

Project Note

New software improves infusion pump

An infusion pump was to be furnished with new functionality for blood glucose control in intensive care patients. Zühlke provided the manufacturer with assistance to the software architecture and the realisation of the innovative treatment.

Task

B. Braun is a leading supplier of infusion pumps for in-patient use in hospitals. Using its Space infusion pump system, the company has developed an innovative treatment for intensive care patients involving blood glucose control. The concept uses an integrated system of multiple infusion pumps, a control algorithm and an operating console to permit the treatment to be carried out with initial fault-tolerance. Zühlke assisted the B. Braun development team with the architecture and realisation of the associated software. This included the graphical user interface, the treatment control system and safety-critical areas.

Implementation

Zühlke experts, with extensive experience in control systems, built on the existing state of development of the system in order to realise the required functionality, together with the client's team. The implementation involved developing a viable software architecture, refactoring existing elements and realising the safety-critical architecture. The team used the tool Rhapsody in C for the work and applied design patterns to reduce the complexity of the software and thereby improve the ease of maintenance. Zühlke also provided the client's team with an introduction to object-oriented programming in Rhapsody in C and the use of patterns, so that they could work together on the project. This knowledge will also help to improve the quality of the software developed in future projects.



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SHARING EXPERTISE



Technical Data

Rhapsody
C
UML
Windows CE
Visual Studio
Metrowerks
CodeWarrior

Customer benefits

- As a result of refactoring and the use of patterns, the client obtains a less complex system that is easier to evolve and maintain.
- Training on the job: The B. Braun team, while working together with the Zühlke experts, are given training in object oriented programming and the use of patterns.
- The support provided by Zühlke helps expedite official approval of the system.

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