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FIPA-OS: FIPA Everywhere!

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Current Position

- FIPA 97 & 98 specs available
- Many ‘closed’ implementations under development (mainly FIPA members)
- Technology ready, framework/platform instances not so ready
- Many interested parties, initial hurdle to application

- Few people have seen inter-operating FIPA applications - tests underway
- No reference implementation
- Validation / verification of FIPA restricted
- FIPA feedback / maintenance an issue

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Potential Risks

- **Initial implementation too complex - FIPA technology marginalised**
- **FIPA still not adopted widely - FIPA flounders**
- **OMG specify a restricted agent framework without benefits of ACL - FIPA marginalised**

The Challenge

- **Achieving wide adoption / commercialisation of FIPA**
- **Survival of FIPA**
- **Value from FIPA membership**

Option 1: Do Nothing

- Carry on ‘as usual’
- Wait for vendors to produce their own FIPA platforms
- Wait for external activities to validate / verify FIPA

Rejected - not proactive enough

Option 2: Competitive

- **Build interoperability server**
- **Encouraging proprietary solutions to be made public**

Good ideas, but only part of the story ...

Option 3: Collaborative/Co-operating

- **FIPA Open Source**
  - Open source model for FIPA
  - Baseline implementation(s) publicly available
  - Library of publicly / co-operatively produced agents and services
  - Enable agent application developers to construct apps using FIPA technology
  - Encourage extensions/ feedback/ iterative/ evolving implementation(s)
  - Validation & verification mechanism

The FIPA-OS Solution

- Provide a server for public access to FIPA source code
- Provide a light-weight management service for collaborative development / co-ordination of FIPA Open Source
- Additional FIPA sponsored student(s) to help
- Provide FIPA baseline platform
- Allow interoperability test service

The Yield/Payoff/Benefit

- Wider developer adoption of FIPA
- Realises the FIPA promise of interoperability - enabling progress in the agent paradigm
- Helps FIPA to concentrate on agent issues
- The hurdle to adopt FIPA is reduced
- Wider acceptance of FIPA
- Enables users to concentrate on agent-enabled business thrusts, rather than underlying platform / middleware issues

FIPA-OS Overview

FIPA-OS is the first open source implementation of FIPA and is available for free.

- A ‘reference implementation’ of the FIPA open standard for agent interoperability
- OS means Open Source, freely available, modifiable, and exploitable source code
- Enables adoption of FIPA without the need to implement the specifications
- Assist in validating and evolving FIPA standards
- Interoperability proven in the FACTS project

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FIPA-OS Features

- **Platform Agents**
  - AMS, DF, (ACC)
- **Agent Shell**
  - ACL, SL0 and XML\RDF (RDF encoding of SL0) parsers
  - Persistence abstract interface (bindings for serialisation)
  - Transport abstract interface (bindings for Voyager and OrbixWeb)
- **Configuration**
  - XML\RDF Platform and Agent profiles
  - IOR distribution via HTTP

FIPA-OS Status

- v1.01a released September 1999
- v1.02 planned for October 1999
- v1.03 planned for November 1999

- Global user base from Academia and Industry

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Further Information

FIPA-OS is a Open Source implementation of FIPA and is available for free.

- **FIPA-OS**
  - http://www.nortelnetworks.com/fipa-os
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Background Material

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Open Source Advantages

(from Sun Community Source License Principles by Richard P. Gabriel and William N. Joy)

- **The code is open with published and, often, specified interfaces**
- **There are more developers looking and working on the common source code, so there is higher quality and more-rapid innovation**
- **There is no central owning organization that sets schedules and priorities that might conflict with a using organization's schedules and priorities**
- **There is a self-organizing effect in which the boundaries between proprietary concerns and com-munity concerns are adaptively set**
- **A participating organization can reap the benefits of expertise not in its employ.**

Open Source Disadvantages

(from Sun Community Source License Principles by Richard P. Gabriel and William N. Joy)

Disadvantages

- **There is no clear control over compatibility issues and there may, therefore, be fragmentation.**
- **There may be no responsible organization. Bugs introduced by another organization may be too difficult for a using organization to fix and of too low priority for the author to fix in a timely manner**
- **Progress can be chaotic and undirected**
- **There are limited financial incentives for improvements and innovations, leading commercial developers to use the proprietary model.**

Solutions:
1. Community source license
- free to innovation contributors, not free to commercial exploiters
2. Managed open source - free. FIPA-OS is managed open source.