

Programme: 6th Framework Program, IST Priority

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Coordinator: Thales Communications SA

Partners:

Universidad de Murcia (E)

Università degli studi dell'Aquila (I)

OFFIS E.V (D)

Groupe des Écoles des Télécommunications – ENST (F)

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Information Society
Technologies



6th Framework Program, IST Priority

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OBJECTIVES

Next generation collaborative systems will offer mobile users seamless and natural collaboration amongst a diversity of agents within distributed, knowledge rich and virtualised working environments.

This ambitious goal faces numerous challenges, from the underlying communication infrastructure through to security, the limited capabilities of mobile handheld devices and the need of high level application services.



Most currently available tools supporting collaboration exploit a rigid client-server paradigm and fixed communication infrastructures (e.g. the internet).

Peer to Peer (P2P) systems represent an alternative, however, despite the growing success of internet based collaboration applications, P2P technology research has given little attention so far to specific issues related to mobile environments.

Funded under EU's 6th Framework Program, Information Society Technologies priority (IST), POPEYE

tries to answer fundamental needs of mobile information sharing and collaboration free from the constraints of relying on fixed infrastructures, in a flexible and simple way.

Started in May 2006 and spanning a period of two years up to April 2008, POPEYE research focus is on enabling dynamic, spontaneous, mobile collaborative group working environments, without relying on supporting infrastructures, with secure access, support of context information and smart personalisation.

THE VISION

The strategic research goal of POPEYE is to investigate the concepts and deliver the methods and core services for the next generation mobile collaborative working environments, with emphasis on peer-to-peer (P2P) information exchange and collaboration over heterogeneous mobile ad hoc networks (MANETs).

POPEYE addresses mobile ad hoc groups, where a fixed infrastructure is not a prerequisite and virtual communities can emerge spontaneously, engage in communication, share their data and perform collaborative tasks with the appropriate quality of service (persistence, synchronisation, security, ...).

In this scenario, the POPEYE approach includes:

- An integrated overlay networking architecture that combines the flexibility and spontaneous character of mobile ad hoc communication with the stability and performance of infrastructure networks, when available.
- A communication platform that exploits cross-layer functionality down to the lower-level protocols to provide efficient P2P management and communication primitives.
- An higher-level, context-aware, secure and personalised core services framework. Based on the P2P middleware platform, these are designed to simplify applications development.
- An application layer, providing higher level, end-user collaboration applications (POPEYE Plug-ins) within an adaptable user interface.

The POPEYE vision

Opportunistic ad hoc networking: meet and join

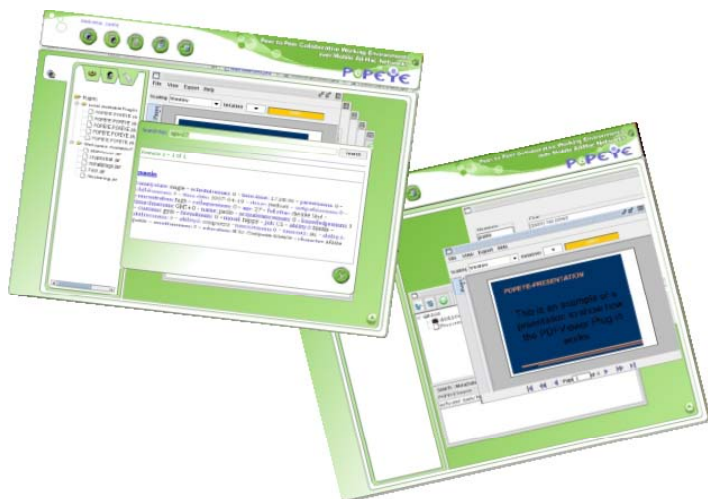
- **Enable creative usage of networked portable devices without the need of supporting infrastructure**

Spontaneous networks: set-up working groups quickly and easily

- **dependable and secure**
- **context-aware, user personalized**
- **suitable for professional and leisure usage**

RESULTS

POPEYE research investigates a number of key issues in mobile, secure, context-aware P2P collaboration over MANETs, delivering a multi-layered, scalable, open framework that enables the development of mobile collaboration services and integrated applications.



The POPEYE framework integrates fundamental services and capabilities for P2P collaboration in an open MANET environment: dynamic peer connection/disconnection, multi-hop peers communication, distributed data sharing and persistency, dynamic workspace management, dynamic context management and security.