DIGITAL BY DESIGN. FOR BETTER HEALTHCARE.

DIGITAL. VON GRUND AUF. FÜR EINE BESSERE GESUNDHEITSVERSORGUNG.

The digital strategy of Lausitz Medical University – Carl Thiem

CONTENTS

1 Introduction
Why a digital strategy? 4

2 Initial basis
An analysis of the operational framework 10

3 The vision for digitalizing
Lausitz Medical University – Carl Thiem 14

4 Differentiation area #1
Lausitz as a model region for digital
healthcare in Germany 18

5 Differentiation area #2
The innovation space for digital technologies
in the healthcare sector in Germany 25

6 Action area #1
Digitalization for better
patient care on the core campus 32

7 Action area #2
Digitalization in the field of research –
key focus area and critical success factor 36

8 Action area #3
Structuring the teaching – with a consistent digital
approach 41

9 Action area #4
Digitalizing administration processes
for greater efficiency 45

10 Action area #5
A capable and secure IT infrastructure 48

11 Execution skills as a foundation
for implementing the digital strategy 53

12 An outlook
Road map to 2030 57

WHY A DIGITAL STRATEGY?
Introduction

1

Digitalization is a key concept for Lausitz Medical University – Carl Thiem (MUL – CT), shaping both its mission and its structure. Founded in July 2024, MUL – CT is Brandenburg's first state university medical center and the newest of its kind in Germany. Given an investment volume of 3.7 billion euros and the unique challenge associated with structural change in the former lignite mining area of Lausitz, it must demonstrate its capacity to deliver for the people in the region and the state of Brandenburg in the coming years and achieve greater relevance in the national competition involving the field of health sciences. Digitalization will play a pivotal role here. From the ground up, it is part of the core concept of MUL – CT. It is the only university medical center in Germany to have a distinct digitalization division embedded in the management board. Other responsibilities include defining the research focus area concerned with digitalizing the healthcare sector in line with Brandenburg's University Medical Center Act. MUL – CT has the task of developing new, data-based care models and acting as the focal point for a digitally supported network of players in the health and care sector in Lausitz as a model region for healthcare. This is linked to the ambition of enabling proven models to serve as a blueprint for regions with similar challenges.

These tasks alone show just how important the subject of digitalization is to MUL – CT. Digitalization is an integral part of MUL – CT's overall strategy and will be a critical success factor in achieving a successful transformation across all four of its pillars: research, teaching, patient care, and the task of establishing and developing Lausitz as a model region for healthcare. In short, MUL – CT is digital by design. Therein lies its unique opportunity to be different and play a particularly important role in the national healthcare sector.

In order to embrace this role, MUL – CT is summarizing the direction of development for digitalization in its own digital strategy. Given the considerable number of goals and scarce resources, the strategy sets out the guidelines for defining the key priorities for MUL – CT's long-term structure. At the same time, in close alignment with MUL – CT's overall strategic considerations, the digital strategy defines its relationship to the overall strategy and its contribution to the general development of MUL – CT. The aim is to use the digital strategy to help differentiate and position MUL – CT in the long term as well as support the establishment and development of all areas of activity.

The digital strategy builds on extensive preliminary work. In the years before MUL – CT was even established, the foundations were swiftly laid to enable the successful structuring of the digitalization concept on an ongoing basis. The work already underway to turn the Carl Thiem hospital into a Digital Lead Hospital and the development of the Data Integration Center (DIZ) are but two particularly outstanding initiatives mentioned here. The digital strategy represents a continuation of this preliminary work. Based on the German Science and Humanities Council's statement and the university's act of foundation, however, the framework for the digitalization projects is now broader: The mandate is more comprehensive, the competitive environment is more complex, and the bar has ambitiously been further raised.

The digital strategy is aimed at decision-makers in the political sphere and wider society, the internal managers of MUL – CT, and interested members of the public. We measure the success of digitalization in terms of its contribution to improving healthcare for people in the region and on the basis of the maturity of technological development. In the area of digitalization at MUL – CT, we want to keep on working hard to achieve the long-term strategic goals while remaining mindful of the organization's need to take action in the short and medium term. The task of implementing the prioritized projects and achieving concrete, measurable results must go hand in hand with the ongoing work on the strategic agenda. In order to meet this objective, the strategy encompasses two levels: On the one hand, it formulates a long-term vision for digital development at MUL – CT and the associated differentiating features, but it also identifies action areas for operationalization with concrete projects, including measurable milestones and key performance indicators (see the overview on page 7). These are highlighted in correspondingly marked text blocks and summarized at the end in the form of a road map to 2030. The operational goals are subject to constant review, as is the regular analysis of the initial situation. The digital transformation process is rapid and the innovation cycles are short. Continuously learning as an organization, specifically adapting our measures to changing circumstances, and determinedly working to realize our long-term vision become success factors in their own right. This strategy paper marks the starting point in this regard.

MUL – CT is about to undergo a comprehensive digital transformation – and will also play a key role in shaping this transformation for the German healthcare sector. It will only be possible to implement the numerous associated projects by drawing on strong execution skills. A separate chapter in this strategy explains how these key strategic resources are established and developed. In doing so, it becomes clear that this project can only succeed due to our well-qualified and motivated experts within the organization and our affiliated partners in the world of politics and the business community.

Martin Peuker
Chief Digital Officer

Prof. Eckhard Nagel
Chairman and Chief Patient Care Officer

Prof. Ulrike Gutheil
Founding Board Member, University Structures

Dr. Alexander Hewer
Chief Commercial Officer

Prof. Adelheid Kuhlmey
Chief Scientific Officer, Founding Board Member

Andrea Stewig-Nitschke
Chief Nursing Officer

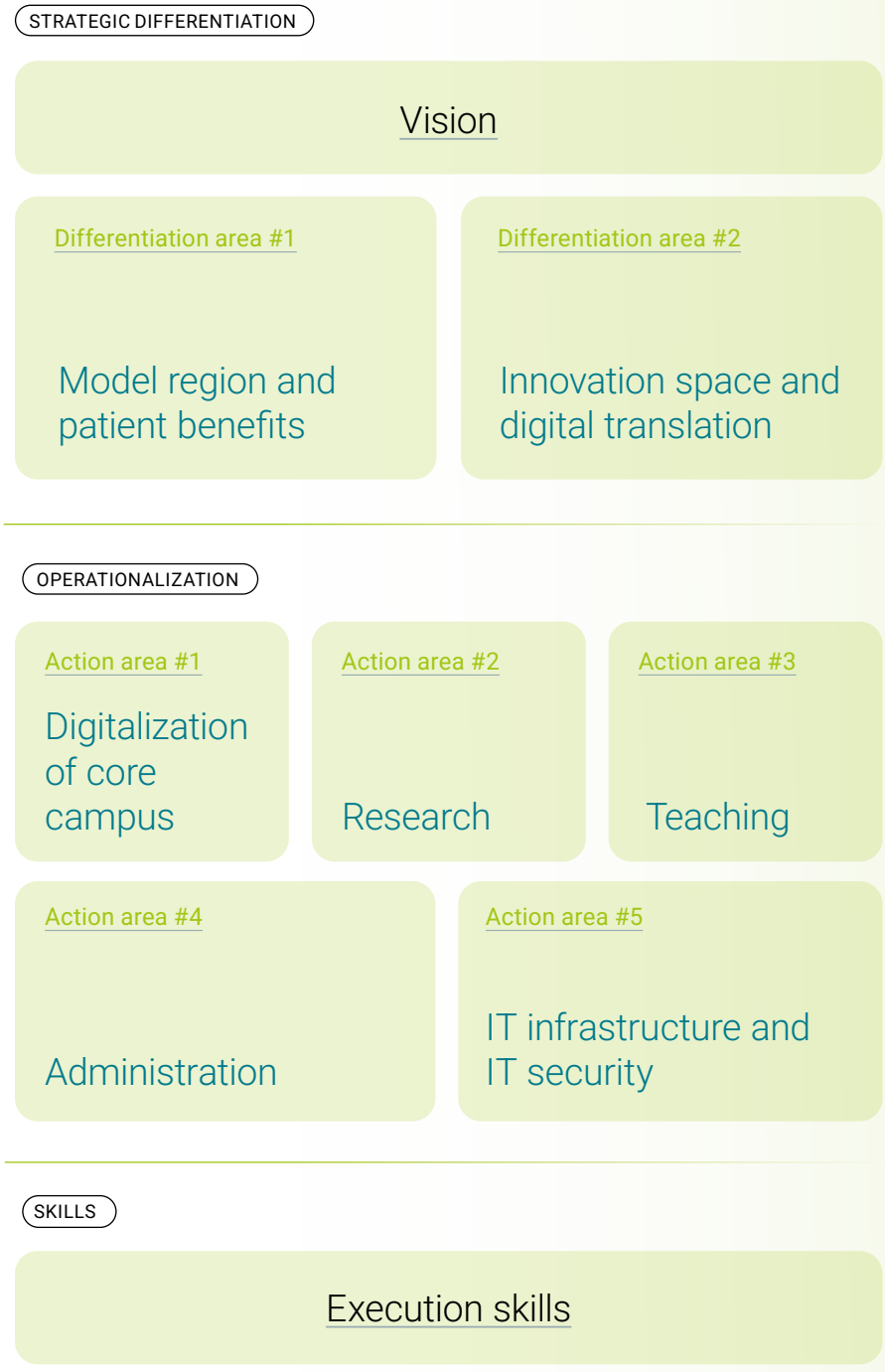


Figure 1: An overview of the digital strategy

OUR MISSION STATEMENT

Digital by design.
For better healthcare.

Digital by design
for better healthcare.

OUR VISION

1. We are embracing digitalization to shape the healthcare of tomorrow.

2. We are using digitalization to generate strong differentiation for Lausitz Medical University – Carl Thiem: regionally, nationally, and internationally.

3. We are pioneers in digital translation.

INITIAL BASIS:
An analysis of the operational framework

2

A look at the initial basis clearly reveals both the opportunities associated with prioritizing a digital strategy and the resulting limitations in terms of determining the scope for action. Structural and long-lasting factors were especially taken into account when analyzing the digital strategy's operational framework. All these considerations have as a starting point the main mission behind the founding of MUL – CT: The goals and actions of MUL – CT are very closely linked to Lausitz. In order to understand the operational framework, it is necessary to take into account the regional characteristics, developments, and conditions of Lausitz along with the needs of the people living there. As a region undergoing structural change with an aging population and a shortage of skilled workers in the healthcare sector, Lausitz is facing significant challenges. In concrete terms, this means longer journeys for the people of Lausitz to see a specialist, considerable waiting times for appointments, increasingly sparse outpatient care in rural communities, and a growing need for care and prevention services that can no longer be met with the existing structures. It is the task of MUL – CT to help shape the transformation of Lausitz with the aim of keeping the region healthy, vibrant, and socially connected.

MUL – CT currently finds itself in a setting-up phase, backed by extensive funding from the state of Brandenburg and the federal government until 2038. This initial funding facilitates the rapid establishment and development of digitalization projects and the necessary university medicine structures. At the same time, sustainable financing is needed beyond this period to secure the long-term viability of MUL – CT. This may take the form of public funds, third-party funds, cooperation with industry, and care models covered by regular funding. Preparing for this transition at an early stage is part of the strategic planning process.

The analysis of the initial situation is summarized in Figure 2 on page 13. This clearly shows that as a newly founded medical university with an ambitious mandate to shape digitalization and a strong tailwind from policymakers and wider society, there is real potential for positive effects stemming from MUL – CT's overall success. At the same time, however, it is also clear that MUL – CT – similar in nature to a start-up – is reaching the limits of a rapidly growing organization in all areas. The speed of growth (scale-up), the dynamics of the needs that have to be prioritized, the necessary adjustments to governance structures, and the expectations of external stakeholders from politics and society are all considerable. Then there are the risks when dealing with a complex and rapidly developing technology and its dependencies.

The analysis of the initial situation underlines the need for clear prioritization based on a digital strategy, with the digitalization division at MUL – CT having to perform a delicate balancing act: In the short and medium term, numerous operational issues – such as unavailable or inadequate software systems in clinical settings, insufficient interface integration, or the need to establish basic university structures – must be solved. These issues are addressed in the digital strategy in specific action areas (chapters 6–10). In the long term, it is equally of major importance to MUL – CT that digitalization makes a significant contribution when it comes to differentiation and achieving a unique position. Only then will it live up to its founding mission and fully exploit its potential, which is particularly explained in the vision and in the two differentiation areas (chapters 3–5).

The task of implementing the digital strategy presented here carries risks that must be actively managed. These especially include the availability of suitably qualified IT and digitalization specialists in Germany's tight labor market, dependence on financial support, the technical and organizational complexity associated with simultaneously implementing numerous projects during ongoing hospital operations, and the task of guaranteeing information security during the particularly sensitive transformation phase. MUL – CT is rising to these challenges with awareness and foresight. They are an integral part of the digital strategy and ongoing management activities.

The initial basis for the digital strategy

MUL – CT INTERNAL

Strengths and resources

- Strong, long-term mandate to shape digitalization – digital by design through the founding mission
- Integration model as the basis for digitalization from one single source
- Mandate for and access to the model region as the basis of an ecosystem for the task of digitalization (partner / real care situation, network)
- Prospect of good provision of financial resources
- Well-qualified employees with strong motivation
- Pooling of responsibility and resources in the management board's digitalization division
- Freedom of action due to the start-up/founding nature of the undertaking and partly greenfield situation
- Good foundations thanks to the preparatory work, especially in terms of the IT infrastructure and the organizational structure
- Established and dynamically evolving industrial partnerships

Challenges

- Task of prioritization made difficult due to high organizational complexity and simultaneity of major issues overall (including construction projects, start of studies, establishment of research infrastructure)
- Regulation of the allocated subsidies hampers growth (temporary fund allocation; fixed-term positions, among other things)
- Disconnected and non-standardized systems and processes in the clinical and non-clinical area, unavailable interfaces, siloed solutions in certain cases with no structured data exchange; gaps in the system landscape
- Internal acceptance problem when restructuring systems and infrastructure during ongoing operations
- Limited ability to implement measures due to a need for dynamic adjustment in relation to strategic priorities, decision governance, resources, and multi-project portfolio management
- Transformation from a municipal maximum care hospital to a university medical center – too little speed for the necessary structuring and restructuring measures

EXTERNAL INFLUENCING FACTORS

Opportunities

- Support from decision-makers in the political sphere and wider society for change through digitalization and the prospect of further funding
- Sense of urgency to act, a willingness to innovate, and network effects in the region due to high demand and a real willingness to embrace shared solutions
- Prospect of regulatory leeway
- Rapid development of new, digitally driven technologies (including agentic AI, data centers, cloud, platform technologies)
- Tailwind for digital projects in the German healthcare system (laws, funding, acceptance)
- High level of interest from other partners in the private sector and industry with prospects of potential investment

Risks

- High expectations among policymakers and wider society versus the internal reality of implementation
- Insufficient sustainability in establishing the digitalization concept, due to dependence on the political agenda, limited funding, and short investment cycles of industry partners, among other things
- Impact of geopolitical risks on partner management and the availability of digital innovations
- Dependence on industrial partners (vendor lock-in) and the impact on own profitability and innovative strength
- Organizational limits in terms of the size of the organization in view of the increasing complexity of the technology
- Growing threat situation due to IT security issues and business continuity requirements

Figure 2: Analysis of the initial situation for the digital strategy (as of Q1/2026)

THE VISION for digitalizing Lausitz Medical University – Carl Thiem

3

The founding mission established by the state of Brandenburg determined the scope of MUL – CT's tasks. In addition to the classic activities of a university medical center – research, teaching, and patient care – it was assigned a fourth task, which involves performing systemically relevant coordination and innovation tasks at the point where science and the healthcare system intersect. This is also reflected in the two focus areas for research that have been prescribed – healthcare system research and digitalization of the healthcare sector. This has been linked to the state government's expectation to contribute to the modernization of the healthcare system beyond the borders of Brandenburg and throughout Germany, including the prospect of serving as a blueprint for regions with similar challenges. Taking on a coordinating and supporting role for healthcare and nursing in Lausitz as a model region for healthcare is a key element of MUL – CT's brief. Comprehensive funding has been earmarked until 2038 for this broad and ambitious range of tasks, along with direct political support in implementing the various measures.

Looking at the general picture in terms of the scope of its tasks, the goals formulated therein, and the existing and earmarked resources, MUL – CT as an institution is thus primarily competing for relevance among various groups and in various areas, including

- the **people of Lausitz**, with the specific aim of significantly improving healthcare and enhancing quality of life;
- the **state of Brandenburg,** with the mandate to make a contribution to public healthcare, to Brandenburg as a business location, to the management of structural change, and to social cohesion;
- the **university medical center landscape in Germany** with the aim of making a unique contribution to progress in the field of health sciences.

In the long term, this systemic relevance will be linked to the overarching strategic goal of attracting excellent personnel to MUL – CT and securing sufficient state funding and other funding beyond the initial finance earmarked until 2038.

Digitalization has been woven into all these tasks from the outset (digital by design). It is a strong differentiating feature and both a distinct goal – among other things, through the mission of shaping the digital transformation in the model region and as a separate focus area for research – and a critical success factor in being able to accomplish many tasks in MUL – CT's various areas of activity, such as the ability to deliver high-quality, cutting-edge patient care, and modern teaching.

A vision for digitalizing Lausitz Medical University – Carl Thiem has been developed along these lines:

1. We are embracing digitalization to shape the healthcare of tomorrow

We are using digitalization to develop the medical care of the future, helping to overcome boundaries in the care sectors with the aid of digital technologies. Our solutions are geared toward the medical needs of the people in Lausitz and cover the entire range of health maintenance and rehabilitation, including personalized prevention services, measures aimed at improving quality and safety at every stage of care, digital solutions in people's everyday lives, and outpatient and inpatient services. We are using digital technologies to deliver high-quality medical care across a wide area and in some cases to the home. We simplify communication between medical professionals and patients, regardless of their physical location. To this end, we supply robust and secure digital technologies, making high-quality expertise and infrastructure accessible to more people in Lausitz. We are developing and providing secure platforms for providers and the citizens of Lausitz to generate personalized benefits from structured data with the aim of delivering better healthcare – safely, securely, and efficiently.

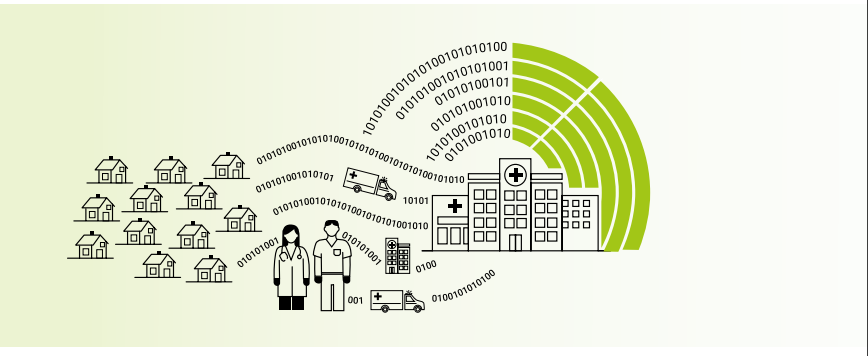


Figure 3: Digitally networked medicine across the sector boundaries

2. We are using digitalization to generate strong differentiation for Lausitz Medical University – Carl Thiem: regionally, nationally, and internationally.

We take every aspect of digitalization into account in all university processes and structures. MUL – CT is Germany's first university medical center to be digital by design. In other words, digitalization is the founding principle here, with its own division embedded in the management board and a legally enshrined research focus. Based on the goals set at the time of our foundation, we will use it as a differentiating factor for MUL – CT as a whole. We are using digitalization to strengthen our differentiating features across all our activity areas, including research, teaching, and patient care, and in the course of establishing and developing the model region. We deliver benefits by taking a unique approach to interlinking activity areas. For example, we use secure technologies to make data from day-to-day healthcare services available for research, offer our students training to prepare them for the digitally driven healthcare of tomorrow, and translate innovative, digitally driven forms of healthcare from the field of science to real-life situations in the model region. Digital technologies are enabling us to develop our two research focus areas. We are laying the technological foundations so that MUL – CT can use the next digital technology waves, such as AI and robotics, and help shape progress. Embracing the spirit of digital innovation cycles, we are defining operations at Germany's newest university medical center with a swift, explorative, and bold approach.

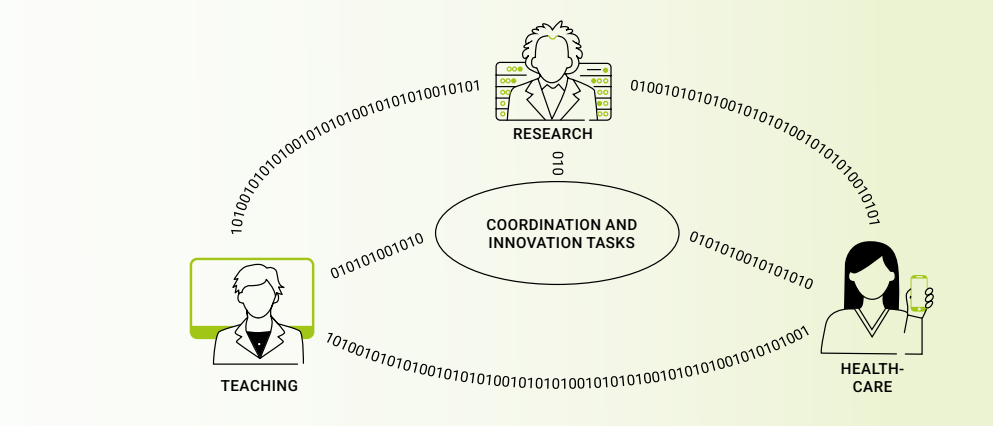


Figure 4: The scope of MUL – CT's tasks – digital by design

3. We are pioneers in digital translation

We are harnessing digital progress for health maintenance and rehabilitation. We are playing a pioneering role in digital translation in the healthcare sector. From Bits to Bedside: We are helping to turn innovative digital ideas into robust and reliable forms of healthcare and are building one of the most advanced innovation spaces for the safe and secure testing of digital applications as well as for digitally driven decision-making systems and the use of artificial intelligence in healthcare in Germany. Healthcare needs are fed back to the scientists and our industry partners in the region as use cases and research questions (bidirectional translation service). We use platform solutions and cloud-based infrastructure to do this. Our sphere of activity gives our partners unique access to real data and a reliable regulatory framework. We offer the citizens of Lausitz global innovations that are quality-tested, evidence-based, and compliant with data protection regulations.



Figure 5:
From Bits to Bedside

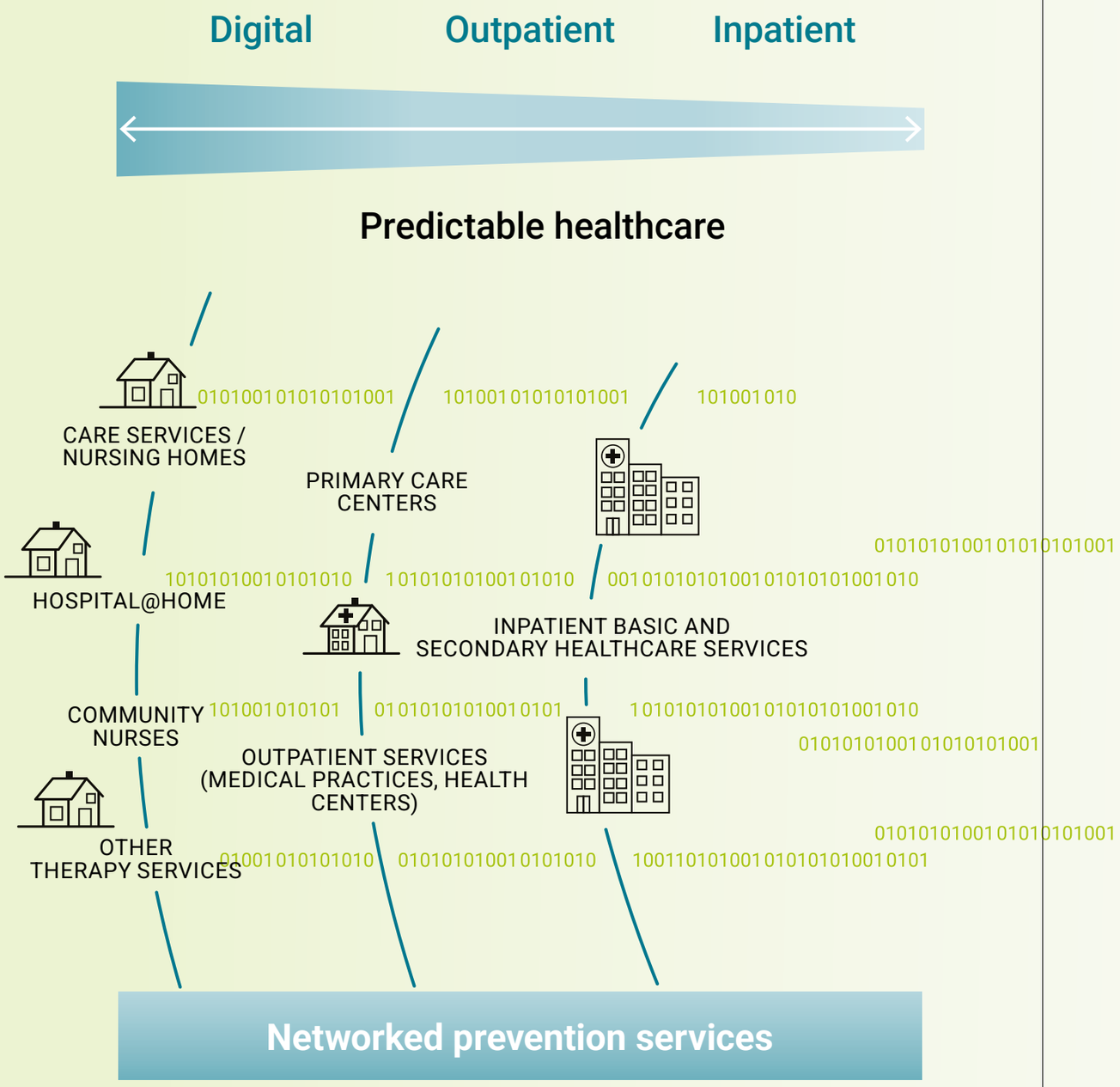
To turn the vision into reality, two areas were identified for the purpose of achieving strong long-term differentiation for MUL – CT: The development of the model region and the establishment of an incubator for innovative technologies. At the same time, MUL – CT is being digitally developed in five action areas. Taken together, these two differentiation areas and the five action areas are the key to achieving the vision set out above. Prioritized projects and measuring points for the coming years are detailed for each of these areas on the following pages. In some cases, the goals and projects reinforce each other in terms of impact.

DIFFERENTIATION AREA #1: Lausitz as a model region for digital healthcare in Germany

4

Having been given the name Lausitz Medical University – Carl Thiem, the state of Brandenburg has already underlined its unique position: MUL – CT is the university medical center for an entire region. Charged with performing systemically relevant coordination and innovation tasks at the point where science and the healthcare system intersect (Section 2, Brandenburg University Medical Center Act, BbgUniMedG), it has been given a mandate to shape healthcare in Lausitz, laying the foundations for strong differentiation in all areas of MUL – CT. With the model region of Lausitz, the research community is gaining access to a uniquely comprehensive data space and is being given opportunities to develop forms of care. Both doctors and healthcare professionals can care for patients across different sectors, while the teaching setup can provide training close to modern, real-life healthcare settings throughout the region. MUL – CT can use the model region to establish a strong unique selling point that also differentiates it from other university medical centers in the long term. Digitalization plays a pivotal role on various levels in terms of putting this concept into practice and enabling MUL – CT to carry out its own development work in the field of digital healthcare. For example, it makes it possible to establish networks between different players, deliver new, modern forms of healthcare in rural areas, and devise prevention concepts beyond individual facilities. With digital technologies such as AI, it intrinsically becomes an instrument used in diagnostics and therapy.

Digitalization supports MUL – CT's future vision of healthcare for the model region. Care is delivered along patient pathways in an interdisciplinary and cross-professional manner close to the real-life situations of the people in Lausitz, overcoming various boundaries that separate different sectors and classic job profiles. Prevention and aftercare are fully integrated into the healthcare concept. Digitally driven forms of care in the home and healthcare setting – such as Hospital@Home, health trackers, virtual nursing, or mobile health trucks – are closely linked with outpatient and inpatient forms of care. Costly infrastructure and resources – such as intensive care and surgical capacity – are for the most part held centrally and used in a targeted manner. Digital platforms and data streams bring together medical and nursing care in the region to create a holistic health service for the people of Lausitz (Figure 6).



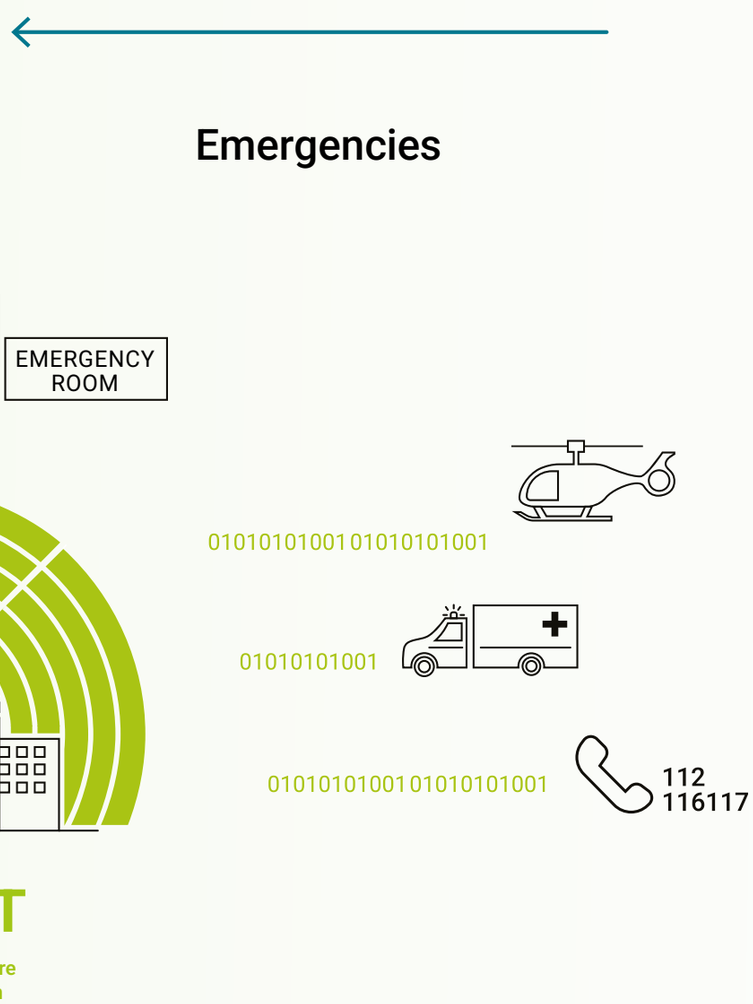


Figure 6: Digitally driven healthcare of the future for Lausitz

The Innovation and Network Council is instrumental in giving concrete form to the digitalization concept in the model region. It defines the strategic framework (pursuant to Section 27 BbgUniMedG) for the joint projects, also determining the digitalization concept and how healthcare is organized, among other things. The digital strategy forms the basic structure for fulfilling this mandate. Specific healthcare measures will be implemented on behalf of and in consultation with the Innovation and Network Council.

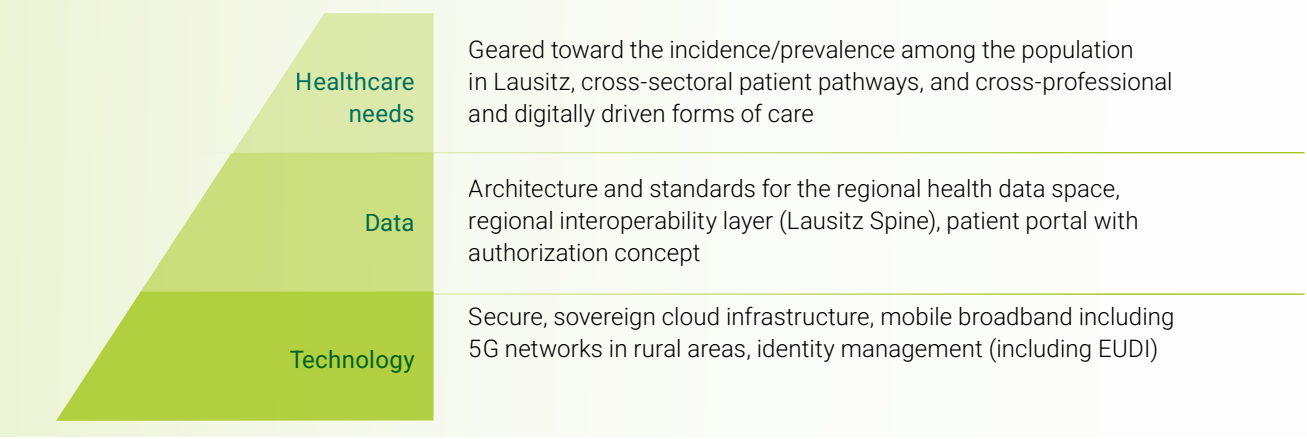


Figure 7: Layer model for digital plans in the model region.

The concept for digitalizing the model region is organized along three levels: the healthcare needs, the data perspective based on these needs, and the necessary IT (Figure 7). On the first level, all digitalization projects stem from the medical needs of the people in the region. Interdisciplinary and cross-professional treatment pathways play a key role here. This includes prevention. In alignment with the considerations of MUL – CT's medical strategy, the following healthcare needs currently prioritized include:

- Telemedicine pathways for chronic illnesses
- Oncological data network, including digital tumor boards
- Mental health and digital aftercare
- Transitional care, needs-based management, and cross-sectoral communication
- Links between operations center–emergency service–hospital–medical practice

There will also be support for various objectives stemming from public health analyses as well as from measures aimed at strengthening pandemic preparedness, managing patients, and optimizing healthcare resources.

Data retention requirements will be defined for the digitalization concept on the basis of this. MUL – CT can build on extensive preliminary work here, following the development plan set out over the course of many years to become a Digital Lead Hospital. Phase 1 (2021–2026) has been laying the technological foundations as a digitalized maximum care hospital. In the coming phase (2027–2030), MUL – CT will continue to develop into a platform provider, complete with a regional interoperability platform.

MUL – CT is embracing the role of an integrated platform provider for the region. This includes the establishment of a federated, interoperable health data space for Lausitz that links healthcare, research, and public health data (one regional health data space). It adopts open standards such as FHIR, SNOMED CT, ICD, LOINC, and OPS and features open interfaces (APIs) for all primary systems. This integration platform does not compete with the electronic patient record (ePA) – on the contrary, the ePA is one element of the central longitudinal database. Healthcare providers across various sectors in Lausitz document structured core information in a standardized manner in the ePA (ePA first). MUL – CT is planning to set up a central health portal as a digital entry point for the model region. Healthcare providers in the region can use this to share appointment details and medical findings, for example, as well as messages, outcome data, and consent between themselves as well as with patients. It will be set up and used in cooperation with the partner organizations in the region. Where digital solutions are not part of the gematik and ePA structure, MUL – CT will also use the portal to provide further services for networking and evaluating performance data. Patients retain full control over protecting their data (patient in control) thanks to transparent consent procedures, viewable data usage logs, and the option to withdraw their consent to the processing of data, among other things.

Central to the realization of the project is a legally secured mandate from policymakers to develop new digitally driven forms of care. This especially includes trialing telemedicine care pathways across sector boundaries, using AI-driven diagnostics under controlled conditions, and collecting and linking healthcare data for research and quality assurance purposes – embedded in concepts that ensure patient safety and data protection. Experimentation must be allowed within a structured and secure framework (commonly known as a regulatory sandbox).

Goals for an experimental space backed by regulation

- Trialing new digital forms of care that are not yet provided in the standard system (with proof of benefits)
- Testing interoperable data flows, alternative documentation models, and new roles (digital care/coordination services)
- Evaluating AI-driven applications under controlled conditions
- Smooth implementation of EHDS/DigiG/GDNG requirements in a pilot region

What specifically is being implemented in the coming years?

1. Establishment of a regional interoperability layer (Lausitz Spine) as an exchange platform for data from hospitals, medical practices, nursing settings, health centers, emergency operations centers, and public health services (ÖGD) on the basis of a harmonized terminology set
   - → For details on the establishment of a platform infrastructure, including communication server architecture, see chapter 10
   - → Among other things, the project builds on the expansion and development of the Data Integration Center, see chapter 7
2. Establishment of a regional health data space architecture to link clinical, outpatient, and nursing data as well as data from public health services, emergency operations centers, and other health-related data, operated by MUL – CT as the infrastructure service provider and independent data trustee
   - → The establishment and operation of the trust office for data use is imperative here, see chapter 7
   - → The integration layer of the core campus forms the technical basis and core of the regional health data space, see chapter 6
3. Establishment of a health portal and integration of the ePA as a central portal for citizens and practitioners in Lausitz, including identity management on the basis of the EUDI Wallet
   - → For the technical details on how the identity management concept will be structured, see chapter 10
4. Establishment and operation of a telemedicine platform as a central digital basis for the provision of telemedicine and nursing services, also as a service for regional partners
   - → For details on the integration of the telemedicine platform into the clinical infrastructure of the core campus, see chapter 6
5. Establishment of a governance framework below the Innovation and Network Council, with elements of a digital operations center for the model region, a cross-professional board for binding standards in the region, and a structure for coordinating data governance

How do we measure success? Key performance indicators and milestones

- Setting up a health portal and recording utilization rates
- Setting up a telemedicine platform and recording utilization rates
- Volume of data exchanged via the interoperability platform
- Number of inpatient and outpatient providers in Lausitz who exchange data via (a) the health portal and (b) the IOP platform

DIFFERENTIATION AREA #2:
The innovation space for digital technologies in the healthcare sector in Germany

MUL – CT is uniquely positioned to drive digital innovation and its translation into clinical practice. As a newly established organization that combines research, teaching, and patient care in an integration model under one roof, it can embed digital structures in all areas from the outset (digital by design). With Lausitz as a model region for healthcare, a unique innovation space is being created in which data-based healthcare models, telemedicine, and AI-driven diagnostics can be trialed and scaled under real conditions. In the Brandenburg University Medical Center Act, the state of Brandenburg has explicitly given MUL – CT the mandate to help modernize the healthcare system in Germany by focusing its research on healthcare system research and digitalization of the healthcare sector. By establishing an innovation space for digital applications and creating close links to a business ecosystem, MUL – CT is addressing a structural gap in the German science and healthcare system: MUL – CT is positioning itself as a location that consistently links digital health innovation, cross-sectoral networking, and cross-professional cooperation from research to real-world application in the hospital setting, along with prevention in the form of a digital translational chain. Data will be collated outside a metropolitan region and healthcare-related innovations for Lausitz and from Lausitz will be made available to other similar regions.

For the purposes of developing, promoting, and scaling digital innovations in the area of healthcare, MUL – CT is building a translational system that is unique in Germany and focuses on these aspects. At the heart of it – under the heading "From Bits to Bedside" – is a translational chain that extends from cross-professional and interdisciplinary teams in the field of research to prototyping, proof of concept and the possibilities provided by real data feedback, plus scaled applications and translation into the routine of prevention and hospital services, as well as spin-offs, corporate development, and scaling in the market (Figure 8, the green elements represent the translational chain). The translational system is geared toward digital solutions such as algorithms, AI applications, and applications in the healthcare sector. The translational chain will have bidirectional mechanisms, some stemming from research on digitally driven innovations and technologies (From Bits) to stable clinical application (to Bedside), others going the other way, with collected data and the needs of clinical care being fed back to the researchers. MUL – CT is supporting this translational system through various programs and investments (Figure 8, indicated in blue):

- **MUL Innovation Academy** – An innovation program at MUL – CT and in the model region, embracing intrapreneurship programs as well as networking, information, and educational formats, among other things
- **MUL Rapid Innovation Hub** – A digital incubator with access to test environments and support for proof of concept, prototyping, and piloting
- **MUL Digital Innovation Infrastructure** – Digital technologies for innovations such as data platforms, test and development environments, virtual and simulation rooms, and building infrastructure (Medical Accelerator MED-ACC)
- **Startup Lausitz Accelerator** – An established accelerator program with a focus on healthcare, including information, consulting, and networking services, representing a central access point to MUL – CT for scaling, product development, and spin-offs
- **MUL Innovation Services** – Contact, consulting, and information services for support and acceleration along the translational chain, serving as a central point of contact for MUL – CT, among other things, and covering financing, regulation, IP, and support when accessing the research infrastructure, such as the interdisciplinary study coordination center, the ethics committee, and the trust office for data use

This will enable MUL – CT to link digital translation and entrepreneurship that focuses on digital innovations in the healthcare sector.

The translational system is open to innovators based in the model region, start-ups in the field of digitalization and healthcare, and well-established industrial companies in the healthcare industry that want to develop innovative digital solutions and products or get them tested for approval. The medium-term goal is to supplement the investments made by MUL – CT and the state of Brandenburg with investments from industry and cooperation partners so that this innovation space can be developed.

To achieve these goals, MUL – CT is developing characteristics to differentiate itself from others in the competition involving ecosystems for digital innovations in healthcare:

- **Central service and speed –** MUL – CT is building a centrally orchestrated innovation service that serves as the main point of contact for internal and external stakeholders (from the industrial company to the innovative start-up) and plays a liaison role in cooperation activities with the research community and hospital setting.
- **Access to the innovation space of MUL – CT and the model region of Lausitz –** MUL – CT is providing access to a systematically developed innovation and data space in the form of the model region of Lausitz, with regulatory experimentation clauses for innovative, digital applications and established governance structures such as the Innovation and Network Council.
- **Support in the form of digital infrastructure for innovations –** MUL – CT has embraced infrastructure for translation and innovation from the outset in the course of establishing its digitalization environment. This includes integrated data from platforms, virtual test and simulation environments, secure development environments, and the MED-ACC as building infrastructure.

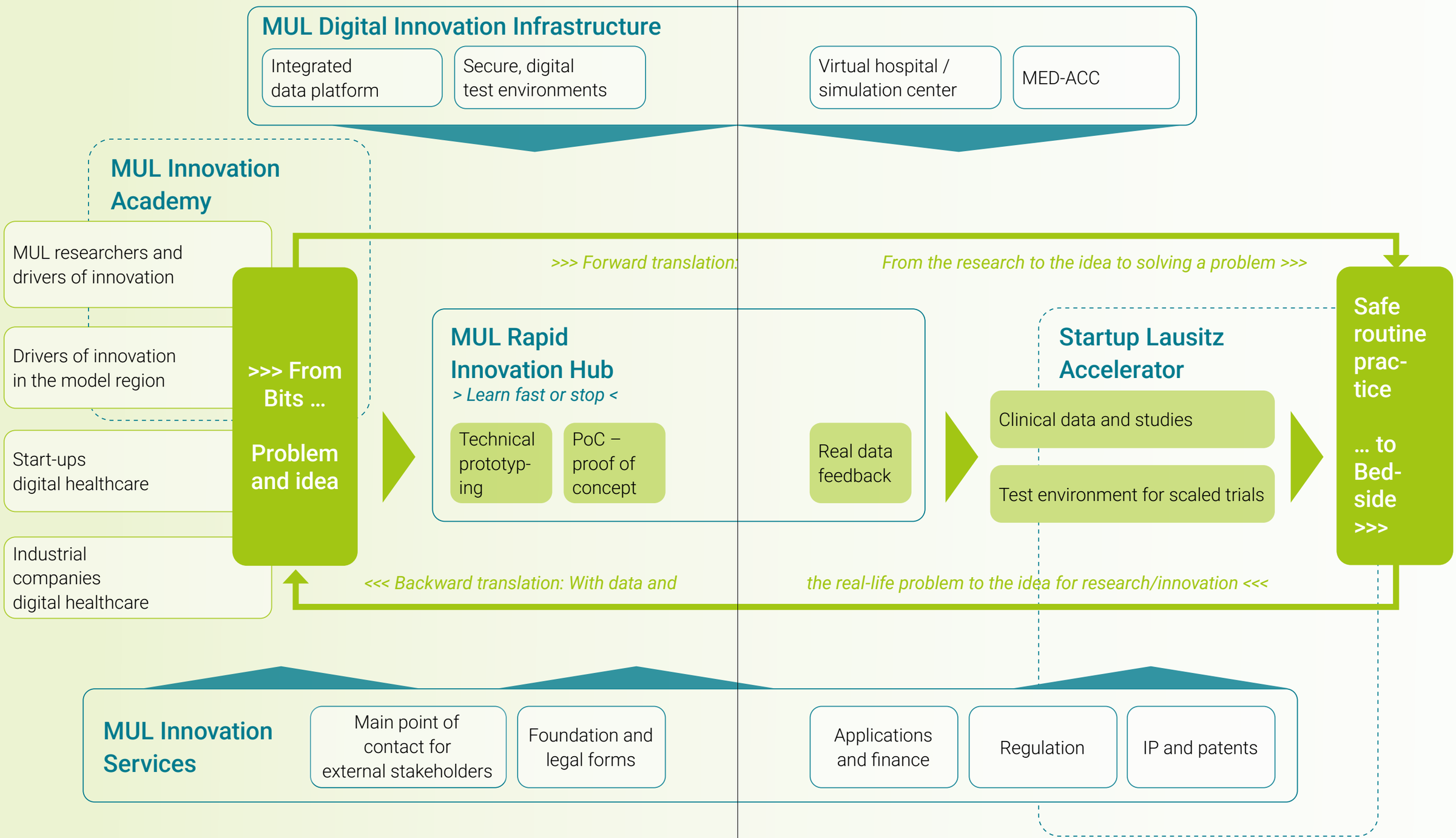


Figure 8: MUL – CT translational system for digital innovations in the healthcare sector

- **Cooperation –** The MUL Innovation Academy and the Startup Lausitz Accelerator offer networking opportunities with establishments specializing in technology transfer (including Brandenburg University of Technology Cottbus-Senftenberg [BTU CS] and the Hasso Plattner Institute for Digital Engineering [HPI]), with business ecosystems (including Potsdam Science Park and the Startup Lausitz network), and provide a direct link to cooperation partners in the public health sector (including the Robert Koch Institute [RKI] and the Clinical Epidemiological Cancer Registry Brandenburg-Berlin).
- **Funding programs and networking with investors –** The state of Brandenburg offers particularly attractive funding programs to secure pre-seed and seed financing. Brandenburg's funded start-up and accelerator scene facilitates focused forms of contact with private investors (VC, business angels).

What specifically is being implemented in the coming years?

1. Creation and development of the MUL Innovation Services for support and acceleration along the translational chain and access to the research infrastructure
2. Establishment and development of the MUL Digital Innovation Infrastructure, including the MED-ACC
3. Development of the MUL Innovation Academy as an innovation program at MUL – CT and in the model region
4. Continuation and ongoing development of the established Startup Lausitz Accelerator with a focus on start-ups in the healthcare sector
5. Creation of the MUL Rapid Innovation Hub as a digital incubator

How do we measure success? Key performance indicators and milestones

- Number of plans, projects, and spin-offs along the MUL – CT translational chain with the involvement of staff from MUL – CT or originally from the model region
- Number of start-ups and industrial companies with activities in the MUL – CT translational system
- Number of MUL – CT patients and people from the model region with access to innovative digital technologies via innovation projects
- In the long term: Number of spin-offs from the MUL – CT translational system
- Number of patents involving MUL – CT

ACTION AREA #1:
Digitalization for better patient care on the core campus

The digital support of clinical operations on MUL – CT's core campus is a key strategic action area. The overarching aim is to provide the clinical staff on the core campus with modern digital technologies for safe, high-quality, and efficient diagnostics and therapy along cross-professional patient pathways, with needs geared toward the strategic considerations governing the focus of medical care overall. Digital technologies also play a pivotal role in building the necessary bridges both to the model region and to the field of research.

The MUL – CT hospital has caught up considerably in recent years where digitalization is concerned and is now sitting nicely in the average range in this regard compared with large maximum care hospitals in Germany. This is not yet enough to be able to take on a real pioneering role as a medical university overall and position MUL – CT against the competition in the field of digitalization. Developments in recent years have been orchestrated under the heading of Digital Lead Hospital and funded by the state of Brandenburg and the federal budget. This approach will continue. It is clear that this demands a great deal from the employees working in the hospital settings on a day-to-day basis and that in the past some ambitions and goals have been formulated that have led to disillusionment and frustration when compared to the clinical reality. MUL – CT has taken concrete action on the basis of these experiences. The necessary governance and management structures as well as transformation skills are detailed in chapter 11. Digitalization for day-to-day clinical practice will be closely geared toward medical needs and the requirements of users from all the relevant healthcare professions as well as doctors.

In addition to the daily aim of gradually improving digital solutions and increasing the level of digitalization, the following subgoals will be pursued in the medium term for the purpose of digitalizing MUL – CT's clinical core campus:

- **Modernization of hospital information systems (HIS)** – The architecture of the existing hospital information systems (HIS) will be fundamentally overhauled in the coming years. The aim is to provide optimal digital support for clinical operations, record data along the entire diagnostic and treatment pathways in a structured manner, and ensure that this data is smoothly linked and processed in order to increase the quality and safety of patient care. Application gaps need to be closed and certain tasks that are still paper-based need to be replaced (areas covered here include maintenance medication, PDMS, monitoring and alarm management, and external digital report transmission). Other digital services – ranging from speech recognition and AI-driven assistance systems or virtual nursing to telemedicine – are gradually being integrated into a modernized architecture. The focus is on creating a flexible, scalable platform architecture that facilitates process design, interoperability, performance, and external networking. Elementary components of this modernized HIS architecture include a central health portal and a telemedicine platform for all healthcare professions. The plan is to build a new technology stack (with containerization, continuous integration and continuous delivery [CI/CD], and the ability to operate as a high-availability platform, among other things), introduce a technical application layer, and consistently gear the HIS toward standardized APIs.

- **Digital networking of device data from diagnostics and therapy –** Parallel to the HIS modernization measures, imaging, functional diagnostics, and monitoring systems will be integrated into an interoperable overall architecture along with other medical technology devices (creation of an IoT integration layer). The aim is to achieve consistent, standardized data exchange (via HL7 FHIR and IHE profiles, among others) between hospital systems, systems used for special documentation, and networked medical devices, so that measured values, curves, and findings can be used in clinical workflows and decision-making processes. On a technical level, everything will be networked via cloud and API architectures, IoT connections, and central API management. At the same time, this will create the basis for being able to offer external healthcare providers from the model region (such as outpatient care facilities or registered private practices) and patients with wearables a secure interface for data exchange.
- **Clinical decision support systems and artificial intelligence –** To improve patient safety and the quality and efficiency of healthcare, clinical decision support systems (CDSS), partially assisted by artificial intelligence, will gradually be rolled out to support practitioners. The aim is to collate structured and unstructured data from the HIS, medical technology, telemedicine, and administrative processes and translate them into recommendations that can be used in the clinical setting. The practitioners treating the patients remain responsible for acting on these recommendations and making any resulting decisions in all cases. Key elements of these recommendation systems include developing the clinical data repository (CDR), linking data from the hospital setting and the field of research, and embedding artificial intelligence technologies. Possible use cases include models for risk stratification, prognosis, diagnostics, and optimization of cross-professional treatment pathways.
- **Robotics on MUL – CT's core campus –** The use of robotics on the core campus will be established as a distinct field of innovation in order to permanently ease the workload on hospital operations involving medical procedures, nursing, logistics, and healthcare, thereby increasing the time available for specialist staff to care directly for patients and further improving the precision and safety of medical procedures. To this end, an open, multi-supplier robotic infrastructure will be established as an integral part of the digital infrastructure on MUL – CT's core campus. Among other things, there are plans for robotic-assisted systems in the operating room, semiautonomous solutions for transport and logistics processes, and, ultimately, robotics playing a supporting role in healthcare settings.
- **Digital hospital coordination center –** Establishing a 360° patient management and resource platform will create an integrated view of patient pathways, resources, and processes across all sectors and locations. The result will be a system that consolidates information from the HIS, the health portal, and the logistics and bed management systems, among other things, and makes it available on a universal coordination and management interface, supporting the predictive management of beds, operating room capacity, diagnostic slots, transport, and aftercare, while improving transparency for medical staff and patients. At the same time, it will form the operational basis for a regional coordination center for patient care and can serve as a central coordination unit in crisis and outage scenarios.

The measures detailed above require good coordination of the clinical operations and technical infrastructure on the core campus of MUL – CT. Network, building, and operating technology must be closely intertwined with information technology. The task

of implementing these solutions will be closely coordinated with MUL – CT's construction master plan.

Successful digitalization of clinical operations calls for the systematic acquisition of additional skills among medical, nursing, administration, IT, and technology staff at MUL – CT. This also includes changing roles and responsibilities. To this end, the digital transformation of the clinical core campus will be flanked by structured training and qualification programs. This is described in more detail in the chapter on the execution skills needed for the digital strategy.

What specifically is being implemented in the coming years?

1. Modernization of the hospital information system (HIS) architecture to create a modular, highly integrated, and open platform architecture
2. Establishment of a health portal and telemedicine platform
   → For details on the health portal and the telemedicine platform as core healthcare elements in the model region, see chapter 4
3. Establishment of an integration layer for the networking of system and device data from the areas of imaging, monitoring, and functional diagnostics (IoT platform)
   → The integration layer of the core campus forms the technical starting point for the regional interoperability platform. For further details, see chapter 4
4. Creation of an open, multi-supplier robotics infrastructure with use cases in the OR and logistics
5. Gradual rollout and expansion of clinical decision support systems, including the use of artificial intelligence in day-to-day clinical practice
6. Establishment of a hospital coordination center for the management of patients and resources on the clinical core campus

How do we measure success? Key performance indicators and milestones

- DigitalRadar score and the associated EMRAM level
- Extent to which the health portal and telemedicine platform are used (volume of users and number of times accessed)
- Connected devices and data exchange volume via the platform for networking device data
- Clinical decision support system utilization rates
- Commissioning and using the hospital coordination center – for bed occupancy management, among other things
- Number of robotic-assisted solutions being used in real-life clinical operations

ACTION AREA #2: Digitalization in the field of research – key focus area and critical success factor

Research plays a dual role in the digital strategy: Firstly, the two legally prescribed research focus areas of healthcare system research and digitalization of the healthcare sector help with the task of strategic differentiation. At the same time, it is an operational action area that needs to be established and developed in the coming years. This dual role is intentional and reflects MUL – CT's founding situation. The differentiating features on the research side, particularly the contribution to the model region and digital translation, are detailed in chapters 4 and 5. The present chapter concentrates on the methodological foundation and the operational requirements that need to be in place.

Digitalization and research are linked on many levels at MUL – CT. The successful development of these two areas with the aim of achieving lasting differentiation when competing for relevance, funding, and excellent personnel can only succeed on the basis of close coordination and jointly defined goals. There is a focus on three areas, the goals of which are closely interwoven:

Research focus areas – Healthcare system research and digitalization of the healthcare sector are the two research focus areas that have already been set for MUL – CT. Up to ten professorships are planned until 2038 in the focus area of digitalization alone. The establishment of this research focus area is a jointly supported goal for the coming years. Open questions in MUL – CT's digitalization agenda serve as suitable research subjects with a strong practical relevance. In the living lab set up as part of the healthcare digitalization professorships there will be a focus on the use of digital technologies. The content of the research focus area is determined in the divisions of science and digitalization as well as by those holding the professorships themselves.

Model region – The model region provides a unique differentiation opportunity, both for MUL – CT in general and more specifically for profiling through digitalization in the two research focus areas. The model region's concept is based on regional networking and the integration of a health data space, among other things. This is where healthcare and digitalization research meet their practical application in the context of patient care. Both sides are dependent on each other in terms of their success. The full potential of the model region can only be exploited if it is well coordinated.

Digital translation – From Bits to Bedside will only succeed if research, healthcare, and digitalization are closely linked. MUL – CT has the unique opportunity to build this translational chain from the bottom up across divisions. The digital strategy sets goals to achieve this, creates an innovation space for development, and covers a wide spectrum, ranging from technological infrastructure to application. The content of the translation will be supplied by the researchers and clinical staff in the healthcare setting.

For these three areas to succeed (Figure 9 in blue), but also for the purpose of establishing a successful research environment in general, the digital strategy has set the goal of building the necessary foundations. This is done on four levels (Figure 9 in green):

1. Creation and provision of integrated data rooms
2. Creation and operation of digitally driven research infrastructure
3. Creation of a regulatory framework for the use of digitalized data and technologies
4. Support for research in general as a service for networking and providing access to technologies

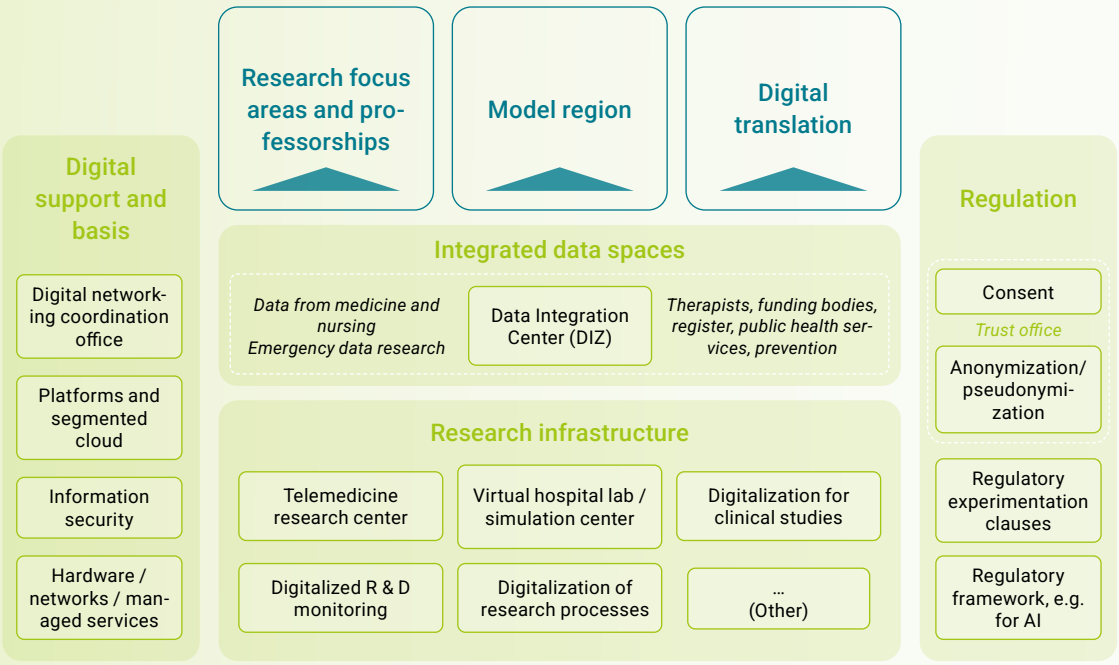


Figure 9: Digitalization and research – shared design and foundations

Digitalization is thus a critical success factor for research at MUL – CT, with the main components shown in the preceding overview. They include:

- The creation of integrated data spaces – in the form of an interoperability platform, among other things – and the establishment of standards for technology, syntax, and semantics in the Data Integration Center (DIZ), including health informatics
- The establishment of a digital networking coordination office as a main service and support center for researchers with a digital focus

- The creation and operation of a core digital research infrastructure, including a virtual hospital lab, a simulation center, a telemedicine research center, and the provision of development environments
- The creation and operation of a trust office for the use of data
- The setting of the regulatory framework by formulating experimentation clauses with the relevant bodies and producing guidelines for the use of artificial intelligence, among other things
- The provision of performant basic services in the form of computing power in segmented cloud solutions, standard platforms, and performant network solutions, among other things

The regulatory framework for the digitalization and research projects is needed to make sure that they are successfully structured (overview below). In many places, the projects will only succeed if there is a clearly defined, protected regulatory architecture for them. MUL – CT will discuss this with the regulators.

The main structuring measures in the area of digitalization and research have been combined with other research tasks in a separate program, which is directly linked to the application for the necessary financial resources and the management of these resources: Research-Based Establishment of Lausitz Medical University – Carl Thiem (shortened to the German acronym FAMeLausitz). The projects are described in detail there and are presented here in abridged form for the outlined implementation with reference to the subproject numbers.

Key regulatory requirements for innovative digitalization for research at MUL – CT

Broader range of legal options for processing and linking existing data for the purpose of research (including register data, statutory health insurance data); broader permission criteria for data processing

Broader range of options relating to consent to the use of research data, such as “broad consent” for the model region

Broader legal basis for experimental space for digital applications (manufacturer approval for MUL – CT to produce its own digital health data applications in line with the MDR/IVDR and EU AI Act)

Broader treatment mandate to include cross-sectoral and outpatient content

What specifically is being implemented in the coming years?

1. A contribution is being made to establishing digitalization as a research focus area and filling the professorship positions in the field of digitalization
2. There will be a number of subprojects (referred to here as SPs) from the FAMeLausitz program with a focus on digitalization, including:
   - Expansion and development of the Data Integration Center DIZ (SP 2.1)
     → The field of research uses the interoperability infrastructure described in chapters 4 and 6 as a basis for integrated data spaces
   - Creation and operation of the Lausitz trust office for data use (SP 2.3)
   - Establishment of the digital networking coordination office (SP 2.5)
   - Creation and operation of the simulation center (SP 2.6) and virtual hospital lab (SP 2.9)
   - Support to create health informatics and health data (SP 2.8)
   - Support to set up the health study for the model region of Lausitz (SP 4.1)
   - Creation of a digital R & D monitoring system (SP 2.11)

How do we measure success? Key performance indicators and milestones

- Subproject milestones from the FAMeLausitz program (as specified in detail there)
- Number of cooperation partners for science with a link to digitalization
- Sum of third-party funds raised with a link to digitalization
- Number of publications and the sum of impact factors with a link to digitalization

ACTION AREA #3:
Structuring the teaching – with a consistent digital approach



Teaching in the field of medicine and in the healthcare professions is undergoing profound structural change. Digital technologies are changing the formats and requirements for education and training, as a position paper published by the German Medical Faculty Association at the end of 2025 on the subject of "Digitality in Medicine and Studies" highlights. At the same time, the job profiles and the way in which they interact across different professions in the field of medical care are also going through profound change.

MUL – CT sees these changes as an opportunity. It will make teaching in medicine digital by design. The unique nationwide opportunity that currently presents itself in Germany to be able to take a digitally driven approach to establishing the university medical center – across all areas of activity covered by the university medical center simultaneously – offers students and trainees extraordinary benefits. For example, a high degree of digitalization of everyday patient care and cooperation with partners of the model region will shape the practical training within a networked and cross-sectoral healthcare landscape. The students and trainees will also come into regular contact with innovations from digital translation and digitalization research in the healthcare sector, giving them the opportunity to practice handling innovative technologies at an early stage and critically reflect on the role they play in day-to-day hospital operations.

Digitalization in teaching pursues the following goals:

1. Future doctors and healthcare professionals are given the right training today to equip them with the skills they will need in the course of their professional careers (future skills). This will shape both the teaching approach and the curriculum at MUL – CT. Patients will directly benefit from this: Future doctors and healthcare professionals will be able to work in cross-professional, digitally networked teams, critically reflect on the role of AI-driven diagnostics, and use telemedicine services in a quality-assured manner. This means that they will possess the skills that are indispensable in the day-to-day reality of delivering healthcare in a rural region.

2. This teaching of skills is especially aimed at activities that form part of cross-professional, digitally networked healthcare services in rural regions. Training, continuing education, and professional development will be integrated in the MUL – CT model region, making students and trainees a part of the medical care of the future.

3. Classic approaches to learning are being combined with digital learning formats, changing the way in which people learn and teach. Students are using digital technologies for their practical and theoretical training, while teachers are being trained in how to use digital technologies in their teaching.

Digitally transformed formats are an essential element of teaching. These include adaptive learning formats, allowing digitalization to give students and trainees more individualized supervision and support. Digitally supported learning formats provide the opportunity for personalized, timely feedback and more in-depth and precise learning. At the same time, MUL – CT is investing in the establishment and development of a cross-professional simulation center, where students and trainees can approach the learning content in new ways with the help of virtual patients or in the form of virtual tutorials or augmented learning.

One of the main teaching objectives is to improve the digital skills of teachers and students. This includes

- enabling lecturers and students to use digital technologies for teaching and learning in a simple, secure, and efficient manner;
- taking a scientific approach to examining digitalization matters and using digital applications in order to improve digital literacy in later professional life;
- boosting skills in dealing with artificial intelligence and digitally driven clinical decision support systems;
- adopting an educated and suitably critical strategy when handling digital technologies and raising awareness of the associated ethical challenges.

Laying the foundations for digitalization in teaching involves establishing a digital campus and thus providing a modern learning environment for the start of teaching from the winter semester 2026/27. This includes digital campus management and learning management solutions, the digital student ID card, and, in the medium term, digital examination formats and virtual tutorials.

MUL – CT's overall aim is to take a consistent approach to digitalization in order to build a particularly modern and attractive teaching and learning environment for education and training in medicine and in the healthcare professions, enabling it to differentiate itself from others in the competition for motivated and qualified students.

What specifically is being implemented in the coming years?

1. Creation and operation of a central campus management system with downstream planning functionalities
2. Creation and operation of a learning management system with AI learning coaches and virtual cases
3. Development of the cross-professional simulation center with virtual tutorials in close conjunction with digital learning resources (teaching library)
4. Establishment of the central student ID card to give students access to all digital and analogue services
5. Establishment of an electronic portfolio for measuring skills and knowledge (360° feedback)
6. Creation of a modern digital infrastructure for teaching and learning activities

How do we measure success? Key performance indicators and milestones

- Putting in place the necessary basics for the start of studies in the winter semester 2026/27: campus management system, learning management system, and central student ID card
- Number of tutorials in the virtual tutorial program
- Extent to which the electronic portfolio is used
- Number of digital examination formats and the extent to which they are used

ACTION AREA #4: Digitalizing administration processes for greater efficiency



The administration at MUL – CT is currently undergoing a structuring and restructuring process. Administrative processes are being refined to reflect its function as a university medical center. One of the main aims is to establish a paperless administration where digital workflows, as many automated tasks as possible, and networked systems considerably increase the efficiency and quality of the administrative work.

The most important measure in this regard involves switching over the main administrative system (ERP – enterprise resource planning) to SAP's S/4HANA platform. This is also in keeping with the general approach of embracing standardized central platform solutions for the administration. This major project involves the comprehensive standardization and digitalization of business processes in the area of administration. The second major digital project in administration involves creating an HR core system in the personnel department, combined with a plan to update and standardize the system landscape in the entire personnel department (including digital personnel files, payroll accounting, and time recording). Digital tools will support the planning, allocation, and evaluation of personnel, time, and financial resources for a more precise and predictive approach to management. These two projects are designed to raise the system landscape to a high level and standardize it. A consistent database can speed up routine processes, increase the automation level, reduce sources of error, and give employees the freedom to undertake activities that add value. This is made possible by introducing digital signatures and switching to a digital contract and document management system, among other things.

At the same time, digitalization should be seen as a way of contributing to a modern, attractive working environment: The introduction of a digital communication and collaboration platform is designed to make daily tasks easier and make MUL – CT more attractive to the employees, laying the foundations for further boosting productivity in the next step with the aid of modern technologies – including artificial intelligence systems and digital agents.

Alongside this, the administration will take a targeted approach to enhancing digital skills. Besides the ongoing development of internal teams of experts, the focus is on training and change management measures for the employees. The aim is to embed the digital transformation not only technically, but also culturally – as a joint learning and development process that makes the administration fit for the future and underlines its commitment to being a modern, service-oriented organization.

What specifically is being implemented in the coming years?

1. Switchover to S/4HANA (for financial accounting, purchasing, and controlling, among other things)
2. Standardization of the software landscape in the personnel department and creation of an HR core system (in line with the digital strategy of the personnel division)
3. Introduction of a digital contract and document management system (by 2030)
4. Development of digital concierge services for the working environment (including self-service concepts, automation of workflows, and use of standardized AI agents)
5. Development of a mobile working environment (including the introduction of a collaboration platform, the expansion of mobile/video telephony, and development of remote working opportunities)
   → For details on the performant cloud infrastructure as a necessary basis for the technical provision of the collaboration platform, see chapter 10
6. Switchover to digitally supported workflows and the introduction of digital signatures

How do we measure success? Key performance indicators and milestones

- Completed rollout of S/4HANA
- Fully established HR core systems
- Extent to which a digital contract and document management system is used
- Extent to which the digital communication and collaboration platform is used
- Introduction of the digital signature
- Number of established digital workflows and self-service concepts (including metrics for measuring process duration) and their acceptance

ACTION AREA #5:
A capable and secure IT infrastructure

10

The technical foundation of the digital strategy is a powerful and secure IT infrastructure. Besides the hardware and network, this also includes ongoing operation. The IT infrastructure serves as an enabler of the digital strategy, making it possible to achieve the goals in the two differentiation areas and the operationalizing action areas. The transition from the previous IT infrastructure of a local maximum care hospital to the technological requirements of a university medical center and the model region poses a particular challenge on three levels:

1. The complexity of the required technological solutions rises significantly due to the establishment of university operations.

2. Many comprehensive projects will run simultaneously during ongoing operations.

3. The available digital technologies are evolving at a rapid pace.

The establishment and operation of a capable and secure IT infrastructure – including servers, the communication architecture, the cloud infrastructure, the networks, and the available hardware needed by the end users – is therefore an integral part of the digital strategy.

The principles guiding the establishment and continuous development of MUL – CT's IT infrastructure are as follows:

- **Resilience –** Provision and continuous development of an effective and fail-safe technology base, with a focus on managed services and a high degree of automation, among other things
- **Interoperability –** Concentration on a few, central platform technologies and an emphasis on established, industry-wide IT standards
- **Scalability –** Efficient and easy adaptability of IT technologies to the needs of MUL – CT and the model region (with segmented cloud solutions, among other things)
- **Innovation –** Active provision of state-of-the-art solutions and thus active translation of technology cycles into MUL – CT's operations, which also means facilitating the safe use of artificial intelligence
- **Information security –** Ensuring a high level of protection for the critical infrastructure and for highly sensitive data, as well as minimizing cyber risks

In the course of restructuring MUL – CT's IT infrastructure landscape, there will be a focus on a segmented multi-cloud structure. The long-term goal is to offer MUL – CT and the players in the model region Healthcare as a Service (HaaS) to the greatest possible extent using layered cloud solutions (Figure 10). Digital health services will be provided by taking a needs-based and scalable approach using cloud infrastructure.

The task of establishing and operating the IT infrastructure will involve cooperating with selected external partners. This will include public sector regulatory bodies and scientific institutions as well as businesses based in the region.

The development and operation of the IT infrastructure in the coming years have been summarized under the program title Infra 2.0.

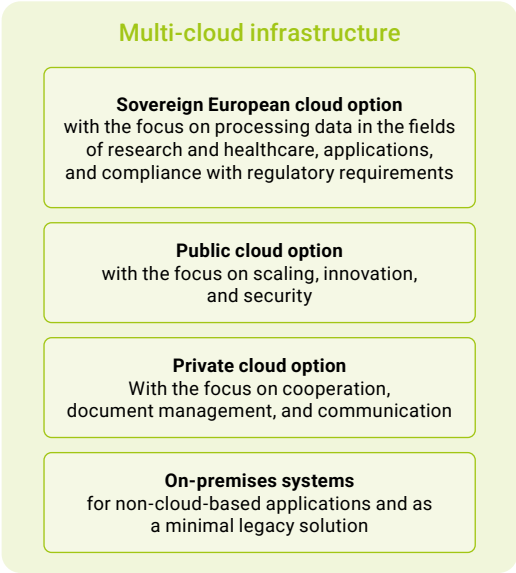


Figure 10: Multi-cloud infrastructure.

What specifically is being implemented in the coming years?

1. Creation of a platform infrastructure, including communication server architecture, to network health data at MUL – CT and in the model region
   → For details on the platform infrastructure, including communication server architecture, as a starting point for linking data in the field of research, see chapter 7; as the core of the regional interoperability layer, see chapter 4; and as the basis of the integration layer for networking system and device data in the hospital setting, see chapter 6
2. Creation of an identity management concept, based on the EUDI Wallet, among other things
   → Identity management is also a functional requirement for the health portal in the model region, see chapter 4
3. Provision of basic services via cloud infrastructure (segmented into private, public, and sovereign clouds) for research, teaching, patient care, and administration
4. Creation of a digital environment for communication and collaboration
   → The digital collaboration environment primarily serves the purpose of modernizing administration and is provided via the cloud infrastructure described here, see chapter 9
5. Campus-wide development of the LAN and WLAN infrastructure, creation of a fail-safe WAN connection for Internet and telephony, and upgrading of mobile broadband (including 5G+)
   → The basis for a networked and effective expansion of the core campus, see chapter 6
6. Creation of an IT service management concept, including management of service providers (including SLAs, control mechanisms, and monitoring)
7. Creation of single sign-on (SSO) concept, especially for clinical applications

How do we measure success? Key performance indicators and milestones

- Number of healthcare providers in the region with an actively used connection to the platform
- Establishment of a self-service platform for the provision of cloud services (measured by the number of virtual clients or clusters/nodes/applications via Kubernetes, among other things)
- Performance, outage times, and scalability for the communication server structure
- Number of users on MUL – CT's internal collaboration platform
- Establishment of a segmented LAN and WLAN infrastructure (measured by coverage and availability of WAN and WLAN, among other things)
- Extent of single sign-on (SSO) rollout

FOCUS – information security

MUL – CT is part of Germany's critical infrastructure (known as KRITIS) and is subject to the strict requirements of the NIS 2 Directive (the second EU Directive on Network and Information Security). Like all other establishments of this size and significance, it is continuously exposed to recurring cyberattacks. The IT infrastructure needed to safeguard medical care is subject to very high information security requirements. Maintaining operations even in crisis and outage scenarios is of the utmost importance to MUL – CT. The information security concept plays the role of a digital enabler in MUL – CT's digital transformation. It follows three principles:

1. Security by design as a standard when devising and implementing projects
2. Risk-adapted decisions instead of static rules – geared toward data and goals
3. Resilience of the entire organization with the involvement of all employees, and especially through training and awareness-raising measures

Key measures for increasing information security in the coming years

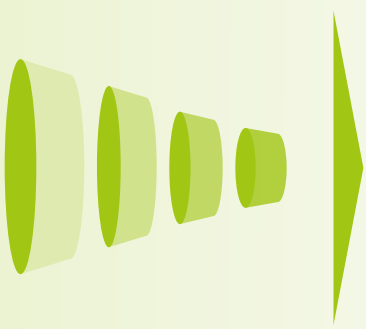
1. Creation of a zero trust architecture (principle: continuous review of trust level)
2. Development of the ability to deal with AI and AI-related security (AI safety center, with AI guidelines and AI governance structure, among other things)
3. Boosting outage and emergency management systems (recording critical business processes and devising business continuity plans and replacement procedures, among other things)
4. Boosting information security in relation to the use of (1) cloud technologies (including through strong authentication and segmentation), (2) data (including through data classification and data loss prevention) and (3) identities (including through multi-factor authentication and single sign-on)
5. Development of anomaly and intrusion detection capabilities (by using SIEM and a hybrid security operation center, among other things)

EXECUTION SKILLS as a foundation for implementing the digital strategy

11

The opportunities and limitations of the digital strategy are largely determined by the organization's ability to implement the measures. Looking at the goals and programs as a whole in the coming years, MUL – CT faces an exceptionally challenging task in the field of digitalization compared to similarly sized organizations. Then there are the ambitions associated with the founding of the university and the differentiation secured by digitalization. The already high demands on digitalization will continue to increase as work continues to establish the university medical center's divisions and focus areas. Having the skill to execute the numerous projects is therefore of central importance. In the context of this strategy, this skill will also be classed as a strategic core competence in the coming years. Its development will be actively shaped by the managers in MUL – CT's digitalization division.

The skills needed to achieve the aims of the digital strategy are the result of a combination of six factors critical to the management of the projects, the availability of resources, and the embedding of digitalization in MUL – CT's organizational culture (Figure 11).



Requirements and ideas

Implementation

1. Governance structures

2. Project portfolio management

3. Internal resource management

4. External partners and cooperation

5. Business process orientation

6. Transformation support
(including education and training for MUL – CT employees)

Figure 11: Execution skills needed to implement the digital strategy

The combination of governance structures and project portfolio management plays a pivotal role in managing the projects:

Governance structures – Scarce, central resources, such as investment funds or the working time of project management and IT experts, are prioritized for the implementation of digitalization projects. Not all projects will be able to be implemented, not every idea will be in line with MUL – CT's aims. This prioritization task must be carried out in joint management and decision-making structures (known as governance for short). One such task is the granting of implementation approval, but others include making decisions on expansion measures and realigning or terminating projects that are already underway. These structures must also make it easier to pilot new ideas and execute time-critical tasks quickly in order to be able

to reflect the special situation associated with the job of establishing university operations and achieving short innovation cycles. These decisions are not the task of the digitalization division or IT department – rather, they must be made together with the managers from the field of science, the hospital setting, and administration at MUL – CT. In research and teaching, too, project ideas will have to be evaluated with regard to their feasibility and squared with existing central resources – while making sure that academic freedom is preserved. The aim for the coming months is to create robust governance structures across all management board divisions.

6. **Project portfolio management –** Closely linked to governance is the operational management of project progress, allocated investment funds, and resources. A number of digitalization projects in the mid-double-digit range are already being worked on simultaneously. This number will continue to rise, along with the size and complexity of the projects. To manage them, measures will be taken to expand the area of project portfolio management in the coming months. The aim is to provide the best possible support in the form of professional project management skills when implementing the projects. This will cover the methodology and tools as well as the skills. At the same time, the management level of MUL – CT will be given an even greater ability to keep an eye on the status of the projects, providing the opportunity to intervene and take control.

   A key factor in determining the ability to implement measures will be the resources needed to realize the projects. MUL – CT will invest massively in establishing and developing a pool of internal experts in digitalization. In addition, it will specifically seek cooperation with external partners. In the coming years, it is the aim of MUL – CT to become a visible, attractive proposition for employees and cooperation partners in the field of digitalization in Germany's health sector.

7. **Internal resource management –** Internal experts are the scarcest and most valuable resource when it comes to implementing measures. This will be reflected in the activities related to attracting, retaining, and developing personnel. To this end, the managers in the digitalization division will manage the use of existing skills for the daily implementation of measures and at the same time communicate the opportunities and limitations of the internal resource pool for the purpose of prioritization. At the same time, the experts' existing skills will be developed and enhanced in the coming years. This will be done in close cooperation with the personnel division. Besides recruitment, there will be investment in the development of existing personnel – by offering specific training opportunities, enhancing skills, and creating structured career paths, for example. The creation of links with the science community will provide outstanding opportunities to do this, which will then be used for the purpose of differentiation.

8. **External partners and cooperation –** External partners will play a pivotal role in the success of the digitalization of MUL – CT. Cooperation creates additional implementation opportunities and unlocks access to additional skills and technologies. With regard to cooperation with companies in the digital economy, it is vital to take clear and explicit make-or-buy decisions. Cooperation partnerships with industry will be actively managed. The aim is to build lasting added value for MUL – CT. This also includes establishing long-term regional roots. Partners from the public sector in the region and the state of Brandenburg will also be central to the success of digitalization of MUL – CT. This includes numerous cooperation partners in the model region, but also institutions such

as Brandenburg University of Technology Cottbus-Senftenberg and the Hasso Plattner Institute. Partner management in the digitalization division will be systematically developed and professionalized in the coming months.

The four factors detailed above are mainly being developed in the digitalization division, while two others aimed at boosting execution skills are being developed across various divisions for the entire MUL – CT organization:

5. **Business process orientation –** The university medical center integration model creates the basis for taking an integral approach to the formulation of the task and with it the opportunity to prevent the formation of silos or the cementing of divisional boundaries. This is achieved operationally by assigning process-oriented responsibilities (to process managers, process supervisors, and process operators, for example), creating the basis for measuring, improving, and taking responsibility for performance from the user's and customer's perspective. For the digitalization projects, this essentially means that their success is just as much the responsibility of the users as the digitalization division and IT department. Only then will digitalization succeed at MUL – CT. In the coming months, MUL – CT will gradually switch to the perspective of business processes in pilot areas and thus break new ground.
6. **Change management / transformation support –** MUL – CT as an organization is changing at a rapid pace and on many different levels. The employees of MUL – CT are in the midst of this change process and are helping to shape it. Transforming from a regional maximum care hospital to a university medical center, establishing a teaching facility, introducing digital technologies – the list of changes is long. **One of the most pressing tasks for the managers at MUL – CT involves actively and supportively shaping this change and using it to create a dynamic of empowerment and success. MUL – CT employees are the vital link between the digital strategy and the patients.** Their expertise, their commitment, and their willingness to use digital tools in day-to-day healthcare services will determine whether digitalization reaches the people for whom it is intended. With this in mind, structured elements of change management will be established or developed across various levels in the coming months – covering communication, education and training for employees, the consolidation of practical application skills among all employees, and management structures. A culture that takes an agile approach to change is central to digitalization. The innovation cycles are short and MUL – CT aims to actively shape this change, adapt its processes to it, and offer its staff opportunities to build and develop skills (digital literacy).

The task of developing execution skills as a core competence is seen as an ongoing one for the managers of the digitalization division and the entire organization. It needs to be turned into one of MUL – CT's strengths so that the digitalization project as a whole succeeds. The essential elements have been outlined in this chapter. The precise development pathway and the individual measures will be regularly evaluated and adapted.

AN OUTLOOK:
Road map to 2030

12

The projects prioritized in the digital strategy are presented in a road map up to 2030. This contains the overarching time frames for the planned programs. The measures for each running year are presented in detail for the internal planning and management of the implementation work. This road map will be regularly updated.

	2026	2027	2028	2029	2030	> 2030
Model region	Creation of a regional IOP layer (Lausitz Spine)					
		Creation of a regional health data space →				
		Health portal				
	MUL – CT patient portal →	Networking of patient portal and health portal →				
		Telemedicine platform				
Patient care	Modernization of hospital information systems →	Modernization of the hospital information system architecture				
		Networking of system and device data (IoT platform)				
		Establishment of a hospital coordination center				
			Rollout and expansion of CDSS and AI solutions			
			Open, multi-supplier robotics infrastructure			
Innovation / technology		MUL Innovation Academy				
		MUL Rapid Innovation Hub				
	Startup Lausitz Accelerator →			Startup Lausitz Accelerator successor program		
		MUL Innovation Services				
		MUL Digital Innovation Infrastructure				
Research	Subprojects from FAMe: Expansion and development of the Data Integration Center DIZ (SP 2.1) →			FAMe follow-up proposal		
	Subprojects from FAMe: Creation and operation of the trust office (SP 2.3) →					
	Subprojects from FAMe: Establishment of the digital networking coordination office (SP 2.5) →					
	Subprojects from FAMe: Creation and operation of the simulation center (SP 2.6) →					
	Subprojects from FAMe: Virtual hospital lab (SP 2.9) →					
	Subprojects from FAMe: Digital R & D monitoring system (SP 2.11) →					
	Subprojects from FAMe: Set up the health study for the model region of Lausitz (SP 4.1) →					
Teaching		Creation of an electronic portfolio for measuring skills				
		Cross-professional simulation center with virtual tutorials				
	MVP phase: - Campus management - Learning management system - Central student ID card - Digital infrastructure for teaching and learning activities	Development of the campus management system				
		Structuring of the following semesters in the learning management system				
		Linking of other digital services to the student ID card				
		Further development of infrastructure and services for the digitally driven studies				
Infrastructure		Platform infrastructure, including communication server architecture				
	Digital communication and collaboration →					
		Identity management (including EUDI) →				
	Development of the cloud infrastructure					
		Development of the SSO (clinical) →				
	Network infrastructure (WLAN, WAN, LAN, mobile broadband [5G+])					
Administration		Digital signature →		Contract and document management		
		HR core systems				
	S/4HANA phase 1 →	S/4HANA follow-up phases				
		Digital concierge services				
Miscellaneous		Digitalization relating to construction matters				

Figure 12: Road map to 2030

Lausitz Medical University – Carl Thiem in numbers

Around 4,200 employees → outlook: + 1,300 positions

More than 20 hospitals, 3 sections, 4 institutes,
1 social education center

Academy with over 820 trainees

Around 35,000 inpatients and over 120,000 outpatients annually

Colleagues from more than 60 nations

Campus site roughly the size of 24 soccer fields

New campus being planned and built

Winter semester 2026/27: 36 students enrolled on the model course human medicine

By 2040: 1,200 university places

Creation of 80 W3 professorships, 10 of which will be within the research focus area of digitalization of the healthcare sector

Imprint

Publisher
Martin Peuker,
Chief Digital Officer

Lausitz Medical
University – Carl Thiem,
Thiemstr. 111, 03048 Cottbus

Editorial team
Mayra Kerkhoff
(MUL – CT project management)

Andreas Mörtel
(moertel management consulting)

Prof. Franziska Bathelt
Frank Engelking
Sven Kleemann
Michael Mallach
Grit Rehe

MUL – CT digitalization team and
digital advisory committee

Design, translation and editing
pi-ar GmbH

Last updated
April 2026