zyfra MDCplus
Digitize your shop

DGPL
Redefining Productivity

Zyfra digital manufacturing

mdc-plus.com

MDCplus at a glance

Real-time monitoring and machine data collection (MDC) system that is designed to track machine operation, personnel productivity and part manufacturing progress. Its tailored reports and charts can be used to eliminate unreasonable downtime, evaluate overall equipment efficiency (OEE) and reduce production costs.

Over 8,000 CNC machines are connected!

FROST & SULLIVAN BEST PRACTICES AWARDS

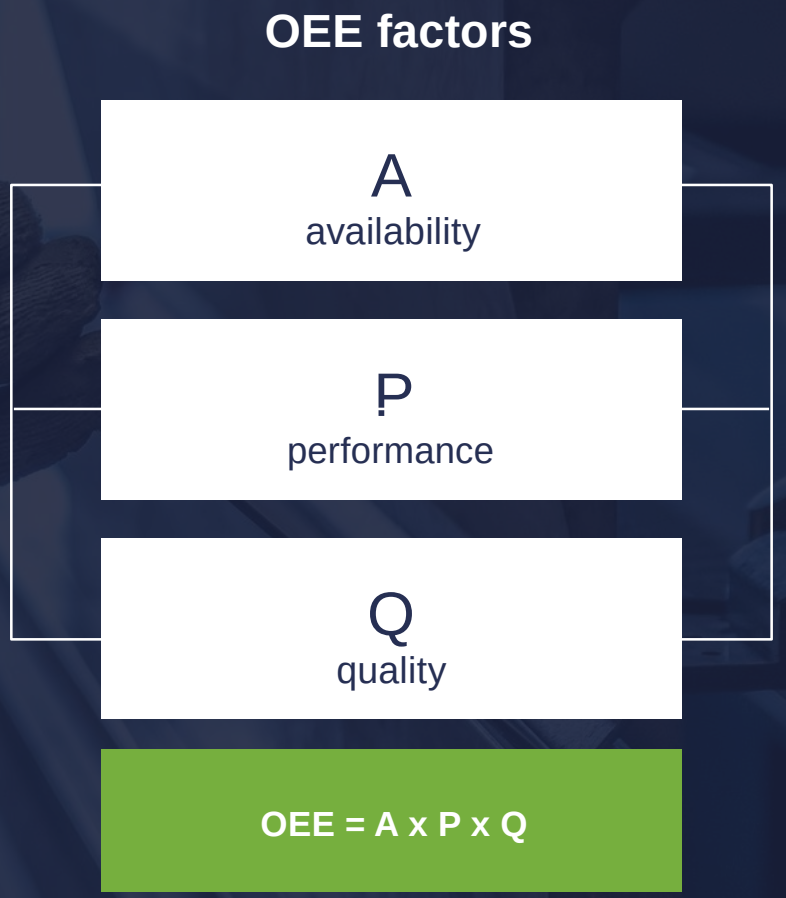
MTConnect®

industrial internet® CONSORTIUM

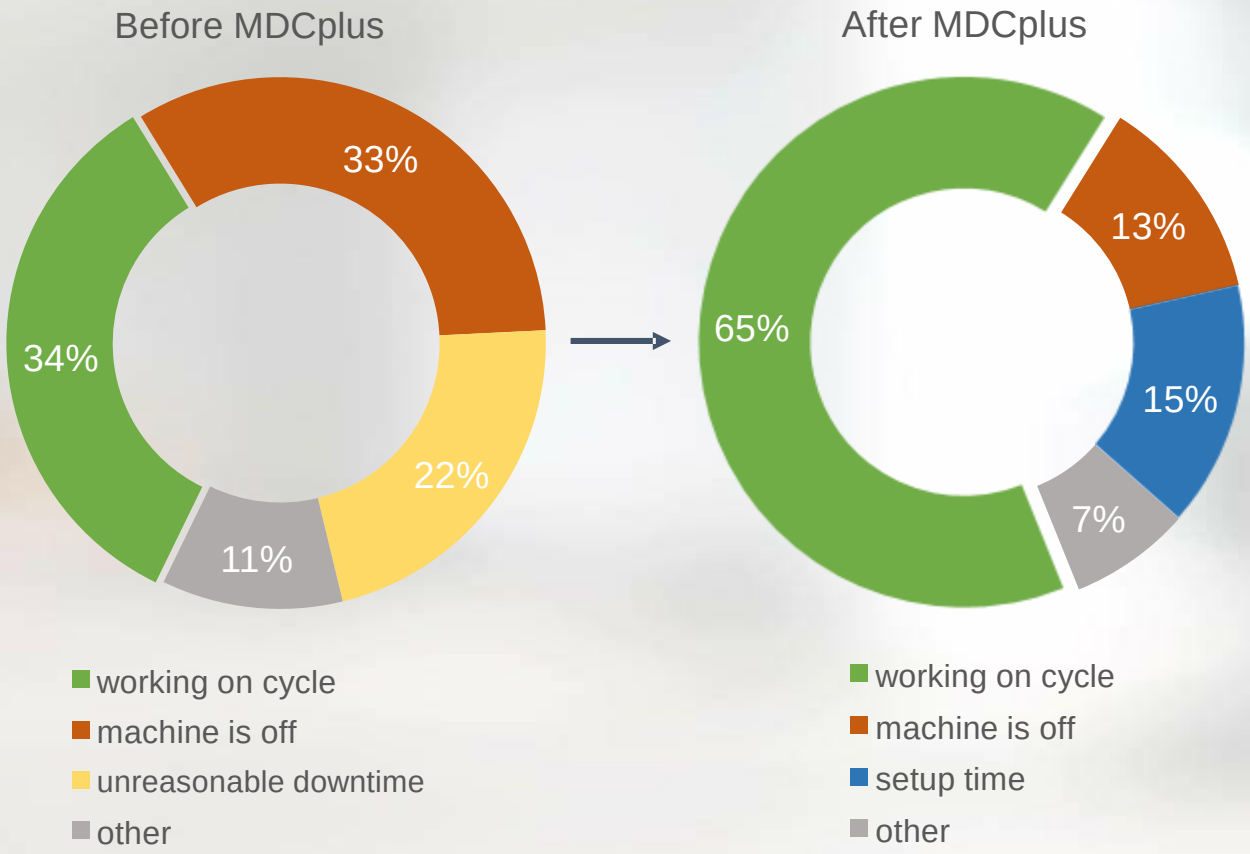
OEE

OEE (Overall Equipment Effectiveness) is a globally accepted standard for measuring manufacturing productivity.

In short: it identifies the share of the total manufacturing time that is truly productive.



Zyfra MDCplus improves overall machine utilization



Implementation of MDCplus allows to:

- Increase machine utilization from 10 to 30 %
- Improve job planning and quoting accuracy
- Reduce Energy Consumption
- Calculate OEE with accordance to ISO22400.

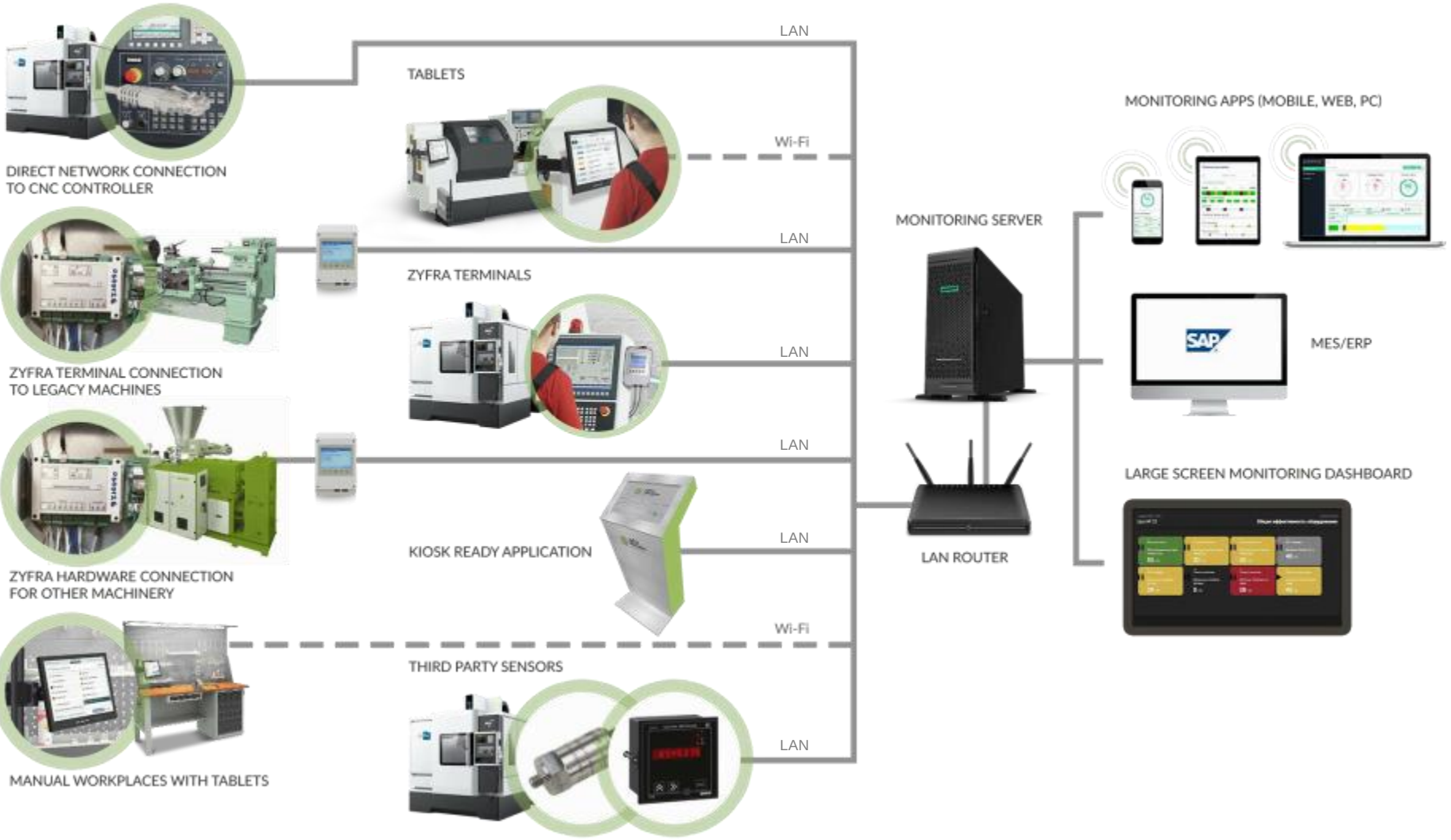
The Return Of Investment (ROI) period on average is

3 months

Calculate ROI here:

https://mdc-plus.com/roi-calculator/

How MDCplus works



HAAS
FANUC
SIEMENS
OKUMA
MITSUBISHI ELECTRIC
HEIDENHAIN
FAGOR
Mazak

Zyfra MDCplus hardware

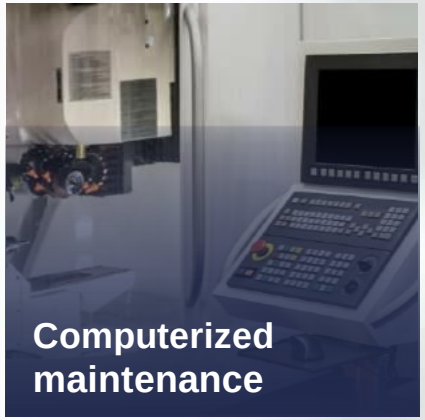
MDCplus hardware kit:

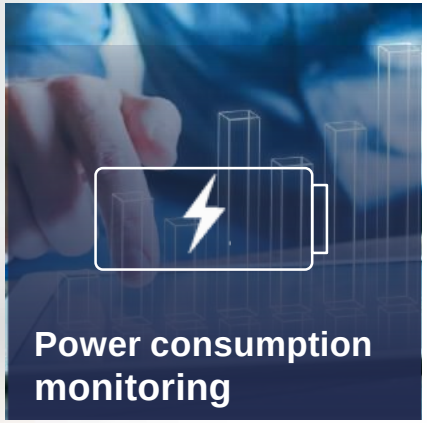
- MDCplus data adapter
- TVV-10
- Barcode scanner
- Current sensor
- Power Unit Controller
- Bracket & wires

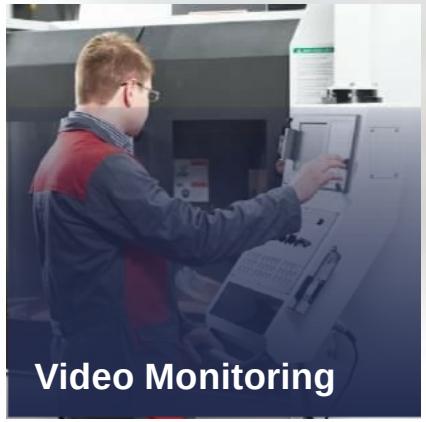
Collective monitoring panel

Vibration controllers and sensors

Zyfra MDCplus features







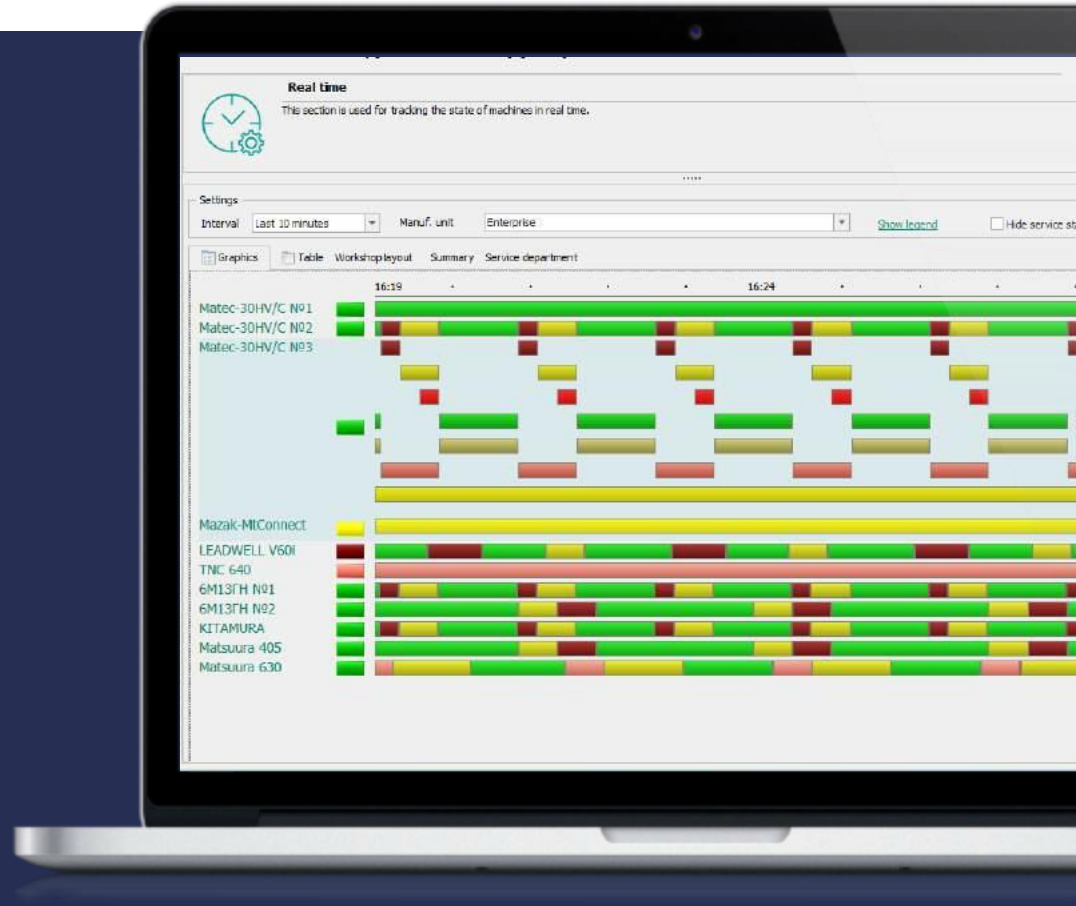
Analytical features

- 100+ report and graph templates
- Report generator
- Overall Equipment Effectiveness (OEE)
- Cycle time per part
- Number of parts per shift/operator
- Number of defective parts
- Scheduled maintenance
- Unscheduled maintenance
- Setup time per part
- Machine Operator Efficiency

Real-time machine monitoring

Features

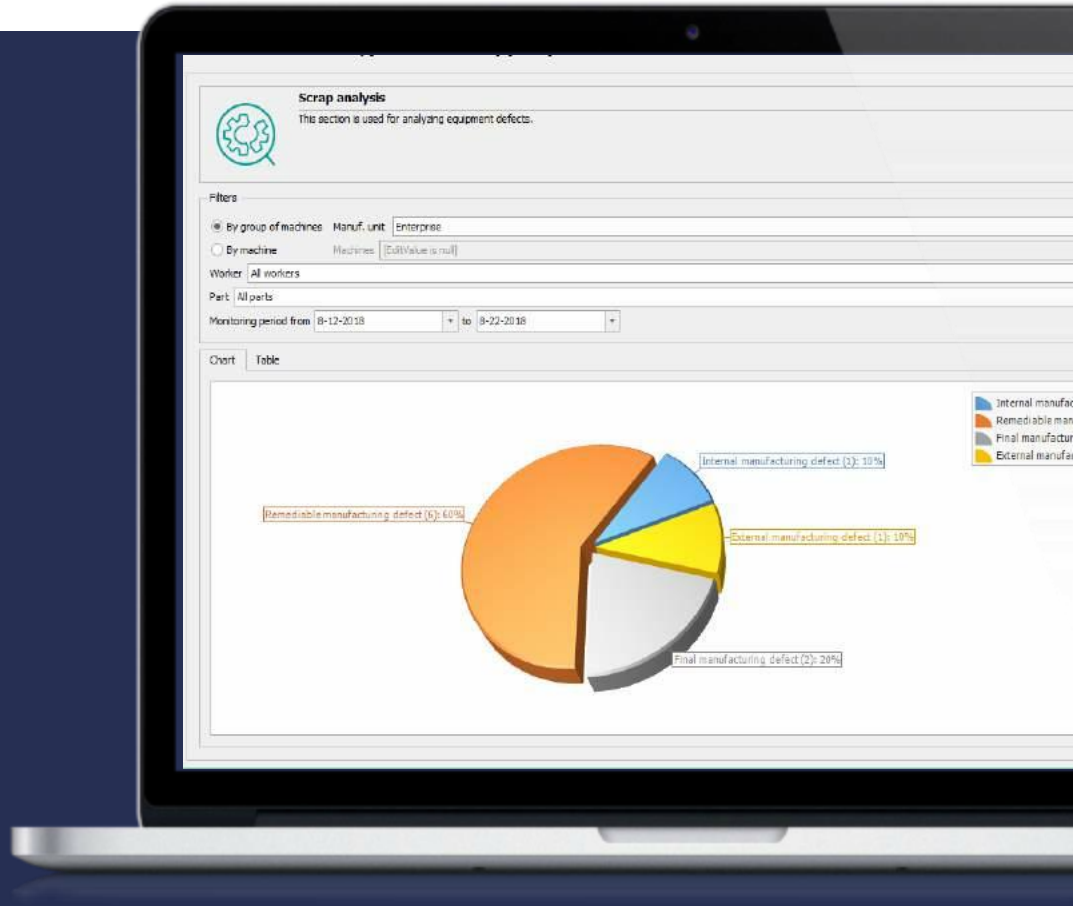
1. Monitor equipment states and downtime reasons in real time on a linear chart, in a table, or on a facility floor plan.
2. Monitor equipment operation parameters & details for each machine (event log, error log, list of measurable parameters for the machine, process information, etc).
3. Set up controlled events and notifications for appropriate company units (e-mail, SMS).
4. Analyze trends in equipment and staff performance.
5. Calculate key performance indicators (KPIs) of the equipment and staff, including OEE, as per ISO 22400-2 2014.



Production control

Features

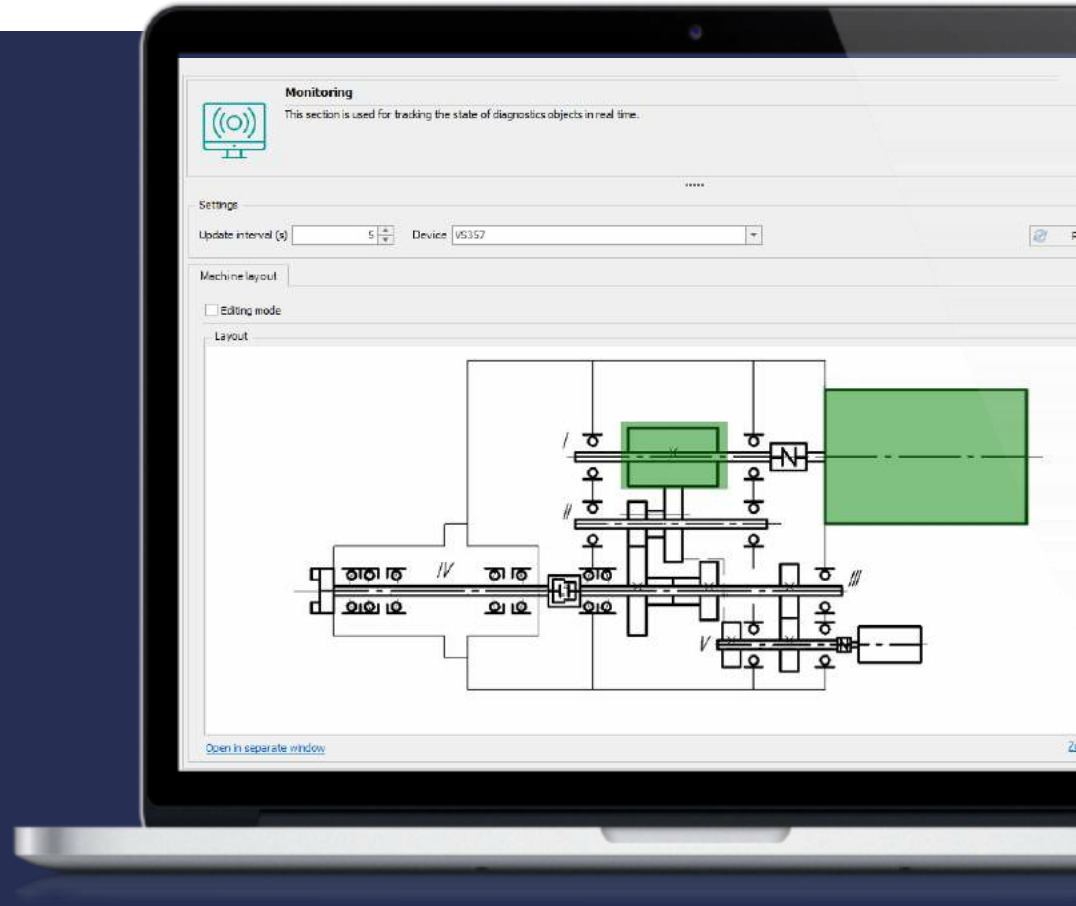
1. Monitoring of manufactured output and scrap.
2. Monitoring of the time standards for the execution of technological operations.
3. Control telemetry parameters during manufacturing output in order to reduce spoilage.
4. Generate shift tasks, routing sheets, and orders.
5. Generate reports on manufactured output and rated time and calculate KPIs, including OEE.



Vibration Monitoring and Diagnostics

Features

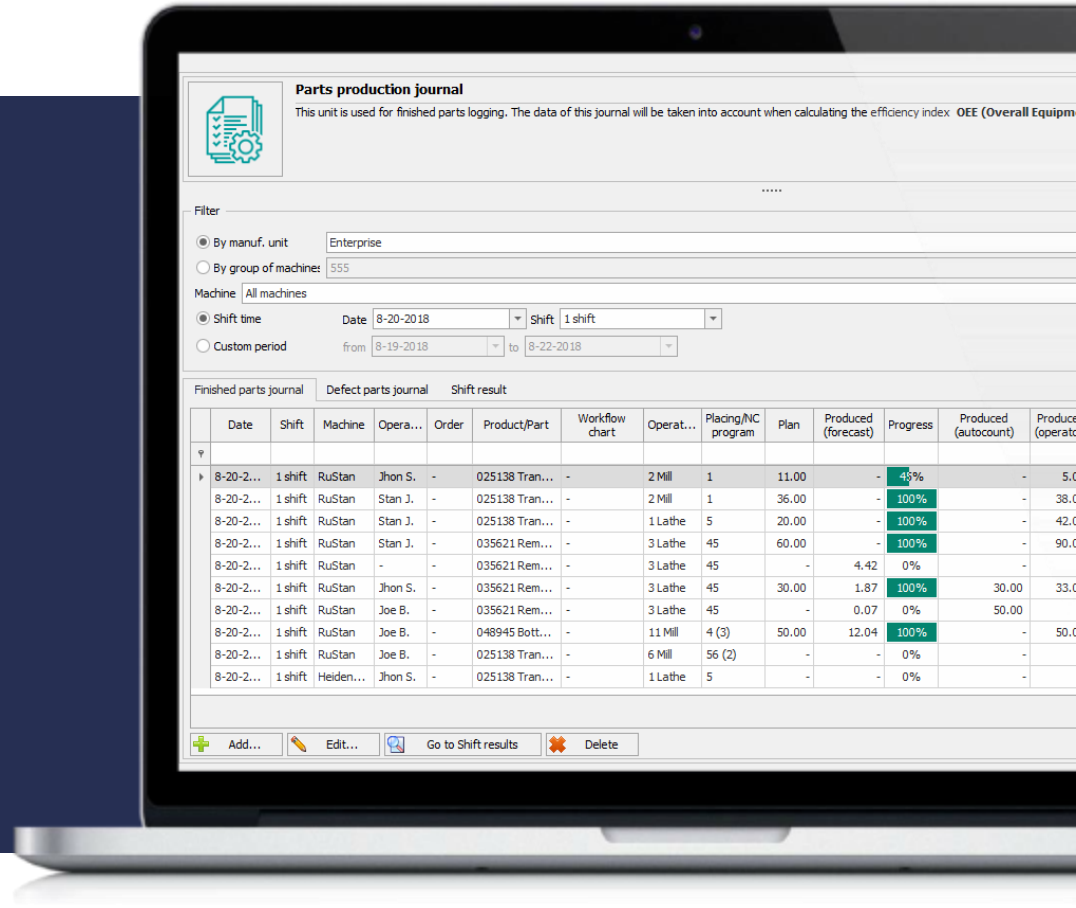
1. Measure key parameters characterizing the technical state of key machine components.
2. Compare parameter values with permissible levels and generate alerts when permissible levels are exceeded.
3. Send data on the actual state of equipment components to the CMMS system.
4. Detect crashes and impacts and issue machine shutdown signals.



API connection for external ERP, CAD/CAM/PDM, MES and BI systems

Features

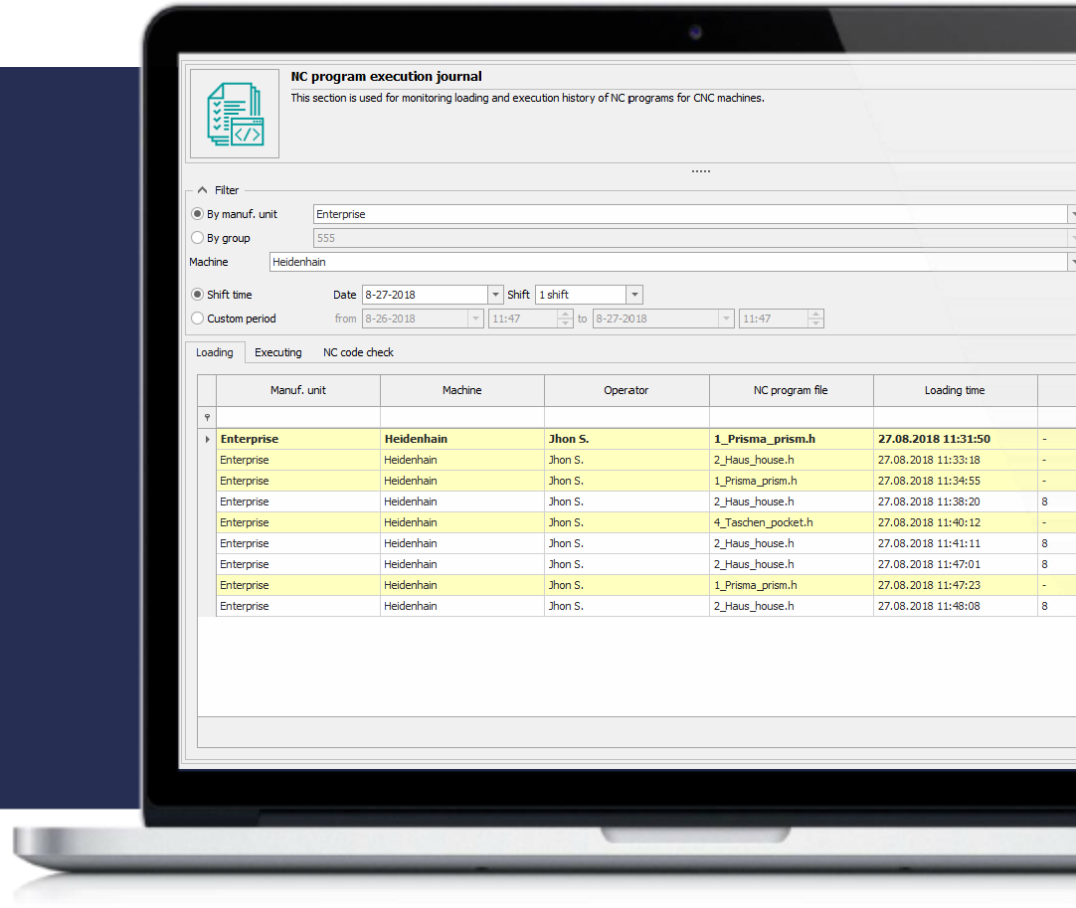
1. Synchronize reference data.
2. Send documents (order, shift task, routing sheet).
3. Obtain actual data (order/operation/machine operation/equipment/employee).
4. Obtain any CNC machine operation data.



DNC Communication & NC Program Management

Features

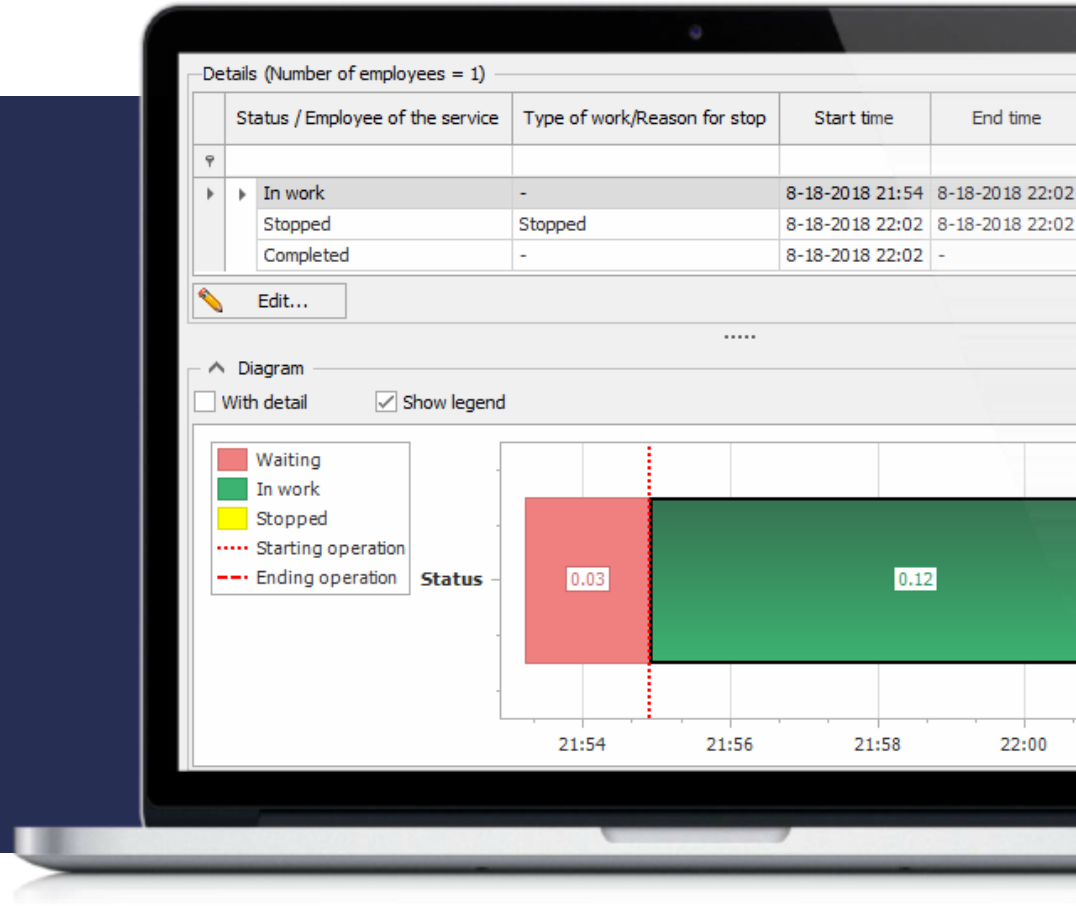
1. Storage of NC programs.
2. DNC Communication (ETHERNET, USB, RS232, IFSP).
3. Analyze NC program usage and compare the code with the standard.



Computerized maintenance

Features

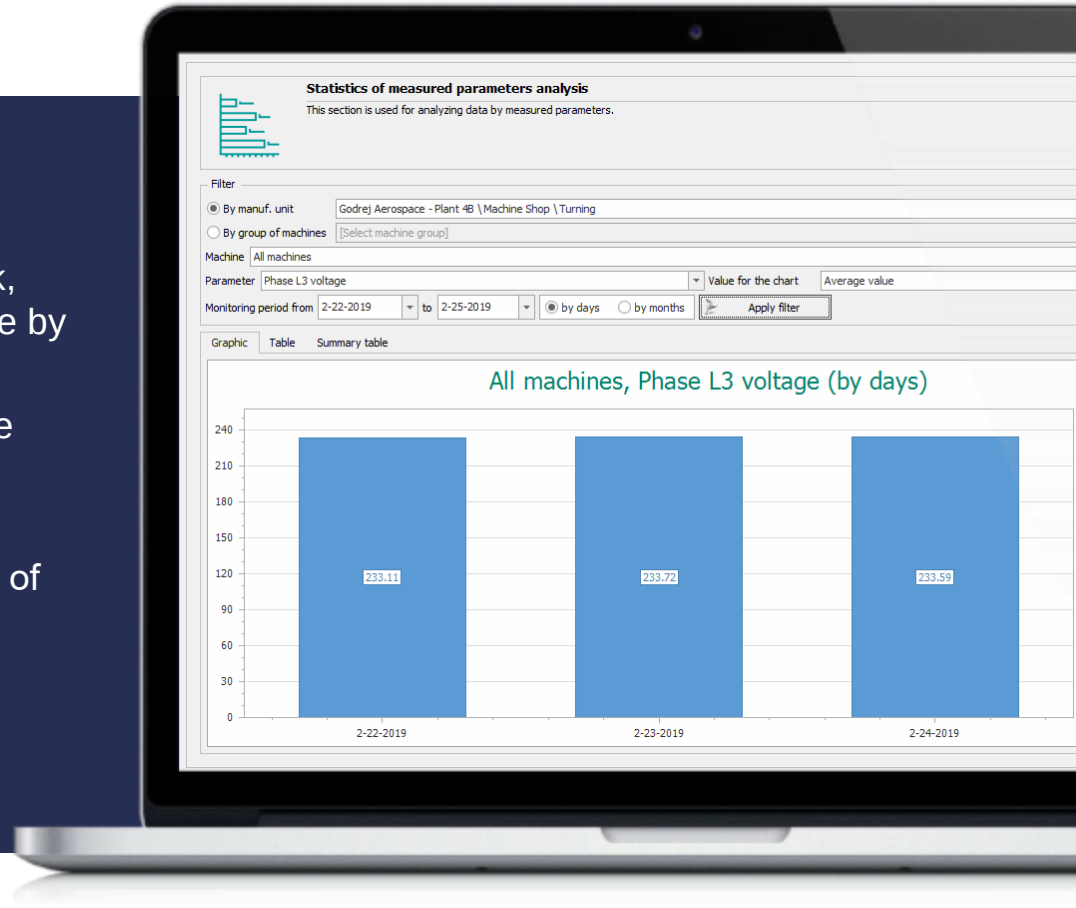
1. Dispatch non-scheduled (emergency) repairs and maintenance.
2. Schedule MRO operations based on work hours and actual states of the CNC machine.
3. Control execution of scheduled repairs.
4. Manage and record the work of maintenance and repair staff.
5. Manage procurement for maintenance and repair services.
6. Documentation support of maintenance and repair operations.
7. Interaction with external service providers.



Power consumption monitoring

Features

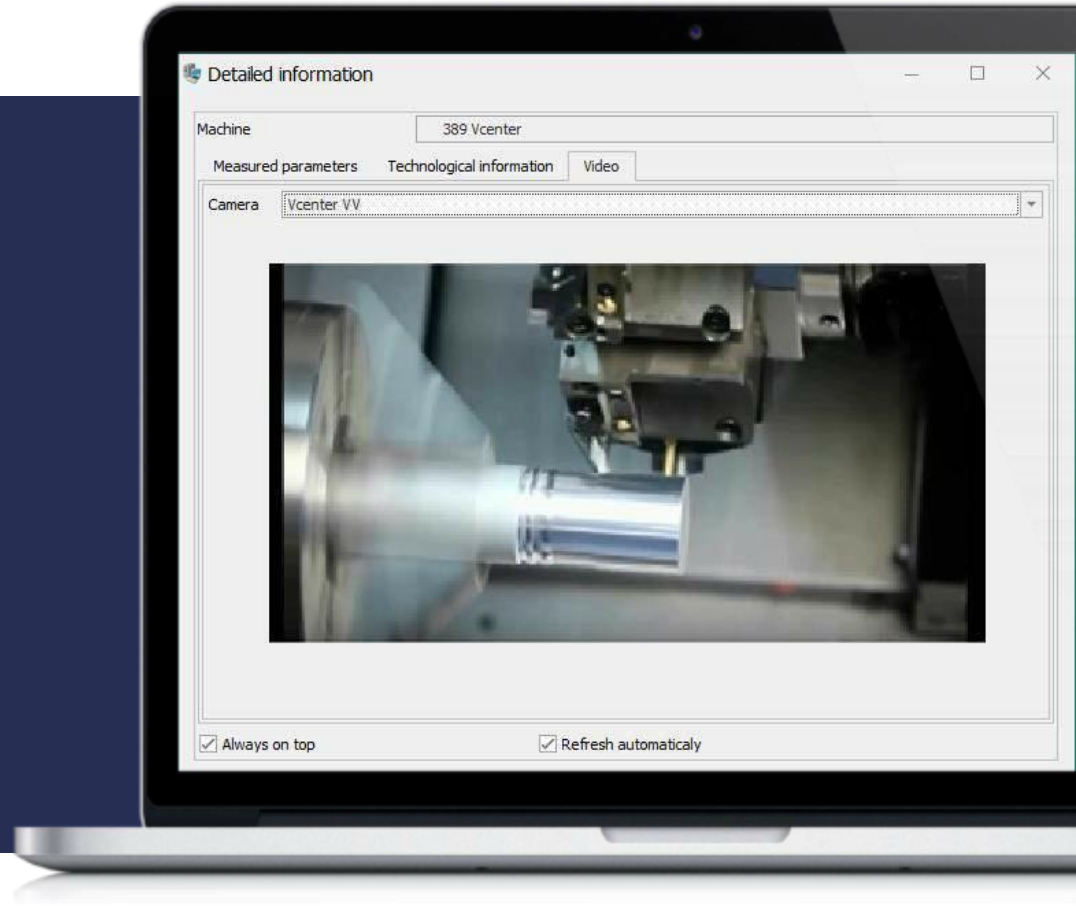
1. Monitor the consumed active and total power of a three-phase electric network, the values of phase voltages and currents, and the quality of the supply voltage by fixing time of surges, breaks and voltage breaks.
2. Calculate all the indicators for the selected time period: shift, day, month for the whole enterprise, and for any unit, equipment, employee.
3. Monitor and classify power consumption by the main equipment states: “Production” and “Downtime”; groups of downtime reasons; downtime reasons of each group.
4. Check the energy parameters average, maximum and minimum values for a specified period



Video Monitoring

Features

1. Video recording of the workpiece, the operator's actions on the machine, the situation at the work site.
2. Binding video sequence to the machine’s state, performed technical operations, etc.
3. Video recording of individual events, for example: machine’s setting up or its repairing.
4. The possibility of a detailed investigation of emergency situations.



Discover the unrealized production potential

Reducing or eliminating

- Setup time
- Downtime
- Scrap
- Energy costs

Improving

- Job planning and quoting accuracy
- Employee productivity
- Machine and resource efficiency
- Maintenance planning
- Reaction time for failures

WE’VE GOT THE PRODUCTION DATA COVERED!

MORE THAN 286 COMPANIES ALREADY USE ZYFRA SOLUTIONS

USE CASES

Streamlining Spare Parts Manufacturing

Task

To raise equipment productiveness to observe order schedules

Solution

- ✓Machine pool has been integrated into a single information space.
- ✓Monitoring Terminals TVV-10 for downtime cause determination have been installed.
- ✓Machine drives energy consumption is controlled.

Result

- ✓3,300 machine-hours per month — identified reserves of machine time
- ✓4,2 thousand euro — monthly net profit from sales of additionally manufactured products
- ✓31% — higher machine loading
- ✓EUR 1,2 million — growth in enterprise annual revenue

Machines connected:	Equipment type:
49	Machines with NC blocks: Heidenhain, Sinumerik, Fanuc

31%

equipment load increase

EUR 1,2 million

increase in annual profit

DGPL Redefining Productivity

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Streamlining Helicopter Appliances Production

Task

- ✓To raise the productiveness.
- ✓To evaluate effectiveness of investments in equipment.

Solution

- ✓Machine pool has been integrated into a single network.
- ✓Monitoring Terminals TVV-10 for downtime cause determination have been installed.
- ✓Critical events alert system has been set up.
- ✓“Efficiency Display Panel” information monitors have been installed for rapid production control.

Result

- ✓126,642 hours per year — identified machine time reserve
- ✓107 000 Euro — the decrease in production cost of one knock-down kit.
- ✓160 000 Euro — saving on reduction of the tools consumption.
- ✓4.7 mln Euro— amount of reallocated investments

Machines connected:	Equipment type:
79	Machines with CNC: Siemens, Fanuc, Heidenhain

DGPL Redefining Productivity

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World Installations

Support Center

Software Updates

Version updates

At least 4 new releases per year

Professional Support

Global technical support

In-person training hosted by Partners

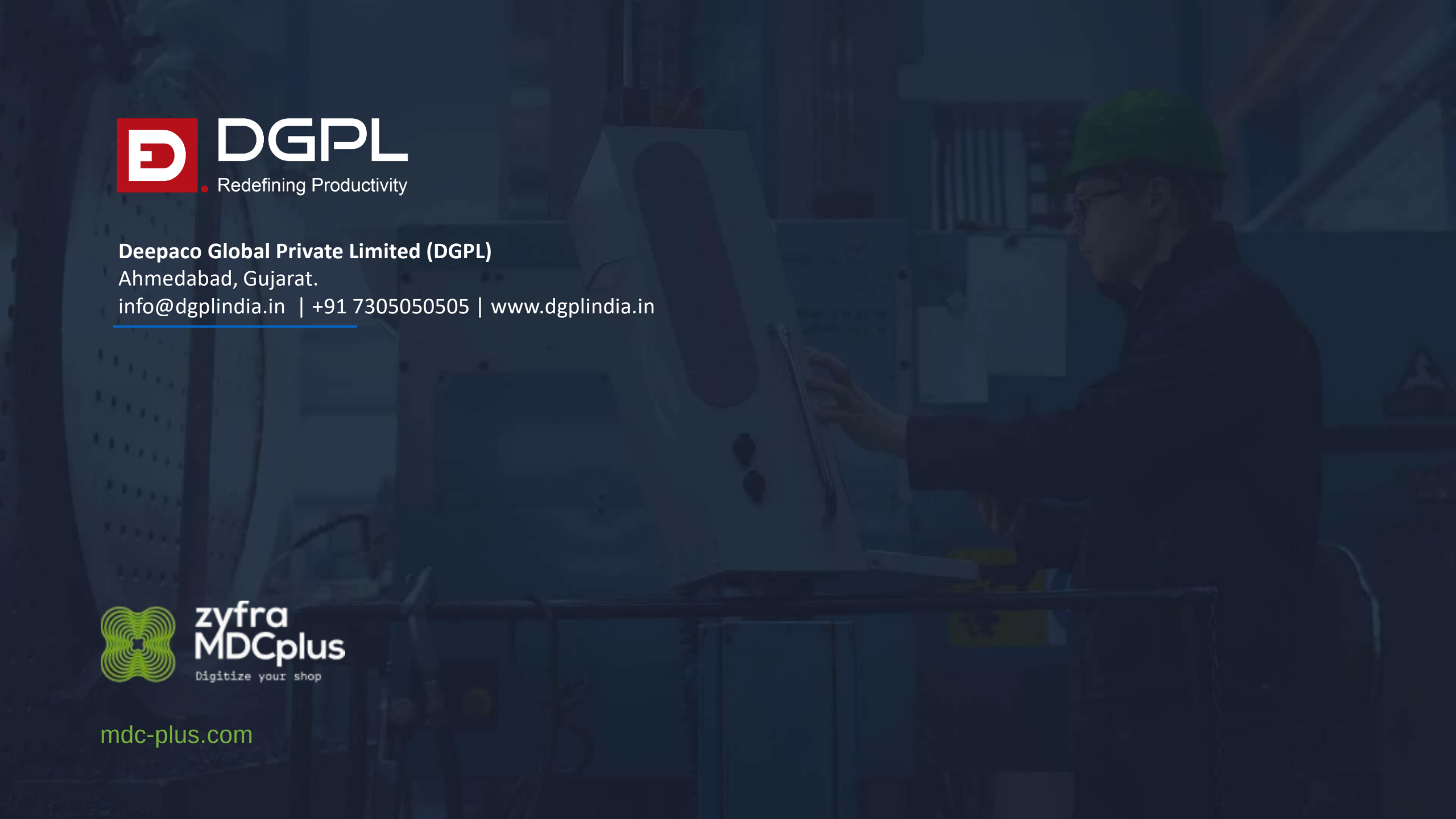
Personal account for Partners with all the updated materials

System Customization

Customizable Reports and Charts

Development of specific functions to fulfill customer requirements

Technical support: support@mdc-plus.com



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