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Mobile Connect Product Guidelines

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# Introduction

## Executive summary

The purpose of this document is to provide guidance for the development of products and services using the existing Mobile Connect framework and in particular for Mobile Operators developing and deploying products to meet their own local market needs.

To ensure that a Service Provider can consume the services in a consistent manner, it will be important that Mobile Operators work together on the definition of said products within their local market, and do so in compliance with a set of Mobile Connect criteria to ensure interoperability. Doing so also ensures that these products can easily be offered consistently by mobile operators across different markets as well.

In short, a new Product should follow the product development guidelines outlined in this document and in particular the technical design principles defined in section 2.2. The Products should also adhere to the Mobile Connect licence agreement [2] and Mobile Connect Privacy Principles [6] and be registered in the Product Directory managed by GSMA to ensure uniqueness of the product identifier hence avoiding conflicting product naming and duplication of effort (see section 2.5).

## Scope of the document

|  |  |
| --- | --- |
| In Scope | Out of Scope |
| * Product development guidelines * Product compliancy requirements * Product registration (Product Directory) | * Go to market including Service Provider onboarding and contracts * In-life management of Products including Service Provider support |

## References

| Ref | Doc Number | Title |
| --- | --- | --- |
|  | RFC 2119 | “Keywords for use in RFCs to Indicate Requirement Levels,” S. Bradner, March 1997. Available at <http://www.ietf.org/rfc2119.txt> |
|  |  | Mobile Connect Operator Licence Agreement |
|  | IDY.01 | Tech Mobile Connect Device Initiated OIDC Profile |
|  | IDY.02 | Tech Mobile Connect Server Initiated OIDC Profile |
|  |  | Quick reference UI flows and Designs. Available at <https://infocentre2.gsma.com/gp/pr/Identity/User%20Flow%20Design%20Kit/1.%20Quick%20referencee%20UI%20flows%20and%20Designs> |
|  |  | Mobile Connect Privacy Principles |
|  | IDY.16 | Product Manager’s Lifecycle Handbook |
|  | IDY.21 | [Prod Mobile Connect National ID product definition v1](https://infocentre2.gsma.com/gp/pr/Identity/Mobile%20Connect%20Attributes1/IDY.22%20-%20Prod%20Mobile%20Connect%20National%20ID%20product%20definition%20v1.docx) |
|  | IDY.03 | Mobile Connect Resource Server Specification |

**Table 1: References**

## Glossary and abbreviations

| Term | Description |
| --- | --- |
| API | Application Programming Interface |
| Attribute | Piece of information about a user that is shared with an SP |
| CIBA | Client Initiated Backchannel Authentication |
| Global Product | Globally defined Mobile Connect product described in GSMA reference documents including Product Definition and Technical Specification |
| Identity Token | Provides a set of metadata regarding the Authentication to the Service Provider. This includes the PCR, authenticator used, Level of Assurance etc. |
| IMEI | International Mobile Equipment Identity |
| IMSI | International Mobile Subscriber Identity |
| KYC | Know Your Customer |
| LoA | Level of Assurance |
| MSISDN | Mobile Station International Subscriber Directory Number |
| Operator | Mobile Network Operator |
| OTP | One-Time Password |
| PAYG | Pay as you go (prepaid contract) |
| PAYM | Pay monthly (postpaid contract) |
| PRD | Public Reference Document |
| SP | Service Provider (The application/service that needs the authentication and identity services) |
| SIM | Subscriber identity module |
| T&C | Terms and conditions |
| UI | User Interface |
| UX | User Experience |

**Table 2: Glossary and abbreviations**

## Conventions

The keywords “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 [1].

## 

# Product Guidelines

The Product guidelines comprise the following three parts:

* Development   
  Adherence to the Mobile Connect product development guidelines (further detailed in sections 0, 2.2 and 2.3)
* License   
  Adherence to the Mobile Connect license agreement [2] including the Mobile Connect Privacy Principles [6] (see section 2.4)
* Product Registration  
  Registration of all Products in a GSMA centrally managed repository [the Product Directory] (see section 2.5).

In order to be considered Mobile Connect compliant, a Product:

* Must adhere to the Mobile Connect technical design principles (see section 2.2)
* Must build upon the Mobile Connect User Experience guidelines (see section 2.3)
* Must rely on the mobile device as the mechanism through which the user authenticates or authorises a transaction

## Development guidelines

When designing a new Product, it is vital that Mobile Operators work together within the market to form a common agreement on the product definition hence ensuring that SPs are able to consume the same service consistently irrespective of the serving Mobile Operator within the local market. Mobile Operators should agree on a suitable process in each market for the development of the product and allocate roles and responsibilities to deliver:

* A product Definition & Technical Specification document which explains:
  + functionality of the Product
  + use cases and scenarios in which it might be used
  + user experience/user flows
  + which attributes are used and the format for these attributes
  + all other applicable product requirements
  + technical specification including how the Open ID Connect Mobile Connect API should be used in the deployment of the product and associated error handling
* An SDK if needed, which may be built as an evolution of a relevant Global Product SDK
* Interoperability testing across MNO deployments in the target market; this may be performed with a friendly SP
* A go-to-market plan covering those aspects which need to be discussed jointly x-MNO including channels to market, contractual model, SP onboarding, billing and settlement and customer care and the potential opportunity of using MC Link in this regard

Mobile Operators may find it useful to leverage the existing Global Product documentation (Service Definition & Technical Requirements) to generate local variants. An example is discussed in annex A.

For reference, Annex A lists a wide range of potential attributes that Mobile Operators may choose to share or verify as part of their Products. Of course Mobile Operators may also have other attributes of interest which are not listed. The table below provides an attribute short-list that addresses many of the current SP needs:

|  |  |
| --- | --- |
| Attribute Name | Description |
| *User identity & contact details* |  |
| title | Salutation |
| given\_name | Given name(s) or first names |
| family\_name | Surname(s) or last name(s) of the user |
| middle\_name | Middle name(s) of the user |
| gender | User’s gender |
| birthdate | User’s birth date[[1]](#footnote-2) |
| street\_address | User’s street (incl. house name/number) |
| city | User’s city / town |
| state | User’s state / county |
| postal\_code | User’s Zip/ Postcode |
| country | User’s postal country |
| phone\_number | User's Mobile Connect designated mobile number |
| email | User’s e-mail |
| *Mobile account details* |  |
| billing\_segment | "PAYG","PAYM","Business" |
| account\_tenure | Date from which the user is known as a customer at the MNO |
| account\_state | "active","inactive" |
| *Contextual signals* |  |
| is\_roaming | True/False |
| country\_code | Last-known country of the user |
| is\_lost\_stolen | True/False |
| is\_unconditional\_call\_divert\_active | Mobile phone account has an unconditional call divert set to a number (True/False) |
| sim\_change | Timestamp of last MSISDN <-> IMSI pairing change |
| device\_change | Timestamp of last MSISDN <-> IMEI pairing change |
| device\_msisdn | MSISDN of the device accessing the SP service[[2]](#footnote-3) |

Figure 1 Attribute short-list

## Technical design principles

This section defines a set of key principles that MUST be adhered to in the deployment of a Product:

1. Mobile Connect API:
   1. The Product MUST use the Mobile Connect API (Device Initiated or Server Initiated OpenID Connect Profiles) for the exposure of Mobile Connect services towards Service Providers
2. There MUST be a logical separation between the “Authorization Server” and the “Resource Server(s)”:
   1. The Authorization Server is part of the ID GW which exposes the protocol endpoints: Authorization and Token
   2. The Resource Server exposes the resource endpoints which can either be UserInfo/PremiumInfo or a service-specific resource endpoint. The Resource Server can be implemented as part of the ID GW or separately; more information on the Resource Server is available in [9]
3. ID GW endpoints:
   1. The ID GW Authorisation Server MUST use the same endpoints (Authorisation; Token or Notification endpoints) irrespective of use case (product/service). For the resources, UserInfo/PremiumInfo or service-specific Resource Server endpoints SHOULD be used
4. Adherence to OIDF standards:
   1. The flows MUST use either a Device-Initiated approach based on the Authorisation Code flow as described in the Mobile Connect Device Initiated OpenID Connect Profile or a Server-Initiated approach based on asynchronous communication.
   2. Device Initiated Mode
      1. The following core OpenID Connect protocol aspects MUST be adhered to:
         1. Authorization Code: OIDC Authorization call
         2. ID Token and Access Token: OIDC Token call
         3. Resource Access: UserInfo/PremiumInfo call or call to service-specific Resource Server endpoint
   3. Server Initiated Mode
      1. The following CIBA[[3]](#footnote-4) related protocol aspects MUST be adhered to
         1. Server initiated call: OIDC Authorization call
         2. ID Token and Access: through Notification or Polling
         3. Resource Access: UserInfo/PremiumInfo call or call to service-specific Resource Server endpoint
   4. There MUST NOT be any additional flows introduced for the Mobile Connect protocol interactions (e.g., additional redirects, additional notifications) unless needed for specific architecture options like aggregator integration, hub based integration etc. The usage of additional flows MUST be discussed and agreed with the GSMA and Mobile Connect MNO community.
5. OIDC <scope> parameter:
   1. The <scope> parameter in the OIDC Authorization request MUST be used as the “control channel” for identifying the product/service being requested by the SP
   2. The <scope> value MUST align with the Mobile Connect pattern (mc\_<<product>>\_<<country>>)
   3. Registration of <scope> value via GSMA Product Directory (see sections &
      1. The Product Directory will check the uniqueness of the <scope> value across the directory and also check for consistency in naming[[4]](#footnote-5)
      2. A Mobile Operator creating a Product should submit a <scope> entry for the directory and use the registered <scope> to identify the product
6. Mobile Connect API extension:
   1. Additional parameters for the Mobile Connect calls [Authorization, Token, Notification and UserInfo] SHOULD NOT be introduced as this may result in fragmentation and interoperability issues
   2. If additional parameters are needed, this MUST be discussed and agreed within the wider Mobile Connect MNO community to minimise the risk of fragmentation
7. The ID Token MUST ONLY be used for providing claims for the Authentication/Authorisation metadata. All user attributes MUST be exchanged using the UserInfo/PremiumInfo endpoint or service-specific Resource Server endpoints.
8. User or Mobile Connect Tokens (PCR, Access Token, ID Token) MUST be used within APIs as parameters and MUST NOT be shared using cookies due to their limitations
9. Mobile Operators must follow local legislation to ensure that users accept T&Cs pertaining to the use of the Mobile Connect Product

## User Experience (UX) guidelines

A clean, simple & intuitive UX is key to the adoption and repeat usage of Mobile Connect Products by end users. Towards this view, Mobile Operators should invest in the UI/UX testing and design of Products to ensure that the most optimised versions are deployed in-market. Similarily, Mobile Operators should acknowledge the importance of user education and incorporate where necessary into the product flow as well as through a wider marketing and communications strategy to drive higher take-up of the product.

For products that include the provision or verification of attributes / personal data, specific attention must be paid to establish the lawful data processing basis. Where user consent is required, the method of consent capture and how to manage the user journey will form an important element of the end-end User Experience. General guidance on consent management is provided in the Product Manager’s Lifecycle Handbook [7] and Mobile Operators will also be able to review other Products listed in the Product Directory to study Best Practice approaches that have worked in other markets.

Additional guidance with regards to UX is currently available in [5].

## Mobile Connect License

A Product which uses the Mobile Connect Service Mark must abide by the Mobile Connect License agreement [2]. The Mobile Connect Licence agreement grants Mobile Operators a worldwide license to use the Mobile Connect brand assets subject to them meeting the following contractual terms[[5]](#footnote-6):

* Usage of the Mobile Connect Service Mark
* Communication guidelines for the Service Mark
* Mobile Connect minimum Service Mark requirements[[6]](#footnote-7)
* Mobile Connect Privacy Principles [6]

A Product that does not use the Mobile Connect Service Mark should still be designed in accordance with the Mobile Connect Product Guidelines as outlined in section 2 and the Mobile Connect Privacy Principles [6] in order to be considered Mobile Connect compliant.

## Product Registration via the GSMA Product Directory

It is vital that Mobile Operators register any Products they develop (and the associated <scope> product identifier they intend to use) within the Product Directory in order to avoid conflicts between different markets (for instance two markets developing different products under the same product identifier). As an additional benefit, by sharing Products through the Product Directory Mobile Operators will benefit from reduced development cost and an increased flow of ideas. Starting the product registration whilst Mobile Operators are still in the development stages is encouraged, both to confirm the correct product identifier and to identify synergies across markets hence avoiding duplication of effort.

Once a Mobile Operator has submitted a product registration request, the GSMA will confirm the product meets the Product Guidelines before publishing it to the Product Directory. More details about the Product Directory and the Product registration process can be found in section 3.

# Mobile Connect Product Directory

The aim of the Product Directory is to provide a single reference point for all Mobile Connect products that are in development or have been deployed in order to support best practise sharing and avoid duplication of effort and/or conflict in product naming (<scope>) etc.

## Information required for product registration

To register a Product a Mobile Operator will need to provide the following registration information:

* Product name
* Country
* Product identifier (<scope>)
* Authenticator/s used (where applicable)
* Assurance level used (where applicable)
* How the service is requested (Device-Initiated and/or Server-Initiated invocation) and what Profile version is being used
* Attributes used (where applicable)
* Comments, such as:
  + Technical assets such as SDKs (if and when avaialble)
  + What restrictions (if any) are put on the visibility of the Product, e.g. restrictions as to how it should be promoted to SPs (some products are not publicly advertised due to commercial sensitivities e.g. SP does not want to publicise their anti-fraud solutions)
  + What consent model is used (where applicable)
  + User flow information including a 30 second video of the Product in action (the video can be provided once the product has been developed)
  + Use cases supported by the product

## Plan for a simple implementation

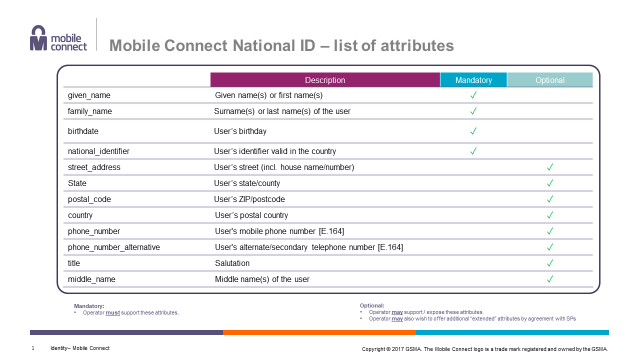
The Product Directory has been implemented as an Excel spreadsheet. GSMA will be responsible for coordinating and tracking the overall progress of new product requests and ensuring that the latest version of the Product Directory is available online.

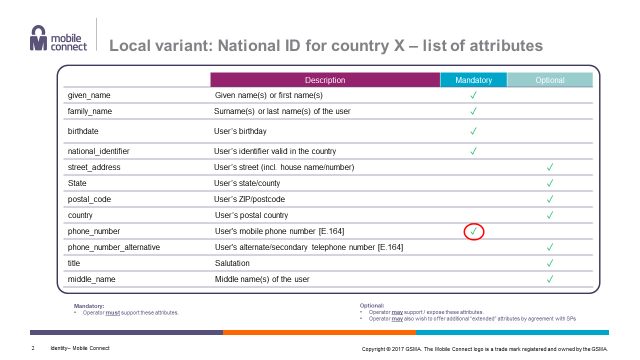


New product requests (or updates to existing products) should be submitted to [mc\_productdirectory@gsma.com](mailto:mc_productdirectory@gsma.com). The GSMA will review all submissions, request any additional information where required and register the new product into the Product Directory. In doing so, it will perform the following checks:

* ensure that each product has a unique identifier (via the <scope> parameter)
* validate that Mobile Operators are not developing a Product that is the same or similar to one that already exists.
  + Should the Product being registered be similar to another product registered in the Product Directory, the GSMA may suggest that the submitted Product use the same Product Identifier and align with the existing registered product; any slight variations to this existing registered product can be accommodated by using the same Product Identifier but appended with the name of the country where the variant is being deployed.
* ensure that the Product abides by the Product Guidelines requirements as set out in this document; if non-conformant, the GSMA will suggest corrections before the product can be considered as Mobile Connect compliant and registered in the Product Directory.
* in case of a change request to an existing product, confirm if the proposed change can be made under the existing registration or if a new product registration is required. If changes are made under the existing registration, GSMA will consider the associated impact for other markets who have already adopted the Product in its initial version and ensure that the same product name is not used in different markets for product variants that are significantly different.
* store the Product Directory [spreadsheet] and make it available online to Mobile Operators and GSMA via InfoCentre2 (only GSMA will have read/write access). Note that Mobile Operators can search the Product Directory directly or request support from the GSMA regional teams.

1. An example of how and when to create a new product

Mobile Connect National ID is a Global Product which delivers the following attributes:

Mobile Operators in a particular market may decide that the user’s mobile phone number should also be included as a mandatory attribute to meet local regulations and/or SP expectations hence would need to create a new variant as identified below:

In such a scenario, the most efficient approach would be for the Operators to modify the existing Mobile Connect National ID Definition & Technical Requirements document [8] rather than writing their own product documentation from scratch.

1. Attributes list (non-exhaustive)

This annex lists a range of attributes which Mobile Operators may decide to share or verify as part of their Products. This list is not intended to be exhaustive and local variations are expected in the availability of attributes.

| **Attribute Name** | **Description** |
| --- | --- |
| Mobile Connect |  |
| sub | Subject Identifier, used as a unique reference for the user (i.e., PCR) |
| creation\_date | Registration date of the user on Mobile Connect |
| updated\_at | Time the user's information was last updated |
| User profile |  |
| title | Salutation |
| name | User's full name in displayable form |
| given\_name | Given name(s) or first name(s) of the user |
| family\_name | Surname(s) or last name(s) of the user |
| middle\_name | Middle name(s) of the user |
| nickname | Casual name of the user that may or may not be the same as the given\_name. For instance, a nickname value of Mike might be returned alongside a given\_name value of Michael |
| preferred\_username | Shorthand name by which the user wishes to be referred to at the SP, such as janedoe or j.doe |
| displayname | Preferred name for display purposes |
| alias | Default alias of the user |
| locale | User's (preferred) locale/language code; e.g., en-US or fr-CA |
| gender | User's gender |
| birthdate | User's birthday; the year MAY be 0000, indicating that it is omitted |
| age | The age of the user in years (rounded) |
| age\_verified | TRUE if the age of the user is verified, FALSE otherwise |
| is\_adult[[7]](#footnote-8) | 0=Unknown  1=Subscriber Verified (verified by the holder)  2=Owner Verified (verified by the bill payer)  3=barred (set to non-verified by the owner/bill payer) |
| profile | URL of the user's profile page (describing the user) |
| picture | URL of the user's profile picture |
| website | URL of the user's Web page or blog |
| msisdn | Designated MSISDN for the Mobile Connect service |
| phone\_number | User's preferred telephone number [E.164] |
| phone\_number\_verified | TRUE if the user's phone number has been verified; otherwise FALSE |
| phone\_number\_country  \_code | E.164 Country Code for the user’s phone number |
| phone\_number\_alternate | User's alternate/secondary telephone number [E.164] |
| voicemail\_PIN\_enabled | TRUE if user has changed the voicemail PIN from the MNO-defined default |
| email | User's email |
| email\_verified | TRUE if the user's e-mail address has been verified; otherwise FALSE |
| address | User’s preferred full postal address. . Concatenated houseno\_or\_housename, postal\_code and optionally city and country |
| formatted | Full postal address formatted for display purpose (as a text string) |
| houseno\_or\_housename | Registered house number or house name |
| street\_address | User’s street (incl. house name/number) |
| city | Registered city or town name (residence) |
| state | Registered state / county (residence) |
| postal\_code | Postal code (Zip code) (residence) |
| country | Country (residence) |
| address\_verified | TRUE if the address is verified at the IDP, FALSE otherwise |
| zoneinfo | Registered (home) timezone of the user; e.g., Europe/Paris or America/Los\_Angeles |
| passport | Passport number of the user |
| social\_security\_number | Social Security Number or NIC of the user |
| national\_identifier | National identifier (e.g., in accordance with eIDAS) in the following format: CC/Type/Identifier  CC: ISO 3166-1 Alpha-2 country code  Type: ID document type (ID card, passport etc.)  Identifier: ID number |
| segmentation | Socio-demographic segmentation of the user (e.g., MOSAIC) |
| Account info |  |
| is\_lost\_stolen | TRUE if device reported as lost or stolen; otherwise FALSE |
| account\_type | "Consumer","Enterprise" |
| billing\_segment | Allowed values "PAYG","PAYM","Business" |
| account\_tenure | Date from which the user is known as a customer at the MNO |
| account\_start\_date | Time since last renewal in days; False if unknown or unsupported |
| account\_type | Primary; Sub |
| length\_of\_tenure | 0=unknown  1=less than 30 days  2=30-90 days  3=90-360 days  4=over 360 days |
| tariff\_group | Tariff group: prepaid, postpaid, hybrid |
| is\_billpayer | TRUE If the user has been verified as the bill payer, FALSE otherwise |
| parental\_control | Flag set by the parent on the account to indicate that the user is a minor (e.g., <18yrs) |
| ported\_in | Has the user ported in from another MNO |
| phone\_number\_recycling | MSISDN has been released and not currently allocated[[8]](#footnote-9):  Boolean:  0: currently not released  1: currently released and not currently allocated |
| account\_state | ‘active’, ‘inactive’ |
| device\_type | User's device type (TAC code) |
| device\_msisdn | MSISDN of the device accessing the SP service[[9]](#footnote-10) [E.164] |
| smartphone\_upgrade | Smartphone upgrade = TAC code change + TAC code now indicating smartphone |
| type\_tokens | MNO identity tokens assigned to the user's device: IMSI, ICCID, IMEI |
| ID\_hash | Hash of MSISDN, IMSI and IMEI |
| device\_change | Timestamp of last MSISDN <-> IMEI pairing change |
| SIM\_change | Timestamp of last MSISDN <-> IMSI pairing change |
| is\_unconditional\_call\_  divert\_active | Call divert status - activated, not-activated |
| date\_last\_bill\_payed | Last bill payment date |
| date\_last\_topup | Last top up date for pre-paid user |
| payment\_type\_used | Payment method used by user - Direct Debit, Bank Transfer, Credit/Debit card |
| channel\_of\_purchase | Channel of purchase used by user - online, PoS, partner |
| Network session |  |
| network\_presence | Network presence: connected\_home\_nw, not\_connected, connected\_roaming |
| subscription\_activity  \_30 | Either the number of calls / texts in the last 30 days or a simple Boolean (TRUE/FALSE) indicating activity within this period |
| subscription\_activity  \_365 | Either the number of calls / texts in the last 12 months or a simple Boolean (TRUE/FALSE) indicating activity within this period; will depend on whether the intention is to indicate ‘liveliness’ |
| is\_roaming | True/False |
| country\_code | The country or last-known country of the user (ISO 3166-1 Alpha-2 country code) |
| latitude | The current or last-known latitude of the user's location |
| longitude | The current or last known longitude of the user's location |
| location\_accuracy | Degree of confidence on the location accuracy: HIGH, MEDIUM, LOW |
| proximity | Indication of whether the user is within a search area (True/False)[[10]](#footnote-11) |
| cell\_id | The current or last known cell id of the mobile device used by the user |
| reverse-coded POI | Nearest POI reverse geo-coded from Lat/Long or Cell ID |
| state | The current or last-known state of the user derived from the Lat/Long and/or cell\_id |
| city | The current or last-known city of the user derived from the Lat/Long and/or cell\_id |
| location\_time | The time at which the location data of the user was collected |
| location\_age | The age of the location information expressed as the time between when the attribute request is made and the time at which the location data of the user was collected (location\_time) |
| current\_zoneinfo | Current or last-known timezone of the user; e.g., Europe/Paris or America/Los\_Angeles |
| dwell\_location | TRUE/FALSE indication of whether the device is currently in a common, habitual location; will be dependent on location pattern analysis and acquiring necessary user consents to collect this information and create these insights (the dwell locations: home, work[[11]](#footnote-12) etc.) |

1. Document History

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Version | Date | Brief Description of Change | Approval Authority | Editor / Company |
| 0.1 | 07/07/2017 | Initial draft | David Pollington | Helene Vigue / GSMA |
| 0.2 | 10/07/2017 | GSMA team revisions | David Pollington | Helene Vigue / GSMA |
| 0.3 | 25/07/2017 | GSMA team revisions (updates to Product Directory strawman implementation) | David Pollington | Helene Vigue / GSMA |
| 0.4 | 02/08/2017 | GSMA team revisions (updates to Annexes) | David Pollington | Helene Vigue / GSMA |
| 0.6 | 07/09/2017 | GSMA team revisions (simplification of Product Directory chapter 3, addition of section **Error! Reference source not found.** and Annex A) | David Pollington | Helene Vigue / GSMA |
| 1.0 | 28/09/2017 | Finalised version | Marie Austenaa | Helene Vigue / GSMA |
| 1.1 | 30/10/18 | Revised version | David Pollington | Niklas Bergvall / GSMA |
| 1.1 | 06/12/2022 | Go through TG approval | TG | Yolanda Sanz/GSMA |

* 1. Other Information

|  |  |
| --- | --- |
| Type | Description |
| Document Owner | IDG |
| Editor / Company | Yolanda Sanz / GSMA |

It is our intention to provide a quality product for your use. If you find any errors or omissions, please contact us with your comments. You MAY notify us at [prd@gsma.com](mailto:prd@gsma.com)

Your comments or suggestions & questions are always welcome.

1. Enables additional derived attributes to be generated such as Age or Is\_Adult [↑](#footnote-ref-2)
2. Captured and used specifically for the Verified MSISDN service [↑](#footnote-ref-3)
3. Client Initiated Backchannel Authentication [↑](#footnote-ref-4)
4. to avoid two products being registered with different names but very similar functionality; e.g., avoid the following: <mc\_kycmatch\_uk> <mc\_kyccompare\_es> [↑](#footnote-ref-5)
5. This license can’t be sub-licensed and therefore any SPs and distribution partners entering into contracts with a Mobile Operator would be required to sign a license agreement with GSMA for access to the Mobile Connect Service Mark [↑](#footnote-ref-6)
6. Minimum requirements that a Mobile Operator must self-certify in order to use the Mobile Connect Service Mark include: The Mobile device must be the mechanism the end user uses to be authenticated, the API exposed must comply with the OpenID Connect standard and global discovery must be enabled. For a complete list please refer to Annex D of the Mobile Connect License Agreement . [↑](#footnote-ref-7)
7. Age threshold for an individual being legally considered an adult will be dependent on local legislation [↑](#footnote-ref-8)
8. Note: this would apply to the situation where a Trusted SP is providing an MSISDN and requesting information about that number [↑](#footnote-ref-9)
9. Captured and used specifically for the Verified MSISDN service [↑](#footnote-ref-10)
10. SP provides target Lat/Long; MNO compares against a pre-defined search radius and returns a True/False indication [↑](#footnote-ref-11)
11. Note: the aim is not to identify the locations or infer anything about the user based on the locations they visit but to determine whether a location is common to the behavioural patterns of a given user; nevertheless, this is clearly privacy sensitive so any capability/service would have to be carefully and considerately designed & deployed [↑](#footnote-ref-12)