HMI Project
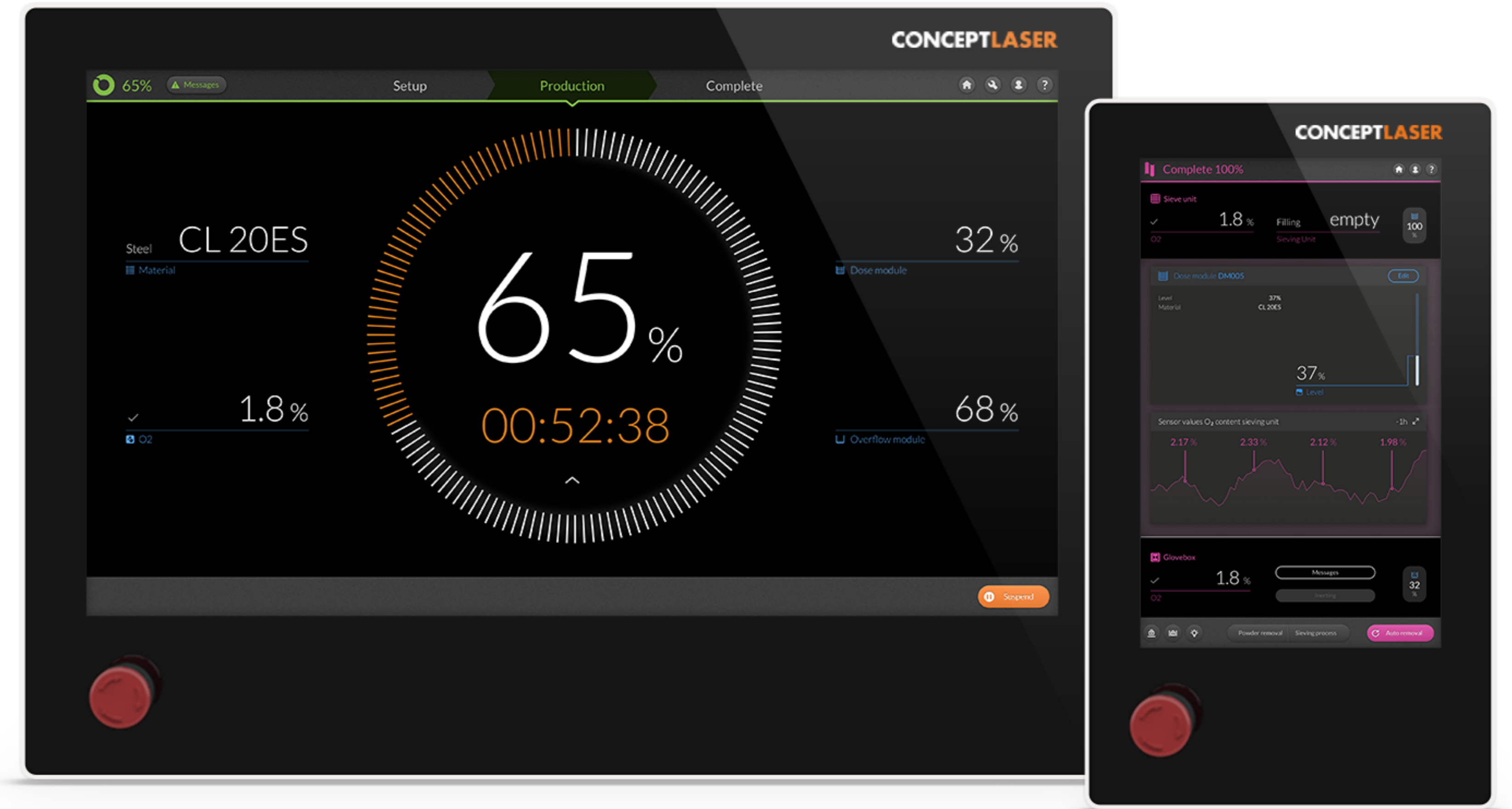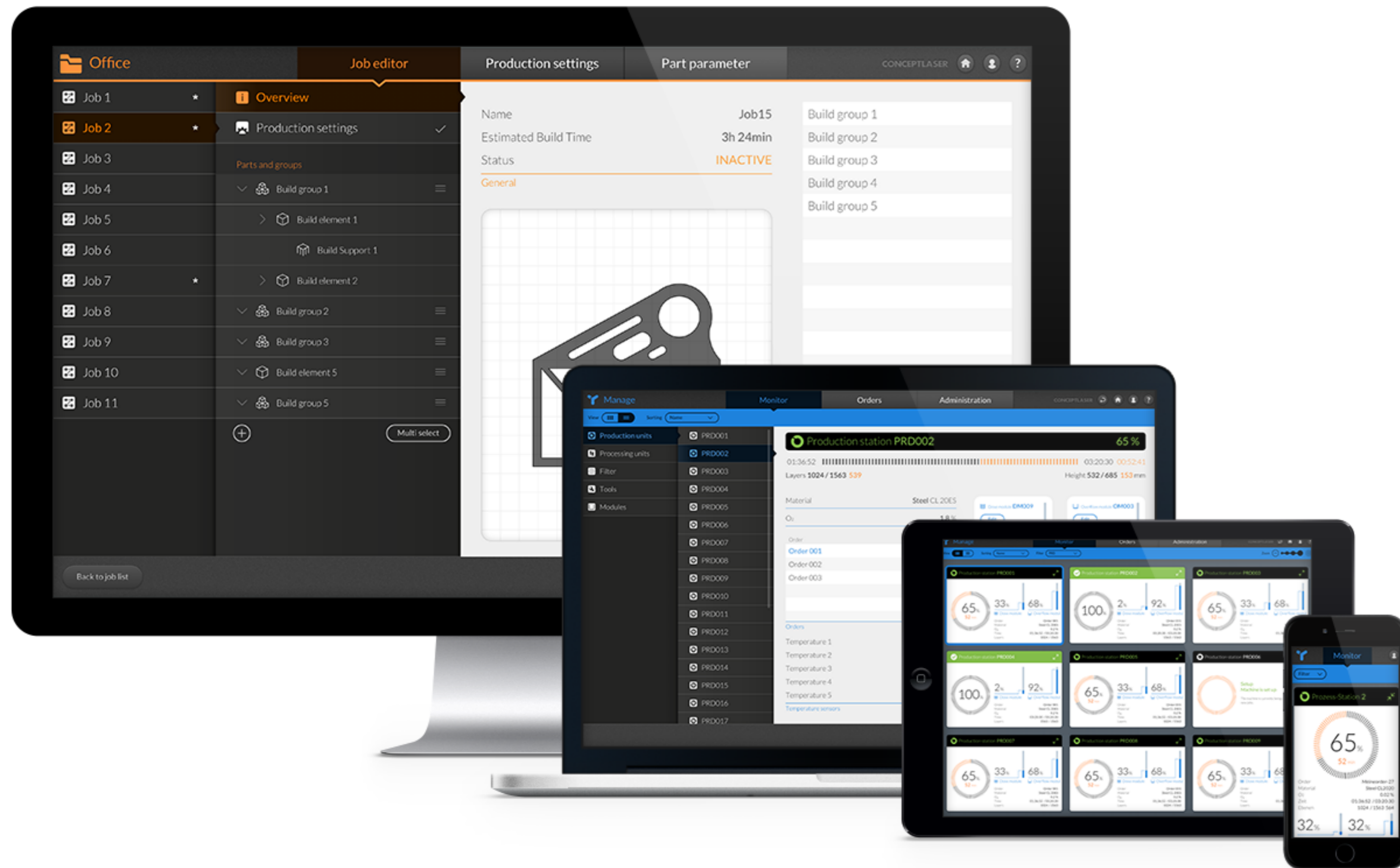
CL WRX 3.0

OFFICE   MANAGER   PRD   PCG

Software Suite for Systems for
3D Printing of Metal Components

Starting Point

Production process, dismantling and final product

LaserCUSING® Process

– powder-bed-based-laser melting of metals

– tool-free, economic fabrication of highly complex
  parts in fairly small batch sizes

– many different industry sectors: medical and dental
  technology, aerospace industry, toolmaking and mold
  construction, automotive industry, watch and jewelry
  industry

– powder materials: stainless steel, hot-work steels,
  aluminum and titanium alloys and precious metals
  like gold or silver

AM Factory of Tomorrow

– new machine concept

– decentralized "Industry 4.0" approach

– increasing productivity in series production

– digital networking of systems integrated into the
  production environment

– high automation of processes and future oriented
  design

– separation of machine loading, setup and dismantling
  procedures

– highly efficient and flexible solution, scalable from
  prototyping to large-scale productions

Machine combination of two production stations and one processing station
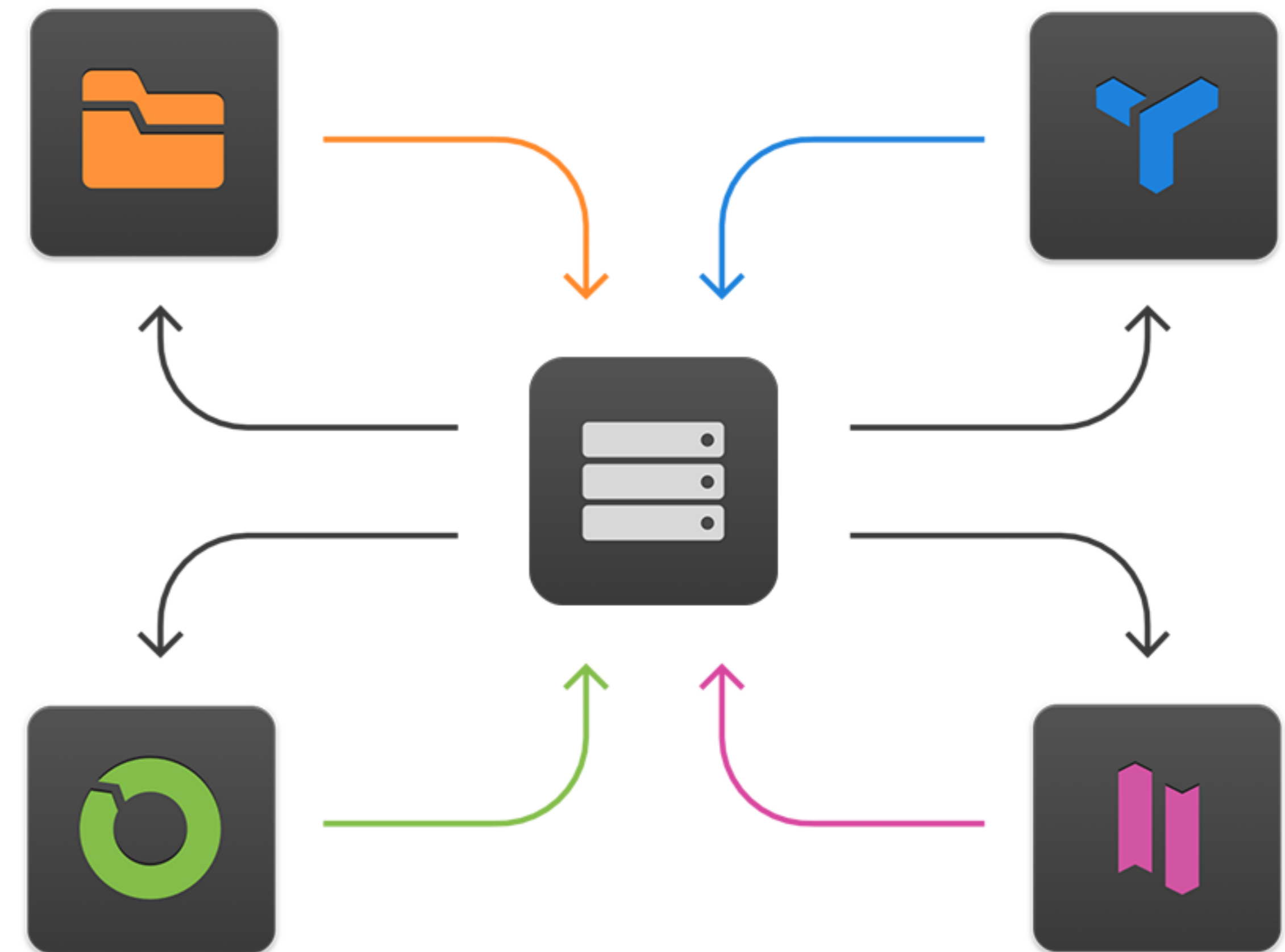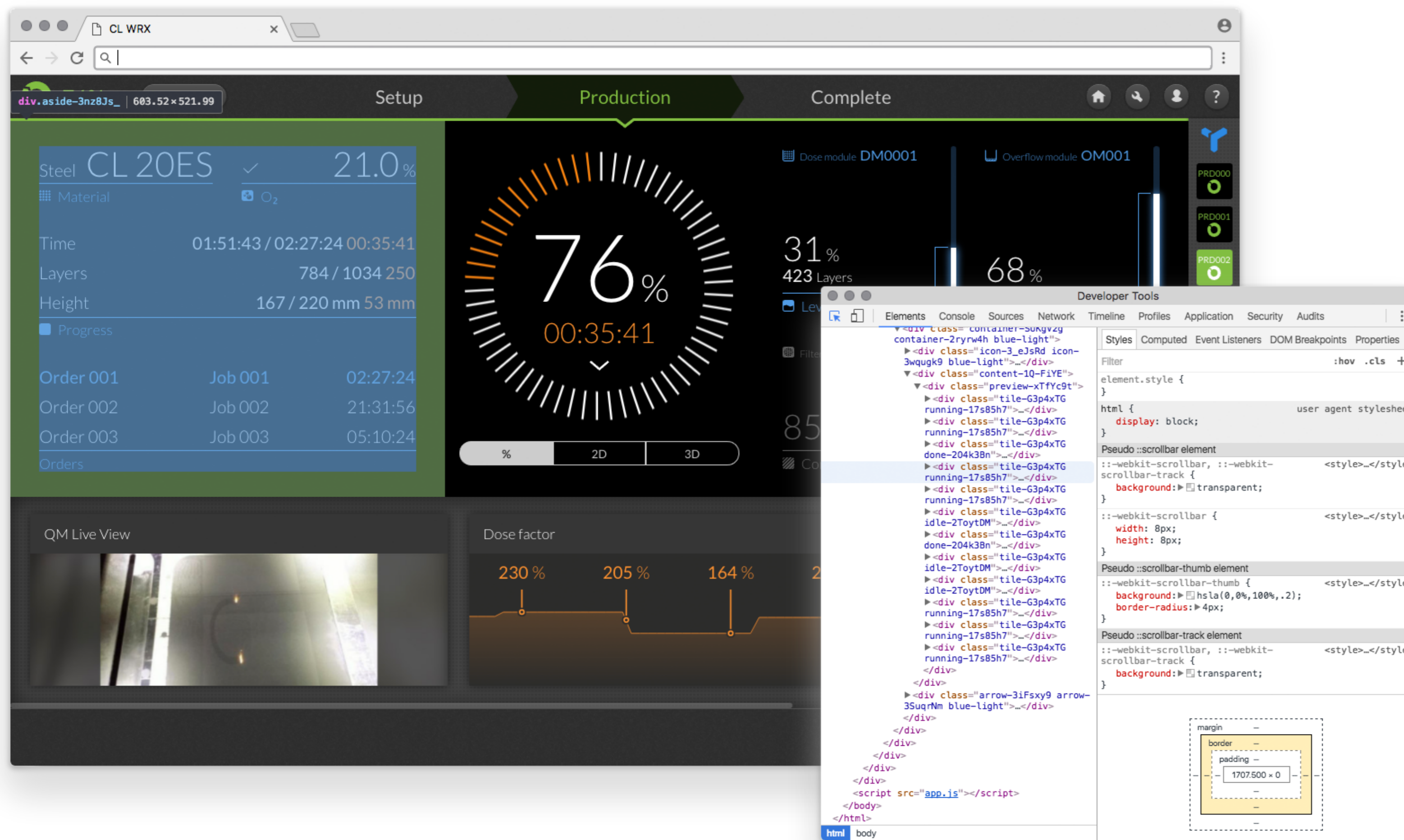
HMI Project

Web Technology

Client Server Architecture

– latest HTML5 and CSS3 technology

– independent frontend and backend development

– scalable, responsive layouts

– consistent browser based display

– independent from platform or operating systems
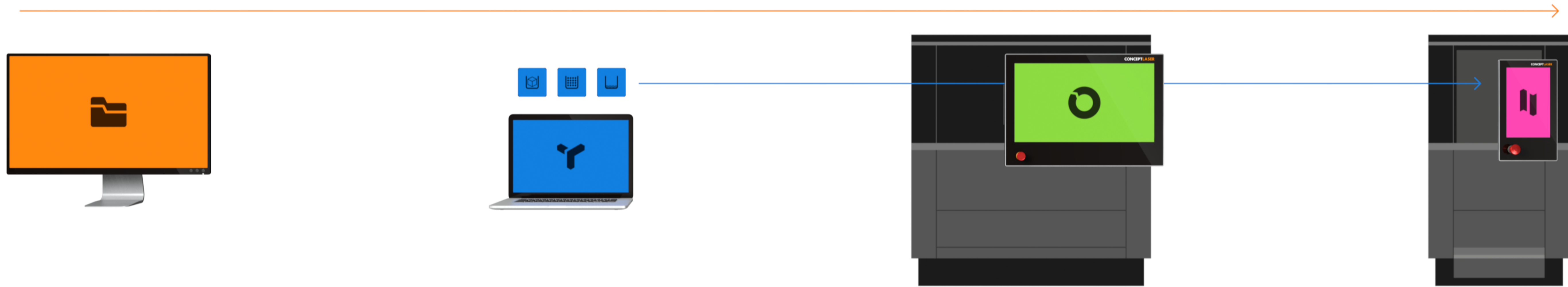
– support of desktop and mobile devices

– one application for various usage contexts

– modular, reusable componente architecture

– integration of a wide range of data sources

HTML5 web technology

Client server architecture

Usage Context

Software Suite

– distributed attendance of the production process with the use of specialized apps

– flexible and modular software architecture

– optimized distribution of functionality for perfect collaboration

– simultaneously operation for higher efficiency

– seamless transition of operation and monitoring tasks

Office Application

- job preparation
- production settings

Manager Application

- order management
- module logistics
- device monitoring
- administation

Production Application

- production setup
- production monitoring
- quality documentation

Processing Application
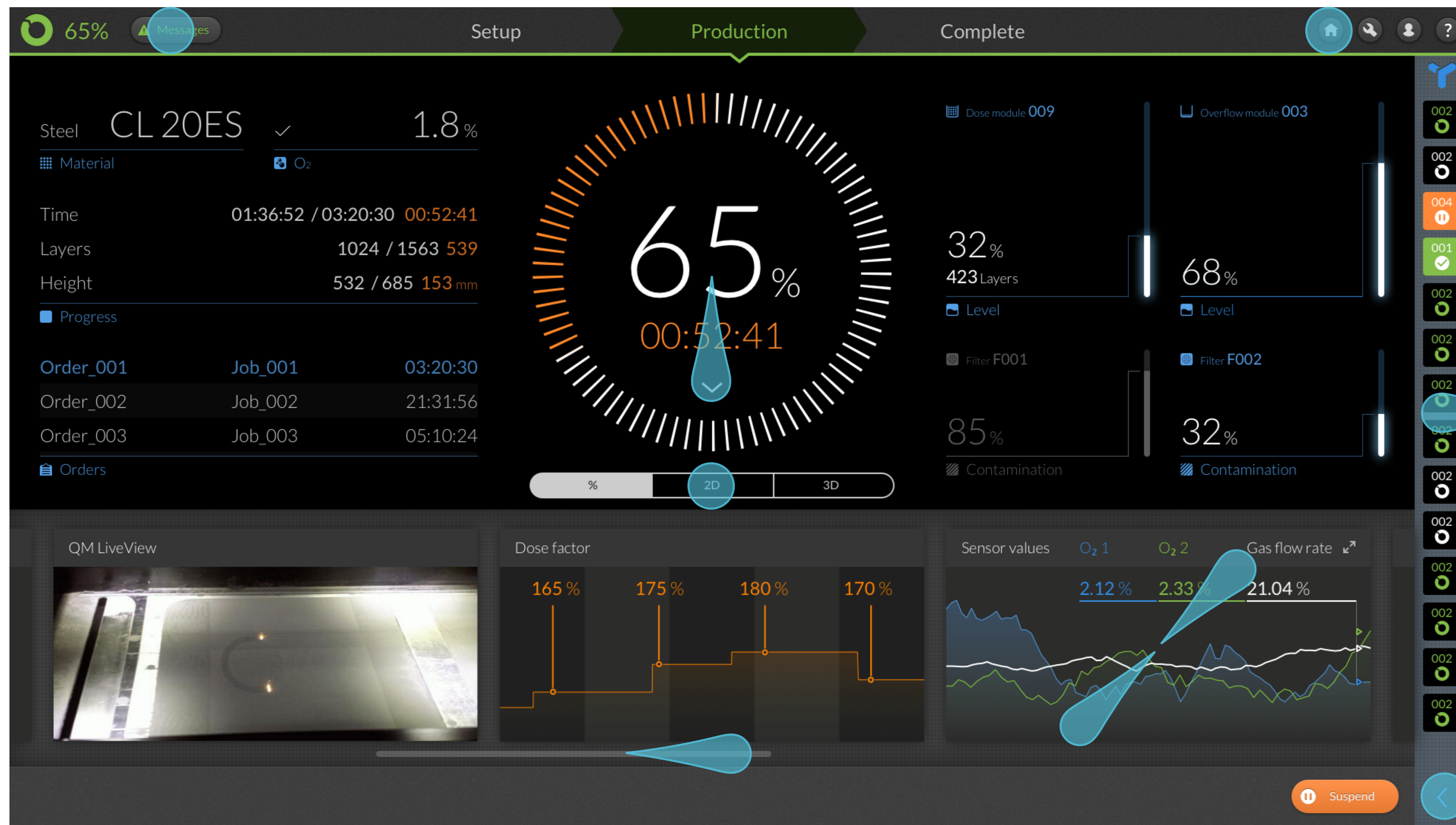
- sieving
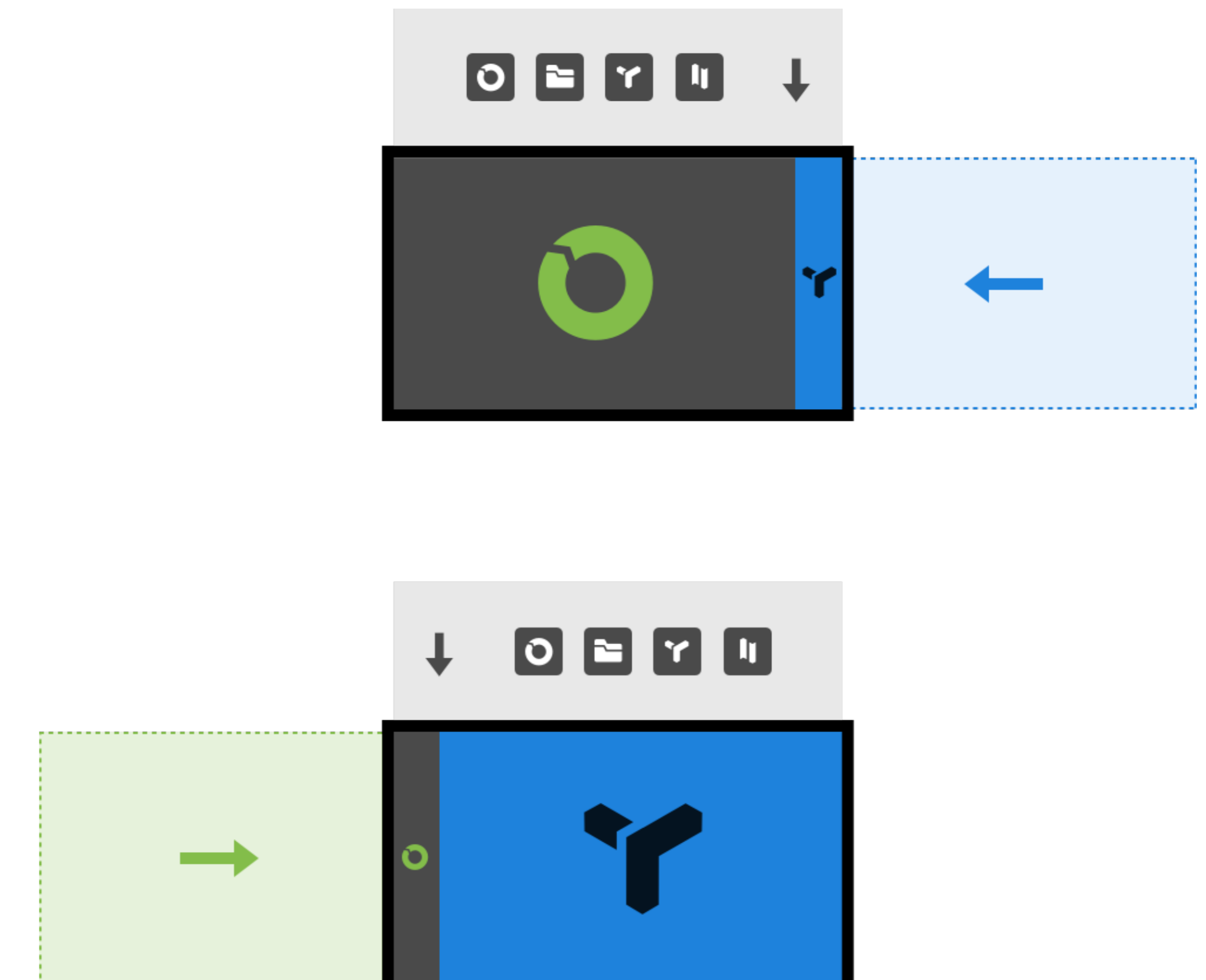- setup and dismantling

User Experience

Usability

– user centered approach

– workflow oriented navigation

– intuitive interaction concept

– clear visibility of system status

– consistent navigation principles

– standardized operation concept for all apps

– error prevention by automated or assisted steps

– seamless integration in industrial design

– high quality over all impression

– customizable widget concept

– flexible extendability for large production plants

– user roll dependent scope of functionality

– functional animations

– comfort operation by swipe & multi-touch gestures

Benefits

– functionality conform to user expectations

– higher efficiency

– reduction of training times

– better acceptance

– reduction of improper operation

– differentiation from the competition

– joy of use

Intuitive access of app navigation and deeper information levels

App combination and navigation metaphor

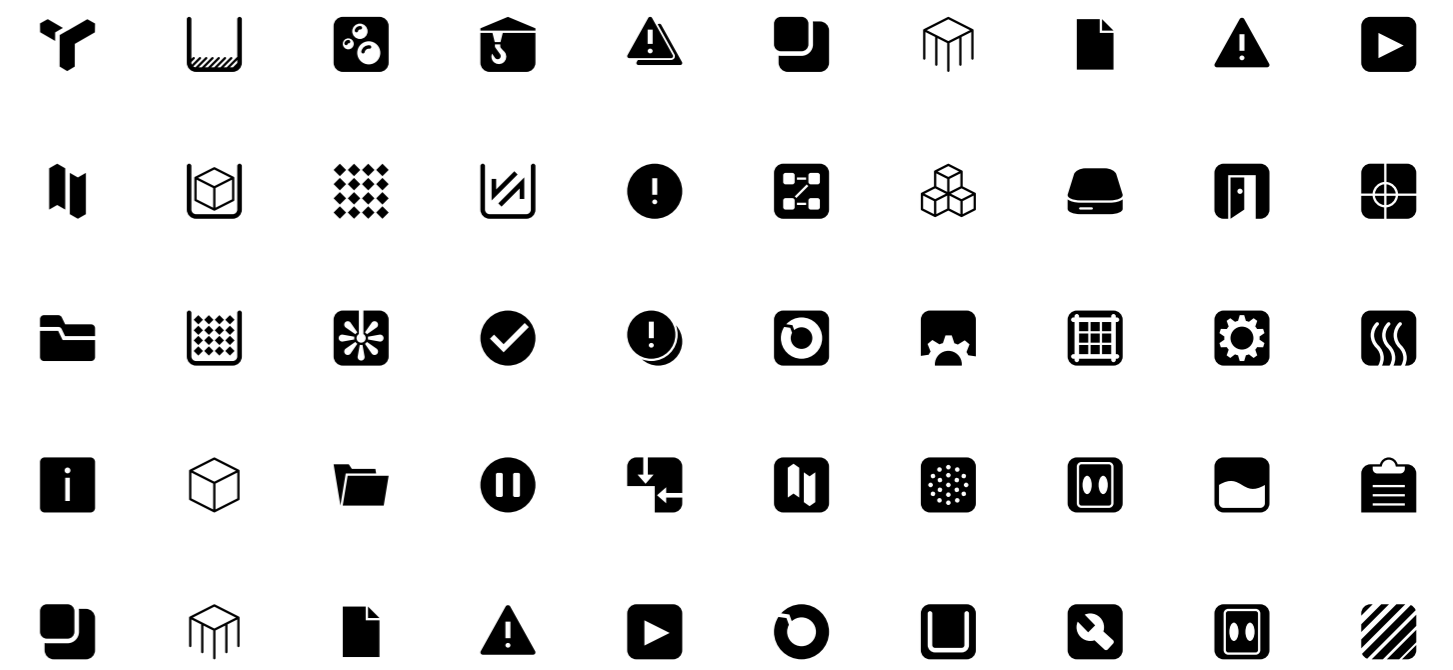**HMI** Project

Interface Design

Characteristics

– precise display of production progress
– clear system status (even on long distance)
– self descriptive displays and controls
– aesthetic and minimalist design

– coded color concept for better orientation
– simple optical translation of complex processes
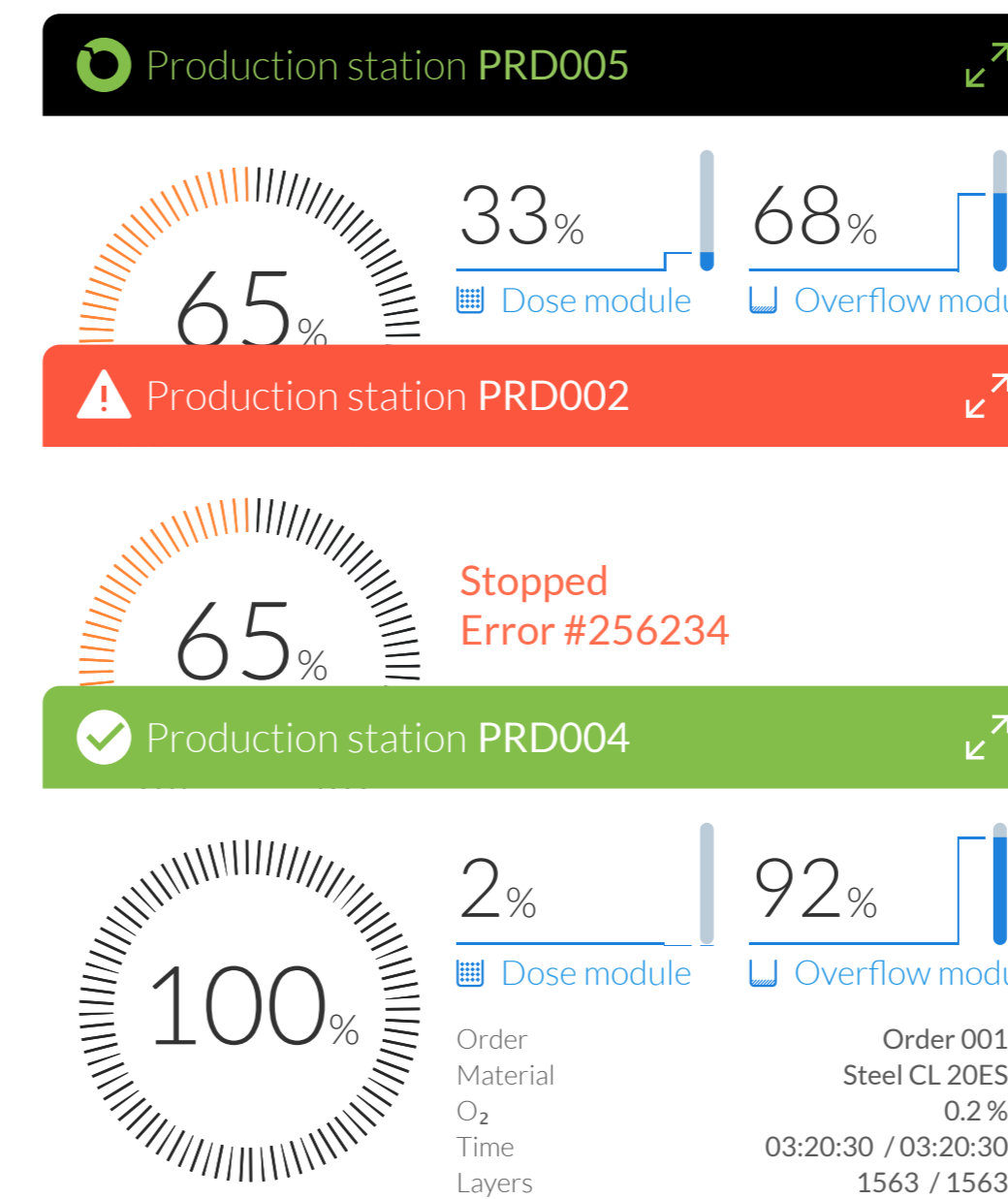– responsive and adaptives component behavior
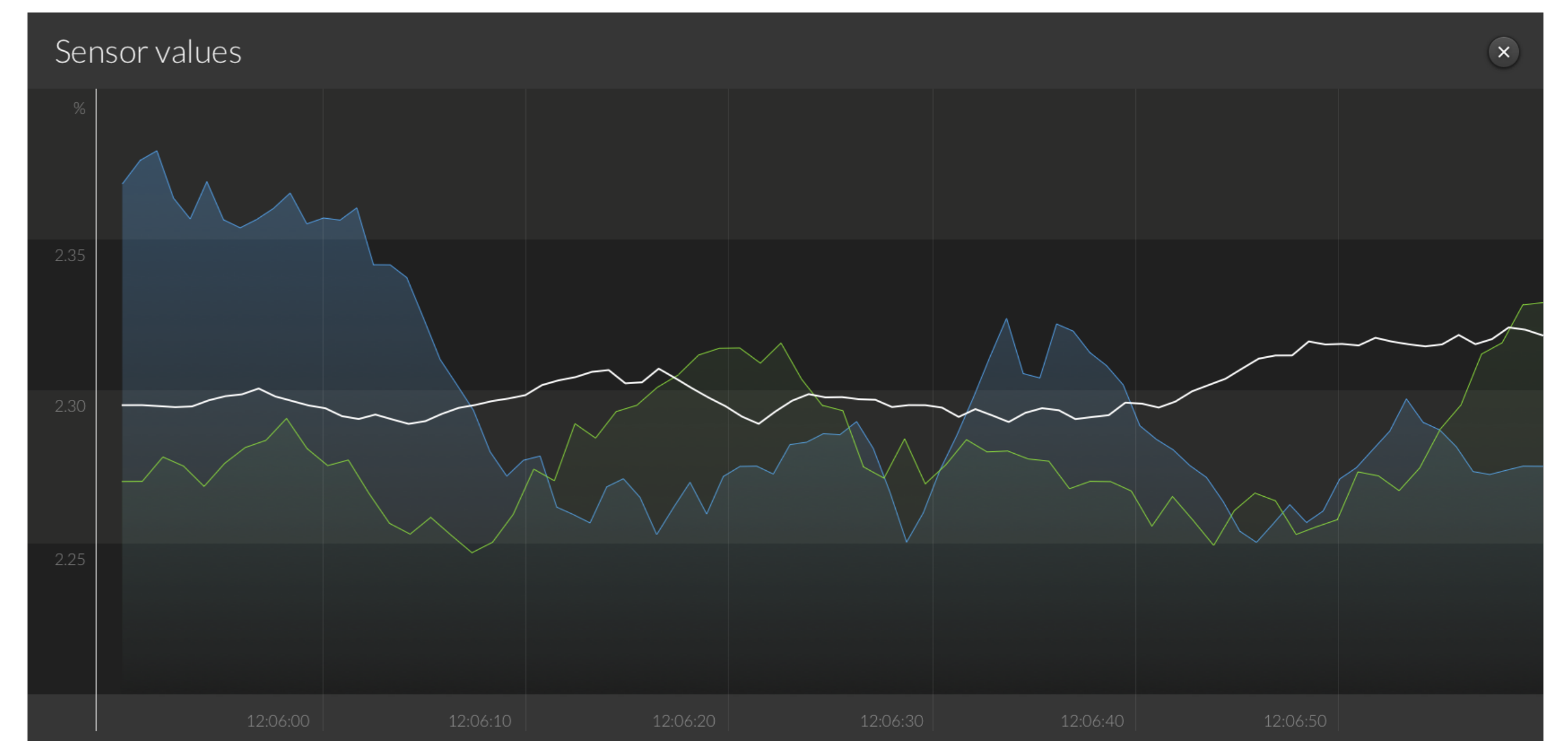
CONCEPTLASER

Client logo and corporate colors

Icon style

Control style

Production dashboard information layers
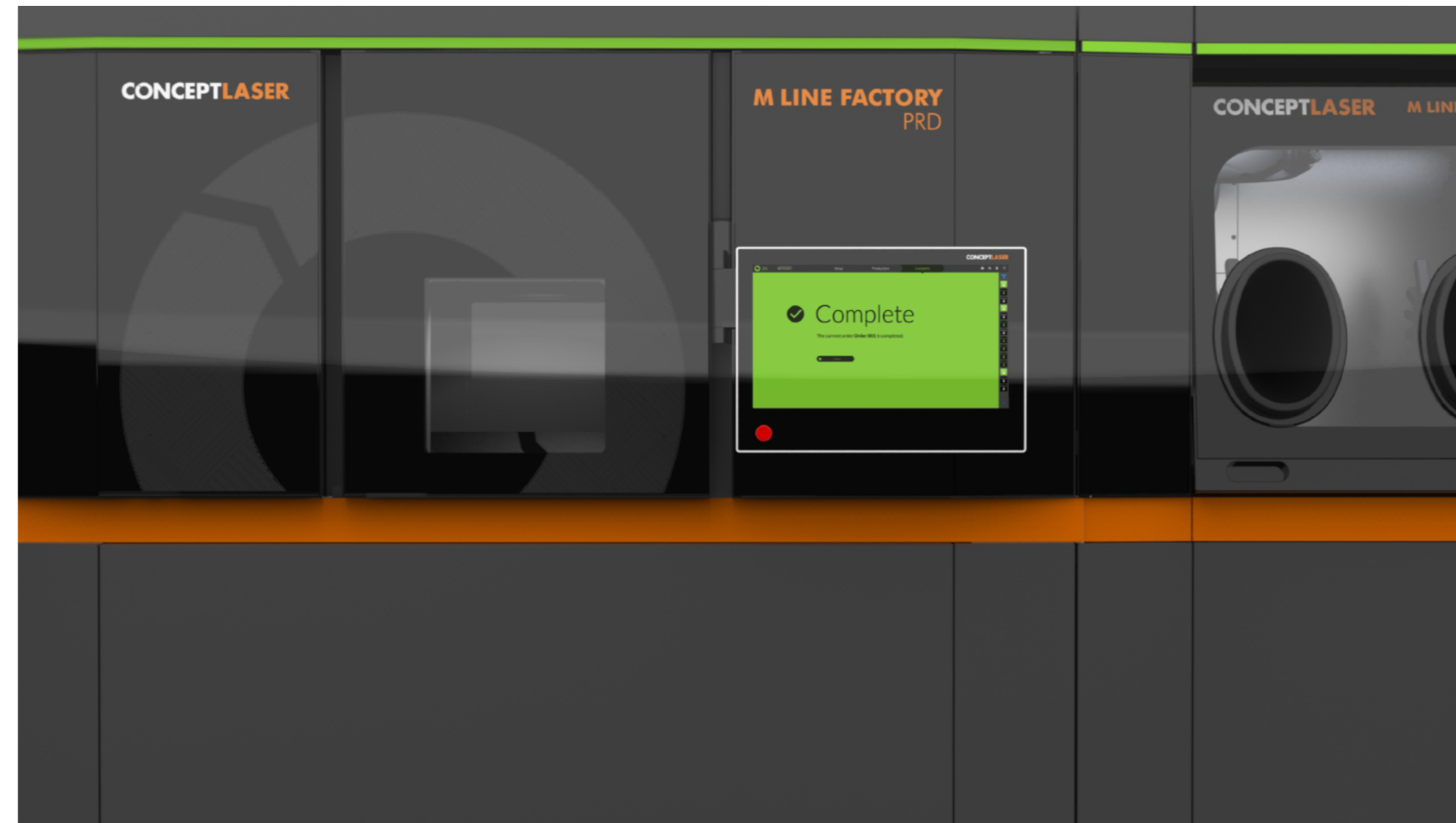
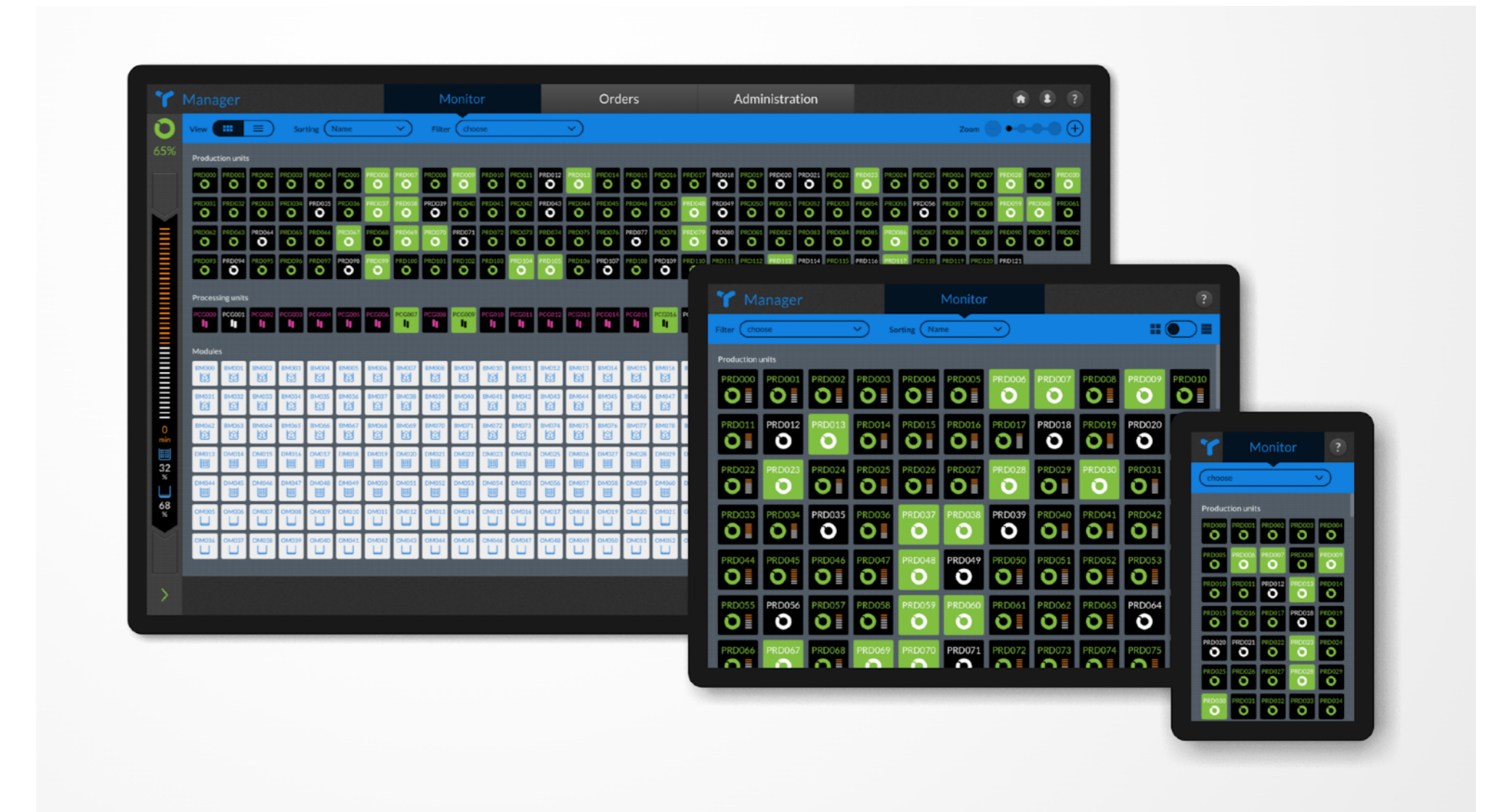Color concept

Graphic charts

Features

Features

– simultaneous operation

– central data management

– responsive design

– mobile devices

– fast app switching

– modular expandability

– precise graphic charts

– clear status display

– unlimited scalability
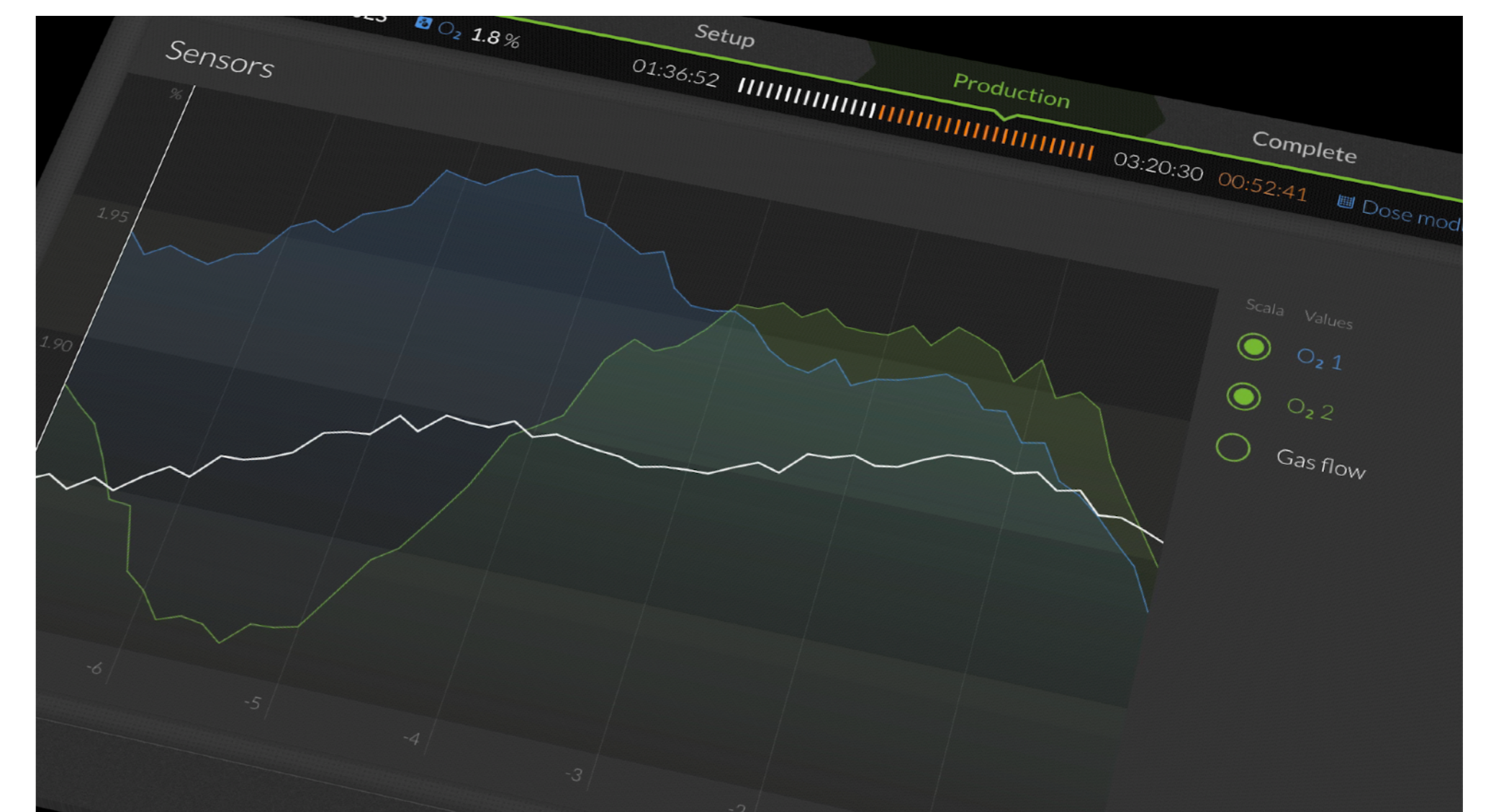

Workflows

Machine status

Various device sizes

Tablet and Smart Phone

App integration

Graphic charts

HMI Project

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