# SIG CRUISER

## Next Generation User Interface for SIG NEO Filling Lines

**Context**

The SIG CRUISER is a user interface for industrial machines for aseptic filling and packaging of food and beverages. The interface is used to operate an entire filling line which means at least five different machines. The interface of the filling line was created for the new packaging format combivita, for which a completely new generation of filling machines with new mechanical requirements was developed and will be rolled out to all SIG machine types and be a standard for future developments.

**Design Challenges**

- Simplify the complexity of the current user interface
- Reduction of training costs and access to the machine for less educated people
- Integration of new machine functions into the user interface
- Development of a flexible and modular system that can be transferred to other types of machines used in production lines and that runs on different software
- Developing a design system to be used by 3rd party machine builders

# User Centered Design

**Principles**

The development is based on human centered design process. A comprehensive analysis was carried out in close cooperation with operators and experts at different production sites. The analysis also included interviews with various personal roles and observation of real productions.
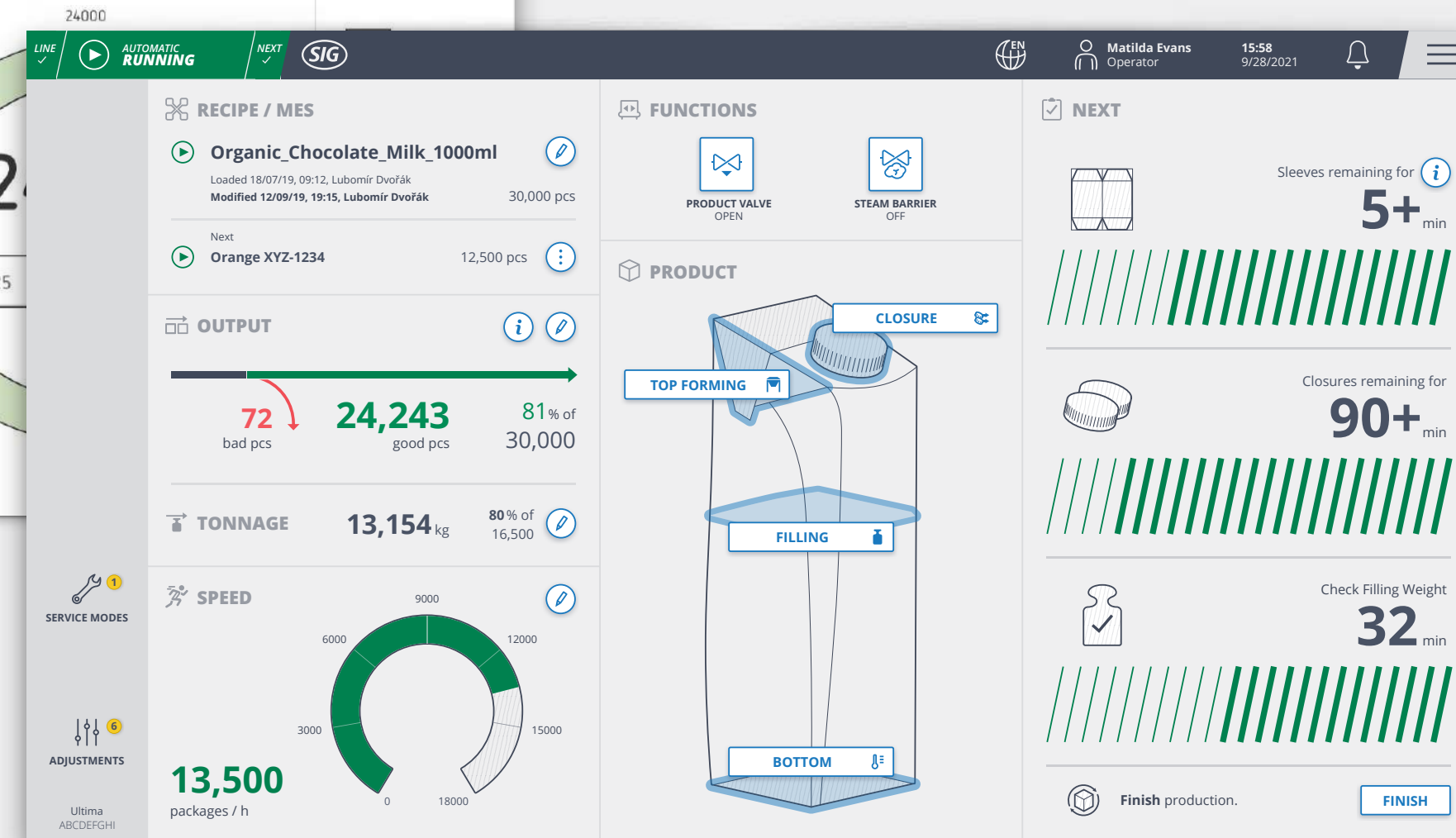
We started with scribbles and carried out further details with wireframes and user tests with real staff before the concepts were incorporated into the design. In the second step, the design was transferred to the different machine types.
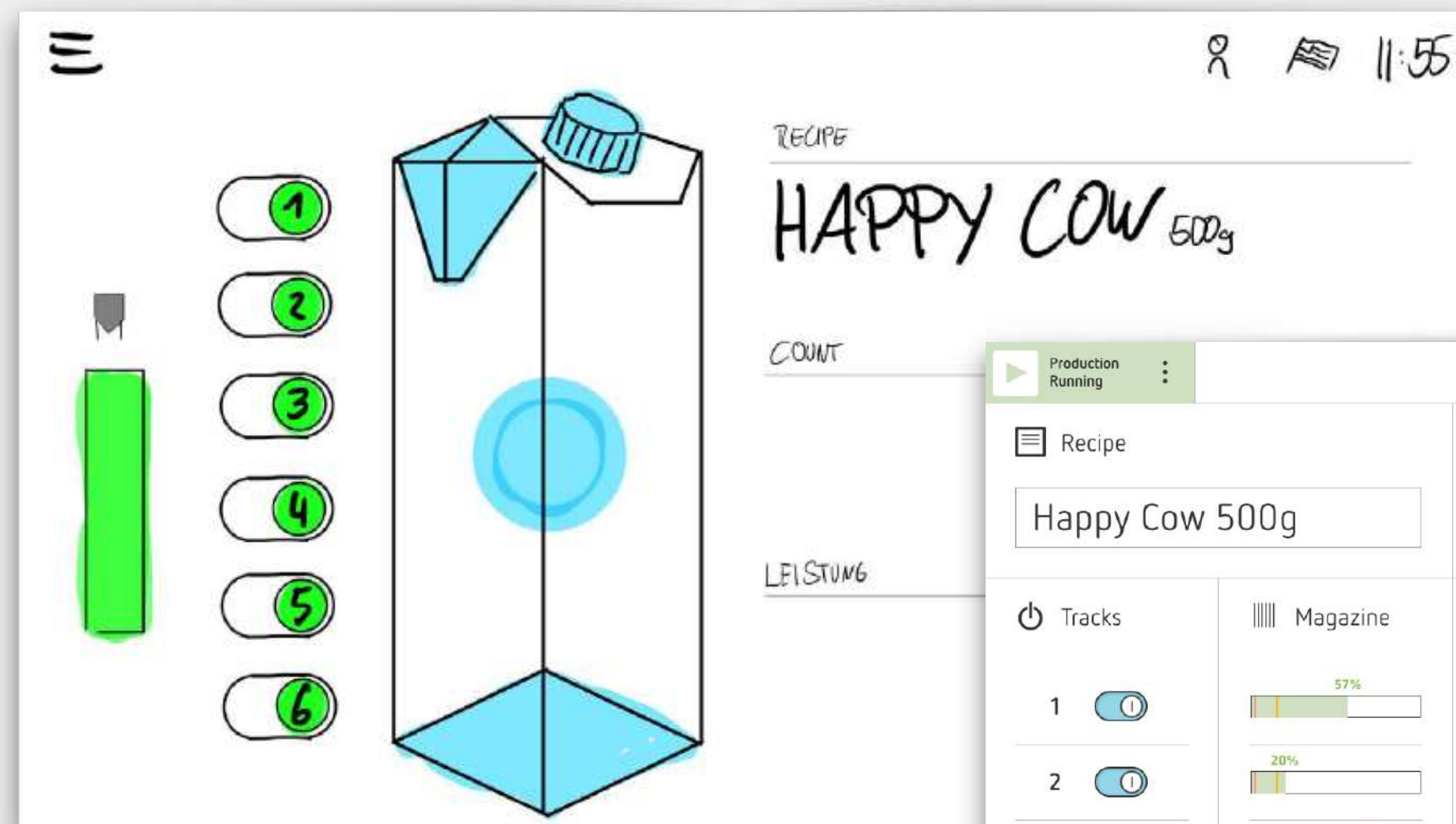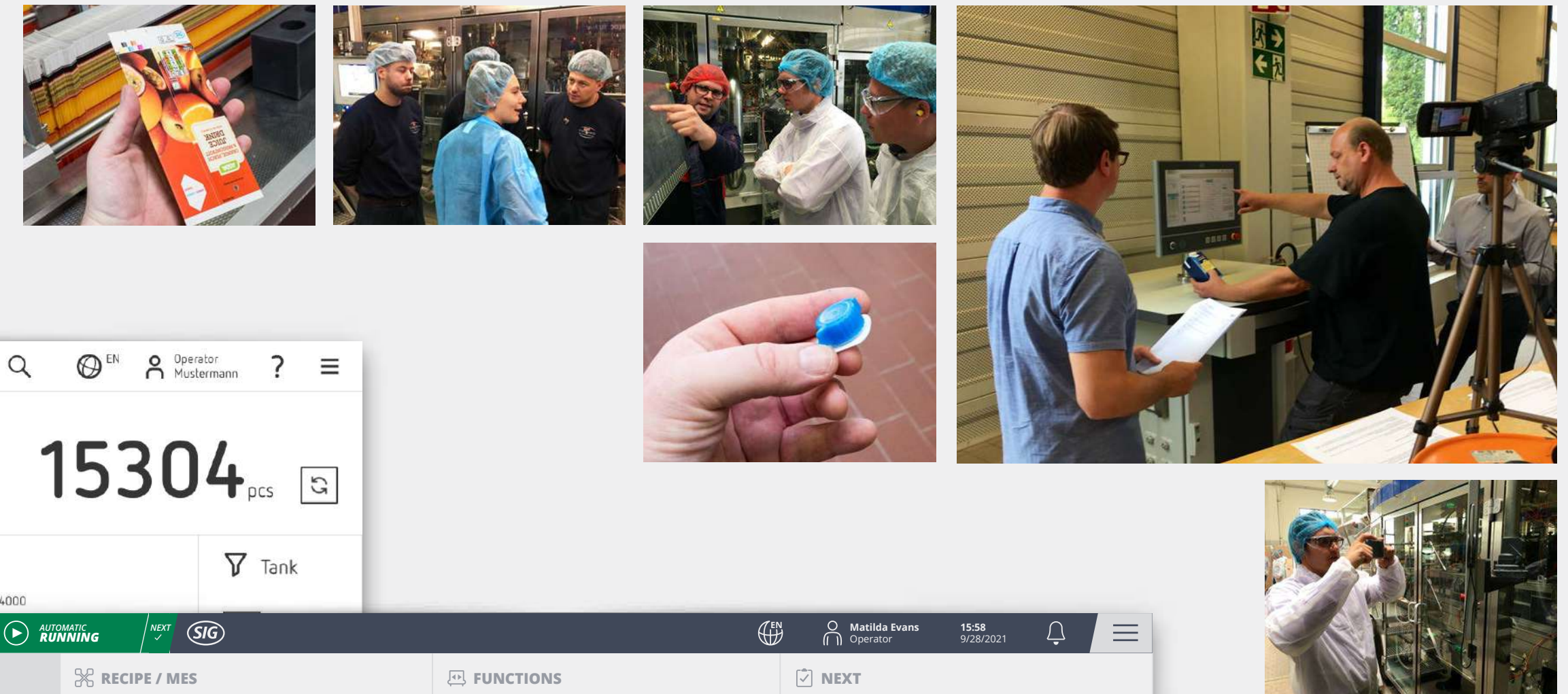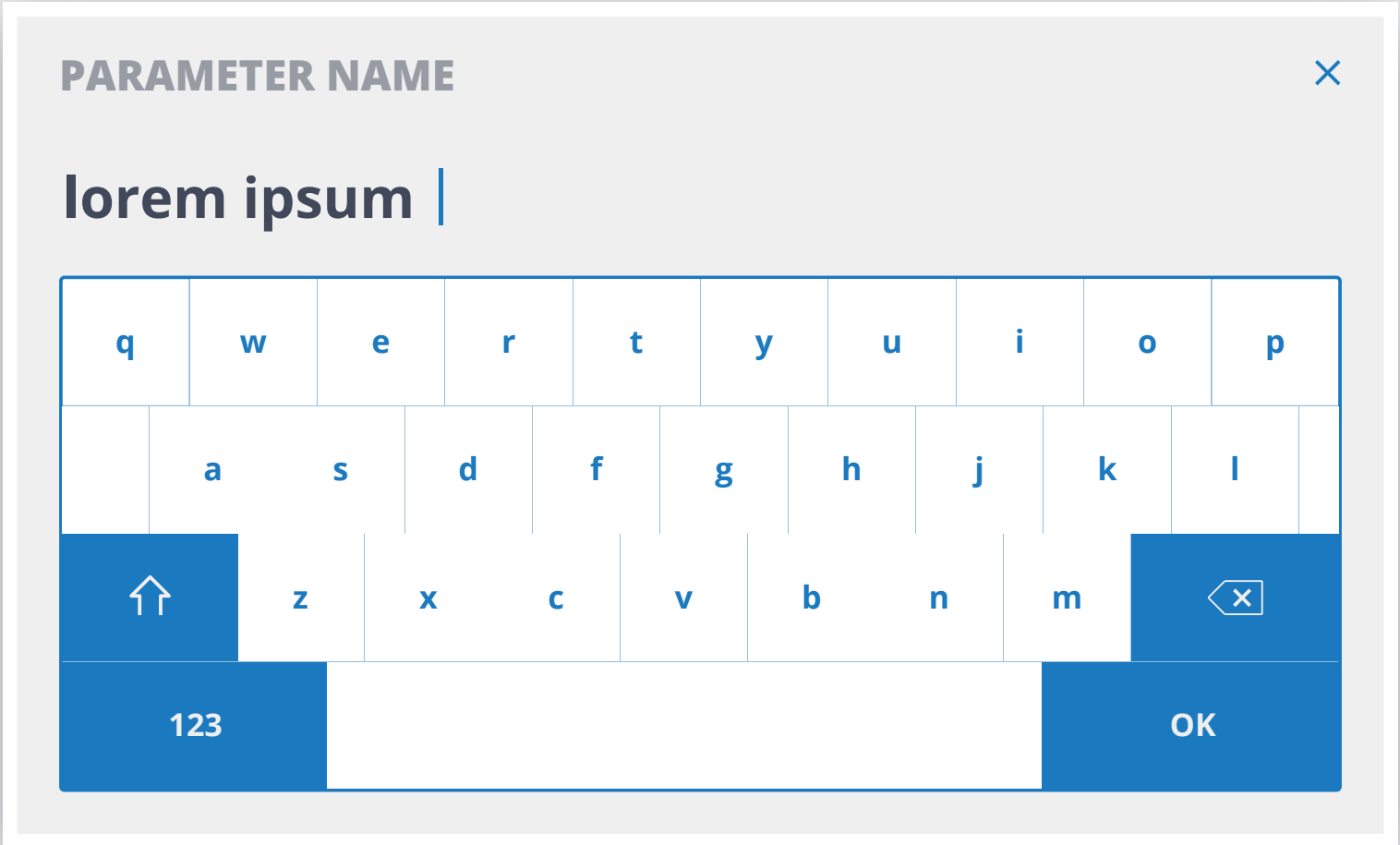


Scribble
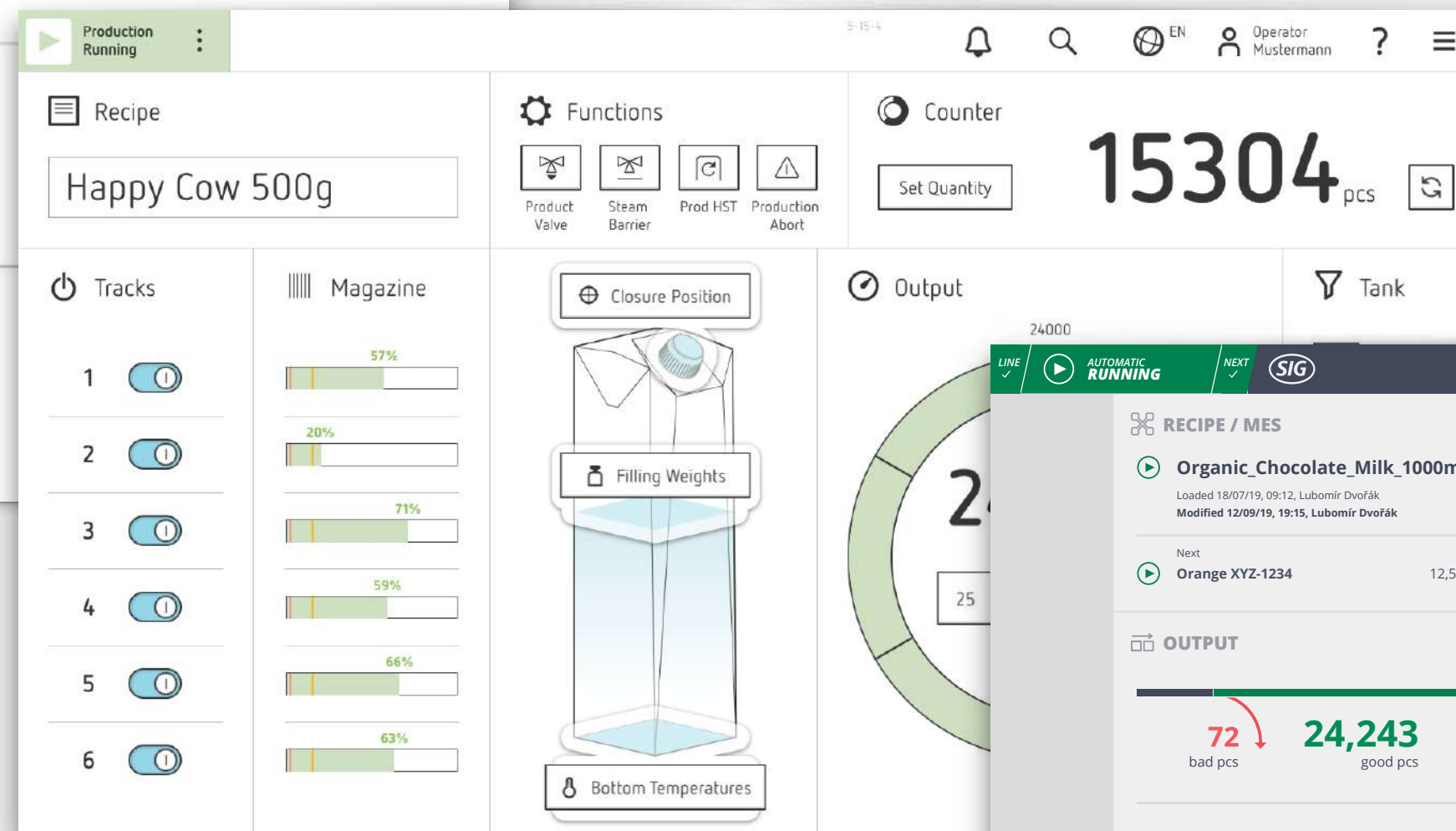


Wireframe / Prototype



Implementation

# Design System

**Principles**

- Important elements and production steps are visually supported by individual icons using a customized icon style
- The visualizations are clear and easy to understand
- Colors have a distinctive meaning

- Input controls like buttons or stepper are easy to identify
- The icons are seamlessly integrated into the design system and create a coherent overall impression



SIG

**ULTIMA**
Line Automation

Operator

**PARAMETER NAME**

lorem ipsum |

| q | w | e | r | t | y | u | i | o | p |
| a | s | d | f | g | h | j | k | l |
| ⇧ | z | x | c | v | b | n | m | ⌫ |
| 123 | | | | | | | OK |

| TAB 1 | TAB 2 | TAB 3 |

BUTTON  BUTTON ⚙  ⚙  ⓘ  ● OFF  − 30°C +  − 30°C +

OPTION  **SELECTED**  OPTION  − − 30°C + +  − 30°C +
1   0.1   0.1   1

**55%**

3200 | **3225**mBar | 3250
3255

3200 | **3212**mBar | 3250
3225

**3204**mBar | 3250
3225

30
25   30   35
20
15   45
40

| MANDREL SECTION | MAGAZINE | MANDREL WHEEL | FILLING SECTION | DEDUSTING | PREHEATING | H2O2 | DRYING | FILLING | STEAM INJECTION | ULTRASONIC | TOP FORMING | DIVERSION | OFF CONVEYOR |

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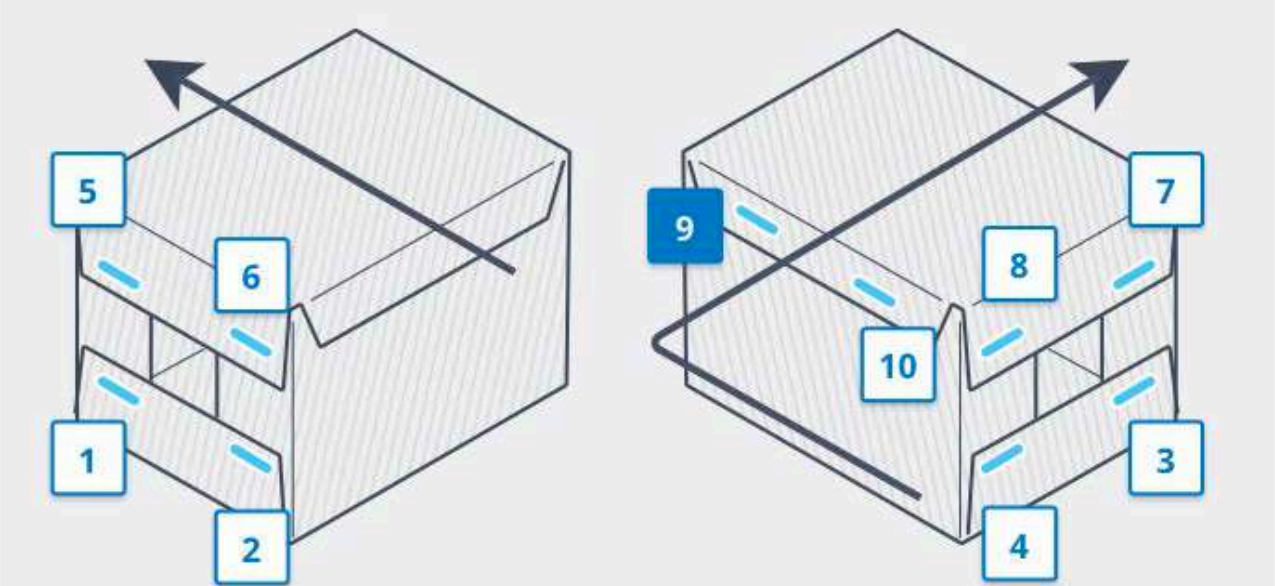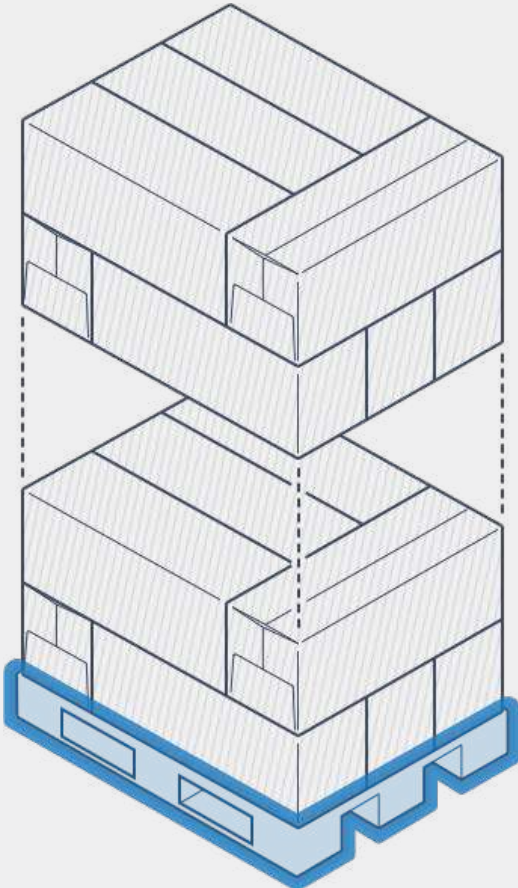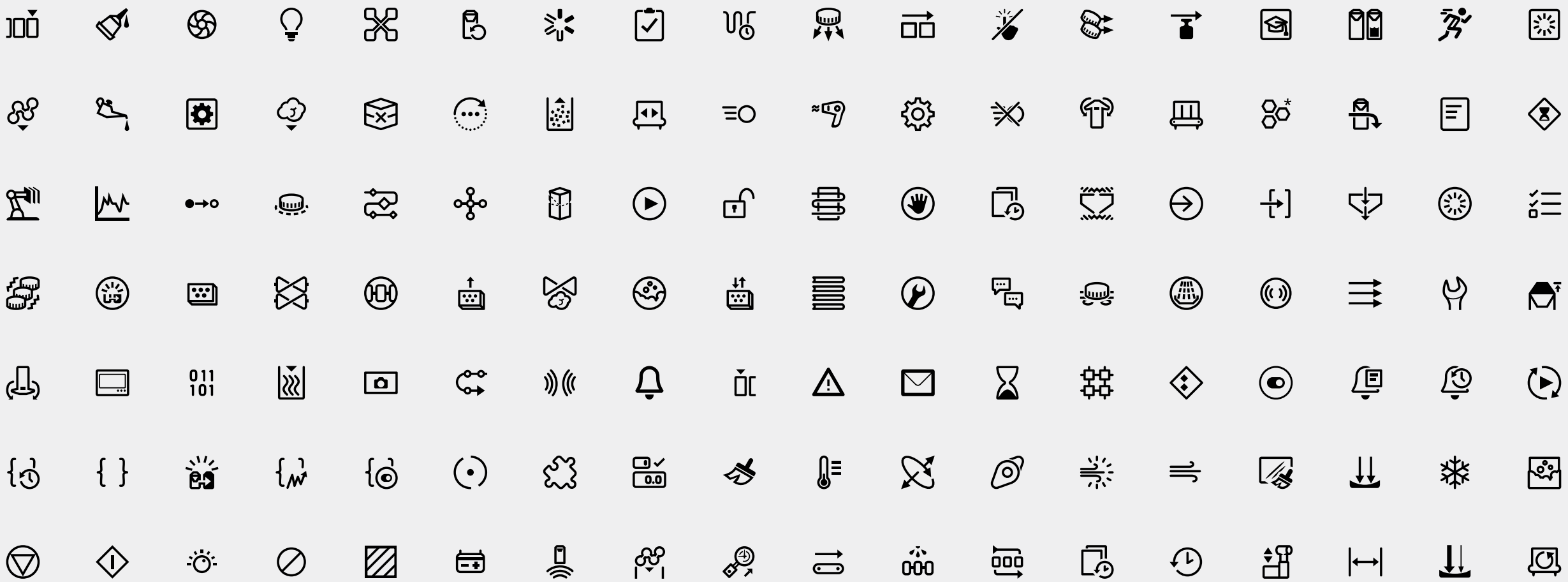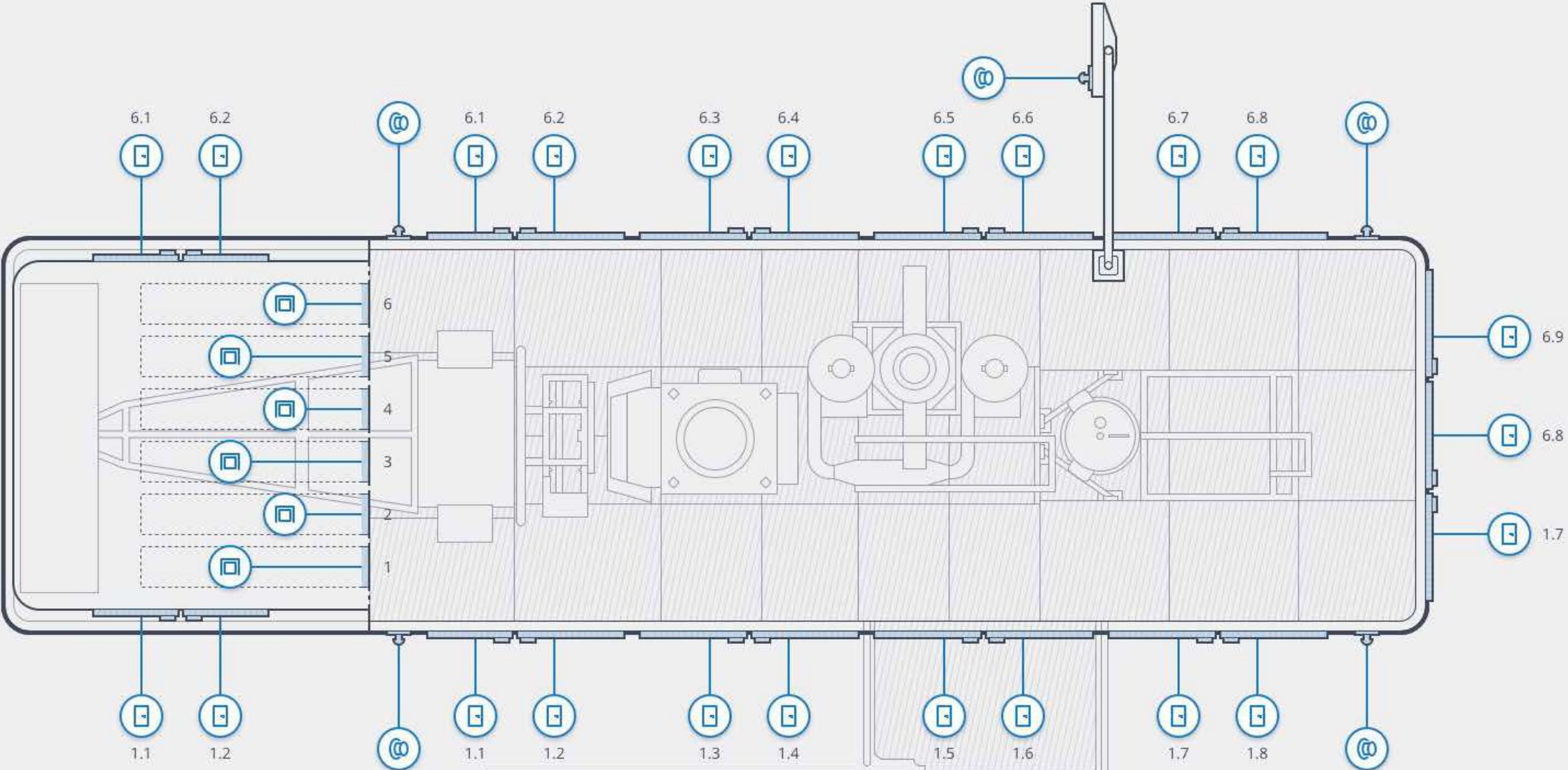
# Consistency over the entire line

**Principles**

Simplified navigation and role and context adaptation tailors information provided to the user, making the system easy to use. Information that is currently not necessary is faded out. In difficult or time-critical situations like a production failure or a lack of consumables, the system offers the operator assistance automatically and leads to the next steps.

• Screen areas are consistent over the entire line

• product driven navigation, that ensures clear overview, quick access and efficient operation
• Next area widget always informs the operator about upcoming tasks



Buffer Table

Closer Hopper

SIG PACER

SIG NEO

Tray Packer
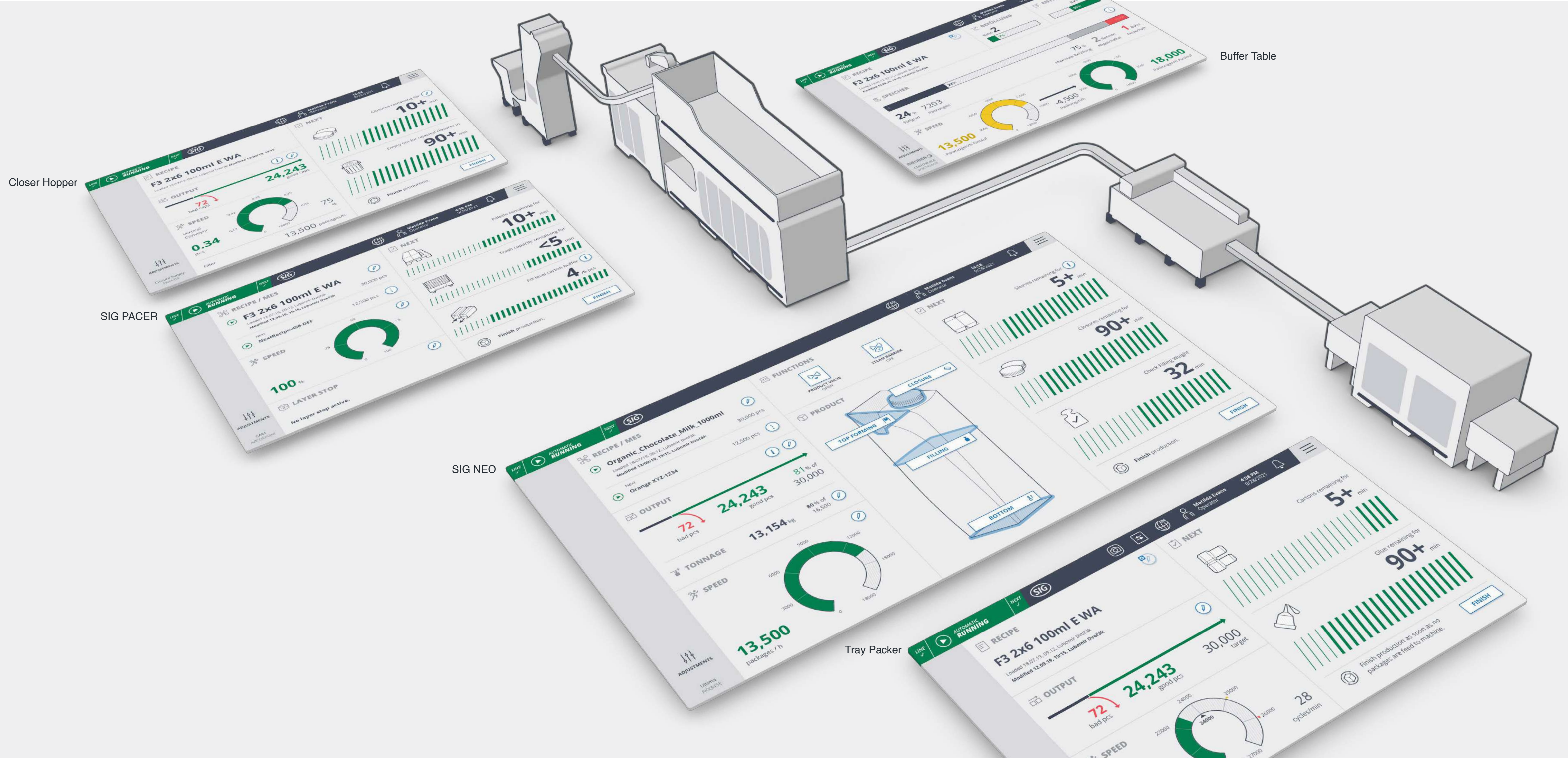
# Navigation

**Principles**

It is a complex machine, but we were able to achieve the following goals:
- The operator must not leave the dashboard layer during production to control the machine
- Operator related settings or corrections are implemented as a temporary overlay. The operator stays in the context and navigation effort is reduced to a minimum
- All navigation destinations that are not relevant for production are bundled in the main menu
- Leaving out unnecessary information where ever possible
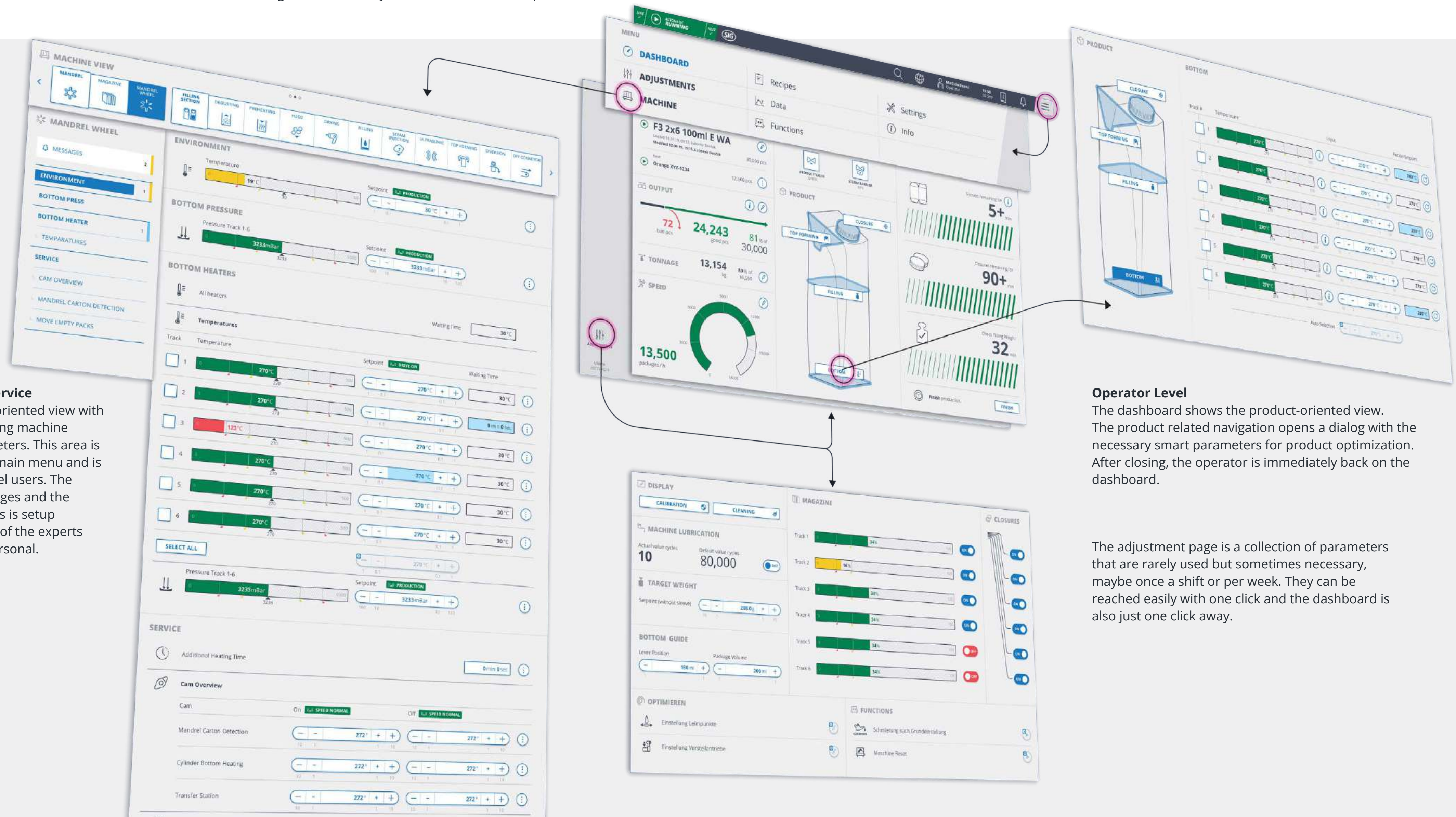
**Higher Level and Service**

This is the machine-oriented view with drilldown to all existing machine modules and parameters. This area is accessible from the main menu and is invisible to lower-level users. The structure of these pages and the sorting of parameters is setup according the needs of the experts and maintenance personal.

**Operator Level**

The dashboard shows the product-oriented view. The product related navigation opens a dialog with the necessary smart parameters for product optimization. After closing, the operator is immediately back on the dashboard.

The adjustment page is a collection of parameters that are rarely used but sometimes necessary, maybe once a shift or per week. They can be reached easily with one click and the dashboard is also just one click away.

# Adaption: Monitoring

**Line Monitoring System combiLink Plus**

The navigation principles and the look & feel were adopted 1 to 1 for the line monitoring system. The library has been expanded to display different key figures and trending graphs. In addition, the software was developed with web technology, which enables responsive behavior on many devices.
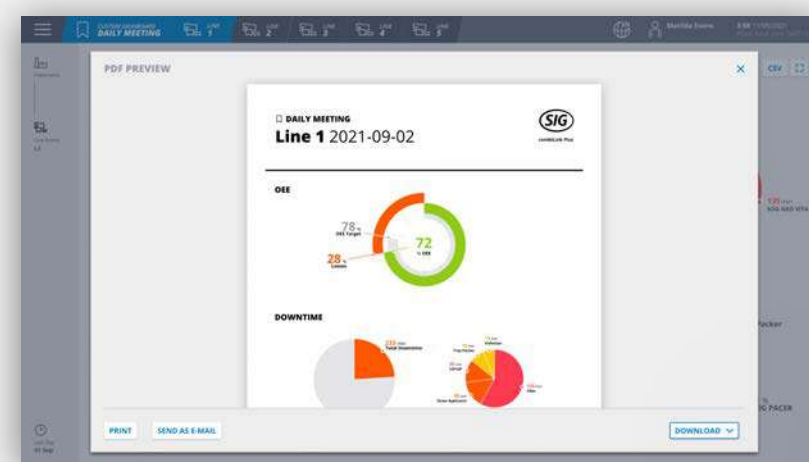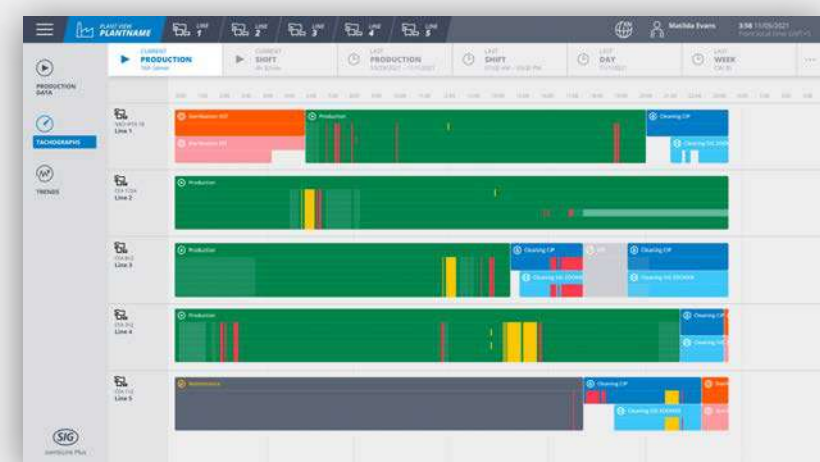
# Summary

**Principles**

Modern elements of SIG's brand are used in balance with ambient lighting and colors that are typically used in an industrial environment, reducing visual clutter and fitting the UX to an industrial setting.

**HMI** Project

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