



services

HMI design

# Create intuitive HMI solutions





At Mekoprint, we're passionate about designing and making HMIs. We are constantly exploring new ways to make user interactions seamless and efficient. Our approach is straightforward: we listen, ask the right questions, and create intuitive, durable solutions. That is why our HMI design services are designed to make your development process as smooth as possible. We offer a customised set of design & engineering services you can pick from to match your needs and expectations in the best possible way.

# HMI design services

Think of our design and engineering team as an extension of your own during the HMI development process. Whether you're facing time constraints, resource limitations, or simply need specialised HMI expertise, our specialists are ready to integrate into your development efforts seamlessly.

Our services are designed to support you at every stage, offering flexibility to match your specific needs. Whether you require full project management or targeted technical expertise, we provide the level of support that suits your unique situation.

To further enhance flexibility, our HMI services are structured into distinct development stages, allowing you to select and purchase service packages tailored to your current needs. This modular approach ensures you get exactly the support you require, when you need it.

Here's what we bring to the table:

- Expertise in HMI solutions, with in-depth knowledge of materials, production processes and design trends
- Proven development processes, with structured approach to NPD and NPI.
- Cross-industry experience, drawing on best practices from a diverse range of industries.
- Danish design and engineering excellence, with focus on efficiency and sustainability.

By partnering with us, you'll benefit from:

- Streamlined processes, with fewer iterations and smoother work flows.
- Reduced risk, mitigating potential pitfalls with our experienced team.
- Accelerated time to market, bringing your products to market faster.
- Outstanding results, achieving the high standards you expect.



## DISCOVERY

Project brief  
Process proposal  
Quote on design services

We start every project with a discovery phase to ensure a thorough understanding of your needs. This crucial step lays the foundation for all subsequent stages, no matter which part of your development process we join.



## IDEATION

Ideation workshop  
Concept catalogue



## DESIGN

3D files and renderings  
Product specification  
Unit & tooling price budget quote



## MOCK-UPS

Low fidelity prototyping  
Mock-up assessment



## ENGINEERING

CAD files  
Circuit layout  
BOM list  
Soft tooling & early prototypes  
Unit and tooling price for series



## RELEASE FOR PRODUCTION

Tooling drawings  
Series manufacturing tool  
Test fixture  
Production drawings  
Unique process description



## LIFE-CYCLE ENGINEERING

End-of-lifetime activity  
Tool replacement  
Cost-down activities  
Dual sourcing / production evaluation  
New compliance requirements



# Discovery

We start every development project with a discovery phase, an essential step regardless of your project's current stage. This phase is a standard part of our sales support, providing a clear understanding of your requirements and laying the foundation for successful collaboration.

During this phase, we often hold a face-to-face meeting to discuss your expectations, requirements, and use cases. We also share inspiration from previous projects, material samples, and construction examples to guide and inform your development process.

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## Roles involved

Typically, a sales coordinator and an engineering specialist are involved.

## Time frame


Project specific, from 1 to 4 weeks.

## Budget idea

## Typical deliverables by Mekoprint

Project specific, but typically including:

Click or scan to request a full overview of our deliverables and prices for HMI design services.



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## Your preparation

This is a typical list of questions that we start the discovery phase with:

- In which phase is your product development?
- Who is involved in the project?
- What do you expect to get from us (scope)?
- Timeline and deadlines (design freeze, prototyping, 0 series, product launch, SOP)?
- What are your design and project priorities?
- What are the use cases and user profiles for your product?
- Verification activities planned?
- Your mass production volume, cost estimates, target price?
- Any sustainability considerations (circular design, CO2 footprint)?





# Ideation

The ideation phase focuses on identifying the right design direction. Typically, we conduct an ideation workshop with your team to explore your requirements and define the project scope. From this, we develop multiple concepts, providing a solid foundation for informed decision-making.

During this phase, we work in our ad-hoc creative team, bringing together different design and engineering disciplines to ensure all perspectives are covered.

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## Roles involved

Ad-hoc creative team  
led by a project manager

## Typical deliverables by Mekoprint

## Time frame

2-4 weeks

## Typical budget identifier

Click or scan to request a full overview of our deliverables and prices for HMI design services.



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## Your preparation

This is a typical list of questions that we cover at the beginning of the ideation phase:

- What are your requirements in terms of technical performance, aesthetics and appearance, compliance?
- How do you range evaluation parameters: price, function, design, UX, sustainability?
- What is the assembly sequence? How will the HMI be integrated with your device?
- How is the electrical interface of the HMI with the device?

Design



Render Tools View Window Help

Denoise Render NURBS Region Navigation Camera Studio Tools Configuration Wizard Geometry View Light Manager Scripting Console

Frames Per Sec:	175.0
Time:	1m 26s
Samples:	1005
Triangles:	41,581
NURBS:	528
Res:	1129 x 635
Focal Length:	50.0
Denoise:	Off

Light Manager

Brightness: 1.518 Contrast: 1 Rotation: 234°

Power: 0.5 Watt

Import Library Project Animation Web Viewer KeyShotKit KeyVR Render

DELL

# Design

At this stage, you may have selected a design direction from the concept catalogue or have already a defined concept that needs refinement. Our design services help make your concept feasible, whether it's engineering for cost, design for manufacturing, or design for assembly.

During this phase, we define colours, materials, and finishes. This is typically an iterative phase, involving cycles of design, build, review, and repeat.

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## Roles involved

Industrial designer  
Product support.

## Time frame

2-4 weeks (an iterative process)

## Typical budget identifier

## Typical deliverables by Mekoprint

3D renderings  
2D technical details  
3D models based on 3D CAD files  
3D models and tooling

Click or scan to request a full overview of our deliverables and prices for HMI design services.



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## Your preparation

This is a typical list of questions that we start the design phase with:

- Your colour, material and finish guidelines?
- Your design guidelines?
- Do you already have 3D CAD files of the device?
- Can you provide colour samples for match?



# Mock-ups

Mock-ups provide physical proof of concept, allowing you to test different designs before investing in tooling. This process is usually iterative. We often create 3D-printed samples to evaluate scale, proportions, shape, and tactility.

Additionally, we might use examples from other projects, visual models, mock-ups, and colour or print tests. Depending on the design's complexity and your needs, low-fidelity prototypes may also be produced at this stage.

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## Roles involved

Industrial designer  
Electronic engineer

## Time frame

2-4 weeks (an iterative process)

## Typical budget identifier

## Typical deliverables by Mekoprint

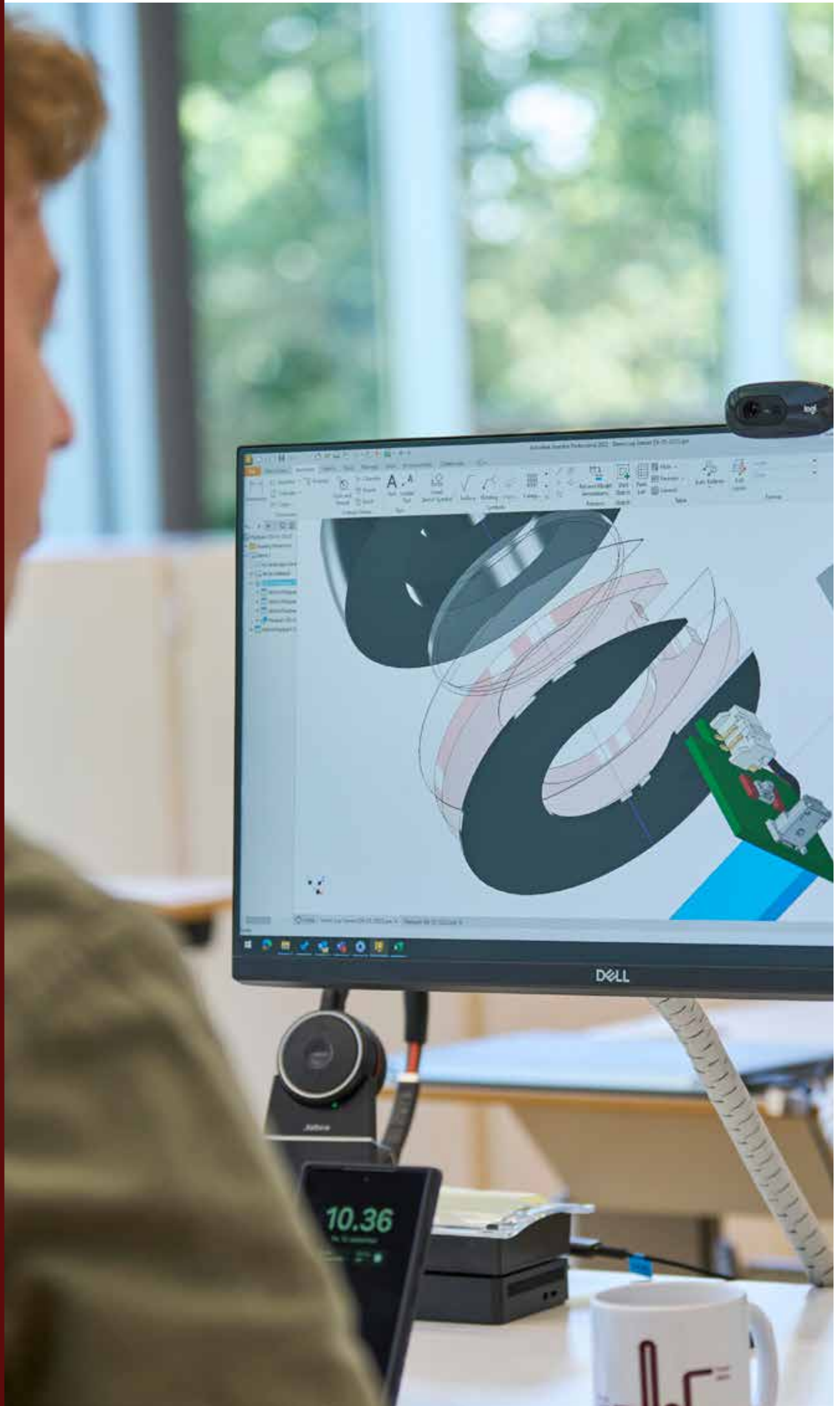
3D printed prototypes  
3D CAD files  
Manufacturing documents

Click or scan to request a full overview of our deliverables and prices for HMI design services.





Engineering



# Engineering

In the engineering phase, we test the designed solution through design evaluation, prototype assessment, and material testing, tailored to your requirements.

Iterations in this stage are typically adjustments and detailing of drawings. The key milestone at this stage is to verify that the solution on paper can be realised effectively.

## Roles involved

Industrial designer as project lead, assisted by:  
• Electronic & construction engineering  
• Mechanical engineering

## Time frame

10-15 weeks (incl. prototyping)

## Typical budget identifier

Click or scan to request a full overview of our deliverables and prices for HMI design services.



## Typical deliverables by Mekoprint

- CAD files incl. mechanical and electrical design
- Circuit layout

- Prototyping and assembly drawings
- Design for serial production
- Prototyping tools

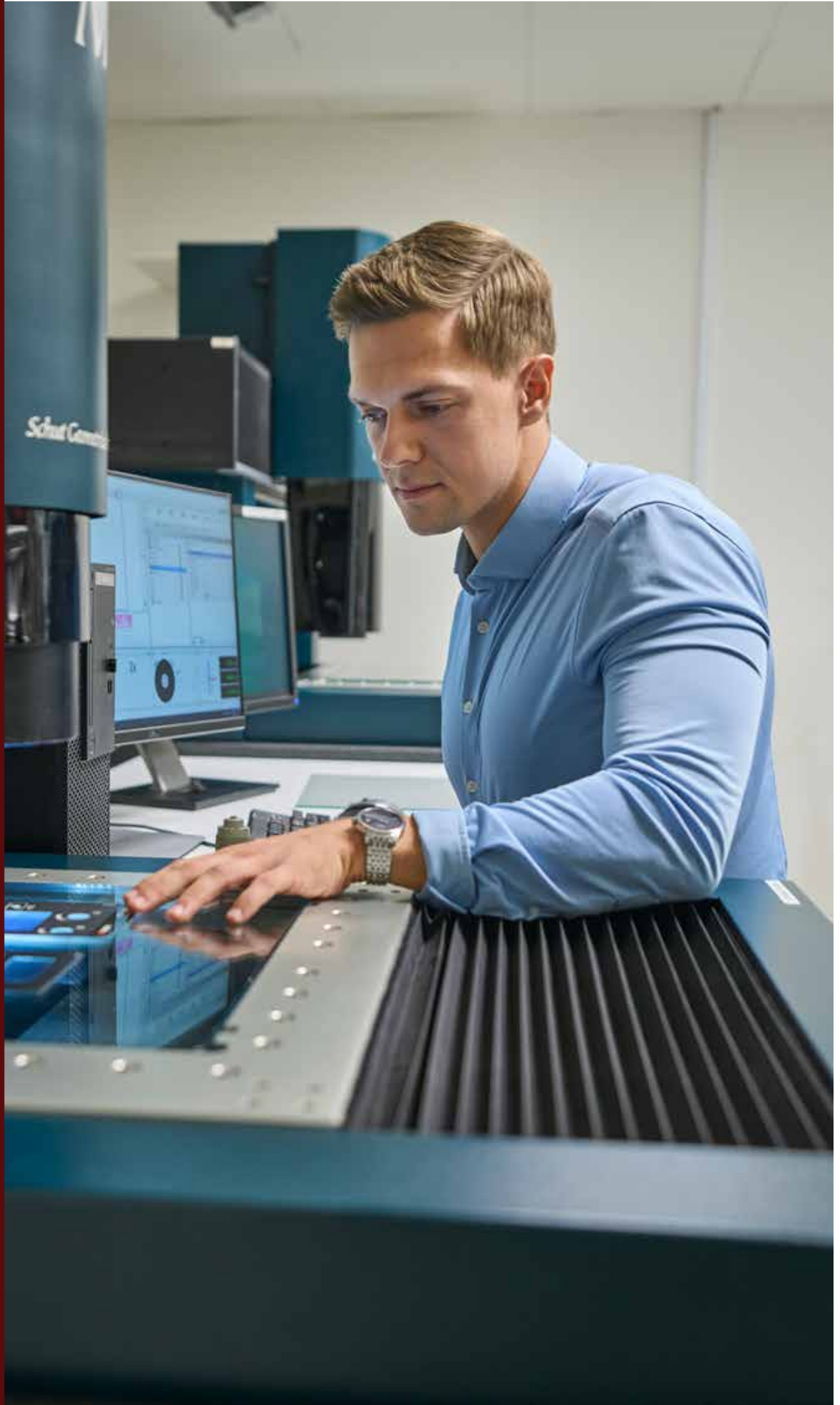
- Validation tests
- Cost breakdown
- Material declaration
- Dual sourcing recommendation
- Production flow outline
- Best cost country recommendation
- Assembly recommendation

## Your preparation

This is a typical list of questions that we touch upon in the engineering phase:

- What is the point of supply for mass production?
- How is the work split between the different disciplines?
- What tests do you expect Mekoprint to carry out?

Release for production





# Release for production

During the release for production phase, we verify the production setup and series tooling, reaching a key milestone with the first out-of-tool parts. Your delivery and quality specifications are finalised, and

we establish an optimal supply chain and logistics setup tailored to your production needs. In this phase, we align all elements to prepare for series production.

## Roles involved

Industrial designer as project lead, assisting with prototyping, validation & construction of tooling, working with sales & production.

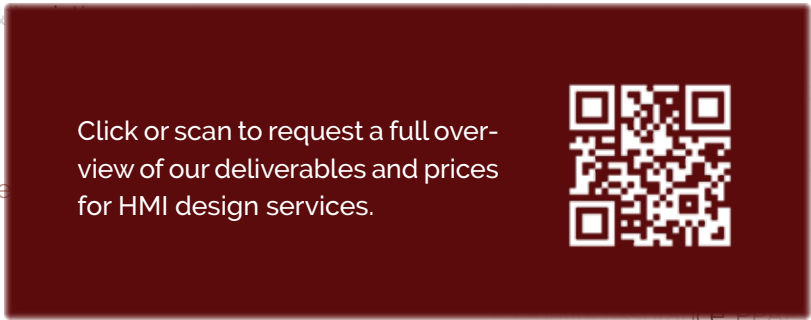
## Time frame

3 to 6 weeks

## Typical budget index

## Typical deliverables by Mekoprint

- Tooling drawings for series production
- Series manufacturing tooling



- Design/Production tooling approval
- Production tooling
- Production tooling

- P-FMEA
- Product test specification (PTS)
- Material declaration (BOM check)

## Your preparation

This is a typical list of questions that we cover during the release for production:

- What documentation do you require from Mekoprint (PPAP, FAI, etc)?
- Do you require compliance and declaration documents, such as UL, Reach, RoHS?
- What are your requirements for the logistic model?



# Life cycle engineering

Our life cycle engineering services offer a comprehensive range of support to ensure your product's success throughout its lifespan. Whether facing unforeseen challenges, adapting to new legal requirements, or adjusting to a new commercial

strategy, our services help modify the production setup to meet your evolving needs. A potential outcome at this stage might be the initiation of a new development project towards a new HMI solution.

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## Roles involved

Original designer, assisted by  
engineering.

## Time frame

Project specific

## Typical budget idea

## Typical deliverables by Mekoprint

Finalizing activities, components

Activity

Revenue

Click or scan to request a full overview of our deliverables and prices for HMI design services.

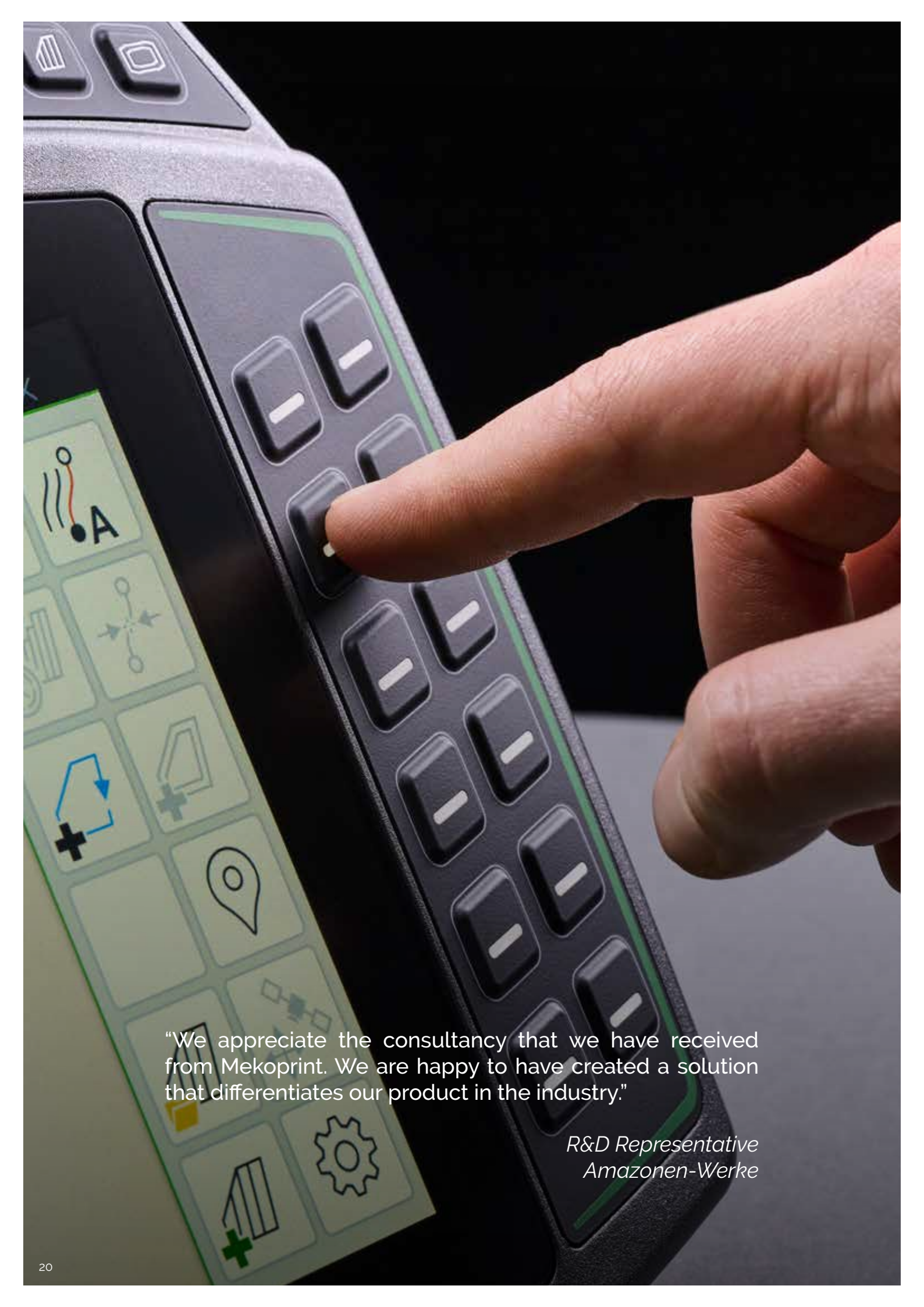


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## Your preparation

This is a typical list of questions that we ask in connection with life cycle engineering:

- What is the issue?
- Are there any compatibility requirements?
- What is the lifetime horizon?



“We appreciate the consultancy that we have received from Mekoprint. We are happy to have created a solution that differentiates our product in the industry.”

*R&D Representative  
Amazonen-Werke*



## Case: Robust keypad for Amazonen Werke

Mekoprint partnered with Amazonen-Werke to tackle durability issues in their machinery's operator panels. Our custom solution resists harsh weather and UV damage, ensuring long-lasting performance and reliability in tough conditions.



## Case: Wearable keypad for Bioservo

As Bioservo's HMI partner for their grip-strengthening glove, we engineered a complete, stitchable HMI solution. The keypad is bendable, intuitive, and watertight, exemplifying our commitment to innovative solutions.



"It is a great strength that Mekoprint can both develop and produce, because they then must produce what they themselves propose in the development process."

*Chief Technology Officer, Bioservo  
Ola Markusson*







# Save time with the right competence match

Our team of engineers, industrial designers, and coordinators specialises in control panels and HMI solutions. We aim to complement your product development with specialist knowledge and lean processes, working together to create the best solution for your product.

When you place a project in our hands, expect a smooth journey from inquiry to mass production. With a structured development process and a fully digital production floor, we ensure transparent and efficient communication throughout. We value open and honest dialogue, keeping you informed and confident every step of the way.

# Let's start the dialogue early

Involving Mekoprint early in your R&D process can save time and streamline your HMI development.

You'll benefit from:

- A smooth development process
- A realistic, production-ready solution
- A holistic understanding of user experience

Scan to get in touch with an HMI expert  
from Mekoprint





# Pushing for progress Leading new ways™

Mekoprint A/S  
Hermesvej 4  
9530 Støvring  
Denmark