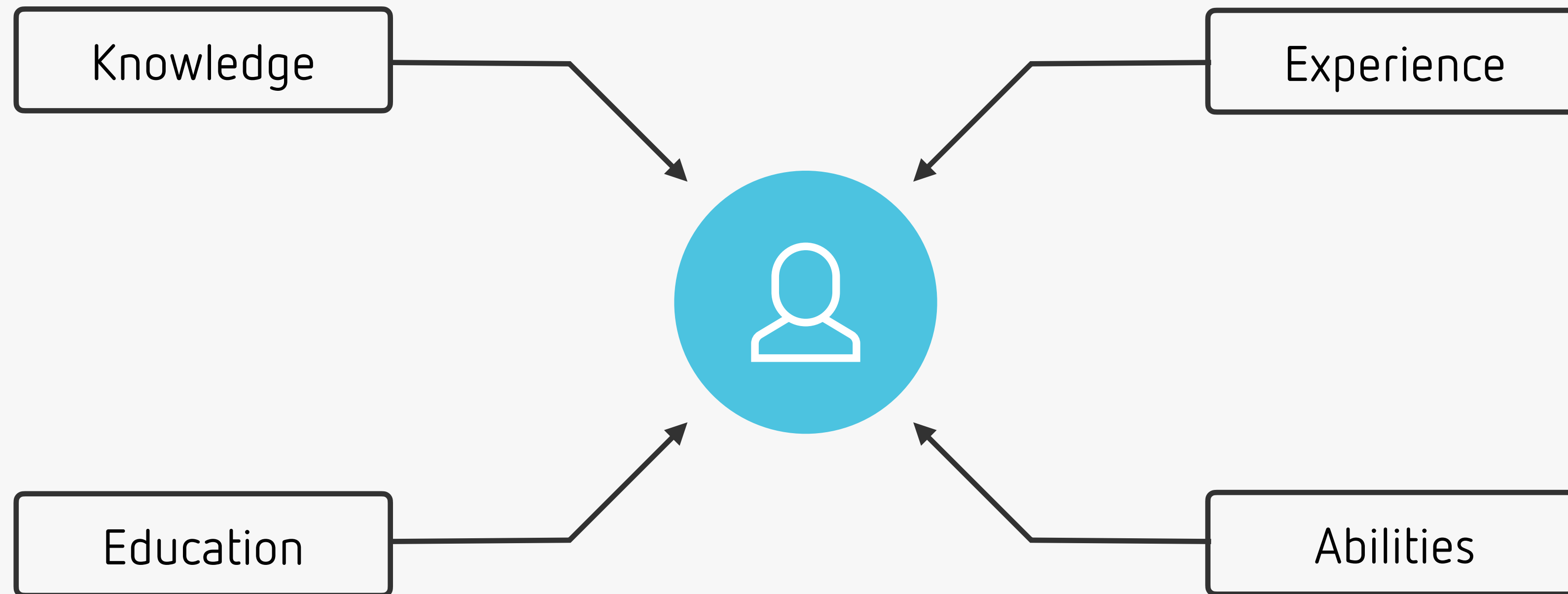


Human Machine Interfaces

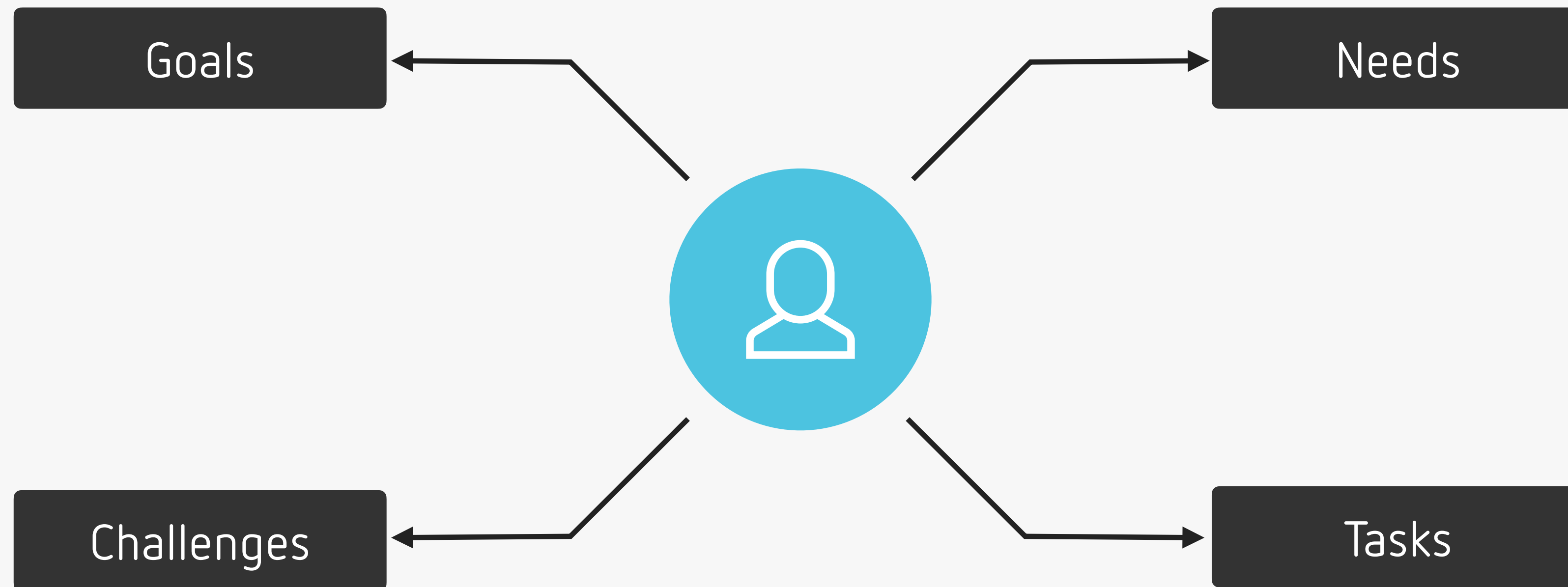
Best Practice

User Centered Design

User Background

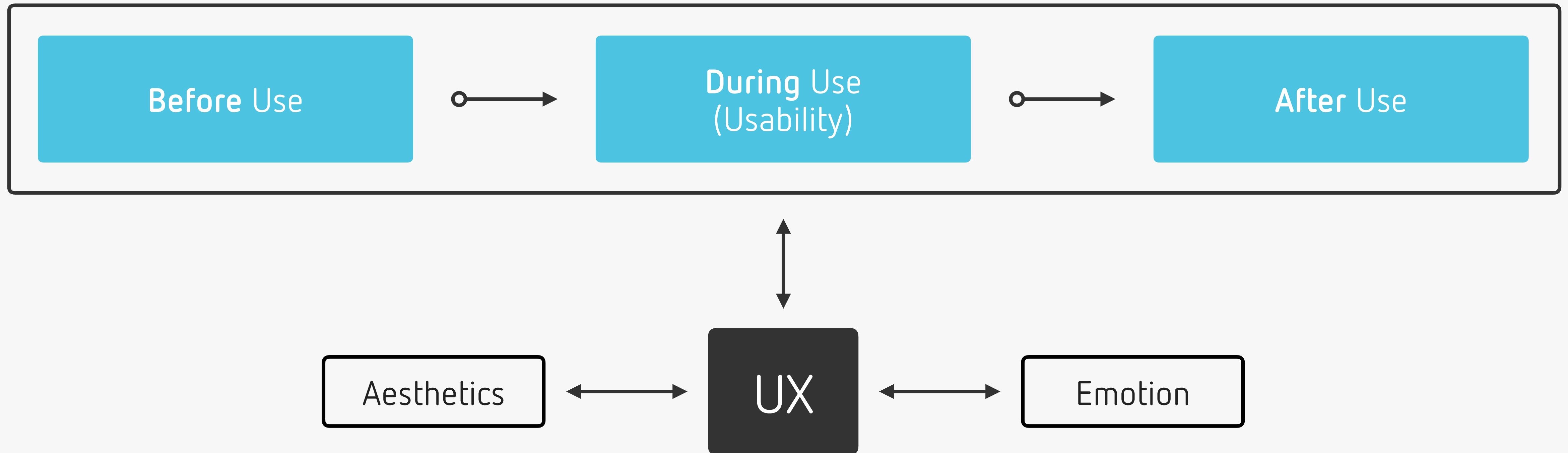


User Requirements



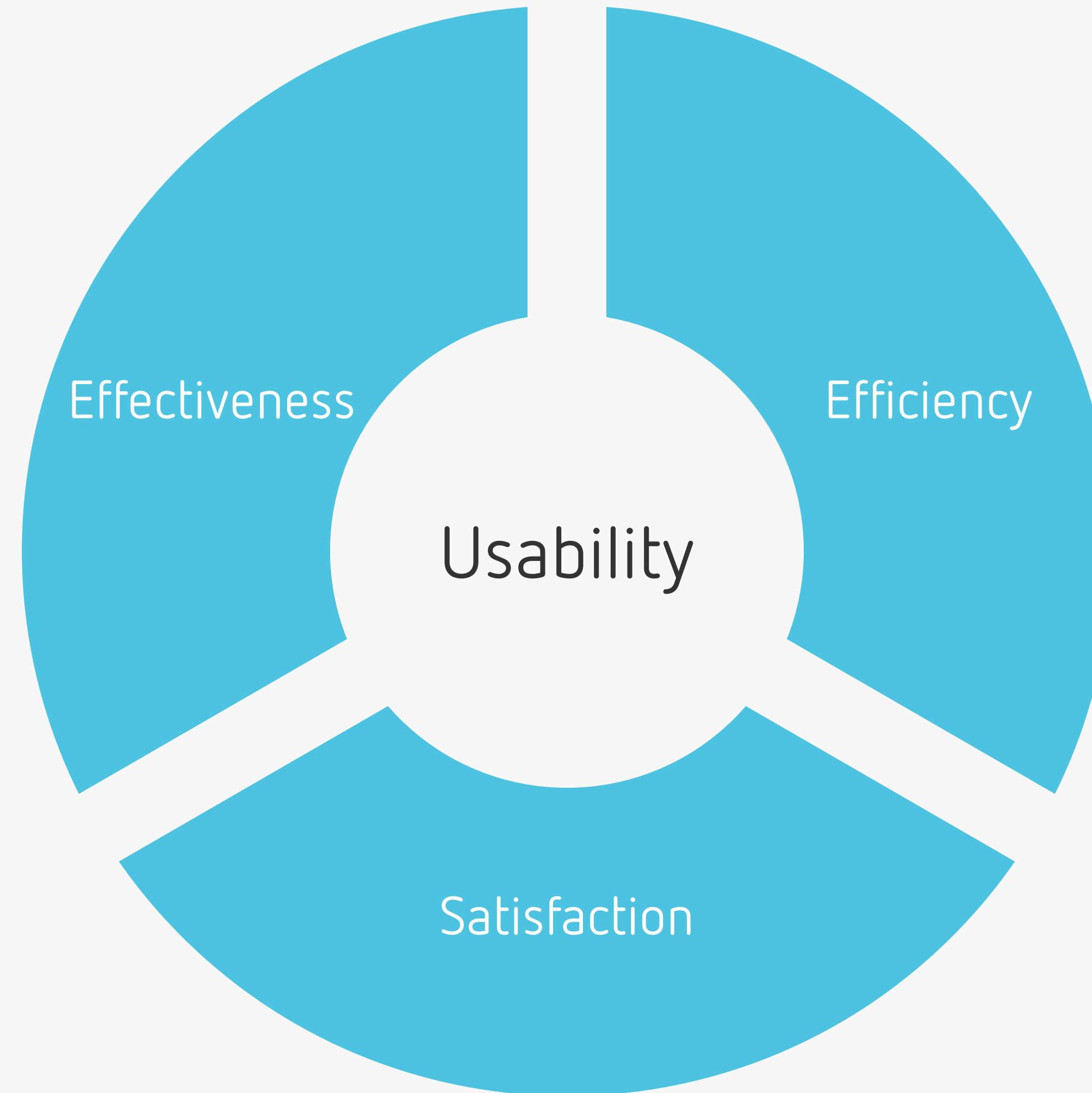
User Experience

Holistic User Experience



Usability

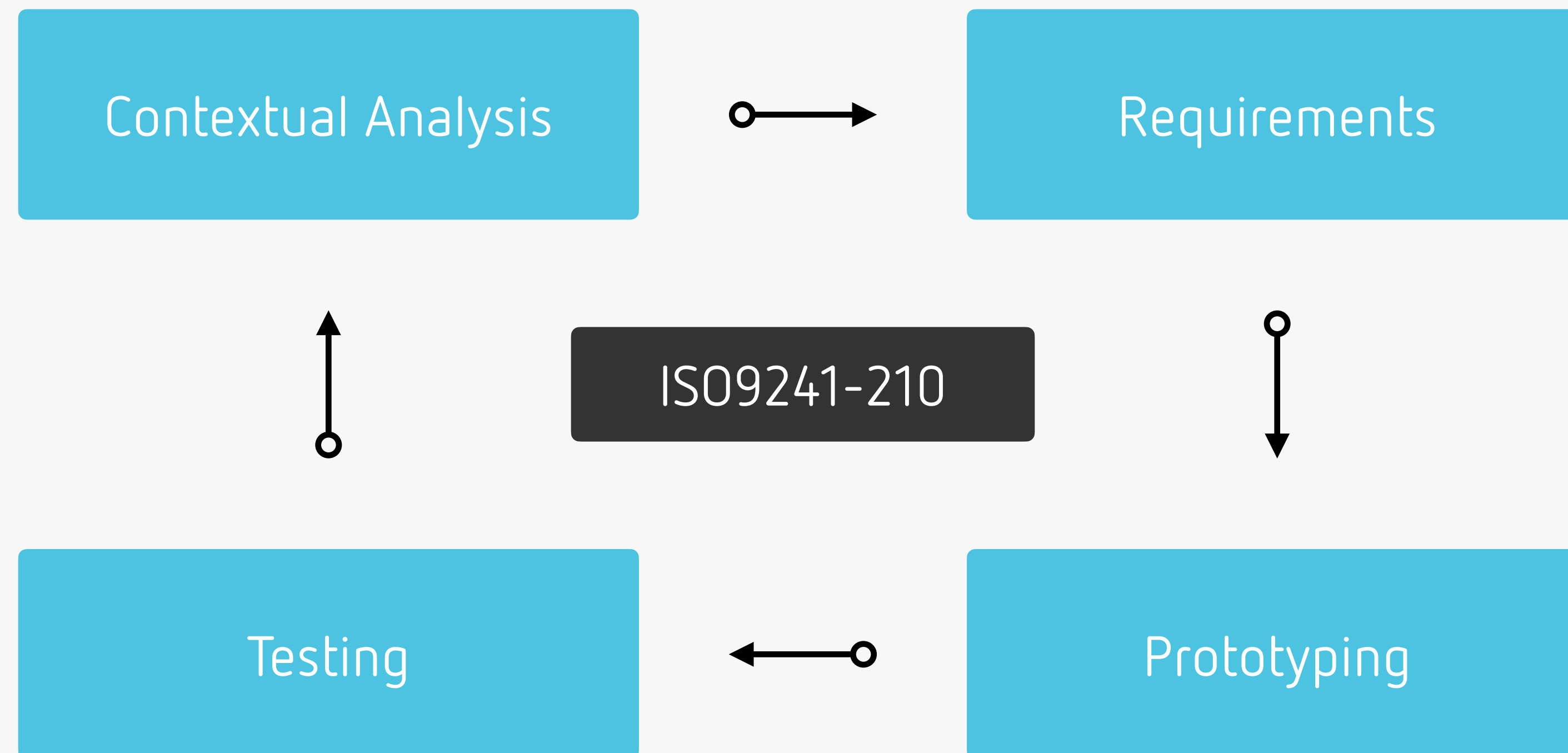
The accuracy and completeness with which users achieve specified goals.



The resources expended by the user in relation to the effectiveness.

The users positive attitude for using the product.

Iterative process based on DIN ISO 9241



Benefits

- _ Improved usability and ergonomics
- _ Increased effectiveness and efficiency
- _ Intuitive quick start
- _ Reduction of learning times
- _ Avoidance of operating errors
- _ Reduction of downtimes
- _ Higher workplace safety
- _ Higher user satisfaction
- _ Better acceptance of new product launches
- _ Meeting increased expectations (from dealing with consumer devices)
- _ Identification of innovation potential
- _ Differentiation from competition
- _ Additional purchase incentive for decision-makers
- _ Increased joy of use

Process

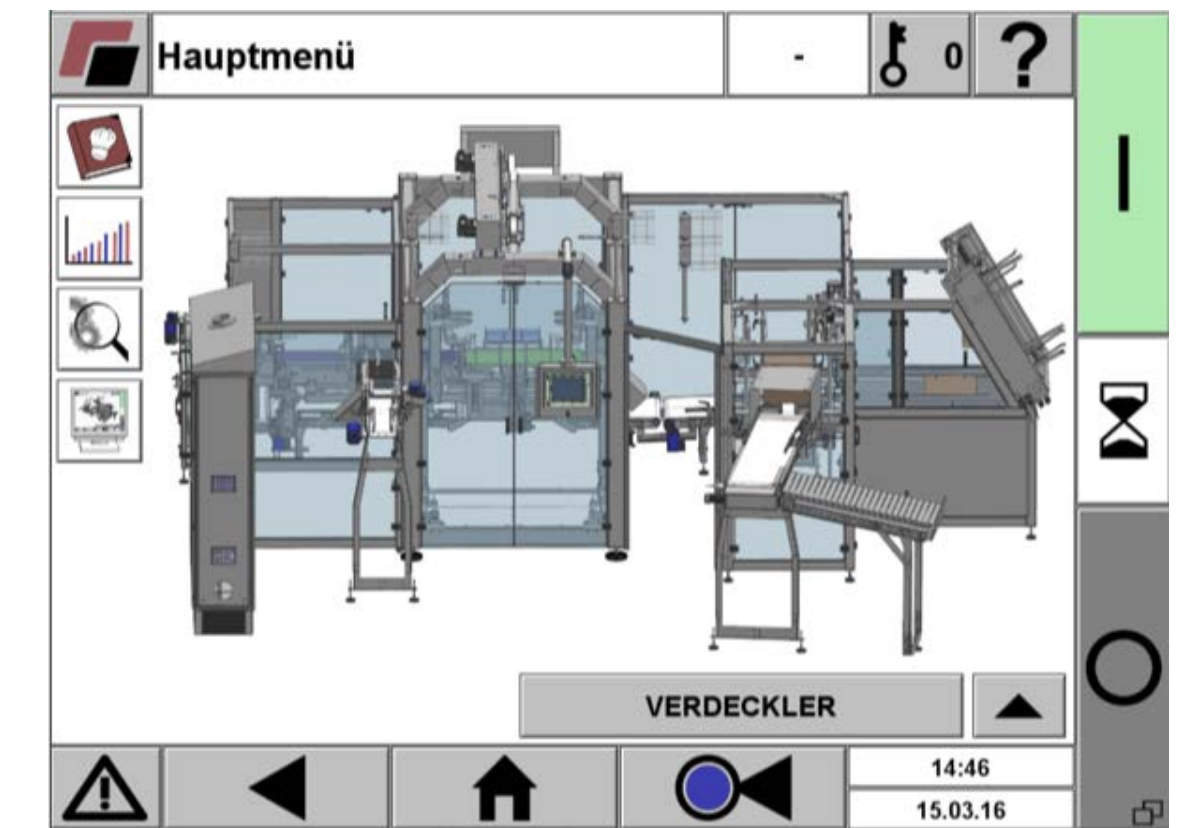
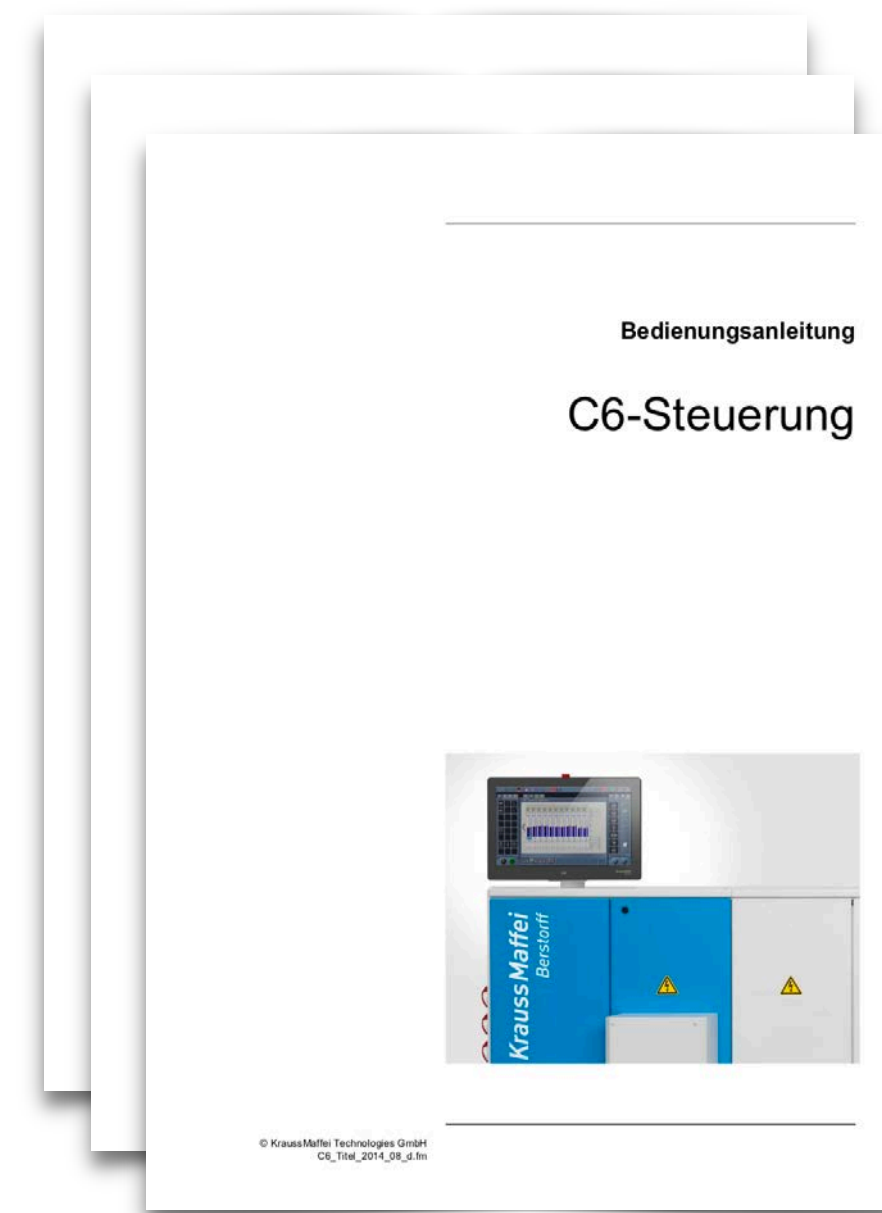
Project Phases



Analysis

Materials

- _ Project specifications
- _ Manuals, operating instructions
- _ Software simulation, test equipment
- _ Corporate Design Guidelines
- _ Industry Design Guidelines
- _ Marketing and sales material
- _ Technical specifications for hardware (HMI clients)
- _ Technical specifications for software (frontend, implementation system)



Context of Use

- _ Training technology and processes
- _ Technical requirements
- _ Expert evaluation of current software
- _ Context of use and user observation with end clients
- _ Semi-structured interviews
- _ ISO questionnaires
- _ Stakeholder requirements
- _ Prioritised backlog



Expert Workshops

- _Stakeholders / specialist departments
- _Mechanical engineering, electrical engineering
- _Software development
- _Marketing, sales
- _Service
- _Application
- _Documentation



Concept

Usage Requirements

- _ User roles / personas
- _ Tasks and subtasks
- _ Processes and workflows
- _ User Stories
- _ Scenarios
- _ Information architecture



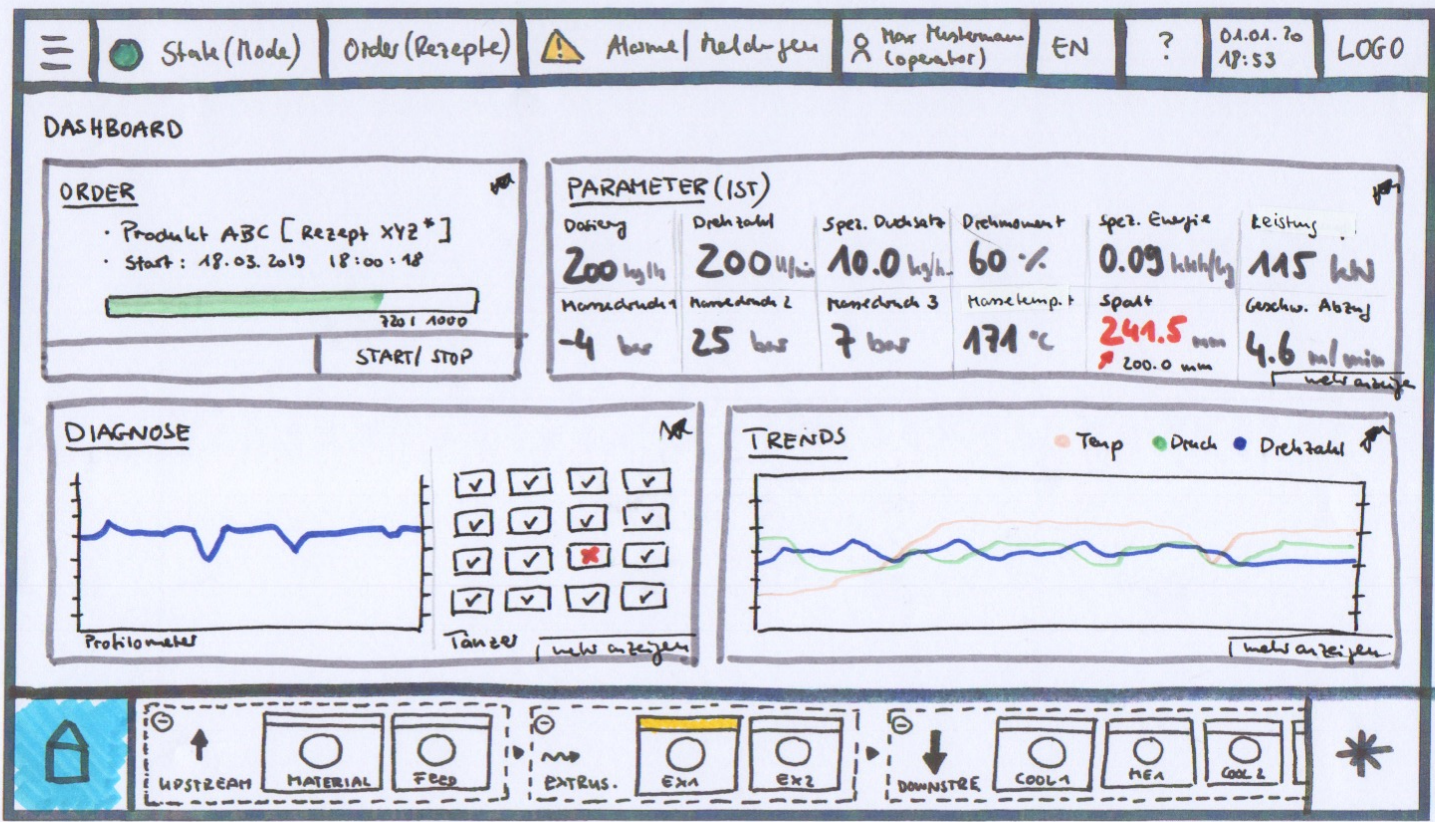
Process / Concept

Prototyping

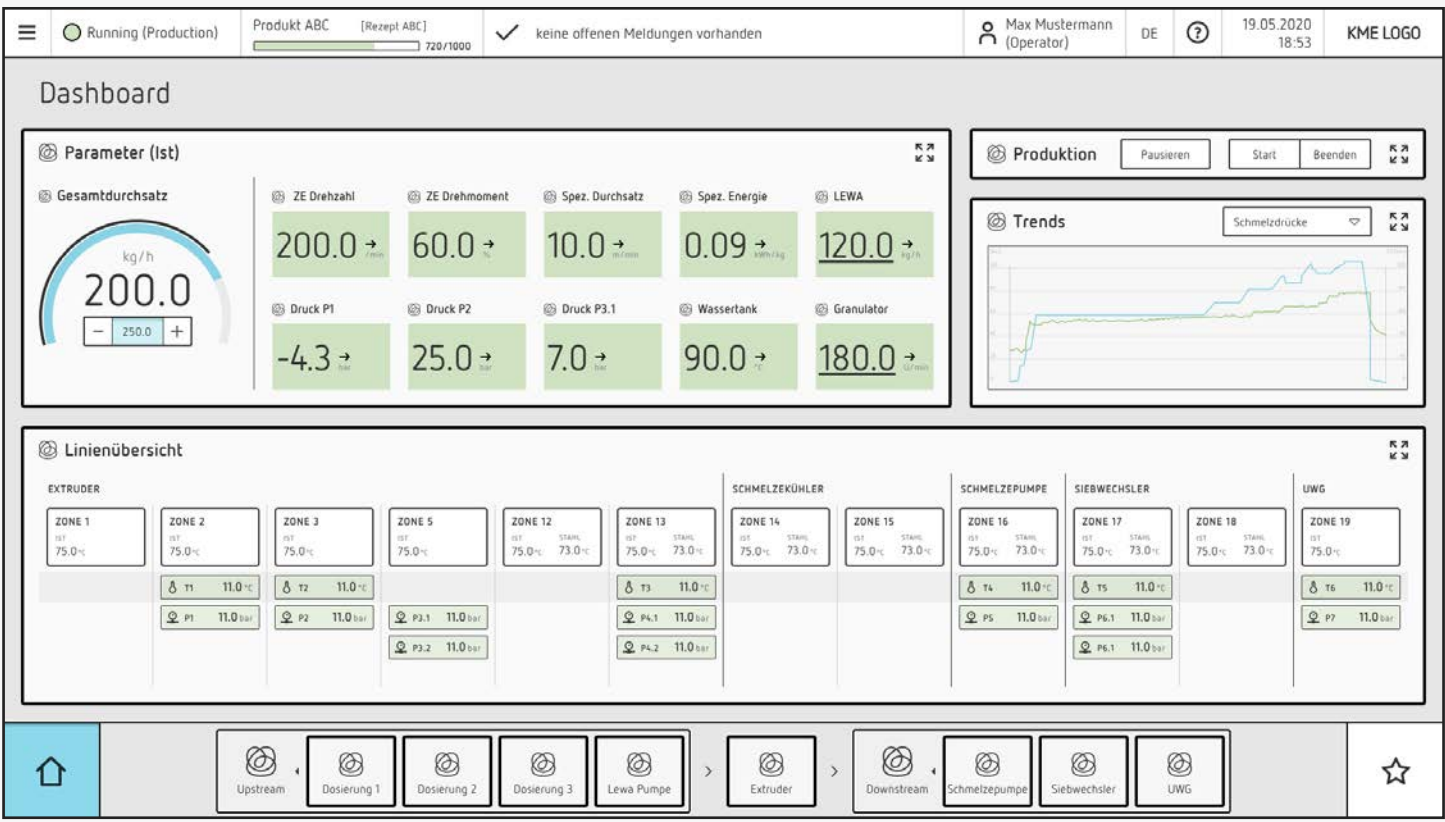
- _ Flowcharts
- _ Paper Prototyping
- _ Wireframing
- _ Low / High Fidelity Prototypes



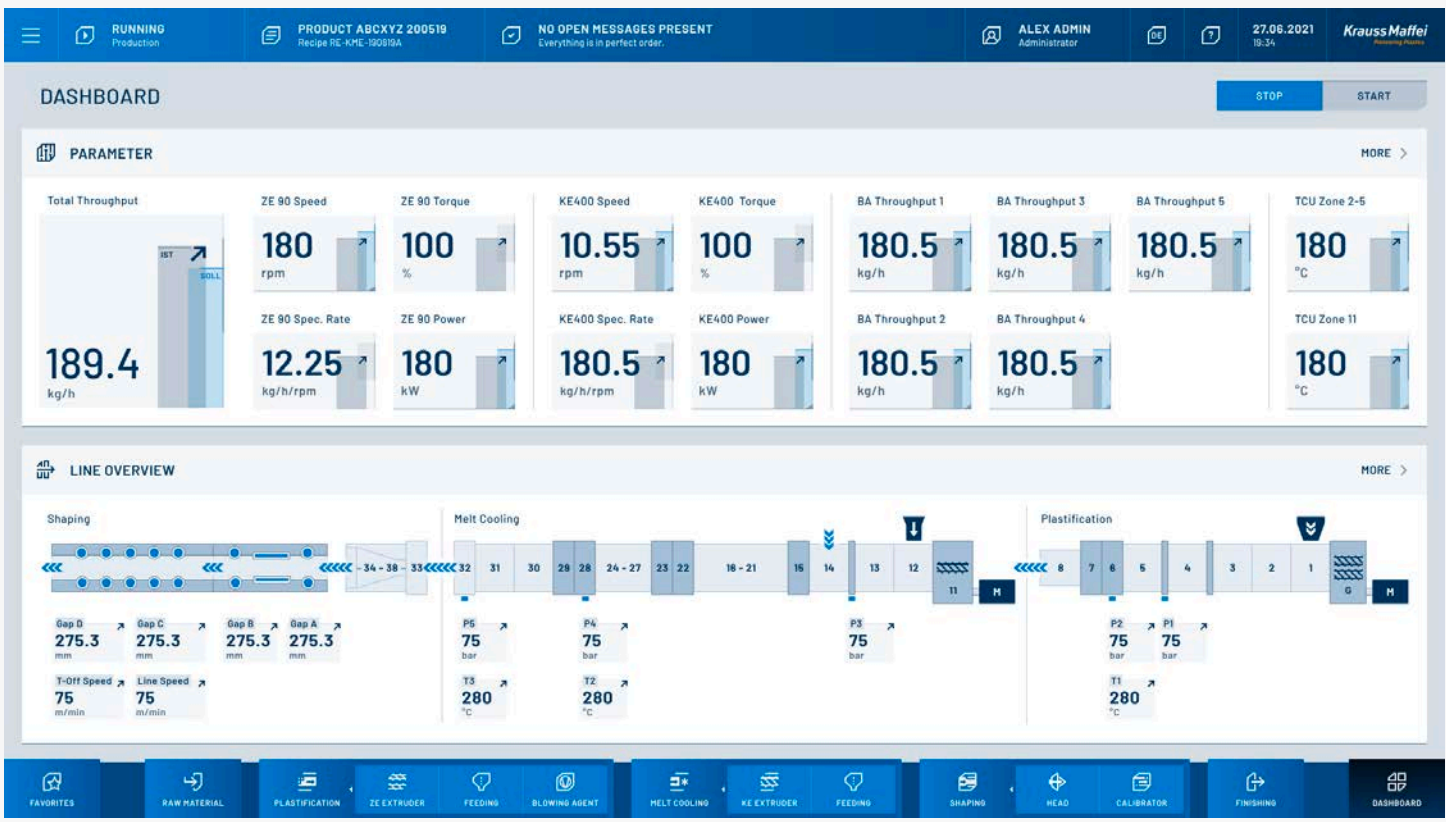
Prototyping Steps



Paper Prototypes



Wireframes
+ Low Fidelity Prototypes



Final Design
+ High Fidelity Prototypes

Testing

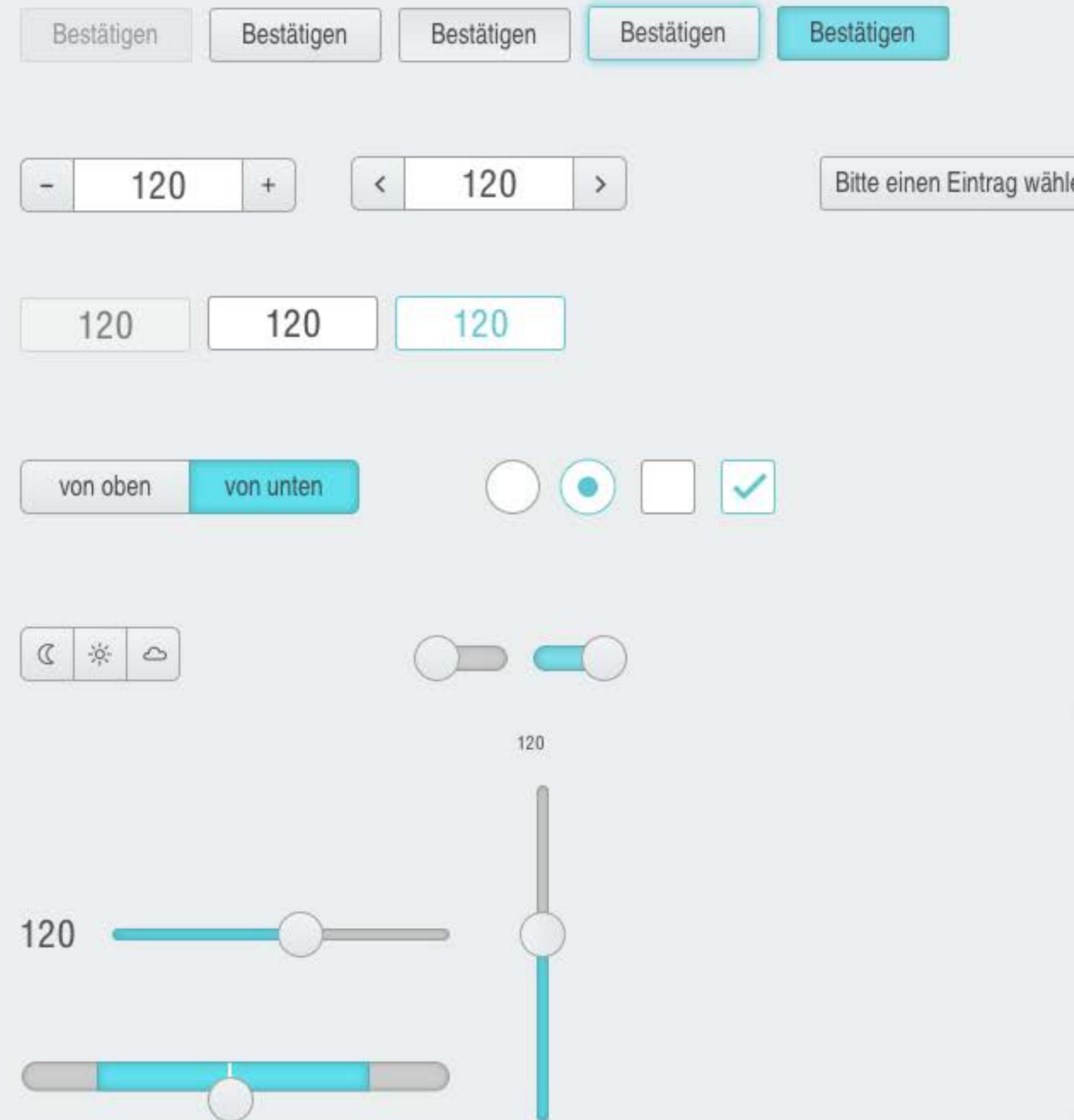
- _ Expert evaluation
- _ ISO questionnaires
- _ User tests
- _ Participating observation
- _ Thinking Aloud
- _ Usability lab, eye-tracking, etc. (Optional)



Design

Global

- _Basic layout & grid
- _Colours & Fonts
- _Icon & illustration style
- _Page templates
- _Standard Controls
- _Transitions
- _Styleguide



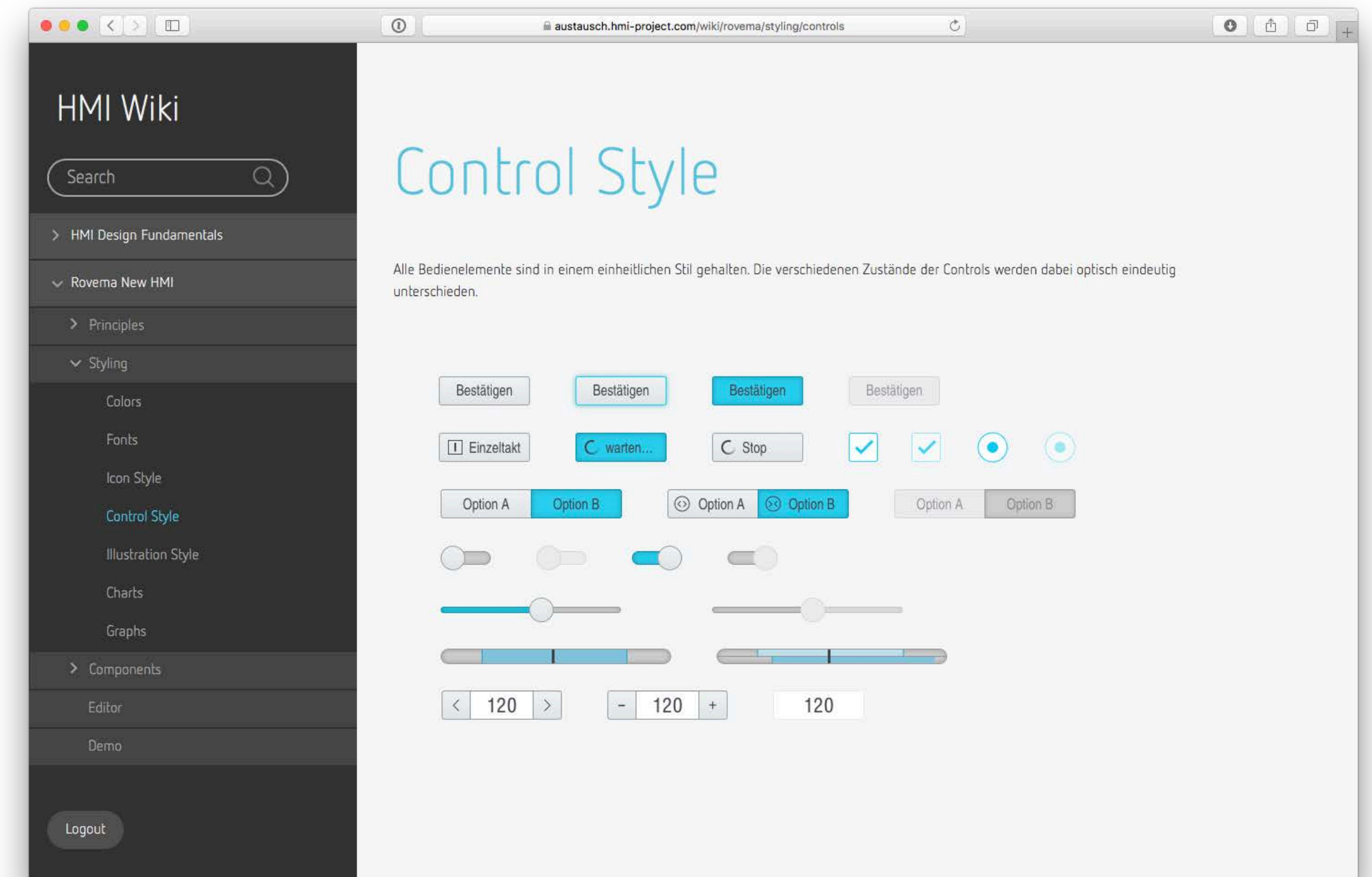
Elaboration

- _Features, special functions and controls
- _Rollout to different machine types
- _Machine-specific icons, illustrations, data visualisation
- _Adaptation for different screen resolutions
- _Adaptation for proprietary project planning systems



Documentation

- Online Wiki Website
- Continuous project documentation
- Styleguide
 - Global
 - Components
 - Patterns
 - Screentypes
 - Assets



Development

Technical Proof of Concept

- _ Programming of a minimal, static prototype
- _ Configuration of the data server
- _ Exemplary data connection
- _ Fixed scope of functions, extensions must be made in the code again



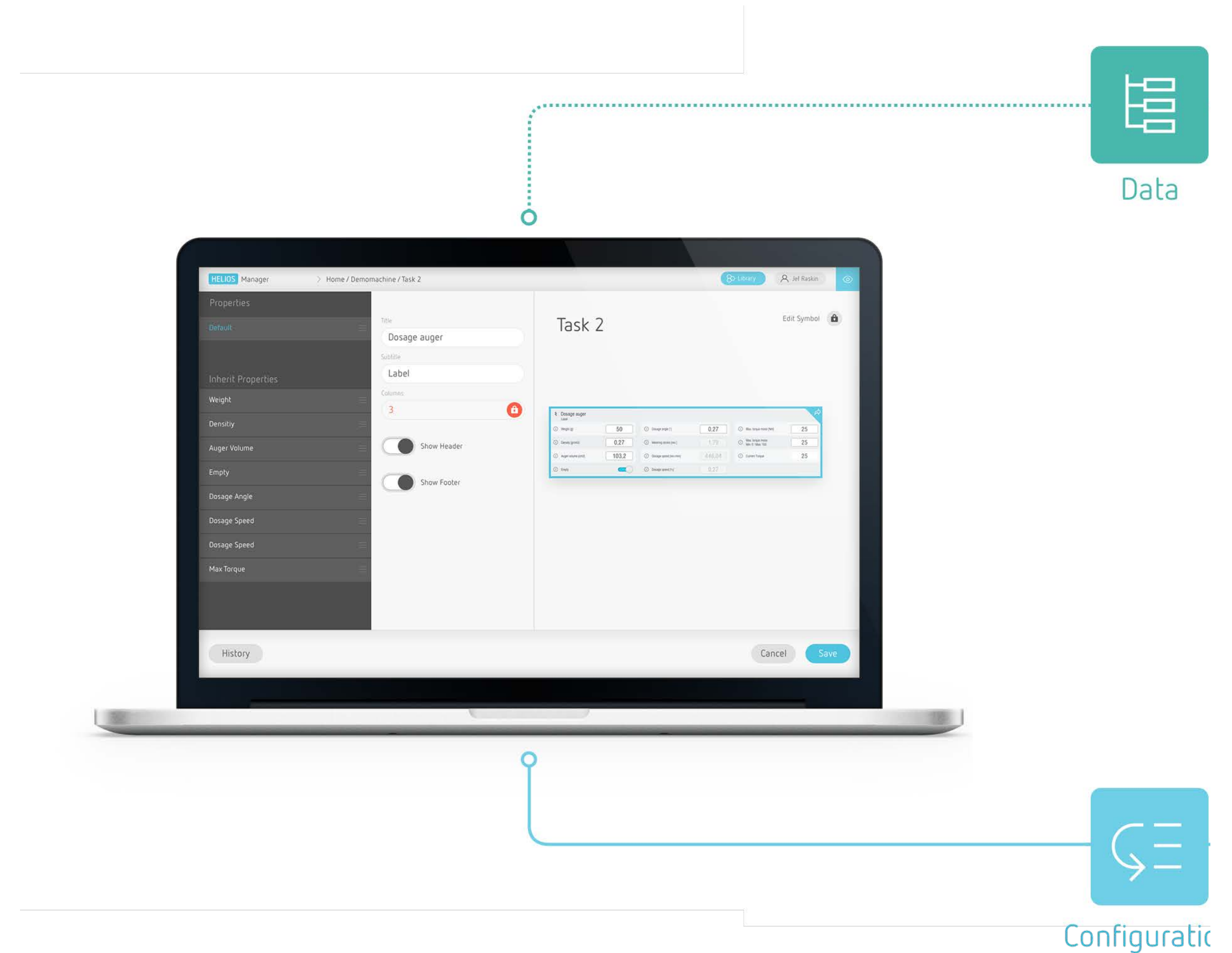
Frontend

- _ Programming of the frontend in web technology
- _ Creation of all required screens and workflows in code
- _ Templates and controls
- _ System integration
- _ Interfaces to the periphery



Content Management

- _ Connection to Content Management System
- _ System integration
- _ Interfaces to the periphery



Support

Support

- _ Trade fair and sales support
- _ Design Review
- _ Development Review
- _ Training / Know-How Transfer
- _ Project presentation, video and award submission



We're looking forward
to work with you!

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