Technical Innovations
in Acute Care
Location

[Map with distances indicated]

- 900 m
- 1,100 m
- 1,400 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
27,000 m²
Largest hospital building in Europe

34
Specialty Clinics

7,000
Employees

>230,000
Patients per year

Dep. of Anaesthesiology
with the sections
• Anaesthesia
• Emergency and disaster medicine
• Pain therapy

>22,000
Aneasthesias per year

Emergency physicians
Staff and supervision

Tele-emergency physicians
Staff and supervision

ACUTE.CARE INNOVATION.HUB
Project partner
Research focus

- Telemedicine, eHealth & mHealth
- Innovative Sensors
- Interoperability and artificial intelligence
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 e.V.
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

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

Official provider of the ORNET VPN (for SDC plug-a-thons)
Anaesthesia workplace / ICU demonstrator
SDC with regard to anesthesiology: Our thoughts and visions
Our culture – this is the way we are co-working
SDC Connectivity in our Smart Health Unit

- Patient monitors
- Syringe pumps
- PDMS
- SDC
- Connector
- Ventilator
- Anesthesia machine
X-Workstation (cockpit)

Function groups

Increased efficiency through workflow optimization

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