Context Casting

Evolve mobile multicasting to exploit the increasing integration of mobile devices with our everyday physical world and environment.

http://www.ict-ccast.eu/

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Introduction

**Project Coordinator:** Telma Mota
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**ICT-2007-216462-STREP**

**Title:** Context Casting
**Start:** March 2008
**Duration:** 24 months
**Consortium:** 12 Partners
**Budget:** 3,7 m€
**Effort:** 548,7 PM

**Focus:**
- Provide end-to-end context-aware multicast framework and communication
Introduction
C-CAST Multicasting

- Multicasting
  - Delivering same content to a group of users
  - Gains achievable on radio level if sufficient number of users requesting the same content are in the same cell
- Intelligent Access Concepts
  - Increase probability to have multicast groups
  - Exploit long-term statistics to generate prediction of user movement (content might have to be delayed)
  - Use HOs to form multicast groups
  - New services (e.g., ads) based on push services
Key Objective

- Key idea: “Context-Aware Multicasting”
- Sensing and predicting of group-multicast situations in the physical environment
- Identifying of communities and ad-hoc groups in the virtual environment
- Efficient multicast delivery of situation and context based multimedia content
- WP2 Business Analysis and Architecture for Context Casting Services
- WP3 Context Casting Service Enablers & Context Management
- WP4 Context Detection and Context-Aware Multiparty Transport
- WP5 Content Casting
C-CAST infrastructure is being designed as a context-aware system where architecture components adapt and react to changes in the environment.

The emphasis is on supporting fast and efficient

- Brokerage of Context Info
- Reasoning (situation deduction)
- Grouping and re-grouping
- Dynamic content selection
- Session/Network adaptation (QoS, mobility,...)
- Media Adaptation
Key Issue

- Service Adaptation
- Network Adaptation
- Device & Application Adaptation
- Content Adaptation
- Environment Adaptation
- Group Adaptation
Target Scenarios

- Context-aware group content delivery:
  - professional multimedia content (films, ring tones,...)
  - user generated content (photos, videos,...)
  - personalised/group advertisement

- Public Smart Spaces
  - railway/bus/boat stations, airports
  - towns, concert halls, museums
  - shopping malls, supermarkets
• Integration of mobile devices in daily Life

• The role of context awareness
  ◦ Still professional content
    ➢ Advertisement and User generated content
  • Still operator and service provider service creation
    ➢ User generated services
  ◦ Still location (and not much…)
    ➢ Context-aware service behaviour and content distribution.
    ➢ Adaptation
  • Still subscription based and social/community aspects
    (improve user daily life: entertainment and health);
    ➢ New large scale community services and applications
Architecture

Publish-Subscribe / Request-Respond

Context Acquisition & Distribution Layer

Publish-Subscribe / Request-Respond

Context Provider & Sensor Layer

ContextML

Scope Attributes Stamps...

Mini Context broker
Sensor G/W
C-CAST

Content
- Professional offline/online
- User generated
- Advertisements

Content Preparation & Pre-processing

Content Processing (Content Adaptation)

Streaming Function

Content Storage

Context

Context Reasoning & Interpretation

Group & Community Management (Group Adaptation)

Context Representation & Management

user/device join/leave

Transport

Network Adaptation

User-created context

Transcoded content

Session Management

Context Detection

Context Distribution

Network Selection

Multiparty Transport