



## Annual Report 2008





## Introduction

*From Stephen Jones, Director of Communications*

This is OMA's first Annual Report, produced as an overview of OMA's activities in the past year. It covers a considerable amount of information, which can be daunting when looked at in its entirety. This table of contents is meant to allow you to quickly find specific information on topics of interest to you or members of your organization. Links are provided for you to move back and forth between the table of contents and any given section. Also, each piece can stand alone and be reused with minimal modification. The full Annual Report and its component pieces are available in PDF or PPT formats. Please contact the OMA Communications Team for assistance with requests to reuse the content.

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## OMA Strategic Direction – How We Will Meet Our Member Expectations and Respond to their Market Needs

*by Fred Harrison, Chairman of the Board*

OMA exists in a world with a complex range of industries, business models and technologies, a world which is now facing an economic downturn. This environment presents a major challenge to our industry to work well together, to work with greater efficiency and flexibility and to embrace innovation in order to respond to our changing situation.



As OMA enters its seventh year of service to the industry, the value chain for the delivery of services to customers is becoming increasingly fragmented. More and more players are joining the mobile data services market every day—big and small, new innovators and established companies. With so many players, there is an increased need for consistent interfaces in order to realize the end-to-end services that our customers and companies demand.

As members of OMA, we must renew our commitment to work together on the specifications and the industry requirements that offer maximum growth opportunities for emerging market areas. High quality standards support the development of competitive markets, helping the industry to work together whilst allowing individual companies to pursue their own commercial objectives.

Now we have an additional challenge which is to deliver our results in a more efficient way. Our processes and work methods need to be refined and focussed to ensure that we offer greater value to our members, reduce our costs and reduce our time to market. I am pleased to report that the Board of OMA has initiated several initiatives that will ensure improved efficiency and higher value.

When the OMA was started, one key objective was to reduce fragmentation. We have successfully affiliated many organizations, and we have also spent time building relationships with other relevant industry bodies – nearly 40 cooperation agreements including the W3C, the IETF and the Third Generation Partnership Project (3GPP). The industry has had a period of explosive growth and high levels of innovation resulting in a broad proliferation of organizations and industry groups. I personally believe we now need some consolidation, to bring more of the work together. This will help service providers deliver a consistent service and will



enable customers to enjoy ease of use and a seamless experience. It will also reduce risks and costs for all companies in the value chain. I am confident that the OMA can help facilitate this consolidation.

As an example, device management specifications have been fragmented across the industry. Perhaps this is not so surprising—since historically we’ve had different approaches to service delivery and the role of devices in the fixed and mobile worlds. The OMA is now working very closely with the Broadband Forum (previously DSL Forum) and we have a new work activity on converged device management. This aims to bring together device management technologies which will help to support the convergence of service delivery across mobile, home and office environments. Where OMA has seen fragmentation, we have tried to reach out and see whether we can reduce it.

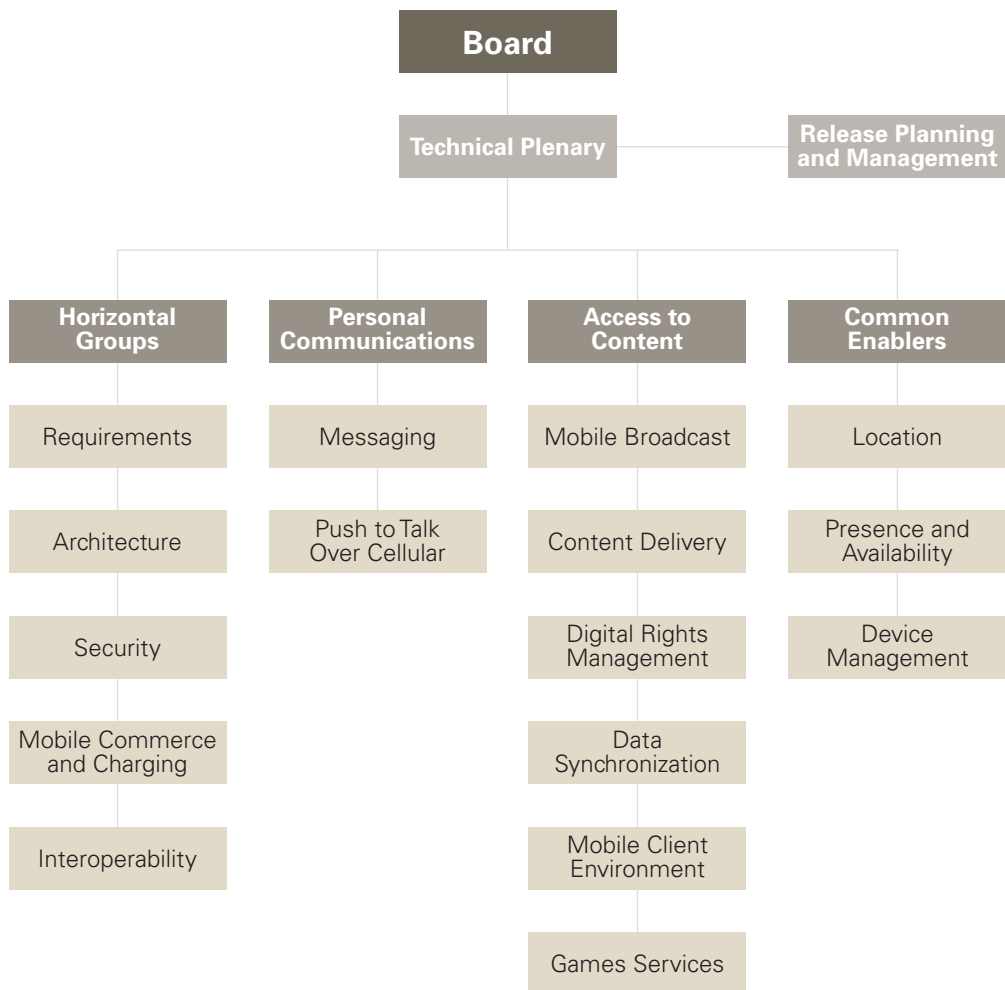
The priority for OMA is making sure that we are aligned with market needs and the expectations of our members and the industry. We need to ensure that OMA deliverables, in both specifications and interoperability programs, are highly relevant to the market. Historically, the market has been easier to predict with a well-established value chain and conventional business models. Clearly, this has changed; within our own companies and organizations we need to be innovative, flexible and responsive to change. The same applies for OMA to be successful. One of the key tasks I have as Chairman of the Board is to set out the agenda to ensure that our processes, organization and workplan respond to the market.

Increasingly, there is a need for OMA to reach out to potential new members who might be working in new technologies and markets that could prove important to the industry. We must embrace broader engagement to ensure that we remain relevant to the developing markets—whether they involve different types of access, devices, services or content.

I truly believe standardization is a critical success factor in enabling new markets and revenue streams. Working collectively we will be better equipped to succeed within our diverse ecosystem, to open up market opportunities and to address the challenge of economic pressures.

I encourage all our members and any company with a commitment to standardization and interoperability to participate in the collaborative effort of the OMA.

## OMA Organizational Structure



## Work Program/TP Overview

*A review of the 2008 technical work of the OMA and the 2009 pipeline of activities from Mark Cataldo, Chairman of the Technical Plenary*

2008 has seen the greatest number of Enablers published and approved by the OMA Board of Directors since our founding in 2002. Also, this year has seen the continuing fruition of our efforts to include fixed line protocols in our specifications. In the beginning of 2006, we changed our charter to address the provision and enabling of services on both fixed and mobile infrastructure, in particular for fixed technologies that support the IP family of protocols. As a consequence, we increasingly facilitate the creation of services and enablers across fixed and mobile domains through the re-use of the IP family of protocols.



With over 100 Enablers currently in the OMA pipeline, we continue to update and improve the fundamental mobile service enablers that OMA produced early in its lifetime. As we continue to see increased mobility and connectivity, greater content distribution, and rising subscriptions to multi-media services, interoperable access to data, *no matter what device or what location*, is becoming a more significant source of revenue across the industry. OMA's work supports this growing market with more complex sets of enablers, reusable across the OMA spectrum of services and technology and relevant to the converging fixed and mobile domains.

What follows in this first Annual Report from OMA are overviews from six of our 12 technical working groups. Also included in the Location Working Group section is a case study about the use of an OMA enabler from Qualcomm. Below are just a handful of brief highlights in summary format of several technical activities from the Technical Plenary.

### Mobile Advertising

OMA is standardizing a way for operators and advertisers to create targeted and personalized marketing and opt-in advertisements based on user profiles and user requests. Begun in 2008, the Mobile Advertising group has identified market-based requirements and is defining the architecture of the Enabler. This work will provide an industry wide standard to take advantage of the estimated \$12 billion market expected by 2011.

### Mobile Codes

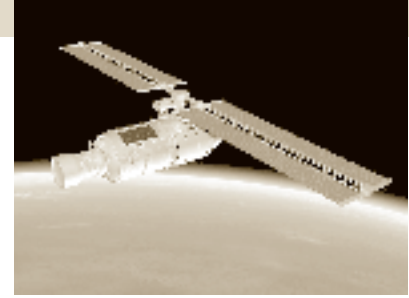
Using the camera on your mobile phone, a user is able to scan a industry-standard symbology (similar to a bar code scanned in supermarkets). The mobile codes may be embedded with details such as business card information, SMS/MMS/phone-number contact details, advertising, product information, internet address or links to the operators' services. OMA is supporting this easy-to-use technology to facilitate access to services. Additionally, mobile codes allows operators to extend to users their services and information, offering a wider set of services or a menu of options customized and personalized to the user's specific interests. Having first produced an investigatory white paper, the mobile codes group has identified market-based requirements and is defining the architecture design of the enabler.

### Mobile TV

OMA has enabled a programme guide to be issued to a user's handset, which describes the schedule of broadcast media to be transmitted—think of TV channels, and you have an idea of what this is. The working group has included content protection as well as charging capabilities, as well as the ability for users to select and pre-programme which programmes they wish to receive and when. With significant uptake of proprietary solutions in some markets, OMA is now offering a standardized and globally interoperable solution.

### Device Management

The approval of the firmware update management object (FUMO) enabler offers the ability for the underlying software to be update, clean up bugs or add new functionality. It effectively allows over-the-air transmission of firmware updates in the device, offering significant cost reduction to operators and corporate help desks, as well as the possibility of new revenue streams associated with new service levels and features installed in existing handsets. The Device Management group has also delivered, and continues to develop several other, similar enablers and is working of the convergence of fixed and mobile device management.



## 2008 Specifications and Accomplishments

An OMA Candidate Enabler Release (CER) delivers an approved set of open technical specifications that can be implemented in products and solutions, and then tested for interoperability. Upon publication as a Candidate, specifications then enter the OMA Interoperability Testing Program where they will eventually reach Approved Enabler Release status.

An Approved Enabler Release (AER) represents Candidate Enabler Releases that have gone through the Interoperability Program (IOP) of OMA. The IOP tests interoperability between different member company's implementations—either within the OMA or through other means.

### New OMA Candidate Enabler Releases approved by OMA Board of Directors since January 2008

#### 2008 CERs

- ▶ OMA Client Provisioning V1\_1 (Revised)
- ▶ OMA Secure Removable Media V1\_0
- ▶ OMA XDM V1
- ▶ OMA Mobile Broadcast V1\_0
- ▶ OMA Presence Simple V1\_1
- ▶ OMA Push to talk over cellular V2\_0 (Revised)
- ▶ OMA Multimedia Messaging Systems V1\_3 (Revised)
- ▶ OMA Common Security Functions V1\_0
- ▶ OMA Mobile Broadcast V1\_0
- ▶ OMA Mobile Location Services V1\_2
- ▶ OMA Secure User Plane V2\_0
- ▶ OMA Device Management Scheduling V1\_0
- ▶ OMA Push to talk over cellular V2\_0
- ▶ OMA Mobile Broadcast V1\_0
- ▶ OMA Digital Rights Management V2\_1
- ▶ OMA Smart Card Web Server V1\_1
- ▶ OMA Policy Evaluation, Enforcement & Management V1\_0
- ▶ OMA Browsing V2\_4
- ▶ OMA Rich Media Environment V1\_0
- ▶ OMA Categorisation Based Content Screening V1\_0
- ▶ OMA Software Component Management Object V1\_0
- ▶ OMA Device Capabilities Management Object V1\_0

- ▶ OMA Scalable Vector Graphics Mobile Domain V1\_0
- ▶ OMA XML Document Management V2\_0
- ▶ OMA Digital Rights Management V2\_1 (Revised)
- ▶ OMA SIMPLE Instant Messaging V1\_0 (Revised)
- ▶ OMA Mobile Broadcast V1\_0 (Revised)
- ▶ OMA Policy Evaluation, Enforcement & Management V1\_0 (Revised)
- ▶ OMA Device Management Scheduling V1\_0 (Revised)

#### 2008 AERs

- ▶ OMA Digital Rights Management V2\_0\_1
- ▶ OMA Smart Card Web Server V1\_0
- ▶ OMA Browsing V2\_3 AER
- ▶ OMA Firmware Update Management Object V1\_0\_1 AER (Revised)
- ▶ OMA Device Management V1\_2\_1
- ▶ OMA XML Document Management V1\_1
- ▶ OMA Presence SIMPLE V1\_1
- ▶ OMA Firmware Update Management Object V1\_0\_2 AER
- ▶ OMA URI Schemes V1\_0
- ▶ OMA Digital Rights Management V2\_0\_2
- ▶ OMA Application Layer Security Common Functions V1\_0
- ▶ OMA Digital Rights Management V2\_1 (Revised)



## 2009 Pipeline

There are currently more than 100 work items under development in the OMA Work Program. This pipeline represents OMA's continued commitment to respond to market demands and deliver specifications that are relevant to the mobile industry.

OMA's technical accomplishments happen throughout the year and announcements are regularly included in OMA's quarterly Newsletter, <http://www.openmobilealliance.org/>. Twice yearly, OMA hosts press events featuring key enablers considered significant to the market. The first press event of 2009 will take place in Boston on Thursday 25 June during the OMA's Technical Plenary.

To learn more about the OMA Release program, please visit the OMA Technical Information page on our website, <http://www.openmobilealliance.org/Technical/releaseprogram.aspx>

### Updates to Existing OMA Work

- ▶ Browsing
- ▶ Dynamic Content Delivery
- ▶ Device Capability MO
- ▶ Push Over Cellular
- ▶ Presence SIMPLE
- ▶ Device Management Scheduling
- ▶ Software Component MO
- ▶ Secure User Plane
- ▶ XML Document Management
- ▶ Data Synchronization

### New Candidate Enablers Slated for Release in 2009

- ▶ Categorization Based Content Screening
- ▶ Diagnostic and Monitoring
- ▶ Device Profiles Evolution
- ▶ Global Permission Management
- ▶ General Service Subscription Management
- ▶ Lock & Wipe Management Object
- ▶ Mobile Email
- ▶ Policy Evaluation, Enforcement & Management
- ▶ Rich Media Environment
- ▶ Secure Content Exchange

## Working Group Summary

# Mobile Broadcast Working Group

### Background

Broadcasting has long been the most effective means of delivering media content to the mass market. Consumers understand well and are comfortable with the traditional broadcasting services of televisions and radios. The increased use of mobile devices by consumers, combined with the convenience of anywhere and anytime, makes broadcasting through mobile devices one more way to distribute content to the consumers. Moreover, as mobile network and device technologies evolve, mobile broadcasting can produce more media-rich and interactive experience for consumers, compared with traditional broadcasting services. Content providers, service providers and device developers worldwide are posed to capture the new market opportunities sprung from mobile broadcasting services.

Mobile broadcasting refers to a broad range of broadcast services, which leverage the unidirectional one-to-many broadcast paradigm as well as the bi-directional unicast paradigm in a mobile environment. It covers one-to-many services ranging from classical broadcast to the rich interactive services. In the mobile environment, underlying technologies of network bearers and devices vary drastically. Since the 1990s, a variety of mobile broadcasting technologies have been developed and adopted in different regions of the world, using different network technologies. Examples are DVB-H (Digital Video Broadcasting Handheld) and DAB (Digital Audio Broadcasting) in Europe, ISDB-T Seg 2 in Japan, S-DMB (Satellite Digital Media Broadcasting ) and T-DMB( Terrestrial DMB ) in Korea, Media FLO in the U.S., ATSC MGH in the U.S. MBMS (Multimedia Broadcast Multicast Service) standardized by 3GPP, BCMCS (Broadcast Multicast Service) standardized by 3GPP2, and MCBCS (Multicast Broadcast Service) standardized by WiMAX. Subsequently, many application-layer services were developed on top of the different network bearer technologies. The heterogeneous technologies create a tremendous interoperability issue, which limits the market potential as a whole.

### Objectives and Goals

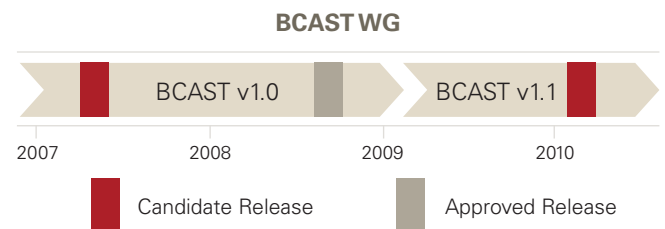
In an effort to focus the industry-wide interest in mobile broadcast on the interoperability challenge, OMA chartered the Broadcast (BCAST) Working Group (WG) to define and specify the application layer enablers to support mobile broadcast services, taking into consideration requirements for such services and the environments needed for their delivery. With industry representations from major content providers, mobile service providers, system vendors and handset manufacturers, the WG aims to deliver a set of protocols that address the required functions of service discovery, service information provision, file/stream delivery, service/content protection, service/terminal management in the mobile broadcast and unicast environments.

### Coordination with Other Standard Organizations

The BCAST WG works closely with external industry fora and other OMA WGs to leverage existing technologies that can be used to develop mobile broadcast enablers. The external fora include DVB, 3GPP, 3GPP2, W3C, IETF, ISMACrypt, WiMAX. Internally, BCAST WG leverages works from other OMA WGs, such as DRM, DM, PUSH, MAE, etc.

### Accomplishments

The BCAST WG is currently working on two enablers, BCAST v1.0 and BCAST v1.1. The chart below shows the timeline for these two enablers.



Following is a brief description of the work items in the BCAST WG and their status at the end of 2008.

**Mobile Broadcast Service Enabler – BCAST v1.0, Candidate Enabler**

BCAST v1.0 provides a complete end-to-end framework for mobile broadcast services by defining nine functionalities to address different technical areas. The nine functionalities are: Service Guide, Notification, File Distribution, Stream Distribution, Service Protection, Content Protection, Service Provisioning, Terminal Provisioning and Service Interaction. Some of the nine functions, such as Service Guide, File Distribution, and Stream Distribution, are basic functionalities and the others are functionalities for the enhanced feature. BCAST v1.0, as the transmission bearer independent technology, can support three different digital broadcast systems, DVB-H, 3GPP MBMS and 3GPP2 BCMCS.

With BCAST v1.0, network infrastructure investments by service providers are protected, as broadcast services can be provisioned through existing networks. Device vendors find themselves in a level playing field, where they can pick and choose functional areas to implement for optimizing cost and differentiation. Consumers will benefit from a standardized and uniform interactive experience and receive a better user experience.

**Mobile Broadcast Service Enabler – BCAST v1.1, Candidate Enabler expected 1Q10.**

The BCAST v1.1 enabler makes functional improvements from BCAST v1.0. These improvements would serve well all entities in the value chain—content providers, service providers and device developers—and allow them to capture additional revenue from new features and value added services.

BCAST v1.1 will include enhancements for content providers to provide more personalized services, subscription and interactive functionalities,

as well as improved roaming capabilities among broadcast networks. Regarding network operators, BCAST v1.1 will allow additional underlying technologies to provision broadcast services, such as WiMAX, DVB-SH, Media FLO, and hybrid networks. Device Management (DM) for Broadcast Channel will also be defined in BCAST v1.1. As for mobile device functionality, BCAST v1.1 will include the latest DRM features, such as support of Secured Removable Media (SRM v1.0) and a variety of rich media technologies.

The BCAST WG is currently working on the requirement and architectural documents for the BCAST v1.1 enabler.



## Working Group Summary

# Content Delivery Working Group

### Market Analysis and Requirements

In today's networked consumer and business environment, users demand rich multimedia content that is available when they want it, wherever they are. Further, users demand content that is personalized per their interests and context (e.g. location), and expect a seamless experience accessing content-based services from any device. Networks and devices are becoming increasingly more capable of fulfilling such requirements. All segments of the mobile data services value chain—application developers, content providers (including users, for user-generated content), mobile operators and device manufacturers—are contributing to satisfy customers demands for content-based services.

However, a number of challenges still remain. Application developers and content providers need to improve the user experience in consuming and interacting with content from a mobile device. In addition, the proliferation of mobile platforms requires time consuming adaptation of content by application developers.

Service enablers that OMA is developing can address how, when, and in what form content is delivered to users on behalf of content providers and standards developed through co-operative efforts of all value chain members can start addressing these challenges and maximize the market opportunity.

### Objectives and Goals

The Content Delivery Working Group (CD WG) develops specifications for client/server systems and related protocols in the form of service enablers. These service enablers address a broad range of mechanisms to deliver

content via point-to-point and point-to-multipoint bearers in networked environments, both mobile and fixed. With an evolving service environment in mind, the CD WG aims to deliver service enablers that are tested for interoperability and to drive industry-wide adoption of these enablers.

### Coordination with Other Standards Organizations

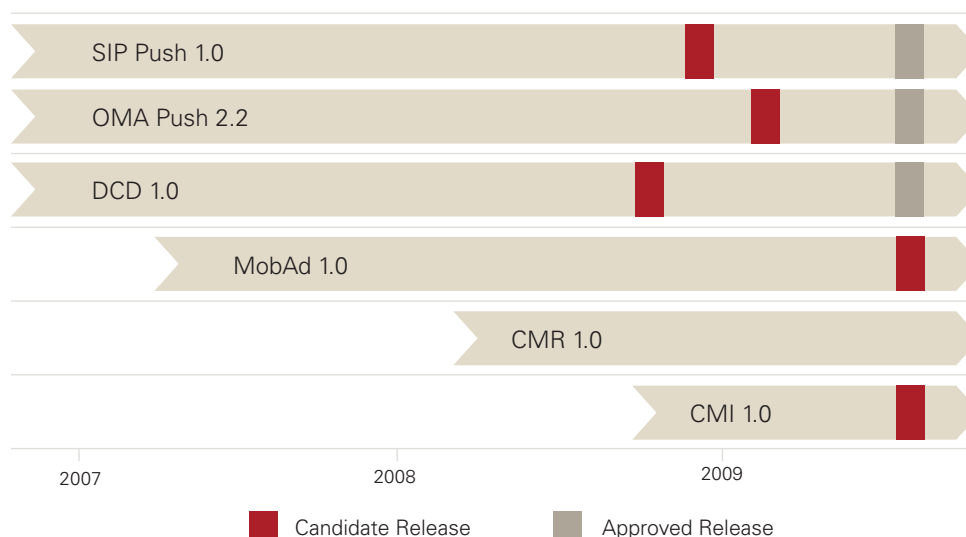
In order to maximize synergy and avoid duplication, the CD WG is working closely with external standards organizations, such as W3C, 3GPP/3GPP2, the Open Mobile Terminal Platform (OMTP), as well as with other OMA WGs. Over 50 companies representing all players in the value chain are currently participating in this working group.

### Work Plan

The CD WG was formed in 2006 to collect, coordinate and carry forward ongoing work in the content delivery topic. Current work includes the following:

- ▶ Dynamic Content Delivery – DCD 1.0
- ▶ OMA Push, including
  - SIP Push 1.0
  - OMA Push 2.2
- ▶ Mobile Advertising – MobAd 1.0
- ▶ Content Management Interface – CMI 1.0
- ▶ Customized Multimedia Ringing – CMR 1.0

The table below shows the work item schedule for the current work.



Following is a brief description of each work item in the CD WG and their status at the end of 2008. Note that some of the timelines may have slightly slipped due to the results of the last meeting in 2008.

#### **Session Initiation Protocol (SIP) Push— SIP Push 1.0, Candidate Enabler**

SIP Push extends the successful Push delivery model pioneered by OMA through WAP Push, which provides context-aware mechanisms for server-initiated content delivery to device-based applications. SIP Push defines a client-server protocol for Push operations in service environments leveraging the IETF-defined Session Initiation Protocol (SIP) for connection management. This protocol is intended to be used in the development of SIP-based Push applications and OMA service enablers, or through the OMA Push service enabler (see below).

#### **OMA Push 2.2, Candidate Enabler 1Q09**

OMA Push 2.2 is the latest release of OMA's end-to-end service enabler supporting Push operations, being defined as an update to the existing WAP Push Enabler. WAP Push is one of the widest deployed OMA service enablers, as a supporting enabler to many other OMA enablers, and as a means to directly develop Push-based services. OMA Push 2.2 incorporates the SIP Push 1.0 protocol into the OMA Push architecture, which includes the Push Proxy Gateway (PPG) as a context-aware server for Push operation adaptation to the diverse network/bearer environments supported by OMA Push, and the Push Client as an extensible device component enabling access to Push-based services by other OMA Enabler clients and generic applications.

#### **Dynamic Content Delivery— DCD 1.0, Candidate Enabler 1Q09**

The goal of DCD is to simplify user access to content services, by providing automated delivery of personalized content direct to users' devices. In contrast to the difficulty that browser users often have in finding Web content that works well on their device, users can subscribe to DCD-enabled services that automatically deliver personalized content that is tailored to their device. DCD defines a client-server architecture and protocols for the context-aware management and delivery of content-based services. DCD provides a generic framework enabling the simple and manageable deployment of services supporting automated/on-demand content download and upload, such as content-syndication based services as part of an overall Web 2.0 service environment.

#### **Mobile Advertising— MobAd 1.0, Candidate Enabler 4Q09**

Mobile Advertising takes advantage of information available about mobile device users and how they use their devices to provide users with advertisements that are directly targeted to their interests, leading to higher advertisement response rates. The MobAd Enabler will support the successful deployment of Mobile Advertising services by providing an interoperable framework for ad personalization, delivery and metrics data collection. The MobAd Enabler allows ad personalization by defining metadata about the target audience for an ad or ad campaign; this information can be matched against user profile and preference information so that the user only receives ads that are of interest to them. The MobAd Enabler can make use of a variety of advertisement delivery methods, (e.g. pull, push and broadcast delivery). The MobAd Enabler also specifies a standard set of advertisement metrics data that are recorded (as users view ads and interact with them) and then collected to enable the measurement of the response to ads and ad campaigns.

#### **Customized Multimedia Ringing— CMR 1.0, Candidate Enabler 2Q10**

As devices are becoming more powerful and able to support many kinds of multimedia resources, and IP-based networks become able to support transfer of multimedia resources rapidly and reliably, opportunities are increasing for users to express their personality through multimedia communications, e.g., incoming calls, messages, etc. The CMR Enabler will define an end-to-end service architecture supporting such features as delivery of a video to be played to a calling party, instead of a network-based ring tone. CMR will be able to directly deliver services, and also as a reusable component for incorporation of related features into other OMA service enablers.

#### **Content Management Interface— CMI 1.0, Candidate Enabler 3Q09**

The goal of the CMI Enabler is to define standardized interfaces between Service Providers and Content Providers supporting various functions related to the use of content in services, e.g. upload/download/expiration, content metadata, purchasing, and statistics reporting. The CMI Enabler is intended to support the management of content used in services deployed via other OMA service enablers, e.g. CMR.



## Working Group Summary

# Device Management Working Group

### Objectives and Goals

The goal of OMA's Device Management (DM) Working Group (WG) is to specify protocols and mechanisms to facilitate management of mobile devices, including remote configuration settings, software installation and updates and diagnostics. One of the key areas for recent and future work in the DM WG is the management of converged and multimode devices.

Terminal manufacturers, members of OMA, support DM across a wide range of platforms and all key OMA members mobile—operators and vendors, IT companies—are contributors in the WG. Given this broad base of support of OMA members, analysts expect the momentum for OMA DM to build steadily over the next several quarters.

### Success Criteria

The OMA DM WG has strong momentum, although it is a newer device management technology and therefore currently has lower levels of penetration than proprietary solutions. The WG has good support across handset platforms in most key markets, with the first implementations typically in higher-end devices and newer handset platforms. Some of the biggest challenges for managing devices are:

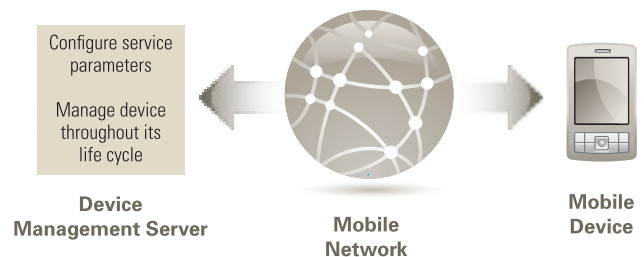
- ▶ Identifying devices on the networks
- ▶ Configuring devices before shipping
- ▶ Updating device firmware after shipping
- ▶ Updating device settings after shipping

A successful DM solution will provide a high degree of device and network security, track user equipment and capabilities and remotely support users, by resolving issues quickly, updating technology constantly and containing support costs. Further, it will assist enterprises to manage applications for devices in the field using standard, rather than point, solutions.

### Accomplishments

The OMA DM WG was tasked to specify an open standard for the management of mobile devices. This includes specifying the client/server protocol and the management objects to store the various configuration and provisioning parameters. Many devices are already available in the

market from all major mobile device manufacturers that support OMA DM device provisioning with an OMA DM client. The Device Description Framework (DDF) of each device contains a set of management objects and specifies operations that can be performed on those objects. Using the device specific information of the DDF, the Device Management Suite can perform a variety of management functions including firmware updates, inventory collection, alert handling, and device provisioning, regardless of the specific capabilities of the device. DM Device provisioning can provision every parameter of every OMA DM compliant mobile device. These provisioning capabilities are specified in OMA DM 1.1.2 (2004) and 1.2 (Approved Enabler 2007).



DM has proven to be critical to enabling more mobile services and operators are showing high interest.

Some of the benefits of OMA DM provisioning are:

- ▶ Network independence—Work on GSM, GPRS, WCDMA, and 3G mobile networks
- ▶ More efficient full-duplex provisioning method, using TCP-IP on mobile networks
- ▶ Secure transactions, using HTTP with TLS 1.0 / SSL 3.0 and 128 bit or stronger
- ▶ Access control for all operations specified in the DDF
- ▶ Highly extensible OMA DM protocol to support all future functionality of mobile devices
- ▶ Revenue impact, as new services can be provisioned more quickly-
- ▶ Reduction in customer care costs and churn, by eliminating delays and inefficiency of manual configuration

### Enablers Completed

Following is the list of enablers specified by the end of 2008.

- ▶ Device Management (DM) 1.2.1, Approved Enabler
- ▶ DM Management Objects (MOs). Several enablers either Candidate or Approved
- ▶ Lock and Wipe (LAWMO) V1.0, Candidate Enabler, 4Q08
- ▶ Diagnostics & Monitoring (DiagMon) V1.0, Candidate Enabler 4Q08
- ▶ Firmware Update Management Object (FUMO) V1.0, Approved Enabler

### Work Items in the Pipeline

- ▶ DM V2.0, Candidate Enabler, 4Q10

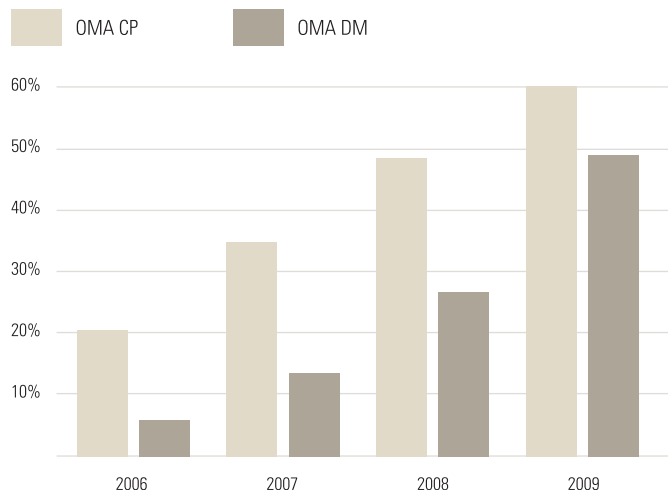
No consensus has been achieved as to direction, but the WG is planning a workshop with external organizations in early 2009.

- ▶ Web Services Interface (WSI) V1.0, Candidate Enabler, 1Q09
- ▶ Browser Management Object (BMO), Candidate Enabler, 3Q09
- ▶ Smartcard (SC) V1.0, Candidate Enabler 2Q09

### Deployment Statistics

Mobile handsets are a critical communication tool for people all over the world and, with more than 1 billion mobile handsets shipped worldwide in 2007, the number in use increases every day. At the same time, the complexity of the mobile devices and the proliferation and complexity of data applications and services offered by mobile operators is also

**MDM-Enabled Handsets as a Percentage of Installed Base**



increasing. Mobile device management technologies to do such tasks as remote diagnostics and problems fixing are experiencing strong global growth, according to Ovum. Analysis shows that between the fourth quarter of 2006 and the fourth quarter of 2007, global shipments of mobiles grew by a compound annual growth rate (CAGR) of 83 per cent for OMA FUMO, 51 per cent for OMA client provisioning (CP) and 159 per cent for OMA DM.

According to the 2007 research by iSupply\*:

- ▶ 89% of handset models introduced by major handset vendors in 2006 support OMA DM (1.1.2 and 1.2) and 95% in 2007
- ▶ 91% of operators implemented OMA DM in 2006 and 88% in 2007

Quality and reliability of these Enablers is well established and bodes well for the future pipeline of OMA.

Mobile handset shipments worldwide were well above one billion in 2007. The growth in the percentage of handsets within the installed base that have OMA CP and DM capabilities is due to the fact that more and more new shipments have the OMA capabilities.

### Work Items in the Pipeline

- ▶ Diagnostic and Monitoring Management Object—Diagnose and monitor a device to help locate troubles with the device
- ▶ Software Component Management Object, SCOMO
- ▶ Additional enablers in the early stage of development
  - Lock and Wipe Management Object allows deactivation of the device over the network.
  - Device capabilities Management Object allows activation or deactivation of hardware on the device, such as Wi-Fi access or other capabilities.
- ▶ Connectivity Management Object—Seamless operation of device over all the various protocols without manual administration of the device
  - UMTS, CDMA2000, Wi-Fi
  - 3GPP Packet Switch or other Proxy settings
- ▶ SCOMO—Software Component Management Object—allows remote management of software components (libraries, executables, etc.)

### Sources

- Ovum Statistics
- OMA DM enablers specifications

\* These percentages do not address the installed base of handsets or subscribers.



## Working Group Summary

# Digital Rights Management Working Group

### Background

Networking technologies in today's digital world enable content to move ever faster and cheaper among users. However, ease of distribution comes with increased abuse of content rights and licensing agreements, such as unauthorized distribution of copyright materials. Digital Rights Management (DRM) solutions exist but are highly fragmented, due to the differences in underlying proprietary technologies used by the industry's major players. As digital distribution of content has become the preferred industry method, industry cooperation and standardization of DRM technology has become a more pressing need. Standardization can ensure seamless content flow across multiple distribution environments, content provider models and consumer devices.

### Objectives and Goals

The intent of the OMA DRM Working Group (WG) is not only to protect content owners from unauthorized use, but also to encourage easier digital distribution of quality content, which directly benefits consumers. OMA DRM has endeavored to support new business models that generate incremental revenue streams, such as digital rental and subscription services, which have evolved along with the development of DRM technologies.

The DRM WG is chartered to develop open application-layer protocols to specify transactional and lifecycle management of content and applications. Currently, the WG includes industry representations from device manufacturers and operators worldwide.

### Coordination with other OMA Working Groups

To allow the use of OMA DRM technology for broadcast purposes, the OMA DRM WG works closely with the OMA BCAST WG.

### Accomplishments

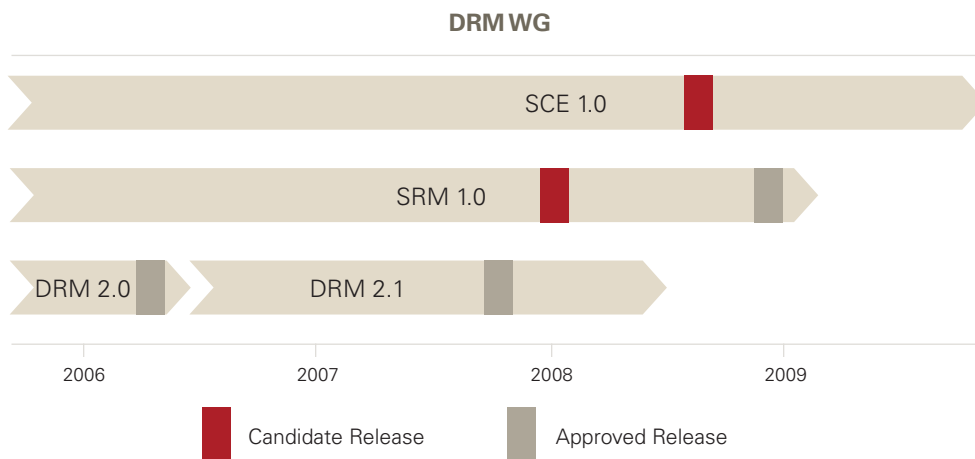
The chart below shows the expected timeline for the DRM enablers.

Following are brief descriptions of the enablers specified by the end of 2008 and their status. Note that the timeline may have changed slightly after the last meeting of 2008.

#### DRM v2.0, Approved Enabler

#### DRM v2.1, Candidate Enabler

OMA DRM v1.0 was released in 2004 as a clearly defined industry requirement for quick and basic "forward-lock" rights management for user-created content. In 2006, OMA DRM v2.0 evolved from version 1.0 with more sophisticated end-to-end interoperable mechanisms for secure



distribution of content to users, independent of the underlying media format and execution environment. OMA DRM 1.0 had great success in the industry, judging from the high volume of handsets that support it. V 2.0 has not been implemented to the same extent and the market appears to be fragmenting with proprietary DRM and no DRM gaining some support. DRM v2.0 is, however, providing valuable feedback for v2.1 improvements. While architecturally backward compatible with OMA DRM v2.0, OMA DRM v2.1 provides enhanced features directly benefiting content providers, mobile operators, and end users.

- ▶ Improved Content Provider Control
  - Metering
  - Content differentiation
  - Capability of confirming rights object installation
- ▶ Improved consumer usability
  - More metadata categories,
  - User-configurable metadata
  - Rights object upload features

#### **Secure Removable Media (SRM) v1.0, Candidate Enabler, January 2009**

OMA SRM v1.0 is an extension to OMA DRM for managing rights in the use of removable media. Removable media, such as secure memory cards, are increasingly used for transporting and sharing content among consumer electronics devices due to their convenience. This is an example of how the OMA DRM Working Group supports the convergence of fixed and mobile environments and technologies. Removable media with an SRM v1.0 agent and secure storage area can be used for the secure transfer of rights between clients with DRM agents, providing higher portability and flexibility for users. Content providers also benefit from an additional means to distribute DRM content. For example, by pre-installing content rights management in an SRM agent during the manufacturing processes, content providers will maintain more complete access and distribution controls than traditional media formats for content distribution and sharing—such as CDs and DVDs.

#### **Items in the pipeline**

##### **SRM v1.1, Candidate Enabler 1Q10**

Work on requirements has already started.

##### **Secure Content Exchange—SCE v1.0, Candidate Enabler Dec 2009**

OMA SCE v1.0 is an extension to the OMA DRM. It specifically addresses the exchange of DRM protected content between multiple devices in order to achieve a better user experience. Enhancements include:

- ▶ Flexible sharing of purchased content
- ▶ Import of protected content from non-OMA DRM systems
- ▶ Enabling consumption of DRM content contained in MPEG-2 transport streams across a multiple user devices

With OMA SCE v1.0, content owners have the capability to allow a more flexible use of their content, for example by allowing sharing, lending or gifting.

#### **Deployment Statistics**

OMA DRM deployment statistics, according to the 2007 research by iSupply,\* are:

- ▶ 89% of handset models introduced by major handset vendors in 2006 support OMA DRM and 90% in 2007
- ▶ 64% of operators implemented OMA DRM in 2006 and 100% in 2007

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\* These percentages do not address the installed base of handsets or subscribers.



## Working Group Summary

# Data Synchronization Working Group

### Background

SyncML is a mobile data industry standard, developed by the SyncML Initiative. SyncML DS provides a protocol to synchronize personal information manager (PIM) data between a mobile device and a server. PIM data is the collective name given to contacts, calendar, notes, tasks, and email. The SyncML initiative was founded in February 2000 as collaboration between Nokia, Ericsson, IBM, Lotus, Matsushita, Motorola, Palm, Psion and Starfish Software. The first handset launched supporting the new SyncML standard was the Nokia 9210 Communicator in December 2000. The SyncML Initiative was one of the initial standard bodies absorbed by OMA in 2002 and SyncML became an OMA standard.

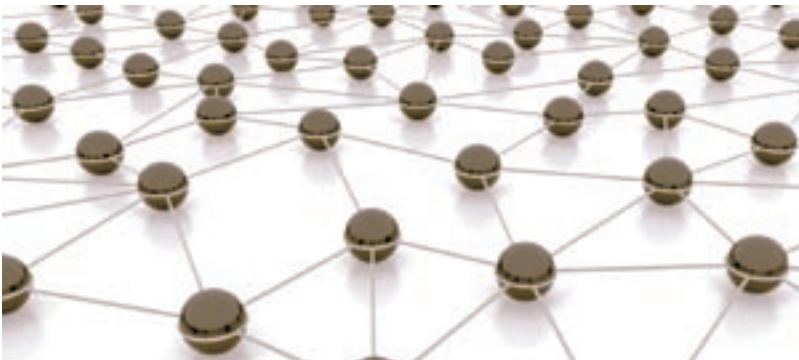
### Objectives and Goals

The goal of the Data Synchronization (DS) Working Group (WG) is to continue development of specifications for data synchronization and to develop other similar specifications, including but not limited to SyncML technology. These specifications will include conformance specifications and a set of best practices that describe how to use the data synchronization technology specifications within the OMA Service Environment.

### Success Criteria

One of the key promises of mobile computing and communications devices is the ability to deliver information to users almost anytime and anywhere. This information can then be modified and updated in various locations and devices, and later synchronized with compatible applications when the user is back in the office or at home. Today's cell phone users expect feature-rich handsets. The ability to connect and synchronize mobile devices with PCs has become a requirement. OMA DS will be successful if it delivers enablers that

- ▶ Provide business travelers with the opportunity to be up-to-date with remote synchronization of data over a mobile network
- ▶ Facilitate synchronization of large amounts of data, for example backup of phone data
- ▶ Ensure broader device compatibility
- ▶ Accelerate development and innovation
- ▶ Enrich operators service offerings
- ▶ Provide flexibility and customization to the enterprise
- ▶ Lower total cost of ownership
- ▶ Decrease time to deployment



By utilizing the SyncML standards, OMA enables lower-end mobile phones to participate in PIM synchronization, application provisioning and device management. With a large number of newer mobile phones coming pre-loaded with SyncML clients, SyncML technology allows enterprises to reduce/postpone investments in more advanced mobile data devices.

Data synchronization and the ability to deliver data services, such as mobile email, to consumer lower-end handsets will open up a new market opportunity.

### DS Benefits

All major device manufacturers support the OMA DS. OMA DS-compliant software is now included as standard in a wide variety of phones types. This allows synchronization and backup/restore services to be provided by network operators to an increasingly broad customer base of business users and consumers.

Synchronization plays an important role in applications that run on mobile devices. In addition to keeping data in sync on all devices and platforms, it gives the user the illusion of uninterrupted operations in the presence of poor or nonexistent network connections.

### Accomplishments

Following are the enablers specified by the DS WG by the end of 2008 and their status.

- ▶ SyncML Common V1.2.1, Approved Enabler, Aug 2007
- ▶ DS Data Objects V1.0, Approved Enabler, Sept 2008
- ▶ DS V1.2.1, Approved Enabler, Sept 2007

One of the major enhancements to the 1.2 release of the OMA DS standard was a notification mechanism. Known as server-alerted notification (SAN), this addition allows a server to notify a device of a new PIM data item by sending a binary SMS to the device, which initiates a synchronization session with the server to collect the new data item. Release 1.2.1 also makes improvements for providing push email service from an array of email sources.

### Work Items in the Pipeline

- ▶ DS 1.2.2, Candidate Enabler, TBD

This version is being created for version interoperability and for some minor enhancements

- ▶ DS V2.0, Candidate Enabler, 4Q08?? Or 4Q09?

The main enhancements in this version include: change DTD to Schema, remove the data objects definitions to be data agnostic, introduce fingerprints, continuous sync, enhanced notification, enhanced security and DS MO for provisioning.

### Deployment Statistics

According to the 2007 research by iSupply\*, DS statistics are:

- ▶ 85% of handset models introduced by major handset vendors in 2006 support OMA DS and 96% in 2007
- ▶ 89% of operators implemented OMA DS in 2006 and 100% in 2007

The industry momentum behind the SyncML standards and the demand for synchronization services and mobile email are fostering market adoption of the OMA solution, which promises to be available at a lesser cost than the proprietary solutions that currently dominate this market.

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\*These percentages do not address the installed base of handsets or subscribers.

## Working Group Summary

# Location Working Group

### Objectives and Goals

The goal of the OMA Location (LOC) Working Group (WG) is to develop specifications to ensure interoperability of location-based services (LBS) on an end-to-end basis. It covers the key aspects of these services, such as

- ▶ End-to-end architectural framework
- ▶ Relevant application and contents interfaces
- ▶ Privacy and security
- ▶ Charging, billing and roaming

### Success Criteria

The LBS market is evolving rapidly and mobile service providers are striving to provide personalized services, based on current location, to a broad range of mobile subscribers. Success of the LOC WG will be measured by:

- ▶ Wide-scale adoption of the LOC WG specifications by the industry
- ▶ Timely identification and resolution of problems
- ▶ Consideration and integration of existing solution from other organizations
- ▶ Timely initiation of market-driven new activities
- ▶ Satisfactory interoperability testing of LOC enablers
- ▶ Respect of work boundaries agreed with external organizations

### Coordination with other standard organizations

The LOC WG interfaces with external organizations that have technologies, which are referenced by, or have an impact on, OMA LOC specifications. Currently, it liaises with 3GPP, 3GPP2, IETF, ETSI, GSMA and the WiMAX Forum.

### Accomplishments

Following are the enablers specified by the end of 2008 by the LOC WG and their status.

#### Mobile Location Services (MLS) V1.2, Candidate Enabler

MLS V1.2 consists of a set of location specifications complying with defined releases of 3GPP location services specifications. They include MLP (Mobile Location protocol) and RLP (Roaming Location Protocol). MLP describes the protocol between an MLS client and the Location Server and

RLP describes the protocol between two Location Servers. MLS V1.0 was initially based on a commitment to deliver Technical Specifications (TS) for four reference points defined in 3GPP TS 23.271. Later, MLS V1.1 was extended to support OMA SUPL (Secure User Plane Location) V1.0.

MLS V1.2 is an evolution of MLS V1.1. It includes additional functionalities:

- ▶ Support of 3GPP Release 7 location services specification
- ▶ Support of OMA SUPL V2.0
- ▶ Support of the L3 interface in "TIA/EIA-41-D Location Services Enhancements"
- ▶ Support of multiple responses with increasing accuracy to a location request
- ▶ Support of the capability to stop location reporting for individual targets of a Triggered Location Reporting Request that included more than one target
- ▶ Support of civic address formats

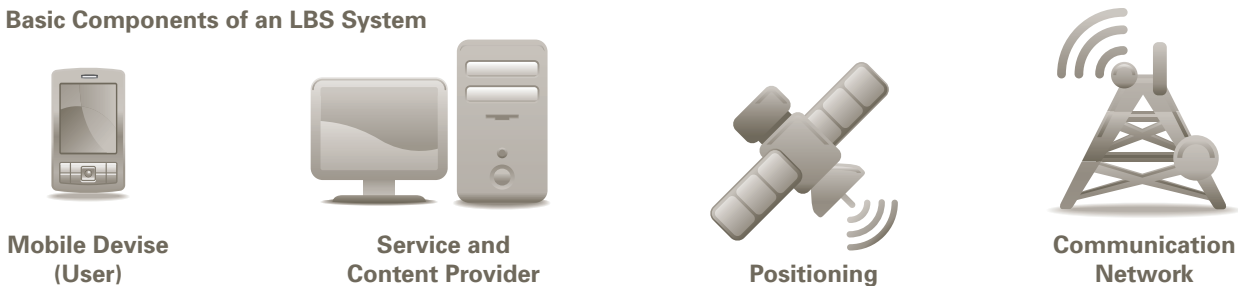
#### Secure User Plane for Location (SUPL) V2.0, Candidate Enabler

SUPL employs user plane data bearers to transfer location assistance information, such as GPS assistance data, and to carry positioning technology-related protocols between the mobile terminal and the network. SUPL is intended as an alternative and complement to standards based on signaling in the mobile network control plane. It is designed to be extensible to more positioning technologies, as they become available. SUPL V1.0 provides full functionality of Assisted Global Positioning System (A-GPS) with minimum changes to network elements. In SUPL V2.0 the concept of Assisted Global Navigation Satellite System (A-GNSS) concept is introduced to allow all possible navigation satellite system assisted positioning technologies be utilized, e.g. GPS and GALILEO.

### Market Analysis

The LBS market potential could be very significant. Ovum Research estimates the value of such services at \$8 billion in the US and at \$50 billion worldwide. The Forrester Group sees LBS as the mobile "killer app" and believes that thin-client, personalized services, based on location, will dominate the mobile e-commerce and consumer wireless data markets. LBS could open a new market for value-added services, such as advising users of traffic conditions, supplying routing information. They could be a potential source of growth for mobile operators, service providers, navigation software vendors and mobile phone manufacturers.

### The Basic Components of an LBS System



The basic components of an LBS system are: Mobile device/User, Communication Network, Positioning system, Service and Content Provider.

LBS face some technical and policy challenges, such as:

- ▶ The user's location may not always be available for a variety of reasons
- ▶ The mobile device is cut off from location determination methods, e.g., it is in a tunnel or on an airplane
- ▶ The user withholds permission to release location information
- ▶ Location data providers are unavailable
- ▶ Location determination may take longer than acceptable for the specific application, e.g., navigation
- ▶ Privacy concerns
- ▶ Protection of location information

#### Items in the Pipeline

#### Location Service in SIP/IP core (LOCSIP) V1.0.

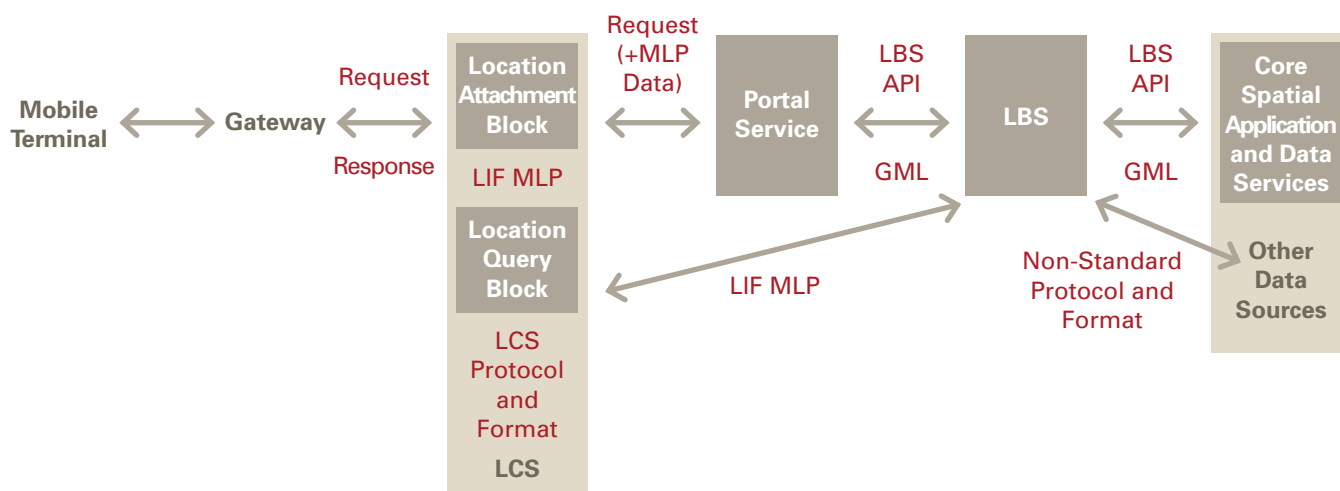
##### Candidate enabler 2009

LOCSIP V1.0 provides a SIP-based interface to expose the location information of targets. The location information may be processed and

utilized by other applications or enablers in the SIP/IP core network to enrich the end user experience. Examples of enablers that may utilize location information are Presence and PoC. LOCSIP will support location requests from both commercial services and emergency services.

#### SUPL V3.0. Draft Work Items (WIs) introduced to discuss future developments of SUPL, such as:

- ▶ Location Support for LTE
- ▶ Improved Location for IP Emergency Calls
- ▶ Improved Location performance
- ▶ Triggered Location Enhancement
- ▶ Improved Indoor Location Accuracy
- ▶ SET to SET Location
- ▶ Authentication Enhancements
- ▶ Privacy Enhancements
- ▶ Additional access networks
- ▶ Support for Extended Location Information



## Case Study

# OMA Secure User Plane Location



### Market Analysis and Requirements

More than a decade has passed since the publication of standards enabling Location-Based Services (LBS) both for Value Added Services (VAS) and emergency services. Arguably the regulatory mandates for emergency services were key drivers behind the development of these standards, which are now collectively referred to as the Control Plane (CP) solution.

In the intervening years, technology has advanced on many fronts. There are now highly efficient Internet Protocol (IP)-based mobile multimedia communications, and more precise techniques for pinpointing the location of the signal emitted from portable devices. Relying on geo-positioned satellites, location tracking has been further refined to leverage the network itself. In only a few seconds, hybrid Assisted Global Positioning Systems (A-GPS) now enable GPS location fixes accurate within five meters.

The shift to A-GPS in combination with the evolution of wireless networks to IP-based communications allows application developers the opportunity to create new revenue-enhancing VAS that seize the power of the Internet. Legacy standards enabling VAS on the control plane are inherently complex and expensive. They require updates to almost all components of the signaling infrastructure. This has led to ad-hoc designs around the problem. These diverse attempts to extract LBS management from the core network have resulted in proprietary IP based User Plane (UP) implementations. The Yankee Group has pointed out that, The A-GPS architecture that uses existing TCP/IP infrastructure for server-handset communication resulted in multiple proprietary A-GPS systems, making carrier network upgrades and location vendor selection costly and complicated.\* This inefficient methodology has stunted the adoption of location based VAS.

The need to streamline VAS enablers by establishing a direct IP connection between the location server and the handset led the Open Mobile Alliance (OMA) to spearhead the drive to build consensus on how to shift control to the UP. With the publication of Secure User Plane Location (SUPL) V 1.0 in 2005 as a Candidate Enabler Release, and V 2.0 in 2008, OMA continues to evolve the standard for deploying VAS on the UP. OMA's mission is to facilitate global user adoption of mobile data services by specifying market-driven mobile service enablers that ensure service interoperability across devices, geographies, service providers and operator networks, while allowing businesses to compete through innovation and differentiation. SUPL enhances traditional telecom-based location detection methods by extracting the function to the UP. With OMA SUPL, location based VAS are no longer embedded as a core network feature or dependent on the development of custom approaches.

Thanks to lower cost and interoperability benefits, UP implementations have grown beyond *the* CP in a much shorter time. After a full decade of work with vendors to launch CP-based VAS, only a few operators now use the technology. In contrast, in the two and a half years since OMA's SUPL specification was published, UP-based VAS is the choice of nearly three times as many operators. The market has clearly spoken in favor of OMA SUPL, said Ed Tiedemann, senior vice president, engineering, Qualcomm Incorporated.

### Benefits of OMA SUPL

Operators in every corner of the globe are embracing the OMA SUPL specifications for two primary reasons:

- ▶ Cost-efficient enablement of location based VAS
- ▶ The added benefit of enabling seamless location awareness while roaming across GSM and next-generation Wideband CDMA (WCDMA) networks.

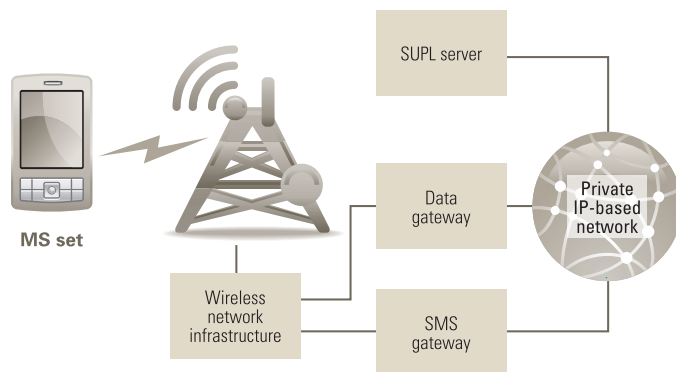
At least a dozen operators in Europe, Asia and North America have deployed or publicly announced OMA SUPL-enabled VAS, an indicator of OMA's steady progress toward its objective. Operators, along with their vendor partners, have noted that OMA SUPL requires no core network modifications. This presents a low risk, low cost option for demonstrating,

\* A-GPS Finds Its Place as Leader of Wireless Technologies, April 2, 2008

testing, trialing and commercializing UP-based LBS on live networks. As an early supporter of SUPL 1.0, Qualcomm is already shipping select chipsets from its WCDMA portfolio with this capability, enabling a new generation of mobile handset designs. These devices will be a catalyst for OMA's goal to spur the development of A-GPS-based services beyond simple navigation, such as location-enhanced gaming, personal productivity tools and friend finders, adding a new dimension and revenue opportunity to the 3G wireless experience.

**SUPL Integration Consistent with Mobile Packet Systems**

In the SUPL architecture, a location server (SUPL Server in the figure below) with a direct IP link to the mobile device is integrated into the mobile communication network. The data connection is akin to that used for packet networks already employed for GSM Packet Radio System (GPRS) and Universal Mobile Telecommunications System (UMTS) data traffic. The UP solution takes advantage of protocols and interfaces that already exist in the core and radio networks. This means that the integration of the UP architecture is fairly straightforward.



**OMA Recommendations**

SUPL 1.0 was merely the first phase of a steadily maturing specification. It overcomes the complexity of various telecom- and IP-based transport mechanisms to create a seamless and trouble-free experience for the mobile customer. OMA has spurred the development of a solid foundation for SUPL that is based on industry consensus. It clarifies the roadmap to next-generation VAS, ensuring forward compatibility and stability that are prerequisites for investment in innovation. Industry support for OMA SUPL 1.0 is a fundamental component to the development dynamics of A-GPS applications. This will result in important revenue sources for mobile operators, service providers, navigation software vendors and mobile chip and phone manufacturers. SUPL 1.0 and its enhancements will be the foundation for the infrastructure to deliver the promise of universal access to location aware-applications anywhere, anytime and on any network.



## Working Group Summary

# Messaging Working Group

### Objectives and Goals

The OMA Messaging Working Group (MWG) is responsible for the specification of messaging and related enabling technologies, including all the messaging protocols. An important objective of the MWG is interoperability of the messaging services that its specifications will enable; therefore it may also develop requirements for service affecting components, which are not directly specified by the MWG (e.g., content or media formats, codecs and authentication methods). The goal of the MWG is to specify a set of basic messaging features that may be used to enable specific messaging paradigms. The MWG is also expected to provide clarity of methods by which the messaging enablers are used as a means for the interaction with other mobile applications.

The MWG includes dedicated Sub Working Groups for specific messaging paradigms.

**Instant Messaging** (MWG-IM)

**Mobile Email** (MWG-MEM)

**Multimedia Messaging** (MWG-MMSG)

Each messaging enabler has independent use case and requirements and is therefore listed separately

- ▶ Defines the architecture and the interaction points between servers and clients
- ▶ Defines required information to pass at the protocol level and
- ▶ Specifies the format of the information.

### Success Criteria

Success for the WGM will be development and market adoption of standardized enablers that will facilitate easy to use, interoperable messaging services.

### Coordination with Other Standards Organizations

The MWG is actively working with other industry organizations that are developing MMS standards (3GPP, 3GPP2 and GSMA), in order to ensure interoperability across different network operator domains. In addition, it strives to ensure that market requirements and technical interfaces are considered in the work of these other organizations. One of the tasks of the MWG is to fulfill the requirements on the corresponding reference point interface in 3GPP's MMS standard, by specifying the protocol for MMS Client Transaction Framework.

### Achievements

Following are the enablers specified by the end of 2008 and their status.

- ▶ Instant Messaging Presence Service (IMPS) Implementation Guidelines, Candidate Reference, 4Q08
- ▶ Customized Multimedia Ringing (CMR) V1.0, Requirements Document (RD) approved Dec 2008.

### Items in the Pipeline

#### Converged Address Book (CAB) V1.0, 4Q09

Significant progress has been made in understanding possible architectures. A generic solution is being pursued to define non-SIP subscription and notification mechanisms. The CABenabler is an evolution of the simple address book. It will support new services from all-IP networks, with new innovative capabilities, such as those emerging for peer-to-peer and community communications.

#### Converged IP messaging (CPM) V1.0, Candidate Enabler, 4Q09

The converged IP messaging (CPM) enabler aims at harmonizing the user experience of today's separate messaging services, such as Instant Messaging (IM), PoC, mobile email (MEM), SMS and MMS, and other supporting enablers, such as the presence enabler, the CAB enabler, the message and media storage enabler, and the user preference enabler.

#### Mobile Email (MEM) V1.0, Candidate Enabler, 2Q 09

The Technical Specification (TS) has been completed and consistency reviews are being conducted in preparation for approval as Candidate Enabler.

#### CRM V1.0, Candidate Enabler, 2Q10



## TestFest

The OMA's Interoperability (IOP) Program is responsible for verifying the OMA specifications and member product implementations. OMA has a full range of testing events and methods in its IOP testing program to ensure that every OMA specification is complete, unambiguous and market-ready for implementation by the marketplace. Upon completion of the testing phase, many OMA member products will have demonstrated interoperability with the other companies implementing the same Specification.

### TestFests

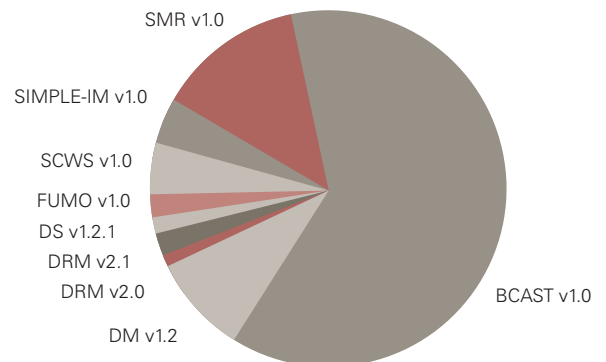
2008 has been a transitional year for the TestFest testing event program. While running four TestFests involving approximately 250 engineers, the majority of the work in the IOP Program has focused on the preparation for new enablers currently in development by the Technical Working Groups. The Mobile Broadcast enabler was the main candidate enabler testing at the events in 2008.

TestFests took place in Montreal, Madrid, Helsinki and Seoul.

- ▶ Two TestFests were hosted by permanent TestFest Hosts: International Institute of Telecommunications in Montreal and TeliaSonera in Helsinki
- ▶ Two TestFests were hosted by volunteer operators: Telefonica in Madrid and SK Telecom in Seoul.

In 2008, Over 100 implementations of OMA Enablers were tested in the OMA TestFests:

In 2009, OMA is expecting to test more Candidate Enabler Releases than in any previous year. The first two TestFests are currently scheduled to take place in Beijing, China (China Mobile) and Dusseldorf, Germany (Vodafone).



## Additional Testing Methodologies

### Automated EICS Management and Scheduling System

- ▶ Launched in 2008, this new tool allows a company to submit its Enabler Implementation Conformance Statement (EICS) describing the product capabilities of an implementation to be tested at a TestFest to determine which other products also participating in the event may be tested with during the event.
- ▶ Simplified session arrangements allow for an increased focus of areas to be tested and more testing time available for participating member companies.

### New Testing Initiatives

#### ▶ Bi-Lateral Testing and Virtual TestFest Mechanisms

- ▶ Currently in development, these initiatives support engineers working in their company labs while running interoperability testing with other member companies.
- ▶ A new database to facilitate testing arrangements and “match” member companies interested in testing implementations of specific member products.

### TTCN Test Case Development

- ▶ Improved compliance testing of OMA member products through cooperation with Member Test Tool companies and outside contractors to develop TTCN Source Code to determine the conformance of member products.
- ▶ In 2008, an RFI generated nine responses from companies interested in developing these TTCN test cases for OMA.

### Enhanced Environment Testing

OMA are also looking at new test initiative that will allow teams to test in as close to a production environment as possible. This testing will involve more than one host company and in addition to testing roaming will permit operators to witness the Use Cases they defined in the Requirements Document being executed by vendor companies with their implementations.

The first event will take place in March 2009 and much preparation is already underway to prepare for the event. China Mobile and Vodafone will host teams in Beijing and Dusseldorf to test Device Management, Data Synchronization, Digital Rights Management, Mobile Broadcast, Mobile Email, and Secure User Plane for Location.



## Why OMA

*Seth Newberry, General Manager, Open Mobile Alliance Ltd.*

### **The Open Mobile Alliance—Seeing Global Impact from Five Plus Years of Work**

Our founding members created a place where Information and Communication Technology companies from anywhere in the world could define mobile service enablers under a common set of requirements, using a common development methodology. Through our IOP program, they created the infrastructure to test member product implementations in real-world circumstances and use those results to enhance the performance of OMA specifications. We are now seeing worldwide claims of the value of OMA specifications through both member and non-member references to OMA Enabler Releases in product specifications and marketing materials.

### **Much of the Global Mobile Industry Contributes to OMA Specifications**

The Open Mobile Alliance is fortunate to have a large and consistent population of technical contributors, including Operators, Content companies, IT suppliers and Mobile Equipment Suppliers. In the last three years, over 130 companies have made over 37,000 technical contributions to OMA. 50 different companies comprise the regular and most consistent number of contributions.

Companies of all sizes make technical contributions to OMA specifications. Many of our members have broad interests and observe or contribute to multiple development tracks. Still others come to contribute to a single specification. In our converging fixed and mobile world, small, predominantly IT-oriented companies make 10% of contributions to OMA, and we believe that this percentage will continue to grow.

### **Every Contributor has a Voice**

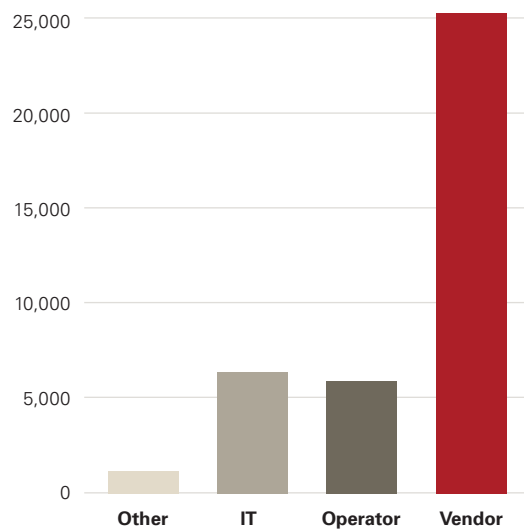
OMA allows for membership of all types and sizes of companies. Large companies become Sponsor or Full members, where the primary advantage of Sponsor membership is a governing seat on the Board of Directors. Full members also participate in the governance of the OMA through election to Board seats.

OMA has reserved the Associate level of membership to permit smaller companies to contribute directly to the specification work for a modest fee. Roughly 25% of our member companies avail themselves of this level of membership.

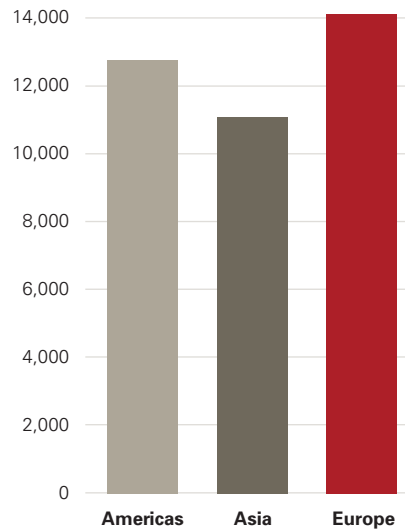
Supporter members can join for only \$600 and participate in OMA Testing events.

### OMA is Built on a Global Vision

**Contributions: June, 2008**



**Contributions by Region**



#### **Enduring presence and member participation**

- ▶ Most regularly contributing members have been involved since OMA's founding.
- ▶ OMA provides an ideal environment for companies to participate the full gamut of the mobile value chain.
- ▶ With an average of over 300 members annually since founding, OMA has a strong balance sheet.
- ▶ OMA will continue on its mission well into the future.



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