Embedded OSGi Gateway

**Project overview**

- **Main goal:**
  This board was designed to provide secure supervision through SNMP* V3 protocol, and remote information and HTTP interface management.
- **Ad'Hoc network architecture:**
  The device dynamically request sensors' data through analog/digital communication without any access point.

*SNMP : Simple Network Management Protocol

**Low-cost ad'hoc hardware architecture**

- This board was designed around several components:
  - ARM920T microcontroller
  - 8 MB of Flash Memory
  - 16 MB of RAM
  - I2C EEPROM
  - Serial Interface
  - USB Host Connectivity
  - Ethernet
- All of these make this board communicative and having lots of possibility further its main use.

**System architecture**

- The device's architecture is constituted of Linux operating system that offers the possibility to use several applications.
- After different cross-compiling test and use of Java Virtual Machines, « Kaffe » and « Blackdown » will be used because of the difference of performance compared to « Kaffe ».
- Osgi’s dynamic services as a natural solution for software flexibility (Oscar Implementation)
- BlackDown VM as a support for Oscar (been tested as the most suitable compared to Kaffe, ...)
- Embedded linux as operating system
- OSCAR OSGi framework implementation is used at the time to manage services

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**Further work**

The next use of the device is to coordinate a ZigBee network, being managed through the TCP/IP protocol.
The same board could pull several RFID Readers, through its 4 serial buses.
FELIX could be used to integrate and to use the last OSGi specifications.

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**Plate-forme Technologique**

Plate-forme technologique – Université Pierre Mendes-France
Laboratoire de Conception et d’intégration des Systèmes
Institut National Polytechnique de Grenoble
Tel:(33)4 75 41 88 58 – Fax:(33)4 75 41 88 58