simpligo

Preconfiguration and Functional scope of modules

System configuration before startup

Step 1

You map your production floor by defining manufacturing cells / lines

- In the ”Manufacturing Cells" tab, first create a Group and then define a set of machines of this Group, e.g. "Laser cutting machines" group, and then specific ones: "Laser cutting machine 1", "Laser cutting machine n"

Step 2

You define a list of possible reasons for downtimes

- According to your procedures, you create a list of reasons for machine downtime with the level of detail you want operators to report.
- In the "Downtimes" tab, first create a Downtime Group and then define specific reasons for downtime, indicating whether it is planned or unplanned downtime.

Step 3

You define a list of possible reasons for breaks

- According to your procedures, you create a list of reasons for operators’ breaks with the level of detail you want operators to report them.
- In the "Breaks" tab, first create a Break Group and then define specific reasons for breaks, indicating whether it is a planned or unplanned break.

Step 4 (option – administration module)

You define a list of operators

- You create a list of operators authorized to log in to the reporting console
- You assign the Operator his ID. Using that ID operators will be able to log in in 3 ways - (1) by entering the ID number on the interface, (2) using a barcode with ID, (3) using a QR code with ID.

The system consists of 4 modules

1. Production module

Creating orders and production planning

2. Reporting console

Production progress reporting by operators on an industrial computer (IPC) with a touch screen

3. Business Intelligence module

Data analysis and visualization

4. Hardware integration module

Collecting signals from machines, sensors and meters

Production module

Creating orders and production planning

Access from a web browser

Functional scope

- Login
- Creating production orders (web browser or in Excel file) :
  - list of operations (manufacturing route)
- Import of Excel files to the system
- Preview and edit of imported orders
- Generating a Production Guide for a job or operation (per line or manufacturing cell)
- Production planning i.e. the order of operations:
  - scheduling on list (queue, per type of manufacturing cell, no date)
  - scheduling on the timeline* (per manufacturing cell, per date)
- Visualization of order execution details
- User management module (assigning ID)
- Configurator of reasons for machines downtimes and operators breaks

*Functionality available in the Digital PRO package

Reporting console

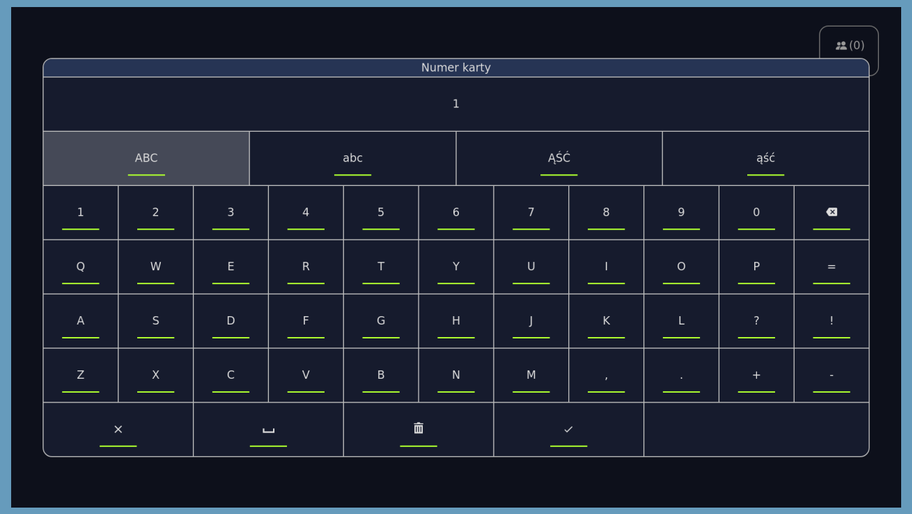
Application for operators to report production progress

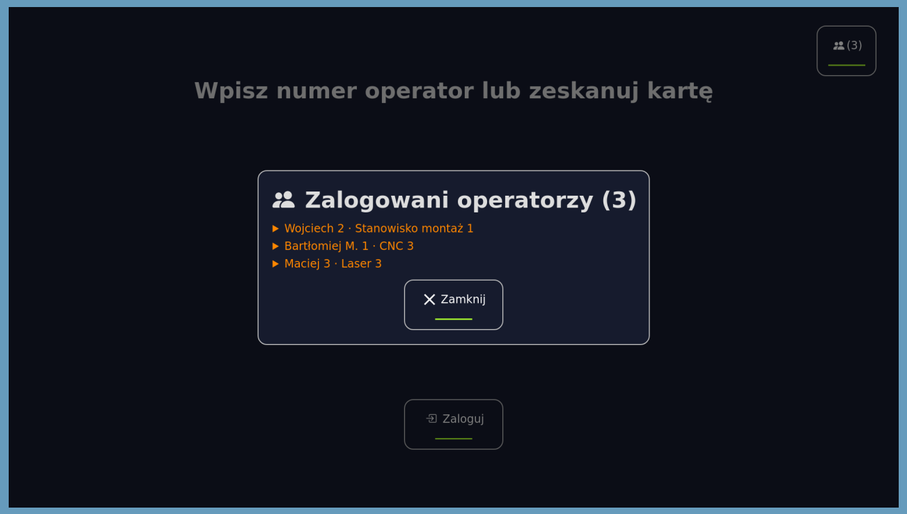
Operation on an industrial touchscreen computer (IPC) + scanner

Functional scope

- Login
- Manufacturing cell selection
- Selecting an order on a manufacturing cell (or line)
- Production Guide scanning (optional)
- Reporting:
    - (time) start / stop:
        - operation
        - changeover, downtime, failure
    - quantity produced
    - waste (quantity)
    - rework (quantity, time)
- Reworks support (unlocking the ability to perform operations on previous manufacturing cells)
- Downtime handling (reason selection)
- Entering a comment for order

Sample screens of the operator console





Business Intelligence module

Access to analytics and reports in real time

Access from a web browser

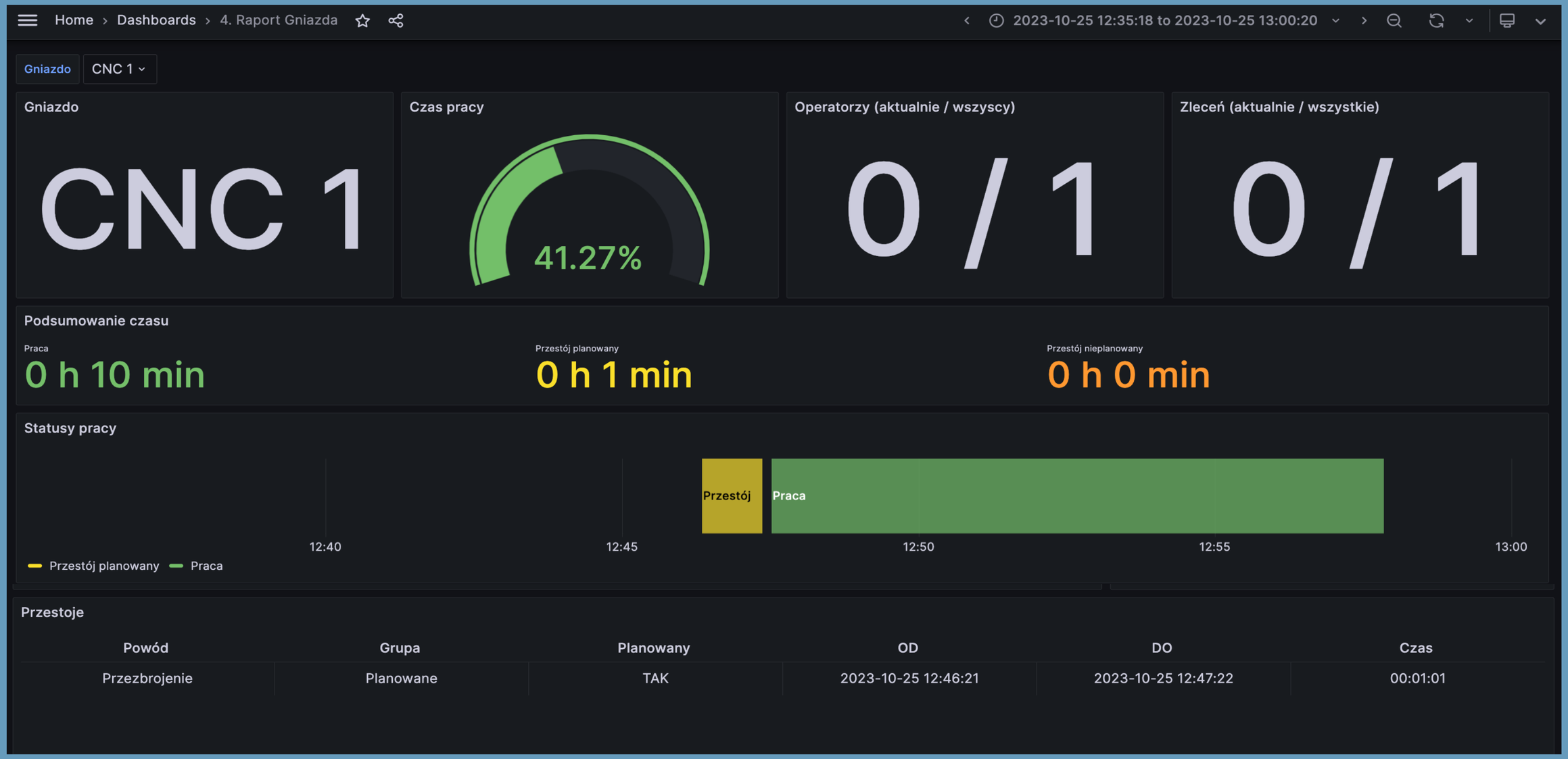
Functional scope

The module has configured reports that automatically aggregate, analyze and visualize data collected from the production floor from a selected period:

- summary reports:
  - time spectrum of manufacturing cells (lines) operation
  - progress of orders
- detailed reports :
  - per manufacturing cell (line)
  - order progress:
    - time, progress of execution, time to promised deadline, reworks, waste
  - operator’s work time
  - energy consumption per order report*
- visualization of signals from machines*

* Functionality available in the Digital PRO package

Sample dashboard | Order detailed report



Hardware integration module

Collecting signals from machines

Configuration of additional hardware required before implementation

Functional scope

- Automatic acquisition of signals from machines, e.g.:
    - work/stop,
    - quantity of produced pieces,
    - line speed
    - electricity consumption per operation*
    - others you want to monitor
- Data visualization on dashboards**, including:
    - calculation of energy consumption per order
    - comparison of the machine's operating time during the operation and the work time declared by the operator
    - real-time tracking of manufacturing cell (line) operating parameters affecting quality or efficiency

* Functionality available in the Digital PRO package

** Estimate of the time required to create a dashboard upon request

Operating the system is simple

Step 1

You create production order

- In the Excel form we have prepared, you create a list of operations (manufacturing route).
- You upload the completed Excel file to the Production module.
- If you prefer, you can create a list of operations in our module.
- For each order, you can generate a Production Guide containing QR codes for each operation. Scanning QR codes makes it faster and easier for operators to enter data into the system.

Step 2

You are planning the execution of orders

- You can plan particular operations for every order.
- You plan a queue of operations for a group of manufacturing cell (without a date) or operations for a manufacturing cell to be executed on a chosen date*.
- You can also plan work outsourced to external companies.
- If your technology requires it, you can plan to pass the semi-finished product through the same manufacturing cell multiple times.

Option

You print Production Guide

- You use an office printer to print the Guides (A4).
- You can decide whether you print all operations on one sheet of paper or single operation on separate sheets of paper.

You hand over the Production Guides to the operators

Each Guide has QR code that describe scheduled operations to be executed on a particular manufacturing cell (line).

Step 3

Reporting the start of an operation in an order

- The operator logs in to the application.
- On the application screen, he selects the manufacturing cell he is working on.
- A list of operations to be executed appears on the screen.
- The operator scans the QR code from the Guide or selects an operation on the screen.
- After selecting the operation, a list of steps to be executed and comments entered by the plannist or another operator (providing important information) appears on the screen.
- The operator clicks the START button. At this point, the system starts counting the operation time. Confirming the start of production using the START button is equivalent to confirming that you have also read comments.

Step 4

Reporting the end of an operation in an order

- After completing the operation or at the end of the shift, the operator logs in to the console.
- The application displays an interface for entering data regarding the operation he was working on.
- On the interface, he enters data regarding the operation:
  - quantity made
  - waste
- If necessary, he enters a comment for the operation - a functionality useful when the operation is continued on another shift or on another socket.
- Data reported by the operator are visible on the list, in reports and on the timeline* in the production planning component.

Collecting additional data

- While working on an operation, the operator can report:
  - failure
  - downtime
  - rework.
- The operator logs in to the console.
- The BREAK button (refers to the operator) and DOWNTIME button (refers to the machine) appear on the interface.
- The operator selects the BREAK button and the reason for the break from the list; the same procedure applies to reporting downtime.
- The operator can enter a comment on the order.

*Functionality available in the Digital PRO Package

About us

The **simpligo** system was developed by STABILIS.IO - a Polish technology company that supports manufacturing companies in digital transformation by providing advanced systems for optimizing industrial production processes.

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More information

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