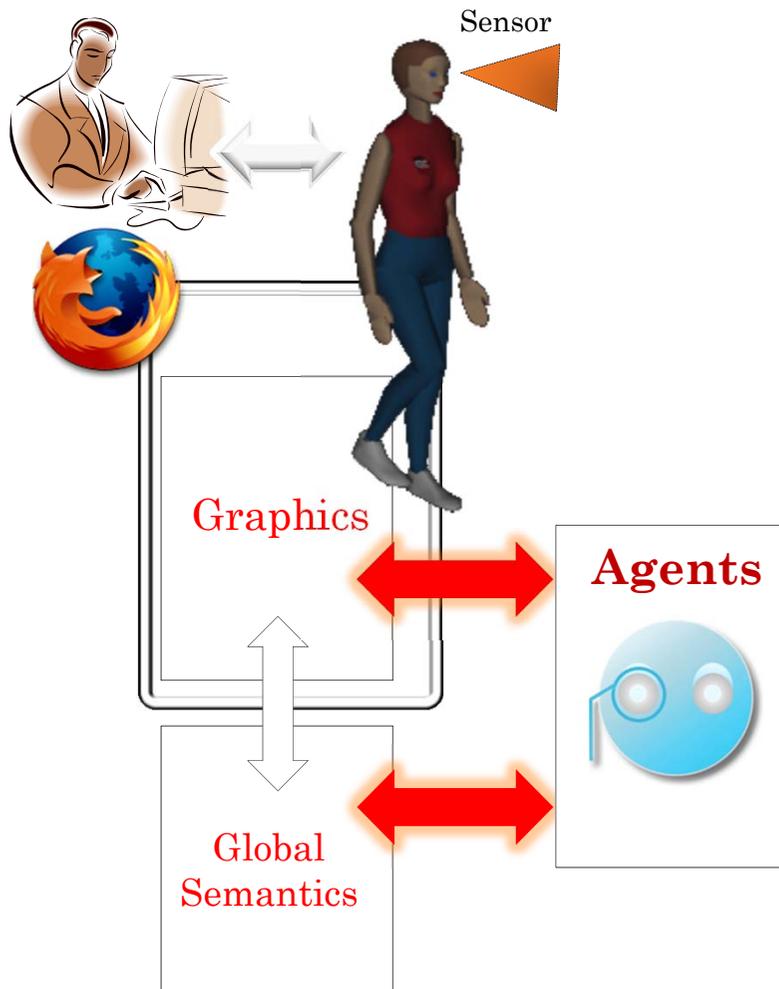


DFKI SOFTWARE PROJECTS

Research Group Multi-Agent Systems
PD Dr Klusch, Dr Fischer



INTELLIGENT AVATAR IN JADEX



ISReal Platform

- Virtual 3D world simulation
- Annotated XML3D scenes
- Avatars in scenes
 - User interaction
 - Planning
 - Semantic reasoning
- Behavior controlled by agent

BDI agent architecture

BDI agent platforms

- JACK ✓
- JADEX ?





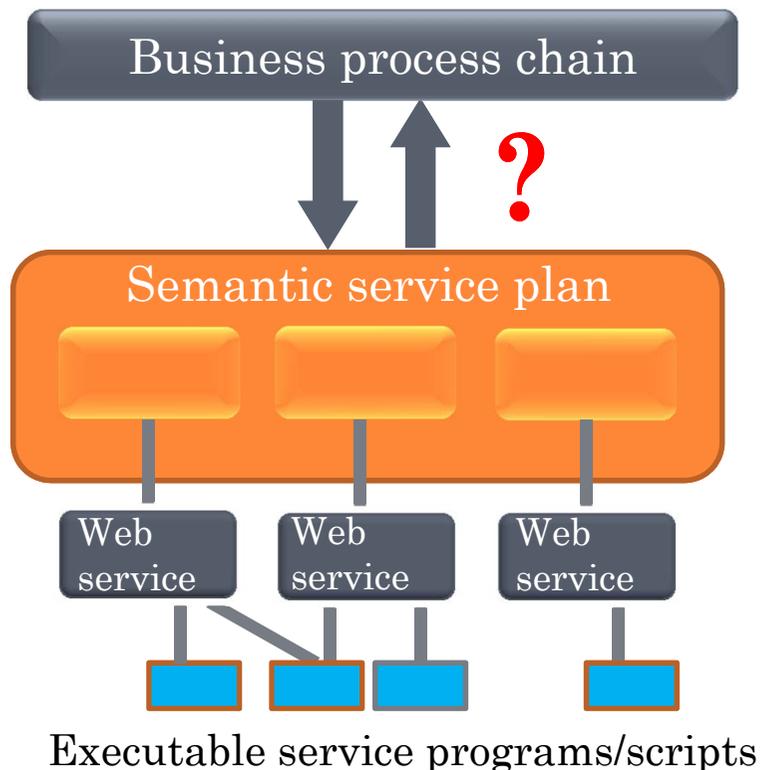
TASK

- Realize an intelligent avatar agent using the multi-agent system development platform JADEX (Java, XML)
- Validate your solution of an intelligent avatar in annotated 3D scenes in XML3D using the ISReal platform
 - Web: XML3D-compliant Firefox/Chrome
 - VR system: Lightning

Contact: PD Dr Klusch (klusch@dfki.de), Dr Hoffmann, MSc Warwas
ISReal Project: www.dfki.de/~klusch/isreal, XML3D: www.xml3d.org



SEMANTIC SERVICE-ORIENTED PLANNING OF BUSINESS PROCESSES



- **Business process** modeling in BPMN
- Implemented by **Web services** based on WSDL
- **Semantically** annotated Web services in OWL-S
- **Composition planning** of semantic Web services with **OWLS-Xplan 2.0**



TASK

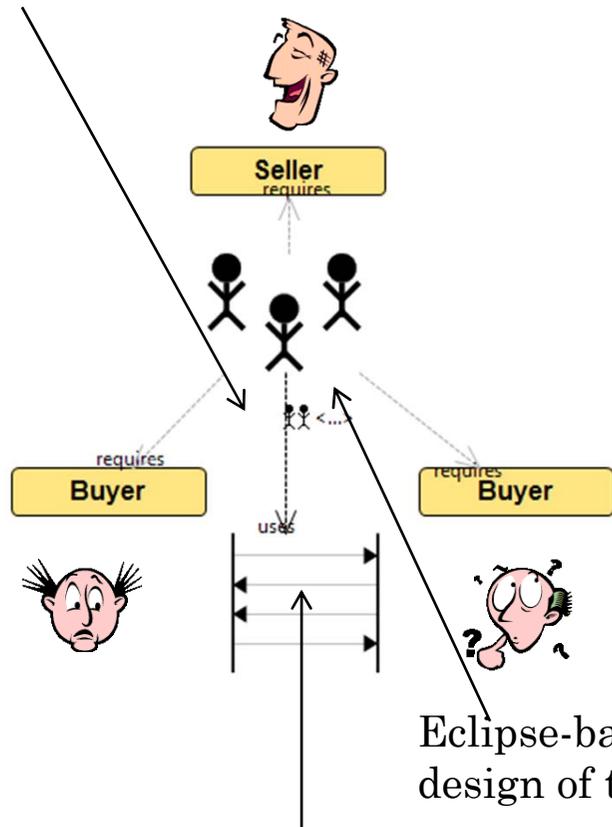
- Implement and validate semi-automated planning support tool for service-oriented business process implementation using OWLS-Xplan 2.0
 - *Top-down:*
 - From query at business process level (BPMN)
 - To optimal service plan
 - *Bottom-up:*
 - From query at semantic service level (OWL-S/USDL/SAWSDL)
 - To most relevant business processes
 - *Change management (service/process/query):*
 - Replanning with service alternatives,
 - Recommendation of alternative business processes

Contact: PD Dr Klusch (klusch@dfki.de), MSc Kapahnke



AGENT-SUPPORTED NEGOTIATION FRAMEWORK

Computer-aided support to structure negotiation is desirable!



- Computer-aided negotiation
- Agent-based systems
- Model-driven system design
- Technologies:
 - Agent development environments
 - Eclipse (EMF/GMF)
 - Modeling (UML-style)
 - Model transformations (ATL/QVT)

Eclipse-based modeling approach to the design of the agent-base system.

Protocol design is most crucial for a negotiation framework.



TASK

- Evaluation of the overall architecture and approaches
- Investigate model to model transformations of protocols using two competing technologies (ATL/QVT)
- Check on model to text transformations for a given execution environment

The basic building blocks are there. What you need to do is to bring them together and apply the techniques of the lecture to the overall system design.

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Dipl. Inform. Ingo Zinnikus

