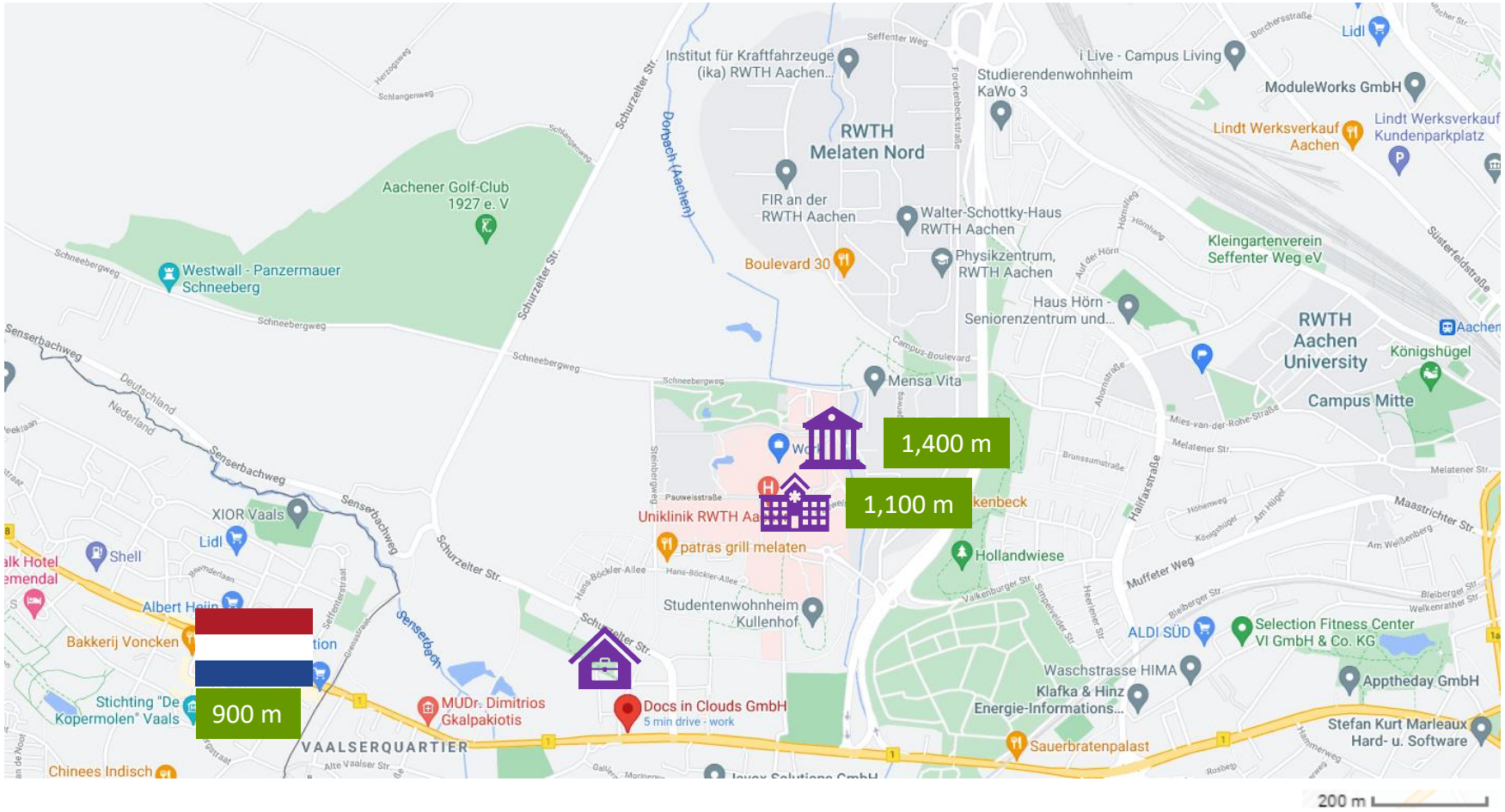
UNIKLINIK RWTH AACHEN
Department of Anaesthesiology

ACUTE.CARE INNOVATION.HUB

Technical Innovations

in Acute Care

Location



1,400 m
1,100 m
900 m
RWTH Melaten Nord
Institut für Kraftfahrzeuge (ika) RWTH Aachen...
Studierendenwohnheim KaWo 3
i Live - Campus Living
ModuleWorks GmbH
Lindt Werksverkauf Aachen
Lindt Werksverkauf Kundenparkplatz
Aachener Golf-Club 1927 e. V
FIR an der RWTH Aachen
Walter-Schottky-Haus RWTH Aachen
Boulevard 30
Physikzentrum, RWTH Aachen
Kleingartenverein Seffenter Weg eV
Westwall - Panzermauer Schneeberg
Haus Hörn - Seniorenzentrum und...
RWTH Aachen University
Königshügel
Campus Mitte
Mensa Vita
Uniklinik RWTH Aa
patras grill melaten
Hollandwiese
XIOR Vaals
Lidl
Shell
Albert Heijn
Bakkerij Voncken
Studentenwohnheim Kullenhof
ALDI SÜD
Selection Fitness Center VI GmbH & Co. KG
Waschstrasse HIMA
Klafka & Hinz Energie-Informations...
Appteday GmbH
Stichting "De Kopermolen" Vaals
MUDr. Dimitrios Gkalpakiotis
Docs in Clouds GmbH
5 min drive - work
Sauerbratenpalast
Stefan Kurt Marleaux Hard- u. Software
VAALSERQUARTIER
Chinees Indisch
200 m

Management board

Head of Acute.Care Innovation.Hub

Prof. Dr. med. Dr. rer. nat. Michael Czaplik

Senior physician

Deputy Head Acute.Care Innovation.Hub

Dr. med. Andreas Follmann, MHBA

Senior physician

Senior Engineer

Dr.-Ing. Carina Barbosa Pereira

Engineer for biomedical technology

Our team

Alexander Kube
Sr.-Developer
Project Manager
Business
Development
Oberingenieurin
Michael Czaplik
CEO, Founder
Sektionsleiter
Follmann
Stellv.
Sektionsleiter
Henriette
Dohmeier
Wiss. Mitarbeiterin
Franziska
Schollemann
Wiss. Mitarbeiterin
Pauline
Weismann
Wiss. Mitarbeiterin
Andrea Arnolds
Techn. Angestellte
Benedikt Hürter
Developer
Lilian Pye
Assistenz der
Geschäftsführung
Lucas Mösch
Developer
Wiss. Mitarbeiter
Irena Damjanic
Frontoffice
Alexander
Gromow
Wiss. Mitarbeiter
Tobias Imhof
Wiss. Mitarbeiter
Verena Voigt
Wiss. Mitarbeiterin
Milos Bogovac
Wiss. Mitarbeiter
Sarah Tan
Wiss. Mitarbeiterin
Jana Barth
Public Relations
Werkstudentin
Karina Schmunk
Developerin
Marian Ohligs
Sr.-Developer, DSB
Wiss. Mitarbeiter
Janosch Kunczik
Sr.-Developer, QMB
Wiss. Mitarbeiter
Sina Kittlaus
Wiss. Hilfskraft
Lukas Marschall
Wiss. Hilfskraft
Yasemin Capraz
Wiss. Hilfskraft
Jascha
Matuszczyk
Wiss. Hilfskraft
Mayra Elwes
Wiss. Hilfskraft
Amelie Dittmann
Werkstudentin
Felix Burkhardt
Developer
Jonas Roth
Developer
Wiss. Mitarbeiter
Diana Pokee
Wiss. Mitarbeiterin
Backoffice
Kerstin
Hubbermann
Wiss. Mitarbeiterin
Aleksandar
Timanov
Wiss. Hilfskraft
Jan Wienhold
Wiss. Hilfskraft
Eva Schliebusch
Wiss. Hilfskraft

UNIKLINIK RWTH AACHEN

Dep. of Anaesthesiology
with the sections

- Anaesthesia
- Emergency and disaster medicine
- Pain therapy

ACUTE.CARE INNOVATION.HUB

> 22,000
Aneasthesias per year

Emergency physicians
Staff and supervision

Tele-emergency physicians
Staff and supervision

27,000 m²
Largest hospital building in Europe

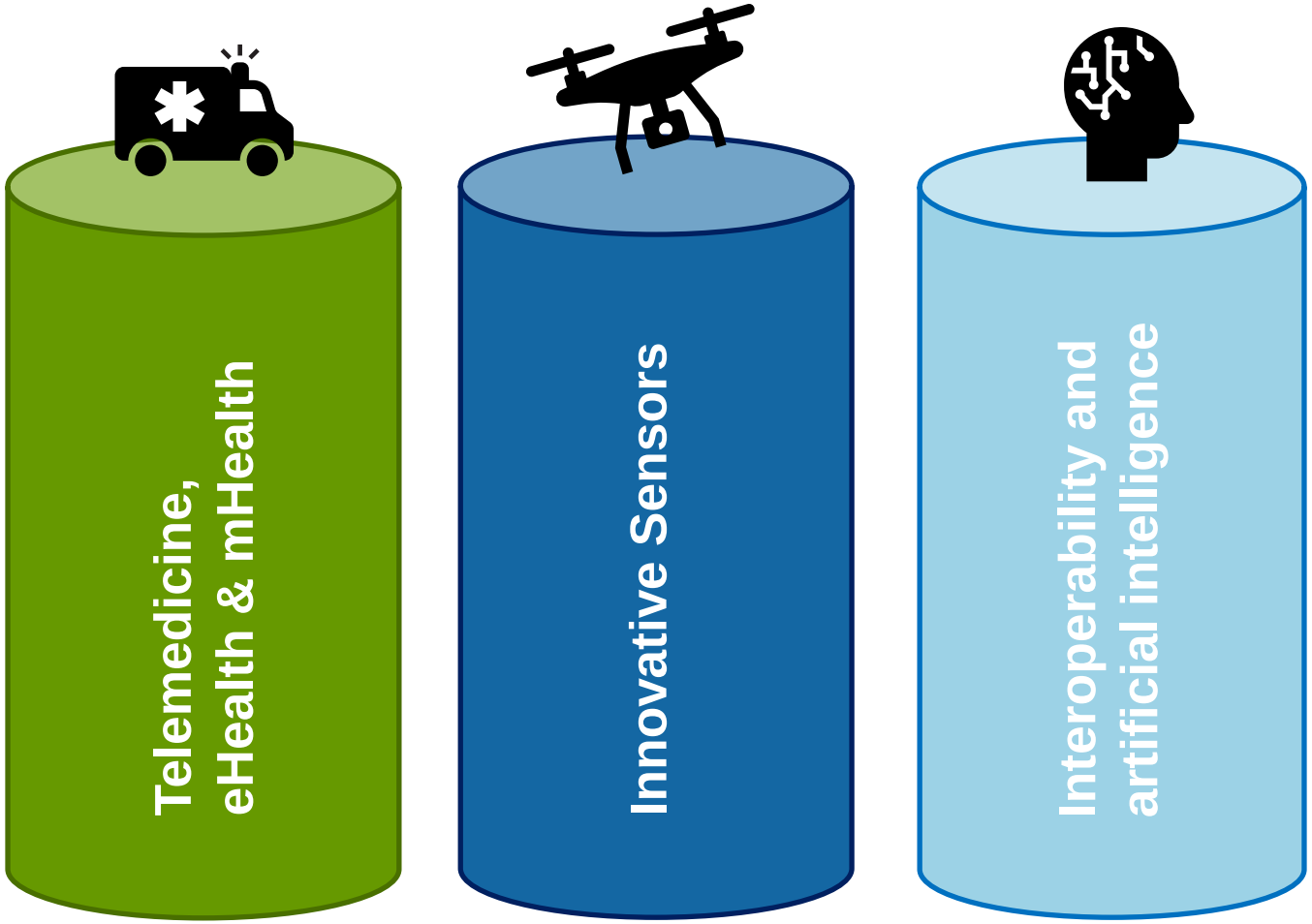
34
Specialty Clinics

7,000
Employees

>230,000
Patients per year

Project partner

Research focus



OR.NET e.V.
OR.NET e.V. brings together players from industry, hospitals and research to jointly realize the openly networked operating room of the future.

Introduction of the Acute.Care Innovation.Hub / ORNET team

Prof. Dr. med. Dr. rer. nat. Michael Czaplik

ORNET Executive Board Member
Head of „Medical Board“

Senior Physician

Dr. med. Verena Voigt

Medical Board Member
Project Manager „PriMed“

Consultant anaesthesiology

Jonas Roth, M.Sc., M.Sc.

Project Manager „PriMed“

Front-/Backend developer

Dr. rer. medic. Marian Ohligs

Project Manager
OR.NET insider since 6+ yrs.

Sina Kittlaus

Medical Assistance

Muhammad Waqar, B.Sc.

Developer

Aleksandar Timanov, B.Sc.

Developer

Frontend developer

Dr.-Ing. Marcus Köny

ORNET Executive Board Member
Head of „Demonstrators und simulators“

External consultant, Ilara GmbH

More than 13 years of work on interoperability

smartOR
Innovative communication and network architectures for the modular adaptable integrated operating room of the future

OR.NET Verein
Aim of the dissemination of the SDC standard

MoVE
Modular Validation Environment for Medical Device Networks

PriMed
Process optimization through integrated medical devices in the operating room and clinic

OR.NET
Secure dynamic networking in operating room and clinic

Leitwarte
Secure dynamic networking in operating room and clinic

SDC Standard
IEEE 11073 Service-oriented Device Connectivity (SDC)
Communication protocol for medical devices

„Medical Research @ DCC“

- **Office and showroom “Smart Health Unit” at „Digital Capability Center“**
  Vaalser Straße 460, Aachen, Germany
- Close collaboration with our spinoff companies
  Docs in Clouds GmbH and Ilara GmbH

DocsinClouds

Supervision by a clinical expert from remote („tele supervision“)

ILARA MEDICAL SOFTWARE SOLUTIONS

Official provider of the ORNET VPN
(for SDC plug-a-thons)

DocsinClouds
Telemedical Service und Assistance

STIEGELMEYER

PHILIPS

LANCOM
Systems

medisana

STEPHAN

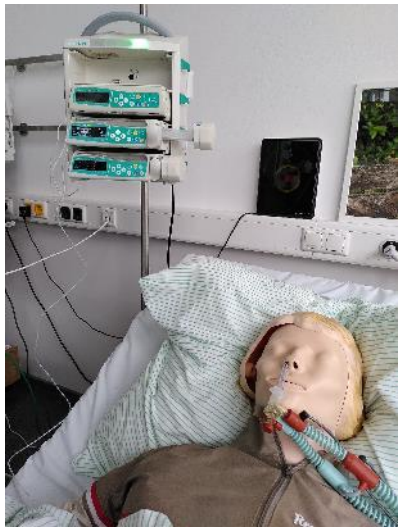
B|BRAUN

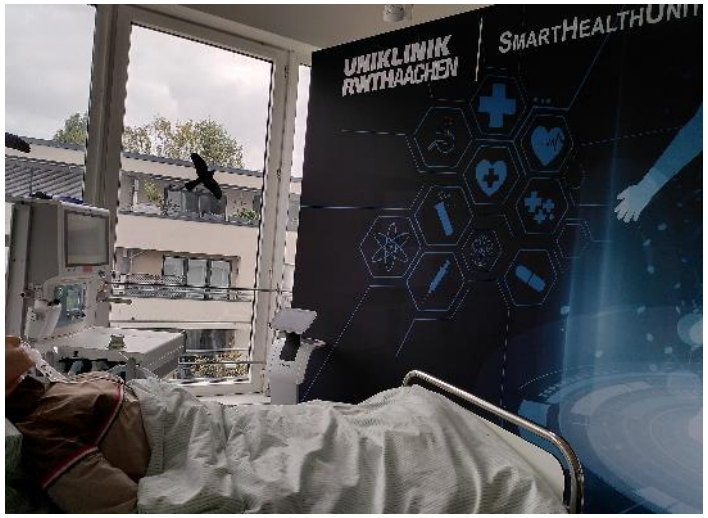
Dräger

ILARA

iMDsoft

Anaesthesia workplace / ICU demonstrator





ACUTE.CARE INNOVATION.HUB

UNIKLINIK RWTH AACHEN
Department of Anaesthesiology

ACUTE.CARE INNOVATION.HUB

SDC with regard to anesthesiology: Our thoughts and visions

Our culture – this is the way we are co-working

Technical specification and mockups

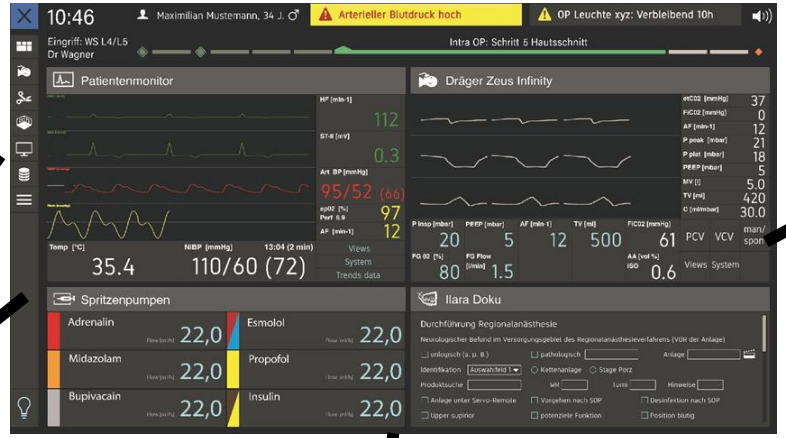
Clinic:
Requirement analysis

Industrial design and software development

SDC Connectivity in our Smart Health Unit

patient monitors

Connector



Connector

ventilator

syringe pumps

Connector

PDMS

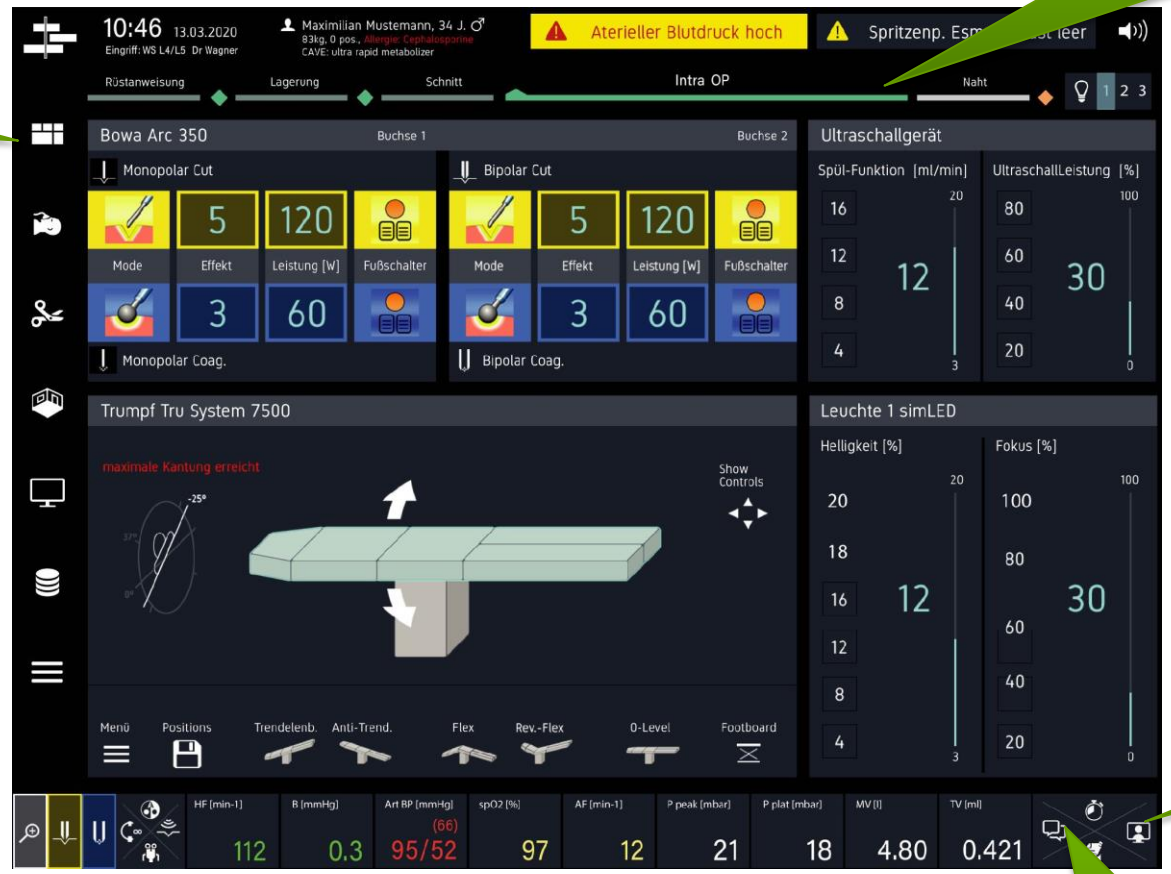
SDC

anesthesia machine

X-Workstation (cockpit)

Increased efficiency through workflow optimization

Function groups



Tele-Supervision

Chat

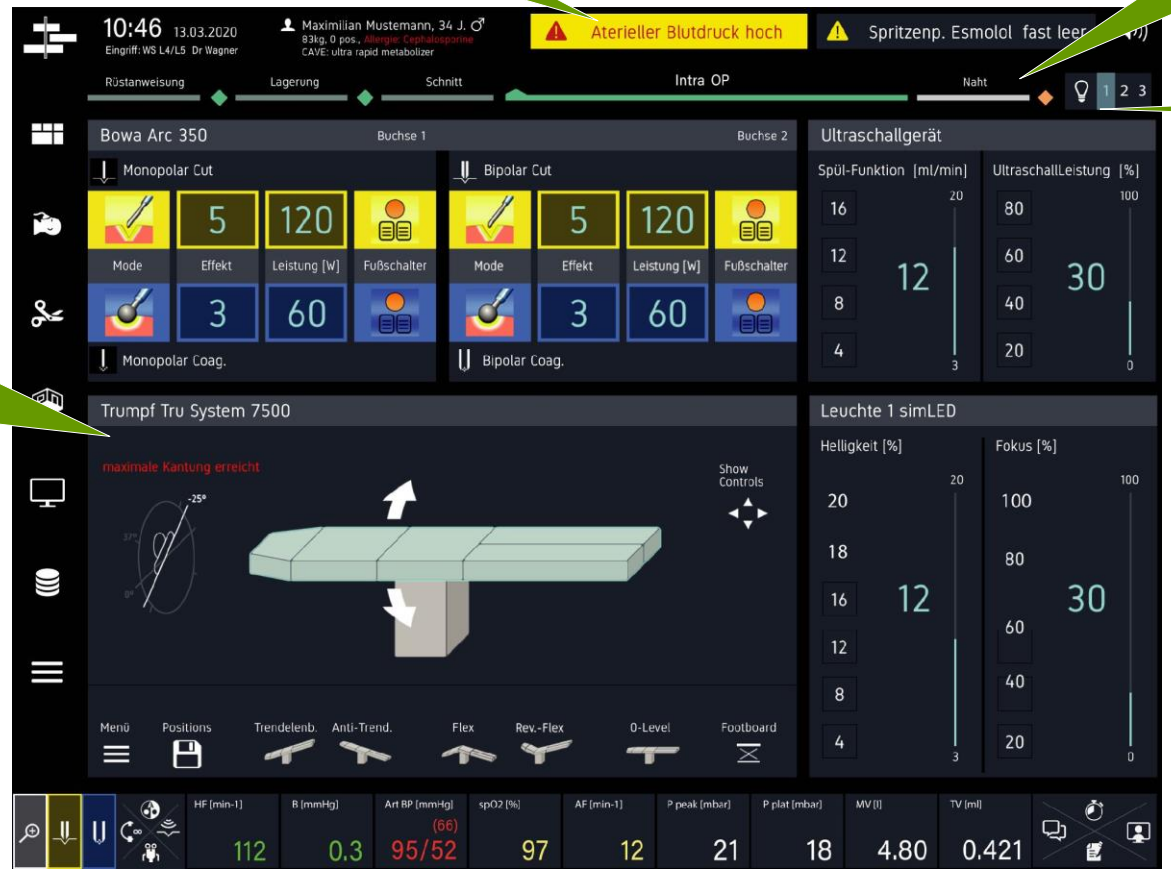
X-Workstation (cockpit)

Centralized intelligent alarms

SOP-Integration

Assistance systems

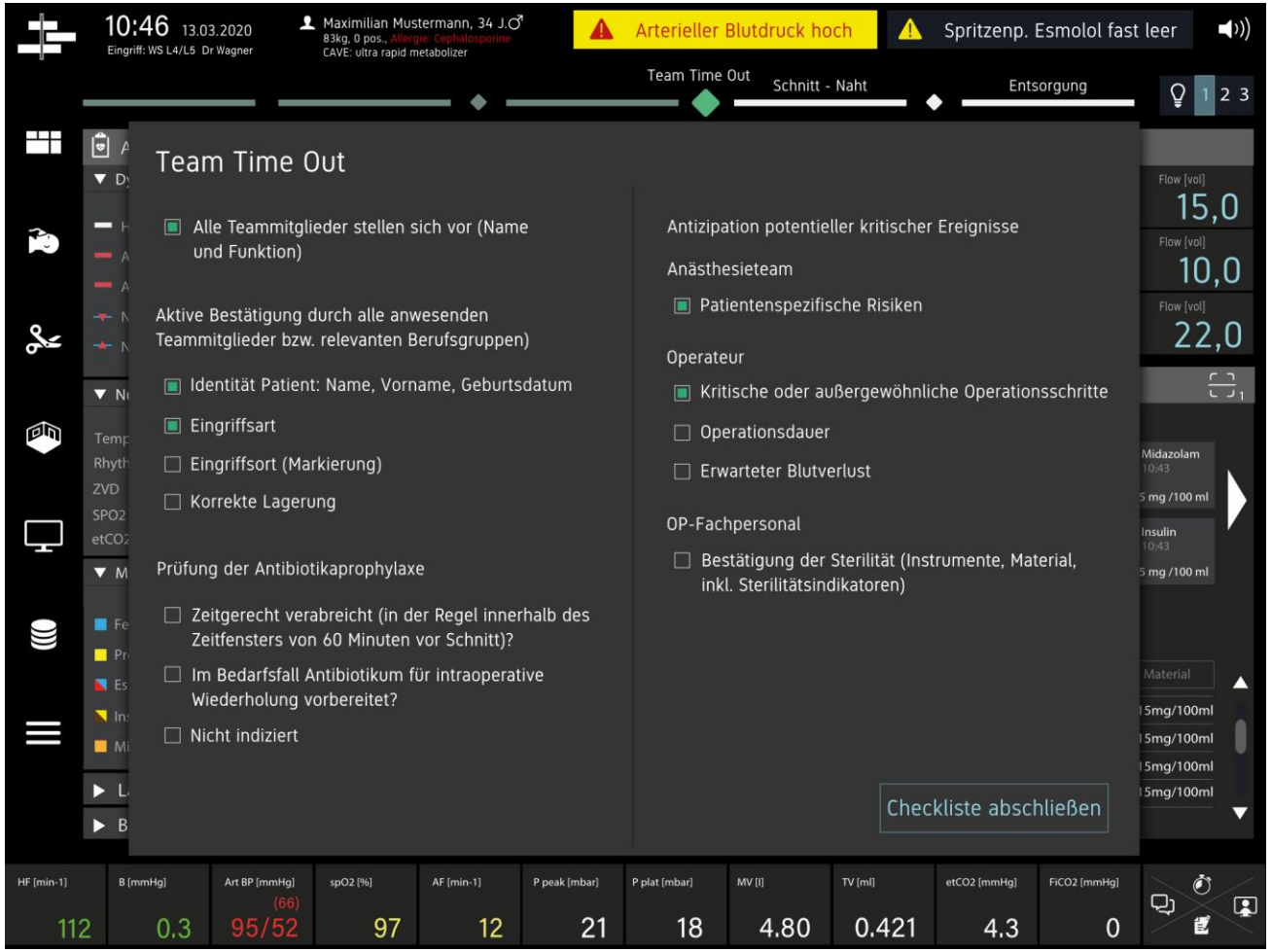
Uniform and modern human-machine interfaces "Generic device FE"



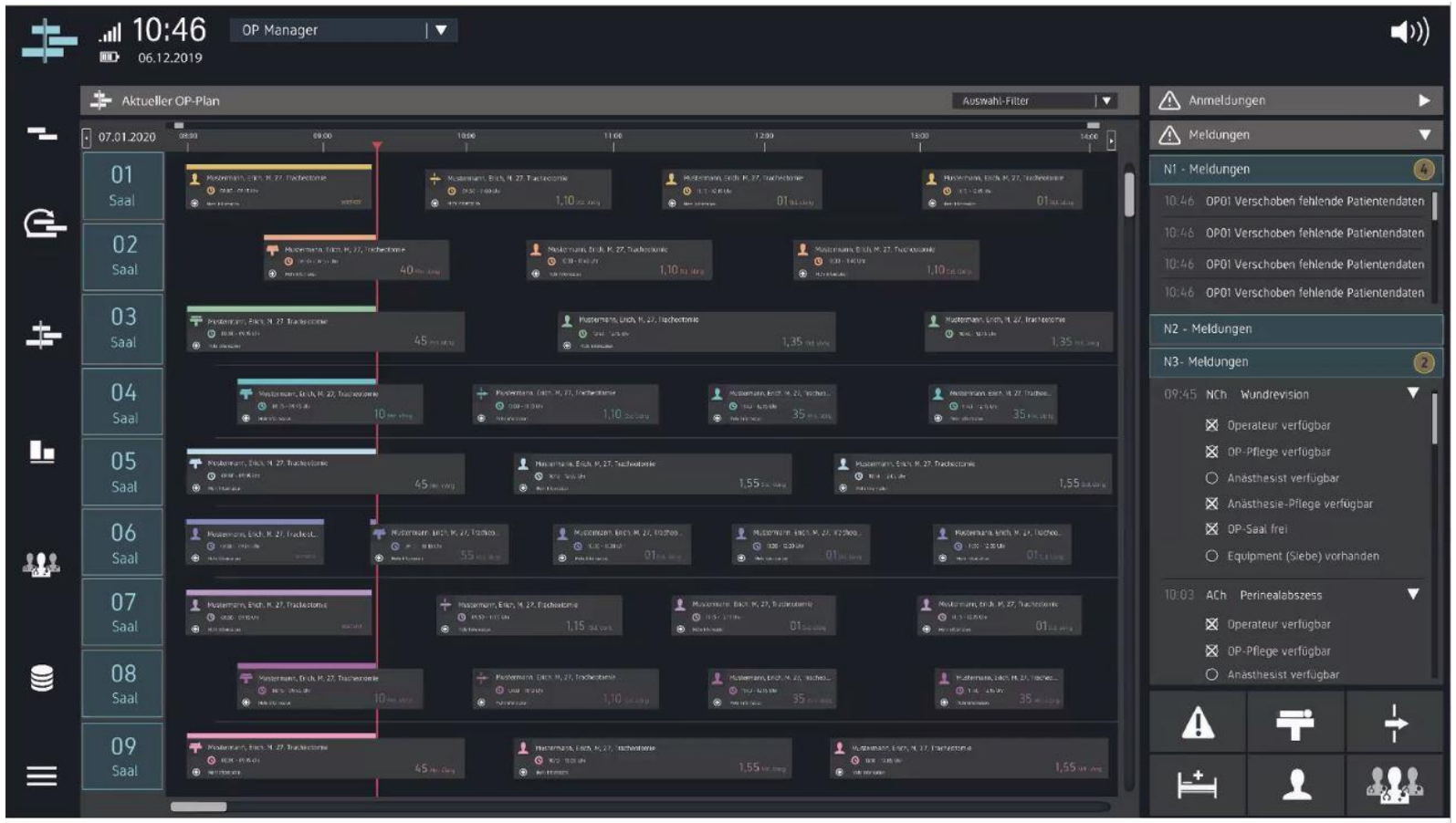
AR-based personal assistance

- Process optimization
- Integration of process instructions / SOPs
- Checklists
- Improvement of guideline adherence

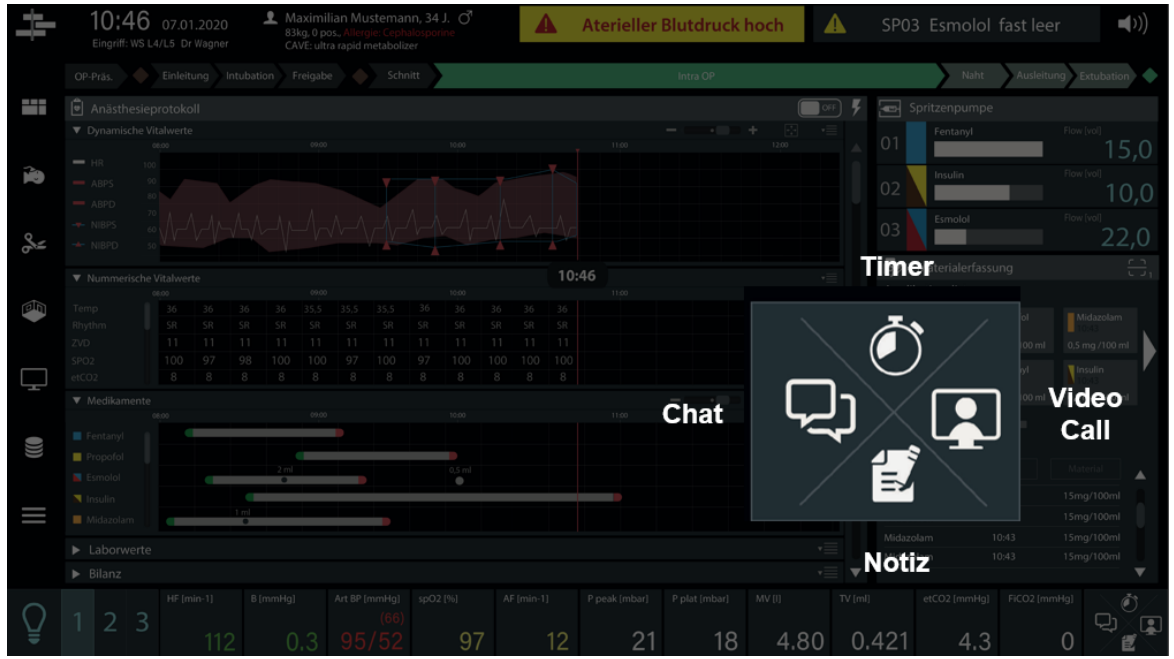
Integration of checklists and SOPs



OR-Management



Tele supervision



Video call selection option for supervision from the anesthesiologist's perspective

Supervision view of the senior physician

Specialized dashboards e.g. for PACU

Decision support through color-coded relocation criteria

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