Anonymous Subscriber ID (ASID) - A Mobile Web Site Developers Cookbook

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Introduction

This cookbook is aimed at mobile developers who wish to extend their applications to support user recognition using the OMI[2] Anonymous Subscriber ID (ASID).
Operators that support the OMI[2] ASID are Vodafone, T-Mobile and KPN[1]
It is expected that with the integrations of the operator networks Telfort and Orange will support OMI[2] ASID in the near future too. MVNO's are explained later on.

What is ASID?

ASID is an identifier that uniquely identifies the mobile end user over a longer period than one session. To understand the relationship between the ASID and the mobile user, check the requirements that OMI[2] has defined for the implementation of the ASID:

- ASID is unique in combination with operator code;
- ASID is related directly to MSISDN and combined with operator code;
- MSISDN is not traceable from an ASID;
- ASID is related to SIM (or duo SIMS);
- ASID is not related to the mobile device;
- ASID changes when switching operator;
- ASID changes when MSISDN are reused by operators;
- ASID might not change when switching contract within an operator;
- Providing an ASID is compliant with NL privacy laws.
- Operators can demand contracts for providing ASID to the content providers.

Applications of OMI[2] ASID

The OMI[2] ASID will allow you to:
- ❑ Count Unique Visitors to your site / application, user click paths, etc
- ❑ Obtain the mobile end user settings for the site / application
- ❑ Execute Advertising rules like delivery capping[2]
- ❑ Produce full traces of mobile end users
- ❑ … many more

Obtaining the ASID for your site

Without registration, except for Vodafone, the ASID is default not added to the HTTP header. In order to obtain the ASID, you must register your URL(s) with each operator and accept the terms & conditions of the operator.

This OMI[2] overview shows if ASID is available and if you need to register:

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[1] note that KPN uses a different identifier (X-XID)

[2] Delivery capping is a Ad Management term to indicate that end users only see an certain advertisement a limited number of times

ASID proef voor 1 jaar

Specs	X-ID	X-ASID	X-ASID
Netwerken	KPN en Hi niet op Telfort	T-Mobile (Orange gaat uit!)	Vodafone
Operationeel	Nu	'oktober 2008'	mei/juni
Registratie	per URL	per URL	Nee
Algemene voorwaarden	Ja		

For further information see the Memorandum of Understanding ASID, that is available via this link: http://www.openmobielinternet.com/2008/06/24/download-memorandum-of-understanding

ASID with Vodafone & T-Mobile

Vodafone and T-Mobile add the OMI^2 ASID with the name X-ASID in the HTTP header. The full technical specification of this added header field has been documented here: http://www.openmobielinternet.com/2008/04/28/gebruikersherkenning-user-recognition

ASID with KPN

KPN does not support the name X-ASID but uses the name X-XID instead. The required documentation (ASID request form, detailed technical information on the X-XID and Terms & Conditions) can be requested via the e-mail CPsupport@kpn.com.
In general the X-XID added HTTP header of KPN follows the requirements of the OMI^2 ASID although the domain of the value is different as the length of the identifier will be 12 hexadecimal characters (0-F). However note that this does not impact the capability of uniquely identifying mobile users that enter a mobile site from the KPN network.

ASID with MVNO's

For MVNO's (Mobile Virtual Network Operators), the ASID is added to the http header when the MVNO (see also http://www.dutchmvno.nl/marketoverview.html) is sharing the same infrastructure. The following table shows the MVNO status per operator.

Operator	MVNO
Vodafone	Dexcom / Mydad's
KPN (Telfort)	-
T-Mobile (Orange)	unknown

Note that for some MVNO's it does not make sense to implement an ASID when the MVNO does not support Mobile Internet.

Technical specifications of ASID

In each supported operator network[3] the ASID is added to the HTTP traffic in the message header that is defined by the IETF RFC 2616. The ASID does not represent a standard IANA header but is an extra header field and therefore has to be prefixed with an X-, which results in the name X-ASID. This is what the RFC states:

"Non-registered headers, called user defined fields, can have any non-registered name, according to RFC 822. The HTTP 1.0 specification also allows such headers: "Unknown header fields are treated as Entity-Header fields." [section 4.3] This means that they are treated as describing the content of the HTTP message."

Example of ASID in a HTTP Header

If you would examine a HTTP GET request that is forwarded to your webserver from an operator network, you will be seeing the following data:

```
GET http://www.openmobielinternet.com/  HTTP/1.1
Host: www.openmobielinternet.com
User-Agent: Mozilla/5.0 (iPhone; U; CPU like Mac OS X; nl-nl)
…
X-ASID: 0400acbABC12+/
..
```

Code Examples of retrieving an ASID

The availability of the ASID in you mobile internet application / site depends on the software architecture that is used (operating system, middleware, web servers..). The follow trivial examples assume that a version of Apache is used. Apache has a very simple mechanism to make the HTTP header fields available to the programmer, for each request the HTTP header field is passed on in the environment. See also http://httpd.apache.org/docs/2.0/howto/cgi.html.

Accessing the ASID via Apache & PHP

```
        …
        $asid = $_SERVER['HTTP_X_ASID'];
        if (!isset($asid)) { # KPN
                $asid = $_SERVER['HTTP_X_XID'];
        }
        $userprofile = fetchProfile($asid);

        …
```
Accessing the ASID via Apache CGI & Perl

```
        …
        my $asid = $ENV{HTTP_X_ASID}||$ENV{HTTP_X_XID};
        print STDERR "The value of ASID = $asid\n";
        my $userprofile = fetchProfile($asid);
        …
```

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[3] Note that this excludes general WiFi networks, satellite networks etc.

The above examples are very simple and not meant to set a standard whatsoever, also the example shows a imaginary *fetchProfile*() subroutine to demonstrate how you could retrieve the mobile user's profile, the fictive subroutine is not part of the ASID whatsoever. No security requirements have been applied to the above code - like perl taint - to tag the ASID data as a potential security threat as it is external data to the application. Please consult the manuals/guides if you want to make sure you are using the correct programming technique to retrieve the http headers. On the Internet there is a huge collection of examples available, see for example:
http://www.developershome.com/wap/detection/detection.asp?page=readHeader

Testing the ASID in your application

To make sure that your code is picking up the ASID you might want to test it first. A very useful tool to execute such a test is the FireFox Ad-On called Modify Headers: https://addons.mozilla.org/en-US/firefox/addon/967. With this Ad-On you can temporary ad any http header to you browser request, like the X-ASID and/or X-XID. With another FireFox Ad-On called Live Headers you can also track your request and make sure the added header is available in the request.

Testing the ASID on a handset

In order to find out if the ASID is actually added to the get request of an handset, you could create a test page in your site/application and display/print the value of the obtained ASID. As a courtesy to OMI^2 MoMac has setup a test page that can be accessed via this link: www.allesisgratis.mobi/asid

Accessing ASID in local (e.g. J2ME) applications

Due to the current implementation of the ASID (being transported in the HTTP header) the ASID won't be directly available in a local (e.g. J2ME) mobile application. However, it is possible to extend a J2ME application to make a HTTP request to any (registered) URL. The response HTTP data will include the ASID in the HTTP header as described earlier when you have made sure the HTTP request is executed using the standard APN settings, that are also used by the default browser on the handset.

ASID and HTTPS

Using ASID in encrypted connections poses a problem, as the network operator is not able to add the ASID header into the encrypted stream. For this reason the ASID will not be available when using https:// urls (SSL/TSL encrypted connections). OMI^2 is planning for enhanced versions of the ASID e.g. ASID 2.0. With this version it might be possible to obtain the ASID via a service call when a SSL/TSL connection is used.

ASID & WiFi connections

When a handset (user) switches the connection from a 3G to WiFi (like the N95), the ASID won't be available in the subsequent requests. As most handsets that have this feature are high end handsets with high capable mobile browsers such as WebKit/Safari, Mobile IE, Opera Mini, etc. it might be possible to extend your application in a way that the ASID is copied to a (permanent) cookie. Once the user leaves the 3G network, the cookie can take over the role of the HTTP header. Make sure when the 3G connection comes back to use the HTTP header again to assert the ASID is still okay (and check and correct the cookie when a difference is detected).

ASID FAQ, Tips and Hints

Question	Answer/Advise
I can't see any ASID in my HTTP header	❑ You need to register your site URL with KPN and T-Mobile ❑ Make sure you are using the correct HTTP Header name to retrieve the ASID being X-ASID of X-XID. Note that your webserver and application technology can alter this name e.g. Apache adds a prefix and changes the hyphen into a underscore and presents this variable in the environment as HTTP_X_ASID or HTTP_X_XID.
What about end user privacy?	❑ Make sure you adhere to the terms & conditions of each operator, and comply with the Memorandum of Understanding: http://www.openmobielinternet.com/2008/06/24/download-memorandum-of-understanding/ ❑ When you use the ASID to link CRM information (age, address, preferences) and want to re-use or link the information make sure you ask for *explicit* permission (opt-in) and inform the end-user that the information might be shared with for example 3rd parties.
What about security?	❑ The ASID is secure and anonymous. However when you establish a link to CRM data you might want to encrypt such CRM data before storing so on data theft the data is easy to re-use for malicious reasons. ❑ ASID itself is transmitted unsecured and must be seen as any other public available data item such as the IP number of the content itself being transmitted over an unsecured connection

Can I use ASID to direct settle payments and do secure transactions?	❑ No
	❑ Use secure payment systems to implement your billing requirements such as:
	   o Click2Pay (KPN Call Factory)
	   o MiniTix (Rabo)
	   o PayPal Mobile Checkout (Paypal UK)

Are there any groups, companies, markets etc. excluded from ASID?	❑ No, currently there is no plan to exclude any end user as the ASID is an Open concept.
Will ASID work in other countries?	❑ Yes, for Dutch roaming end users the ASID will work abroad. ❑ No, for end users in other countries (having a contract with an operator of that country) ASID will not be available. Note that in other countries other means of user identification might exists, such is provided in the PayForIt framework that is used in countries like the UK & Spain.