Point Of Interest

UU/IT/Project DV 2006

Magnus Bladh - Streetmedia7

Peter Sjögren- Mobile Arts AB

Content

- Mobile Arts & Streetmedia7 Introduction
- Application Scenarios
- Network Location technology
- Solution Architecture
- Challenges & Options
- Deliverables
- Equipment

Mobile Arts
Introduction

- Provides mobile telecom solutions to Mobile Operators, and consulting services
- Product Areas
  - ✓ Messaging (SMSC, Voice Mail Server)
  - ✓ Call Completion (Missed Call Alert)
  - ✓ Location (GMLC, SMLC, Middleware)
- Established 2001 with offices in:
  - ✓ Stockholm, Sweden (12 People - HQ, R&D)
  - ✓ London, UK
  - ✓ Moscow, Russia

Mobile Arts

street | media 7

Mobile Arts
Development Environment

- Erlang
  - ✓ Erlang is a general-purpose programming language and runtime environment., with built-in support for:
  - ✓ concurrency
  - ✓ distribution
  - ✓ fault tolerance
- Open Telecom Platform (OTP)
  - ✓ OTP is a large collection of libraries for Erlang to do everything from compiling ASN.1 to providing a WWW server
  - ✓ Mnesia database
- PC / Linux (Commercial: SUN / Solaris)

Mobile Arts

street | media 7

Street media7

Introduction

- Provides Mobile marketing solutions (games, toys) for consumer brand companies.
- Product areas: Java applications for mobile phones (J2ME). And messaging solutions (SMS, WAP)
- Company started in 2003. Offices in Uppsala and Vancouver (Canada)

Mobile Arts

street | media 7

StreetMedia7

Development Environment

- J2ME
  - ✓ Java 2 platform micro edition: is a collection of Java APIs for the development of software for resource constrained devices such as PDAs, cell phones and other consumer appliances.
  - ✓ Runs on almost every phone available on the market today.
- PC / Linux
- Emulation software: Sun / SonyEricsson / Nokia / Samsung/ Motorola...

Mobile Arts

street | media 7

Content

- Mobile Arts & Streetmedia7 Introduction
- Application Scenarios
- Network Location
- Solution Architecture
- Challenges & Options
- Deliverables
- Equipment

Mobile Arts

street | media 7

Point Of Interest

What's new?

- Interactive POI
  - ✓ Communication rather than information
- Location enabled without Operator participation
  - ✓ Enables ISP's to enter market segment

Mobile Arts

street | media 7

Point Of Interest

Service Scenario I – Community Service

- The application is serving a ”community”
- POI entered by the users
- POI: Location + data: text, pictures, Rating, etc
- Possible to comment other entries
- WEB and WAP access

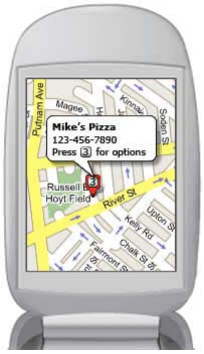
Mobile Arts

street | media 7

Point of Interest Application

Service Scenario II – Tourist information

- POI entered mainly by the ISP.
- Tourists may comment and rate the information
- Vouchers linked to POI.
- Click to call
- ...



Google Map Example

Mobile Arts

street | media 7

Assumed Business model

- Service to be operated by ISP (Internet Service Provider)
- GSM/UMTS operator only provides connectivity
  - ✓ Celldata has to be re-engineered by use of GPS enabled terminals.
- Community service
  - ✓ WEB/WAP advertisement
- Tourist service
  - ✓ WEB/WAP advertisement
  - ✓ Paid content

Mobile Arts

street | media 7

Content

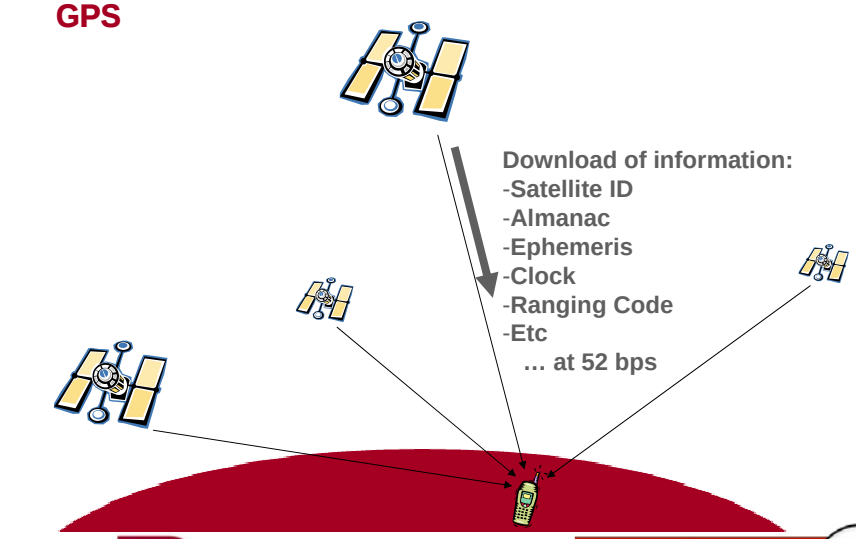
- Mobile Arts & Streetmedia7 Introduction
- Application Scenarios
- Network Location
- Solution Architecture
- Challenges & Options
- Deliverables
- Equipment

Mobile Arts

street | media 7

Technology Overview

GPS

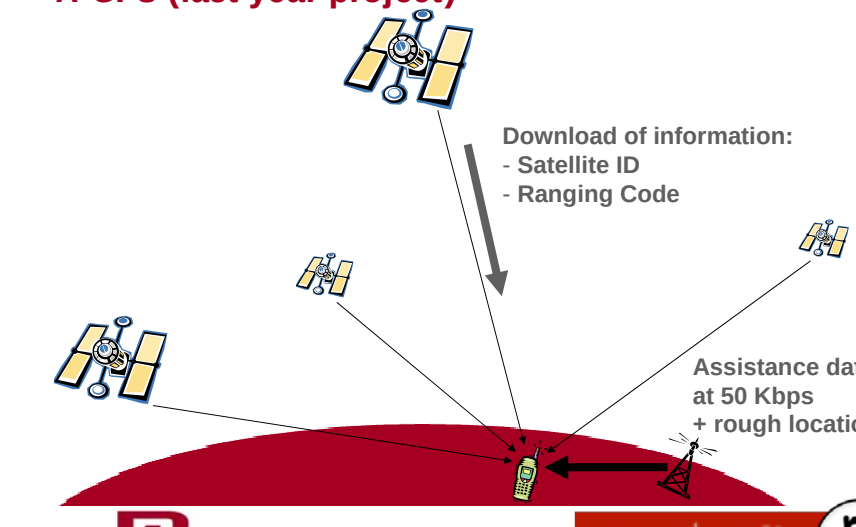


Mobile Arts

street | media 7

Technology Overview

A-GPS (last year project)

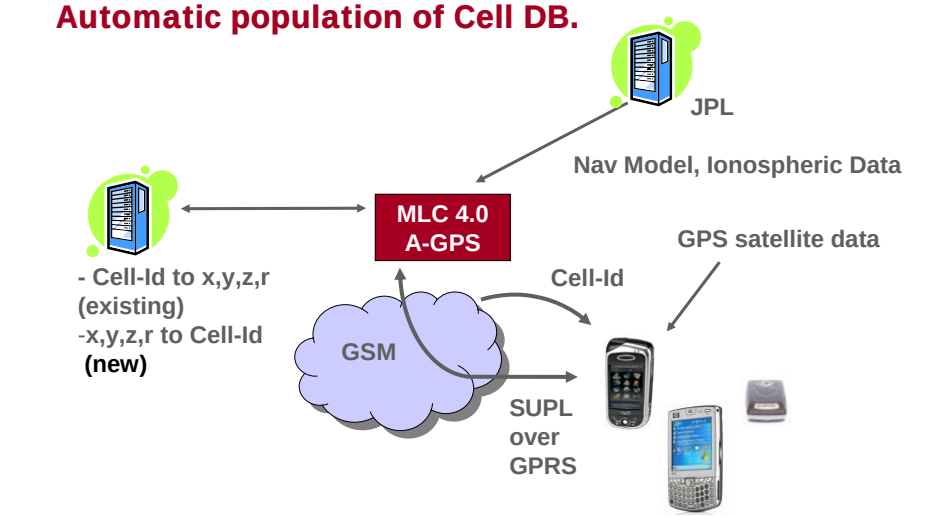


Mobile Arts

street | media 7

A-GPS location

Automatic population of Cell DB.



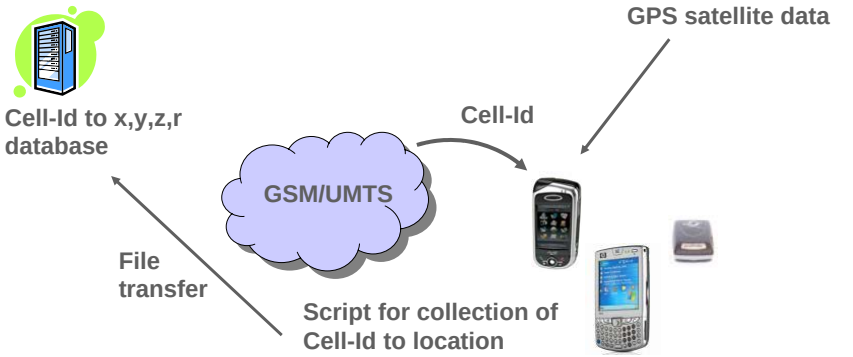
Mobile Arts

street | media 7

GPS location

Script tool.

Enables fast population of Cell database.
(www.placelab.org)



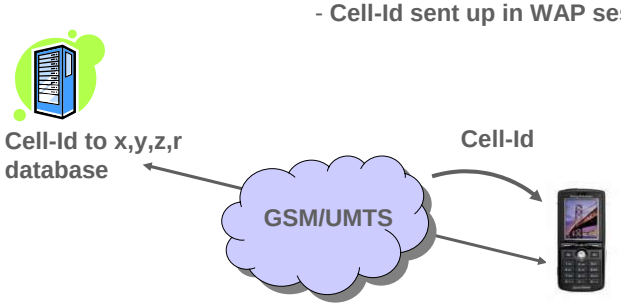
Mobile Arts

street | media 7

Cell-Id location

Non GPS terminals

- Cell-Id DB either preloaded as file or,
- Cell-Id sent up in WAP session



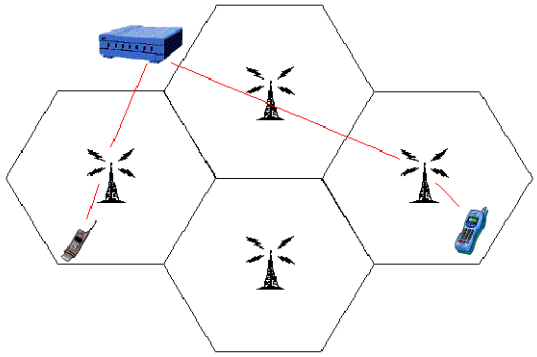
- Cell-Id through J2ME interface

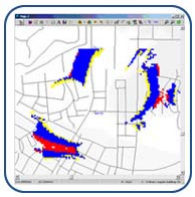
Mobile Arts

street | media 7

GSM / UMTS radiocells

- A Radio cell covers typically an area of 0,1 to 10 SqKm
- Each Cell is given a unique Cell-Id per operator & country





Mobile Arts

street | media 7

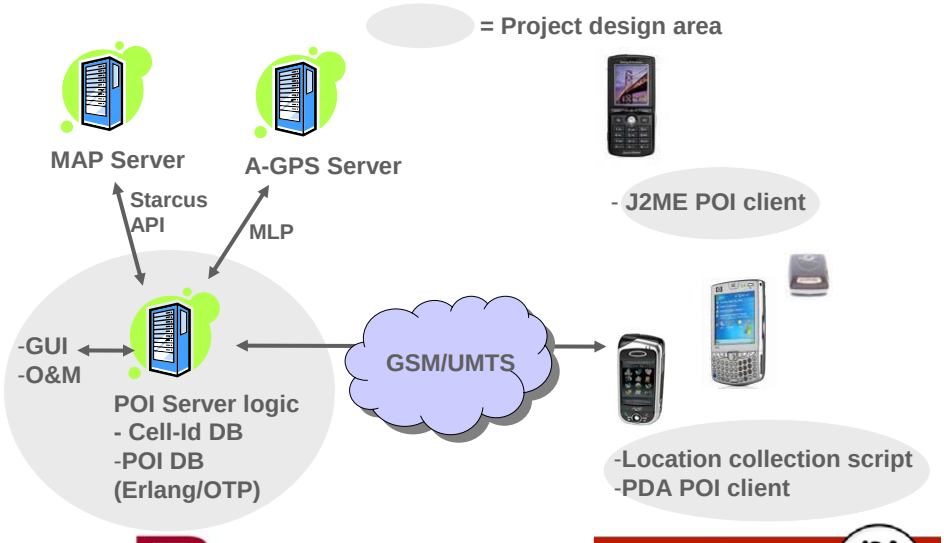
Content

- Mobile Arts & Streetmedia7 Introduction
- Application Scenarios
- Network Location
- Solution Architecture
- Challenges & Options
- Deliverables
- Equipment

Mobile Arts

street | media 7

Proposed architecture



Mobile Arts

street | media 7

Challenges

- Re-engineering of Celldata network
  - ✓ How estimate Cell-sizes
  - ✓ How handle missing cells?
- Data modelling
  - ✓ Storage in terminal (J2ME SW) versus WAP access?
- End-user interfaces
  - ✓ How make intuitive, yet functional?
- Terminal development environments
  - ✓ Cell-data access, GUI
- Interoperability with Google maps?

Mobile Arts

street | media 7

Project Deliverables

- Prototype of both Client and Server
- Documentation of solution
  - ✓ Data allocation
  - ✓ System architecture (SW modules etc)
  - ✓ Special algorithms etc
  - ✓ High level state diagrams
  - ✓ High level installation/operation manuals
- First round of field trial executed
  - ✓ Cell-Id data for central town collected
  - ✓ System reasonably debugged
  - ✓ Feedback on user experience collected and documented

Mobile Arts

street | media 7

Option Table

... if enough time / personell

- Terminal program for drive (cycle) around and mapp CellId to meassured location.
- Advanced algorithms for Cell-Size adaptation
- Barcode voucher by WAP/MMS?
- Service Administration
  - ✓ Censoring
  - ✓ DB administration GUI
- Triggered terminal alerts based on POI linked to Cells.
- Load/robustness tests
- 802.11 sites for location determination

Mobile Arts

street | media 7

Equipment provided

- A-GPS terminals
  - ✓ Mitac 701 with A-GPS support
  - ✓ HP + Bluetooth A-GPS device
  - ✓ Terminal Development API from SiRF
- GSM J2ME terminals
  - ✓ Tbd (SonyEricsson or Nokia)
- Remote access to Starcus MAP server with API for POI overlay generation.
- Remote access to Mobile Arts A-GPS server

Mobile Arts

street | media 7

Contact information

Peter Sjögren

CEO, Mobile Arts AB

peter.sjogren@mobilearts.com

+46 733 35 84 35

Magnus Bladh

Streetmedia7 AB

magnus.bladh@streetmedia7.com

+46 708 28 52 84