Mobile Arts Company Presentation

- Mobile Arts provides real-time voice/text messaging and positioning telecom/IT products to international GSM/3G operators, e.g.
  - SMS centre
  - Voice mail system
  - GPS positioning system
- Mobile Arts has offices in Stockholm (HQ), Birmingham, Moscow, Zagreb
- Mobile Arts uses Erlang/OTP as development environment
- Mobile Arts has taken part in all DV projects since 2005
- Each year, several DV students have continued the DV project by a Master Thesis at Mobile Arts
- Quite a few former DV students are now employed at Mobile Arts

IMS Instant Messaging (IM) issues

- Very little supplementary (e.g. point-to-multipoint) services defined both on sending/originating and receiving/terminating sides
- No possibilities for absent receiving client to define handing of message while absent
- No delivery receipt to sender at delivery to receiver
- No handling of SPAM
- No definition on how to manage subscriber setting for service
- ...  

IMS Instant Messaging Issues

- IMS Instant Messaging is a real-time point-to-point message transfer service
- Standardization issues:
  - Very little supplementary (e.g. point-to-multipoint) services defined both on sending/originating and receiving/terminating sides
  - No possibilities for absent receiving client to define handing of message while absent
  - No delivery receipt to sender at delivery to receiver
  - No handling of SPAM
  - No definition on how to manage subscriber setting for service
- The idea with this project is to implement an IMS Messaging Service that overcomes these issues (requires creativity beyond current standard forums – IETF, 3GPP)

IMS Messaging Application Server (MAS) Features

- Basic SIP Instant Messaging (IM)
- IM related supplementary services (underlined = mandatory)
  - Centralized message store while absent receiver
  - Delivery Receipt (DR) to sender at message delivery/discard
  - Receiver defined Auto Reply (AR) to sender
  - Sender/receiver defined Email Copy (EC) of sent/received message
  - Receiver defined Cloning (CL) of received message to group of receivers
  - Receiver defined Forwarding (FWD) of received message to another receiver
  - Operator defined screening of received SPAM messages into SPAM data base (DB)
- User Web Server (WS) management of MAS Subscriber Data Base (SDB) of:
  - IM service preferences
  - Sent/Received Message Logs
  - Received SPAM

IMS Messaging Application Server (MAS) Network Context

- IMS Platform
- SMS Server
- IMS Server (Or/Ter)
IMS Messaging Application Server (MAS)

IMS Platform

- Call Session Control Function (CSCF) handles subscriber registration, message/call routing, triggering, etc.
- Home Subscriber Server (HSS) contains generic subscriber info.
  - Sh/Diameter interface is used to get notification on subscriber register.
  - Alternative: 3rd party REGISTER is received from CSCF.
- SIP Client (PC and/or MS) as subscriber premises equipment.
- DHCP.

IMS Messaging Application Server (MAS)

Issues

- Implementation (standardization) issues: How to
  - Request Delivery Receipt?
  - Indicate forwarded, stored, auto reply, delivery receipt message?
  - Handle network loops due to circular forwarding?
  - Detect SPAM/non-SPAM?
  - Handle missing subscriber register info from HSS?
- Testing (security) issues: How to
  - Deploy Erlang/OTP SW (upgrades) into MAS hosted upon IMS Platform?
  - Retrieve Erlang/OTP logs from MAS hosted upon IMS Platform?
  - Possible to send email copy using SMTP from MAS hosted upon IMS Platform?

IMS Messaging Application Server (MAS)

Development Environment

- MAS: Erlang/OTP
- WS: ?
- OS: Solaris/Linux
- Servers: Sun, HP, IBM, Dell, ...

IMS Messaging Application Server (MAS)

IMS Document References

- 3GPP (www.3gpp.org)
  - 3GPP TS 22.228, Service requirements for the Internet Protocol (IP) multimedia core network subsystem (IMS); Stage 1
  - 3GPP TS 22.340, IP Multimedia Subsystem (IMS) messaging; Stage 1
  - 3GPP TS 23.239, IP Multimedia Subsystem (IMS); Stage 2 (Release 6)
  - 3GPP TS 24,247, Messaging using the IP Multimedia (IM) Core Network (CN) subsystem; Stage 3 (Release 6)
  - 3GPP TS 29.232, IP Multimedia Subsystem (IMS) Sh interface; Signalling flows and message contents
  - 3GPP TS 29.329, Sh interface based on the Diameter protocol; Protocol details
- IETF (www.ietf.org)
  - RFC 3261, SIP: Session Initiation Protocol
  - RFC 3428, Session Initiation Protocol (SIP) Extension for Instant Messaging