3APL-M
Platform for Lightweight Deliberative Agents

What is 3APL-M?

- Platform for agent applications running on mobile devices
- Uses 3APL for the deliberation cycles and internal knowledge representation
- Suitable for Java 2 Micro Edition and Java 2 Standard Edition applications

System Architecture

Java Library

Java programming Library:
- Any Java programming platform
- Runs on Java compatible devices

3APL Machinery: encapsulates the Agent's components
- Belief, Capabilities, Goal and Plan Rules: 3APL structures
- Deliberation process: implement the transition rules
- Plan Base: the list of current Plans
- mProlog: reduced Prolog engine, optimized for J2ME
- Sensor and Actuator interface: integration external world
- Communicator: networking infrastructure

3APL Deliberation Process

http://www.cs.uu.nl/3apl-m
Integrable

- Integrates to any Java Programming environment (JBuilder, NetBeans)
- Integrates to any Java code through Sensors, Actuators and Communicator programming interfaces

Integrates to AO Software Engineering

DEMOS

Context awareness

(A) Screen shots

(B) 3APL code

CAPABILITIES:

{shoppingList(List)} AddItemToList(Item)
{ NOT shoppingList(List), shoppingList(List + Item)}
AskConfirmation(Message) {GUI(promptYesNo, Message)}
Display(Message) {GUI(promptOk, Message)}
GUI(Type, Message) {EXTERNAL}.

RULEBASE:

addItemToList(Item) <- TRUE | AddItemToList(Item).
getQuote(Shopping, List, Result) <- TRUE | Send(MsgId, Shopping, query-ref, quote(List)),
Receive(MsgId, Shopping, Performative, Result, 4).
resolve <- location(near, Shopping) AND shoppingList(List) |
AskConfirmation( [Near, Shopping, Request for quote?]),
getQuote(Shopping, List, Result),
Assert(receivedQuote(Shopping, List, Result)),
displayQuote(Shopping, Result).

BELIEFBASE:

shoppingList( [productA, productB]).

Collaboration

Interest Based negotiation

Content Delivery

Mobile Commerce

Wumpus game

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Web Site
✓ Source Code
✓ Documentation
✓ JavaDoc
✓ Pre-built J2ME, J2SE and PersonalJava packages
✓ Demos
✓ References
✓ Contact Information

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