Berufsperspektiven für Psycholog*innen

Vortragsreihe SoSe 2022

Universität Konstanz

Titel des Gastvortrags:

"UX: Schäferstündchen zwischen Mensch und Maschine"

Wo Psychologie und Informatik sich heimlich treffen

Dipl.-Inform. Dipl.-Psych. Johannes Schäfer
UX Engineer, Product Owner
KEB Automation KG, Heilbronn

Dienstag, 10.05.2022, 18.45 – 20.15 Uhr, Zoom

BMZ
KEB
Automation with Drive

Agenda

1. **Wieso Informatik und Psychologie in der UX?**
2. **Was habe ich bisher gemacht, als Informatiker und Psychologe?**
3. **Was mache ich zurzeit, was davon Informatik, was Psychologie?**
4. **Welche Aufgaben gibt es in einem Praktikum bei KEB?**

… Systeme, die nicht benutzbar sind, aus Sicht des Kunden nicht funktionieren – für den Nutzer/Kunden wertlos sind

... nicht benutzbare Systeme für den Nutzer/Kunden nicht nur wertlos, sondern sogar gefährlich sein können

FACHBEREICH
MENSCH-COMPUTER-INTERAKTION

https://fb-mci.gi.de/
https://fb-mci.gi.de/fileadmin/FB/MCI/dokumente/MCI_Broschuere_2019-11.pdf

λ

Bei der **Informatik** handelt es sich um die Wissenschaft von der systematischen Darstellung, Speicherung, Verarbeitung und Übertragung von Informationen, wobei besonders die automatische Verarbeitung mit Digitalrechnern betrachtet wird.

https://de.wikipedia.org/wiki/Informatik

λ

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https://de.wikipedia.org/wiki/Informatik

FUCK
THE SYSTEM.

UMPLING TOWN
中心
2)673–7260

Symbolbild

Ψ

Die **Psychologie** ist eine empirische Wissenschaft. Ihr Ziel ist es, menschliches Erleben und Verhalten, deren Entwicklung im Laufe des Lebens sowie alle dafür maßgeblichen inneren und äußeren Faktoren und Bedingungen zu beschreiben, zu erklären und gegebenenfalls zu verändern.

https://de.wikipedia.org/wiki/Psychologie

Ψ

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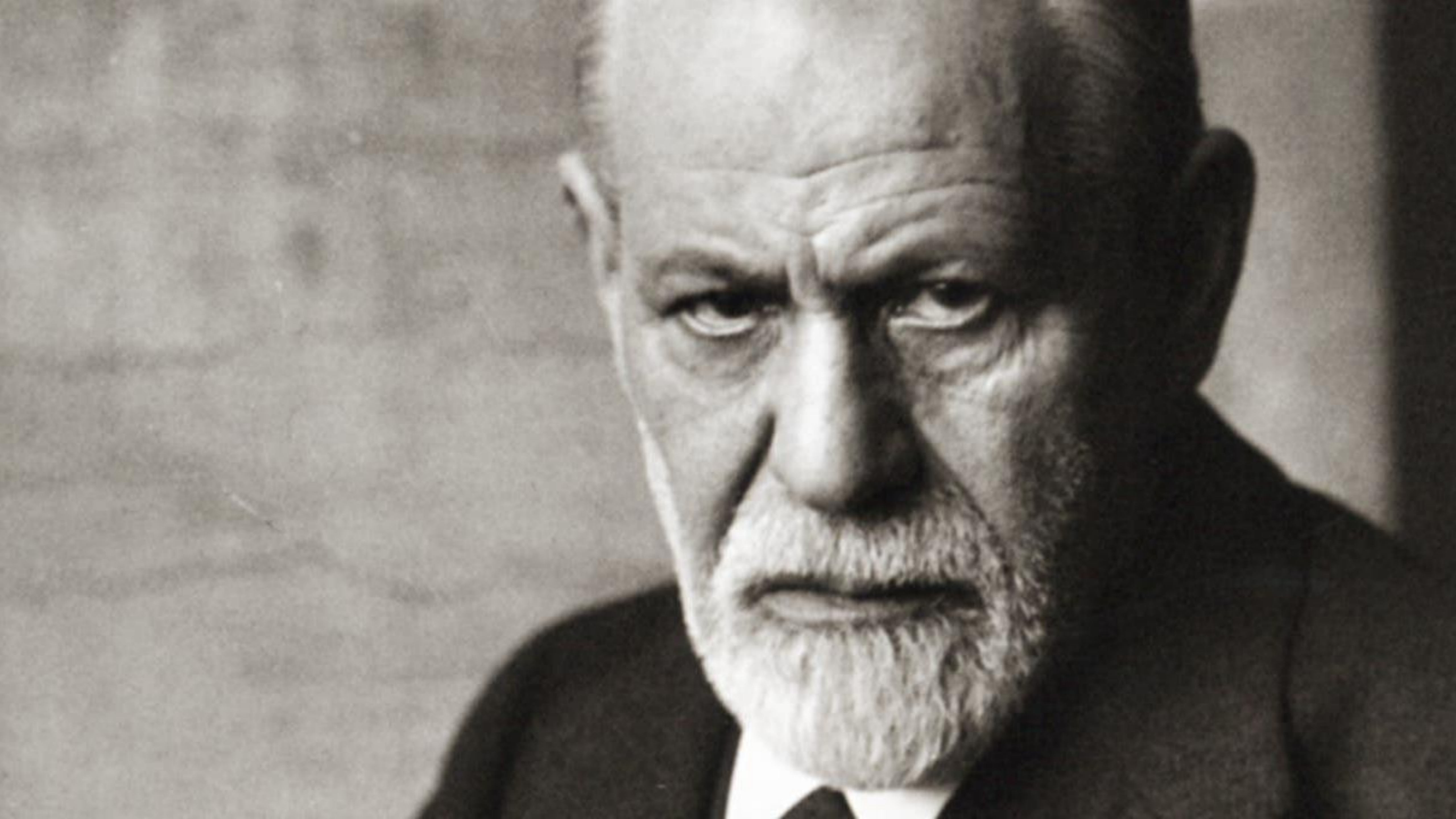
https://de.wikipedia.org/wiki/Psychologie



Symbolbild

https://germanupa.de/

UX

A person's perceptions and responses that result from the use and/or anticipated use of a product, system or service.

ISO 9241-210

UX

A person's … ons and responses that result from the use and/or antic… …ed us… …duct, system or service.

Menschliches Erleben und Verhalten

Interaktion mit Computersystemen

ISO 9241-210

Usability

Usability bezeichnet das Ausmaß, in dem ein Produkt, System oder Dienst durch bestimmte Benutzer in einem bestimmten Anwendungskontext genutzt werden kann, um bestimmte Ziele effektiv, effizient und zufriedenstellend zu erreichen.

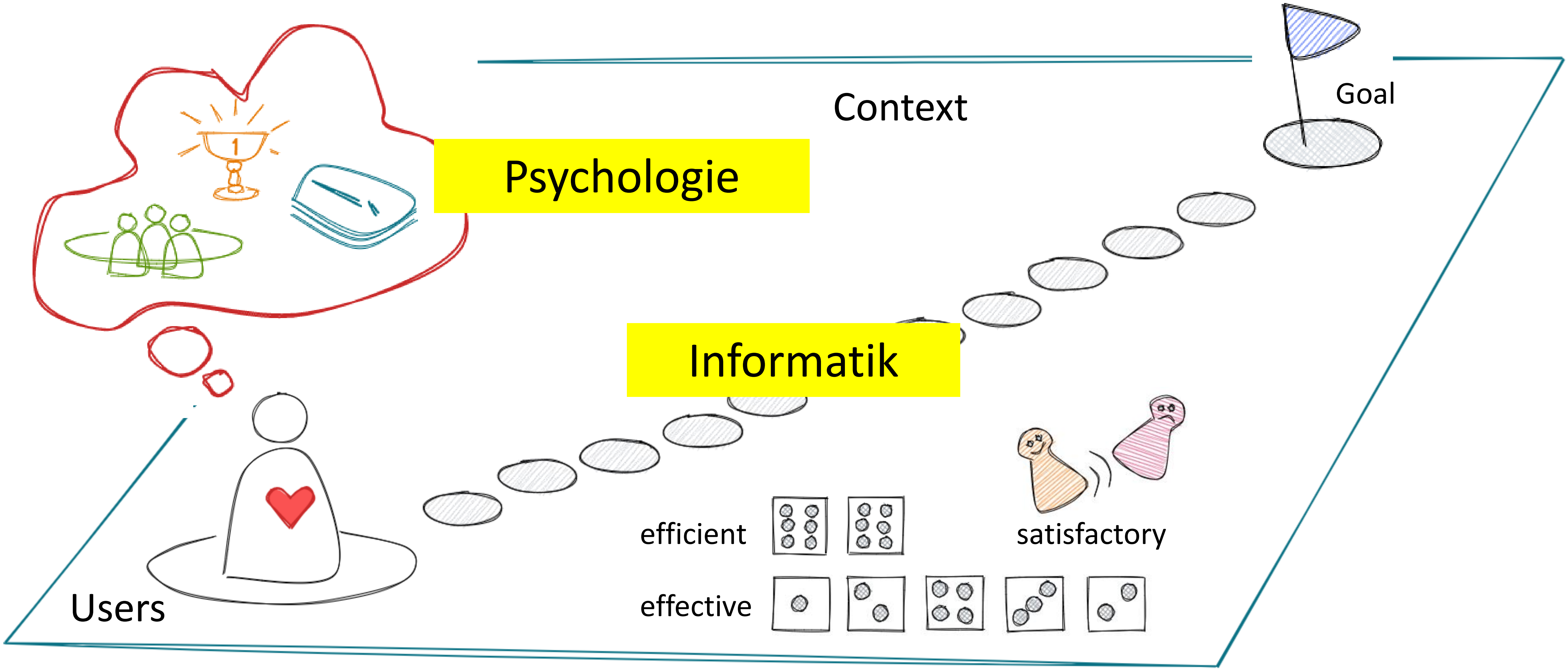
ISO 9241-110

Usability

Usability bezeichnet das Ausmaß, in dem ein Produkt, System oder Dienst durch bestimmte Benutzer in einem bestimmten Anwendungskontext genutzt werden kann, um bestimmte Ziele effektiv, effizient und zufriedenstellend zu erreichen.

ISO 9241-110

Usability & UX

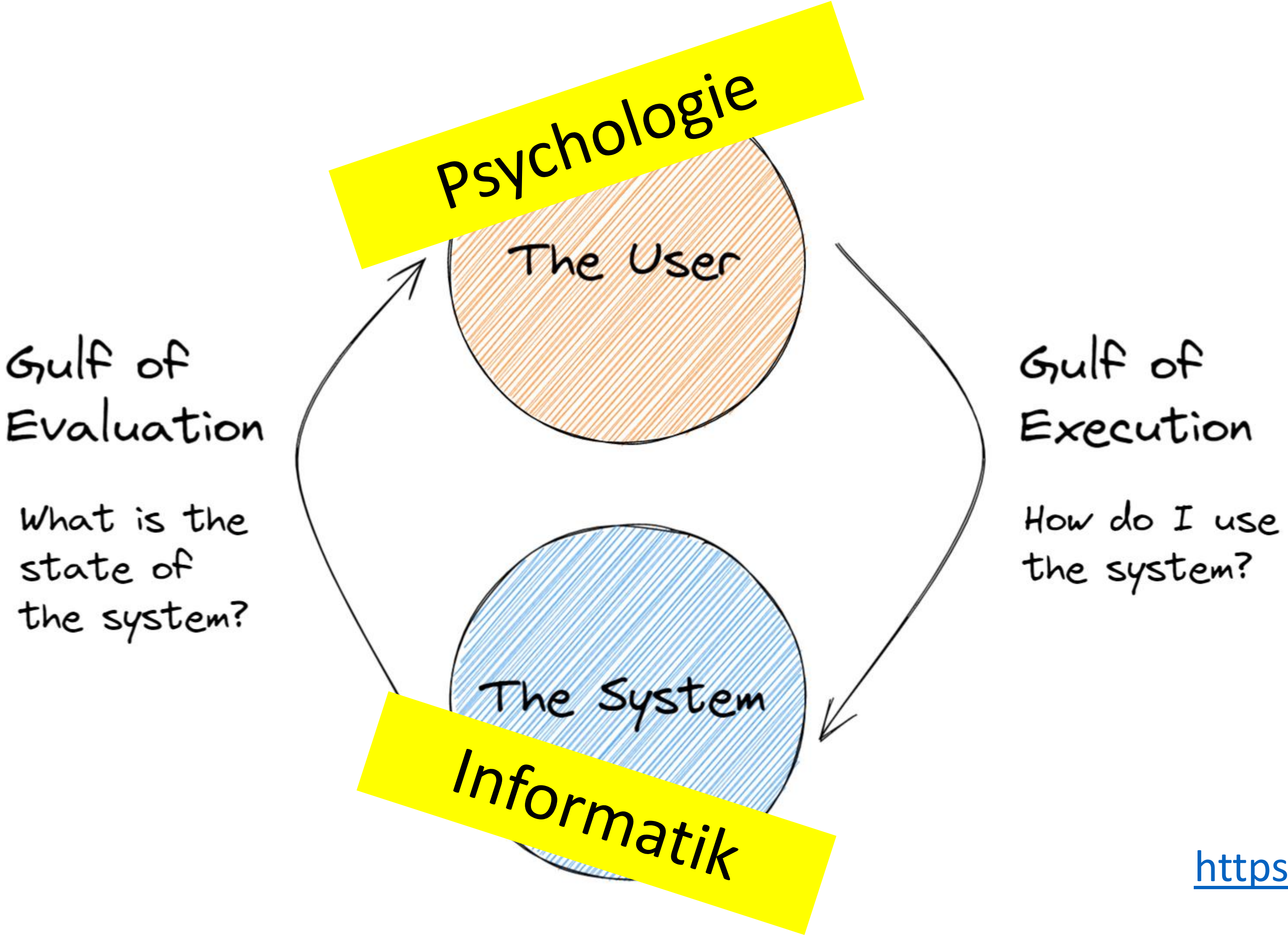


Psychologie

Informatik

Context
Goal
efficient
satisfactory
effective
Users

Nutshell


The User
Gulf of Evaluation
What is the state of the system?
Gulf of Execution
How do I use the system?
The System

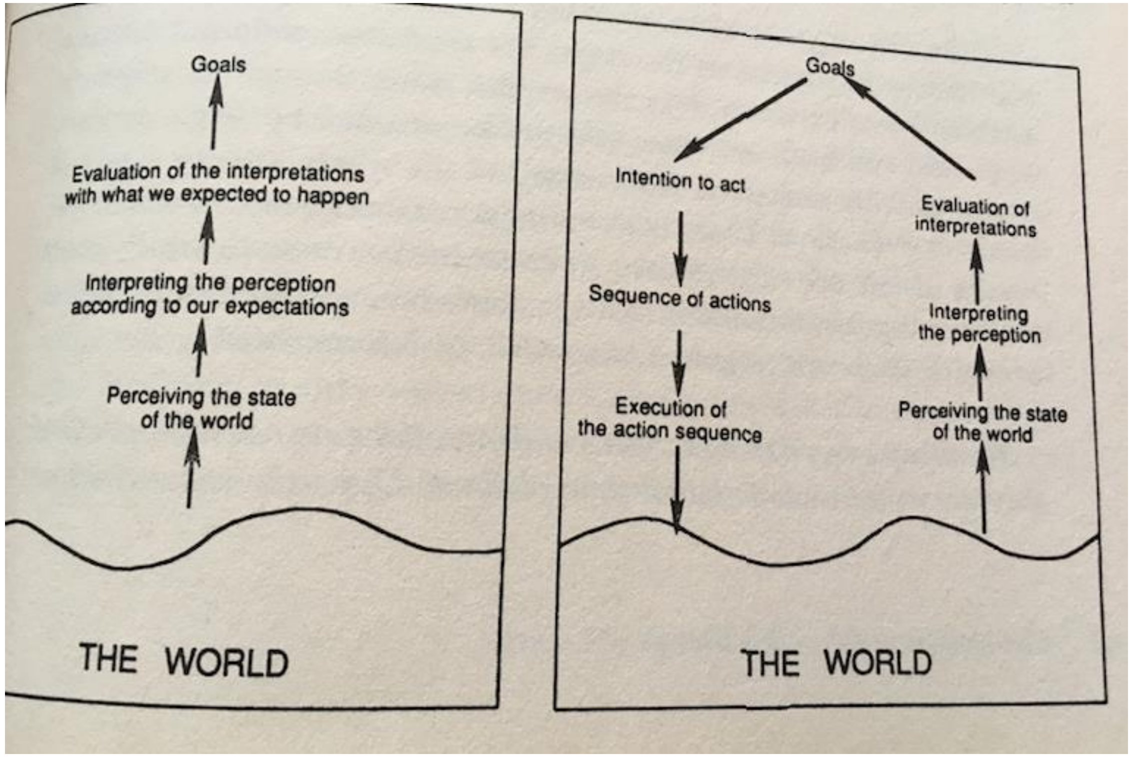
Psychologie

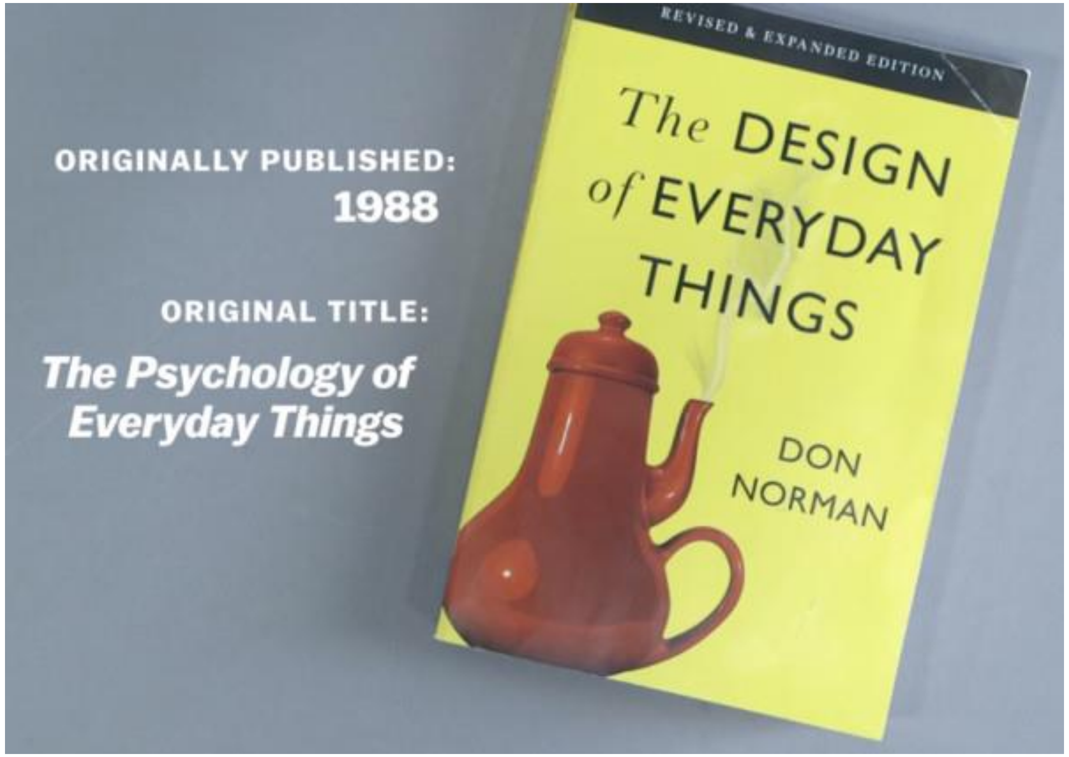
Informatik

https://excalidraw.com/

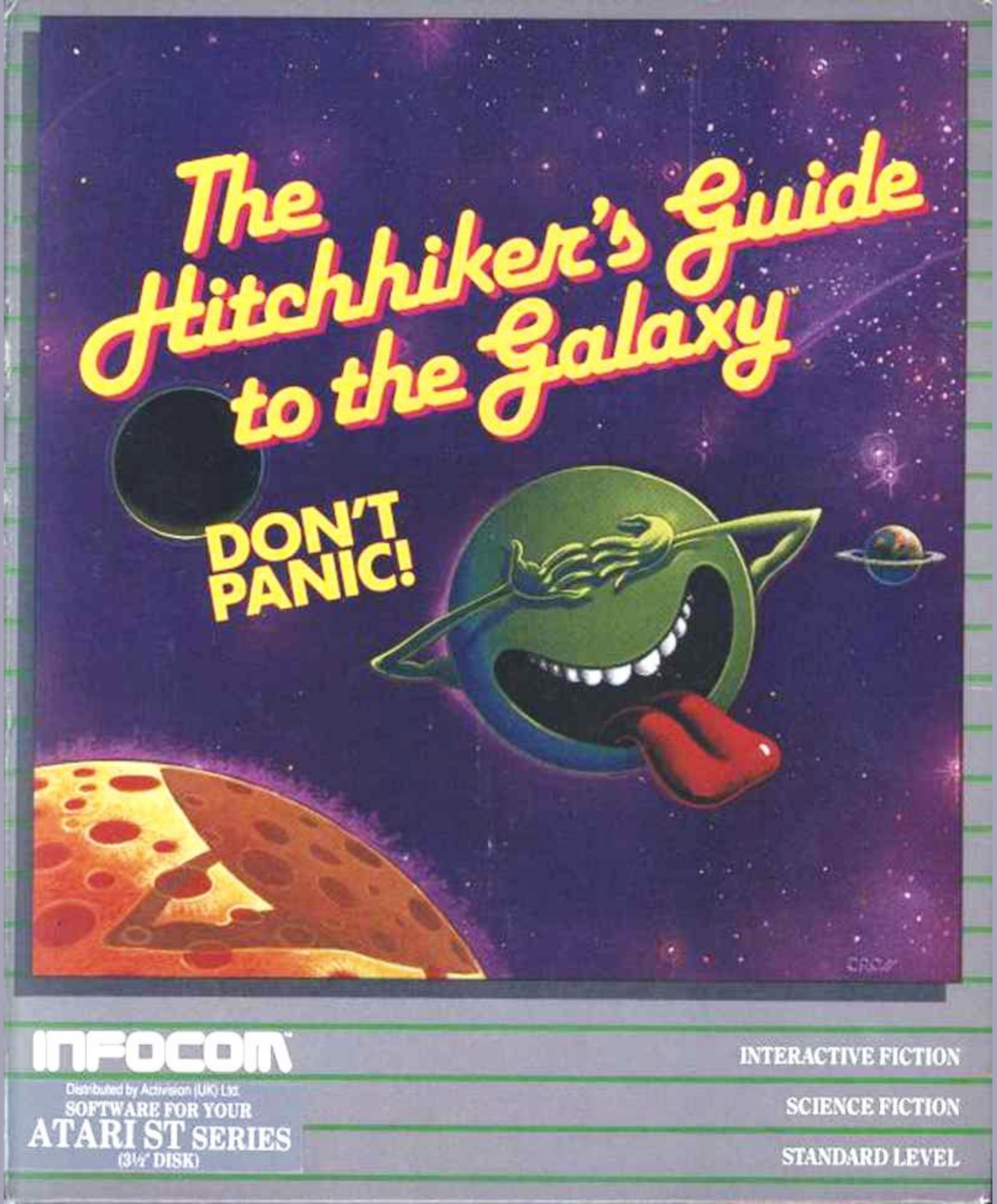
Theory

Wichtig!


Goals
Evaluation of the interpretations with what we expected to happen
Interpreting the perception according to our expectations
Perceiving the state of the world
THE WORLD
Goals
Intention to act
Sequence of actions
Execution of the action sequence
Evaluation of interpretations
Interpreting the perception
Perceiving the state of the world
THE WORLD


ORIGINALLY PUBLISHED:
1988
ORIGINAL TITLE:
The Psychology of Everyday Things
REVISED & EXPANDED EDITION
The DESIGN of EVERYDAY THINGS
DON NORMAN

https://www.guerillagirl.de/2017/03/18/seven-stages-of-action-don-norman/


The Hitchhiker's Guide to the Galaxy™
DON'T PANIC!
INFOCOM™
Distributed by Activision (UK) Ltd.
SOFTWARE FOR YOUR
ATARI ST SERIES
(3½" DISK)
INTERACTIVE FICTION
SCIENCE FICTION
STANDARD LEVEL

Q&A

About me

Consultant | Engineer | Researcher

UX
Emotional Design
LEVELS OF EMOTION
Visceral
Behavioral
Reflective

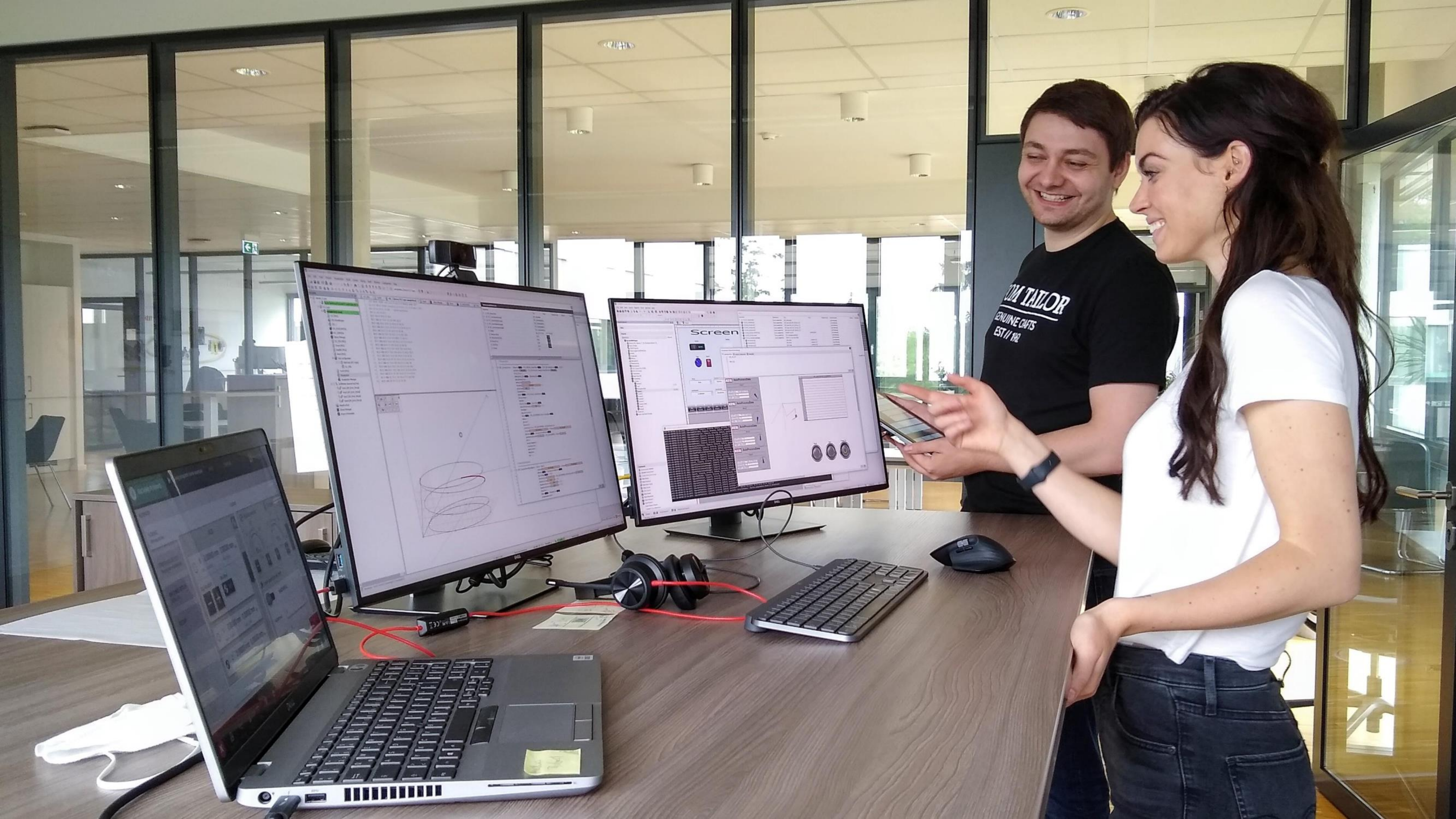
ISO 9241

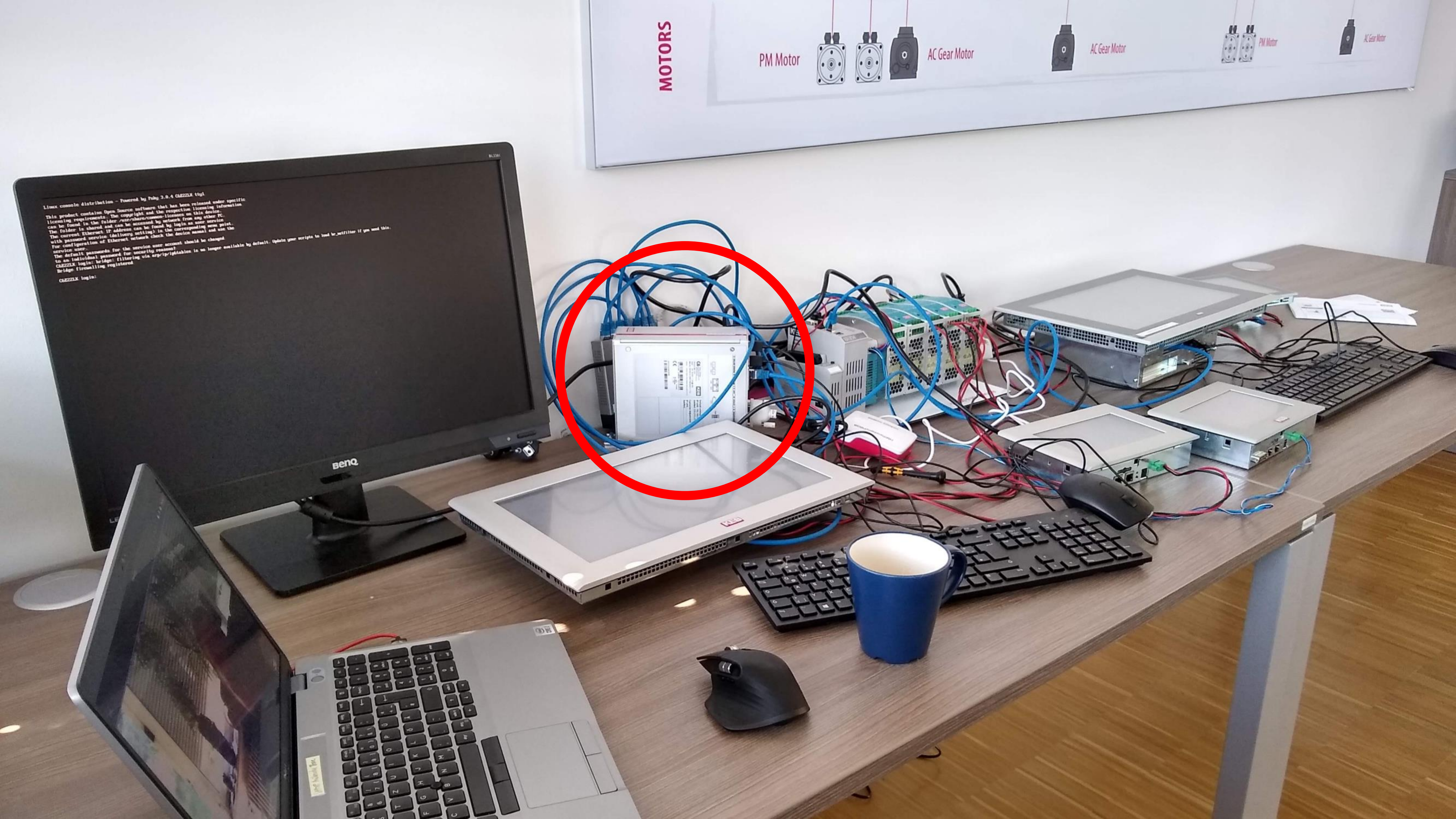
users
evaluation
implementation
usability
patients
hmi
interface
workshops
management
applications
documentation
external
moog
application
results
human-machine
complete
new
concept
remote
media
experience
visual
style
stakeholders
ideas
after
games
implemented
creative
exterior
projects
coordination
team
german
ui
machine
ux
based
product
user
workshop
other
forrest
html
processes
data
maintenance
client
online
skills
definition
vision
empathy
usage
work
needs
worked
more
analysis
hardware
social
research
intuitive
partners
suite
report
consultant
approach
design
creativity
both
during
observation
testing
prototype
refinement
test
insights
university
through
building
collaboration
functionality
three
lead
solutions
coaching
gui
kick-off
specification
including
project
define
development
close
software
complex
use
reporting

https://worditout.com/word-cloud/create

Automation **with Drive**

clean, straightforward, direct, organized, open, determined, friendly, confident, bold, strong, rigorous, correct, formal, traditional


Screen

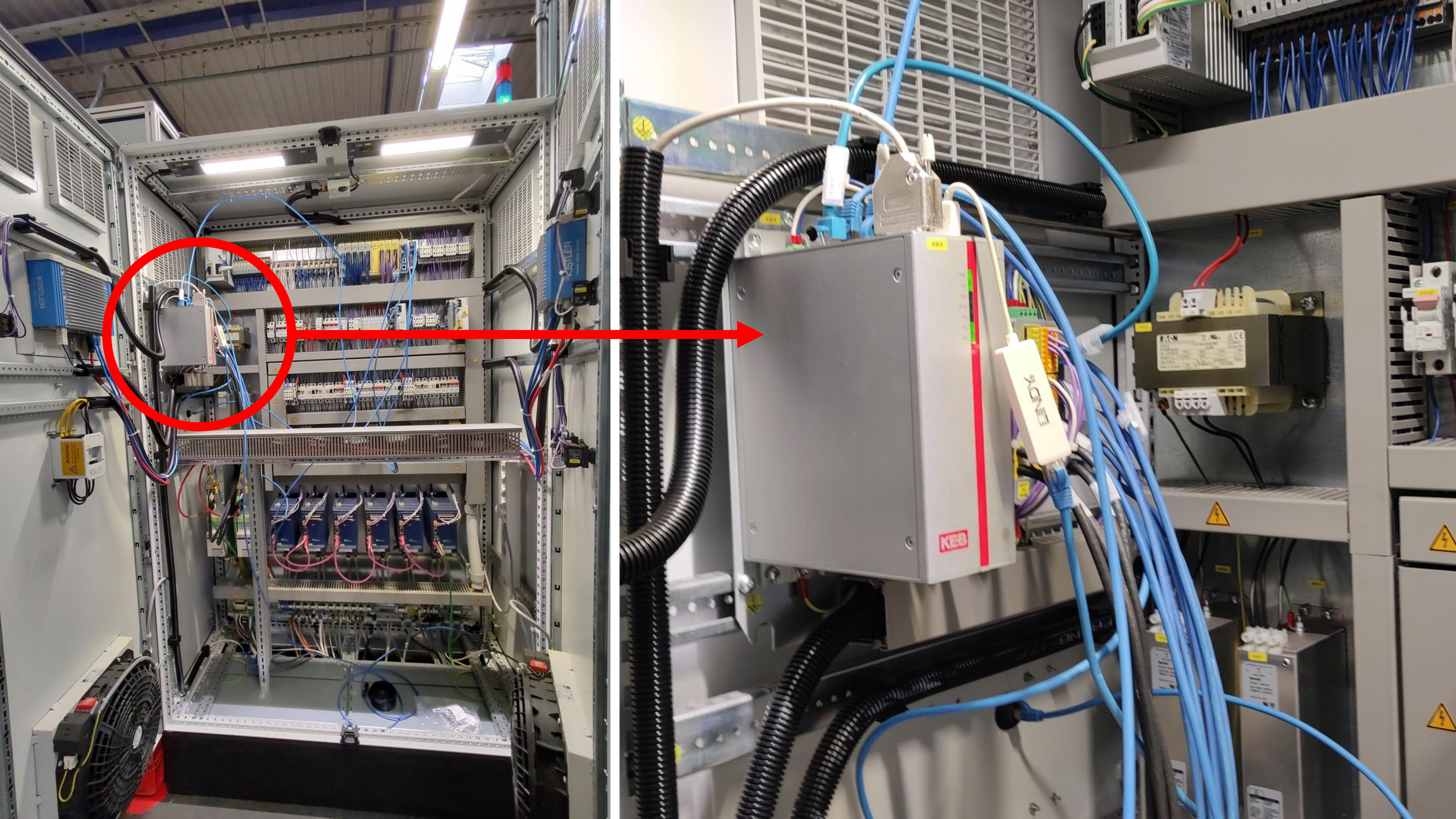


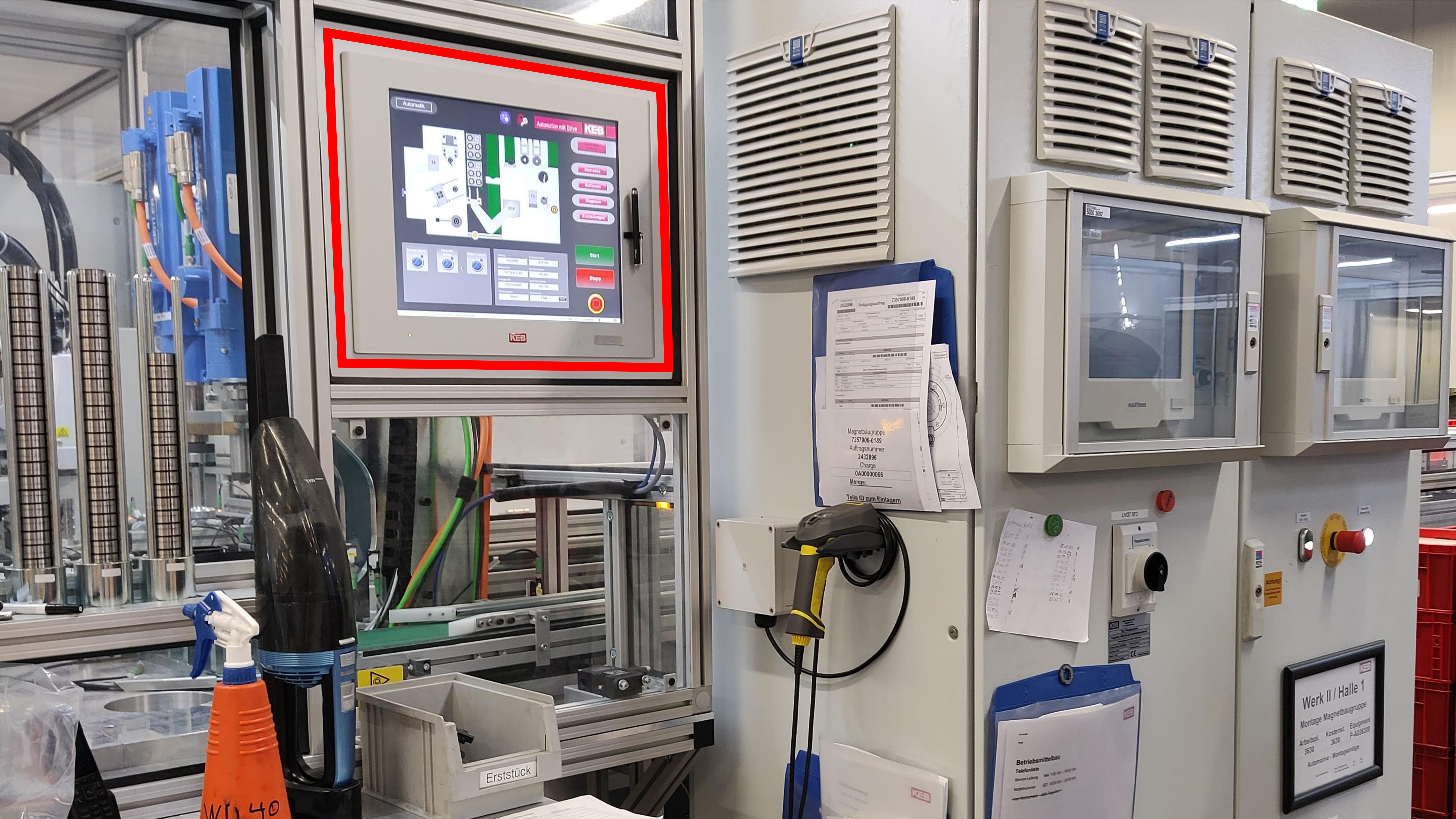
```
Linux console distribution - Powered by Poky 3.0.4 C6E22LX tty1

This product contains Open Source software that has been released under specific
licensing requirements. The copyright and the respective licensing information
can be found in the folder /usr/share/common-licenses on this device.
The folder is shared and can be accessed by network from any other PC.
The current Ethernet IP address can be found by login as user service
with password service (delivery setting) in the corresponding menu point.
For configuration of Ethernet network check the device manual and use the
service user.
The default passwords for the service user account should be changed
to an individual password for security reasons!
C6E22LX login: bridge: filtering via arp/ip/ip6tables is no longer available by default. Update your scripts to load br_netfilter if you need this.
Bridge firewalling registered

C6E22LX login:
```

EPSON
EPSON
EPSON


KISTLER
KISTLER
Achtung!
KEB


Automatik
Automation mit Drive
KEB
Start
Stopp
KEB
Magnetbaugruppe
7357906-0189
Auftragsnummer
2432896
Charge
0A00000066
Menge:
Teile IO zum Einlagern
Erststück
WD-40
Betriebsmittelbau
Telefonliste
Werk II / Halle 1
Montage Magnetbaugruppe
Arbeitspl. 3630
Kostenst. 3630
Equipment P-A036300
Automotive - Montageanlage

Frame 3
Frame 4
Production
Alarm
Menu
Settings
Frame 307
Frame 5
Frame 6
Frame 7
Frame 8
Frame 9
Frame 10
Frame 11
Frame 17
Frame 26
Frame 29
Frame 31
Framework
Desktop - 1
CNC Screen w...
Select ...
110
32
DELL
Machine Running
Part Name: N° 123456-ABC-def.789
Tool
Tool ID
ABC-123
Spindle Override
80 rpm
Override
80 %
Power
80 %
Headline
X
Y
Z
A
MCD
6.5349
-4.9758
4.8793
0.0000
126.5349
6.5346
-4.9758
4.8793
0.0000
126.5346
Production
N123456-ABC-def.789
SPINDLE SPEED
90
rpm
OVERRIDE AXES SPEED
35
%

Vision

Create an HMI as easy as a webpage

Start from Template

Connect your data

Deploy anywhere

Makes good **HMIs** available for everyone

[HMI Project | Projekte (hmi-project.com)](hmi-project.com)

Collaboration with HMI Project

_Design and software specialist for industrial HMI environment

_Development based on web technologies

_Founded in 2011

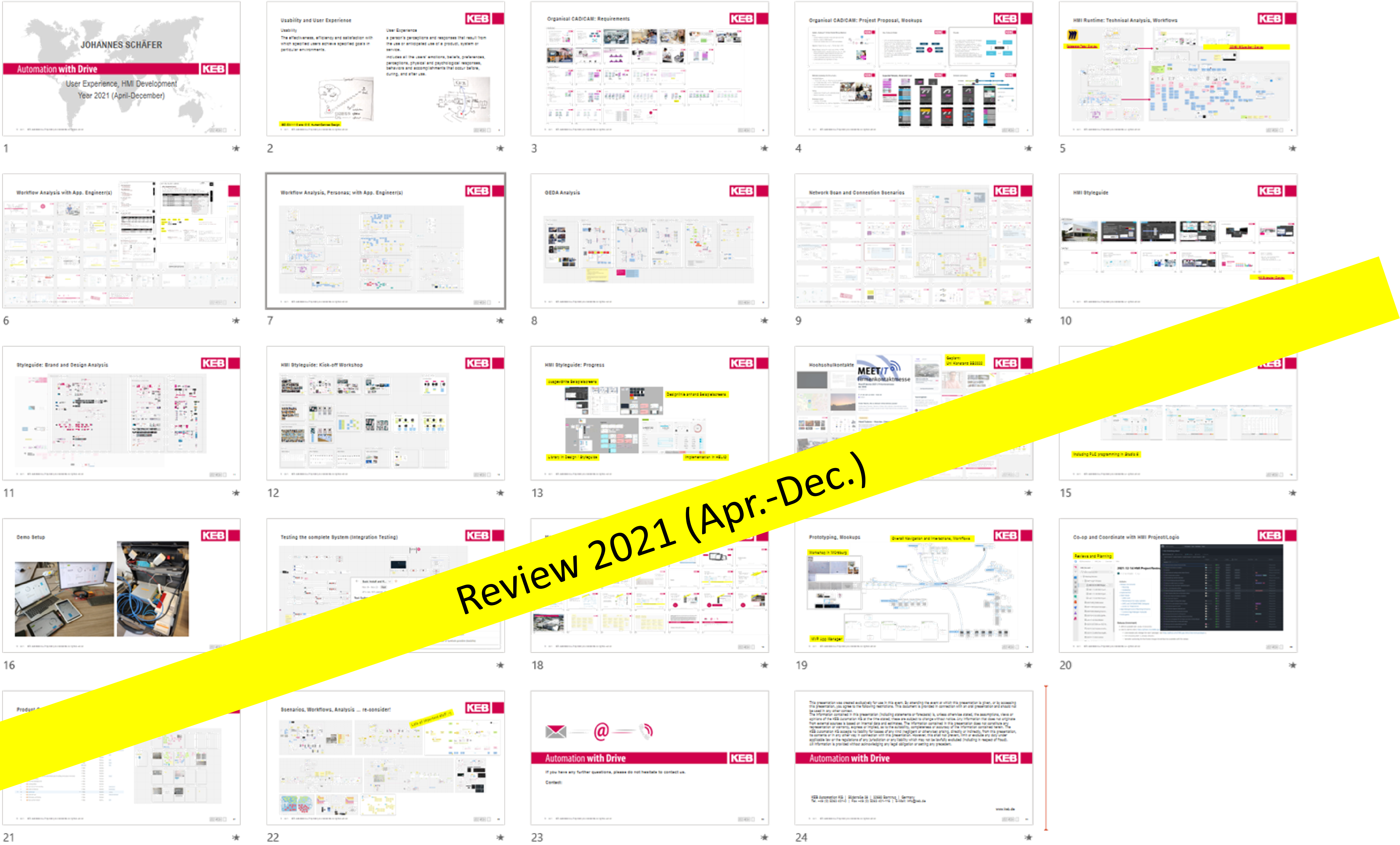
_Business form GmbH

_Location Würzburg DE

_17 Team Members

Pieces
79pc
00:01:49 min
63%
-2

[HMI Project (hmi-project.com)](https://hmi-project.com)



Review 2021 (Apr.-Dec.)

1 JOHANNES SCHÄFER
Automation with Drive
User Experience, HMI Development
Year 2021 (April-December)

2 Usability and User Experience

3 Organisal CAD/CAM: Requirements

4 Organisal CAD/CAM: Project Proposal, Mockups

5 HMI Runtime: Technical Analysis, Workflows

6 Workflow Analysis with App. Engineer(s)

7 Workflow Analysis, Personas; with App. Engineer(s)

8 GEDA Analysis

9 Network Scan and Connection Scenarios

10 HMI Styleguide

11 Styleguide: Brand and Design Analysis

12 HMI Styleguide: Kick-off Workshop

13 HMI Styleguide: Progress

14 Hochschulkontakte

16 Demo Setup

17 Testing the complete System (Integration Testing)

19 Prototyping, Mockups

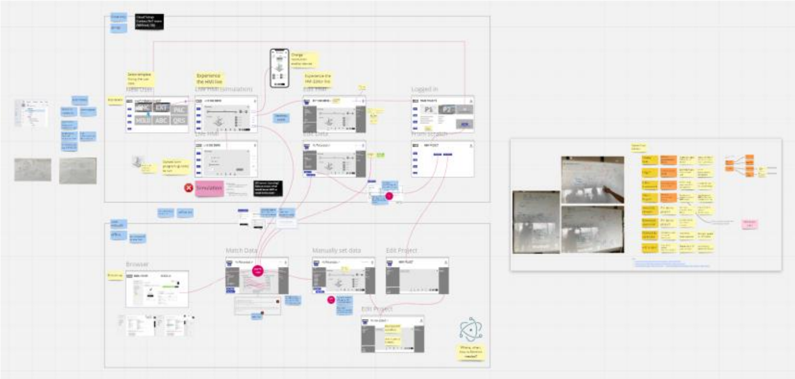
20 Co-op and Coordinate with HMI Project/Logic

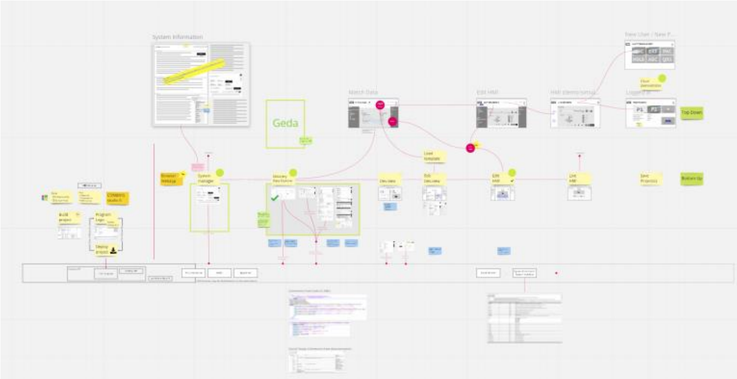
22 Scenarios, Workflows, Analysis ... re-consider!

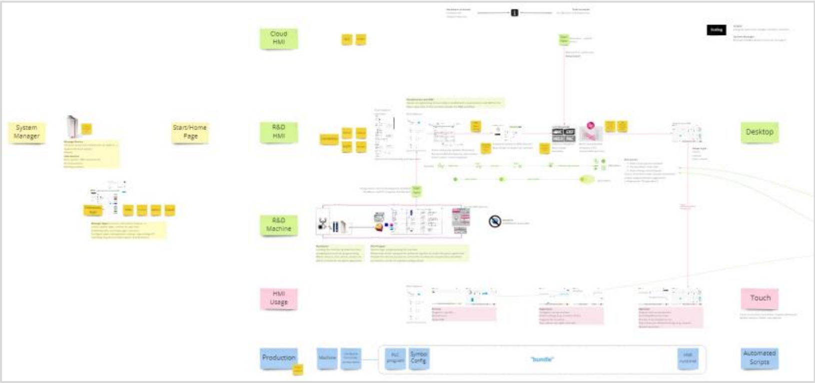
23 Automation with Drive

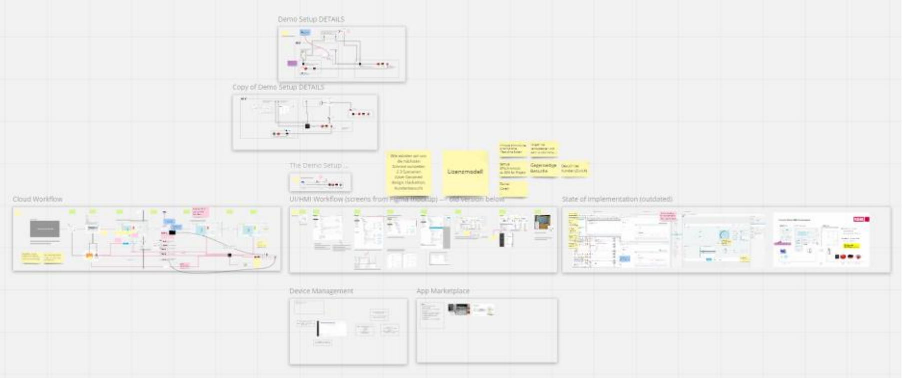
24 Automation with Drive

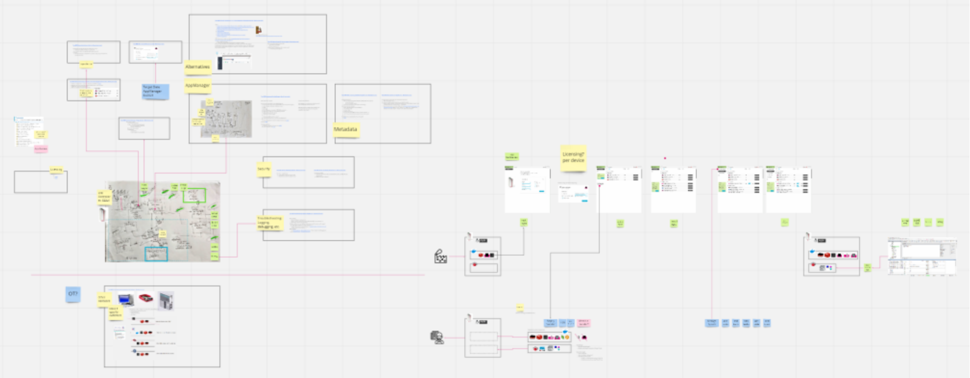
UR + Analysis

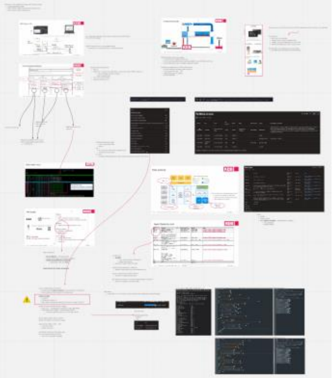

Match Data
Manually set data
Edit Project
Browser
Logged in


System Information
Geda
Match Data
Edit HMI

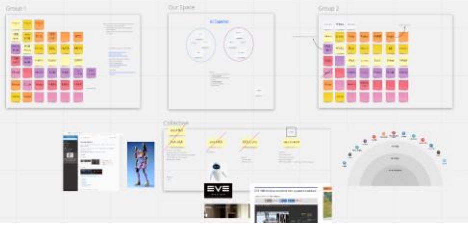

Cloud HMI
System Manager
Start/Home Page
R&D HMI
R&D Machine
Desktop
HMI Usage
Touch
Production
Machine
"bundle"
Automated Scripts

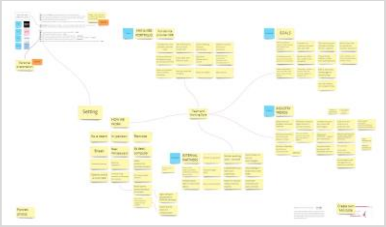

Demo Setup DETAILS
Copy of Demo Setup DETAILS
The Demo Setup
Lizenzmodell
Cloud Workflow
State of implementation (outdated)
Device Management
App Marketplace

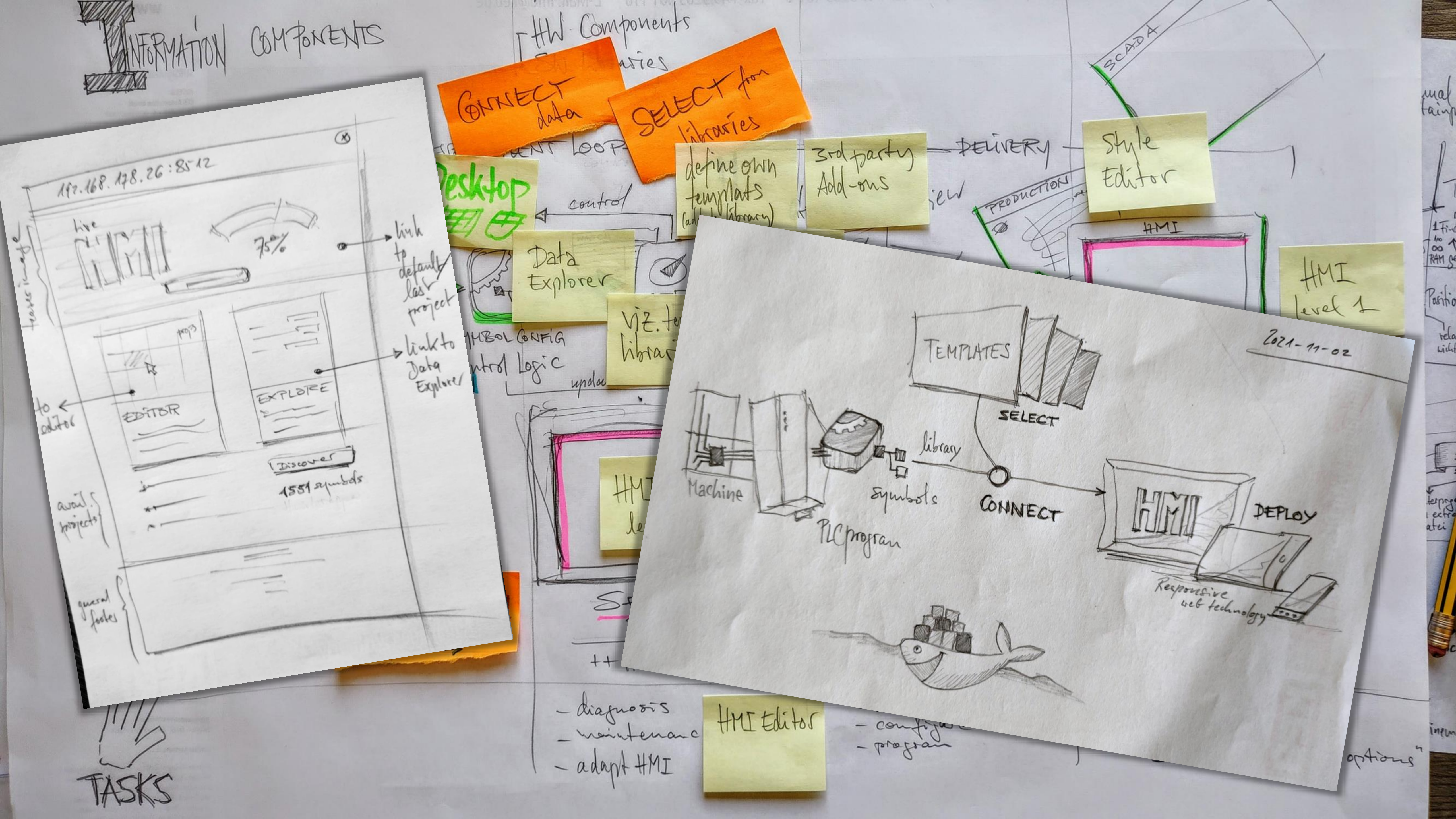

Alternatives
Metadata



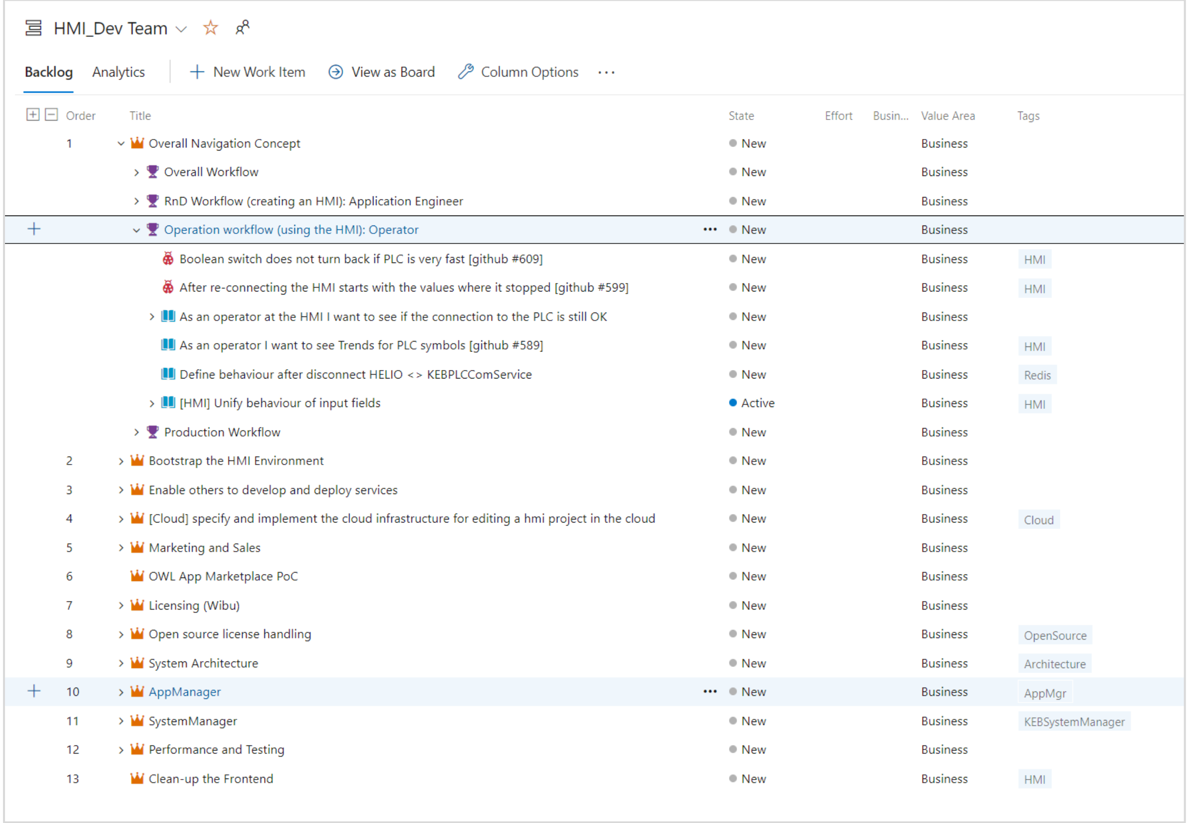
Value Proposition Canvas


Group 1
Our Space
Group 2
EVE




INFORMATION COMPONENTS
HW Components
libraries
CONNECT data
SELECT from libraries
Desktop
define own templats (add to library)
3rd party Add-ons
DELIVERY
Style Editor
SCADA
PRODUCTION
HMI
HMI level 1
control
Data Explorer
VIZ. te… librar…
SYMBOL CONFIG
…ntrol Logic
update
HMI le…
192.168.178.26:8512
live HMI
75%
link to default last project
link to Data Explorer
to editor
EDITOR
EXPLORE
Discover
1551 symbols
teaser image
avail. projects
general footer
2021-11-02
TEMPLATES
SELECT
Machine
PLC program
library
symbols
CONNECT
HMI
DEPLOY
Responsive web technology
diagnosis
maintenance
adapt HMI
HMI Editor
configure
program
options
TASKS

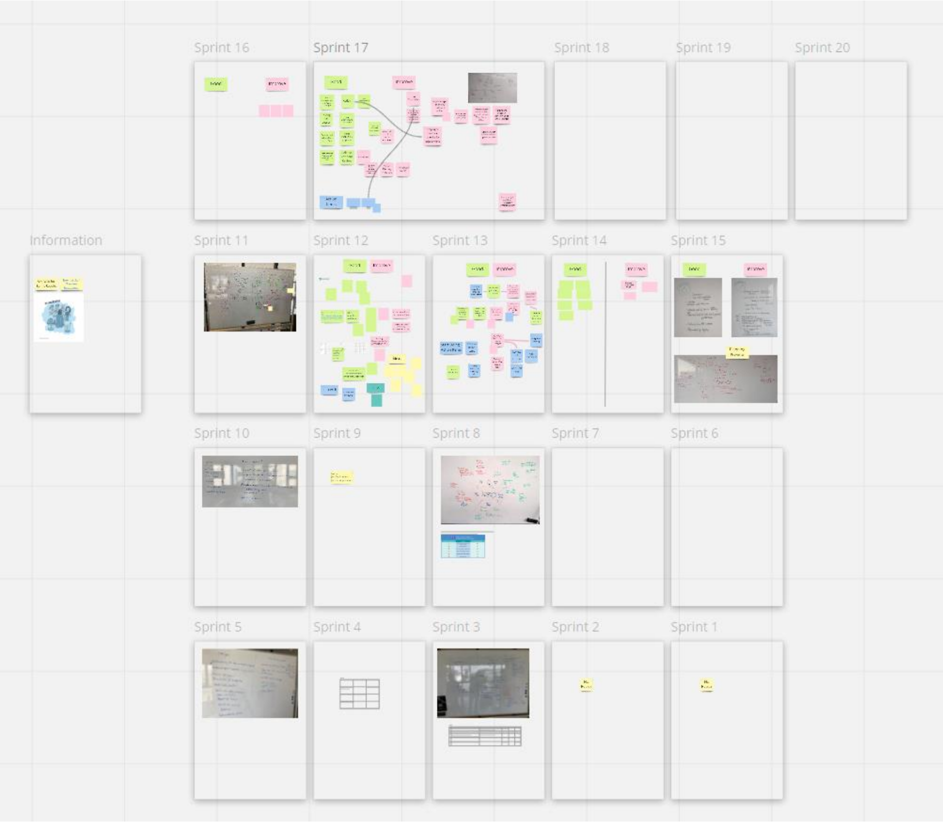
PO + SM



HMI_Dev Team

Backlog
Analytics
New Work Item
View as Board
Column Options

Order	Title	State	Effort	Busin...	Value Area	Tags
1	Overall Navigation Concept	New			Business	
	Overall Workflow	New			Business	
	RnD Workflow (creating an HMI): Application Engineer	New			Business	
	Operation workflow (using the HMI): Operator	New			Business	
	Boolean switch does not turn back if PLC is very fast [github #609]	New			Business	HMI
	After re-connecting the HMI starts with the values where it stopped [github #599]	New			Business	HMI
	As an operator at the HMI I want to see if the connection to the PLC is still OK	New			Business	
	As an operator I want to see Trends for PLC symbols [github #589]	New			Business	HMI
	Define behaviour after disconnect HELIO <> KEBPLCComService	New			Business	Redis
	[HMI] Unify behaviour of input fields	Active			Business	HMI
	Production Workflow	New			Business	
2	Bootstrap the HMI Environment	New			Business	
3	Enable others to develop and deploy services	New			Business	
4	[Cloud] specify and implement the cloud infrastructure for editing a hmi project in the cloud	New			Business	Cloud
5	Marketing and Sales	New			Business	
6	OWL App Marketplace PoC	New			Business	
7	Licensing (Wibu)	New			Business	
8	Open source license handling	New			Business	OpenSource
9	System Architecture	New			Business	Architecture
10	AppManager	New			Business	AppMgr
11	SystemManager	New			Business	KEBSystemManager
12	Performance and Testing	New			Business	
13	Clean-up the Frontend	New			Business	HMI

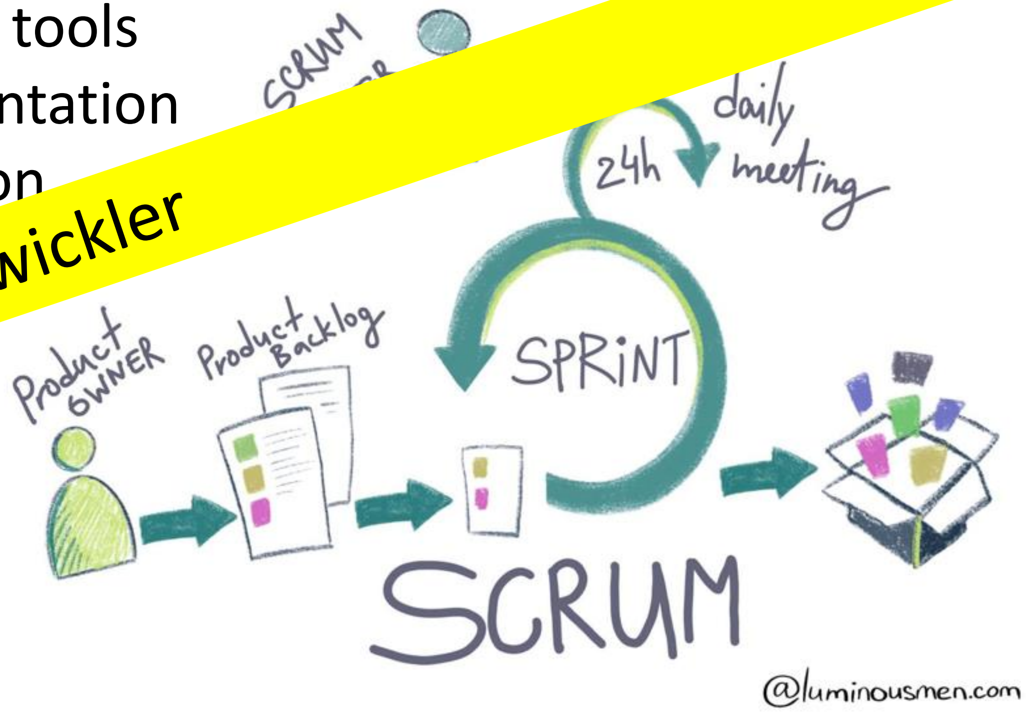


Sprint 16
Sprint 17
Sprint 18
Sprint 19
Sprint 20
Information
Sprint 11
Sprint 12
Sprint 13
Sprint 14
Sprint 15
Sprint 10
Sprint 9
Sprint 8
Sprint 7
Sprint 6
Sprint 5
Sprint 4
Sprint 3
Sprint 2
Sprint 1

Agile

Individuals and interactions over processes and tools
Working software over comprehensive documentation
Customer collaboration over contract negotiation
Responding to change over following a pla

Informatik: Entwickler


SCRUM
daily meeting
24h
Product OWNER
Product Backlog
SPRINT
SCRUM
@luminousmen.com

https://agilemanifesto.org/
https://luminousmen.com/post/11-steps-of-scrum

Scrum Master

Psychologie: UX + Scrum Master

The Scrum Master is accountable for establishing Scrum as defined in [illegible] Guide. They do this by helping everyone understand Scrum [illegible] practice, both within the Scrum Team and the organization [illegible]

The Scrum Master is accountable [illegible] Team’s effectiveness. They do this by enabling the Scrum [illegible] its practices, within the Scrum framework.

[illegible] sters are true leaders who serve the Scrum Team and the larger [illegible]ganization.

https://scrumguides.org/

Links

https://www.interaction-design.org/
https://99percentinvisible.org/article/norman-doors-dont-know-whether-push-pull-blame-design/

ISO 9241

Contact

johannes.schaefer@keb.de

UX
Emotional Design
LEVELS OF EMOTION
Visceral
Behavioral
Reflective

ISO 9241