



CASCOM 

Intelligent Service Coordination For Mobile Emergency Medical Assistance

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Project in a Glance



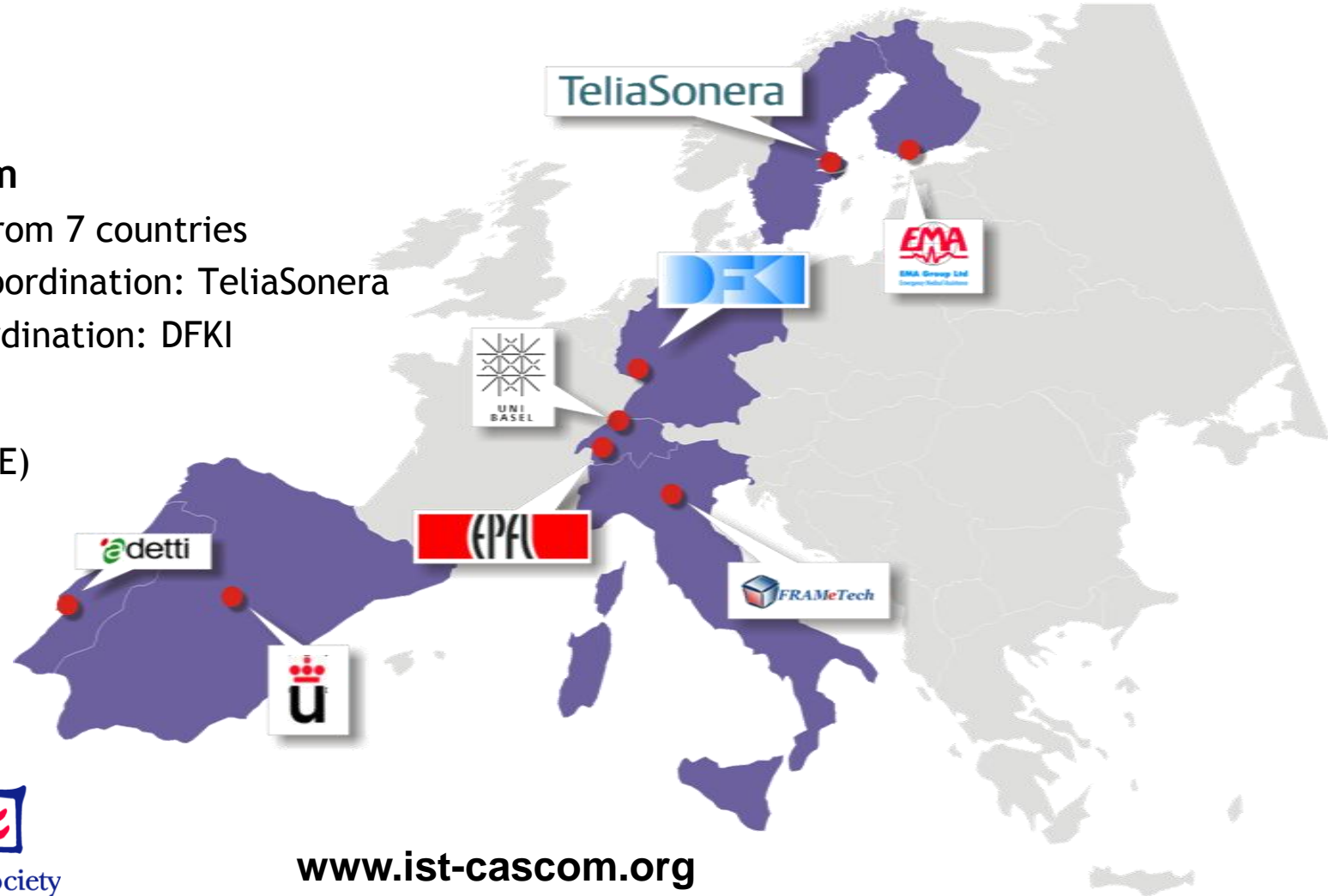
- **European funded STREP FP6 IST, 2004 - 2007**
 - **Context-Aware Business Application Service Co-ordination in Mobile Computing Environments**
- **To develop, implement, validate, and trial**
 - **Agent-based service coordination infrastructure** for mobile and fixed P2P service networks.
- **Use case of emergency medical assistance across Europe**
 - Involving hospital physician, emergency physician, emergency medical assistance centre, health insurance, and - the patient



Project in a Glance (2)

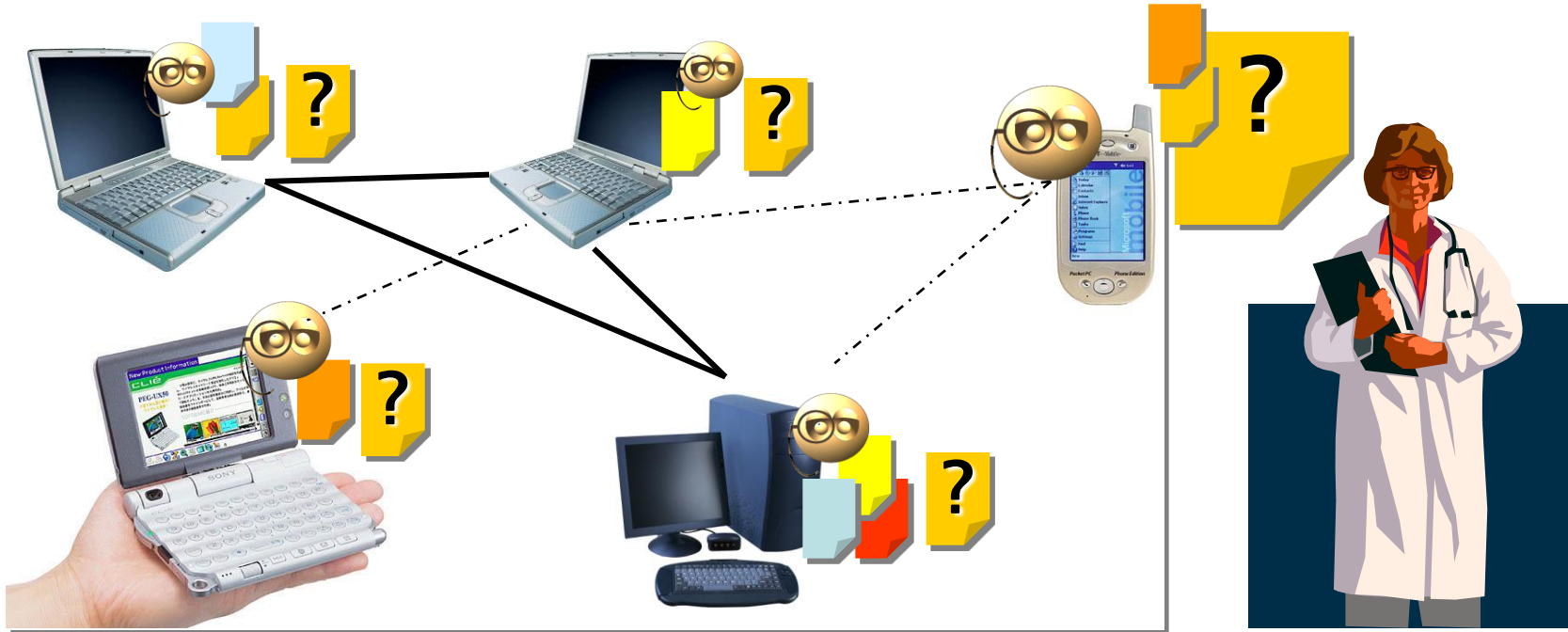


- **Consortium**
8 partners from 7 countries
Technical coordination: TeliaSonera
Project coordination: DFKI
- **Funding**
2.7ME (3.7ME)



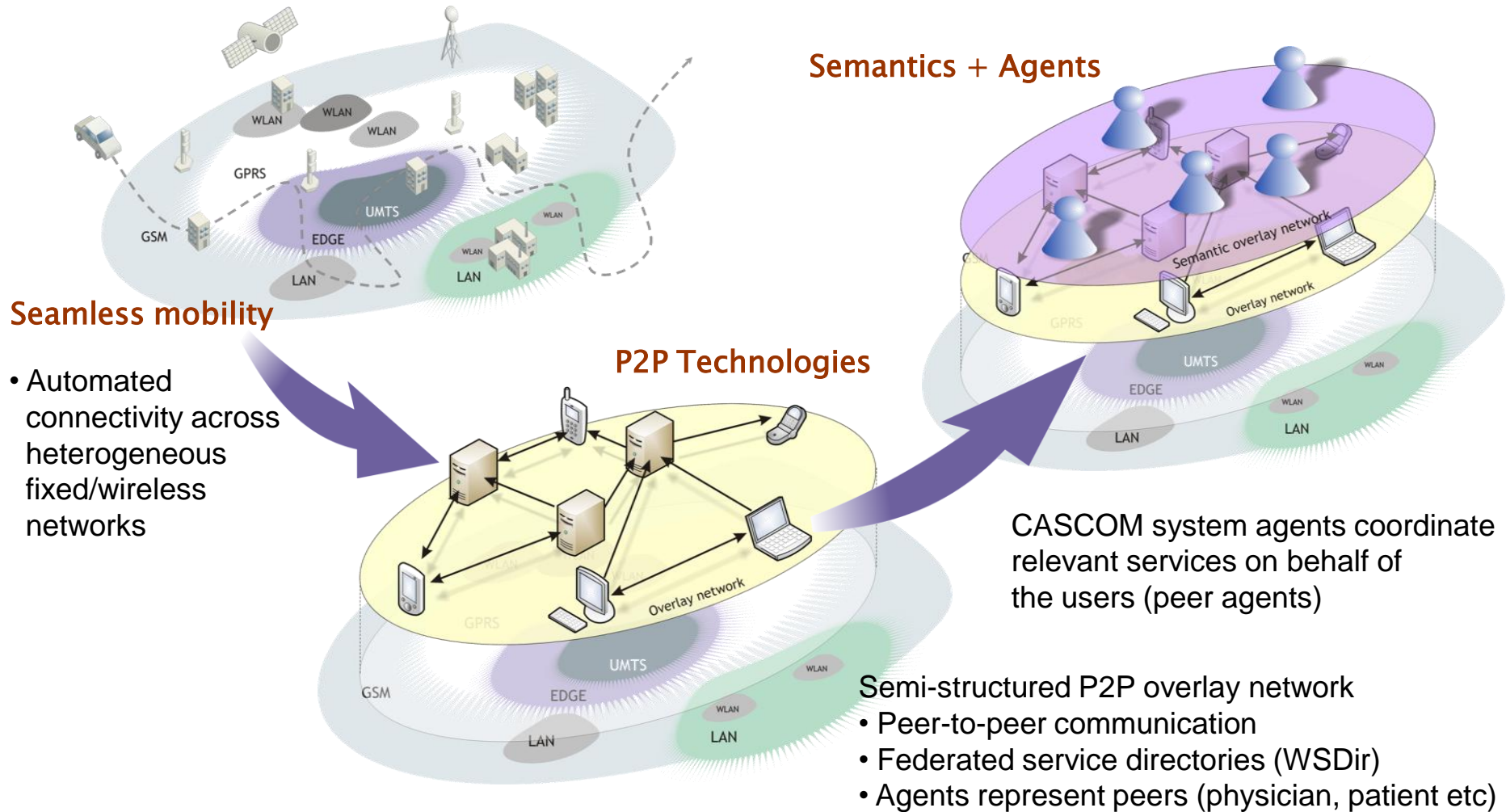
www.ist-cascom.org

The Challenge

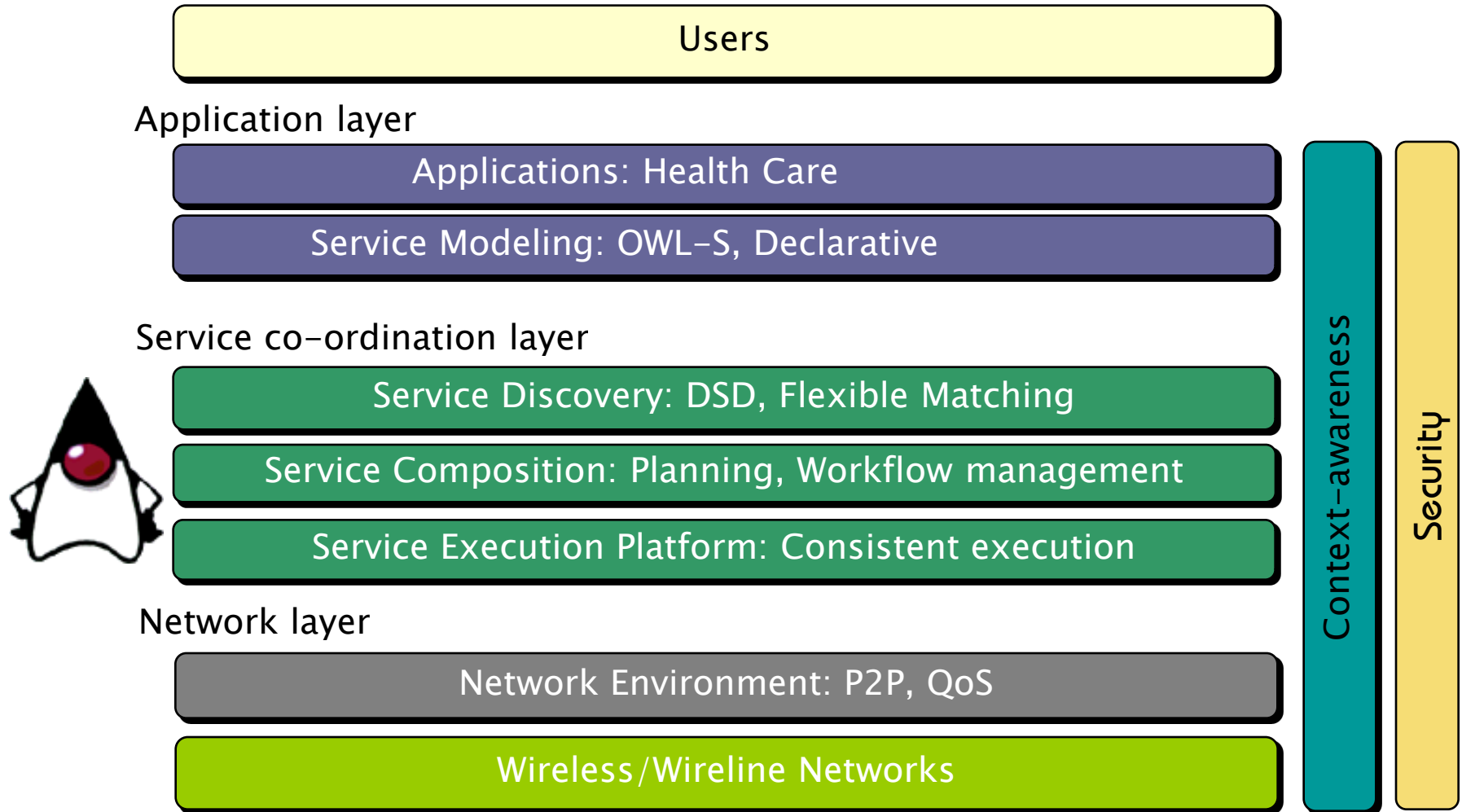


How to ad hoc discover, compose and execute relevant semantic Web services offered by different agents on demand in a mobile P2P network ?

The CASCOM Solution



CASCOM System Architecture

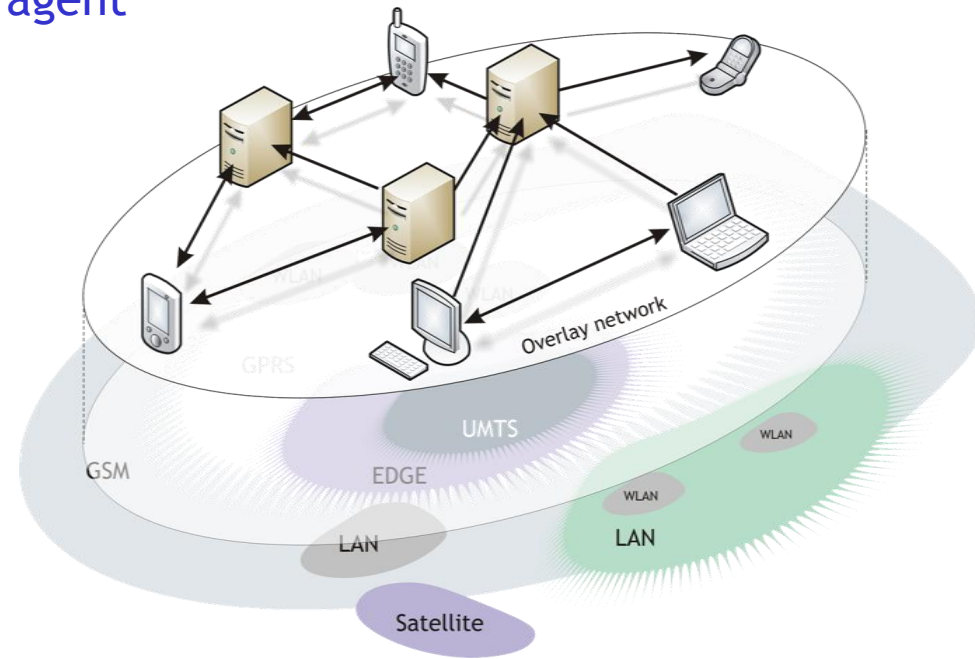


Key Components & Technologies



- **Intelligent P2P network infrastructure**

- **Semi-structured P2P overlay** situated on top of the combination of various wireless and wireline access networks
- **JADE-LEAP lightweight agents** for mobile devices
- **Efficient, reliable and secure P2P agent communication means**

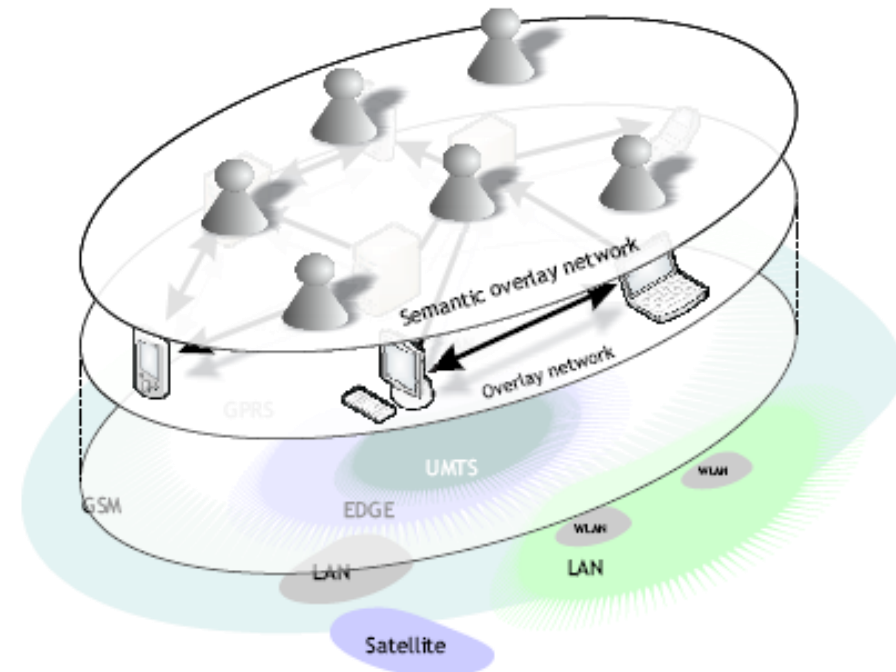


Key Components & Technologies (2)



- **Agent based coordination of semantic Web services**

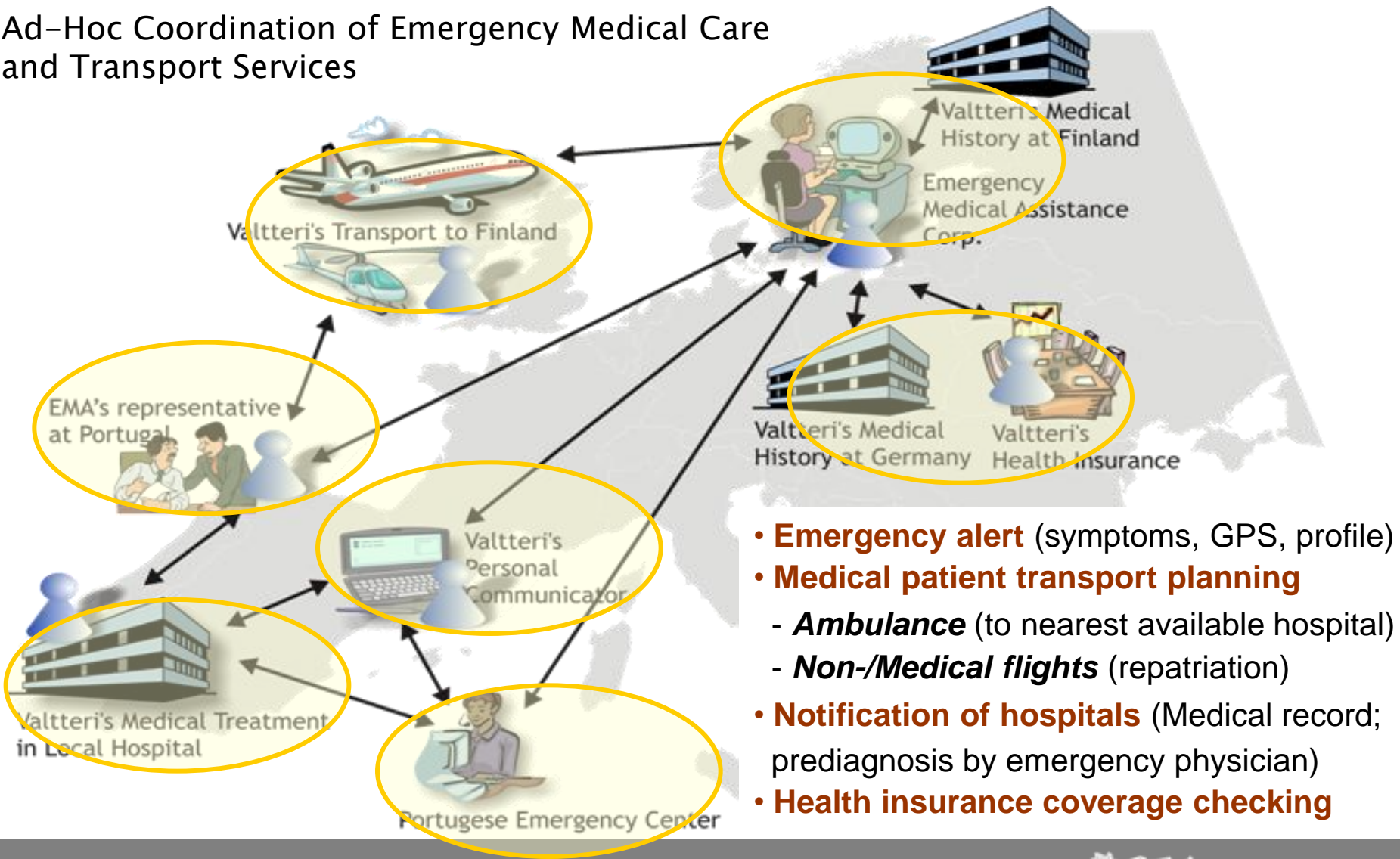
- Declarative description of service (data) semantics in OWL-S (OWL)
- Service discovery
 - Coarse-grained search by **discovery agents & Web service directory**
 - Fine-grained search by **matchmaker agents**
- Service composition
 - **AI based planning agents**
- Service execution
 - Decentralized, consistent (OSIRIS)
- Personal mobile interaction
 - **User interface agents**
 - Context system (location, profile)



E-Health Use Case



Ad-Hoc Coordination of Emergency Medical Care and Transport Services



Field Trial 1 – July 2007



Location

- **Central hospital and city of Innsbruck (Austria)**

Medical application partners

- **Tiroler Landeskrankenanstalten Konsortium TILAK**

Hospital & emergency physicians, emergency ambulance car
Medical consultancy; Use case design; Evaluation

- **Emergency Medical Assistance EMA Corp. in Helsinki**

Medical consultancy; Use case design



Participants

- ***Patient***
- Local emergency medical assistance center (simulated)
- ***Emergency physician in ambulance car***
- ***Hospital physician***
- Health insurance (simulated)



Trial video (5 min)

Conclusions



- Innovative agent based service coordination system CASCOM for mobile P2P services
- Use case in the e-health domain (EMA & Repatriation services)
- First field trial of CASCOM system successfully completed
- Second field trial with additional ambulance helicopter
- Online demonstrator and public deliverables available at

www.ist-cascom.org