

Bavarian research & innovation



Bavarian Research Cooperation forFLEX – Service-oriented IT-systems for highly flexible business processes

ADVANTAGE THROUGH FLEXIBILITY

Business has to meet ever growing requirements for flexibility. Companies constantly adjust their efficiency and effectiveness. While conventional business processes reach a high degree of automation through the use of modern standard software, there is a deficit in the support of highly flexible business processes (hbp).

Highly flexible business processes occur in different spheres – for example in medical health care when it comes to the cooperation of hospitals, medical practices and laboratories in medical care centres. Highly flexible business processes are context sensitive and can only be scheduled partially or in an ad hoc manner. Appropriate steering and automation of such processes can bring about strategic and competitive advantages for the companies concerned. At the same time, the development of the corresponding software represents a big challenge.

To some extent, requirements to highly flexible business processes are only defined at the moment of their execution. Therefore, the chronological steps from process planning to execution become indistinct. This is why conventional standard software with its “hard-wired” and preprogrammed behaviour variations comes to its limits here. Highly flexible business processes require a dynamic and extensible behaviour repertoire from their supporting IT-systems.



aboutpixel.de – Kim Czuma

There is a high need for research and development with regard to the requirements, structural and behaviour properties of highly flexible business processes and their software support. The Research Cooperation forFLEX has its focus on that need.

It shall examine and use the potentials of service oriented IT-systems as key technology for the flexibilisation of business processes. To this end, scientists of forFLEX research applicable forms and degrees of automation of highly flexible business processes.

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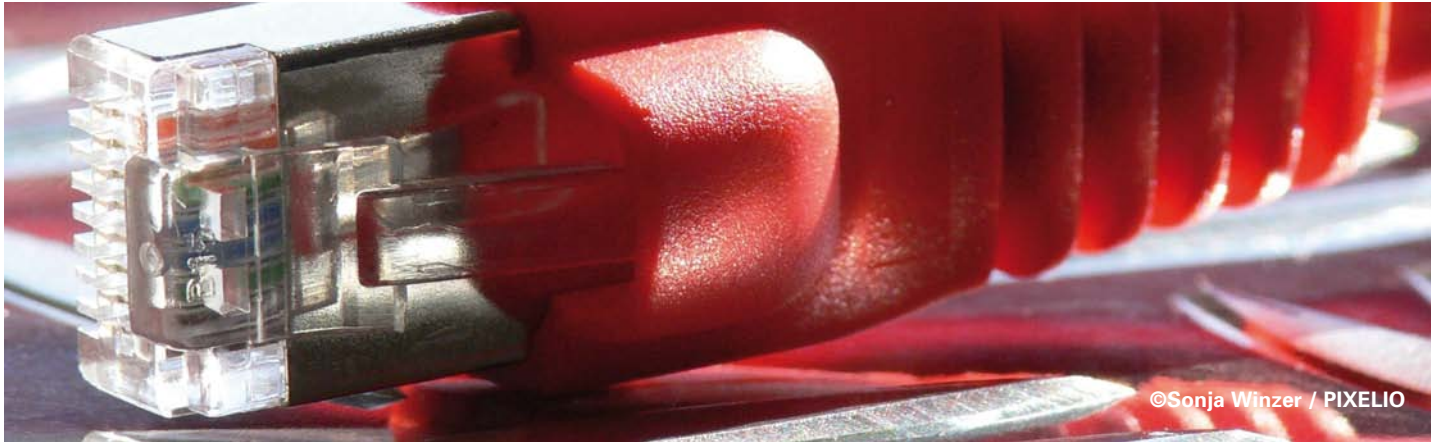
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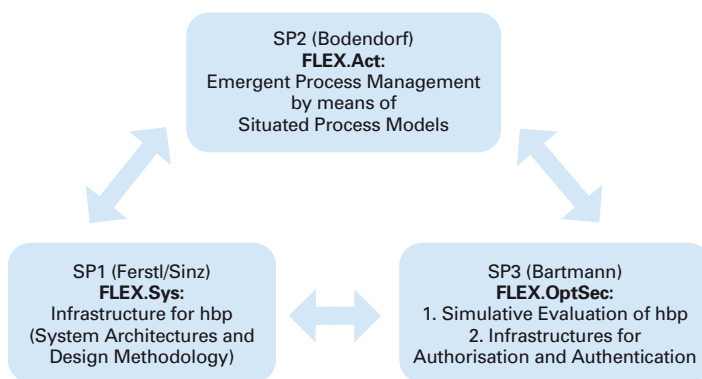
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RESEARCH TOPICS:

The research project for FLEX comprises three parts that are related one to another.



Sub-project 1: FLEX.Sys

FLEX.Sys concentrates on the gain of methodical knowledge and practical experience to design application systems for highly flexible business processes. According to the context sensitivity of these processes, application systems require a flexible array of own features as well as manifold possibilities to interact with other application systems within and outside the company. One solution to be considered are service-oriented application system architectures whose requirements and properties are intensively being discussed at the moment.

Sub-project 2: FLEX.Act

The aim of this sub-project is the conception and prototypical development of a support system for highly flexible business processes on the basis of a service-oriented architecture. Thereby, process activities will not only be considered from the process owner's point

of view, but also from those of the different process actors. This combination of centralised and decentralised approaches allows single units in the company to immediately react to changes, depending on their situational environment.

Sub-project 3: FLEX.OptSec

1. "Simulative Evaluation of highly flexible business processes"

The issue of quality assurance is one important aspect of modelling of highly flexible business processes. Very often, processes are not completely or even incorrectly specified, so that competent departments are not satisfied with the newly modelled processes and the expected advantages of new processes fail to materialize. Therefore, this sub-project aims at creating methods and instruments to allow for finely adjusted process simulations already during the modelling phase. Thus, modelling bugs can directly be detected and deleted. A formally correct representation of the process that is also loadable to a workflow-engine will be produced.

2. "Infrastructures for Authorisation and Authentication"

IT-Security services for highly flexible business processes can only be realised across companies when the "trust chain" has appropriately been modelled. Staff of different medical practices, for instance, will access the same electronic patient database. By doing so, additional problems regarding password protection will occur. In general, password policy and the degree of strict observance differ in every company involved into the workflow process. This leads to security issues. Remedy is offered by authorisation and authentication infrastructures (AAI) that work with two-factor security systems, using biometric procedures in addition to password security. The integration of biometry into AAI, however, entails specific problems that have not yet been solved (ageing process of biometric characteristics, ambiguousness). The task of this sub-project is to find and test feasible approaches to solving these problems.

Economic applications:

- Competitive advantage through higher agility of companies
- New business models for IT-suppliers, especially SME
- Effective and efficient process management
- Improvement of quality, time and cost factors through evaluated and secure business processes
- Improvement of quality, time and cost factors when adapting IT to modified or new business processes

Academic partners:

- University of Bamberg
Chair of Information Systems, esp. Industrial Application Systems
Chair of Information Systems, esp. Systems Engineering
- University of Erlangen-Nürnberg
Chair of Information Systems II
- University of Regensburg
Chair of Information Systems II – Banking Informatics

Industrial partners:

Accenture GmbH
ASTRUM IT GmbH
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