Enabler Release Definition for Mobile Codes

Candidate Version 1.0 – 02 Mar 2010

Open Mobile Alliance

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1. Scope

The scope of this document is limited to the Enabler Release Definition of Mobile Codes (MC) according to OMA Release process and the Enabler Release specification baseline listed in section 5.

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2. References

2.1 Normative References

[RFC2119] "Key words for use in RFCs to Indicate Requirement Levels", S. Bradner, March 1997, URL:http://www.ietf.org/rfc/rfc2119.txt

2.2 Informative References

[DATAMATRIX] "Information technology — International symbology specification — Data Matrix", ISO/IEC 16022:2000.

[EAN/UPC] "Information technology — Automatic identification and data capture techniques — Bar code symbology specification — EAN/UPC", ISO/IEC 15420.

[FLASHCODE] "Flashcode Reader International Specification", Version 1.0 http://www.mobiletag.com/beta/en/contactspecification.html

[MIME] "Multipurpose Internet Mail Extensions (MIME) Part Two: Media Types", RFC 2046 http://www.ietf.org/rfc/rfc2046.txt

[NDEF] "NFC Data Exchange Format (NDEF) Technical Specification", NFC Forum http://www.nfc-forum.org/specs/

[NFCRTD] "NFC Record Type Definition (RTD) Technical Specification", NFC Forum

[NTTDOCOMOGUIDE] "Rough Measures and criteria for creating QR codes compatible with all terminals", NTT DoCoMo, http://www.nttdocomo.co.jp/english/service/imode/make/content/barcode/about/#p02

[NTTDOCOMOFUNC] "Outline of Functions", NTT DoCoMo, http://www.nttdocomo.co.jp/english/service/imode/make/content/barcode/function/

[OMADICT] "Dictionary for OMA Specifications", Version x.y, Open Mobile Alliance™, OMA-ORG-Dictionary-Vx_y, URL:http://www.openmobilealliance.org/

[OMAWP] "White Paper on Mobile Codes", Version 1.0, Open Mobile Alliance™, OMA-WP-MobileCodes-20081024-A, URL:http://www.openmobilealliance.org/.

[OMAURI] "URI Schemes for the Mobile Applications Environment", Version 1.0, Open Mobile Alliance™, OMA-TS-URI_Schemes-V1_0-20070718-D, URL:http://www.openmobilealliance.org/.

[QR] "Information technology — Automatic identification and data capture techniques — QR Code 2005 bar code symbology specification", ISO/IEC 18004:2006.

[SPRTD] "NFC Smart Poster RTD Technical Specification", NFC Forum

[TAGURI] "RFC 4151. The 'tag' URI Scheme", IETF, http://www.faqs.org/rfcs/rfc4151.html.

[TEXTRTD] "NFC Text RTD Technical Specification", NFC Forum

[URI] "RFC 3986. Uniform Resource Identifier (URI): Generic Syntax", IETF, http://www.ietf.org/rfc/rfc3986.txt.

[URIRTD] "NFC URI RTD Technical Specification", NFC Forum

[URNRES] "RFC 2169 - A Trivial Convention for using HTTP in URN Resolution", IETF, http://www.faqs.org/rfcs/rfc2169.html.

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3. Terminology and Conventions

3.1 Conventions

The key words “MUST”, “MUST NOT”, “REQUIRED”, “SHALL”, “SHALL NOT”, “SHOULD”, “SHOULD NOT”, “RECOMMENDED”, “MAY”, and “OPTIONAL” in this document are to be interpreted as described in [RFC2119].

All sections and appendixes, except “Scope” and “Introduction”, are normative, unless they are explicitly indicated to be informative.

This is an informative document, which is not intended to provide testable requirements to implementations.

3.2 Definitions

Code Clearing House	The Code Clearing House performs Code Routing functions as part of the CMP; CCH exists in markets where the CMP role is not owned by a single entity.
Code Management Platform	The Code Management Platform performs a resolution service pertaining to Indirect Mobile Codes; specifically, it resolves Indirect Code Identifiers into corresponding addresses of target content or services as intended by the Code Publisher for appropriate further actions by the Mobile Code Client.
Code Resolution	The process of mapping an Indirect Code Identifier supplied from an Indirect Code into either content to be consumed directly by the handset, or the address of content (or a service) to be consumed by the handset. Typically, Code Resolution is performed by a network service.
Code Resolution Server	The Code Resolution Server performs the code resolution part of the CMP; CRS exists in markets where the CMP role is not owned by a single entity.
Code Transfer	The ability for a Code Publisher to change the resolving CMP (or CRS where applicable) for a single or multiple Indirect Code Identifiers.
Routing Prefix	That part of the Indirect Code Identifier that contains a value that is uniquely assigned to the CMP (or CRS, as applicable) and is used for routing.
Direct Code	A Mobile Code that contains either (1) content for direct consumption for the handset, or (2) the address of the service to be accessed (typically a URI [URI])
Global Mobile Code Registry	The Global Mobile Code Registry is a singular and unique component within an Indirect Code eco-system that is entrusted to allocate, administer, and maintain global uniqueness of Routing Prefixes used in the given eco-system.
Indirect Code	A Mobile Code that contains an Indirect Code Identifier.
Indirect Code Identifier	An identifier in the Indirect Code that has to be resolved in order to access the intended content or service. See also Code Resolution.
Mobile Code	A 1D or 2D barcode as read by camera-equipped handsets
Mobile Code Client	The MC enabler software entity that resides in the device, and contains the functionality to acquire, decode, and extract the encoded information for further processing as required. This is often referred to as a Mobile Code Reader and these terms may be used synonymously.
Mobile Code Data Format	The syntactical description of the information contained within a Mobile Code.
Mobile Code Publisher	This is a brand (business, organisation or individual) who wants to distribute certain content or services (i.e. an advertising campaign) to a mass audience by using Mobile Code scanning as a channel.
Mobile Code Sales Agency	The Mobile Code Sales Agency ensures the best Mobile Code service or campaign success by coordinating business topics and related activities on behalf of the Mobile Code Publisher.
Mobile Code Scanning	The physical act of capturing a Mobile Code symbol and decoding the information contained within the Mobile Code into a Data Format.
Mobile Code Service Policy	A set of Policy Conditions [Ref: OMA Dictionary] that convey any service level constraints that are placed on Mobile Code Resolution. Mobile Code Service Policy is typically defined by the Mobile Code Publisher and is applicable to one or more Indirect Code Identifiers.

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Resolution Identifier	That part of the Indirect Code Identifier that is used to index the content or service.
Symbology	The algorithm by which data is encoded as visual elements (typically arrangements of lines or squares), and the resultant "look and feel" for the user.

3.3 Abbreviations

1D	1-Dimensional
2D	2-Dimensional
CCH	Code Clearing House
CMP	Code Management Platform
CP	Code Publisher
CRS	Code Resolution Server
EAN	European Article Number, see EAN/UPC
EAN/UPC	Barcode symbology family including EAN-8, EAN-13, UPC-A, and UPC-E [EAN/UPC]
FTP	File Transfer Protocol
GMCR	Global Mobile Code Registry
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
JAN	Japanese Article Number, a barcode of the EAN symbology family, used in Japan
MC	Mobile Code
NDEF	NFC Data Exchange Format
NFC	Near Field Communications
OMA	Open Mobile Alliance
QR	Quick Response, a type of barcode symbology [QR]
SMS	Short Message Service
UPC	Universal Product Code, see EAN/UPC
URI	Uniform Resource Identifier [URI]

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4. Mobile Codes enabler description (Informative)

4.1 Introduction

Background:

Mobile 2D and 1D barcodes have emerged as a promising enabler of the mobile Internet in some markets. There is, however, still a lack of interoperability between different markets and players. The majority of consumers are unlikely to adopt the technology before it comes pre-installed on a large variety of devices and offers easy interoperability between different service providers. Similarly, marketing, publishing and other industries that are otherwise motivated to provide mobile codes will not adopt them without adequate potential for consumer take-up. The MC Enabler aims to define requirements and eco-system architecture and functional component specifications to enable large scale deployment of the globally interoperable mobile codes eco-system.

Use case and justification:

Outside, in a café, a mobile handset camera is pointed at an advertisement, poster, leaflet or beer-mat. In just one or two click(s), the user arrives at a webpage designed specifically for that location. No struggle with the compromised navigational systems of mobile websites; no wait – just the instant fulfilment of the user's needs. The spontaneity of the response encourages an internet connection there and then; the internet content is relevant to the precise time and location of the user. The advertiser can track exactly which piece of paper generated the user response – and the mobile handset has enabled a trouble-free and relevant experience of the web that is potentially more useful to website provider and user alike. And of course, the mobile industry benefits from increased usage of the internet over mobile handsets as well as potential participation in the online advertising opportunities.

4.1.1 Summary

As described in [OMAWP], two methods of encoding data in the mobile code are: a) Direct mobile codes, and b) Indirect mobile codes. In general, Direct mobile codes require relatively fewer actors and functional components than in the Indirect mobile codes eco-system.

The following summary indicates all the key actors identified in the Indirect mobile codes eco-system envisaged:

- Mobile Code Publisher (or Brand)
- End User
- Mobile Code Client (or Mobile Code Reader)
- Mobile Device
- Code Management Platform
- Code Clearing House
- Code Resolution Server
- Mobile Operator
- Global Mobile Code Registry

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4.2 Version 1.0 Functionality

This version of the Mobile Codes Enabler contains support for a full ecosystem for both Direct and Indirect Codes.

Technology is specified for:

- Symbology(ies)
- Mobile Code Data Format
- Direct encoding of content
- Encoding of Indirect Code Identifiers
- Resolution of Indirect Code Identifiers
- Security procedures

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5. Document Listing for MC

This section is normative.

Doc Ref	Permanent Document Reference	Description
Requirement Document		
[MC_RD]	OMA-RD-MC-V1_0-20090512-C	Requirement Document for MC Enabler
Architecture Document		
[MC_AD]	OMA-AD-MC-V1_0-20100302-C	Architecture Document for MC Enabler
Technical Specifications		
Supporting Files		

Table 1: Listing of Documents in MC Enabler

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6. OMNA Considerations

The Version 1.0 release of the MC Enabler does not have any OMNA items for handling.

Note: This may change during the MC enabler development.

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7. Conformance Requirements Notation Details

This section is informative; pending completion of the AD and TS.

The tables in following chapters use the following notation:

Item: Entry in this column MUST be a valid ScrItem according to [SCRRULES].

Feature/Application: Entry in this column SHOULD be a short descriptive label to the **Item** in question.

Requirement: Expression in the column MUST be a valid TerminalExpression according to [SCRRULES] and it MUST accurately reflect the architectural requirement of the **Item** in question.

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8. ERDEF for MC- Client Requirements

This section is normative.

Item	Feature / Application	Requirement
Not yet available; AD and TS design in progress.		

Table 2: ERDEF for MC Client-side Requirements

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9. ERDEF for MC- Server Requirements

This section is normative.

Item	Feature / Application	Requirement
Not yet available; AD and TS design in progress.		

Table 3: ERDEF for MC Server-side Requirements

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Appendix A. Change History (Informative)

A.1 Approved Version 1.0 History

Reference	Date	Description
n/a	n/a	No prior version –or- No previous version within OMA

A.2 Draft/Candidate Version 1.0 History

Document Identifier	Date	Sections	Description
Draft Versions OMA-ERELD-MC-V1_0	16 Dec 2008	all	Initial draft version for RD review
	20 Jan 2009	all	Clerical changes only. Title of document was corrected to reflect Mobile Codes Enabler.
	24 Mar 2009	all	Document updated after completion of the RDRR and the general update of the Mobile Codes RD.
	18 Apr 2009	all	Document updated after MC RD was updated.
Candidate Version: OMA-ERELD-MC-V1_0	12 May 2009	All	Status changed to Candidate by TP: OMA-TP-2009-0187-INP_MC_V1_0_RD_for_Candidate_Approval Editorial fix: History Box and Contents page
Draft Version OMA-ERELD-MC-V1_0	21 Aug 2009	5	Document listing updated with draft AD
	05 Feb 2010	5	Updated Document listing and template
Candidate Version: OMA-ERELD-MC-V1_0	02 Mar 2010	All	Status changed to Candidate by TP: OMA-TP-2010-0067-INP_MC_V1_0_AD_for_Candidate_approval

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