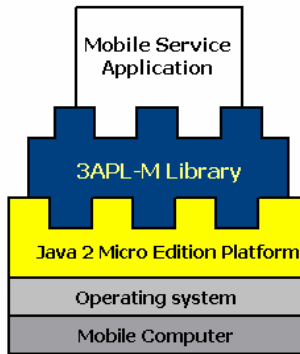


What is 3APL-M?

- ✓ 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

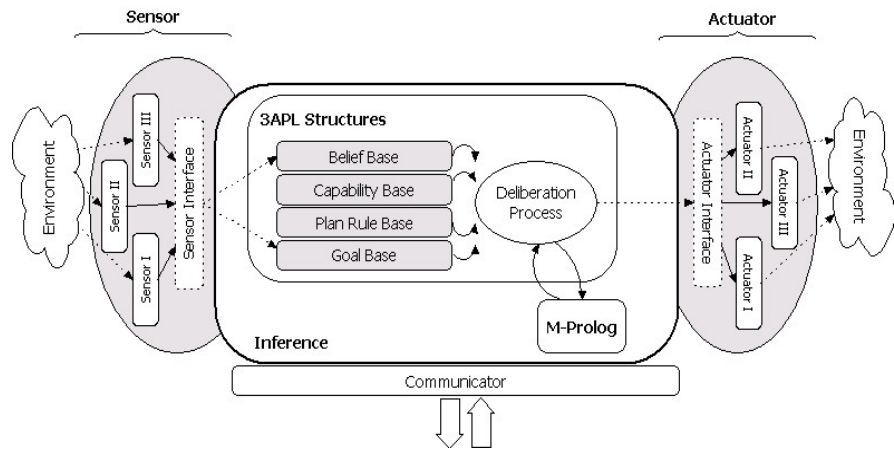
System Architecture

Java Library



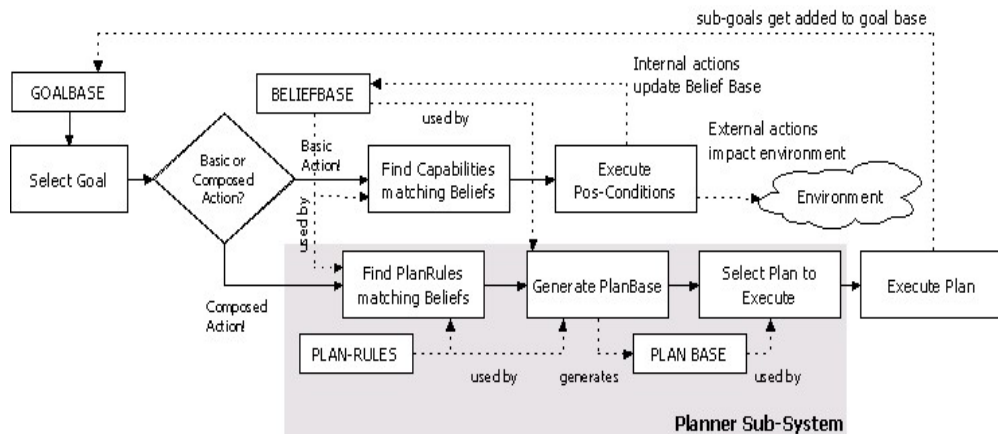
Java programming Library:

- ✓ 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





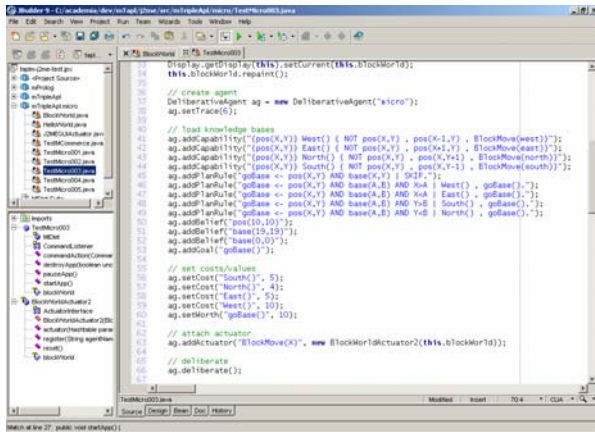
3APL-M

Platform for Lightweight Deliberative Agents

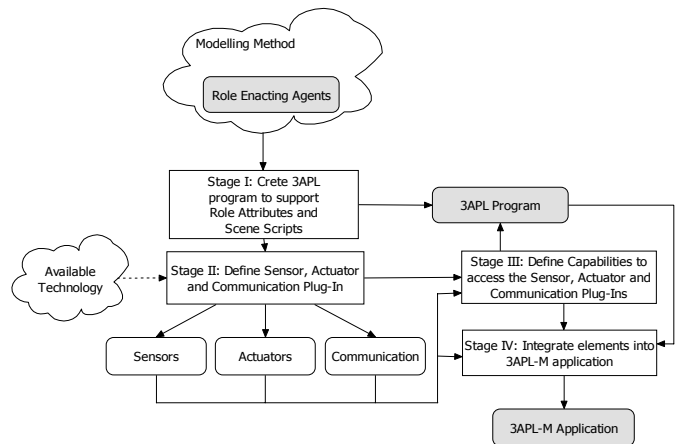
Integrable

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

Borland JBuilder®

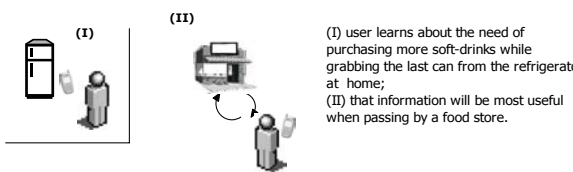


Integrates to AO Software Engineering



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).

displayQuote(Shopping, Quote) <- TRUE |
Display(Quote received from, Shopping, is $, Quote)).

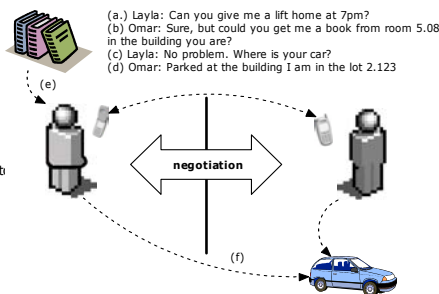
getQuote(Shopping, List, Result) <- TRUE |
Send(MsgId, Shopping, query-ref, quote(List),
Receive(MsgId, Shopping, Performative, Result, 4).

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:
addressBook(storeA, http://localhost:50001\
shoppingList(productA, productB)).
location(near, storeA).
  
```

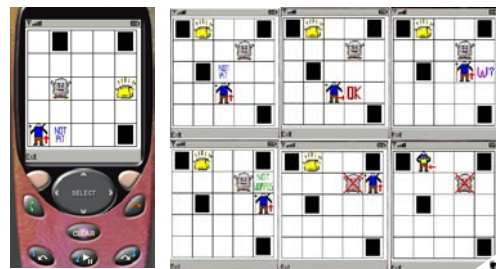
Mobile Commerce

Collaboration



Interest Based negotiation

Content Delivery



Wumpus game





3APL-M

Platform for Lightweight Deliberative Agents



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Web Site

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



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

