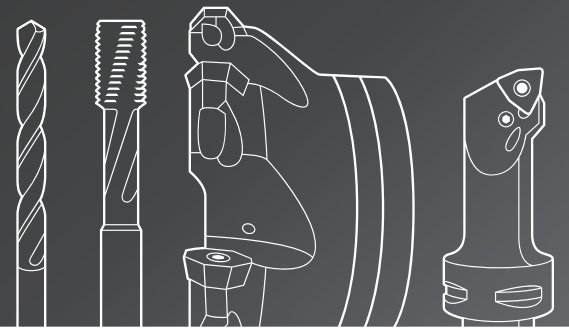
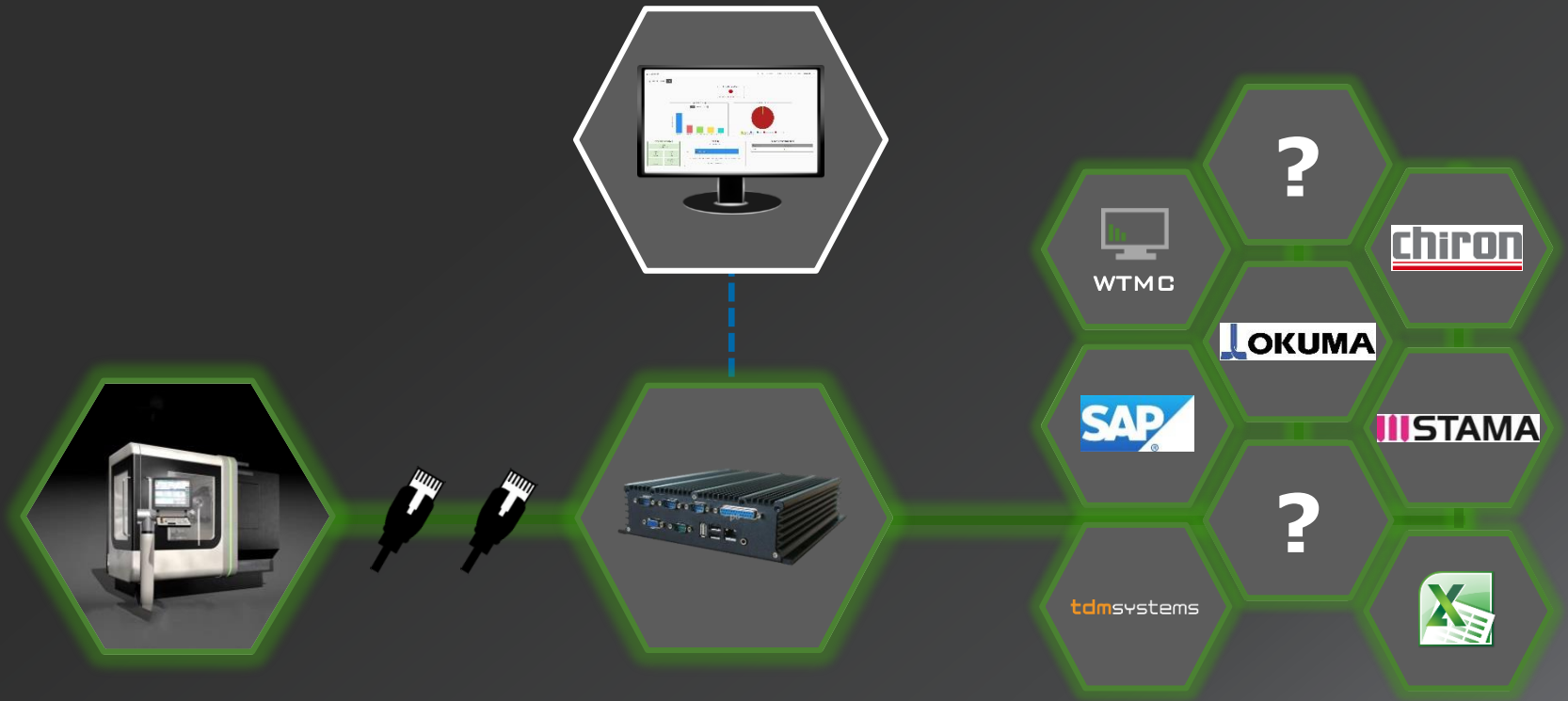
appCom

Information App Bundles



The appCom principle



What is included

Hardware

Industrial PC (IPC)

Maße:
180x142x48 mm

1x

Software

Standard Apps

1x

To be ordered separately:
- Customization of apps
- Interface to other systems

Machine control requirements

Requirements Siemens control

- Year of manufacture 2005 or later
- 230V oder 24V power supply in the cabinet of the machine
- IP Switch (with 3 ports or more)
- Connection to the company network via Ethernet

Requirements FANUC control

- „FOCAS 2“ option activ
- 230V oder 24V power supply in the cabinet of the machine
- IP Switch (with 3 ports or more)
- Connection to the company network via Ethernet

Requirements Heidenhain control

- „Heidenhain DNC“ option activ (Option 18)
- 230V oder 24V power supply in the cabinet of the machine
- IP Switch (with 3 ports or more)
- Connection to the company network via Ethernet

What is possible with appcom

- Easy data preparation
- Quick access to the desired data

- Cost transparency
- Calculations based on real machine data
- Program and process optimization

- Recording of all relevant machine data in real time
- Open to all machine brands

- Machine utilization based on real machine data
- Increase of productivity
- Increase machine efficiency

- Monitoring
- Overview of manufacturing in real time

- Exact detection of machine uptimes
- Reduction of cycle, process and machining times

Advantages through the appCom system

Process optimization

Ex.
- Identify down-time reasons
- Identify set-up times
- Process stability
- Overview of tool performance
- Optimization of cutting-parameter

Improvement of machine utilization

Ex.
- Planning of machining time
- Integration of predicitve maintenance
- OEE analysis based on different parameters
- Comparison of tool magazin and required tools

Transparency of machine uptime

Ex.
- Tracking of real processing times
- Detection of parameter changes
- Exact display of usage times
- Detection of waiting times, chip-to-chip times and tool change times

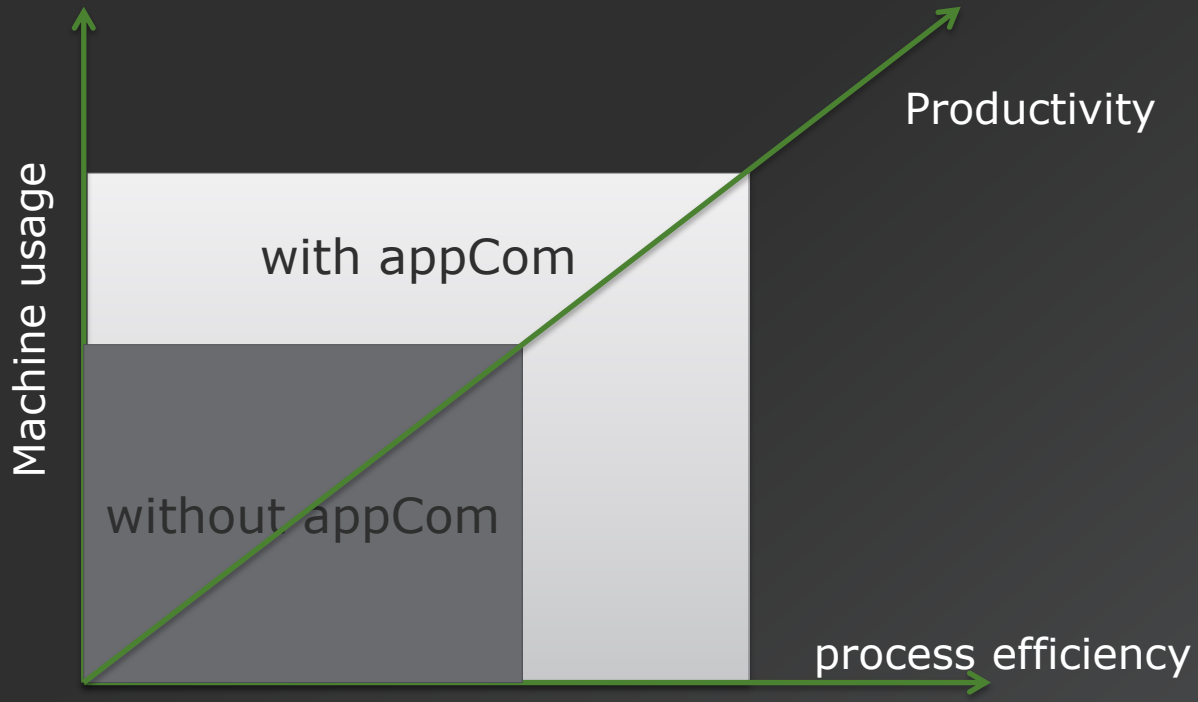
Overview of real tool costs

Ex.
- Improved lifetime detection
- Determining accurate tooling times
- Cost per part calculation based on real machine data

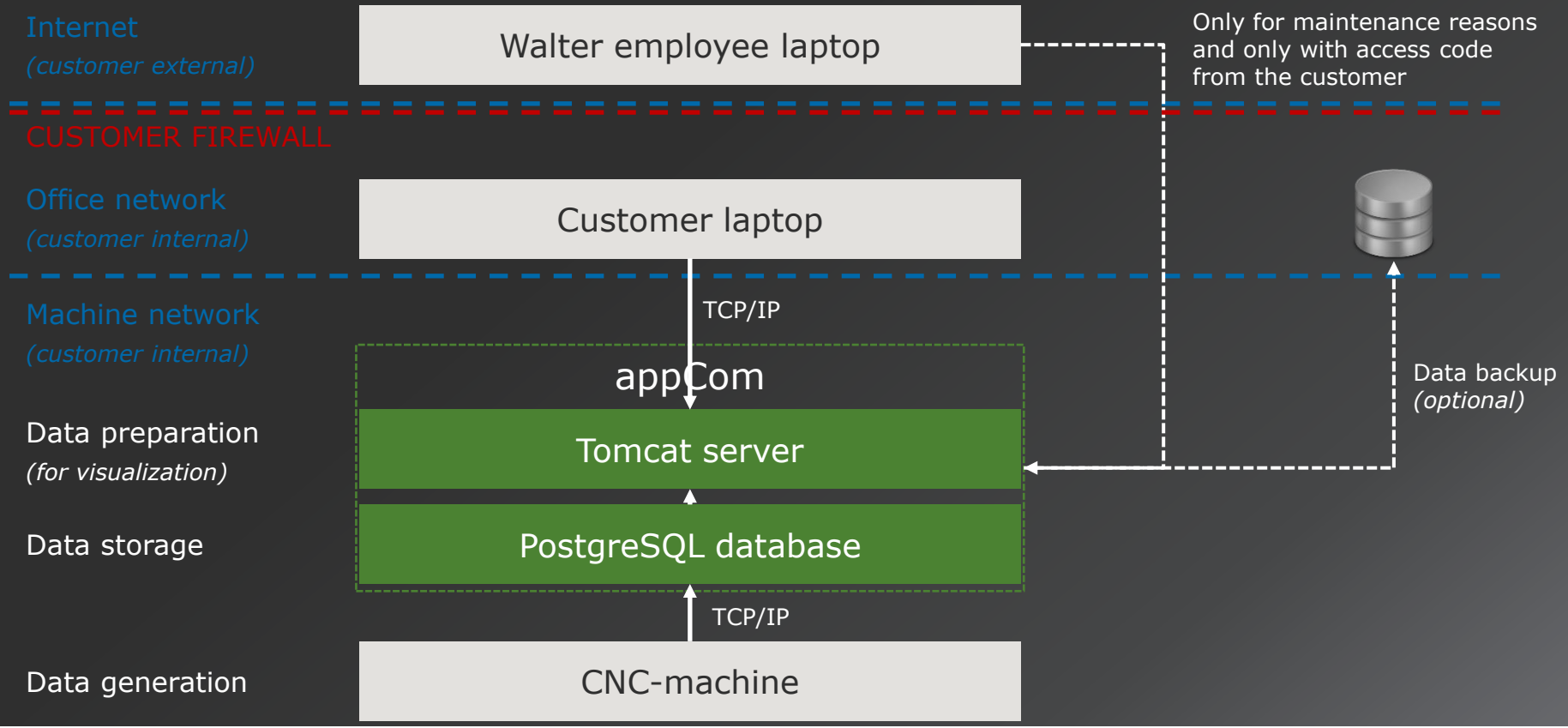
Improvement possibilities with appCom

	without appCom	with appCom
The machine data acquisition	See less data	Complete monitoring of the machine / high data density/real time
Transparency of data	Complex searching for data	Faster and easier access to small, prepared data
Cost transparency and cost-calculation	Estimation of tool costs	Cost transparency/calculations based on real machine data
process stability	Much effort to to control the stbility of processes	Complete monitoring of the process / simple recognition of error sources
Machine efficiency	Analysis of effectiveness based on less data	Effectiveness analysis on the basis of many data and based on real time data / detection of downtime reasons

Potential through the use of appCom



‘Connectivity’ of appCom



appCom bundles

Product	Apps
optimization	Tool life cycle, Program potential identifier
Monitoring, Potential	Energy consumption, Tools in magazine, Tool cost drivers; Variance, Program overview, Tool comparison
appCom Basic System	Machine Status, Machine ID, Production Overview, Dashboard, Parts Overview, Program changes, Machine availability, Quality factor configurator, iConfirm, Walter Tools – search and find

App Bundles

Starter bundle + advanced apps

Starter Bundle Applications

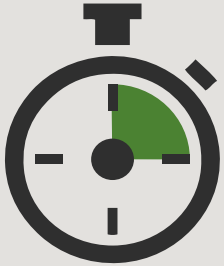
Software

Basic Apps

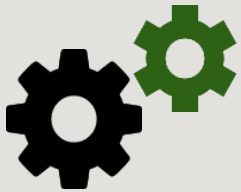
1x

Starter Bundle

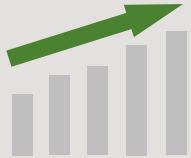
- Machine Status
- Machine ID



- Production Overview
- Dashboard



- Quality Factor Configurator
- Machine Availability



- Parts Overview
- NC Program Changes

Dashboard

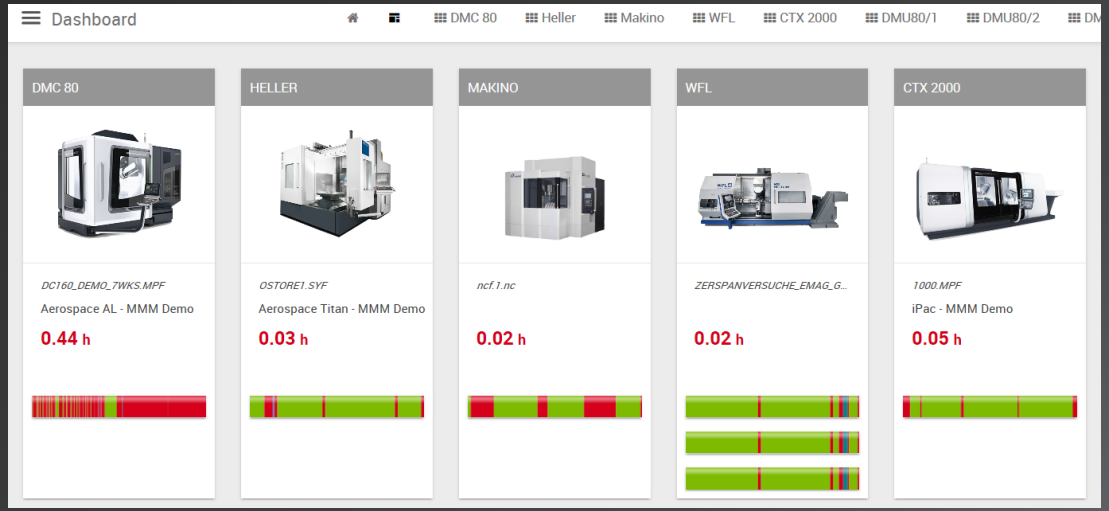
The overview of your machines with just one simple click

Which information is being displayed?

- Name of each machine/segment
- Active program on the machine
- Time how long the machine is being continously productive or inproductive

Benefits:

- Overview over all neccessary machines/segments
- No manual input needed



Available for: SIEMENS FANUC HEIDENHAIN

Production Overview

The performance of your machines on a glance

Which information is being displayed?

- Productivity of each machine (operation mode, downtimes)
- Allocated shift (early/late/night shift)

Benefits:

- Productivity overview on a glance
- No manual input needed

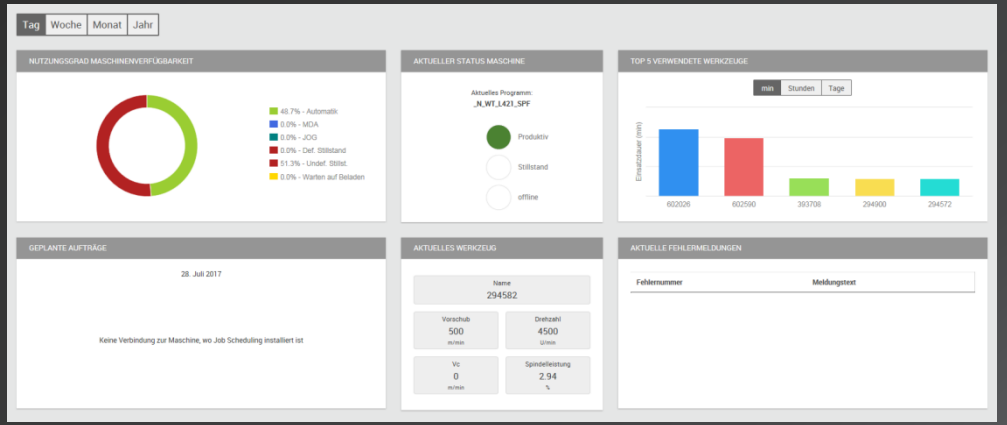
Available for: SIEMENS FANUC HEIDENHAIN

Machine ID

All you need to know about your machine

What information is being displayed?

- Current status of the machine (productive/unproductive)
- Use of the machine availability (OEE)
- Top 5 tools used based on actual machining records
- Current tool in use (name and cutting parameters)
- Jobs from Job Scheduling App or ERP system for this machine
- Current alarms from the machine



Benefits:

- All crucial parameters of the machine on a glance
- No manual input needed (except for jobs)

Interface to:

Job Scheduling App or ERP System is **NOT** part of the standard package.

Available for: SIEMENS FANUC HEIDENHAIN

Machine Status

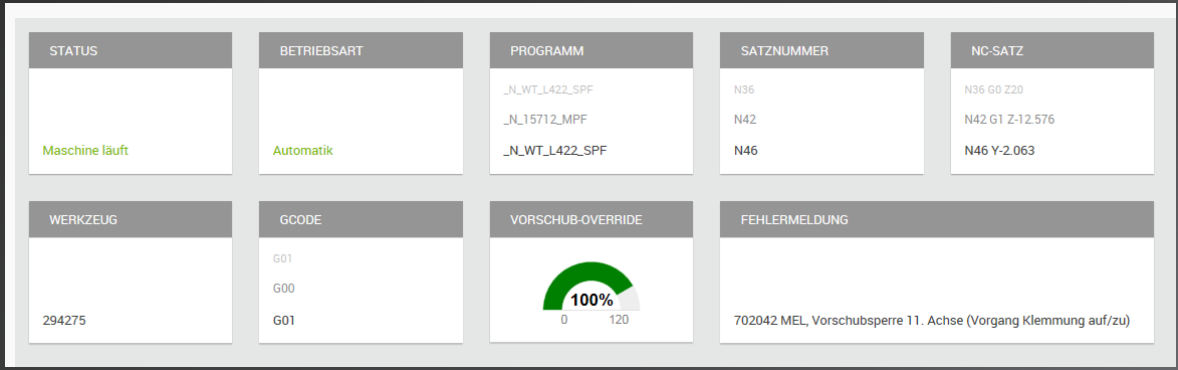
what is the machine doing

What information is being displayed?

- Live parameters of the machine (status, operation mode, program, tool in use, G-code, NC sentence, content of the NC sentence, override position)

Benefits:

- All live parameters of the machine on a glance without standing next to the machine
- No manual input needed



This level of detail is only available for Siemens machines!

Available for: SIEMENS FANUC HEIDENHAIN

Machine Availability

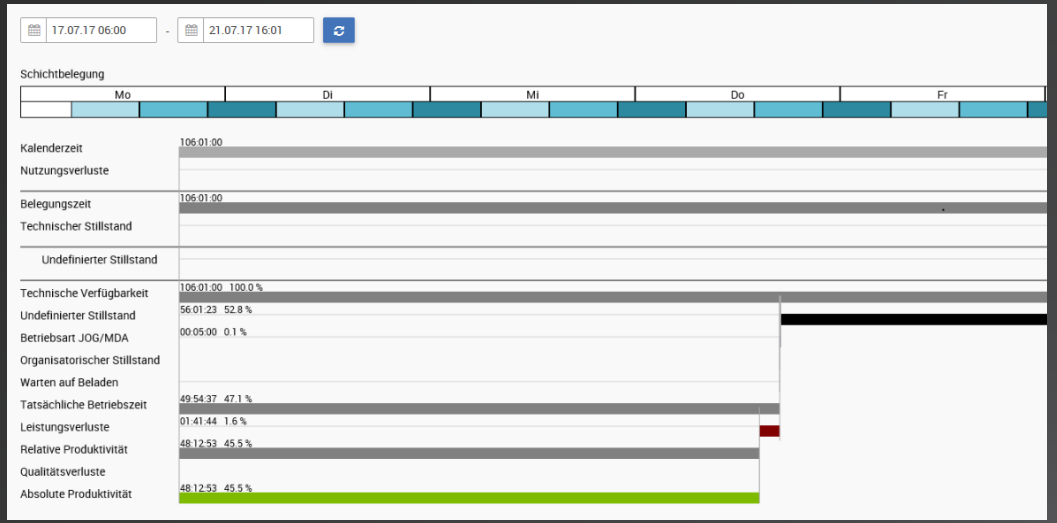
see the machine utilization

What information is being displayed?

- Availablity of the machine (splitted in different modes)
- Utilization of the machine availability
- Reasons why the machine stood still (not included in standard bundle)

Benefits:

- Analysis of machine availability for individual time windows
- Analysis of the reasons for stoppages and the effects on the efficiency of the machine
- Efficiency optimization by detecting frequent errors
- OEE analysis on the basis of different parameters (machine is effective when: potentiometer on 100%, active program, tool inserted, feed is on, spindle load is on ...)



Available for: SIEMENS FANUC HEIDENHAIN

Parts Overview

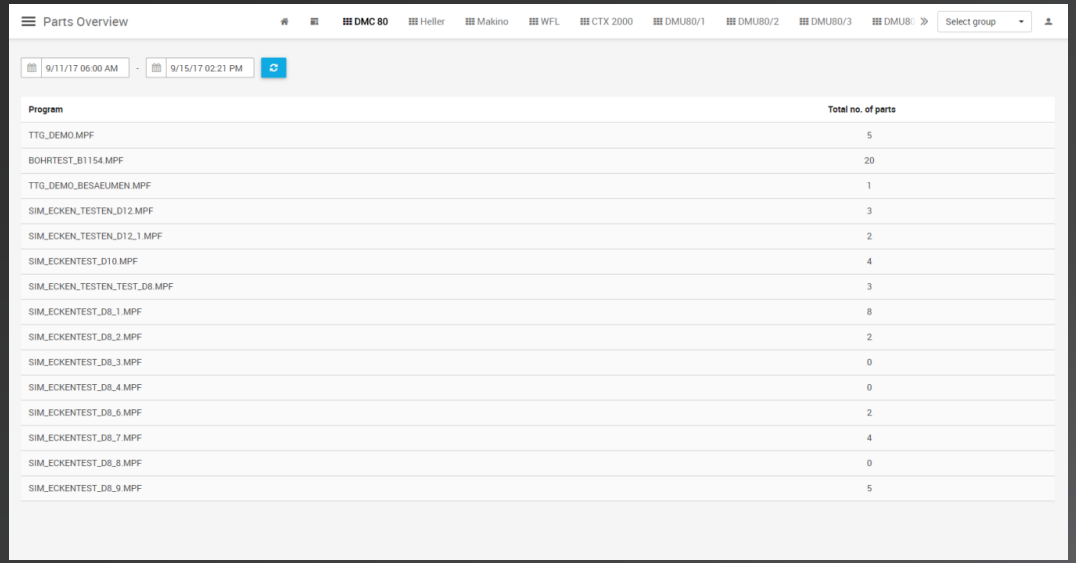
Number of produced workpieces in the choosen time periode

What information is being displayed?

- Completed NC-Programs related to a defined time period
- Number of Program-runs

Benefits:

- Overview of the number and type of the produced workpieces in the selected time period



Program	Total no. of parts
TTG_DEMO.MPF	5
BOHRTEST_B1154.MPF	20
TTG_DEMO_BESAEUMEN.MPF	1
SIM_ECKEN_TESTEN_D12.MPF	3
SIM_ECKEN_TESTEN_D12_1.MPF	2
SIM_ECKENTEST_D10.MPF	4
SIM_ECKEN_TESTEN_TEST_D8.MPF	3
SIM_ECKENTEST_D8_1.MPF	8
SIM_ECKENTEST_D8_2.MPF	2
SIM_ECKENTEST_D8_3.MPF	0
SIM_ECKENTEST_D8_4.MPF	0
SIM_ECKENTEST_D8_6.MPF	2
SIM_ECKENTEST_D8_7.MPF	4
SIM_ECKENTEST_D8_8.MPF	0
SIM_ECKENTEST_D8_9.MPF	5

Available for: SIEMENS FANUC HEIDENHAIN

Quality Factor Configurator

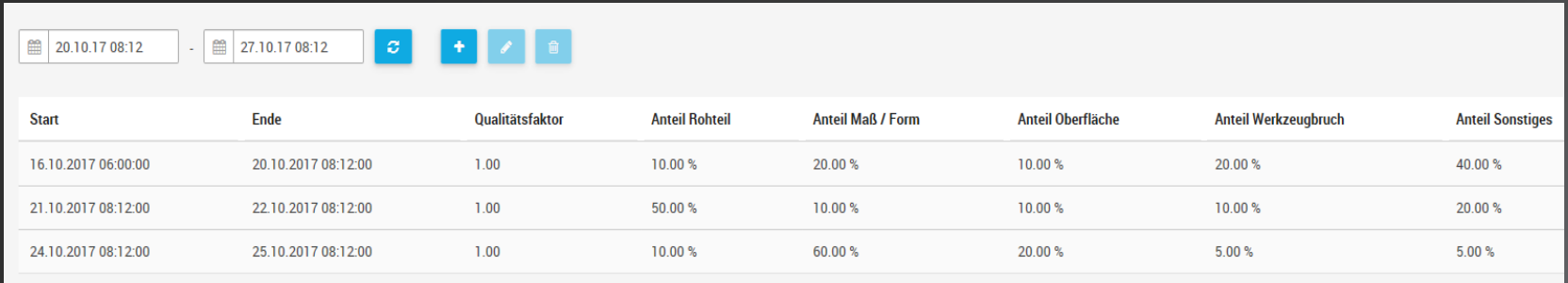
Overview of quality losses

What information is being displayed?

- Overview of quality losses
- Proportional List of the reasons for quality losses

Benefits:

- Transfer of quality losses to the machine availability app
- Calculation of productivity due the quality losses



Start	Ende	Qualitätsfaktor	Anteil Rohteil	Anteil Maß / Form	Anteil Oberfläche	Anteil Werkzeugbruch	Anteil Sonstiges
16.10.2017 06:00:00	20.10.2017 08:12:00	1.00	10.00 %	20.00 %	10.00 %	20.00 %	40.00 %
21.10.2017 08:12:00	22.10.2017 08:12:00	1.00	50.00 %	10.00 %	10.00 %	10.00 %	20.00 %
24.10.2017 08:12:00	25.10.2017 08:12:00	1.00	10.00 %	60.00 %	20.00 %	5.00 %	5.00 %

Available for: SIEMENS FANUC HEIDENHAIN

NC Program Changes

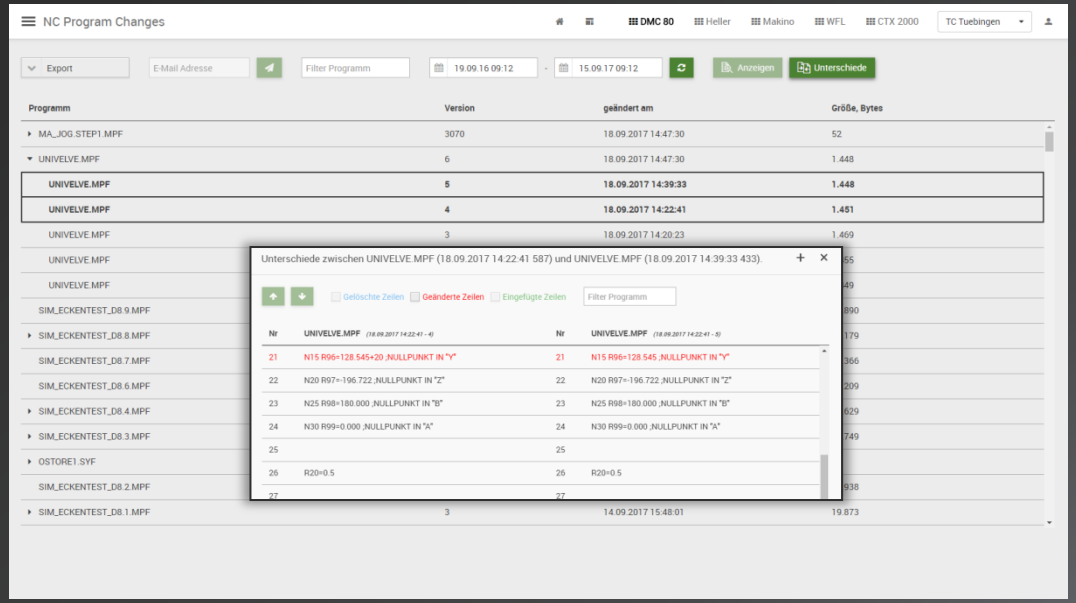
Program changes on one view

What information is being displayed?

- Collection of completed NC programs in selected period
- Changes are recorded along with modification date and index
- By selecting two NC programs are shown changes to the level of the NC steps

Benefits:

- Transparent cutting process, because changes are automatically documented and understandable



Available for: SIEMENS

iConfirm

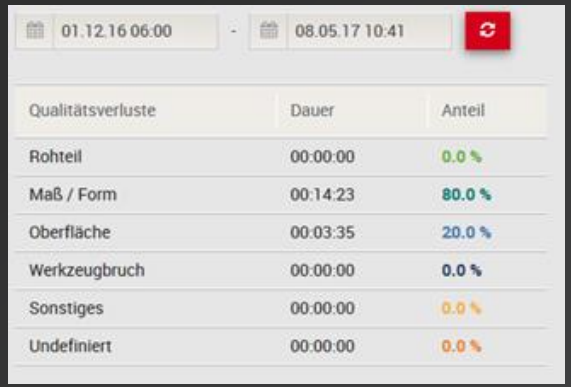
Determination of availability and quality loss

What information is displayed?

- Downtime reasons and time periods appear in time and %
- quality losses are displayed the time which was the machine in use, and has produced defective parts

Benefits:

- Analysis of machine availability for individual time windows
- Quick overview of optimization potential
- Easy detection of losses
- Quality, availability and productivity at a glance



Qualitätsverluste	Dauer	Anteil
Rohteil	00:00:00	0.0 %
Maß / Form	00:14:23	80.0 %
Oberfläche	00:03:35	20.0 %
Werkzeugbruch	00:00:00	0.0 %
Sonstiges	00:00:00	0.0 %
Undefiniert	00:00:00	0.0 %

Input of standstill reasons is carried out by the skilled worker at the machine.

Up to 16 reasons could be defined and deposited the softkeys.

Not included in the Starter Bundle

Verfügbarkeitsverluste	Dauer	Anteil
Undefinierter Stillstand	2min	2.6 %
Org. Stillstand	0min	0.0 %
Programmänderung	0min	0.0 %
Pause	32min	37.4 %
Qualität	39min	44.8 %
Techn. Störung	0min	0.0 %
Wochenende	0min	0.0 %
Werkzeug	9min	11.2 %
Rüsten	0min	0.0 %
Wartung IH	0min	0.0 %
Reinigung	0min	0.0 %
Fehlendes Material	0min	0.0 %
Fehlendes Personal	3min	4.0 %
Fehlender Auftrag	0min	0.0 %

Walter Tools – search and find

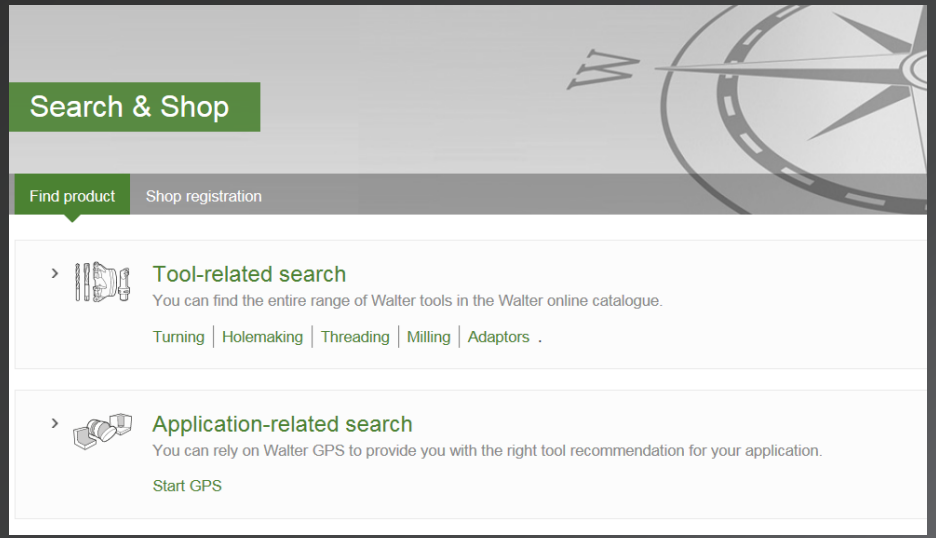
Connection to Walter Search & Shop

What information is displayed?

- Walter GPS
- Walter Catalogue

Benefits:

- Fast and easy access to Walter GPS / Catalogue



appCom bundles

Produkt	Apps	
optimization	Tool life cycle, Program potential identifier	
Monitoring, Potential	Energy consumption, Tools in magazine, Tool cost drivers	Variance, Program overview, Tool comparison
appCom Basic System	Machine Status, Machine ID, Production Overview, Dashboard, Parts Overview, Program changes, Machine availability, Quality factor configurator, iConfirm, Walter Tools – search and find	

Monitoring bundle

Software

Extended Apps

1x

Energy consumption

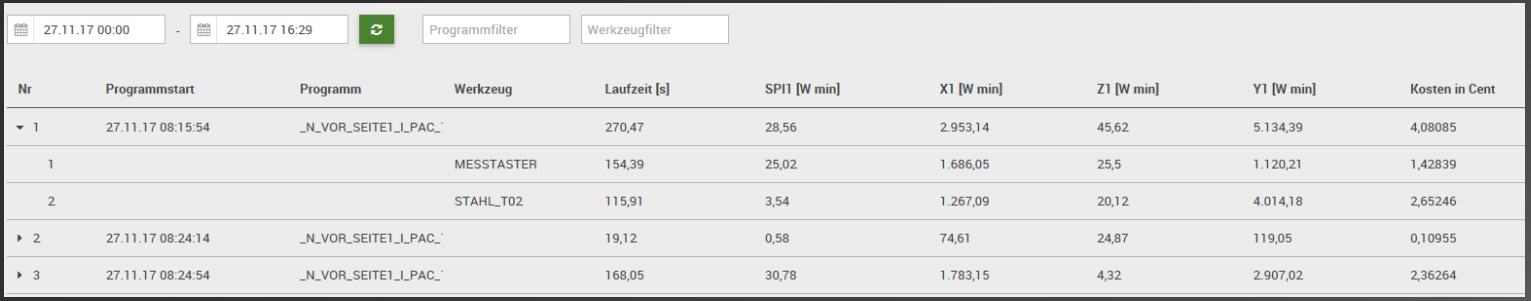
Energy consumption for each tool and program

What information is being displayed?

- How many KW has been needed for which tool and spindle
- Costs for each produced component
- Used energy for each tool and process

Benefits:

- Cost calculation based on real data



Nr	Programmstart	Programm	Werkzeug	Laufzeit [s]	SPI1 [W min]	X1 [W min]	Z1 [W min]	Y1 [W min]	Kosten in Cent
1	27.11.17 08:15:54	_N_VOR_SEITE1_I_PAC_		270,47	28,56	2.953,14	45,62	5.134,39	4,08085
1			MESSTASTER	154,39	25,02	1.686,05	25,5	1.120,21	1,42839
2			STAHL_T02	115,91	3,54	1.267,09	20,12	4.014,18	2,65246
2	27.11.17 08:24:14	_N_VOR_SEITE1_I_PAC_		19,12	0,58	74,61	24,87	119,05	0,10955
3	27.11.17 08:24:54	_N_VOR_SEITE1_I_PAC_		168,05	30,78	1.783,15	4,32	2.907,02	2,36264

Available for: SIEMENS

Electricity price and performance data of the engines must be entered manually once

Tools in Magazine

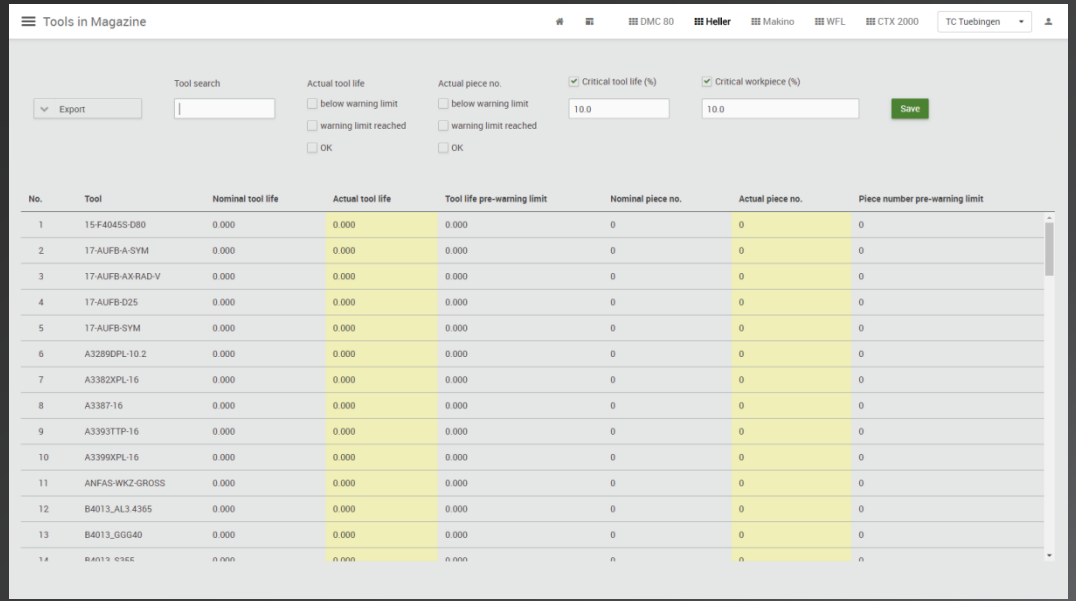
Tools - including wear status - in tool magazine

What information is being displayed?

- Collection of the tools in the tool magazine
- Mapping tool name to magazine number
- Actual and planned downtime of each tool

Benefits:

- It is possible to find tools in the magazine, that have for example a low residual service life through search filter



Available for: SIEMENS

Tool Cost Drivers

Overview about tool costs

What information is being displayed?

- Costs for each use of a tool
- Planned life-time and real life-time for each tool

Needs to be provided:

- Tool costs per tool (.csv format)
- Tool lives need to be set up in machine magazine

Benefits:

- Better tool cost calculation
- Overview about tool costs

Werkzeug	Anzahl der Werkzeuge im Einsatz	Kosten je Einsatz	Preis pro Werkzeug	Soll-Standzeit	Ist-Standzeit vor Einsatz	Ist-Standzeit nach Einsatz	Standzeit je Einsatz
602003	6	317,27 €	693 €	30.000			26.192
294418	10	258,29 €	249,1 €	30.000			39.137
294572	4	135,34 €	191,3 €	30.000			21.224
294752	7	97,95 €	578 €	30.000			5.084
	1	13,64 €	578 €	30.000	14.916	14.208	0.708
	1	11,65 €	578 €	30.000	15.371	14.767	0.604
	1	19,01 €	578 €	30.000	15.604	14.617	0.987
	1	13,62 €	578 €	30.000	14.777	14.070	0.707
	1	14,2 €	578 €	30.000	14.670	13.933	0.737
	1	12,85 €	578 €	30.000	14.463	13.797	0.667
	1	12,98 €	578 €	30.000	14.334	13.660	0.674

Available for: SIEMENS

appCom bundles

Produkt	Apps
optimization	Tool life cycle, Program potential identifier
Monitoring, Potential	Energy consumption, Tools in magazine, Tool cost drivers; Variance, Program overview, Tool comparison
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potential bundle

Software

Extended Apps

1x

Variance

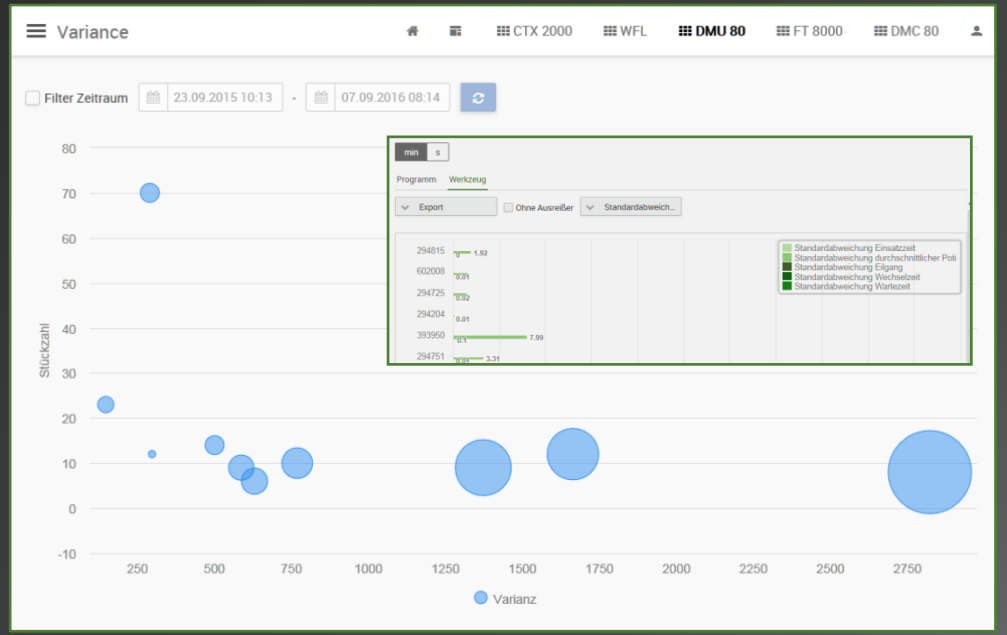
Stability of your process made visible – without manual input

What information is being displayed?

- NC programs are represented as bubbles
- The size of the bubble indicating that a program once more, required times less processing time for the same component (big bubble = large deviations)

Benefits:

- Optimization potential can be easily identified
- No manual entry of data necessary
- The data can be traced back to the process, and the tool.
- The optimisation potential identified on tool, Porzessebene
- Potentiometer will be shown too



Available for: SIEMENS FANUC HEIDENHAIN

Program Overview

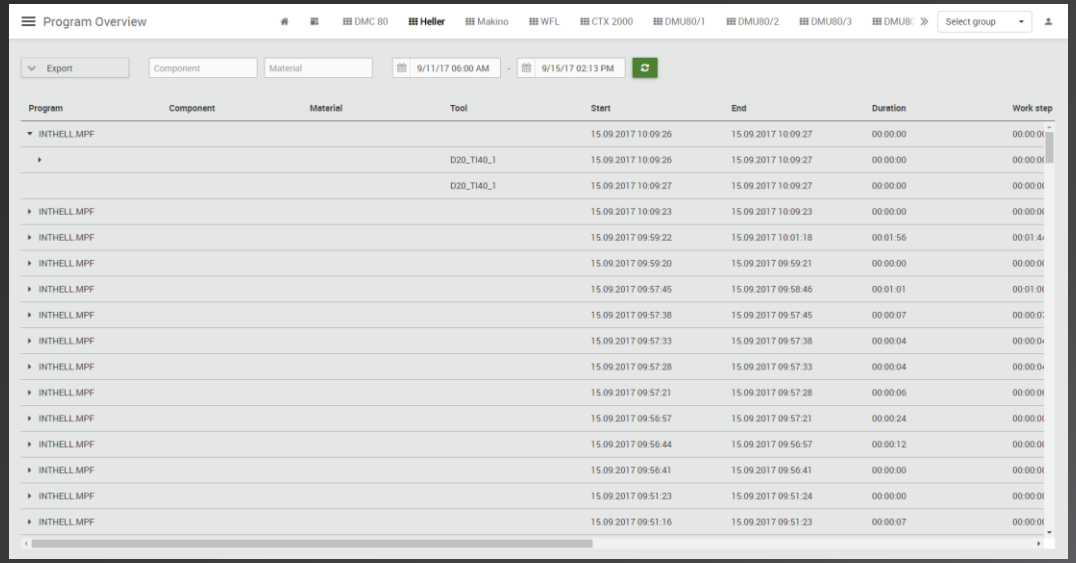
Overview of the processed programs

What information is being displayed?

- List of processed NC-Programs in the selected time period
- Workingtime of tools in the choosen program

Benefits:

- Overview of the rapid-mode-time and the machining-time
- Overview of chip to chip time



Available for: SIEMENS FANUC HEIDENHAIN

Tool Comparison

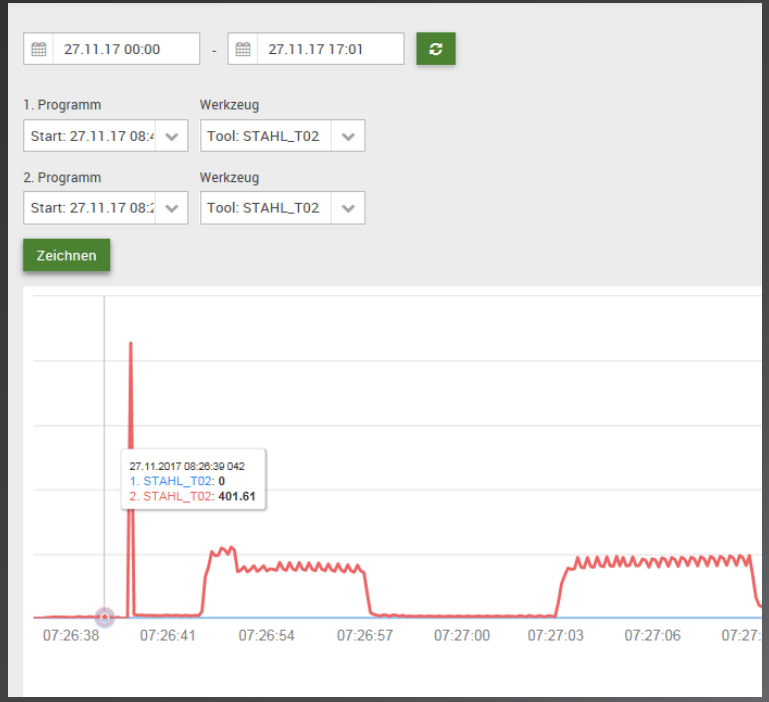
Comparison of tool performance

What information is being displayed?

- Power consumption of tools
- Differences of tool performance

Benefits:

- Comparison of tool performance
- Easier to select the best tools for a process



Available for: SIEMENS

appCom bundles

Produkt	Apps	
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optimization bundle

Software

Extended Apps

1x

Tool Life

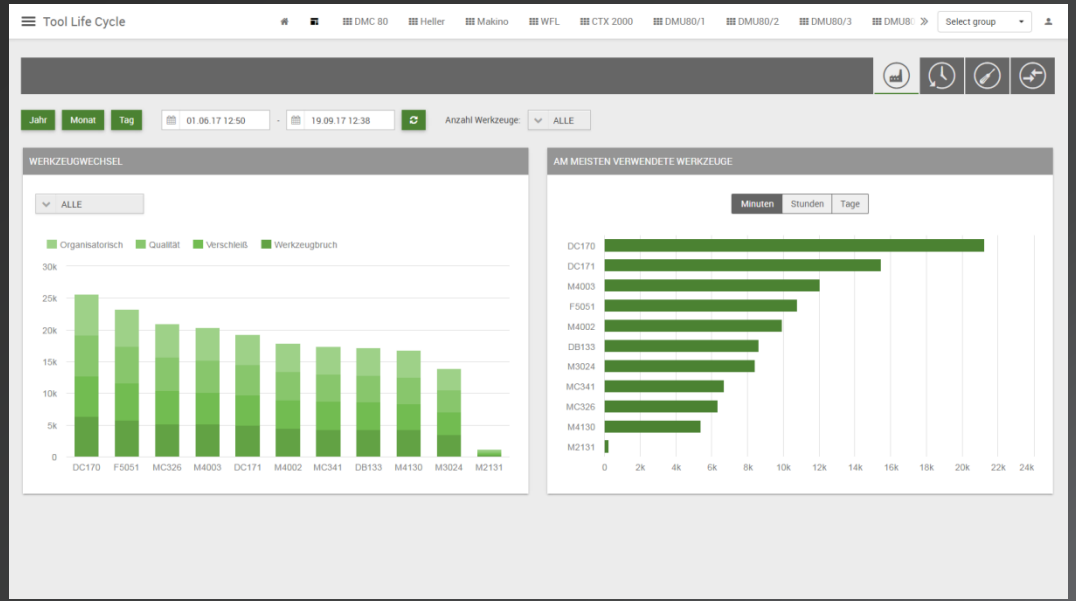
Tool usage data at a glance (BETA VERSION)

What information is displayed?

- Tool changing reasons (breakage, wear, etc.)
- Usage time/place/time of tools
- Wear conditions sorted by traffic light system (red stand time end achieved, yellow short residual life, green long remaining life)
- Estimated delivery date (based on the residual service life and the tool operation time in the current NC program)

Benefits:

- Problematic tools become apparent (E.g. due to frequent breakage) at a glance
- Seldom-used tools are listed
- Reduced downtime of the machine, because tools can be upgraded in a timely manner and provided



Available for: SIEMENS

Program Potential Identifier

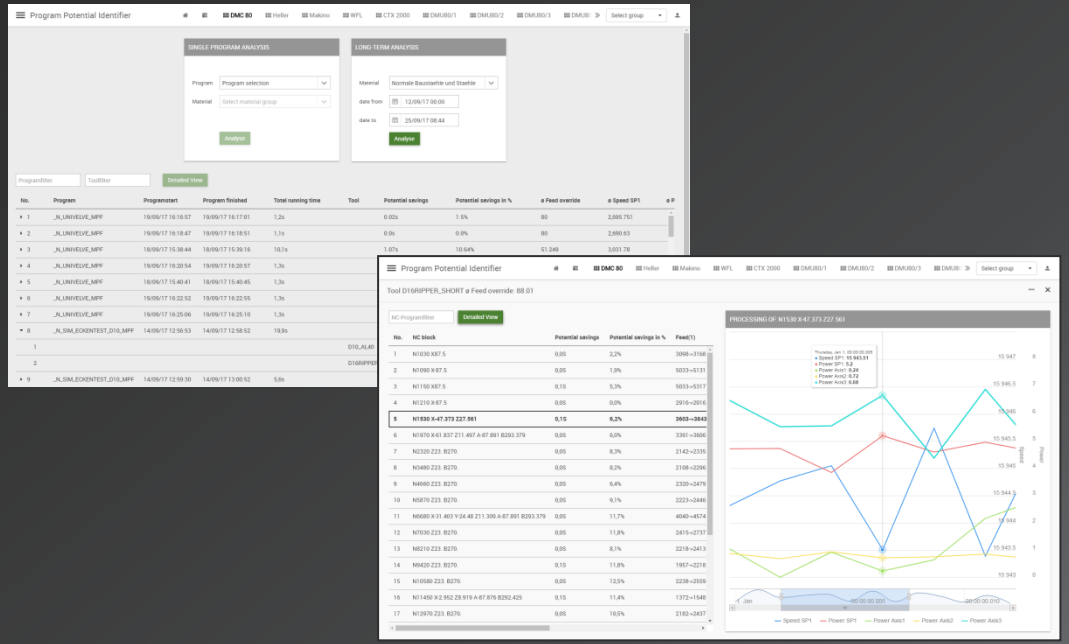
Recognize and demonstrate optimization potential

What information is displayed?

- Used programs in selected period
- Potential time savings tool based on basis of feed boost

Benefits:

- Run-time optimizations are shown per tool and NC set.
- New feed rate is proposed for each NC set to inprove



Available for: SIEMENS

FAQ

Who gets my data? How are my data protected?	The data remains in the internal corporate network. The data is protected on the protection of the internal network.
Where can I get appCom?	appCom can be purchased through the sales of Walter AG.
Can I change the appCom on my needs?	The Starter Bundle includes predefined default apps. It is possible to buy extended applications or get customized apps.
Are there references	There are some customers who have appCom in use. AGCO Fendt is a customer who may be called.
Who has access to appCom?	Only the customer, from all devices that are connected to the network.
How to include the PC?	The PC is connected to the control of the machine via Ethernet. The company network is also connected to the PC.
Where is the data stored?	The data is stored on the PC. There is the possibility to create backups automatically. The backups will be stored in a public folder. The customer has got access to the folder to get the data into the server.

Engineering Kompetenz