



University Medical Center Freiburg

Hospital gets applications to market faster with an IBM Integration foundation solution

Overview

The need

The integration architecture team at University Medical Center (UMC) Freiburg (Universitätsklinikum Freiburg) needed to connect the hospital's business and patient care applications with its clinical and patient data storage systems to provide a full view of patient care in one location, resulting in better overall care.

The solution

The hospital implemented IBM Integration Bus plus Healthcare Connectivity Pack and IBM MQ software to provide integration, messaging and data transformation.

The benefit

The integration architecture team saves critical time when implementing new information-system interfaces, allowing the hospital to seamlessly adopt new systems of record and applications.

Based in Freiburg, Germany, University Medical Center (UMC) Freiburg (Universitätsklinikum Freiburg) is one of the largest hospitals in Europe, with over 10,000 employees. Its medical professionals and administrators rely on an IT environment consisting of more than 80 clinical, operational and patient care applications. This application environment demands constant change, with ongoing application modifications and deployments.

Integrating an IT environment that scales

Markus Gogolin, UMC Freiburg integration architecture team lead, must ensure that all new and modified applications interface effectively with the medical center's two backbone systems, one for patient data storage and the other for clinical report archiving while maintaining consistent service for users. These systems must also comply with Health Level Seven International (HL7), which provides messaging standards for exchanging patient care and clinical information in electronic health records (EHRs).

With the IBM application integration platform, UMC Freiburg's integration architecture team is poised to meet dynamic healthcare environment requirements. "Everything's moving toward connecting data from different hospitals over a broad area interchange, or health information exchange, and we now have the foundation for that," says Markus Gogolin, integration architecture team lead at UMC Freiburg.



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— Markus Gogolin, integration architecture team lead, UMC Freiburg

“The back-end systems of record have been running about 25 years, and we’re more or less using proprietary interfaces and protocols for communication,” says Gogolin. “Our plans are to replace those back-end systems and the clinical document storage, in about a year, so we’ll need to have HL7-compliant connections for all the existing software applications into the new system. The challenge there is that we do not have partners who can modify the interfaces, so we are going to have to do it, and we want to move away from dependence on proprietary interfaces.”

With any modifications to the hospital’s 80 front-end applications Markus Gogolin and his team confront the daily task of creating new interfaces. These interfaces are vital to synchronizing all the hospital’s patient, lab and radiologic data, the volume of which doubles every 1–2 years. “We had the idea of building a layer between the front-end applications and the back-end patient data and clinical report systems, so that we wouldn’t have to change interfaces on the applications themselves—a very resource-intensive activity. We wanted to create an information sharing platform foundation for all the things we want to do in the future.”

Building an HL7-compliant infrastructure

UMC Freiburg implemented two components from the IBM Integration foundation portfolio: IBM Integration Bus and IBM Integration Bus Healthcare Pack software. The solution connects the medical center’s applications across its IT environment and provides monitoring, auditing and analytics capabilities. Integration Bus software provides Gogolin and his team with capabilities to build solutions needed to support HL7 integration requirements. IBM MQ software supports the Integration Bus software by helping UMC Freiburg’s 80-plus applications securely communicate with one another.

“I have a 3-tier architecture implemented on Integration Bus,” Gogolin says. “The first layer is a connection layer for the application systems, the second layer is a transformation layer and the third layer is the storage layer communicating with our back-end systems. The glue between these layers is MQ. MQ is very important because it helps us exchange the interfaces without interrupting service to our end users.”

Gogolin also engaged IBM Training for in-house education on the IBM software and subscribed to the IBM On Demand Consulting service to receive assistance from the IBM Software Services for WebSphere team.

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— Markus Gogolin, integration architecture team lead, UMC Freiburg

Solution Components

Software

- IBM Integration Bus (formerly IBM® WebSphere® Message Broker)
- Healthcare Connectivity Pack
- IBM MQ (formerly IBM WebSphere MQ)

Services

- IBM Training
 - IBM On Demand Consulting
 - IBM Software Services for WebSphere
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Facilitating operational and clinical agility

By using Integration Bus and MQ software, UMC Freiburg reduced the time necessary to implement new information-system interfaces. This resource savings promote integration-development agility, increasing the time the hospital integration architecture team can dedicate to new development.

“Now we have time and resources available for new business developments, whereas before we needed all of our time to fix issues and build numerous interfaces,” Gogolin says. “The problem was that every time we bought new software, we had to make modifications to their interfaces, and that made the software much more expensive. Now, with Integration Bus, there’s no need for difficult modifications to interfaces; they can connect to our system out of the box.” Gogolin goes on to point out that it now takes one person no more than a week to integrate a new application to the organization’s back-end system, as opposed to 1–6 months previously. There were even cases where the organization was never able to use software it purchased because of an inability to build the necessary interfaces.

This simpler, faster method for building application interfaces at the IT level is invisible to frontline UMC Freiburg personnel, such as doctors, nurses, lab technicians and hospital administrators, but the agility that Integration Bus software facilitates has a significant impact on the operational and clinical level. “They now have the flexibility to select the best software for their needs without concern as to whether we can connect it to our back-end system,” says Gogolin. “That wasn’t always the case, because software providers had to modify their application in order to integrate it in our system, and sometimes they were not willing. So we’d have to go with alternative, possibly less effective, applications. So it’s a win all the way around.”

For more information

To learn more about IBM Integration Bus or IBM MQ software, please contact your IBM marketing representative or IBM Business Partner, or visit the following website:

ibm.com/software/products/en/category/connectivity-integration-soa



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