

MAIN-TOOL

MAINTENANCE MADE EASY

Microsoft Dynamics Business Central



Flexible planning options

Optimal overview

Flexibility

With more than 35 years of experience in the maintenance planning segment and a presence in various industries, we have implemented the right solutions in our system for the industry-specific requirements of companies and their employees.

MAIN-TOOL for production, manufacturing and process

This cross-industry special solution for maintenance and technical operations management is used primarily in the manufacturing industry. It manages the technical equipment in the company over the entire life cycle and maps the maintenance, inspection and repair processes. MAIN-TOOL supports telediagnosis and also offers shutdown management for major repairs in the process industry. MAIN-TOOL ensures the quality management according to ISO 9001 ff.

MAIN-TOOL for energy and water

The industry-specific maintenance solution for the energy and water industry as well as for drainage companies. Topics such as the connection to known GIS systems and their integration into the workflow processes are supported by the system.

MAIN-TOOL for disposal companies

The industry-specific solution for maintenance and technical management for commercial and municipal waste disposal companies such as waste incineration plants with their specific plants, including the vehicle fleet.

MAIN-TOOL for bus, train and logistics

An administration for road and rail vehicles helps you to plan and control business processes. Topics such as labor values and workshop accounting are supported. The vehicle files help you to meet the legal and commercial (LCC) requirements. Reporting according to MDBF (Mean Distance Between Failure) or vehicle structuring according to DIN 25002-2, which specifies a product-related key structure, are topics supported by MAIN-TOOL.



MAIN-TOOL for ship operation

A solution that stands out due to its simple operation with a complex background!

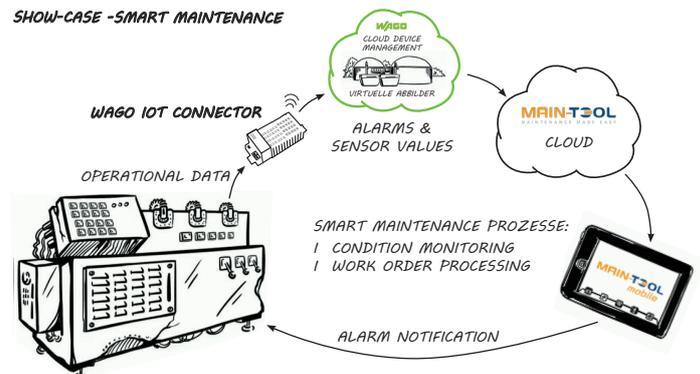
The integration of practitioners from ship operation has resulted in a solution that answers all questions of the technical inspector and the chief. Ship-to-Shore-to-Ship communication is also a practical solution.

MAIN-TOOL for technical service providers

MAIN-TOOL is used by service companies that are concerned with securing the electricity and water supply or with the maintenance of boiler houses, sanitary and heating systems as well as systems for manufacturing and production. Here the integration of technical and commercial programmes is of particular value.

MAIN-TOOL for Facility Management

For technical FM, MAIN-TOOL offers all the possibilities you need to organize your building services and building technology. You can map your building structures as well as your supply circuits. Manage your building service providers or monitor BGVA 3 inspections.



Work Order management

Work order requests/failure reports/shift books

MAIN-TOOL allows your employees to enter failure reports and work order requirements directly into the system. This can be carried out either via a Microsoft Dynamics NAV interface or a web form. This section is also frequently used as a shift book.

Construction/renovation work

Procurement capacities also allow renovations to buildings and facilities to be planned, carried out and checked. The system takes over both cost control and scheduling. Future activation of costs is also possible.

Service charging

Maintenance service providers can service and maintain your customers' facilities. The maintenance quality and the corresponding invoices can be cleanly documented and debited. All options can be displayed, whether you use a bill of quantities, charge a flatrate or invoice based on expenditure!

Contracts

This module allows you to set up and manage service-related contractual agreements with your customers. This contains details such as contract conditions (prices, discounts, invoicing details), contract coverage and service level (response time, priority, service intervals). Further features include service agreement offers, contract templates, automated creation of contract invoices and service orders, and profitability analysis and service history.

The screenshot displays the Dynamics 365 Business Central interface for a Work Order card. The card title is 'WO00547 · Change shaft bearings on pump'. The interface is divided into several sections:

- General:** Fields for No. (WO00547), Description (Change shaft bearings on pump), Person in Charge No. (PAUL), Res. Department No. (INDUS), and Work Order Status (Planning).
- Reference Object:** Technical Component (TK00103) and Detail Description (centrifugal pump Comeo CRN 15).
- Lines:** A table with columns: TYPE, NO., DESCRIPTION, QUANTITY, UNIT OF MEASURE CODE, UNIT COST, and LINE AMOUNT.

TYPE	NO.	DESCRIPTION	QUANTITY	UNIT OF MEASURE CODE	UNIT COST	LINE AMOUNT
Item	90007	Bearing SKF 6004 RE	2	PCS	16.50	33.00
Item	90009	Water Filter	1	PCS	32.00	32.00
- Work Order History:** A summary table showing counts for various metrics like No. of Entries, Follow-Up Work Orders, etc., all currently at 0.
- Work Order Details:** A table showing details for the selected detail description (TK00103).
- Work Order Facts:** A section for facts, currently empty.
- Notes:** A section for notes, currently empty.

Work Order: Card

CRONUS International Ltd. | Posted Documents

Work Orders: All | Search | + New | X Delete | Process | Show Attached | Open in Excel | More options

NO.	DESCRIPTION	WORK ORDER STATUS	PERSON IN CHARGE NO.	DEPARTME... CODE	TYPE OF ACTIVITY CODE
WO00547	Change shaft bearings on p...	Planning	PAUL	1004	MAINTENANCE
WO00548	Repair gas meter GA2000	Planning	LINDA		MAINTENANCE
WO00549	change front breake discs	Planning	MARK	1004	MAINTENANCE
WO00550	Truck Inspection	Planning	MARK	1004	INSPECTION
WO00551	Annual compressor inspecti...	Execution	STEFAN	1004	INSPECTION
WO00553	Pump Maintenance	Planning	STEFAN		W
WO00554	Pump Maintenance	Planning	TIMOTHY		W
WO00555	Pump Maintenance	Planning			W
WO00556	Machine break down	Finished	MARK	1004	MAINTENANCE
WO00559	4 weekly Fan inspection	Planning			
WO00560	Inspection and oil change (...)	Planning	JOSEF		MAINTENANCE
WO00561	Problem Fixed	Finished		1004	

Work Order History

Work Order No.	WO00547
No. of Entries	0
Follow-Up Work Orders	0
No. of Origin Lines	0
No. of Requisition Worksheets	0
Quotes	0
Orders	0
Posted P. Invoices	0
Posted P. Credit Memos	0
Quotes	0
S. Invoices	0
Posted S. Invoices	0
Posted S. Credit Memos	0

Work Order Details

NO.	DESCRIPTION
TK00103	centrifugal pump Comeo ...

Notes

(There is nothing to show in this view)

Work Order: List

Facility management

Asset model

This overview quickly provides information about the structure of a Technical Component or complete equipment or assets. The Equipment-Informationcenter offers quick and easy access to individual assets and all subsidiary levels. A detailed view of the next level is available with a single click. This can, for example, organize and display the plant from the perspective of a process (e.g. electricity generation). The system is also evaluated at this level. You can select any number of outlines (plant identification groups) for a complete or partial asset. This ensures that every user, from the worker to the managing director, has „his“ view of the asset.

The asset is also analyzed on this level. An unlimited number of structures (Component Address Group) can be selected for a full asset or part of an asset. This allows every user, from operator to the CEO, to have access to their „own“ view of the asset.



Asset management integration

MAIN-TOOL does more than a traditional IPS. The solution allows the mapping of complete asset management. The modular structure allows sections to be put into operation gradually. The entire life cycle of all components can be mapped from asset acquisition, through operation, to recycling or sale.

Dynamics 365 Business Central Component Address

Equipment Structure Manage Create new Activity Master Data Transactional Data Show Attached Actions Navigate Less options

EDIT - EQUIPMENT-INFORMATIONCENTER

No.	Description
CR01	CRONUS International Ltd.
CR01.HH	Plant Hamburg
CR01.HH.ADM	Administration
CR01.HH.ES	Energy Supply
CR01.HH.ES.PU01	Combined Heat and Power Unit 01
CR01.HH.ES.PU02	Combined Heat and Power Unit 02
CR01.HH.ES.TS	Transformer Station
CR01.HH.PRO	Production
CR01.HH.PRO.01	Production Line 01
CR01.HH.PRO.01.01	Frame production
CR01.HH.PRO.01.02	Paint shop
TK00046	Robot surface spray painting machine VEN SPRAY VAR
CR01.HH.PRO.01.03	Final assembly
TK00049	OCS overhead conveyor OCS 150
TK00050	OCS overhead conveyor OCS 150
CR01.HH.PRO.02	Production Line 02
CR01.HH.WS	Water Supply
CR01.HH.WS.PS01	Pump Station 01
EP00021	Pump unit 1
TK00101	centrifugal pump Comeo CRN 15
TK00102	motor
EP00022	Pump unit 2
TK00107	centrifugal pump Comeo CRN 15
TK00108	motor
EP00023	Pump unit 3

General

Description: Water Supply Search Description: WATER SUPPLY

Component Address from: CR01.HH Component Address Group: CRONUS

Department Code: 1007 Data Sheet Template: []

Project Code: [] Blocked: []

Data Sheet

Technical Specification	Description	Content	Unit of Measure Code
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Monitoring Lines

Links

URL1	Description	Created	To User ID
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Comments

Date	Comment
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Work Order Requests

Work Orders

Work Order Feedbacks

Posted Work Order Requests

Closed Work Orders

Posted Work Order Feedbacks

No.	Work Order No.	Work Order Descripti...	Person In Charge No.	Type of Activity Code
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Close

Equipment-Informationcenter

Replacement part management/ Materials management

Requirements requisitions/Material planning

The orders can be used to create requirements requests for warehouse material, direct material, and external activities, which can then be summarized into one procurement transaction so that several requisition requests can be combined into one purchase order if necessary.

The procurement process for material, direct material or External services are either based on requirements requests or are triggered by requirements planning. In this area, external service providers, suppliers, services, spare parts, wear parts, auxiliary and operating materials, and so on, are managed.

Resources/Tools

The resources (tools) are also managed via the system. These and the spare parts (spare parts worth maintaining) can be included in the maintenance process.

Calibration

Maintenance objects and the necessary measurement techniques or measuring equipment are calibrated using the system. Measurement logs are stored in the system and are available for comparison. Necessary calibrations can be determined by time period or degree of use.

Spare Parts/Stock Management

The plants and their components are directly connected to the warehouse management. BOMs can be stored there for the spare parts and materials. The system also maintains class and type catalogs for the Technical Components. These are used to assign spare parts to Technical Components in Warehouse Management (where-used list) and for standardization.

Technical Purchasing

Using the ordering system, the system can generate an order proposal list by entering minimum stocks and reorder points. This list can be sent to Purchasing as a requirement request or can be sorted by supplier and printed on a form to trigger an order transaction immediately.

If required, order tracking can be set up to ensure just-in-time delivery of important components. Incoming goods and partial deliveries are taken into account in Work Order Management and booked accordingly. This ensures that information on open orders or adherence to delivery dates is available at all times.



Workplanning

Activity log (log book)

The activity log tracks what changes have been made to master data or transaction data, and by which employees. These records are logged irrespective of permissions; they contribute to quality assurance and data security.

Asset control integration

The integration of asset control systems with MAINTOOL allows precise service planning and evaluation of individual plants. To do this, MAIN-TOOL offers an interface to the EXTEND 7000 SCADA system. However, connections to other systems are also feasible without any problems. The MAIN-TOOL Standard OPC Client is used for this purpose.

OPC is an independent standard interface based on Microsoft OLE/COM technology. OPC allows direct communication between guidance systems or automation systems and MAIN-TOOL.

Workplanning

The Work Order Management module allows resources, materials and external services to be planned, calculated, confir-

med and invoiced in the system. In this way, the system ensures permanent feedback, which facilitates constant monitoring of all measures and the associated costs and consumption data for management, and above all assists in systematic weak-point analysis.

Barcodes

Barcodes minimize the effort required for input, and prevent errors in data entry. This particularly applies for data entry using mobile devices that do not have a full keyboard or no keyboard at all. The number of a replacement part can be scanned, as well as the associated order number or maintenance job number. In addition to barcode stickers, barcodes can be printed as part of every document, offering a range of applications.

Vehicle maintenance

The vehicle maintenance module offers you the option to technically administer your motor pool. It does not matter whether the vehicles belong to your company or another. Service and inspection, tank data management, mileage and accident repair with insurance accounting are just a few of the options available. MAIN-TOOL allows you to produce complete vehicle files.

Work Order No.	Description	Date of Execution	Planned Completion	Person in charge
AA-00044	Stock Control	25.01.18 11:30	25.01.18 11:30	KARL
AA-00047	Pump stopped	25.01.18 09:00	25.01.18 10:00	DIETER
AA-00053	Drive failed	25.01.18 09:00	25.01.18 11:30	KARL
AA-00068	Machine down	25.01.18 11:30	25.01.18 13:30	KARL
AA-00070	Testing of steps and ladders	25.01.18 09:00	25.01.18 13:00	JOERG

Schedule Board

Inspections

MAIN-TOOL allows you to plan and carry out inspections. You can store inspection related task schedules, operations and sequences which operators must then follow according to a checklist system. This allows you to guarantee fully documented and verified work.

Maintenance/production calendar

Use the production planning display including Gantt charts and plan new processes using a drag-and-drop interface. This immediately displays changes in the relevant production order. Connect your production planning with maintenance and improve your efficiency.

Resource planning

Planning is everything. Operations planning and efficient scheduling of individual activities play key roles in planning maintenance measures and projects. It is also important to provide and allocate sufficient capacities for the resources required, without avoidable idle time.

Achieve the fastest results.

The planning tool offers you an overview of the upcoming tasks, and allows you to quickly and easily map the desired sequence and planned start and end dates or process duration in the system. A drag & drop interface allows resources to be included in planning with consideration for capacities. The planning tool is directly integrated into Microsoft Dynamics NAV.

Maintenance planning

The maintenance planning module is a key control element. A wide range of concepts are supported. The module can be event-driven or condition-oriented. Deadlines are monitored for all objects to be serviced. Deadlines are triggered by period, time, operating hours, process counters, threshold values, etc. Any number of these can be combined. Deadlines are displayed via the deadline preview, which is available in a tabular or graphical (GANTT) form. We use a 3 tier role-based user interface, so that every planning engineer only sees „his“ deadlines.

Drawings, images and documents

Drawings, images and documents can be directly allocated to a component in MAIN-TOOL. This means that test logs, pictures of damage and other important documents can be accessed immediately at the relevant points.

Condition-based maintenance

Measurement logs allow unlimited sets of operating data to be defined. This operating data or performance data can be read and documented. The system also compares target and actual values and automatically triggers service, inspection and planned repair measures automatically when a threshold value is reached. Analyses can be graphically supported. The system also recognizes inadmissible value fluctuations!

Condition analysis

Plants are assessed by employees as part of a regular process, with the evaluation based on employees' experience and forming an important criterion in decision making.

Controlling

Analysis and KPIs

By default, the system has a number of analyses in the form of reports which can be retrieved at any time by the user. The results of these analyses are generally presented in the form of a table. There is also graphical support for the majority of these analyses. Standard analyses and Pareto analyses (ABC analysis) are available for all areas of the system: technical components, Work Order Management, warehousing, cost and budget monitoring, lifecycles of machines and installation locations, and weak-point analysis.

Budgets

Behind the controlling module is budgeting and cost control. This is where, for instance, budgets for cost centers, technical components, profit centers and locations are monitored. Budgets include costs for personnel, materials and external services, and can be precisely planned and tracked for individual months. The maintenance system offers the opportunity to store cost rates in the master data for the maintenance group and external services. Costs against a budget are calculated from order feedback, warehouse withdrawals and accounting for external services. There is a permanent comparison of planned and actual values.

IT-environment/highlights

Database technology

Microsoft SQL Server is used for data management. Microsoft SQL Server is a reliable, productive and intelligent data platform. The characteristics that distinguish it include security, reliability and scalability.

Integration

MAIN-TOOL can be connected with external systems in a number of ways, as it has access to all the standard functionalities of Microsoft Dynamics NAV. Microsoft BizTalk Server or Microsoft Dynamics NAV Web Services are just two of the options for integrating MAIN-TOOL into existing systems.

Internal notifications

Using internal notifications, processes or simply messages can be sent within the system.

Clients

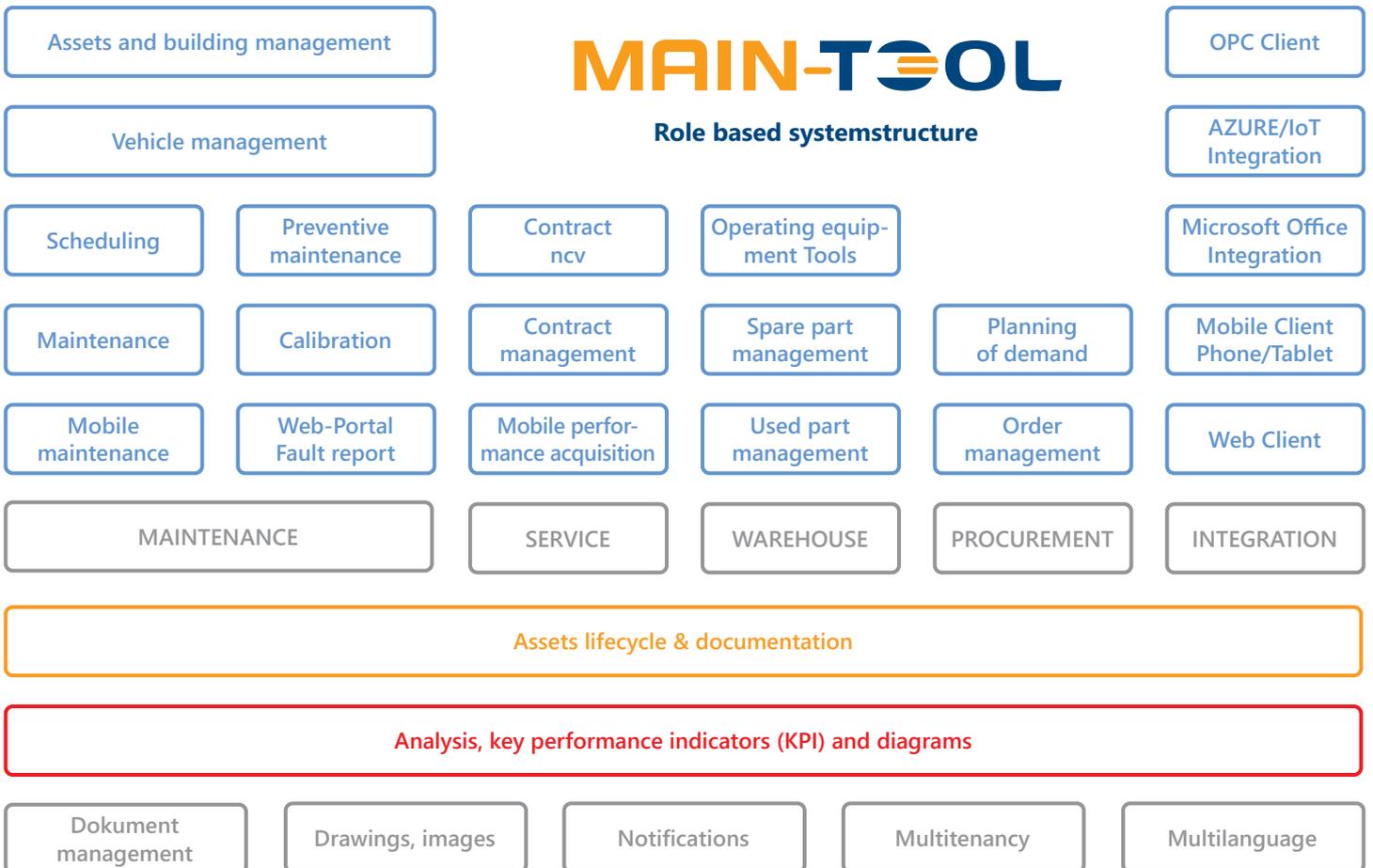
MAIN-TOOL is a multi-client system. This allows to be implemented in a group of companies.

Microsoft Office

Increase your productivity with simple data export and additional processing and analysis in the well-known Microsoft Office Excel® and Microsoft Office Word® applications.

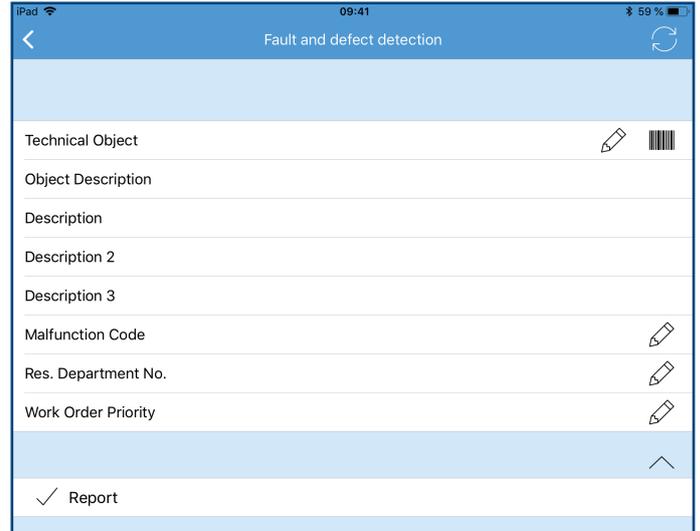
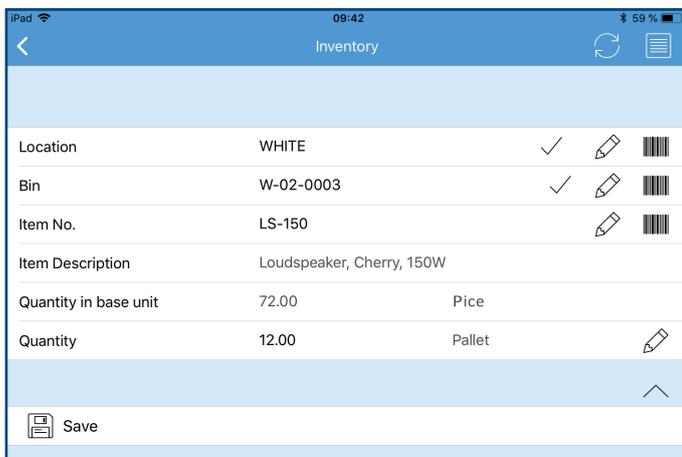
Outlook Integration

Work more productively with direct management of contacts, tasks and team data in Outlook. Users can create, update or delete records in Outlook or MAIN-TOOL, as well as customize forms and then synchronize data.



Mobile solutions

Ideally, data should be recorded where they occur. „MAIN-TOOL Mobile“ is a solution based on Microsoft Windows Mobile (from Version 5.0). The application is easy to use and communicates directly with the MAIN-TOOL system via web services. Data can be recorded both online and offline. For this, the data are stored in a Microsoft SQL database on the mobile device. Individual functions can also be quickly added to the system.



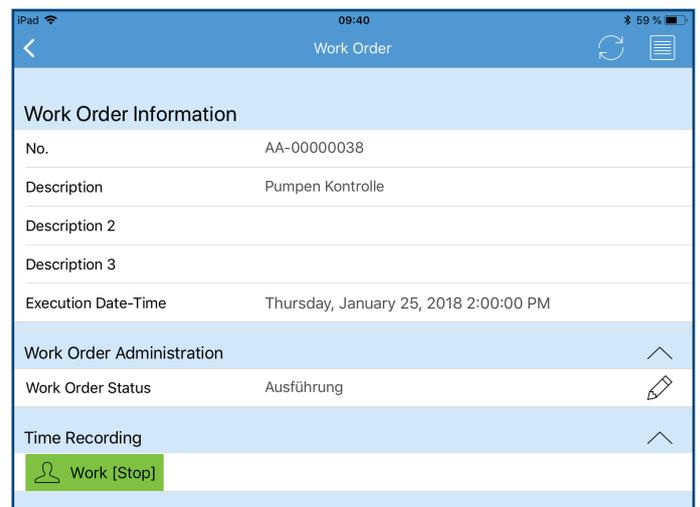
Mobile processes/default roles

By personally logging on to the mobile device, the user can see just the data that are relevant to them.

The following default roles are available:

Warehouse

- Store (with or without order)
- Transfer
- Inventory
- Stock issue Maintenance
- Feedback of materials and hours to orders
- Processing of order check lists.



MAIN-TOOL Mobile

CRONUS AG

Masterdata

Posted Documents

Work Order Requests

Work Orders

Work Order Feedbacks

Purchases

Assigned Purchase Lines

Date Proposal Worksheets

More



ACTIONS

> Work Order

> Work Order Feedback

> Time Schedule

Work Order Statistics (Top 10)

Work Order Card

> Work Order Request

> Time Recording

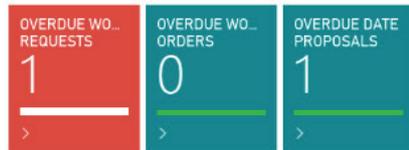
> Work Plan

Work Order Stat...chnical Object)

Insights

Maintenance Activities

OVERDUE



CURRENT



IN FUTURE/PLANNING



Power BI Reports

Get started with Power BI

My Resources

RESOURCE NO.	NAME	JOB TITLE	
(There is nothing to show in this view)			

Back to top

Role Center Workplanning

CRONUS AG

Masterdata

Posted Documents

Registered Work Order Requests

Work Orders

Work Order Feedbacks

Time Recordings

Work Order Journals

More



ACTIONS

> Work Order

> Work Order Feedback

Work Order Statistics (Top 10)

Work Order Card

> Work Order Request

> Time Recording

Work Order Stat...chnical Object)

Insights

Maintenance Activities

TASKS TO BE PERFORMED

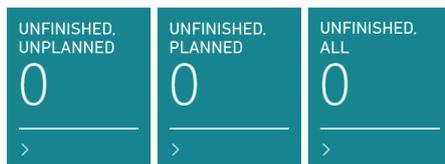


Work Order Traffic Light



6 of 14 Orders completed (42.86 %)

UNFINISHED WORK



FUTURE TASKS

*Role Center Workplanning*

Role-based work/default roles

The role-based user interface displays the tasks and functions that your employees carry out in your company. Whether they are an accountant or warehouse employee, every user receives their own role center, which provides optimum support for their work. Every employee can:

- carry out tasks more efficiently,
- make better decisions thanks to more detailed information,
- evaluate their performance better, as they are able to see the effects of their work on the company as a whole.

More productivity

The role centers in MAIN-TOOL are designed so that they offer every employee intuitive access to maintenance data and functions and provide optimum support for their tasks. Day-to-day work is structured better, and every employee knows exactly

what they should do next. This is the basis for more productive work. The default roles here are „work planner“, „worker“ and „maintenance supervisor“.

Web services

Web services allow external systems controlled access to MAIN-TOOL data. In addition, MAIN-TOOL business logic functions can be activated via external systems.

Web-based processes

Web interfaces make sense wherever training costs must be kept particularly low or where a large number of users can collect data. In principle, all MAIN-TOOL functions can also be provided online through the use of web services. This can take place through special web interfaces (work order request) or be easily integrated into the company intranet.

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