

FIGARO

Future Internet Gateway-based Architecture of Residential Networks



Future Networks 6th FP7 Concertation Plenary Meeting

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FIGARO

258378 -- FIGARO

*Future Internet Gateway-based
Architecture of Residential Networks*

Call identifier:

FP7-ICT-2009-5

Funding scheme:

Collaborative project

THEME [ICT-2009.1.1]

[The Network of the Future]

Requested Funding:

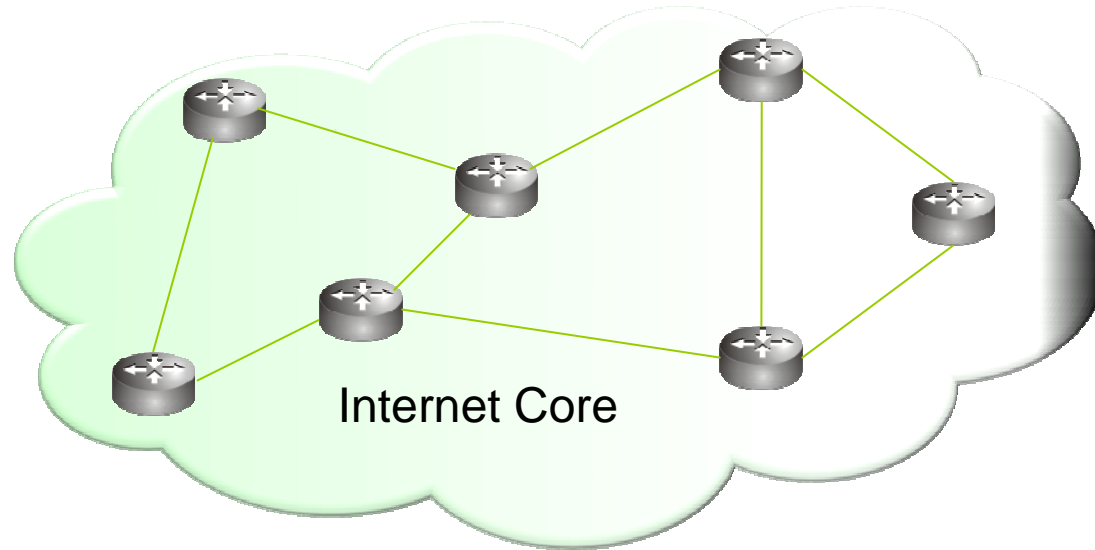
5.1M€

Beneficiaries:

- Technicolor R&D Paris (FR)
- Martel GMBH (CH)
- Technicolor R&D France ((FR)
- Universite Pierre et Marie Curie(FR)
- Politecnico di Torino (IT)
- Telefonica I+D (ES)
- Eurecom (FR)
- Philips Consumer Lifestyle (NL)
- TNO (NL)
- Guavus (IN)
- Home Automation Europe (NL)
- University of Waterloo (CA)

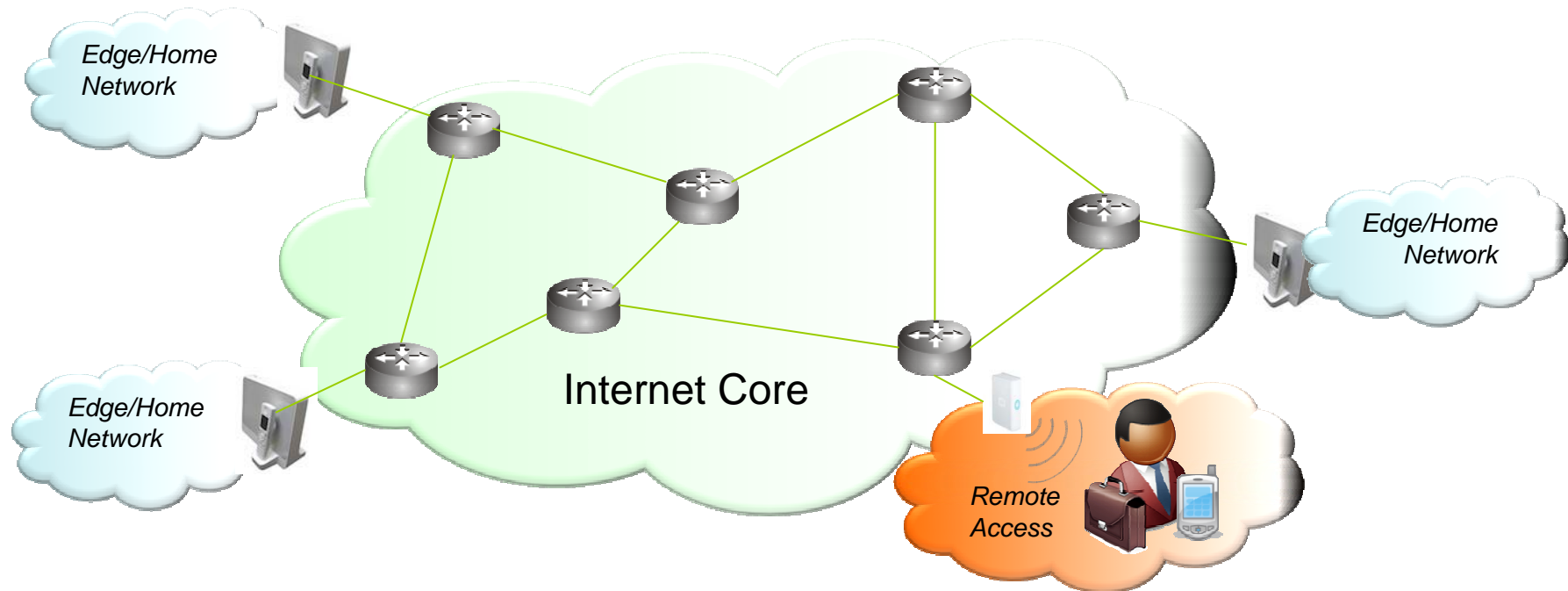
FIGARO Project Overview

- Today's Internet: still a technology-centric core network

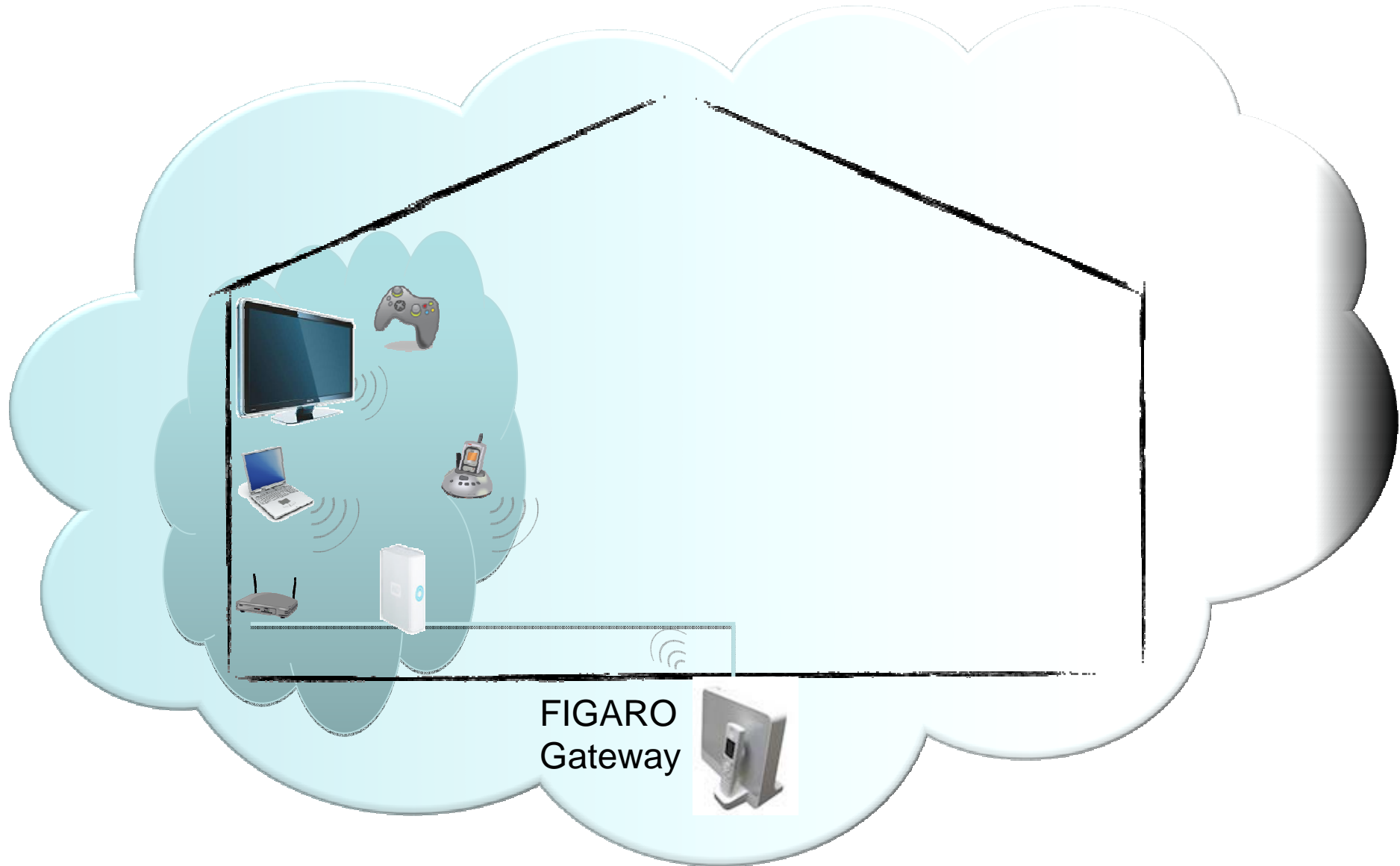


FIGARO Project Overview

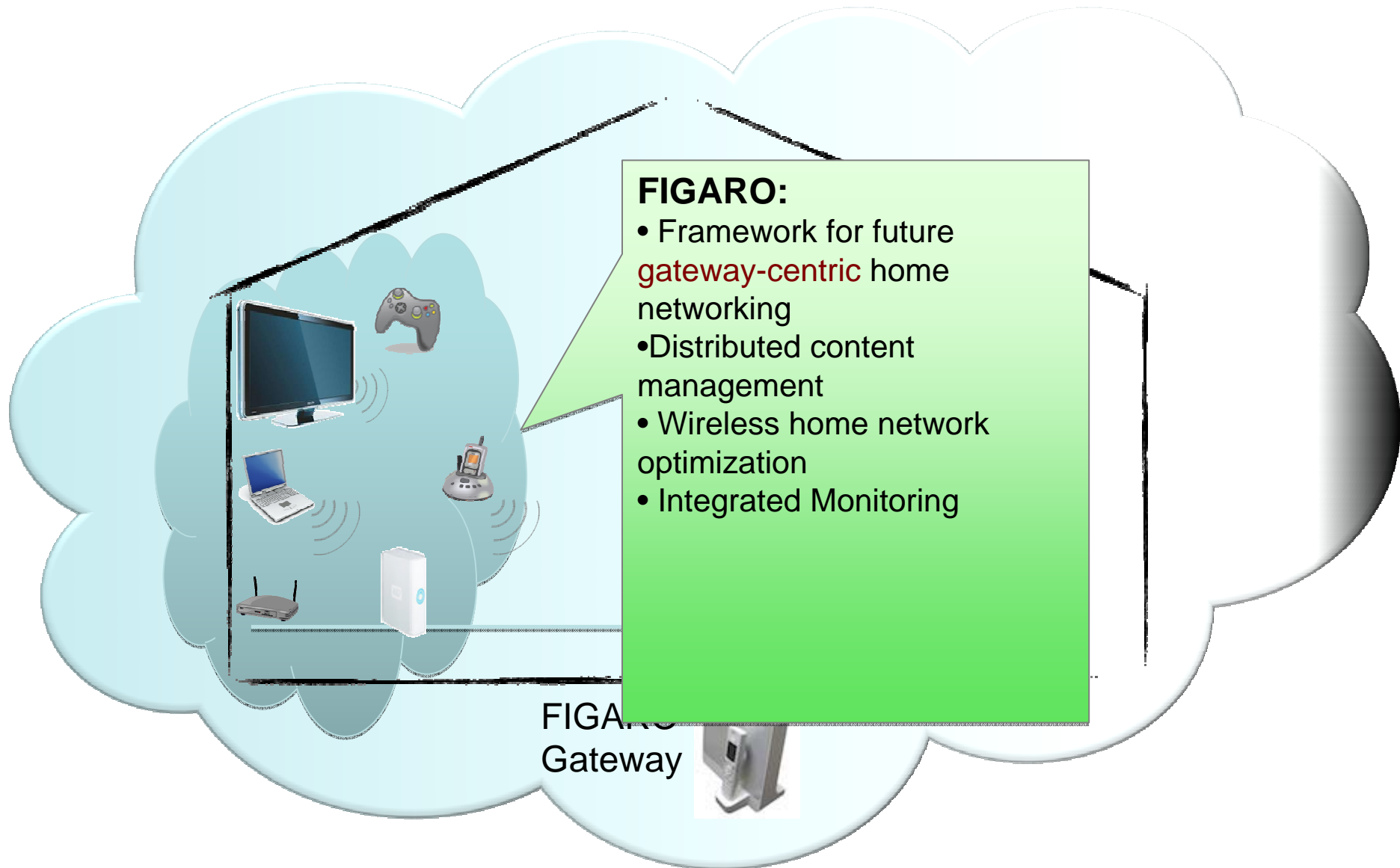
- Today's Internet: still a technology-centric core network
- Future Internet will be user- and content-centric
 - Edge/home networks becoming an integral part of the Internet
 - Service convergence and additional sectors adopting Internet technologies
- Challenges are management of
 - Converged network: cross-sector integration
 - Content: to create, store, search, and retrieve content



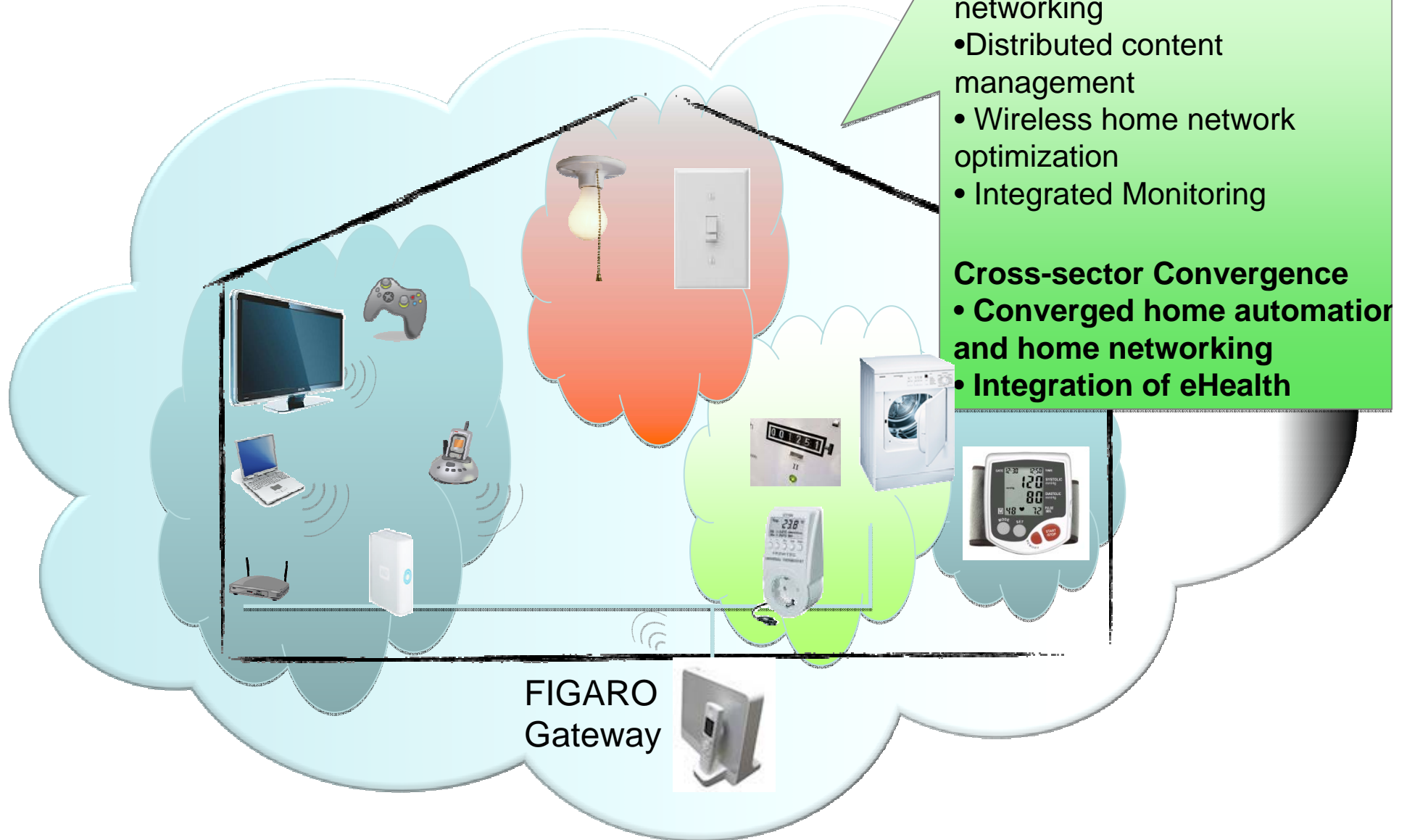
Home/Edge Network



Home/Edge Network



Home/Edge Network



FIGARO:

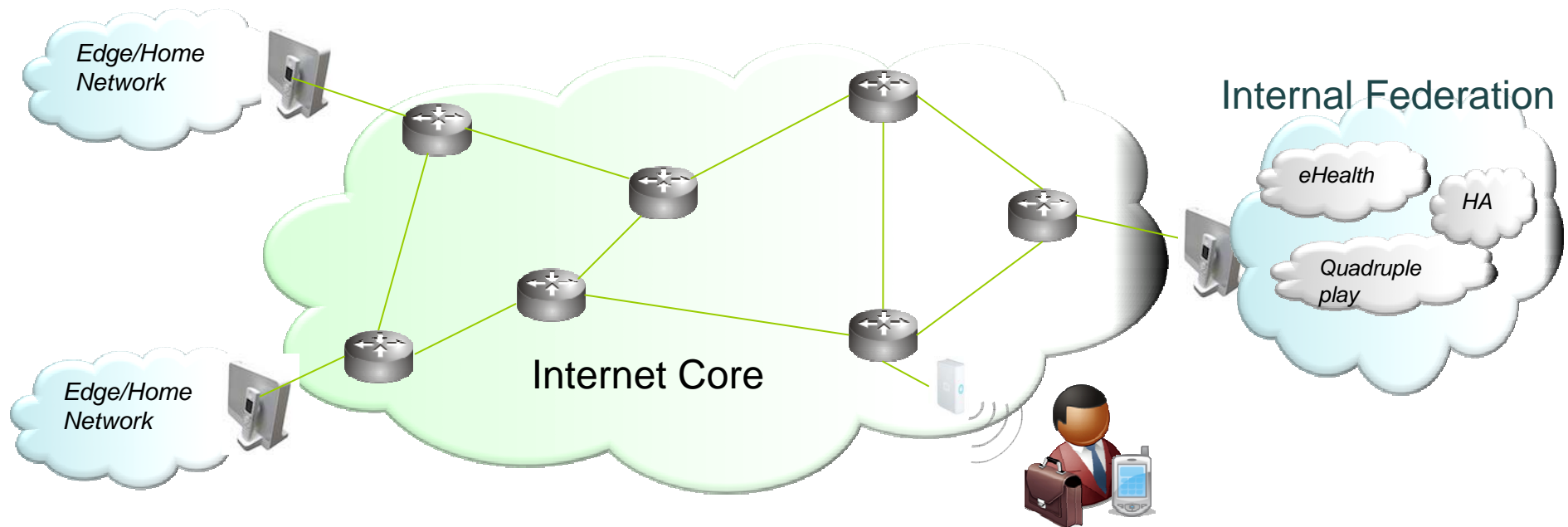
- Framework for future gateway-centric home networking
- Distributed content management
- Wireless home network optimization
- Integrated Monitoring

Cross-sector Convergence

- Converged home automation and home networking
- Integration of eHealth

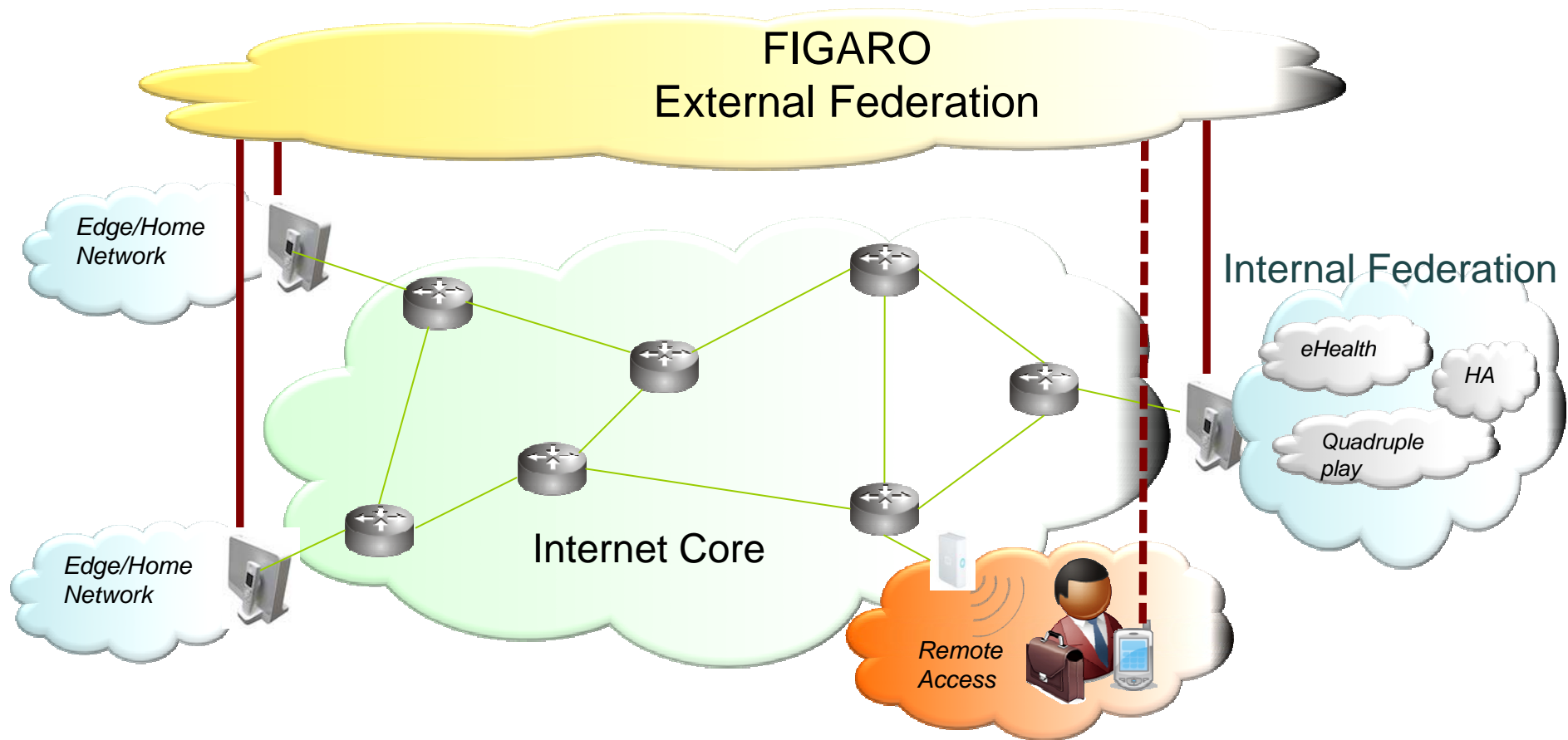
Figaro Project Overview

- FIGARO: a future Internet gateway-based architecture of residential networks
 - Network federations, community networking, remote access network and content mgmt
 - Converged service across sectors



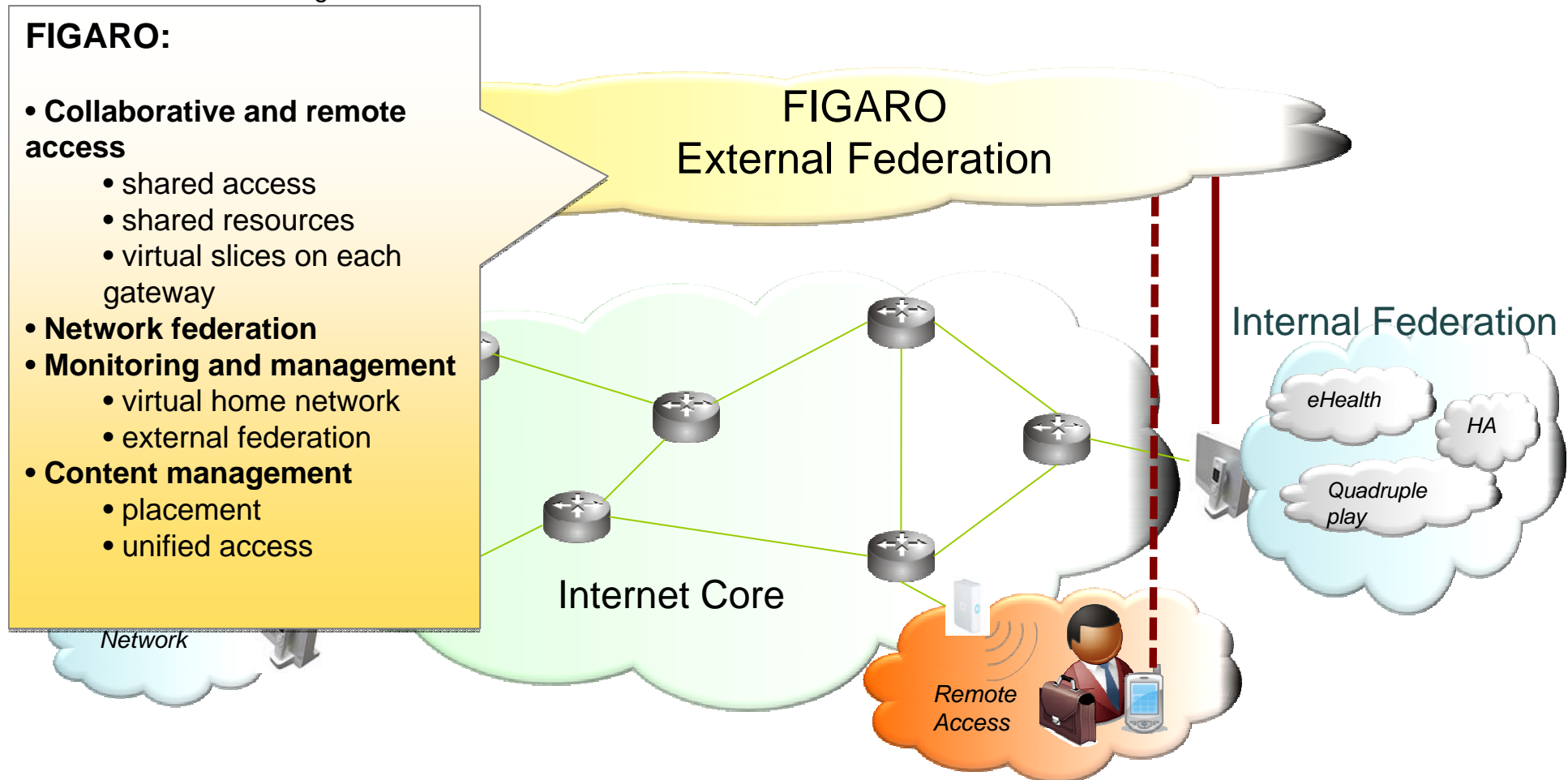
Figaro Project Overview

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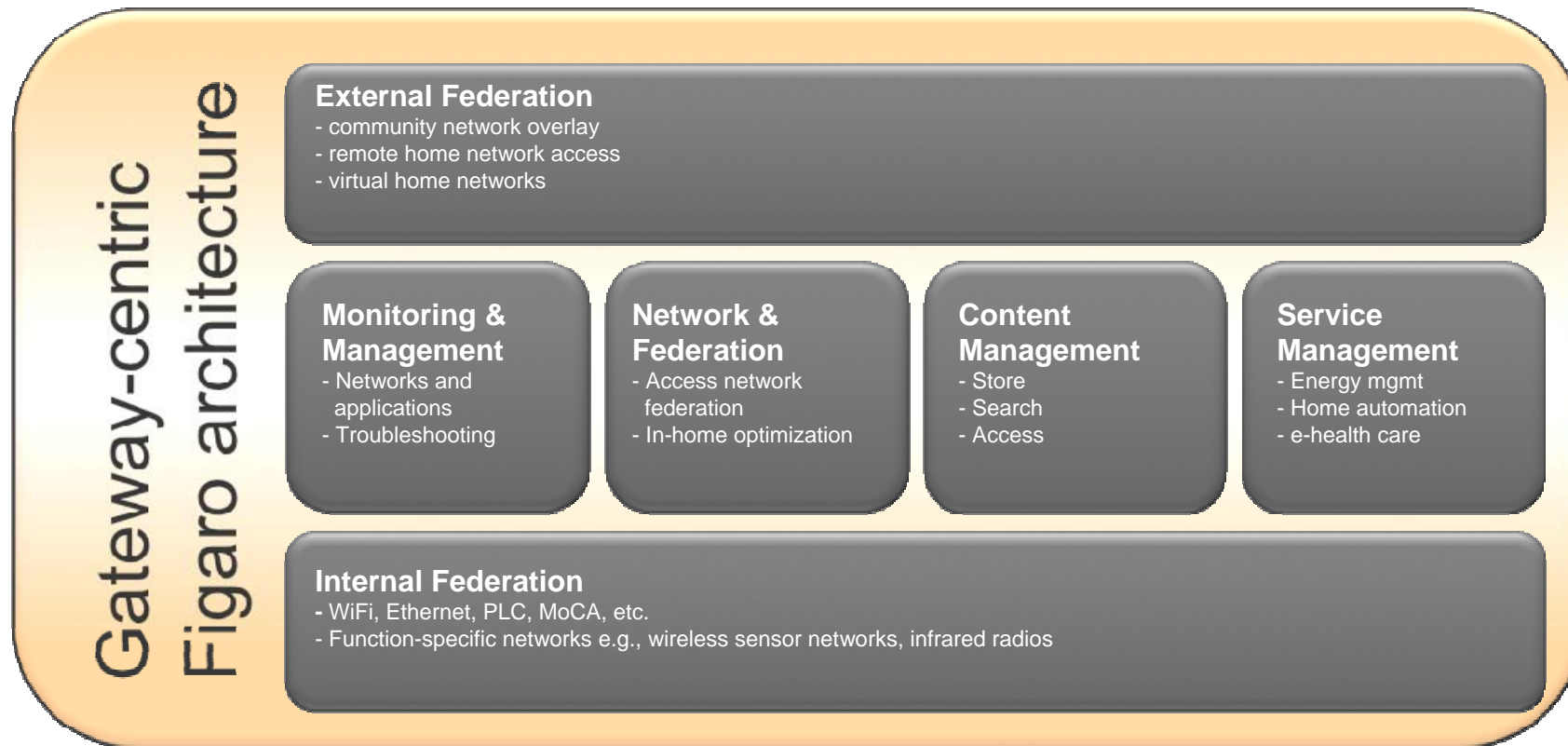


Project Objectives

- **O1:** To design a **Future Internet gateway-based architecture centered on federated residential networking**.
- **O2:** To provide a **network management framework** including novel gateway-centric monitoring and real-time troubleshooting mechanisms for heterogeneous wired and wireless networking environments.
- **O3:** To design and develop **novel networking solutions** for improved Internet-based communication by exploiting multiple access networks, network bundling through neighborhood federation, and heterogeneous network optimizations.
- **O4:** To provide a **new distributed content management architecture** for transparent and efficient content storage, search, and ubiquitous access across federated residential network overlays and the Internet.
- **O5:** To provide **requirements and solutions for integrating** into the Future Internet **new sectors** such as home automation, energy management, and e-health care.
- **O6:** To provide an evolutionary path to the Internet of the future, departing from the centralized cloud based architecture and instead capitalizing on millions of residential networks to deliver content and services of the future.

Project Objectives

- FIGARO will design a **Future Internet gateway-based architecture centered on federated residential networking.**



- FIGARO will provide an **evolutionary path to the Internet of the future**, departing from the centralized cloud based architecture and instead capitalizing on millions of residential networks to deliver content and services of the future.

Thank you
for your attention!

Backup Slides

FIGARO

Future Internet Gateway-based Architecture of Residential Networks



Heilmeyer questions

October 2010

Henrik Lundgren, Technicolor

WHAT ARE WE TRYING TO DO?

- The Internet has evolved from a technology-centric core network to a user- and content-centric network.
 - content is created and delivered to/from hundreds of millions households connected at the edge of the network.
 - new services with new requirements and heterogeneous network technologies at the edges.
- FIGARO proposes an evolvable Future Internet architecture based on gateway-oriented federation of residential networks.
- FIGARO has the objective to deliver solutions centered on the residential gateway that implements the following:
 - a distributed content management architecture
 - a network optimization framework leveraging community networks and heterogeneous networks.
 - a residential network management framework
 - integration of emerging services from other sectors, such as home automation, e-health care.

HOW DOES THIS GET DONE, AT PRESENT?

- The support for the envisioned Future Internet is not well addressed to date.
 - The rapidly increasing amount of content is poorly managed in an ad hoc fashion by end-users.
 - Federation of home networks are limited to wireless access point sharing a la FON.
 - Residential network management is increasingly complex and performed by end-users with ISP call center as only support.
 - Emerging services from other sectors are typically realized by closed, vertical solutions.

WHAT IS NEW ABOUT OUR APPROACH?

- FIGARO is inline with the original Internet philosophy: simple network core and move complexity to the edges.
- FIGARO is increasing the scalability of the Internet by departing from the traditional centralized client-server based architecture.
- FIGARO provides an evolutionary path to the Future Internet through the cooperation of millions of homes.

IF WE SUCCEED, WHAT DIFFERENCE DO WE THINK IT WILL MAKE?

- Improved and simplified content management and service delivery over home networks and the Internet.
- ICT service convergence and reduced costs.
- Strengthen Europe's position in developing the Future Internet.
- Competitive advantage to European industry
 - Future Internet technologies and services,
 - residential gateways and other customer premises equipment,
 - home automation
- Innovation and new business opportunities in cross-sector services.

HOW LONG DO WE THINK IT WILL TAKE?

- FIGARO is a 3-year project.
- Expected project evolution with intermediate milestones:
 - Y1: Requirements and initial system specifications.
 - Y2: First core system components implemented in testbed.
 - Y3: Final set of system components, integration, and demonstrator.

CAN WE TRANSITION?

- FIGARO is an evolvable approach and thus backward compatible.
- FIGARO consortium includes major players in fields close to the end-user
 - Internet service provision, home gateways, CPE, home automation.
- Roll-out of FIGARO solutions by service offerings including FIGARO gateways.

HOW MUCH WILL IT COST?

- FIGARO will develop solutions for the next generation residential gateway.
- Service providers can offer enhanced services through FIGARO gateways
- New business opportunities emerging from cross-sector innovation