

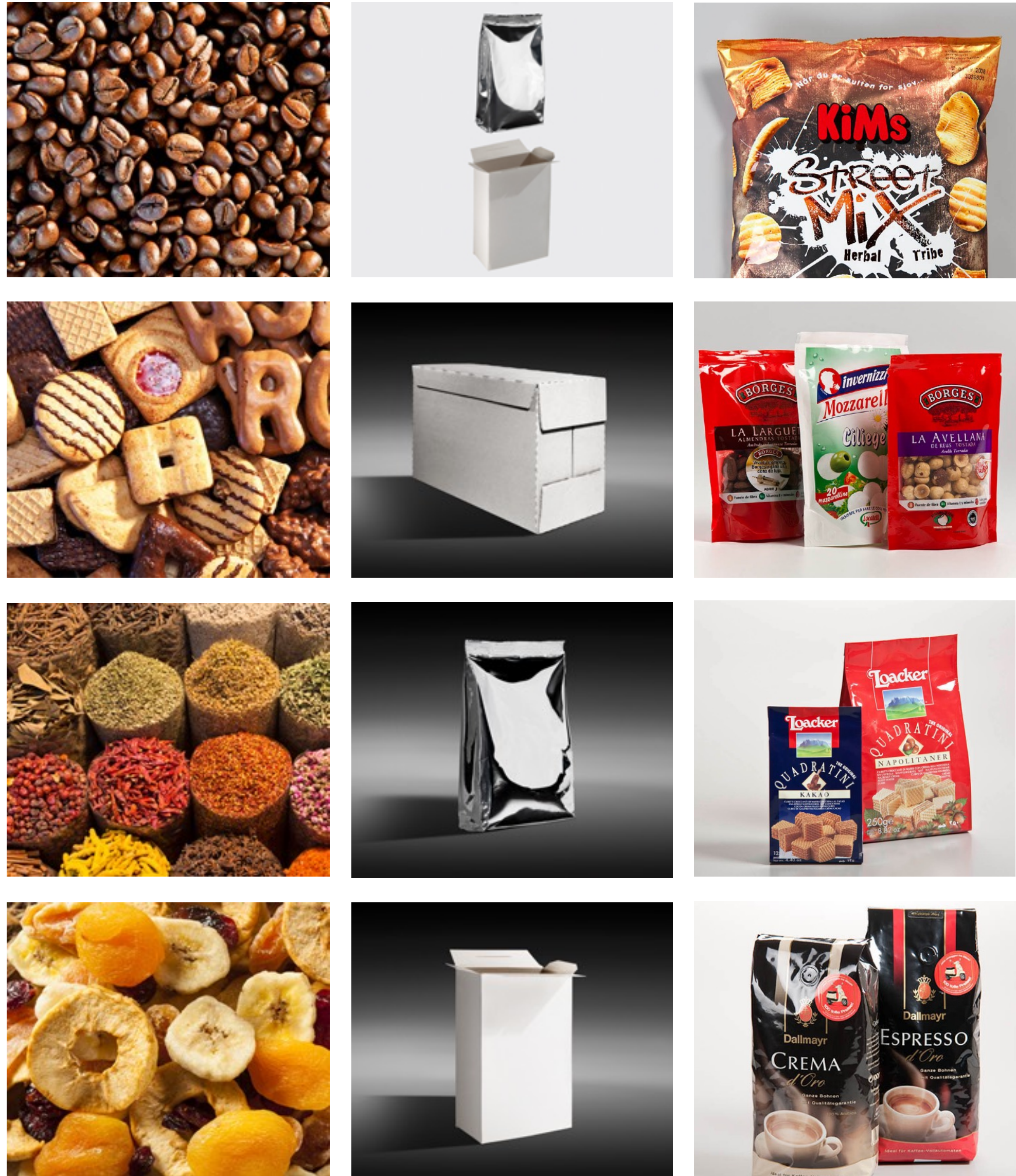
# New ROVEMA HMI

Customizable User Interface Design for Packaging Machines





# Starting Point



Goods and final packaged products

## Context

Touch-optimized user interface for packaging machines and lines serving the whole packaging process: From dosing to Form, Fill and Seal machines up to complete packaging systems – including final packaging – for a wide variety of different products and applications from the food and non-food sector.



SBS Brick Pack Machine



Final Packaging Machine

## Design Challenges

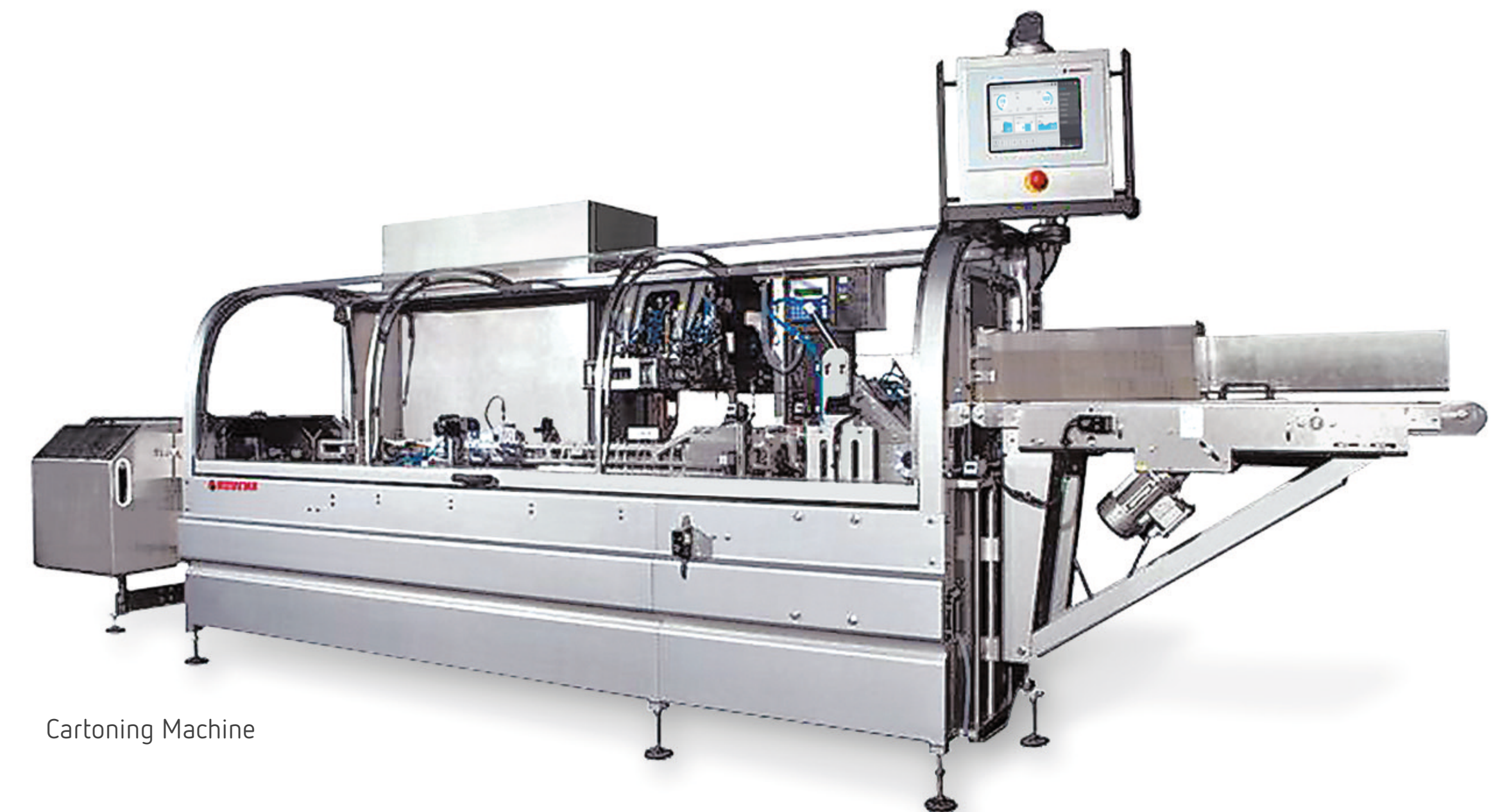
- Various machine types from single machines up to fully aligned packaging lines
- Customized, expandable machines, individually planned for client's products and needs
- High automation of processes
- Complex commissioning on client site configured directly on the HMI
- Heterogeneous usage context and HMI device configuration



Dosing System



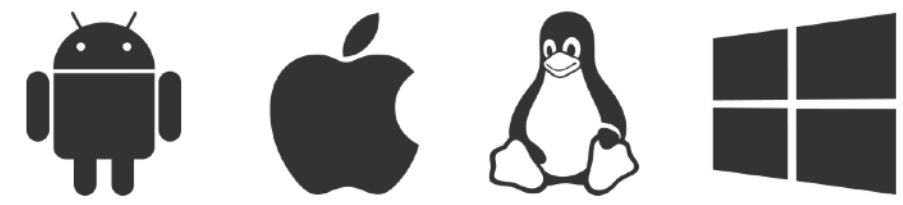
Form Fill and Seal Machine



Cartoning Machine



# Web Content Manager



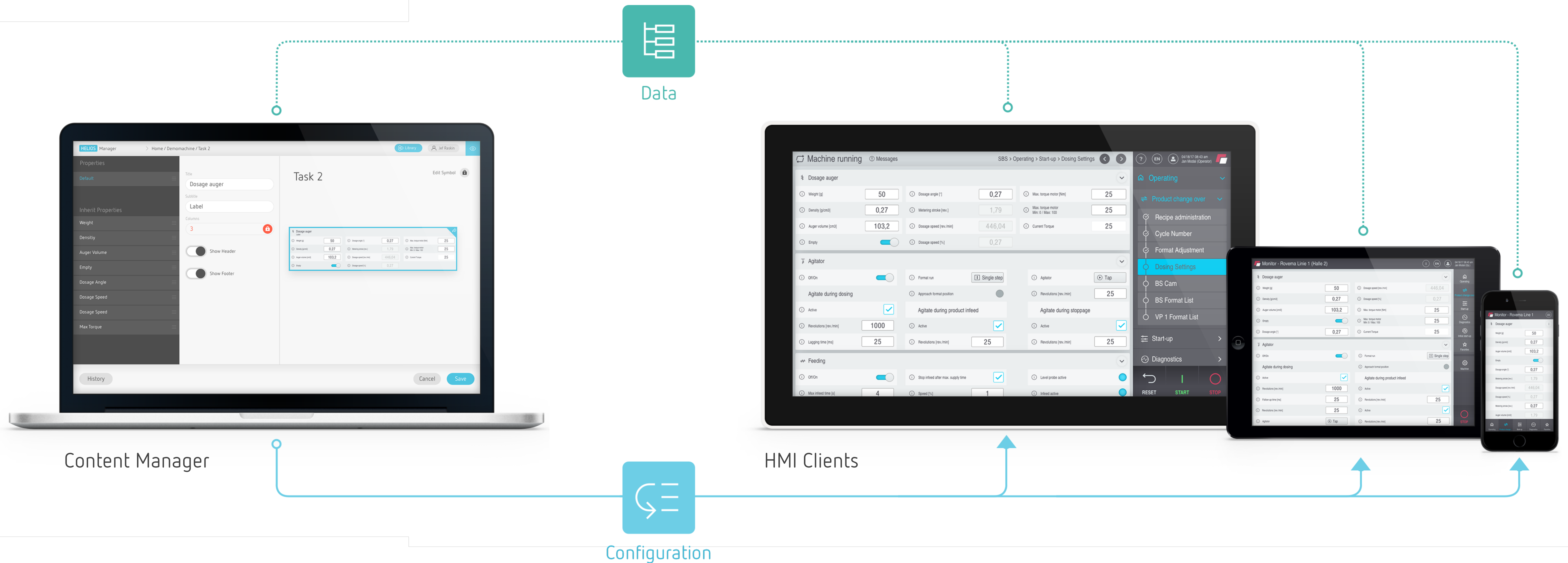
## HTML5 Technology

- State-of-the-art HTML5 and CSS3 technology
- Scalable, responsive layouts
- Consistent browser based display
- Support of desktop and mobile devices
- Modular, reusable component architecture

## Web-based Content Management System

- Individually web-based graphical editing environment
- Fully customizable HMI
- Custom-built library of high-quality core components
- Automatic versioning and restore features
- Supports internationalization and localization

- Build once, run anywhere: one application automatically
- Adapts to various screen sizes and input methods
- Multi-user support in the HMI clients as well as the Editor
- Fully featured live preview with real backend data
- Unlimited content scalability





# User Experience



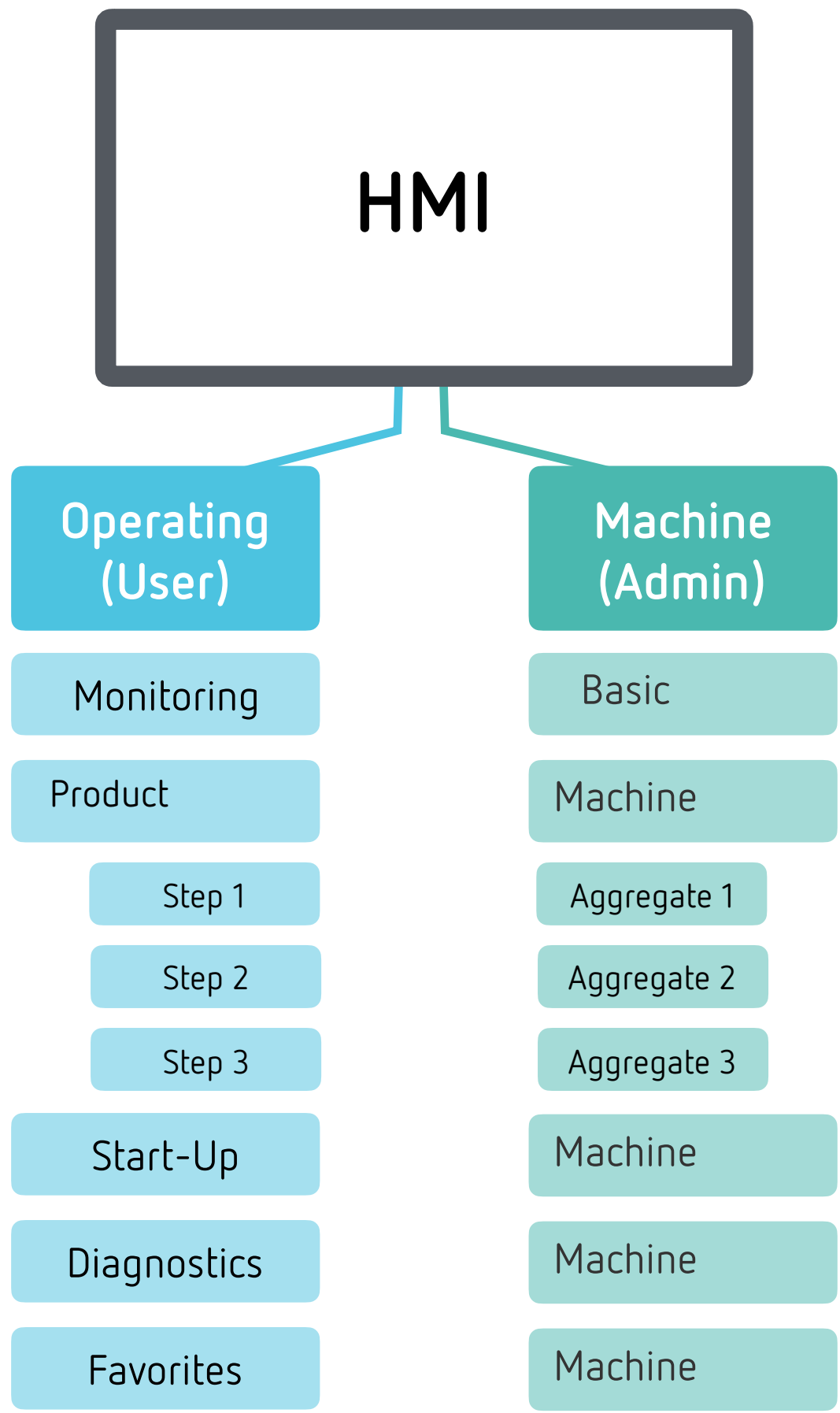
Interaction patterns derived from consumer products to fulfill users expectations

## Usability Principles

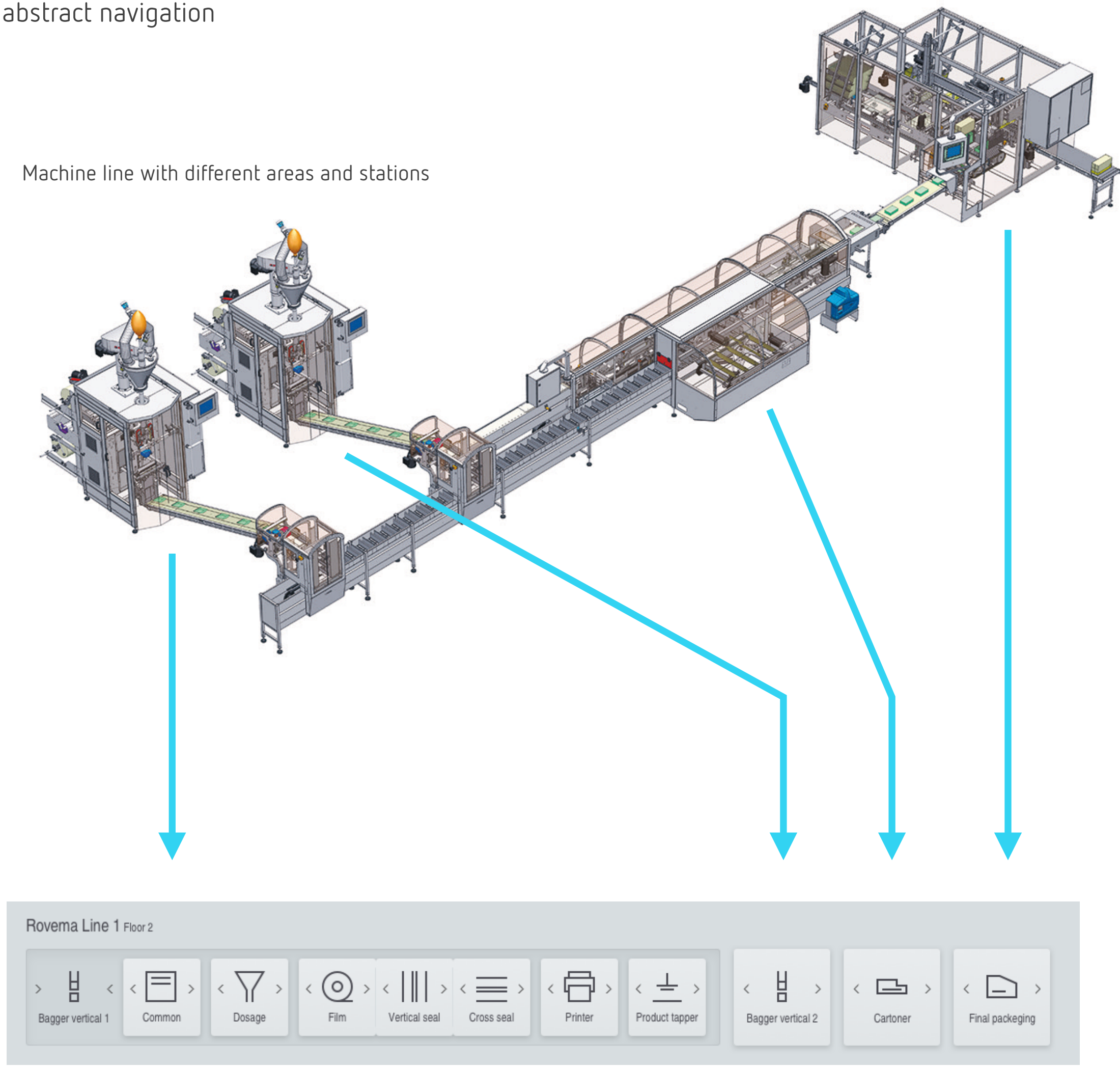
- Touch-optimized operation
- User-oriented operating concept
- User management and user role depended views and functionality
- Consistent navigation principles
- Modular structure, uniform appearance for all machine types
- Production overview on a central dashboard page
- Customizable favorite functions page
- Additional Multi-Touch Features
- Suitable for monitoring individual machines and complex lines
- Separation of day-to-day tasks from setup functions
- Assisted operation by Workflows and step-by-step instructions
- Intuitive approach via active user guidance
- Abstract, process oriented display of machine settings
- Process-orientated abstract navigation

## Benefits

- Reduction of improper operation
- Improvement of work safety
- Reduction of training times
- Easier support
- Higher efficiency
- Better acceptance and joy of use



Task based information architecture



Process-orientated abstract navigation



# Interface Design

- Design Principles
- Clear system status display
  - Self descriptive displays and controls
  - Aesthetic and minimalist design
  - Coded color concept to support messaging system

- Simple visual translation of complex processes
- Responsive and adaptive component behavior
- Comprehensive communication of process values
- Clearly arranged structures



User Interface with main dashboard mounted in HMI panel



Manufacturer branding




Graphic charts



Direct machine functions

Color palette



Confirm Confirm Confirm

Option A Option B wait...

Navigation icons: back, forward, search, etc.

Value display: 120

Slider control

Value display: 120 120 120

Warning icons: exclamation marks in colored circles

Control icons: arrows, squares, etc.

Icon and control style



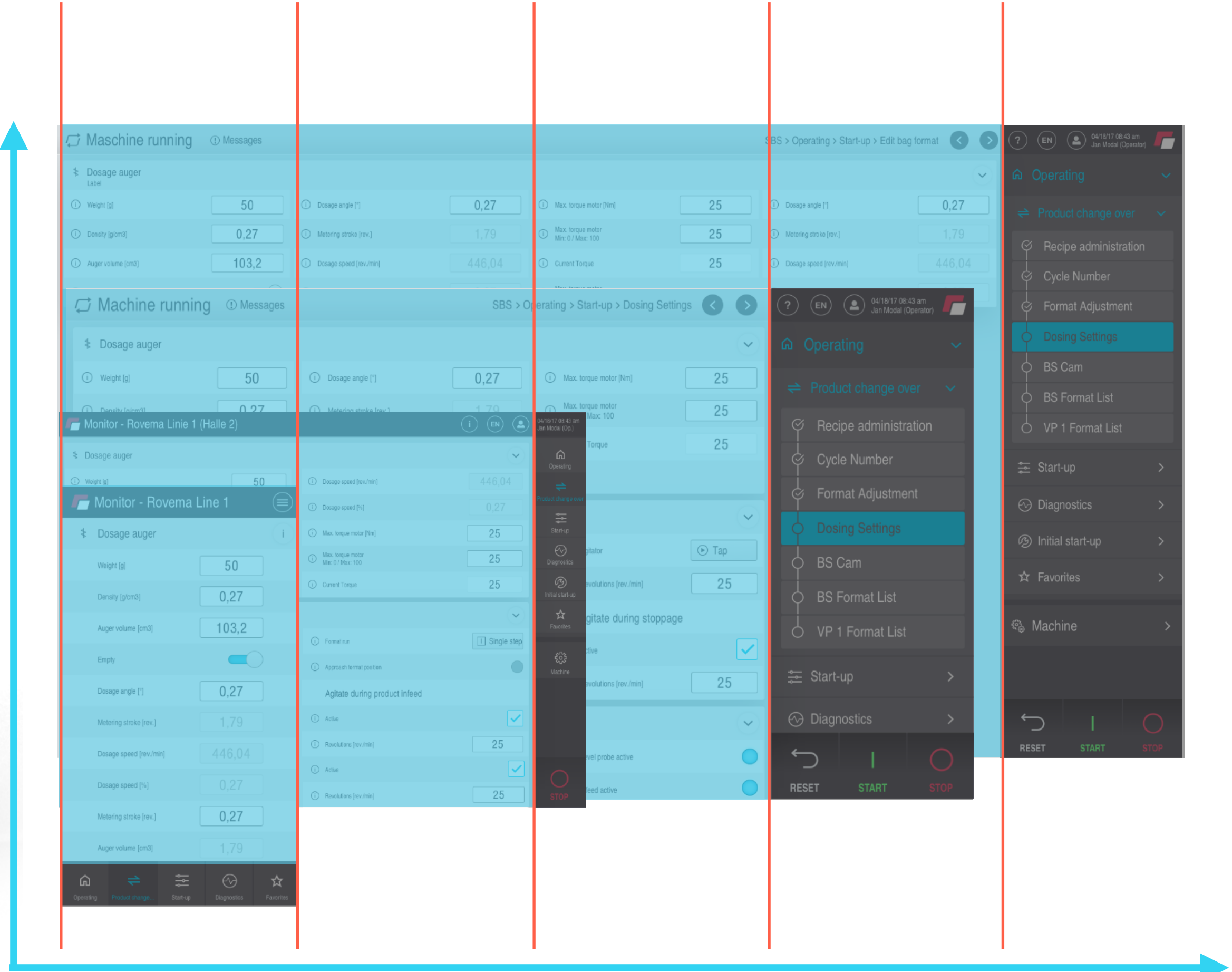
# Responsive Design

Features & Benefits

- Scalable, responsive behavior as core functionality
  - Grid-based application adjusts to various device types and screen resolutions
  - Consistent User Experience for all device types
  - Predefined design rules cover all scenarios and lead to a uniform appearance
  - Easy support of different sized touch-panels, desktops and mobile devices
- Consistent control sizes with guaranteed touch optimized ergonomics
  - Modular, reusable component architecture
  - Cost-effective application for different contexts
  - Easy to manage and update without necessary design adjustments



Support of various device types and sizes



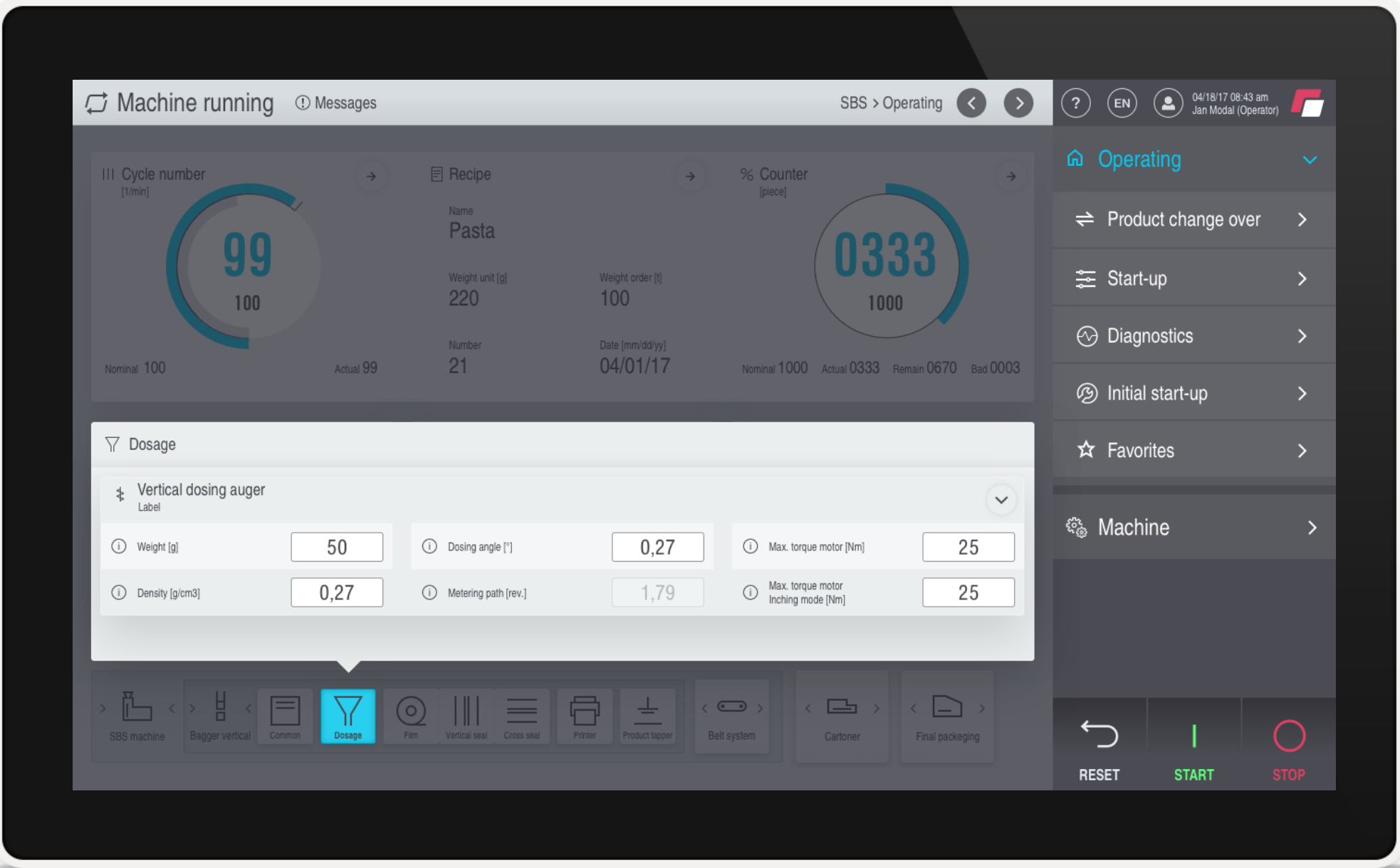
Flexible design grid with 1-5 column options



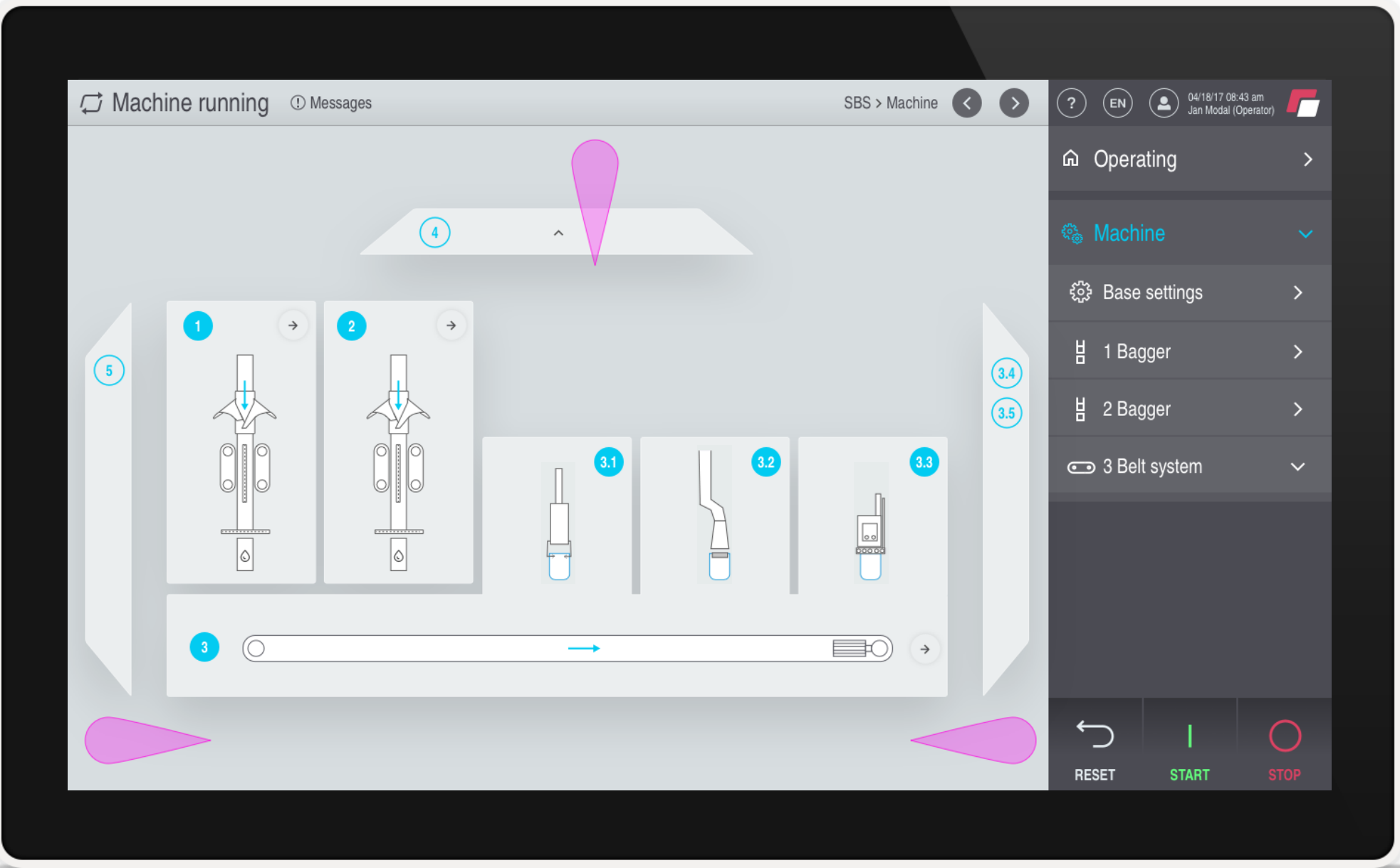
# Features

Features

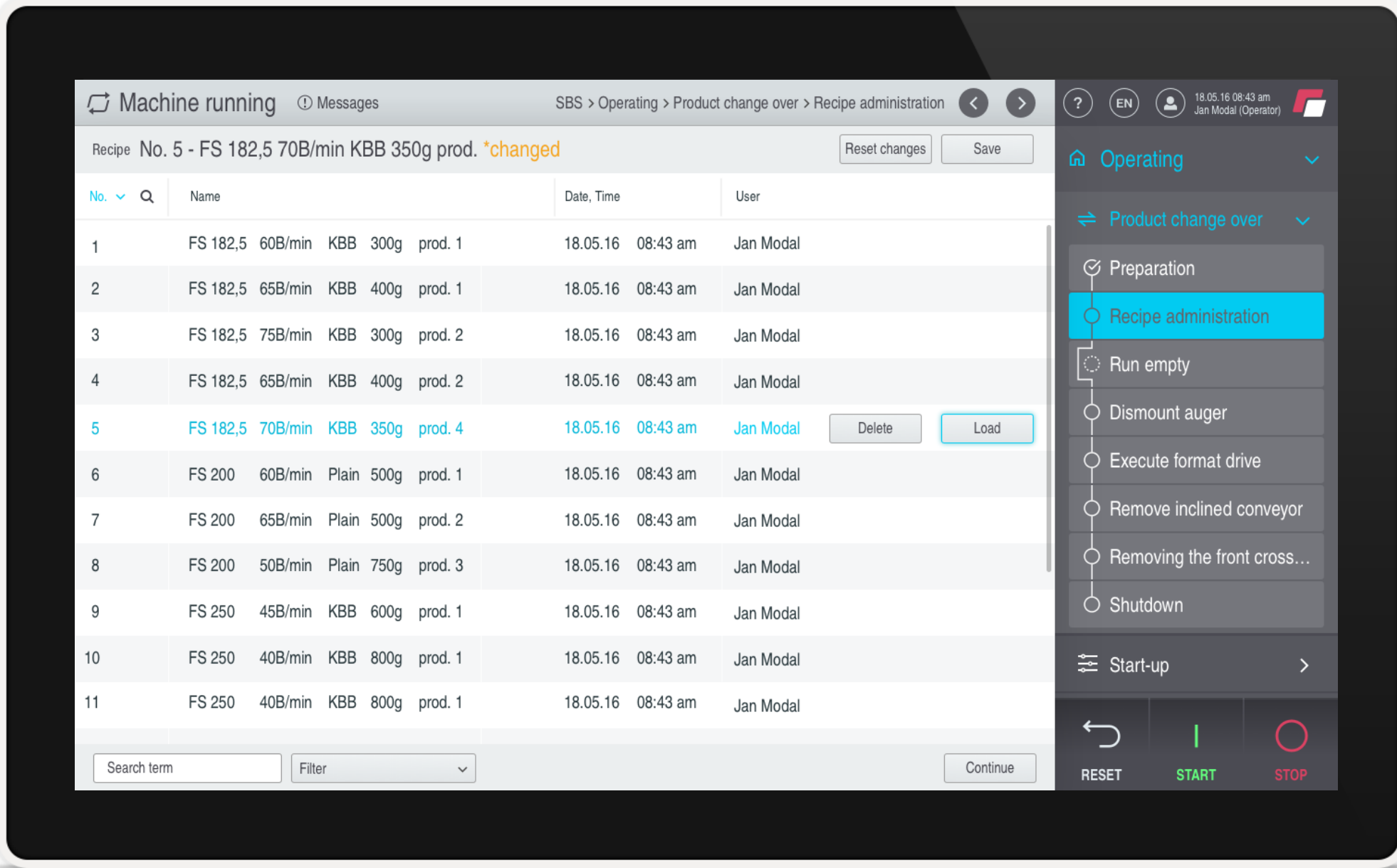
- Quick access to key functions
- Intuitive navigation metaphors
- Active support by step-by-step instruction
- Illustrations of complex machine functions
- Highly customizable for each machine type and user role
- Context-sensitive help available in all situations
- Multi-touch gestures as additional features
- Clear status displays
- Graphic UI for parameter limit calculation, cam control and extensive diagnose options (oscilloscope)
- Notification with graphic alarm localization, user generated content (comments) and quick service access



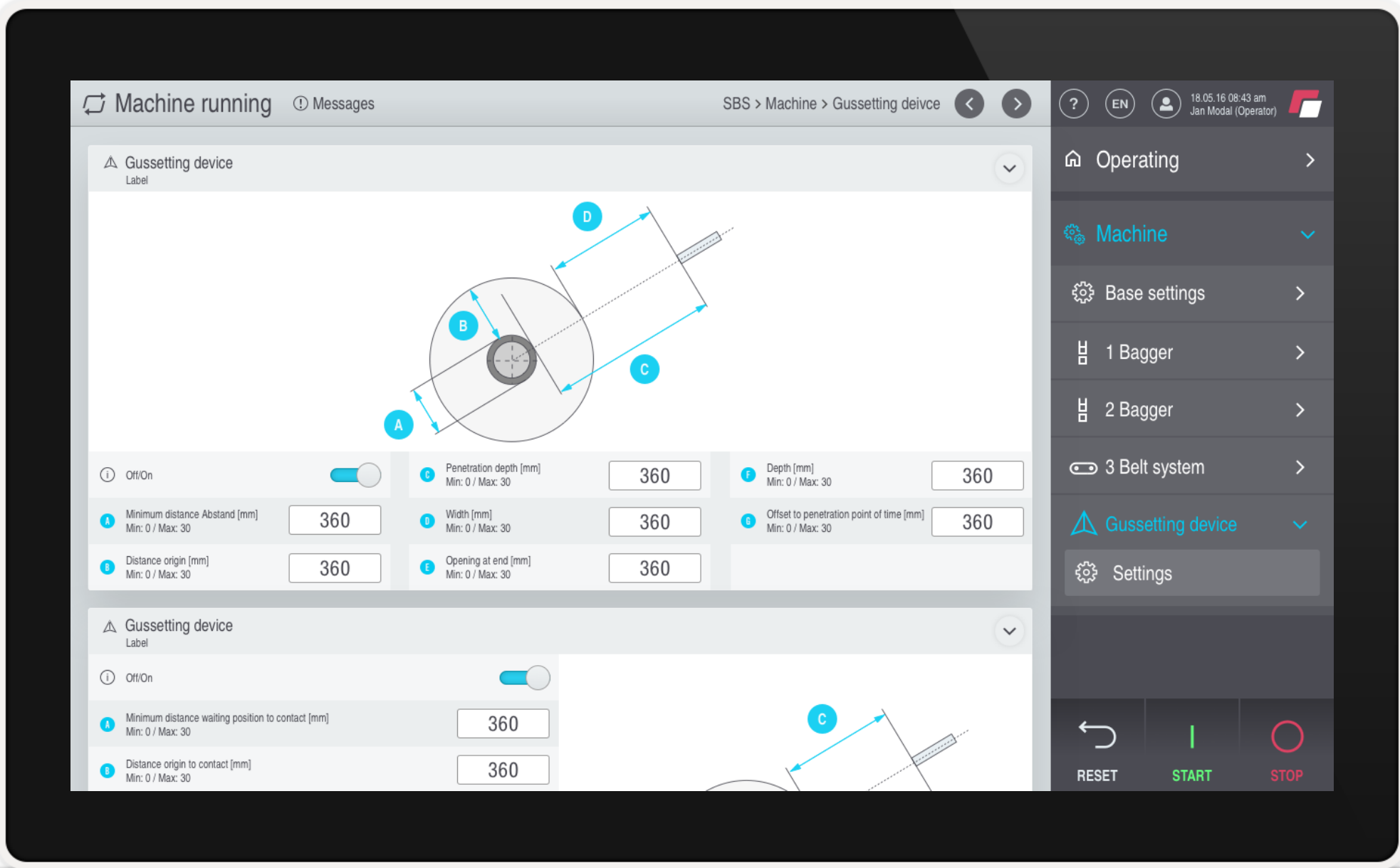
Quick parameter access via machine station dialogs



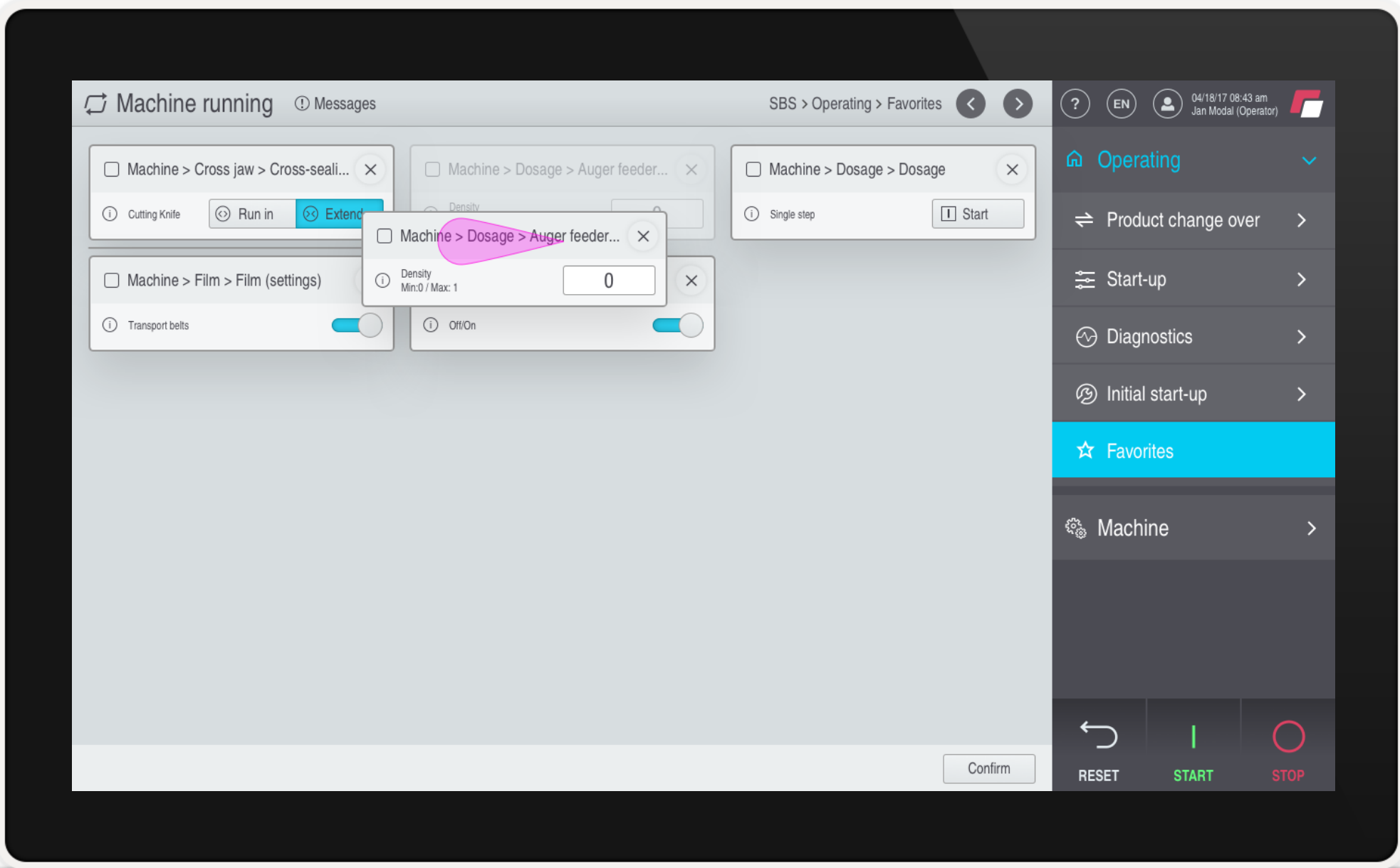
Multidimensional abstract machine view



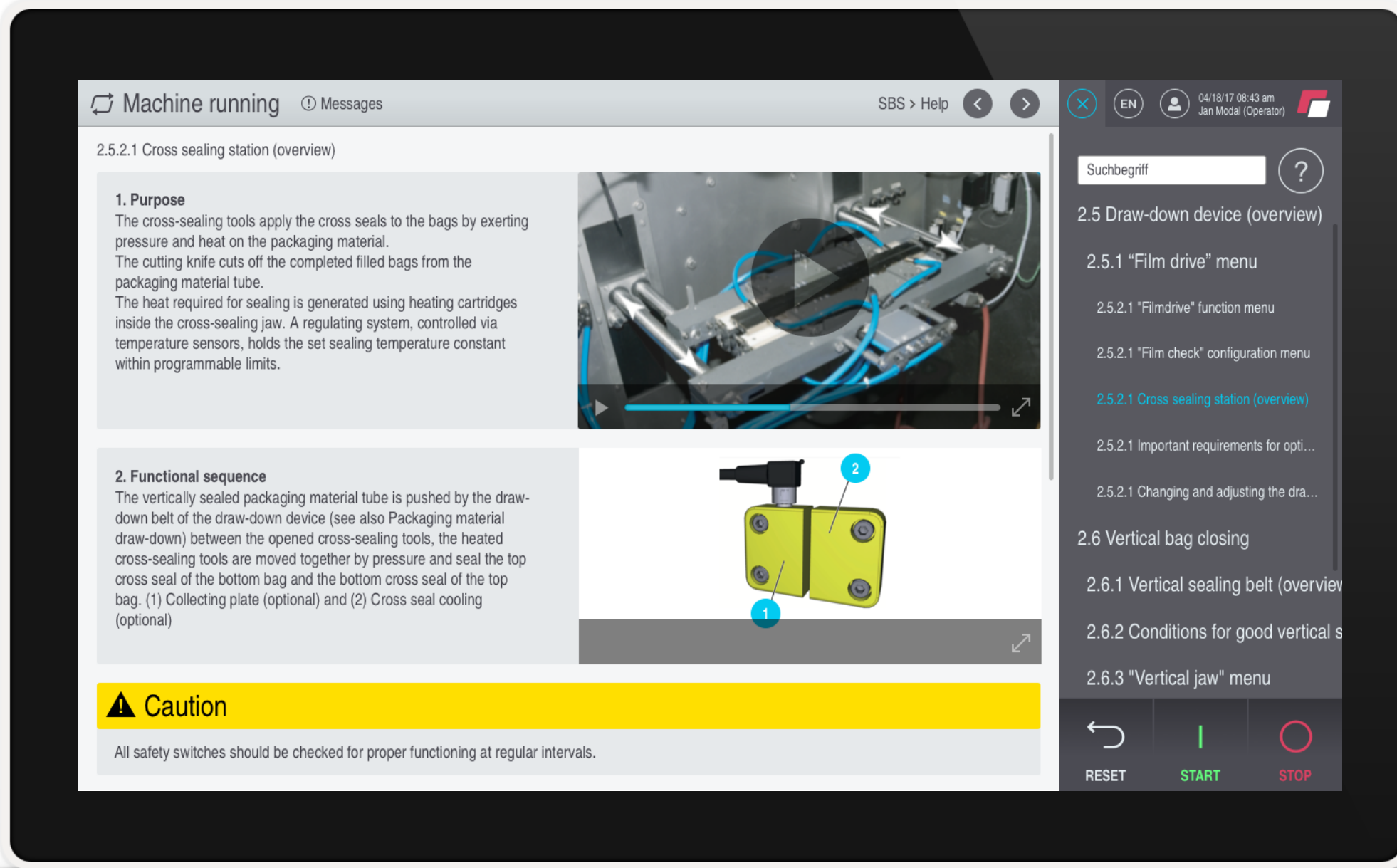
Step-by-step assisted product change



Visualized machine parts settings



Customizable function favorites page



Contextual help and online-manual including illustrations and videos



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