

# Identity Mapping Service

(Version 2.0)

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## Executive Summary

According to Adobe<sup>1</sup>, 33% of users use a TV set and a digital device at the same time, 40% of people start their journeys on one device and finish it on another and 60% percent of adults use at least two screens a day. The typical user owns anywhere from 2 to 7 devices. We can no longer market to devices. We have to market to the people using these devices. Ultimately, it means understanding cross device identities.

ADITION intends to provide an opportunity to its customers to reach users across their devices. With IMS v2.0, ADITION provides an opportunity to reach and to retarget users across devices, using DMP and tagging user data. This will help the advertisers to deliver the campaigns to their target users across the devices, the publishers to provide best user experience and the users to interact with the most relevant ad contents.

ADITION plans to release a series of product features in this area.

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<sup>1</sup> <https://adobe.ly/2DYVY77>

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## Introduction

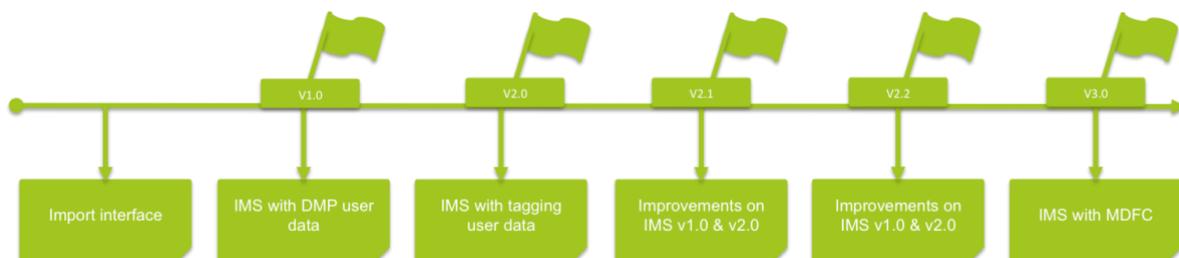
The consumer of today is not tied to a desk when online, and does not shop exclusively in-store or on a desktop. Today, there are more mobile devices than people in the world. The consumer moves seamlessly from desktop web browsing to in-app activity. The consumer visits a convenience store, uses a tablet in the car on the way home and picks up the digital trail on a laptop, streaming television. Then he or she watches cable TV shows with the family at home.

For advertisers, building relationships does not mean treating the consumer as a complete stranger, never met before, at each individual touch point. It means continuing a conversation across multiple devices, controlling frequency of contact with the same individual on different channels, and being intelligently available when and where the consumer wants to be reached.

Ultimately, it means understanding cross device identities.

ADDITION intends to make cross device recognition possible. Therefore, a product feature called identity mapping service (IMS) is being developed.

The development is planned in phases. The planned evolution is as follows:



The focus of this version is to provide a possibility to reach and to recognize a user across devices, using both DMP and tagging user data. The plan will further evolve as per feedback from the customers.

The following sections further explain the feature in detail.

## Objectives

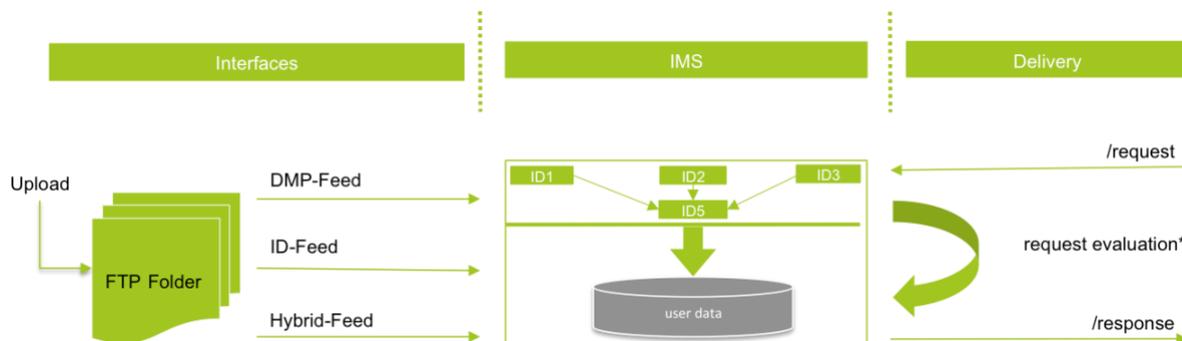
The objective of this version of the IMS is to provide a possibility to reach and to recognize a user across devices, based on DMP and tagging user data. The objective is also to implement some improvements to handle the shortcomings.

## Overview

ADITION allows customers to import DMP user data and/or to collect user data via tagging. The identifiers behind the user data are mostly ADITION cookie IDs. A user uses multiple browsers and multiple devices in a day. For this reason, ADITION allows its customers to import all identifiers of a user across the devices into ADITION. For such an identifier, ADITION will recognize and reach the user with the most relevant campaign across the devices, using the mappings and the user data collected in multiple devices.

For example, the customers can indicate the desktop identifiers (browser cookie IDs), CRM hashed identifier and mobile identifier (e.g. IDFA) belongs to a user via an import. ADITION will use user data collected in the desktop to retarget the user in the mobile device and vice versa.

The overview can be visualized as follows:



## Interfaces

The interface accepts the following import formats:

- ID-Feed
- DMP-Feed
- Hybrid-Feed

## IMS

ADITION will store the user identifiers, their mappings and user data.

## Delivery

IMS will recognize a user during a request and will respond with the most relevant ad content.

## Interface<sup>2</sup>

The interface accepts the following types of import formats:

1. **ID-Feed** is a mapping import. The import file format should be  
<USER-ID-UNSTABLE1>,<USER-ID-UNSTABLE2>,...,<USER-ID-STABLE>
2. **DMP-Feed** is a DMP user data import. The import file format should be  
<USER-ID><TAB><TAGGING-ATTRIBUTES-TO-ADD><TAB><TAGGING-ATTRIBUTES-TO-REMOVE>
3. **Hybrid-Feed** is a mapping and DMP user data import in a file. The import file format should be  
<USER-ID-UNSTABLE1>,...,<USER-ID-STABLE><TAB><TAGGING-ATTRIBUTES-TO-ADD><TAB><TAGGING-ATTRIBUTES-TO-REMOVE>

ADDITION provides a standard interface to import DMP user data, mapping data and hybrid data. Please refer to the interface specification for more detail information.

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<sup>2</sup> See: <http://bit.ly/2BE4vHI>

## Identity Mapping Service

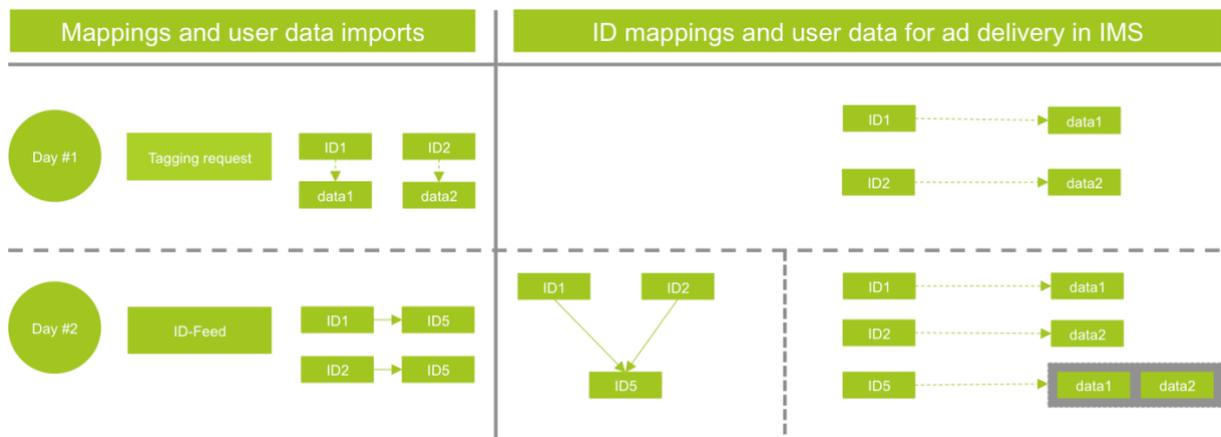
This section describes different operations and business rules within IMS.

### Mapping

A customer can import identifiers of a physical user into ADITION. IMS prepares the DMP and tagging user data.

### Merging of user data

When a mapping is imported into ADITION, the user data are merged as follows:



As per the mapping, the user data from the unstable user IDs and from the stable user ID are merged. The merged user data are stored at the stable user ID. All unstable user IDs will have access to this merged user data. The unstable user IDs will also continue to retain their own user data.

During a request with an unstable user ID, ADITION will merge user data from the stable user ID and from the unstable user ID.

### Merge rules

- The newest<sup>3</sup> peculiarity values are taken into consideration, if multiple values are received for the same KEY.SUBKEY during the merge.
- ADITION stores only a limited number of values for a peculiarity
  - For DMP imported peculiarity, ADITION stores only the newest peculiarity. The oldest value(s) are ignored during the merge.
  - For tagging peculiarity, ADITION stores only the newest values for a peculiarity in the store. The oldest value(s) are ignored during the merge.
- The DMP imported user data is preferred over tagging user data for a KEY.SUBKEY, if there is an overlap.
- The counts are summed during the merge for the same KEY.SUBKEY=VALUE. Please refer later section for detail information.

### For example,

Let us assume,

- with a tagging request
  - a cookie ID 'ID1' is updated with 'data1' (KEY.SUBKEY=VALUE1) &
  - an IDFA 'ID2' is updated with 'data2' (KEY.SUBKEY= VALUE11)
- When 'ID1' and 'ID2' are mapped to an account ID 'ID5', then
  - the user data at 'ID1' is merged with user data at 'ID2'. The merged user data is stored at 'ID5'.
  - the user IDs 'ID1' , 'ID2' and 'ID5' will have access to the merged user data.

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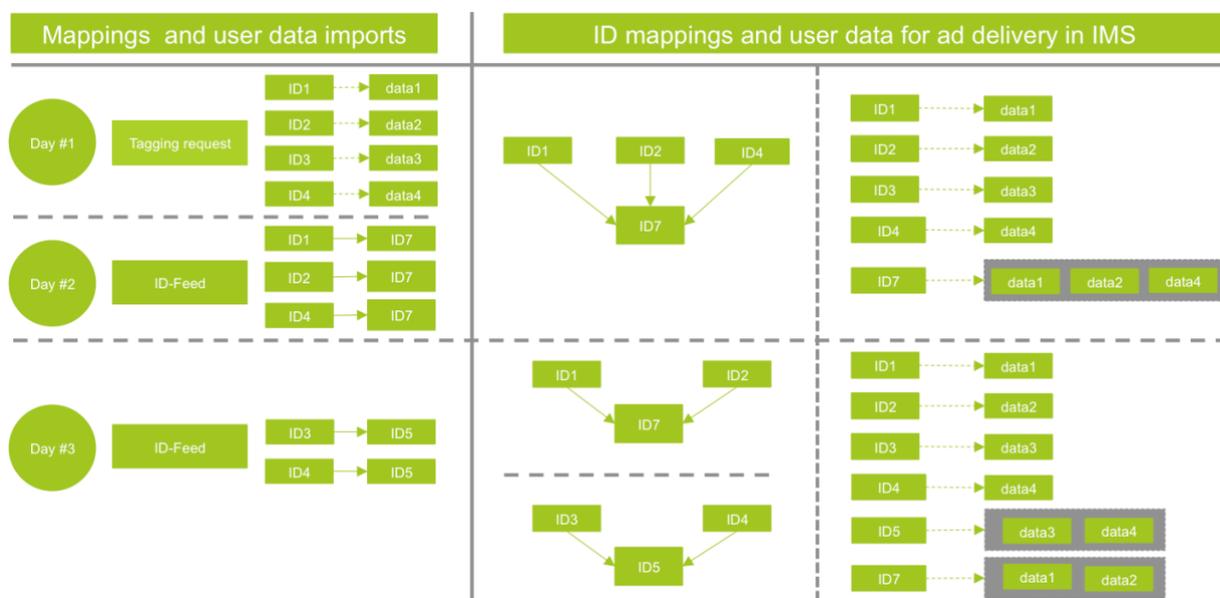
<sup>3</sup>The newest is calculated with respect to the import time of the peculiarity.

## Remapping

When a customer uses a probabilistic graph (algorithm) to group identifiers of a physical user, then it is possible that an identity is mapped to a wrong probabilistic user ID. The customer can correct that mapping of the identifier.

## Merging of user data

During the remapping, the user data from unstable and stable user ID are merged as follows:



## For example,

Let us assume,

- with a tagging request
  - cookie IDs 'ID1', 'ID2', 'ID3' and 'ID4' are updated with user data 'data1', 'data2', data3' and 'data4' respectively.
- with a probabilistic approach 'ID1', 'ID2' and 'ID4' are mapped to 'ID7'. Then,
  - user data 'data1', 'data2' and 'data4' are merged and stored at 'ID7'.
  - 'ID1', 'ID2', 'ID4' and 'ID7' will have access to the merged user data.
- next day, when the user logs-in with account ID 'ID5' from the devices with IDs 'ID3' and 'ID4'. The IDs are mapped to the account ID 'ID5'. Then,
  - user data 'data3' and 'data4' are merged and stored at 'ID5'.
  - 'ID3' 'ID4' and 'ID5' will have access to the merged user data.

### Tagging data and DMP data with IMS

This section focuses in tagging data and DMP data with respect to IMS.

#### Tagging request

ADITION respects the existing mapping during the tagging requests (internal and external).

#### For example,

Let us assume,

- In day #1, when 'ID1' and 'ID2' are mapped to an account ID 'ID5', then
  - the user data at 'ID1' is merged with user data at 'ID2'. The merged user data are stored at 'ID5' and
  - the count is summed and stored at the stable user ID 'ID5'.
- In day #2, with a tagging request, a cookie ID 'ID1' is tagged with 'data' (KEY.SUBKEY=VALUE1), then
  - newly tagged user data is immediately merged with the user data at the stable user ID 'ID5' and stored at 'ID5',
  - unstable user ID 'ID1' will also retain the newly tagged user data &
  - the count is also similarly calculated and stored.

#### DMP import

A DMP user data are merged only during the mapping import. A DMP import will only update the DMP user data from the user ID, which is included in the import file. It will not update the user data from any other user IDs in the store. However, user data from both unstable user ID and stable user ID are merged during the ad delivery.

#### Shortcomings

- A DMP import does not update the user data at stable user ID.
- Hybrid imports are unsuitable for remapping, because a hybrid import updates the DMP user data only from the stable user ID. The unstable user IDs do not store the user data imported in a hybrid import. The unstable user ID can be re-mapped to another stable ID, but the unstable user ID will not have any DMP user data to merge with that from the new stable ID. Similarly, a hybrid import will delete the DMP user data only from the stable user ID.

### Count and Frequency of a peculiarity with IMS

The counts of receipt of a tag (KEY.SUBKEY) are summed, when user data of an unstable user ID is merged with the user data of a stable user ID. The summed count is stored at the stable user ID. However, the unstable user IDs will continue to retain their own counts for each KEY.SUBKEY.

#### For example,

Let us assume,

- with tagging requests
  - a cookie ID 'ID1' is tagged with 'data' (KEY.SUBKEY=VALUE1) and
  - an IDFA 'ID2' is tagged with 'data' (KEY.SUBKEY= VALUE1)
- When 'ID1' and 'ID2' are mapped to an account ID 'ID5', then the count of tagging of (KEY.SUBKEY= VALUE1) at 'ID1' and 'ID2' are summed and stored at the stable user ID 'ID5' (as count=2).

ADITION considers all subsequent mappings of the same combination of the unstable and stable user IDs as the reimport of the same mapping. Hence, it does not sum the counts for such reimports. For example, if a customer makes a full mapping import once per day, then it is quite likely that some of the mappings in the imports are same everyday.

#### For example,

Let us assume,

- with tagging requests
  - a cookie ID 'ID1' is tagged with 'data' (KEY.SUBKEY=v1) and
  - an IDFA 'ID2' is tagged with 'data' (KEY.SUBKEY=v1)
- In day#1, when 'ID1' and 'ID2' are mapped to an account ID 'ID5', then the count of tagging (KEY.SUBKEY=v1) at 'ID1' and 'ID2' are summed and stored at the stable user ID 'ID5' (as count=2).
- In day#2, when 'ID1' and 'ID2' are again mapped to an account ID 'ID5' with a reimport, then the count at the stable user ID 'ID5' remains unchanged for the tag.

## Delivery

This section focuses on ad delivery, explaining what and how a user is retargeted using tagging and DMP user data.

### Ad delivery with IMS

ADITION customers can request for a banner with an ADITION cookie user ID and/or with an external user ID. ADITION will use the mappings and the user data to deliver a suitable banner to the user across the devices. The delivery with IMS works as follows:

- When a request is received only with an ADITION cookie user ID, then ADITION will merge
  - DMP user data from the cookie user ID
  - tagging user data from the cookie user ID
  - DMP user data from the stable user ID of the cookie user ID and
  - tagging user data from the stable user ID of the cookie user ID.
- When a request is received only with an external user ID (e.g. IDFA or AdID), then ADITION will merge
  - DMP user data from the external user ID
  - DMP user data from the stable user ID of the external user ID and
  - tagging user data from the stable user ID of the external user ID.
- When a request is received with both an ADITION cookie user ID and an external user ID, the ADITION will merge
  - DMP user data from the external user ID,
  - DMP user data from the stable user ID of the external user ID,
  - tagging user data from the cookie user ID and
  - tagging user data from the stable user ID of the external user ID

### Ad delivery with IMS and DIL

The data integration layer (DIL)<sup>4</sup> is adapted to IMS v2.0. The mappings in a data user network are used for a request in the network. The user data from both the data user network and from the data owner network(s) are considered during the delivery. The exact delivery with IMS and DIL works as follows:

- When a request is received with an unstable user ID in a data user network, then ADITION looks for the stable user ID in the data user network. Then, for delivery, ADITION will merge
  - user data in data user network
    - DMP user data from the unstable user ID
    - tagging user data from the unstable user ID
    - DMP user data from the stable user ID
    - user data from the stable user ID and
  - user data in data owner network(s)
    - DMP user data from the unstable user ID
    - tagging user data from the unstable user ID
- When a data user network has more than one data owner networks, the user data are merged from all the networks.
- A RTB request is similarly resolved.

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<sup>4</sup> See: <http://bit.ly/2rRtrLY>

## Limits

This section lists all the limitations in IMS.

- A mapping is effective only within one network in ADITION.
- A maximum of 10 unstable user IDs can be mapped to a stable user ID and imported at a time for a user. The customer can map and import additional unstable user IDs for a user in subsequent imports. But ADITION will retain only the last 10 unstable user IDs.
- A user ID can have exactly one stable user ID in a network at a time.
- The life of a mapping of a user ID is 30 days.
- Maximum number of tagging peculiarities (user data) per user ID for a network is limited. Please contact ADITION for exact limit for your network.

## **IMS with EU GDPR (Regulation (EU) 2016/679)**

EU GDPR is in effect since May 25, 2018. This section summarizes and gives you the perspective information about the EU GDPR from IMS perspectives.

### **User data via tagging, DMP import and EU GDPR (Regulation (EU) 2016/679)**

ADITION will not accept user data via tagging requests and DMP import for a user, in case the user has 'opted-out'.

### **IMS and general EU GDPR (Regulation (EU) 2016/679)**

The EU GDPR provides the following rights for individual consumers/users:

1. The right to be informed.
2. The right of access.
3. The right to rectification.
4. The right to erasure (the right to be forgotten).
5. The right to restrict processing.
6. The right to data portability.
7. The right to object.
8. Rights in relation to automated decision making and profiling.

Only the user rights (2) and (4) are explained below in this section with respect to IMS. Other user rights are general in nature and do not need specific description within IMS.

The section describes the workflow and process followed by ADITION for the following user rights.

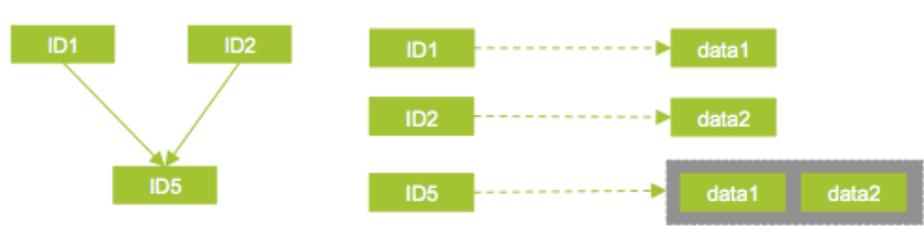
### Right of access user data

When a request is received from a customer to access data of a user ID, ADITION will provide user data that includes IMS mapping related data and user data that the user ID has access due to the IMS in the network.

#### For example,

Let us assume,

- User IDs 'ID1' and 'ID2' are mapped to a stable user ID 'ID5' in a customer network. The user data are correspondingly merged and stored. It can be diagrammatic explained as follows:



- When a user request the data from a device user ID 'ID1' via the customers, then
  - ADITION will provide information that the device user ID 'ID1' is mapped to stable user ID 'ID5'. ADITION will also provide information about other device ID(s) 'ID2' is mapped to the stable user ID 'ID5'.
  - ADITION will provide the corresponding user data. In this case, ADITION will provide that device user ID 'ID2' has access to 'data1' and 'data2'. These data are being used to reach the user in these devices.

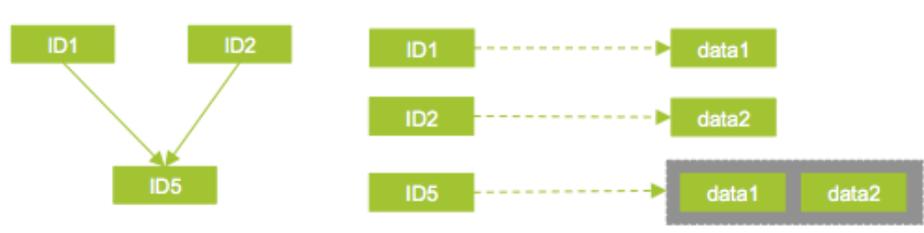
### The right to erasure (the right to be forgotten)

When a request is received to erasure (to be forgotten) a user ID from a customer, ADITION will delete data that includes IMS mapping related data and user data the user ID has due to the IMS in the network.

#### For example,

Let us assume,

- User IDs 'ID1' and 'ID2' are mapped to a stable user ID 'ID5' in a customer network. The user data are correspondingly merged and stored. It can be diagrammatic explained as follows:



- When a user request to erasure (to be forgotten) from a device user ID 'ID1' via the customers, then
  - ADITION will delete the mapping of the device user ID 'ID1' to stable user ID 'ID5'. ADITION will also delete mappings of the other device ID(s) 'ID2' to the stable user ID 'ID5'.
  - ADITION will delete the corresponding user data. In this case, ADITION will delete the user IDs and corresponding user data behind 'ID1', 'ID2' and 'ID5' (i.e. 'data1' and 'data2').

## Glossary

**ADITION Cookie User ID** is a standard ADITION cookie ID, which is generated by ADITION and stored in the browser.

**External User ID** is foreign to ADITION. It can be CRM, DMP, IDFA or customers' cookie ID.

**Stable user ID** is generated and owned by the website owner or publisher e.g. login ID. The end users typically cannot delete or change a stable user ID.

**Unstable user ID** is generated and stored in a browser/device. The end users can change and delete an unstable user ID. Multiple unstable IDs can be assigned to an end user.

**Mapping** provides information about the relationship between the IDs. It indicates the unstable user ID and its stable user ID.

**Attribute** is a tag that is formed in the form of KEY.SUBKEY, which represents a market segment.

**User data** is tags behind an ID. The user data is in form of KEY.SUBKEY=VALUE.

**DMP-Feed** is an import format in which a customer can import user data from a DMP.

**ID-Feed** is an import format in which a customer can import mappings among IDs. It is a simple list of IDs.

**Hybrid-Feed** is a combination of ID-Feed and DMP user data feed.

**Merge** is a process of merging user data.