# Fuego Core Project

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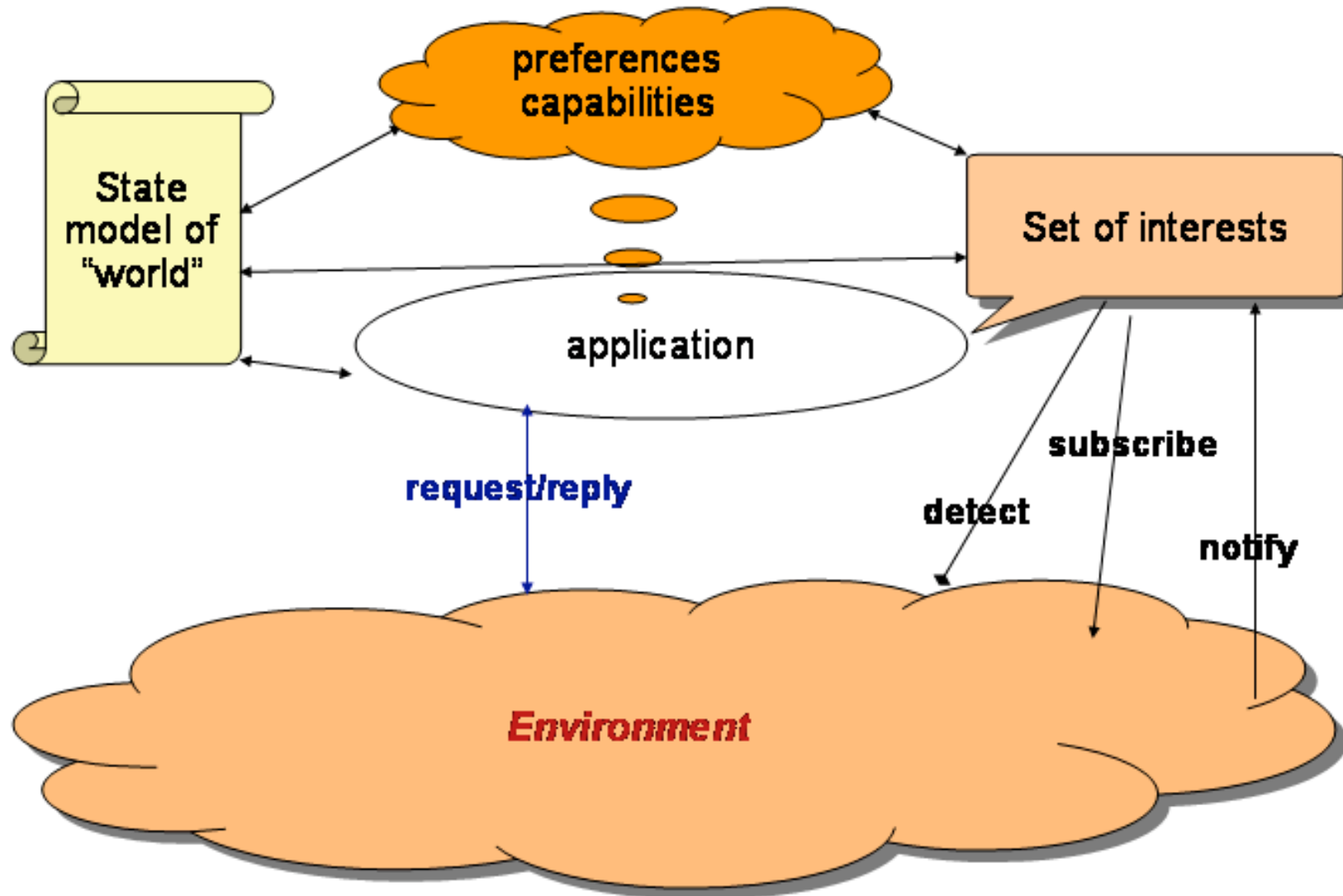and Kimmo Raatikainen

16.12.2005

# Contents

- Project Overview
- Distributed Event Management
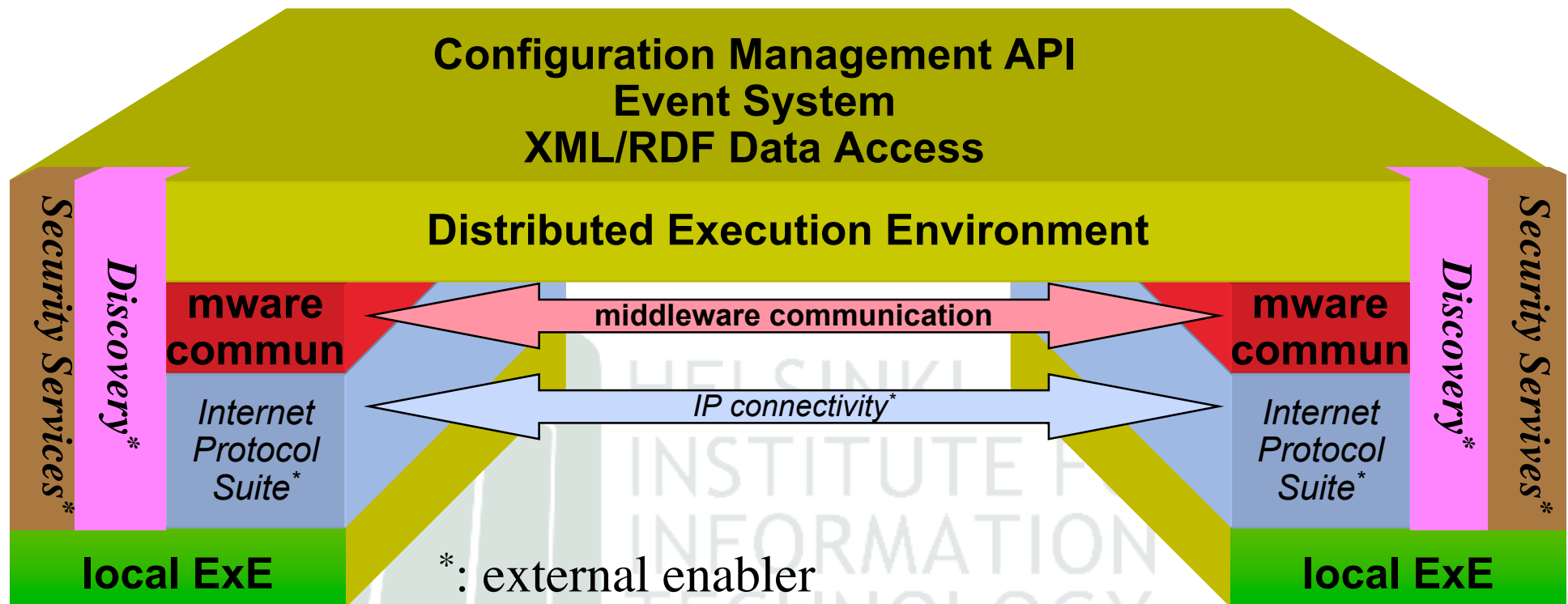- Peer-to-Peer File Synchronization

# FUEGO CORE

- Mobile and wireless environments have different requirements than desktop systems
  - User mobility, terminal mobility, connectivity, device characteristics, dynamic environments
- Vision: A service application is distributed among various application servers, network elements and terminals
- Three year Tekes project (2002-2004)
  - Industrial partners: Nokia, TeliaSonera, Elisa, Ericsson, Movial
  - Open source software
  - Demonstration at WMCSA 2004
  - Standardization contributions: W3C, IETF, WWRF
- Continuation project (2005-2007) under way
  - Industrial partners: Nokia, TeliaSonera, Ericsson

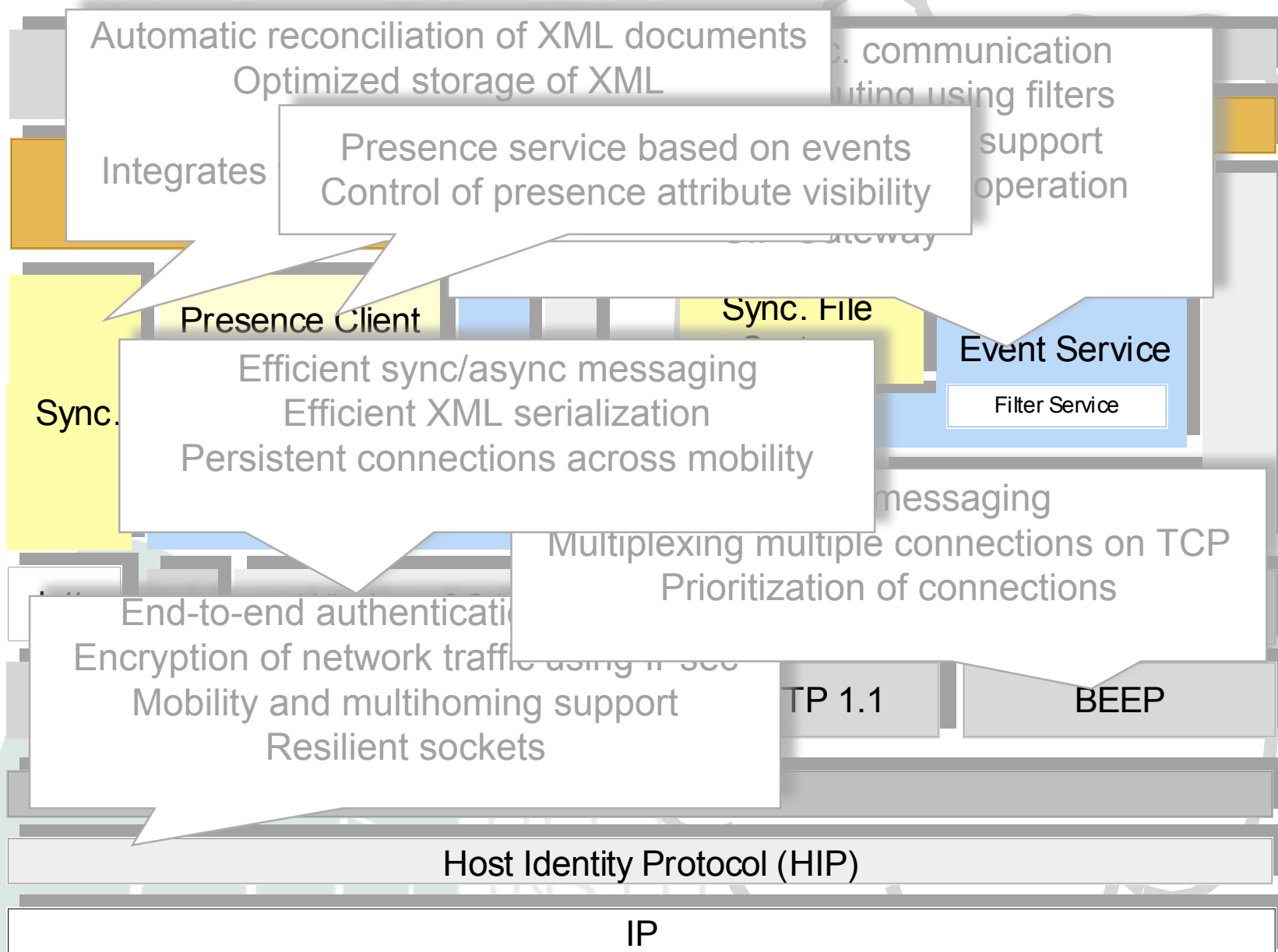# Requirements for Future Applications

# Fuego Core 2005/7

- Mobile distributed events
- XML messaging
- XML/RDF data access
- Software configuration management

# Fuego Core 2005

- The Fuego middleware service set
  - Data communication
    - Efficient wireless SOAP (Jaakko Kangasharju)
    - Efficient content-based routing
    - SIP Events (Thalainayar Balasubramanian Ramya)
  - Data synchronization (Tancred Lindholm)
    - 3-way XML document merging
    - XML-aware file synchronizer
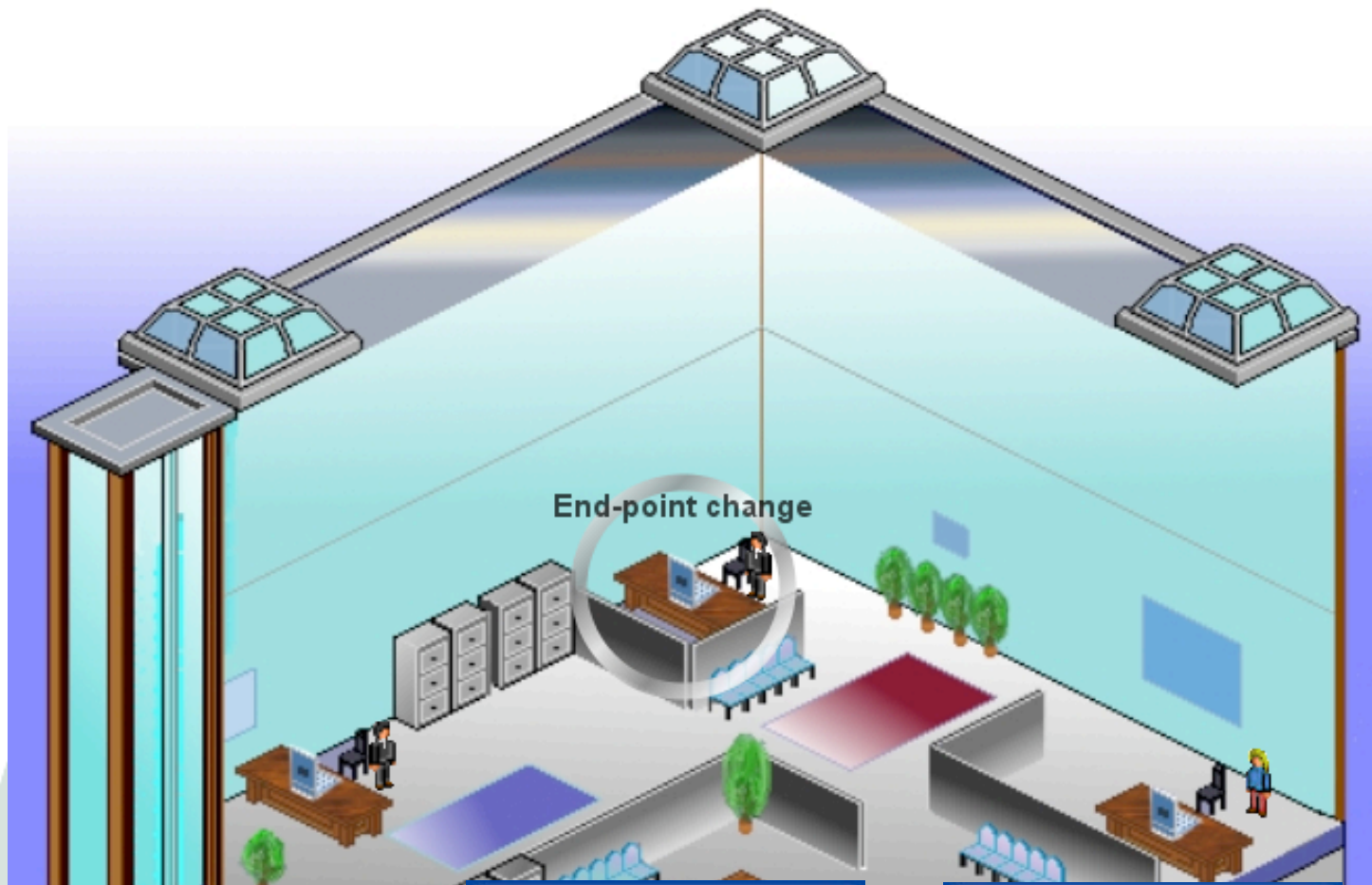- Project Manager: Sasu Tarkoma
- Project Leader: Kimmo Raatikainen

Automatic reconciliation of XML documents
Optimized storage of XML

Integrates

Presence service based on events
Control of presence attribute visibility

c. communication
uting using filters
support
operation

Presence Client

Sync. File

Event Service

Filter Service

Sync.

Efficient sync/async messaging
Efficient XML serialization
Persistent connections across mobility

messaging
Multiplexing multiple connections on TCP
Prioritization of connections

End-to-end authenticatio
Encryption of network traffic using IPsec
Mobility and multihoming support
Resilient sockets

TP 1.1

BEEP

Host Identity Protocol (HIP)

IP

**Mobile Clients**

**Distributed Servers**

# Smart Office Scenario

- Fuego Core project demonstration. Shown at the 6th IEEE Workshop on Mobile Computing Systems & Applications (WMCSA 2004).
- Integrates three fundamental middleware services: messaging (SOAP), events, and file synchronization.
- Shows various interesting interactions in the office environment
- Uses content-based routing to realize context-aware messaging
  - Context-awareness is considered as an important property of future mobile applications.
  - We define context to be represented by a set of dimensions that take either discrete or interval values → filters
  - Client subscribes current context and receives matching content

**End-point change**

**FuegoTicker**

Fuego core demo

topic 1 - New servic

HELSINKI
INSTITUTE FOR
INFORMATION
TECHNOLOGY

Retrieved 5

Options                Close

**FuegoTicker**

Transfer session
View events
At home&work
At home
At work
Exit

Select                Cancel

**Choose Notification**

⦿ New service available
○ Presence alert
○ Alert 3
○ Alert 2
○ 4 buddies online

Options

# More Information

- More information and publications are available at:
    - http://www.hiit.fi/fuego/fc