Supporting Software Agents on Small Devices

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MicroFIPA-OS

- An open-source agent execution environment and toolkit derived from FIPA-OS for small and wireless devices by the University of Helsinki.

- Deployment of FIPA-OS agents on small devices.

- Runs on most of today's middle/high-level PDAs with PersonalJava support (Java 1.1, J2SE, CDC..)

MicroFIPA-OS was developed in the CRUMPET project, which aims to provide tourism services for mobile users. www.ist-crumpet.org

MicroFIPA-OS is available as open-source from the SourceForge-forum. fipa-os.sourceforge.net

MicroFIPA-OS supports a number of agents on the small device

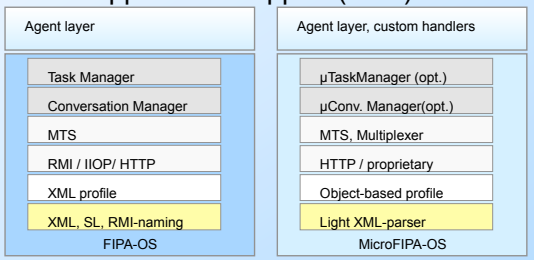
- It is able to host a full FIPA platform and execute AMS and DF on the terminal.

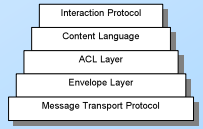
- Minimal API for thin agents.

Redesigned message transport layer and interaction protocol layer.

- Agents share transport protocols.

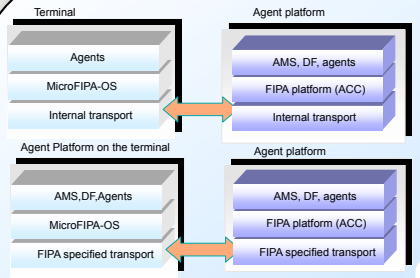
Nomadic Application Support (NAS)





FIPA communications stack

	 Casio Cassiopeia E-115	 Compaq IPAQ H3630	Laptop
CPU	131MHz MIPS	206MHz StrongARM	500MHz
OS	Windows CE 2.11	Linux 2.4.3	Linux 2.2.16
JVM	Sun Pjava 1.0	Sun JDK 1.1.8	Sun JDK 1.1.8
Caffeine Mark	27	120	679
MFOS runtime footprint	3 MB	4.1 MB	3.9 MB
Startup time (ms)	16574.5	2206.5	439.2



Two deployment scenarios:

-terminal system as an independent agent platform (AMS,DF,interoperability).

- terminal system as part of an existing agent domain.

It is possible to execute Java-based middleware and agents on small devices.

There is a price on portability: increased resource consumption, reduced performance.