Embedded Systems for Medical Technology

*Embedded Systems*
Today, highly reliable and fast software is controlling many processes in everyday life.

Today, highly reliable and fast software is performing important routine tasks, everywhere.

Embedded systems are in use everywhere. Based upon your specific requirements, ideas, and wishes, our embedded systems team develops powerful technical software, e.g. control software for imaging components or imaging products, robot control units, or communication platforms.

For you, we realize individual software concepts, and implement system software and application software. To ensure a smooth operation, we plan and perform extensive tests. For your ongoing operations, we take care of maintenance or requirement handling and tracing.

If you cannot find a standard solution, we are your partner. We develop your solution individually, tailor-made, reliable, and safe – just the way you need it.

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Embedded Systems – Reliable and Safe

In Use at softgate: State-of-the-Art Technology

Since its foundation, softgate has been active in all areas of software development – from hardware-dependent software to object oriented programming. The demanding quality and safety requirements we guarantee by using state-of-the-art tools and up-to-date technologies.

Our experienced engineers are proficient in a wide range of programming languages, from C/C++ to Java.

Our customers’ needs also require tools individually matched to fit, applied as “DevOps”:

Integrated development environments, version management systems, and special programs for object oriented software analysis and software design are in everyday use to meet the demands of systems becoming ever more complex.

Software for People

Our range of services includes everything from real-time system development to low-level programming or realization of communication systems.

One key aspect of our services is the development of robot-based applications for medical technology requiring a high level of security and availability.

Both, in the development process and in software architecture, we strictly adhere to relevant standards, e.g. IEC 62304, IEC 60601-1, or ISO 13485. Prior to any software development and in accordance to our customers’ demands, we use the optimal process model (e.g. V-model or SCRUM).

To provide high availability to safety critical software, the mentioned software modules will be implemented with redundancy and technologically different, i.e. diversified.

Embedded Security

Another important aspect in the world of industry 4.0 and the increasingly dense connection of software components of machines previously independent is the issue of security in the meaning of Data Security and Data Integrity. Here, already during software development, softgate performs process-guided development steps, which allow the highest degree of robustness against attacks via external or internal interfaces.
Our Solutions and Services

**Software Development Process**

softgate covers the complete development process, both – in whole or in part:

- Product lifecycle management / application lifecycle management, specification, requirement engineering, risk analysis, model based development, architecture and design, tests on every V model level (code review, unit test, module test, integration system, system test, and acceptance test).

We pay particular attention to automatable tests. For requirement tracing, we often count on an approach that allows us to link the document type of the respective level of development with other levels as well horizontally as vertically.

**Embedded User Interfaces**

Do you need an attractive user interface for your medical device? We would be happy to realize a professional interface and to integrate it into your product. You can choose between traditional technologies such as QT or HTML5, or popular mobile approaches such as Android (Java) or Blackberry. Of course, we consider every required standard here, too.

**From Planning to Turn-Key Software Solution**

To complete our portfolio, we offer integration of hardware and software, control systems and communication systems, and development of prototypes up to serial software. If required, we will accompany your product throughout its entire lifetime and provide maintenance.