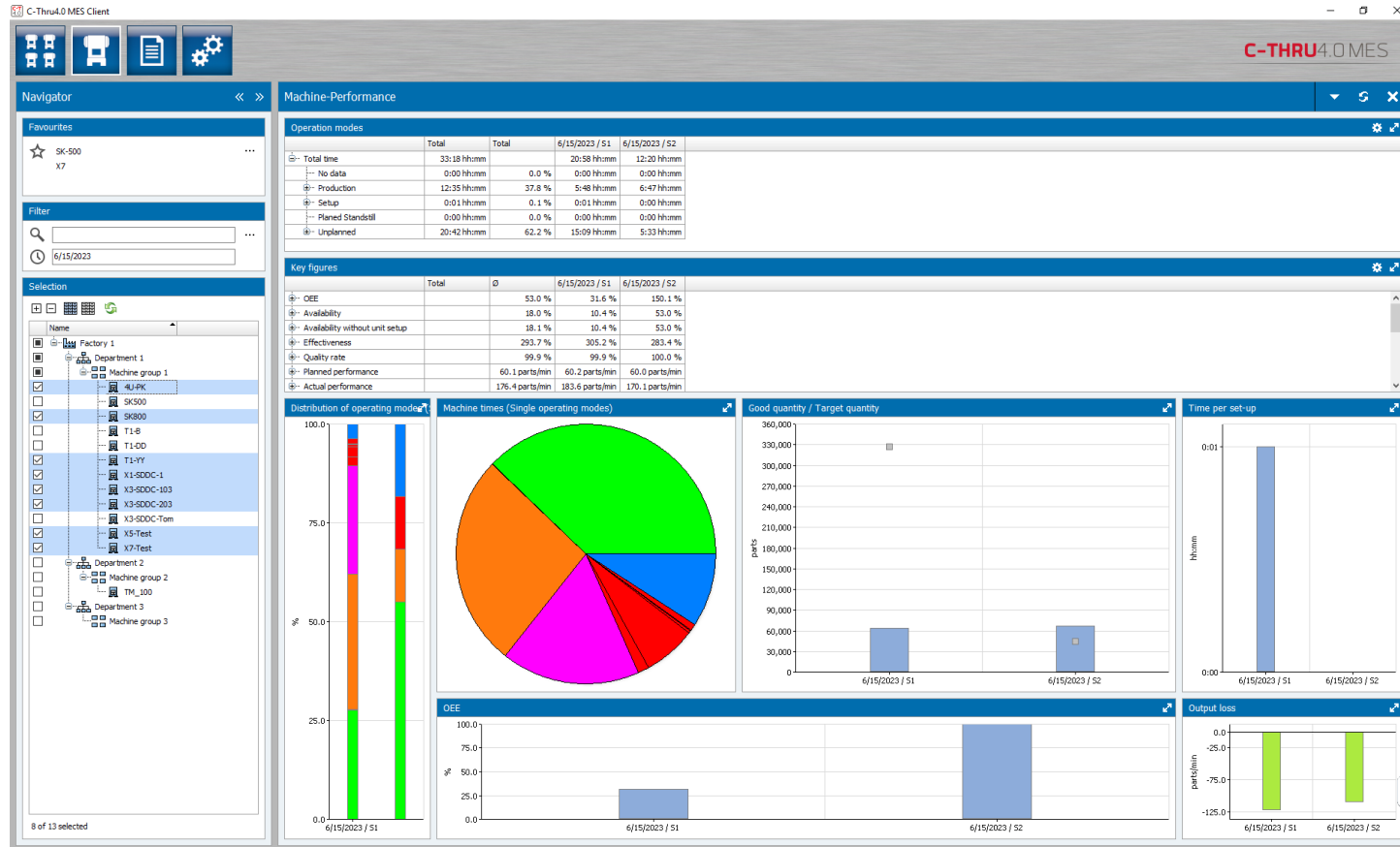
*Hirt: planned standstills and no data / no shift reduces available time and are therefore only visible, if available machine time is selected as usage time

C-THRU4.0 up/down chart

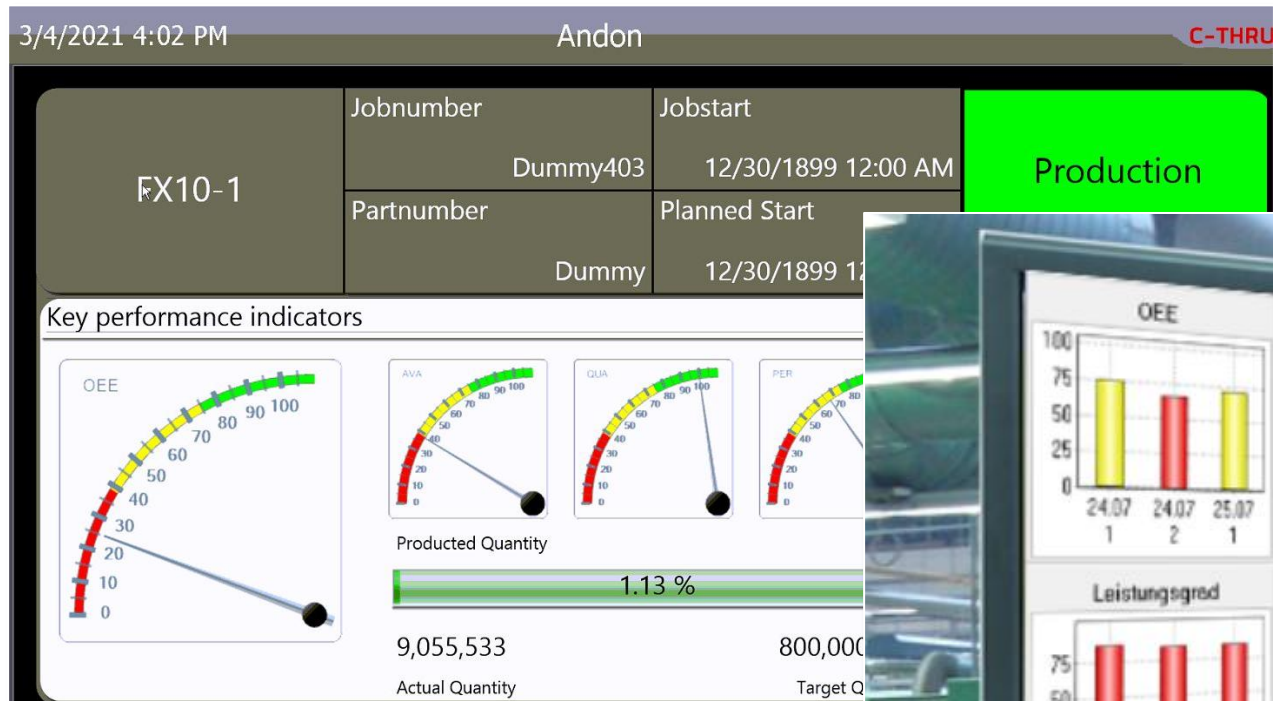


- Overview about job performance
- Analyse machine set-up process

C-THRU4.0 Production reports OEE



C-THRU4.0 Dashboard



- Multiple templates
- Customizable dashboard template



C-THRU4.0 Benefits

Transparency in the facility

Reduction of flow times

Increase of productivity

Efficiency rating with standardized key figures

Reduction machine down times

References (extract)

