+GF+

System 3R

Software portfolio

Swedish design and quality

GF Machining Solutions: all about you

When all you need is everything, it's good to know that there is one company that you can count on to deliver complete solutions and services. From world-class electrical discharge machines (EDM), Laser texturing and Additive Manufacturing through to first-class Milling and Spindles, Tooling, Automation and software systems — all backed by unrivalled customer service and support — we, through our AgieCharmilles, Microlution, Mikron Mill, Liechti, Step-Tec and System 3R technologies, help you raise your game and increase your competitive edge.

✚ We are System 3R.
   We are GF Machining Solutions.

Contents

Machining Processes

Global presence

Sales companies in over 20 countries.

Thousands of installations worldwide.

We have the solution

Either you have a single or multiple process in your production.

Fully automatized

System 3R's software portfolio has over 25 years of

experience of machining.

+ Secure and standardize your process and expect better quality
+ 24/7 production support
+ Import and export to ERP system
+ Multiple technology support (milling, EDMing, wireEDMing,
   laser, grinding, CMM, Drying and cleaning)

Software range

Software	Process support	Robot type
CellManager	Mill, EDM, WEDM, Laser, CMM and Clean	WP1, WPT1+ and Fanuc
EasyCellManager	Mill	WP1, WPT1+ and Fanuc
JobToolManager	Mill	Mikron WPC
CellManager light	Mill, EDM, WEDM, Laser and CMM	Without robot support
BatchBuilder	Mill, EDM, WEDM and CMM	Pallet-, electrode changer, WP1 and WPT1+
BatchBuilder with ID	Mill, EDM, WEDM and CMM	Pallet-, electrode changer, WP1 and WPT1+

CellManager

CMM

WorkCenter

Server SQL Database
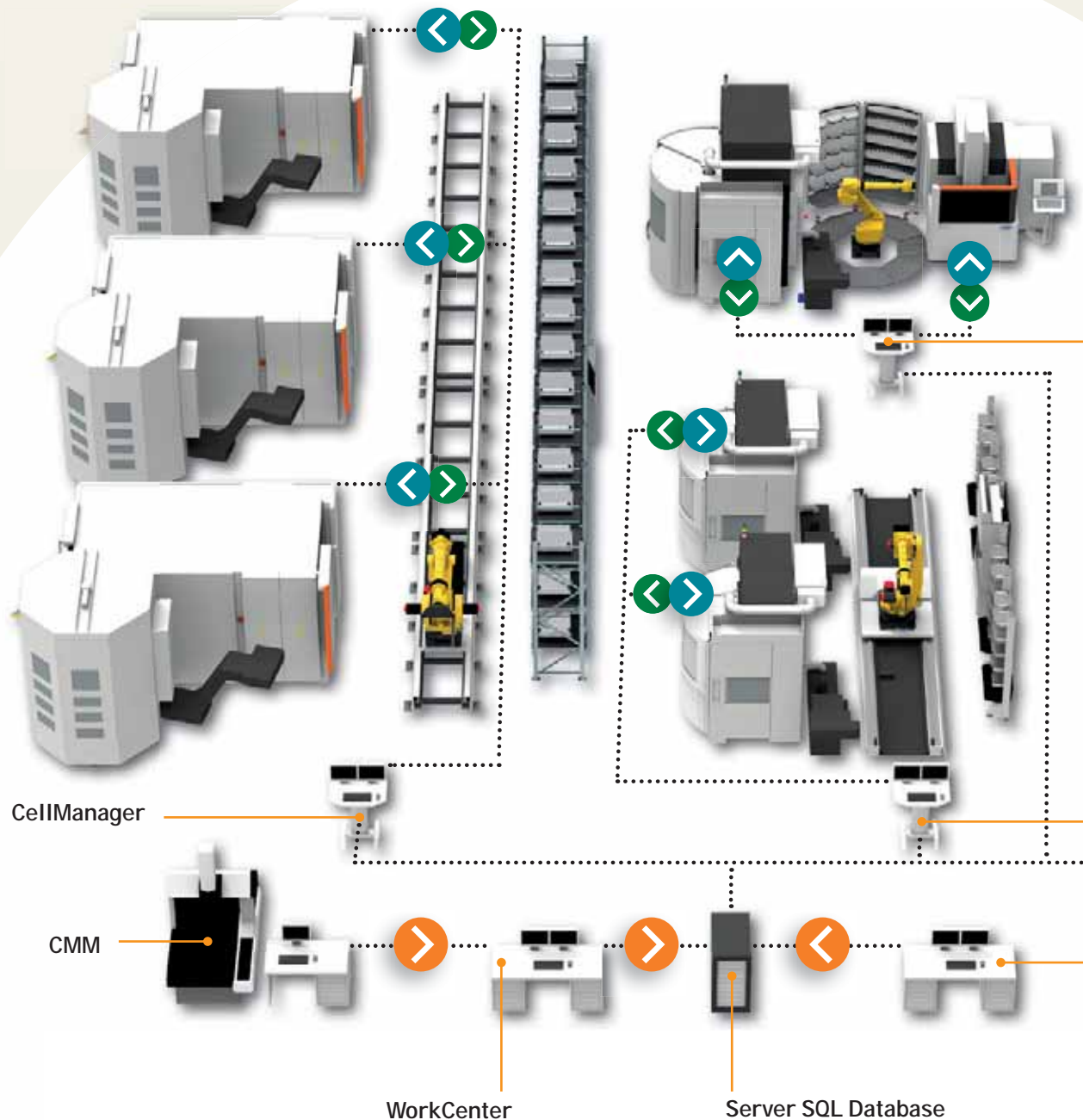
Machines	Rail	Supported Options
1 to 12	■	CTM, AES, AlarmServer, Pallet-, Hybrid station, Statistics, Monitor and MPS2WSM
1 to 4	■	CTM, AlarmServer, Statistics and Monitor
1	–	CTM, AlarmServer, Statistics and Monitor
1	–	CTM, AES, AlarmServer, Statistics, Monitor and MPS2WSM
1	–	
1	–	AlarmServer, Statistics and Monitor

CellManager
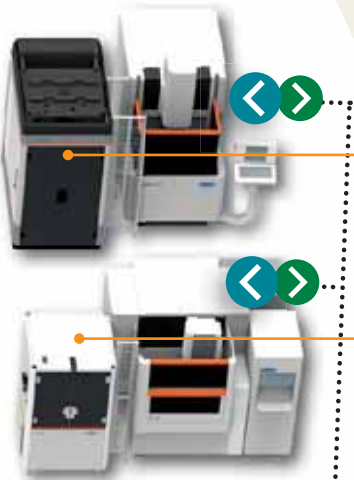
BatchManagement
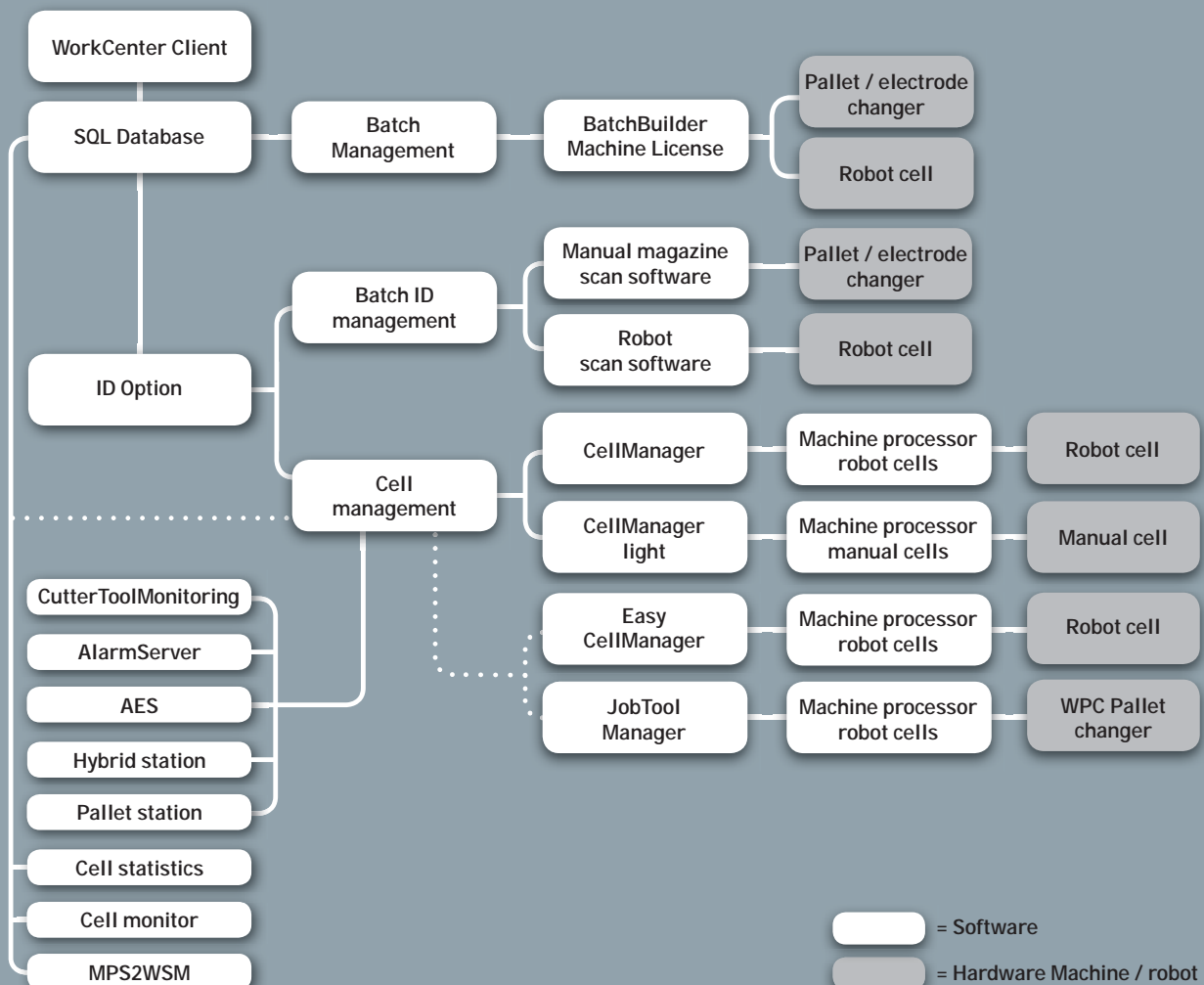
CellManager

CAM

WorkShopManager

Seamless integration of all your processes

- Quick and accurate overview of the entire process chain
- Management of the entire Automation process
- Human errors are drastically reduced
- Process safety and reliability.

WorkShopManager

Grows with your needs

+ Easy-to-learn and user friendly
+ Bring all your production technologies together in one process chain
+ Keep your production running with standardized procedures
+ Manage your automation process
+ Designed for your future – adding new machines, magazines and options later on
+ Central database for the entire factory.

WorkCenter Client

SQL Database — **Batch Management** — **BatchBuilder Machine License** — Pallet / electrode changer / Robot cell

ID Option — **Batch ID management** — **Manual magazine scan software** — Pallet / electrode changer / **Robot scan software** — Robot cell

Cell management
- **CellManager** — Machine processor robot cells — Robot cell
- **CellManager light** — Machine processor manual cells — Manual cell
- **Easy CellManager** — Machine processor robot cells — Robot cell
- **JobTool Manager** — Machine processor robot cells — WPC Pallet changer

CutterToolMonitoring
AlarmServer
AES
Hybrid station
Pallet station
Cell statistics
Cell monitor
MPS2WSM

⬜ = Software
⬛ = Hardware Machine / robot

CellManager

Intuitive and user-friendly

+ 1 or upto 12 machines in a cell
+ Supports different types of machines such as Milling, EDMing, WireEDMing, Laser, CMM, and cleaning machines
+ System 3R Automation - WorkPal 1, WorkPartner 1+ or Fanuc 70-700 kg
+ Process safety and ID system for identification
+ Clear graphics of the magazine content
+ Easy to prioritize jobs. Move up/down or stop
+ Loading station support.

WorkCenter Client			
SQL Database	Batch Management	Batch builder Machine License	Pallet / electrode changer
			Robot cell
	Batch ID management	Manual magazine scan software	Pallet / electrode changer
ID Option		Robot scan software	Robot cell
	Cell management	CellManager	Machine processor robot cells → Robot cell
		CellManager light	Machine processor manual cells → Manual cell
WSM Options		EasyCell Manager	Machine processor robot cells → Robot cell
Cutter Tool Monitoring		JobTool Manager	Machine processor robot cells → WPC Pallet changer
AlarmServer			
AES			
Hybrid station			
Pallet station			
Cell statistics			
Cell monitor		= Software	
MPS2WSM		= Hardware Machine / robot	

CellManager – Workflow

The user-friendly procedure can be summarized in three stages:

WorkCenter – Preparation

+ Generate jobs / work orders
+ Assignment of operations and NC-Programs
+ Request and transfer of offset values
+ Approve and release jobs / work orders for production.

CellManager – Execution

+ Management of pallet ID's and magazine positions
+ Generate priority lists
+ Automatic start of released jobs / work orders based on the priority list.

Monitoring

+ Updating of all information in a central database, such as status of machining / process hours, CuttingToolMonitoring etc.

CellManager – Options

	Technology	CellManager	ECM – Easy-CellManager	JTM – Job-Tool Manager	CellManager light	BatchBuilder
CTM – CutterTool Monitoring	Milling	■	■	■	■	–
AlarmServer	Mill, EDM, WEDM, Laser, CMM, Clean	■	■	■	■	–
AES – Automatic ElectrodeSelection	EDM	■	–	–	–	–
Hybrid station (mix pallets and raw material)	Milling	■	–	–	–	–
Pallet station (re-fixturing)	Milling	■				
Cell statistics	Mill, EDM, WEDM, Laser, CMM, Clean	■	■	■	■	–
Cell monitor	Mill, EDM, WEDM, Laser, CMM, Clean	■	■	■	■	–
MPS2WSM	Mill, EDM, WEDM, Laser, CMM, Clean	■	–	–	■	–

Hybrid automation

+ For mixed pallet automation combined with workpiece handling.
+ Fully automatic change from workpiece A to workpiece B in the machine.
+ The system keeps track of NC program, cassette, gripper, chuck adapters, quantity, etc.

The workpiece handling concept is ideal for workpiece families. Thus, grippers and fixtures can possibly be used for more than a single, unique workpiece.

Easy, step-by-step

Prepare

Prepare cassettes and jobs.
Load cassettes into magazine.
Execute the jobs via CellManager

Choose

Choose specific chuck
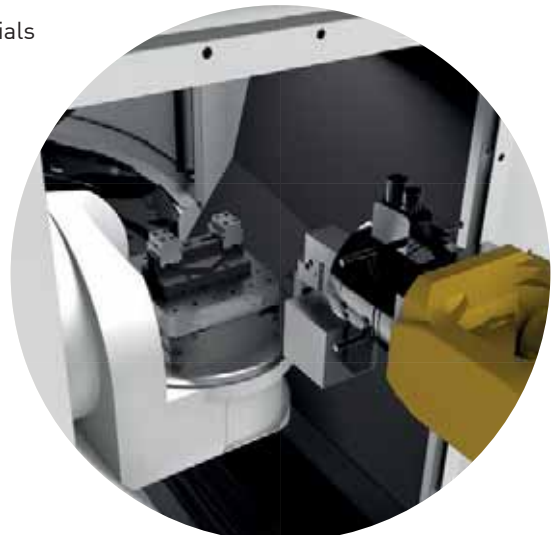adapter/vice needed for the
material

Bring

Bring the cassette with materials
to the Intermediate station

Load

Using predefined raw material
gripper, load each material into
the chuck adapter/vice and start
first job in the queue.

CellManager – Options

CTM – CutterToolMonitoring

+ Cutters used for an operation are stored in the database
+ Cutters needed for each job are compared with the tool magazine of the machine
+ Jobs where cutters are missing, are blocked
+ Cutters can be assigned with estimated usage time If life time monitoring is activated on the machine
+ Jobs with cutters that exceeds the life time, are blocked

AlarmServer

+ Robot cell1 stops due to air pressure failure.
+ The AlarmServer receives the alarm.
+ Operator 1 receives SMS with "Air pressure failure in Robot cell 1" or Machine 2 stops due to "too high coolant temperature".
+ The AlarmServer receives the alarm.
+ Operator 2 receives SMS with "Too high coolant temperature in Machine 2".

AES – AutomaticElectrodeSelection

The AES is a WSM CellManager function to automatically select the proper electrodes for an erosion job from a pool of electrodes available in the production cell magazine.

The selection is based on the electrode part number, the current wear status of the actual electrodes and the needs of the erosion job for electrode freshness.

With this system it is possible to manufacture a large set of identical electrodes to be used by the erosion process as needed with full control of CMM offsets for the individual electrodes.

Code carrier with unique ID-Identity.

CellManager – Options

Statistics and Monitoring

Ability to show and give output to excel format, of the cell / machine's / orders / status / orders etc. in a certain period of time.
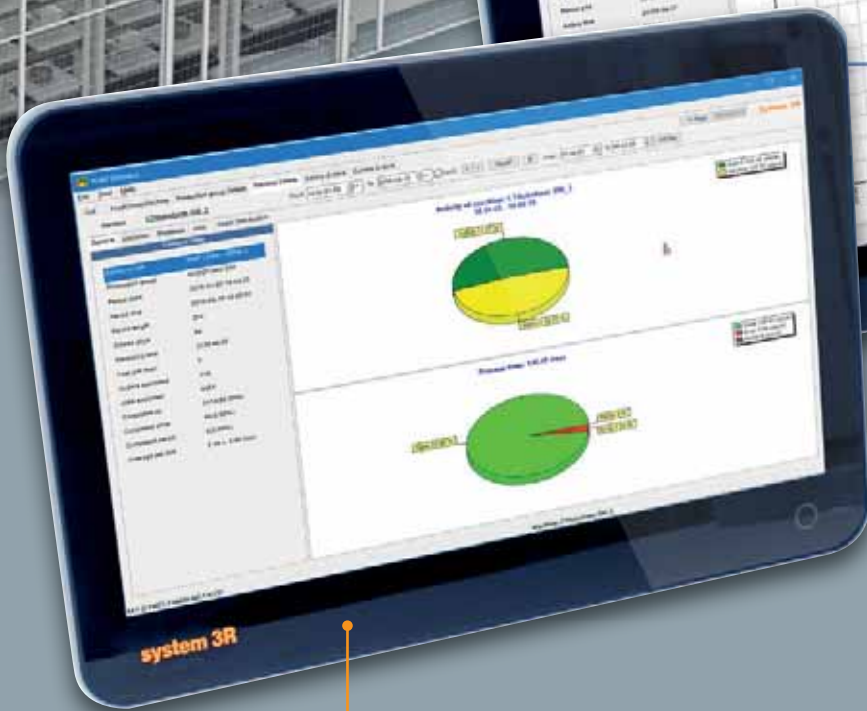
CellMonitor

+ Is a separate software for monitoring several cells.

Displays

+ Cell status
+ Machine activity
+ Job status

CellStatistics
+ Utilization In period, Time of day
+ View as different graphics
+ Export statistics into Exel

Production group
+ Utilization In period, Time of day
+ Job count in period, length distribution
+ Order distribution
+ NC Programs

Machine details
+ Utilization In period, Time of day
+ Job count in period, length distribution
+ Order distribution

History Orders
+ Details

Current orders
+ Order List
+ Order details
+ Order Distribution

CellManager – Options

MPS2WSM Import and export – Workflow

MPS2WSM import and export

is an interface for MPS / ERP* systems.

+ Importing complete production orders from the MPS system into WorkShopManager
+ Export of job status and process times to the MPS system.

Existing manufacturing data is exported from the PPS – ProductionPlanningSystem

+ Order number
+ Machining operations
+ NC programs

*   MPS = Material and planning systems
    ERP = Enterprise resource planning

A manufacturing order is automatically generated

Identify

The next step is to link the physical objects with their manufacturing orders. The object is mounted on a pallet with a code carrier which is recorded in the database.

CMM integration

If required, a measuring machine can be used before machining to determine offset values (X-Y-Z-C) for the workpiece on its pallet.

CellManager executes the Jobs according to the priority list

+ Full graphic overview of magazine content
+ Machine and job status
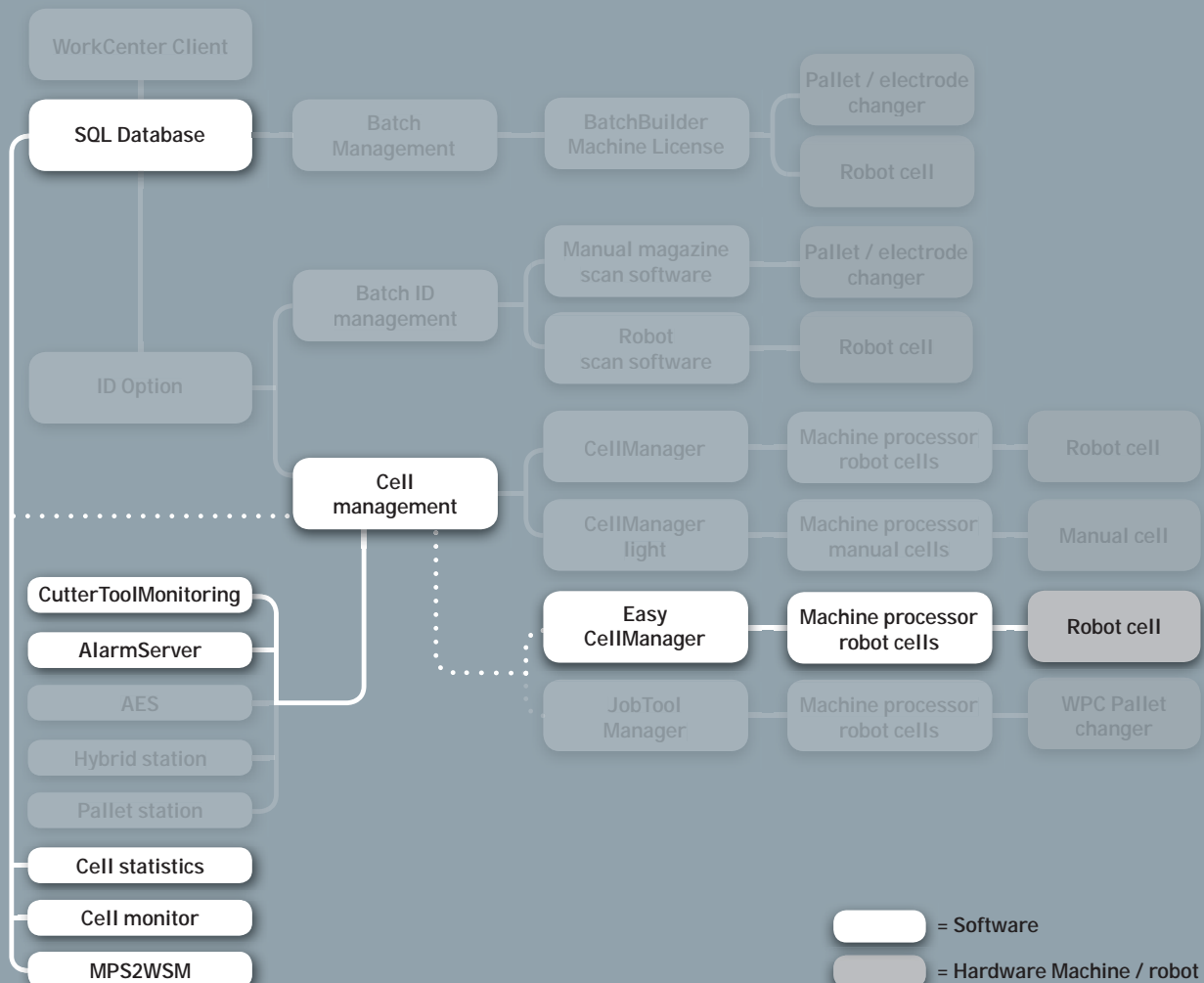+ Easy to prioritize the jobs up/down or stop

Finished orders are reported back to the production planning system

+ Examples of production data which can be reported back are: article number, order number, machine ID, machine time etc.
+ Depending on ERP system and customer we can tailor the report.

EasyCellManager

For milling cells with System 3R robots

+ Easy-to-learn and touch screen support
+ 1-4 machine support (Milling only)
+ System 3R automation – WorkPal 1,
  WorkPartner 1+ and Fanuc
+ Clear graphics of the magazine content
+ Easy to prioritize jobs. Move up/down or stop
+ Without ID system
+ Loading station support.

WorkCenter Client			
SQL Database	Batch Management	BatchBuilder Machine License	Pallet / electrode changer
			Robot cell
	Batch ID management	Manual magazine scan software	Pallet / electrode changer
ID Option		Robot scan software	Robot cell
	Cell management	CellManager	Machine processor robot cells
		CellManager light	Machine processor manual cells
CutterToolMonitoring		Easy CellManager	Machine processor robot cells
AlarmServer		JobTool Manager	Machine processor robot cells
AES			
Hybrid station			
Pallet station			
Cell statistics			
Cell monitor			
MPS2WSM			

Machine processor robot cells → Robot cell
Machine processor manual cells → Manual cell
Easy CellManager → Machine processor robot cells → Robot cell
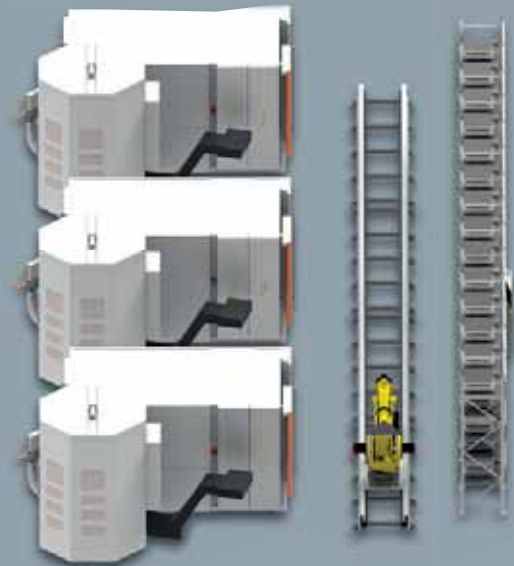JobTool Manager → Machine processor robot cells → WPC Pallet changer

☐ = Software
☐ = Hardware Machine / robot

EasyCellManager

+ Easy-to-Use and install
+ New user interface and color scheme
+ New feature Loading station support
+ Without ID system
+ Only for Milling (all brands / CNC's)
+ 1,2,3 or 4 machine support
+ Dedicated magazine positions per machine
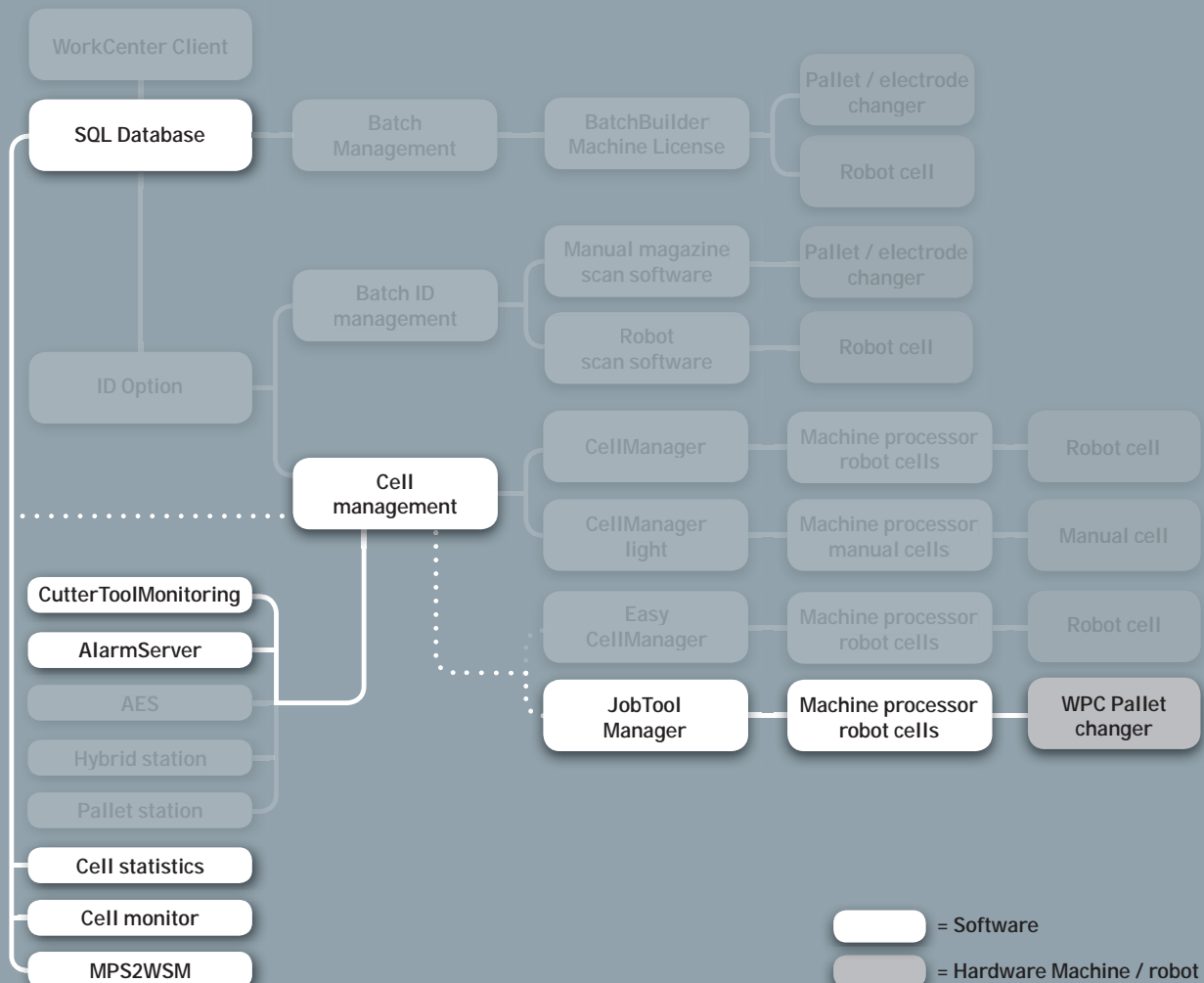 (Max. +100 magazine positions per machine).

Easy CellManager – Options

	Technology	CellManager	ECM – Easy-CellManager	JTM – Job-Tool Manager	CellManager light	BatchBuilder
CTM – CutterTool Monitoring	Milling	◻	◼	◻	◻	–
AlarmServer	Mill, EDM, WEDM, Laser, CMM, Clean	◻	◼	◻	◻	–
AES – Automatic ElectrodeSelection	EDM	◻	–	–	◻	–
Hybrid station (mix pallets and raw material)	Milling	◻	–	–	–	–
Pallet station (re-fixturing)	Milling	◻	–	–	–	–
Cell statistics	Mill, EDM, WEDM, Laser, CMM, Clean	◻	◼	◻	◻	–
Cell monitor	Mill, EDM, WEDM, Laser, CMM, Clean	◻	◼	◻	◻	–
MPS2WSM	Mill, EDM, WEDM, Laser, CMM, Clean	◻	–	–	◻	–

JobToolManager

For milling cells with Mikron WPC

+ Easy-to-learn with touch screen support
+ 1 machine support (milling only)
+ Only Mikron milling machine with WPC
  (WorkPieceChanger)
+ Clear graphics of the magazine content
+ Easy to prioritize jobs. Move up/down or stop
+ Without ID system

WorkCenter Client			
SQL Database	Batch Management	BatchBuilder Machine License	Pallet / electrode changer
			Robot cell
	Batch ID management	Manual magazine scan software	Pallet / electrode changer
ID Option		Robot scan software	Robot cell
	Cell management	CellManager	Machine processor robot cells — Robot cell
		CellManager light	Machine processor manual cells — Manual cell
CutterToolMonitoring		Easy CellManager	Machine processor robot cells — Robot cell
AlarmServer		JobTool Manager	Machine processor robot cells — WPC Pallet changer
AES			
Hybrid station			
Pallet station			
Cell statistics			
Cell monitor			
MPS2WSM			

= Software

= Hardware Machine / robot

Micron WPC equipped with Dynafix pallets.

JobToolManager

+ 1 x CellPC (touch)
+ CTM – CutterToolMonitoring included
+ AlarmServer as optional
+ Shorter operator learning curve
+ Easy-to-Use and install
+ New user interface and color scheme

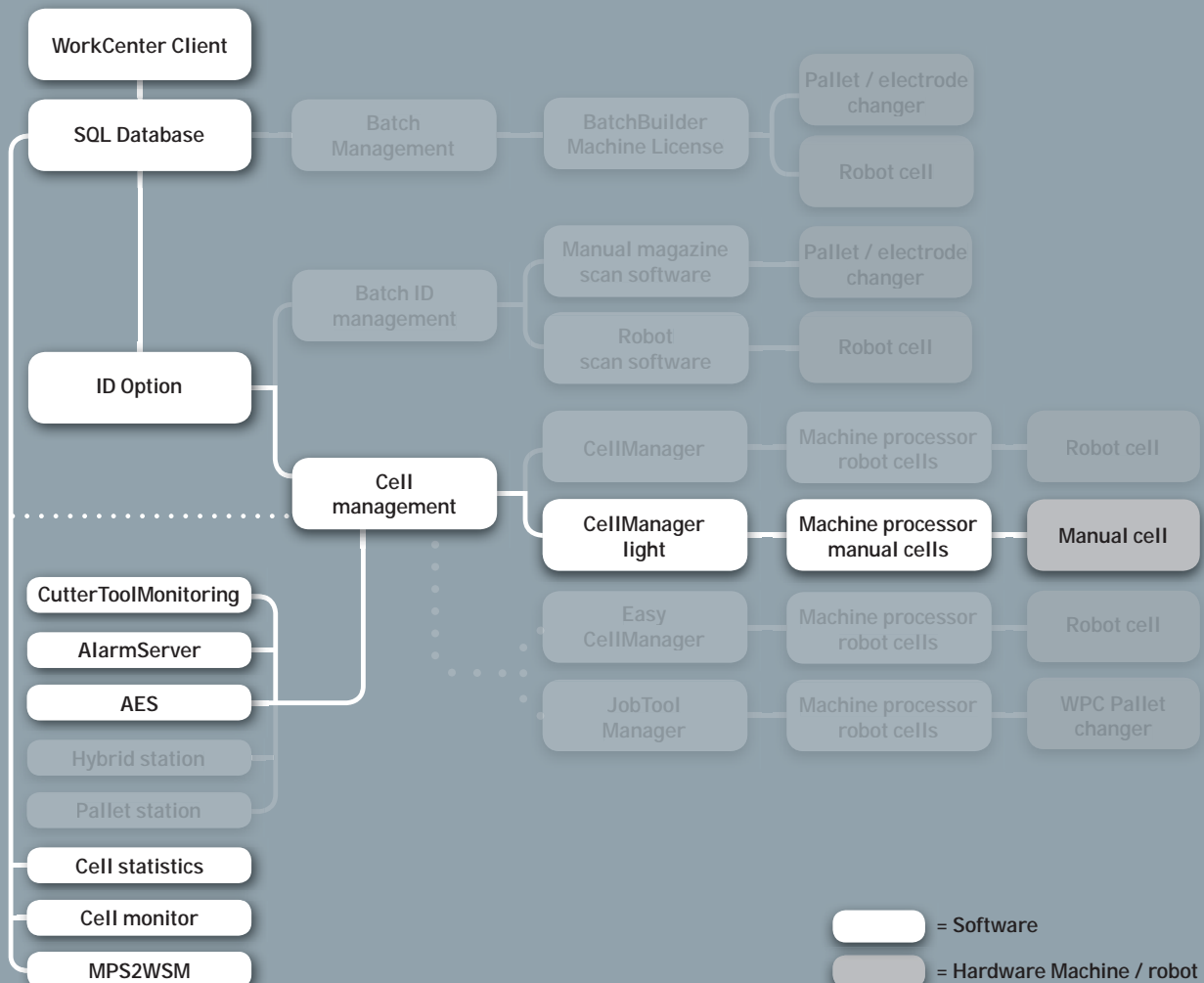## JobToolManager – Options

	Technology	CellManager	ECM – Easy-CellManager	JTM – Job-ToolManager	CellManager light	BatchBuilder
CTM – CutterTool Monitoring	Milling	■	■	■	■	–
AlarmServer	Mill, EDM, WEDM, Laser, CMM, Clean	■	■	■	■	–
AES – Automatic ElectrodeSelection	EDM	■	–	–	■	–
Hybrid station (mix pallets and raw material)	Milling	■	–	–	–	–
Pallet station (re-fixturing)	Milling	■	–	–	–	–
Cell statistics	Mill, EDM, WEDM, Laser, CMM, Clean	■	■	■	■	–
Cell monitor	Mill, EDM, WEDM, Laser, CMM, Clean	■	■	■	■	–
MPS2WSM	Mill, EDM, WEDM, Laser, CMM, Clean	■	–	–	■	–

CellManager light

Full process control without robot

+ One or several machines
+ Without robots
+ Supports different types of machines such as Milling, EDMing, WireEDMing, Laser, CMM
+ Process safety and ID system for identification

WorkCenter Client			
SQL Database	Batch Management	BatchBuilder Machine License	Pallet / electrode changer
			Robot cell
	Batch ID management	Manual magazine scan software	Pallet / electrode changer
		Robot scan software	Robot cell
ID Option			
	Cell management	CellManager	Machine processor robot cells → Robot cell
		CellManager light	**Machine processor manual cells** → **Manual cell**
		Easy CellManager	Machine processor robot cells → Robot cell
		JobTool Manager	Machine processor robot cells → WPC Pallet changer
CutterToolMonitoring			
AlarmServer			
AES			
Hybrid station			
Pallet station			
Cell statistics			
Cell monitor			
MPS2WSM			

= Software
= Hardware Machine / robot

CellManager light (only without robot)

Is a real-time Cell Management System for organizing and executing work in manually loaded machines.
An excellent way to organize your workshop before you step into automation.

1. Create a machining order
2. Identify workpieces and electrodes
3. Measure workpiece and electrode offsets
4. Load workpiece and electrodes
5. Identify workpiece and electrodes in the machine.
6. CellManager light completes the NC program with offset values and magazine positions.
7. The NC program is automatically transferred to the machine and the machining starts
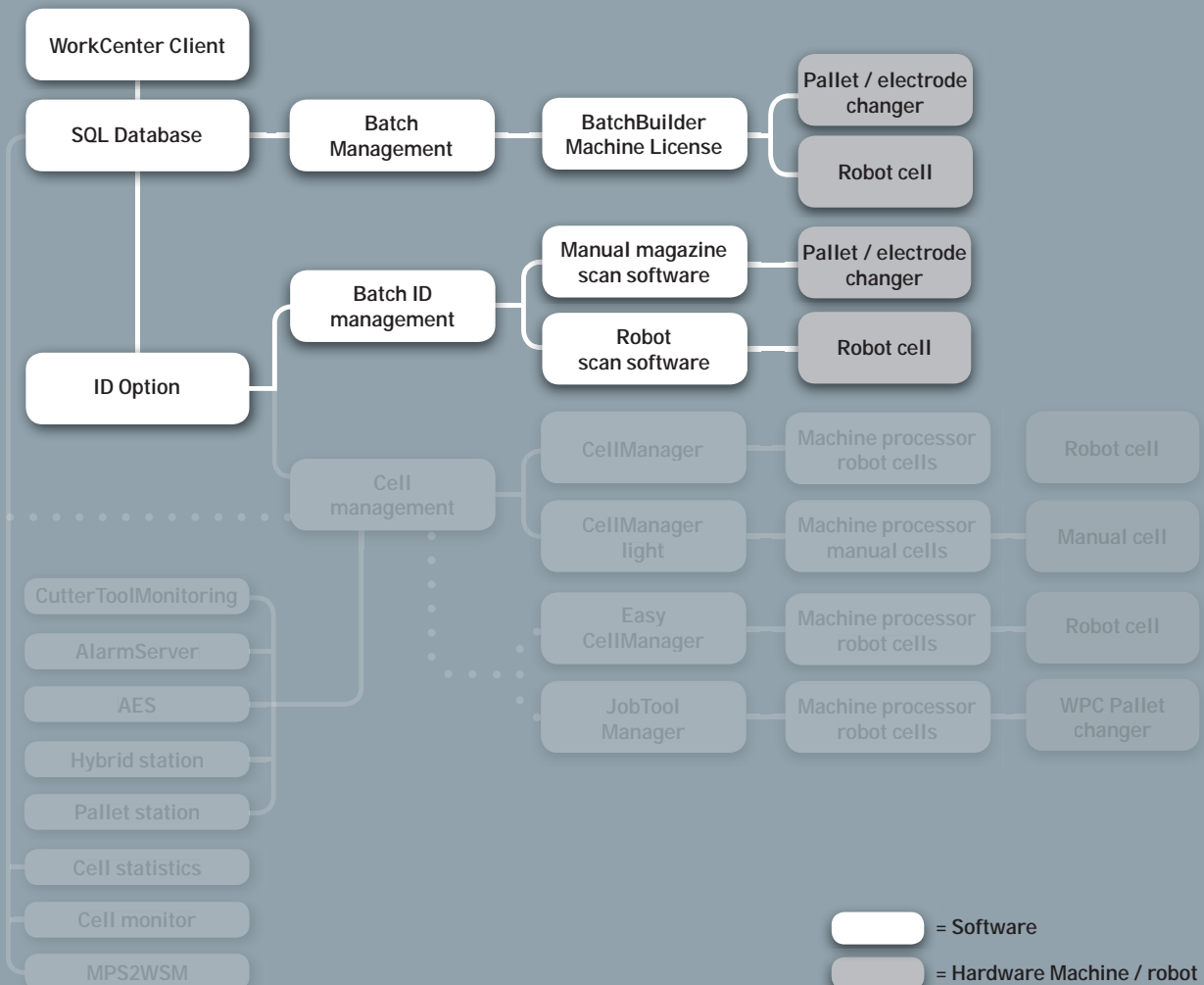
CellManager light,
Communication
without robots
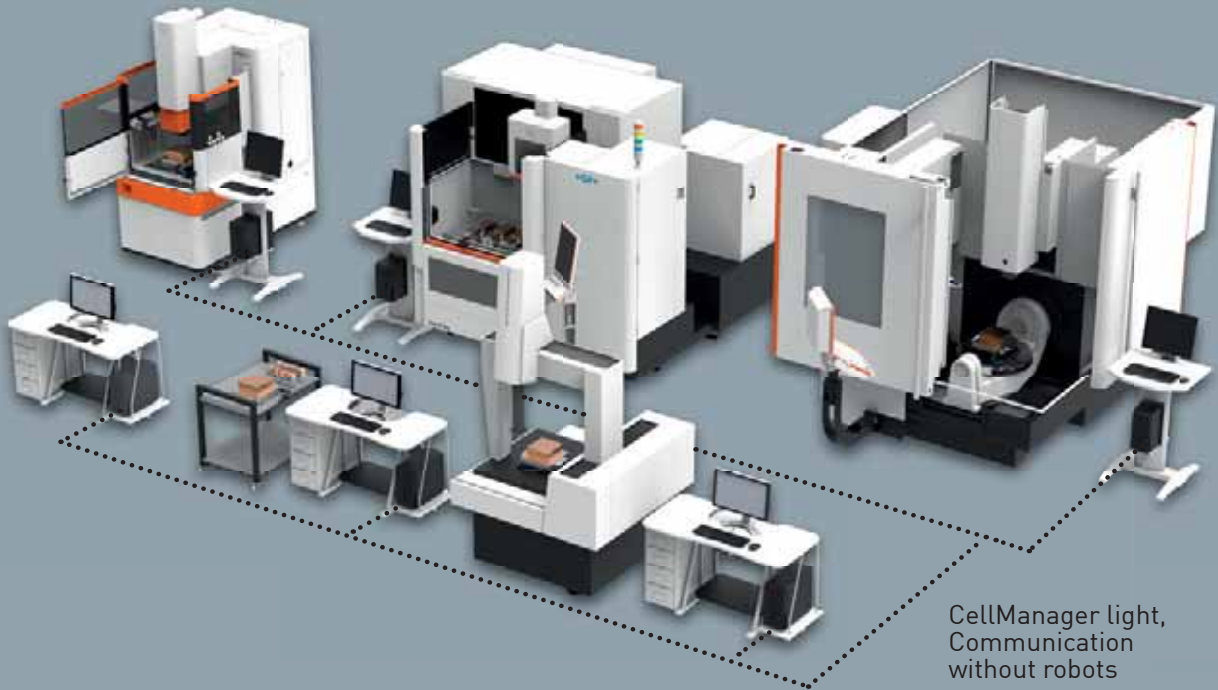
CellManager light – Options

	Technology	CellManager	ECM – Easy-CellManager	JTM – Job-Tool Manager	CellManager light	BatchBuilder
CTM – Cutter Tool Monitoring	Milling	■	■	■	■	–
AlarmServer	Mill, EDM, WEDM, Laser, CMM, Clean	■	■	■	■	–
AES – Automatic Electrode Selection	EDM	■	–	–	■	–
Hybrid station (mix pallets and raw material)	Milling	■	–	–	–	–
Pallet station (re-fixturing)	Milling	■	–	–	–	–
Cell statistics	Mill, EDM, WEDM, Laser, CMM, Clean	■	■	■	■	–
Cell monitor	Mill, EDM, WEDM, Laser, CMM, Clean	■	■	■	■	–
MPS2WSM	Mill, EDM, WEDM, Laser, CMM, Clean	■	–	–	■	–

BatchBuilder

Entry level – create batches of jobs to run in your robotcell

+ Supports System 3R robots: WorkPal 1, WorkPartner 1+ and Fanuc
+ Supports different types of machines such as Milling, EDMing, WireEDMing and CMM
+ With or without ID system.

```
WorkCenter Client
        │
SQL Database ──── Batch ──── BatchBuilder ──── Pallet / electrode changer
        │        Management    Machine License
        │                                  └──── Robot cell
        │
        │              Batch ID ──── Manual magazine ──── Pallet / electrode changer
        │            management       scan software
ID Option ──────┘                 └── Robot ──── Robot cell
                                      scan software
```

Cell management

CellManager — Machine processor robot cells — Robot cell

CellManager light — Machine processor manual cells — Manual cell

Easy CellManager — Machine processor robot cells — Robot cell

JobTool Manager — Machine processor robot cells — WPC Pallet changer

CutterToolMonitoring

AlarmServer

AES

Hybrid station

Pallet station

Cell statistics

Cell monitor

MPS2WSM

= Software

= Hardware Machine / robot

Order number info

Magazine position info

Pallet info

BatchBuilder

Execution of jobs created as a batch (jobque).
Lower level of execution level vs. CellManager
One-way of communication. No possibilities to
re-arrange jobs, make priorities etc.

BatchBuilder – Options

	Technology	CellManager	ECM – Easy-CellManager	JTM – Job-Tool Manager	CellManager light	BatchBuilder
CTM – CutterTool Monitoring	Milling	■	■	■	■	–
AlarmServer	Mill, EDM, WEDM, Laser, CMM, Clean	■	■	■	■	–
AES – Automatic ElectrodeSelection	EDM	■	–	–	■	–
Hybrid station (mix pallets and raw material)	Milling	■	–	–	–	–
Pallet station (re-fixturing)	Milling	■	–	–	–	–
Cell statistics	Mill, EDM, WEDM, Laser, CMM, Clean	■	■	■	■	–
Cell monitor	Mill, EDM, WEDM, Laser, CMM, Clean	■	■	■	■	–
MPS2WSM	Mill, EDM, WEDM, Laser, CMM, Clean	■	–	–	■	–

BatchBuilder – Workflow

**Organisation and
NC-preparation (CAM)**

Preset

**Ordernumbers and
operations**
NC program, offset
valus and magazine
positions
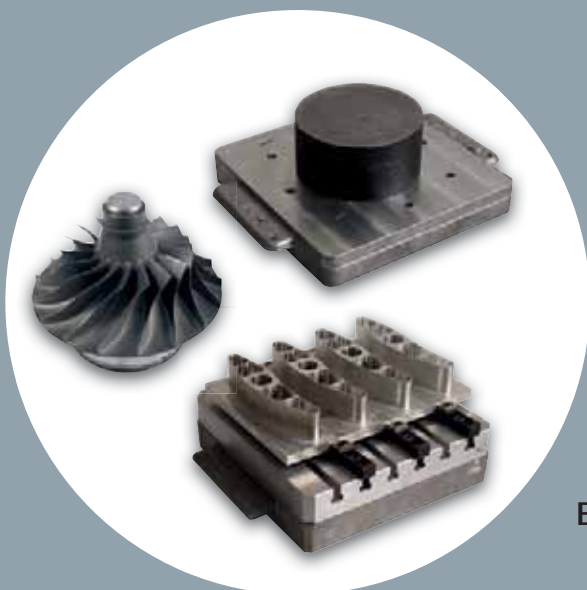
Batch of jobs

Glossary

AlarmServer – Option to WSM. Sends out an alarm if the robot cell finds an error.

AES – Automatic electrode selection. Selects the proper electrode from a pool of electrodes in the magazine.

BatchBuilder – Creates and executes jobs as a job queue (batch). Only for one machine. With or without ID. One-way communication, i.e. limited function vs. CellManager.

CellManager – Manages the Pallet ID codes, magazine positions, creates priority lists, starts jobs, update the database with current info etc.

CellManager light – For organizing and executing work in manually loaded machines. Usable before you step into automation.

Cell monitor – Displays status of cells and machine activity.

Cell statistics – Retrieve and analyze cell data and order data.

CAM – Computer aided manufacturing. Converts CAD models into NC-programs.

CMM – Coordinate-measuring machine

CTM – CutterToolMonitoring. An option to WSM. Keeps track of which cutter tool is needed, used, missing, life time etc.

ECM – EasyCellManager. Only for milling machines. Support 1-4 machines. Easy planning of job sequence and priority with full control. Without ID-support.

Fanuc – System 3R's most flexible robot solution. 70-700 kg. weight handled. With or without rail. Also as hybrid automation.

Hybrid station – Allows a mix of pallets with fixtures/work pieces and raw material.

ID Chip – Or code carrier. With a pre-programmed unique ID (identity). Keeps track of each pallet/fixture.

ID Option – Keep track of pallets and fixtures all with unique ID identity.

Industry 4.0 – Smart factory solutions. It will help manufacturers to become more flexible and react to changes in the market easier. Also to increase the speed of innovations and to be customer centered, leading to faster design processes.

JTM – JobToolManager. Only for Mikron milling machines. Without ID-support. Only for one machine. CTM included. Micron WPC (work piece changer) is needed.

MPS2WSM – Material and planning system integration to WSM. Imports and exports complete production orders from MPS into WSM or vice versa.

NC-program – Numerical control. Also called CNC (computer numerical control). Used to control, automate, and monitor the movements of a machine.

Pallet station – intended as a "parking place" for pallets to refixturing outside the robot cell. ID-Chip needed.

Planning system – Different names and brands such as: MPS – Material planning system. ERP - Enterprize resource planning, MES – Manufacturing execution system and others.

Production group – A group of WSM cells of the same type that all are able to do the same type of work.

Statistics – Utilization in period, time of day. Current orders. Machine details and history.

SQL Server – A Microsoft database solution. Handles all data in a relational database management system.

WorkCenter – Creates an order, assign operations and NC program, retrieve offset values and release the order for production.

WP1 – WorkPal 1. System 3R's smallest sized robot solution.

WPT1+ – WorkPartner 1+. System 3R's middle sized robot solution.

WSM – WorkShopManager. The greatest software package. Seamless integration of all your processes.

Summary

Robot type/model	WPC*	WorkPal 1**	WorkPartner 1+
Maximum weight handled (incl. gripper, pallet, etc.)	90, 200 or 500 kg	50 kg	80 kg
Maximum number of machines served	1	1	2
Maximum number of tooling types	1	1	1 - 2
Chuck adapter support	–	–	■
Technology/application	Mill	Mill, EDM, WEDMing, Grind, laser, and CMM	
Linear rail for manual movement	–	■	■
Aluminium linear rail, maximum length	–	–	–
Steel linear rail, maximum length	–	–	–
Loading station support	–	–	■
Tilting and draining station support	–	–	■
Drying station support (wire EDMing)	–	■	■
Software			
CellManager	–	■	■
EasyCellManager (only for milling)	–	■	■
JobToolManager (only for milling)	■	–	–
CellManager light (only without robot)	–	–	–
BatchBuilder	–	■	■
Batch Builder with ID	–	■	■
Software options			
Hybrid station support (only for milling)	–	–	–
Pallet station support (only for milling)	–	–	–

* WPC (Work Piece Changer), buit-in by Mikron Mill.
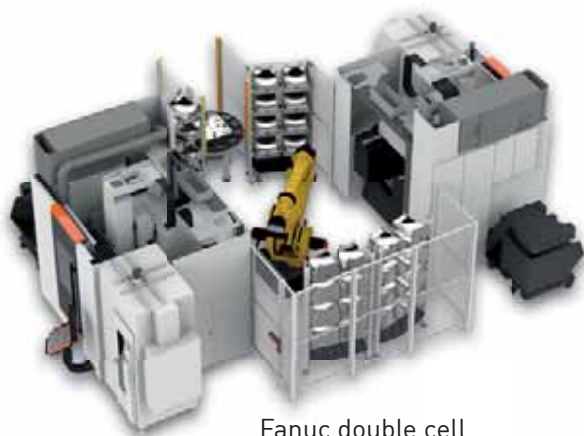** WorkPal 1 can not connect with EDM.

WPC with GFMS Mikron Mill
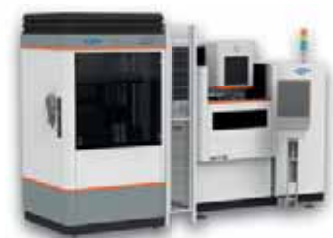
WorkPal 1 with GFMS WEDM

	Fanuc T6-70	Fanuc T6-165	Fanuc T6-210	Fanuc T6-360	Fanuc T6-700
	70 kg	165 kg	210 kg	360 kg	700 kg
	1 – 12	1 – 12	1 – 12	1 – 12	1 – 12
	1 – 5	1 – 5	1 – 5	1 – 5	1 – 5
	■	■	■	■	■
	Mill, EDM, WEDMing, Grind, laser, CMM and washing machine.				
	–	–	–	–	–
	20 m	20 m	20 m	–	–
	30 m	30 m	30 m	30 m	30 m
	■	■	■	■	■
	■	■	■	■	■
	■	■	■	■	■
	■	■	■	■	■
	■	■	■	■	■
	–	–	–	–	–
	–	–	–	–	–
	–	–	–	–	–
	–	–	–	–	–
	–	■	■	–	–
	■	■	■	■	■

WorkPartner 1+ with GFMS EDM

Fanuc double cell

About GF Machining Solutions

Multi–technology solutions provider

Our commitment to you and your specific applications is proven by the value-adding intelligence, productivity and quality delivered by our multi-technology solutions. Your success is our chief motivator. That's why we are continuously advancing our legendary technical expertise. Wherever you are, whatever your market segment and whatever the size of your operation, we have the complete solutions and the customer-centric commitment to accelerate your success—today.

EDM (electrical discharge machining)

Wire-cutting EDM
GF Machining Solutions' wire-cutting EDM is fast, precise and increasingly energy efficient. From ultraprecise machining of miniaturized components down to 0.02 mm to powerful solutions for demanding high-speed machining with respect to surface accuracy, our wire EDM solutions position you for success.

Die-sinking EDM
GF Machining Solutions is revolutionizing die-sinking EDM with features like iGAP technology to dramatically boost machining speed and
reduce electrode wear. All of our die-sinking systems offer fast removal and deliver mirror finishes of Ra 0.1 µm (4 µin).

Hole-drilling EDM
GF Machining Solutions' robust hole-drilling EDM solutions enable you to drill holes in electrically conductive materials at a very high speed—and, with a five-axis configuration, at any angle on a workpiece with an inclined surface.

Milling

Milling
Precision tool and mold manufacturers enjoy a competitive edge with our Mikron MILL S solutions' fast and precise machining. The Mikron MILL P machines achieve above-average productivity thanks to their high performance and Automation. Customers seeking fastest return on investment benefit from the affordable efficiency of our MILL E solutions.

High Performance Airfoil Machining
Our Liechti turnkey solutions enable the highly dynamic manufacturing of precision airfoils. Thanks to their unique performance and our expertise in airfoil machining, you increase productivity by producing at the lowest cost per part.

Spindles
As part of GF Machining Solutions, Step-Tec is engaged in the very first stage of each machining center development project. Compact design combined with excellent thermal and geometric repeatability ensure the perfect integration of this core component into the machine tool.

Advanced manufacturing

Laser texturing
Aesthetic and functional texturing is easy and infinitely repeatable with our digitized Laser technology. Even complex 3D geometries, including precision parts, are textured, engraved, microstructured, marked and labeled.

Laser micromachining
GF Machining Solutions offers the industry's most complete line of Laser micromachining platforms optimized for small, high-precision features to meet the increasing need for smaller, smarter parts to support today's leading-edge products.

Laser Additive Manufacturing (AM)
GF Machining Solutions and 3D Systems, a leading global provider of additive manufacturing solutions and the pioneer of 3D printing, have partnered to introduce new metal 3D printing solutions that enable manufacturers to produce complex metal parts more efficiently.

Tooling and Automation

Tooling
Our customers experience complete autonomy while maintaining extreme accuracy, thanks to our highly accurate System 3R reference systems for holding and positioning electrodes and work pieces. All types of machines can easily be linked, which reduces set-up times and enables a seamless transfer of workpieces between different operations.

Automation
Together with System 3R, we also provide scalable and cost-effective Automation solutions for simple, single machine cells or complex, multi-process cells, tailored to your needs.

Software

Digitalization solutions
To drive its digital transformation, GF Machining Solutions acquired Symmedia GmbH, a company specialized in software for machine connectivity. Together, we offer a complete range of Industry 4.0 solutions across all industries. The future requires the agility to adapt quickly to continual digital processes. Our intelligent manufacturing offers embedded expertise, optimized production processes, and workshop Automation: solutions for smart and connected machines.

Customer Services

Worldwide for you
Ensuring the best performance throughout the lifetime of our customers' equipment is the goal of our three levels of support. Operations Support offers the complete range of original wear parts and certified consumables. Machine Support includes spare parts, technical support, and a range of preventive services to maximize machine uptime. Business Support offers customer-specific business solutions.

Worldwide for you

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Geneva
Flawil
Langnau

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Use our customer services to optimise your equipment uptime

Our services:
+ Ensure productivity.
+ Reduce running costs and waste/scrap
+ Maximise the return on your System 3R investments.
+ Extending the lifetime of your System 3R equipment while maintaining optimum precision.
+ Ensure robot cell safety satisfies present machine directives.

System 3R's customer services are uniquely positioned to help you maximise the availability, value, precision and productivity of your System 3R equipment. Our services are cost-effective, customer-centric and cutting edge. They put your success at the centre, ramp up your productivity and ensure predictable, uninterrupted uptime. System 3R's service engineers are your expert partners for a wide range of success-triggering services.

For more information, please get in touch with your local System 3R dealer.

For contact details, please refer to www.system3r.com.

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