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WORKING PAPER

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NOTE

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| From: | Europol |
| To: | DAPIX (Friends of the Presidency - Data Retention) |
| Subject: | Preparatory work for the Data Retention Matrix |

Delegations will find in the Annex a Preparatory work for the data retention matrix: types of data records held by providers which are strictly necessary or unnecessary for criminal investigation.

Preparatory work for the Data Retention Matrix: types of data records held by providers which are strictly necessary or unnecessary for criminal investigation purposes.

Categories of Data Services and Sources

ETSI Standards V1.20.1 (2017-11)

Council of Europe (COE) 'Electronic Evidence Guide'

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Subscriber data is NOT to be considered for Data Matrix

| | |
|---------------------|---|
| ANNEXES (pp. 45-47) | 2. Directive 2006/24/EC, art.5 categories |
|---------------------|---|

| 1.1. Telephony Subscriber | | ETSI B.2.2 | | Strict necessity for retention | | |
|---|---|------------|----|--------------------------------|--|--|
| 1.1.1. TelephonySubscriberParameters | | Yes | No | Justification | | |
| subscriberID | A unique identifier for a particular subscriber within a CSP | | | | | |
| genericSubscriberInfo | A unique identifier for this particular subscriber within a CSP | | | | | |
| telSubscriberInfo | Service specific information about the subscriber | | | | | |
| subscribedTelServices | List of services details that a subscriber (or account) may have | | | | | |
| 1.1.2. SubscribedTelephonyServices parameters | | | | | | |
| serviceID | A unique identifier within the operator for the service | | | | | |
| providerID | A unique identifier for the service provider | | | | | |
| timeSpan | Time over which the subscription was held | | | | | |
| registeredNumbers | The telephone number(s) assigned to the subscriber as part of this subscription | | | | | |
| registeredICCID | Integrated Circuit Card ID in cases of single SIM card contracts | | | | | |
| serviceType | The type of service subscribed to | | | | | |
| installationAddress | The instation address for the subscriber's equipment, if applicable | | | | | |
| connectionDate | Date when the subscriber was actually connected | | | | | |
| iMSI | IMSI of the subscriber | | | | | |

| | | | | |
|---|---|-------------------|---------------------------------------|---------------|
| carrierPreselect | Indication of the carrier preselection | | | |
| lineStatus | CSP for specific description of the current line status | | | |
| allocatedDeviceIDs | List of all known devices allocated to this user for this subscription | | | |
| pUKCode | PUK code for the SIM card associated with this subscription | | | |
| pUK2Code | PUK2 code for the SIM card associated with this subscription | | | |
| IMEI | IMEI of the subscriber | | | |
| nationalTelSubscription | Defined on a national basis | | | |
| paymentDetails | Details for payment | | | |
| deliveryAddress | The delivery address for equipment | | | |
| resellerAddress | The address of the reseller or dealer | | | |
| otherAddress | Used if there are addresses for the subscription which do not fit into the other categories | | | |
| registeredNumbersInfo | Information about timespan of the active number and disable reasons | | | |
| registeredICCID | Integrated Circuit Card ID in cases of MultiSIM card contracts | | | |
| loginInfos | Information on login details, e.g. in case of a VMS/UMS account | | | |
| 1.2. Telephony Billing Details and Records | | ETSI B.2.3 | Strict necessity for retention | |
| 1.2.1 TelephonyBillingDetails and Records parameters | | Yes | No | Justification |

| | | | | |
|---|--|-------------------|---------------------------------------|---------------|
| <code>subscriberID</code> | A unique identifier for a particular subscriber within a CSP | | | |
| <code>serviceID</code> | A unique identifier within the operator for the service or tariff subscribed to | | | |
| <code>billingAddress</code> | The billing address for this subscription | | | |
| <code>billingIdentifier</code> | A unique identifier for billing purposes. The format is for CSPs to determine | | | |
| <code>billingRecords</code> | A sequence of billing records, one for each payment by the subscriber on this subscription | | | |
| <code>time</code> | Time of the payment | | | |
| <code>place</code> | Location of the payment | | | |
| <code>amount</code> | Amount of the payment, in currency specified | | | |
| <code>currency</code> | Currency of payment | | | |
| <code>method</code> | Type of payment (e.g. credit card, top-up voucher) | | | |
| <code>nationalTelBillingRecords</code> | Defined on a national basis | | | |
| <code>transactionID</code> | Unique reference | | | |
| <code>transactionStatus</code> | Status of transaction (declined, succeeded etc.) | | | |
| 1.3. Telephony Service Usage | | ETSI B.2.4 | Strict necessity for retention | |
| 1.3.1. TelephonyServiceUsage parameters | | Yes | No | Justification |

| | | | | |
|---|--|--|--|--|
| partyInformation | A list of partyInformation structures | | | |
| communicationTime | Total time for this service usage | | | |
| eventInformation | A list of telephony events that occurred during this call. They may relate to Call Forwarding, Conference Calls etc. | | | |
| endReason | The Q.850 cause code for the termination of the call | | | |
| communicationType | The type of call | | | |
| bearerService | The bearer service for the call | | | |
| smsInformation | SMS information for the service usage | | | |
| ringDuration | Ring duration, given in seconds | | | |
| mmsInformation | MMS information for service usage | | | |
| nationalTelServiceUsage | Defined on a national basis | | | |
| operatorSpecificCallDetails | Identifier or a combination of identifiers as used by the CSP to classify the call for billing procedures | | | |
| 1.3.2. PartyInformation + SMS/MMS information parameters | | | | |
| partyRole | Role for this party (e.g. called, calling) | | | |
| partyNumber | Number for this party in E.164 format | | | |
| subscriberID | Subscriber identifier for subscriber | | | |

| | | | | |
|------------------------------|---|--|--|--|
| deviceID | Device identifier | | | |
| locations | location(s) encountered during a call | | | |
| communicationTime | Time that this party was involved in the call, if this was a multiparty call. | | | |
| iMSI | IMSI of the party | | | |
| natureOfAddress | Nature of the address - may be international, national or subscriber number | | | |
| forwardedTransferredNumber | Forwarded number if call was transferred | | | |
| terminatingTransferredNumber | Terminating number if call was transferred | | | |
| emailAddress | Email address of the party for MMS | | | |
| iMEI | IMEI of the party | | | |
| detailedLocation | Detailed location information per call and party | | | |
| nationalTelPartyInfo | Defined on a national basis | | | |
| partyType | Type of party (e.g. operator provided voicemail etc.) | | | |
| dialledDigits | Digits dialled by the party (e.g. subscriber controlled input) | | | |
| smsEvent | Type of message event | | | |
| smsType | Type of sms transferred on SC - MC interface | | | |
| smsStatus | Status reached by the sms | | | |

| | | | | |
|--|--|-------------------|---------------------------------------|---------------|
| <code>smsCmRefNr</code> | Concatenated short message reference number | | | |
| <code>smsNumOfSM</code> | Number of short messages transferred in case of composite messages | | | |
| <code>smsNotifyInd</code> | Delivery notification message generated by messagnig centre | | | |
| <code>smsProtocolID</code> | Transfer layer Protocol - Protocol Identifier (TP-PID) | | | |
| <code>mmsEvent</code> | Type of message event | | | |
| <code>mmsStatus</code> | Status reached by the mms | | | |
| <code>mmsNotifyInd</code> | Delivery notification message generated | | | |
| <code>mmsMsgMod</code> | Modifications performed on the message | | | |
| 1.4. Telephony Device | | ETSI B.2.5 | Strict necessity for retention | |
| 1.4.1 TelephonyDevice parameters | | | Yes | No |
| | | | | Justification |
| <code>deviceIDType</code> | Indicates the type of identifier used in TelephonyDeviceID, e.g. IMEI. | | | |
| <code>telephonyDeviceID</code> | Unique identifier for the telephony device. If this identifier happens to have a particular format (e.g. IMEI), then this may be indicated using deviceIDType | | | |
| <code>subscriberID</code> | Identity of a known user of this equipment. This identity may be registered in cases where the provider has supplied the user with a device. It may also be recorded ad-hoc based on service usage data, depending on national legislation | | | |
| 1.5. TelephonyNetworkElement parameters | | ETSI B.2.6 | Strict necessity for retention | |

| 1.5.1. TelephonyNetworkElement parameters | | Yes | No | Justification |
|---|--|-----|----|---------------|
| telephonyNetworkID | Unique identifier for the network element (e.g. MSC ID) | | | |
| cellInformation | Location information for this network element. | | | |
| validity | Time period during which the information given in this structure is or was valid | | | |
| nationalTelephonyNetworkElement | Defined on a national basis | | | |
| transmitterDetails | Characteristics of the transmitter, e.g. beam-width, radiated power, antenna height, frequency, technology | | | |
| 1.5.2. Location parametres | | | | |
| e164-Number | E.164 number in ISUP format | | | |
| globalCellID | Global cell ID in ETSI TS 100 974 [8] | | | |
| rAI | Routing Area Identifier in current SGSN, in 3GPP TS 24.008, withour Routing Area Identification IEI | | | |
| gsmLocation | GSM location | | | |
| umtsLocation | UMTS location | | | |
| sAI | Service Area Identifier, 3GPP TS 25.413 | | | |

| | | | | |
|--|---|--|--|--|
| oldRAI | Routing area identifier in old SGSN, in 3GPP TS 24.008, without Routing Area Identification IEI | | | |
| postalLocation | Postal address of the location | | | |
| extendedLocation | Extended location information | | | |
| userLocationInformation | This field containt the User Location Information of the MS | | | |
| tAI | The "Tracking Area Identity" (TAI) | | | |
| eCGI | The "E-UTRAN Cell Global Identity" (E-CGI) | | | |
| maritimeTransport | Provides information about the mobile cells embarked on shipsusing satellite transponder backhaul | | | |
| airTransport | Provides information about the mobile cells embarked on aircraft using satellite transponder backhaul | | | |
| 1.5.3. GSM and UMTS Location parameters | | | | |
| geoCoordinates | Geographical latitude-longitude location | | | |
| utmCoordinates | Universal Transverse Mercator location | | | |
| utmRefCoordinates | Universal Transverse Mercator reference coordinates | | | |
| wGS84Coordinates | WGS84 coordinates | | | |
| geoCoordinatesDec | Geographical decimal latitude-longitude location | | | |
| point | Geographical latitude-longitude location | | | |

| | | | | |
|---|---|--|--|--|
| <code>pointWithUncertainty</code> | Geographical latitude-longitude location with additional uncertainty code to indicate radius of uncertainty | | | |
| <code>polygon</code> | Sequence of latitude-longitude locations that define a polygon | | | |
| 1.5.4. Extended location parameters | | | | |
| <code>spot</code> | Geographical coordinate or postal address of the location | | | |
| <code>circle</code> | Geographical coordinate or postal address of the location, each with radius | | | |
| <code>region</code> | Corner marks of an area, consisting of geographical coordinates or postal addresses of locations | | | |
| <code>route</code> | Stretch of way, consisting of geographical coordinates or postal addresses of locations | | | |
| 1.5.5. TransmitterDetails parameters | | | | |
| <code>alternativeID</code> | Alternative naming scheme for cells | | | |
| <code>beamWidth</code> | Beam width in degrees | | | |
| <code>radiatedPower</code> | Radiated power in watts | | | |
| <code>antennaHeight</code> | Height of antenna from ground in metres | | | |
| <code>range</code> | Indication of range or radius of cell or sector coverage in meters | | | |
| <code>frequency</code> | Transmitter frequency in kHz | | | |
| <code>technology</code> | Transmitter technology, e.g. gen2G, gen3g, eUTRAN, WLAN | | | |

| | | | | | |
|---------------------------------|---|-------------------|---------------------------------------|----|---------------|
| nationaltransmitter details | Defined on a national basis | | | | |
| 2.1. Message Subscriber | | ETSI C.2.2 | Strict necessity for retention | | |
| 2.1.1. MsgSubscriber parameters | | | Yes | No | Justification |
| validity | Time period during which the information given in this structure is or was valid | | | | |
| subscriberID | A unique identifier for this particular subscriber within the CSP | | | | |
| msgStores | Descriptions of the private message stores associated with this subscriber | | | | |
| subscriber | Time period during which the information given in this structure is or was valid | | | | |
| paymentDetails | Details for payment (e.g. associated bank account, billing method or billing address) | | | | |
| 2.1.2. MsgStore parameters | | | | | |
| validity | Time period during which the information given in this structure is or was valid | | | | |
| msgStore | A unique identifier for this particular message store within the CSP | | | | |
| aliases | The complete list of all addresses that get delivered into this message store. This may (as a national option) include wildcard addresses (e.g. | | | | |
| providerID | A unique identifier of the provider hosting this message store | | | | |

| | | | | | |
|-----------------------------------|--|-------------------|---------------------------------------|----|---------------|
| 2.2. Message Service Usage | | ETSI C.2.3 | Strict necessity for retention | | |
| 2.2.1. MsgTransmission parameters | | | Yes | No | Justification |

| | | | | |
|--|--|--|--|--|
| dateTime | A unique identifier of the provider hosting this message store | | | |
| subscriberID | Unique identifier of the subscriber sending the message | | | |
| senderAddress | The available address of the sender | | | |
| recipients | The list of available recipients of the message | | | |
| msgStores | List of all local message stores that received a copy of the message | | | |
| deliveryStatus | Result of the transmission from the CSP's message server towards the final destination | | | |
| protocol | Message transmission protocol used | | | |
| clientID | IP address of the source of the message transmission | | | |
| serverID | IP address of the destination of the message transmission | | | |
| messageID | Unique identifier for the message | | | |
| sourceServerName | Name for the server sending the message (if appropriate) | | | |
| destinationServerName | Name for the server receiving the message (if appropriate) | | | |
| 2.2.2. MsgStoreOperation parameters | | | | |
| dateTime | Date and time when the subscriber performed the indicated operation | | | |
| subscriberID | Unique identifier of the subscriber performing the operation | | | |
| msgStore | Unique identifier of the message store being manipulated | | | |

| | | | | |
|---|--|-------------------|---------------------------------------|---------------|
| operation | Type of manipulation performed by the subscriber | | | |
| senderAddress | The available address of the sender | | | |
| recipients | List of all the available recipients of the message | | | |
| protocol | Message store manipulation protocol | | | |
| clientID | IP address of the subscriber who performed the indicated operation | | | |
| serverID | IP address of the message server hosting the message store being manipulated | | | |
| messageID | Unique identifier for the message | | | |
| 2.3. Message Billing details and records | | ETSI C.2.4 | Strict necessity for retention | |
| 2.3.1 MsgBilling details and records parameters | | Yes | No | Justification |
| subscriberID | A unique identifier for a particular subscriber within a CSP | | | |
| serviceID | A unique identifier within the operator for the service or tariff subscribed to | | | |
| billingAddress | The billing address for this subscription | | | |
| billingIdentifier | A unique identifier for billing purposes. The format is for CSPs to determine | | | |
| billingRecords | A sequence of billing records, one for each payment by the subscriber on this subscription | | | |
| NationalMsgBillingDetails | Defined on a national basis | | | |
| time | Time of the payment | | | |

| | | | | |
|---|---|-------------------|---------------------------------------|---------------|
| place | Location of the payment | | | |
| amount | Amount of the payment, in currency specified | | | |
| currency | Currency of payment | | | |
| method | Type of payment (e.g. credit card, top-up voucher) | | | |
| nationalMsg BillingRecords | Defined on a national basis | | | |
| transactionID | Unique reference for this transaction/billing record | | | |
| transactionStatus | Status of transaction (declined, succeeded etc.) | | | |
| 3.1. Multimedia Subscriber | | ETSI D.2.2 | Strict necessity for retention | |
| 3.1.1. MultimediaSubscriber parameters | | Yes | No | Justification |
| subscriberID | A unique identifier for this particular subscriber within the CSP | | | |
| genericSubscriberInfo | General personal information | | | |
| multimediaSubscriberInf | Service specific information about the subscriber | | | |
| subscribedMultimedia Services | List of services details that a subscriber (or account) may have | | | |
| multimediaService RegistrationInfo | Information on registration activity | | | |
| 3.1.2. SubscribedMultimediaService parameters | | | | |
| serviceID | A unique identifier within the operator for the service or tariff subscribed to | | | |

| | | | | |
|-----------------------------|--|--|--|--|
| providerID | A unique identifier for the service provider. The format of this field is to be determined by national agreement | | | |
| timeSpan | Time over which the subscription was held. If the subscription is active, the endTime shall not be populated | | | |
| registeredIdentifiers | The multimedia identifiers(s) assigned to the subscriber as part of this subscription, if applicable | | | |
| registeredICCID | Integrated Circuit Card ID (ICCID) number of the subscriber, in ASCII format | | | |
| serviceType | The type of service subscribed to | | | |
| installationAddress | The installation address for the subscriber's equipment, if applicable | | | |
| connectionDate | Date that the subscription was actually connected (may be different to the start of the subscription) | | | |
| iMSI | IMSI associated with the subscriber | | | |
| carrierPreselect | Flag to indicate that the subscriber has carrier preselect active | | | |
| lineStatus | CSP-specific description of current line or subscription status e.g. "Active", "Suspended", etc. | | | |
| nationalMultimedia Services | Defined on a national basis | | | |
| paymentDetails | Details for payment (e.g. associated bank account, billing method or billing address) | | | |
| deliveryAddress | The delivery address for equipment, if applicable. | | | |
| resellerAddress | The address of the reseller or dealer, if applicable | | | |

| | | | | |
|--|---|-------------------|---------------------------------------|---------------|
| otherAddress | Used if there are addresses for the subscription which do not fit into the other categories | | | |
| orderTime | Time when the subscribed service was ordered by user | | | |
| 3.1.3. MultimediaServiceRegistrationInfo | | | | |
| emailAddress | Email address associated with account | | | |
| languageAtRegistration | Language selected for account | | | |
| accountCreationTime | Time of creation | | | |
| accountCreationIP | IP associated with account | | | |
| accountCreationCountry | Country associated with account | | | |
| clientPlatformType | Platform associated with account | | | |
| clientVersion | Version of platform | | | |
| 3.2. MultimediaBilling Details, Address, Records | | ETSI D.2.3 | Strict necessity for retention | |
| 3.2.1. MultimediaBilling Details, Address and Records parameters | | Yes | No | Justification |
| subscriberID | A unique identifier for a particular subscriber within a CSP | | | |
| serviceID | A unique identifier within the operator for the service or tariff subscribed to | | | |
| billingAddress | The billing address for this subscription | | | |

| | | | | |
|----------------------------------|---|--|--|--|
| multimediaBillingAddress | The billing address for a multimedia subscription | | | |
| billingIdentifier | A unique identifier for billing purposes. The format of this field is for CSPs to determine | | | |
| billingRecords | A sequence of billing records, one for each payment by the subscriber on this subscription | | | |
| nationalMultimediaBillingDetails | Defined on a national basis | | | |
| addressSuppliedTime | Address submission time | | | |
| name | Name of account holder | | | |
| address | Address of account holder | | | |
| time | Time of the payment | | | |
| place | Location of the payment | | | |
| amount | The amount of the payment, in currency specified | | | |
| currency | Currency of payment, in ISO 4217 [5] | | | |
| method | Type of payment (e.g. credit card, top-up voucher) | | | |
| nationalMultimediaBillingRecords | Defined on a national basis | | | |
| multimediaTransactionID | Unique identifier for the billing transaction | | | |
| multimediaTransactionStatus | Status of the billing transaction | | | |

| 3.3. Multimedia Service Usage | | ETSI D.2.4 | Strict necessity for retention | | |
|--|---|------------|--------------------------------|----|---------------|
| 3.3.1. MultimediaServiceUsage parameters | | | Yes | No | Justification |
| partyInformation | List of partyInformation structures for the people involved in the communication | | | | |
| communicationTime | Total time for this service usage | | | | |
| reasonCause | Cause code for the end of call | | | | |
| communicationType | Type of bearer service used in the session | | | | |
| bearerService | The brarer service for the communication | | | | |
| qualityOfService | The quality of service parameter for the communication | | | | |
| ringDuration | Ring duration, given in seconds for VoIP | | | | |
| callID | Identifier of the retained call data, e.g SIP callID, for correlating data from different DR sources in CSP | | | | |
| originalCallID | Identifier of the retained call data before any modifications made to correlate data by different DR sources in CSP | | | | |
| callState | State reached by the session with reference to the calles subscriber connection, e.g reached, alerted, answered | | | | |
| answerTime | Date and time when the communication has been answered by the called party | | | | |
| contentType | List of the media type of the message body, e.g. application/sdp, text/html | | | | |
| mediaComponents | List of media component changes during the session | | | | |

| | | | | |
|---|--|--|--|--|
| imsInformation | IMS-specific information see 3.3.3 | | | |
| nationalMultimediaServiceUsage | Defined on a national basis | | | |
| serviceID | A unique idenetifier within the operator for the service or tariff | | | |
| providerID | A unique identifier for the service provider | | | |
| cdrNumber | Identifier for record - Format of value defined by CSP | | | |
| clientIP | IP of client at time of service usage | | | |
| relayIP | IP of relay - Multimedia service provider infrastructure seen as originating or terminating the call | | | |
| vmLength | Voice mail length given as an integer in seconds | | | |
| reason | Reason description | | | |
| 3.3.2. PartyInformation parameters | | | | |
| partyRole | Role for this party (e.g. called, calling etc.) | | | |
| partyIdentity | Identifier for this party. URI is used in case of IMS service | | | |
| subscriberID | Subscriber identifier, unique identifier for subscriber | | | |

| | | | | |
|-------------------------------------|---|--|--|--|
| communicationTime | Time that this party was involved in the communication, if this was a multiparty communication. Shall be omitted if it is the same as the time of the whole service usage | | | |
| iMSI | IMSI associated with the party, if available. | | | |
| natureOfAddress | Nature of the address - may be "International number", "national number" or subscriber number | | | |
| uRI | URI of the party | | | |
| partyNumber | E.164 number associated to party | | | |
| naAssignedAddress | Address used by the subscriber's client for the connection | | | |
| forwardedTransferred Identifier | Forwarded Identifier if communication was transferred | | | |
| terminatingTransferred Identifier | Terminating identifier if communication was transferred | | | |
| nationalMultimedia PartyInformation | Defined on a national basis | | | |
| userAgent | User agent field, e.g. SIP user agent | | | |
| octetUploaded | Number of uploaded octets | | | |
| octetsDownloaded | Number of downloaded octets | | | |
| accessNetwork Information | The network-provided and user equipment (UE) provided access-type, access-class and cell information of the party from the content of the P-Access-Network-Info field | | | |

| 3.3.3. IMS (IP Multimedia Subsystem) Information | | | | |
|--|---|--|--|--|
| service | Type of IMS service used by subscriber, e.g. session, message, refer | | | |
| roleOfNode | Specification on the role of the Data retention Source in the reported communication, e.g. originating, terminating, proxy, b2bus | | | |
| serviceInfo | List of service-specific data | | | |
| 3.3.4. MediaComponents | | | | |
| time | Time when this media component has been processed | | | |
| mediaName | Media component name (from "m=" line in SDP data) | | | |
| mediaDescription | Media component description (from "attribute-line" content in SDP data) | | | |
| mediaInitiator | Media component initiator, i.e. called Party, calling Party | | | |
| accessCorrelationID | Correlation identifier for the access used for SIP usage | | | |
| nationalMultimediaMediaComponent | Defined on a national basis | | | |

| 4.1. Network Access Subscriber | | ETSI E.2.2 | Strict necessity for retention | | |
|--------------------------------|--|------------|--------------------------------|---------------|--|
| 4.1.1. NASubscriber parameters | | Yes | No | Justification | |
| validity | Time period during which the information given in this structure is or was valid | | | | |

| | | | | |
|---|--|-------------------|---------------------------------------|----------------------|
| subscriberID | A unique identifier for this particular subscriber within the CSP | | | |
| naSubscriptions | List of all known services subscribed to by this user with this CSP | | | |
| allocatedDeviceIDs | List of all known devices allocated to this user. The user may use other devices in addition (or instead of) these devices | | | |
| subscriber | Common information such as name and address is stored the GenericSubscriberInfo structure | | | |
| 4.2. Network Access Service Subscription | | ETSI E.2.3 | Strict necessity for retention | |
| 4.2.1. NAServiceSubscription parameters | | Yes | No | Justification |
| validity | Time period during which the information given in this structure is or was valid | | | |
| naServiceID | A unique identifier for the type of service, e.g. account plan name | | | |
| naProviderID | A unique identifier for the network access provider, e.g. company name or company registration number | | | |
| naAuthID | A unique identifier for this particular subscription, e.g. logon name | | | |
| options | An optional human readable text with restrictions or options to the subscription, e.g. "fixed IP address; max 50 hr/month" | | | |
| installationAddress | The installation address of the subscriber's equipment, if applicable | | | |
| fixIpAddress | If the CSP assigns a fixed IP address to the subscriber (i.e. not allocated each time the service is used), then this IP address may be populated here | | | |

| | | | | |
|--|--|-------------------|---------------------------------------|---------------|
| imsi | If the CSP assigns an IMSI to the subscriber, this may be populated here | | | |
| allocatedDeviceIDs | List of all known devices allocated to this user for this subscription. The user may use other devices in addition (or instead of) these devices | | | |
| naServiceStatus | CSP-specific description of current service status, e.g. "Active", "Ceased", etc. | | | |
| registeredICCID | Integrated Circuit Card ID of subscriber | | | |
| nationalNASubscription | Description of the subscription to a Network Access service | | | |
| paymentDetails | Details for payment (e.g. associated bank account, billing method or billing address) | | | |
| additionalIPAddresses | Additional IP addresses when CSP provides several IP addresses to one subscriber | | | |
| deliveryAddress | The delivery address for equipment, if applicable | | | |
| resellerAddress | The address of the reseller or dealer, if applicable | | | |
| otherAddresses | Used if there are addresses for the subscription which do not fit into the other categories | | | |
| mSISDNs | Mobile Station International ISDN Numbers (MSISDNs) allocated to this subscription | | | |
| 4.3. Network Access Service Usage | | ETSI E.2.4 | Strict necessity for retention | |
| 4.3.1. NAServiceUsage parameters | | Yes | No | Justification |

| | | | | |
|-------------------|--|--|--|--|
| naAccessTime | Date and time of the (attempted) network access | | | |
| naAuthID | Logon name (username) used to obtain network access | | | |
| nwAccessType | Type of network access attempted. If not undefined, this should be one of the types supported by the NAS | | | |
| naStatus | Results of the access attempt | | | |
| interval | Start time and end time of network access | | | |
| naDeviceID | Information on the device used to access the service | | | |
| naNwElementID | Network element (NAS) onto which the subscriber's device is connected to the service | | | |
| naAssignedAddress | IP address assigned by the network access service | | | |
| location | Location of the network access, if applicable | | | |
| dialUpInformation | Information specific to dial-up access | | | |
| gprsInformation | Information specific to gprs access | | | |
| octetsDownloaded | Number of octets downloaded by the subscriber during the network access session | | | |
| octetsUploaded | Number of octets uploaded by the subscriber during the network access session | | | |
| endReason | Indiction of why the network access session ended | | | |
| subscriberID | Identifier for a known user of this network access | | | |

| | | | | |
|--|--|------------|-----------|----------------------|
| ePSInformation | Information specific to Evolved Packet System | | | |
| wiFiInformation | Information specific to WiFi | | | |
| addressTranslationInformation | Details of the NAT and PAT operations carried out on the connection by the provider, if applicable | | | |
| additionalLocations | List of additional locations during the network access service usage, if applicable | | | |
| 4.3.2. DialUpInformation parameters | | Yes | No | Justification |
| diallingNumber | Telephone number used at the subscriber side for dial-up access | | | |
| dialledNumber | Telephone number used at the network element side for dial-up access | | | |
| callback | Call back number used for dial-up access | | | |
| 4.3.3. GPRSInformation parameters | | | | |
| iMSI | IMSI associated with the network access | | | |
| mSISDN | MSISDN associated with the network access | | | |
| sgsnAddress | IP address of the SGSN | | | |
| ggsnAddress | IP address of the GGSN | | | |
| pdp-address-allocated | PDP address allocated for the network access | | | |
| apn | APN of the network access | | | |

| | | | | |
|---|--|--|--|--|
| pdp-type | PDP type | | | |
| gPRSEvent | GPRS event | | | |
| 4.3.4. EPSInformation parameters | | | | |
| iMSI | IMSI associated with the network access | | | |
| iMSIUnauthenticatedFlag | This field indicates the provided served IMSI is not authenticated (emergency bearer service situation) | | | |
| mSISDN | Primary MSISDN associated with the network access | | | |
| iMEISV | IMEISV of the ME, if available | | | |
| s-GWAddress | The control plane IP address of the S-GW used | | | |
| p-GWAddress | The control plane IP address of the P-GW used | | | |
| p-GWPLMN-ID | PLMN identifier (MCC and MNC) of the P-GW | | | |
| aPNNetworkID | The logical name of the connected access point to the external packet data network (network identifier part of APN) | | | |
| pDP-PDNType | PDP/PDN type, i.e. IPv4, IPv6, IPv4v6 | | | |
| pDP-PDNAddress | IP address allocated for the PDP context/PDN connection, i.e. IPv4 address when PDP/PDN Type is IPv4 or IPv6 prefix when PDP/PDN Type is IPv6 or IPv4v6. | | | |
| pDP-PDNAddress Extension | This field holds IPv4 address of the served IMSI, if available, when PDP/PDN type is IPv4v6 | | | |

| | | | | |
|--|---|------------|-----------|----------------------|
| dynamicAddressFlag | Indicates whether served PDP/PDN address is dynamic, which is allocated during IP CAN bearer activation, initial attach (E-UTRAN or over S2x) and UE requested PDN connectivity | | | |
| dynamicAddressFlagExt | Indicates whether served IPv4 PDP/PDN address is dynamic, which is allocated during IP CAN bearer activation, initial attach (E-UTRAN or over S2x) and UE requested PDN connectivity with PDP/PDN type IPv4v6 | | | |
| rATType | This field indicates the Radio Access Technology (RAT) type currently used by the Mobile Station as defined in 3GPP TS 29.061 [33], when available | | | |
| ePSEvent | EPS event | | | |
| 4.3.5. WiFiInformation parameters | | Yes | No | Justification |
| bSSID | The Basic Service Set Identification for the connection. This is also the MAC address of the access point (the present document assumes that records are for infrastructure mode, not ad-hoc mode). The MAC address of the user is given in the naDeviceID in the structure | | | |
| sSID | The human-readable Service Set Identifier | | | |
| username | Username as seen by the CSP. For WiFiTM it is not necessarily the case that this will have been verified in any way | | | |

| | | | | |
|-------------------------------------|---|-------------------|---------------------------------------|---------------|
| locationOfAccessPoint | Location of the Access Point. It should be populated as lat/long, grid reference or postal address | | | |
| authenticationType | How the user authenticated themselves | | | |
| additionalAuthenticationInformation | Additional information known about the user on the basis of the authentication process | | | |
| accessPointIPAddress | IP address of the Access Point | | | |
| accessPointAdditionalDescriptions | Informal description of location, category or type of access point, or a name of the network to which the access point belongs | | | |
| accessPointAdditionalProviders | For WiFi, there may be other parties involved in hosting or owning the Access Points, e.g. access point provider or partner providers | | | |
| 4.4. Network Access Device | | ETSI E.2.5 | Strict necessity for retention | |
| 4.4.1. NADevice parameters | | Yes | No | Justification |
| naDeviceID | Identifier of this device, e.g. the MAC address | | | |
| description | Human readable description of the device | | | |
| location | Installation address of the device, if known | | | |
| macAddress | MAC or ethernet address as presented to the network | | | |
| dslID | DSL identifier of the DSL connection to the CSP | | | |

| | | | | | |
|--|---|-------------------|----|---------------------------------------|--|
| subscriberID | Identifier for a known user of this device or equipment | | | | |
| 4.5. Network Access Server | | ETSI E.2.6 | | Strict necessity for retention | |
| 4.5.1. NANwElement parameters | | Yes | No | Justification | |
| validity | Time period during which the information given in this structure is or was valid | | | | |
| naNwElementID | A unique identifier of this network access server | | | | |
| naProviderID | A unique identifier of the CSP, e.g. company name or company registration number | | | | |
| supportedAccessTypes | The list of access types supported by this network access server | | | | |
| location | Installation address of this network access server, if known and meaningful | | | | |
| 4.6. Network Access Billing Details | | ETSI E.2.7 | | Strict necessity for retention | |
| 4.6.1. NABillingDetails parameters | | Yes | No | Justification | |
| subscriberID | Unique identifier for this subscriber | | | | |
| serviceID | Identifier for the service e.g. account plan name | | | | |
| billingAddress | The billing address for this subscription | | | | |
| billingIdentifier | A unique identifier for billing purposes. The format of this field is for CSPs to determine | | | | |
| billingRecords | A sequence of billing records, one for each payment by the subscriber on this subscription | | | | |

| | | | | |
|--|---|-----------------|---------------------------------------|---------------|
| naTransactionID | Unique reference for this transaction / billing record, to be defined on a national basis | | | |
| naTransactionStatus | Status of the transaction (i.e. "declined", "succeeded", etc.), to be defined on a national basis | | | |
| 5.1. Further Information on data categories | | ETSI H.2 | Strict necessity for retention | |
| 5.1.1. Subscriber Data Requests | | Yes | No | Justification |
| Name | | | | |
| Address | | | | |
| Postcode (with street number | | | | |
| National ID no. | | | | |
| Birth date | | | | |
| Service identifier (e.g. phone/network number, email address, IP-addresses, device-ID, log on names, etc.) | | | | |
| Location | | | | |
| 5.1.2. Generic Subscriber Data Records | | | | |
| Name | | | | |
| Addresses | | | | |
| Birth dates | | | | |
| Service identifier | | | | |
| Authentication | | | | |
| Applicable services | | | | |
| Applicable supplementary services | | | | |
| Service association | | | | |
| Timestamp | | | | |

| | | | | |
|---|----------|--------------------------------|----|---------------|
| 5.1.3. Service Specific Subscriber Reply Data | | | | |
| Service Identifier | | | | |
| Applicable services | | | | |
| Applicable supplementary services | | | | |
| Service association | | | | |
| Timestamp | | | | |
| 5.2. Further Information on Usage Data | ETSI H.3 | Strict necessity for retention | | |
| 5.2.1. Usage Requests | | Yes | No | Justification |
| Network addresses (for example IMSI, email, IP-address) | | | | |
| User addresses (for example (MS-) ISDN, email, URI) | | | | |
| Hardware address (device-ID for example IMEI , MAC) | | | | |
| Location (for example CellID) | | | | |
| 5.2.2. Usage Data Categories | | | | |
| Network addresses | | | | |
| User addresses | | | | |
| Communication entity | | | | |
| Tele-/bearer service used | | | | |
| Supplementary service | | | | |
| Timestamp | | | | |
| 5.2.3. Usage: Traffic Data (Reply) | | | | |
| Network addresses | | | | |
| User addresses | | | | |

| | | | |
|---|-----------------|---------------------------------------|---------------|
| Communication entity | | | |
| Tele-/bearer service used | | | |
| Supplementary service | | | |
| Timestamp | | | |
| 5.2.4. Usage: Traffic Data Related Information (Reply) | | | |
| Hardware addresses | | | |
| Location | | | |
| Timestamp | | | |
| 5.2.5. Usage: Communication Independent User Activities (Reply) | | | |
| User associated log on/off | | | |
| (De)activation of supplementary services | | | |
| Pre-paid updates | | | |
| Timestamp | | | |
| 5.2.6. Usage: Network Activity Data (Reply) | | | |
| Equipment/Network associated log on/off | | | |
| Roaming information | | | |
| Timestamp | | | |
| 5.3. Further Information on Network Element Data | ETSI H.4 | Strict necessity for retention | |
| 5.3.1. Network Element Requests | Yes | No | Justification |
| Location | | | |
| Network element | | | |
| 5.3.2. Network Configuration Data Reply Data | | | |

| | | | |
|--|--|--|--|
| Location association with network elements | | | |
| Network element association with location | | | |
| Timestamp | | | |

| 6. Online Sources of Investigation | | COE - 4.3 | | Strict necessity for retention | | |
|------------------------------------|---|-----------|----|--------------------------------|--|--|
| Source | Example of available evidence | Yes | No | Justification | | |
| 6.1. Plain Web Site | Source Code | | | | | |
| | Code Comments | | | | | |
| | Hidden Fields | | | | | |
| | External site references | | | | | |
| | Online Ads | | | | | |
| | Domain Authentication Codes | | | | | |
| | WebSense /AdSense / SearchSense Codes | | | | | |
| | Medadata (ex. Creation / last modification) | | | | | |
| | Previous versions at archive.org | | | | | |
| 6.2. Social Networking Sites | Source Code | | | | | |
| | Internal IDs | | | | | |
| | Chat Subsystem | | | | | |
| | WebSense /AdSense / SearchSense Codes | | | | | |
| | Medadata (ex. Creation / last modification) | | | | | |
| 6.3. Blogging Sites | Internal IDs (blogID, userID, threadID...) | | | | | |
| | Domain Authentication Codes | | | | | |
| | Mashup: Twitter | | | | | |
| | Mashup: Facebook | | | | | |
| | Mashup: Twitter | | | | | |

| | | | | |
|-------------------------------|---|--|--|--|
| | Mashup: Picasa/ Flickr | | | |
| | Mashup: URL-Shortners | | | |
| | WebSense /AdSense / SearchSense Codes | | | |
| | Medadata (ex. Creation / last modification) | | | |
| 6.4. WebMail Sites | Chat Subsystem | | | |
| | Voice Subsystem | | | |
| | Internal IDs | | | |
| 6.5. URL-Shortners | Public Statistic Services | | | |
| | Creation date | | | |
| 6.6. Ad-Networks | Internal IDs | | | |
| | Money Trail | | | |
| 6.7. Content Storage Networks | Internal IDs (fileID, bucketID, userID,...) | | | |
| | Hashed content | | | |
| | Data Versioning Controls | | | |
| | Money Trail | | | |
| 6.8. P2P Networks | DNS records | | | |
| | Assigned Ips | | | |
| | Used Ports | | | |
| | Chunk/Shard Hashes | | | |

| | | |
|--|---------------------|---------------------------------------|
| 7. Further Digital Evidence Sources | COE 6.5; 3.5 | Strict necessity for retention |
|--|---------------------|---------------------------------------|

| 7.1. Document forensic analysis | | Yes | No | Justification |
|---|---------------|-----|----|---------------|
| Metadata | | | | |
| Stenography | | | | |
| 7.2. Live data forensics and Log file forensic analysis | | | | |
| Volatile Data* (current configuration of the pc) and RAM data | | | | |
| Log file = "Information about what the computer is doing" (e.g. records of the computer's events, crashes etc.) | | | | |
| Registry database (e.g. Windows Registry) = records configurations of the computer and gathers information about external devices connected (e.g. USB sticks) and Wifi networks | | | | |
| 7.3. Network forensic analysis | | | | |
| IP addresses | | | | |
| DNS | | | | |
| Email source texts | Delivered to | | | |
| | Received by | | | |
| | Received from | | | |
| | Return path | | | |
| | Message-ID | | | |
| | To | | | |
| | Subject | | | |
| | Date | | | |
| | Importance | | | |

Subscriber data is NOT to be considered for Data Matrix

| | | | |
|--|------------|-----------|----------------------|
| Internet searches | | | |
| Connected services on seized devices (e.g. automatic connection into a social network account, a VoIP account, an email account, and have password | | | |
| 7.4. Volatile Data fragments | Yes | No | Justification |
| Running processes | | | |
| Running services | | | |
| System Information | | | |
| Logged on users | | | |
| Listening and open ports | | | |
| ARP (address resolution protocol) cache | | | |
| DNS cache | | | |
| Auto-start information | | | |
| Registry information not yet written on the hard disk | | | |
| Unsaved documents | | | |
| Binaries of process, services including those of Malware only residing in memory | | | |
| Contents of RAM | | | |
| Routing-Tables, Kernel statistics | | | |
| Open files | | | |
| Network shares | | | |
| Open ports | | | |
| Mounted encrypted filesystems | | | |
| Temporarily connected filesystems | | | |

| | | | |
|---|--|--|--|
| Remote logging and monitoring data | | | |
| Physical configuration, network topology | | | |
| Storage media | | | |
| System clock (to determine the offset to radio clock) | | | |
| Environment variables | | | |
| Clipboard | | | |
| Contents of disks | | | |

| | |
|----------------|---|
| ANNEXES | <ol style="list-style-type: none"> 1. Swedish Inquiry on data retention - November 2017 2. Directive 2006/24/EC, art.5 categories |
|----------------|---|

| | |
|---|--|
| ANNEX 1. Swedish Inquiry on data retention - November 2017 | |
| 2.1. Data considered strictly necessary and therefore retained | |
| 2.1.1. Telephone services and messaging | |
| | Calling and called numbers or equivalent address (1) |
| | For telephony: callers and called subscriber- and equipment identity (2) |

| | |
|--|--|
| Only communications connected via a mobile access point | Data on subscriber and registered user connected to (1) and (2) |
| | Date and time when the communication was initiated and was terminated or a message was sent and received |
| | For telephony: data on localisation at the beginning and end of the communication |
| | Date, time and localisation of first activation of pre-paid, anonymous services |
| | Missed calls are to be included in the retention |
| 2.1.2. Internet access | |
| Subscribers ip-addresses and other data necessary to identify a subscriber and registered users | |
| Data on subscribers and registered users | |
| Date and time regarding logging on and off the service that provides internet access | |
| Data that identify the equipment that finally secluded the communication from the service provider to the subscriber | |
| 2.2. Data considered not to be strictly necessary therefore proposed not to be retained | |
| 2.2.1. Telephone services and messaging (communications <u>not</u> connected via mobile access point) | |
| a. Fixed telephony (not IP-telephony) | |
| Calling number | |
| Called number and number to which the call is directed | |
| Data on calling and called subscribers and, where applicable, registered user | |
| Date and time at the beginning and end of the communication | |
| Data on used service or services | |
| b. Fixed IP-telephony | |
| Calling number | |
| Called number and number to which the call is directed | |
| Data on calling and called subscribers and, where applicable, registered user | |

| |
|--|
| Date and time at the beginning and end of the communication |
| Data on used service or services |
| Caller and called ip-addresses |
| Date and time for log on and log off of the service or services used |
| Data that identify the equipment that finally secluded the communication from the service provider to the subscriber |
| Data that identify the equipment from which the communication is secluded by the CSP (retention obligation) to the one who finally (no retention obligation) secluded the communication to the individual subscriber |
| c. Messaging |
| Senders and recipients number, ip-address or other address for a message |
| Data on sending and receiving subscriber and, where applicable, registered user |
| Date and time for log on and log off of the service or services used |
| Date and time for sending and receiving message |
| Data on used service or services |
| 2.2.2. Telephone services and messaging (communications connected via mobile access point) |
| a. Mobile telephony (not IP-telephony) |
| Number to which the call has been directed from the calling number |
| Data on used service or services |
| b. Mobile IP-telephony |
| Number to which the call has been directed from the calling number |
| Data on used service or services |
| Caller and called ip-addresses |
| Date and time for log on and log off of the service or services used |
| Data that identify the equipment that finally secluded the communication from the service provider to the subscriber |

| | |
|--|--|
| Data that identify the equipment from which the communication is secluded by the CSP (retention obligation) to the one who finally (no retention obligation) secludes the communication to the individual subscriber | |
| c. Mobile messaging | |
| Date and time for log on and log off of the service or services used | |
| Data on used service or services | |
| 2.2.3. Internet access | |
| Type of capacity for transmission | |
| ANNEX 2. Directive 2006/24/EC, art.5 categories | |
| 3.1. Data necessary to trace and identify the source | |
| Data concerning fixed network telephony and mobile telephony | Calling telephone number |
| | Name and address of the subscriber or registered user |
| Data concerning Internet access, Internet e-mail and Internet telephony | User ID(s) allocated |
| | User ID and telephone number allocated to any communication entering the public telephone network |
| | The name and address of the subscriber or registered user to whom an Internet Protocol (IP) address, user ID or telephone number was allocated at the time of the communication |
| 3.2. Data necessary to trace and identify the destination | |
| Data concerning fixed network telephony and mobile telephony | The number(s) dialled (the telephone number(s) called), and, in cases involving supplementary services such as call forwarding or call transfer, the number or numbers to which the call is routed |
| | The name(s) and address(es) of the subscriber(s) or registered user(s) |
| Data concerning Internet e-mail and Internet telephony | The user ID or telephone number of the intended recipient(s) of an Internet telephony call |
| | The name(s) and address(es) of the subscriber(s) or registered user(s) and user ID of the intended recipient of the communication |

| | |
|--|---|
| 3.3. Data necessary to identify date, time and duration | |
| Data concerning fixed network telephony and mobile telephony the date and time of the start and end of the communication | |
| Data concerning Internet access, Internet e-mail and Internet telephony | The date and time of the log-in and log-off of the Internet access service, based on a certain time zone, together with the IP address, whether dynamic or static, allocated by the Internet access service provider to a communication, and the user ID of the subscriber or registered user |
| | The date and time of the log-in and log-off of the Internet e-mail service or Internet telephony service, based on a certain time zone |
| 3.4. Data necessary to identify the type of communication | |
| Concerning fixed network telephony and mobile telephony: the telephone service used | |
| Concerning Internet e-mail and Internet telephony: the Internet service used | |
| 3.5. Data necessary to identify users' communication equipment or what purports to be their equipment | |
| Data concerning fixed network telephony, the calling and called telephone numbers | |
| Data concerning mobile telephony | The calling and called telephone numbers |
| | The International Mobile Subscriber Identity (IMSI) of the calling party |
| | The International Mobile Equipment Identity (IMEI) of the calling party |
| | The IMSI of the called party |

| | |
|--|--|
| | The IMEI of the called party |
| | In the case of pre-paid anonymous services, the date and time of the initial activation of the service and the location label (Cell ID) from which the service was activated |
| Concerning Internet access, Internet e-mail and Internet telephony: | The calling telephone number for dial-up access |
| | The digital subscriber line (DSL) or other end point of the originator of the communication |
| 3.6. Data necessary to identify the location of mobile communication equipment | |
| The location label (Cell ID) at the start of the communication | |
| Data identifying the geographic location of cells by reference to their location labels (Cell ID) during the period for which communications data are retained | |
| IMPORTANT: "No data revealing the content of the communication may be retained pursuant to this Directive" | |

ETSI-Standards

DATA CATEGORIES

- | |
|--|
| <p>1. Subscriber data</p> <p>1.a. Organization Info parametres</p> <p>1.b. Individual Info parameters</p> <p>1.c. Payment details</p> <p>2. Usage data</p> <p>2.a Usage data (call records)</p> <p>2.b Telephony service Usage</p> <p>3. Equipment data</p> <p>4. Network element data</p> <p>4.a. Network element data</p> <p>4.b. GSM and UMTS Location parameters</p> <p>5. Billing data</p> |
|--|

| 1.a. Organization Info parametres | | Strict necessity for retention | | |
|-----------------------------------|--|--------------------------------|----|-------|
| Field name | Value | Yes | No | Maybe |
| name | Name of the organization | | | |
| contactDetails | Address and contact details | | | |
| nationalRegistrationID | Provides a unique reference for this organization (e.g. tax registration number) | | | |
| registeredAddress | The address to which the organization or business is registered, if known/applicable. | | | |
| tradingAddress | The operating address of the organization or business, if known/applicable. | | | |
| otherAddresses | Used if there are addresses for the organization which do not fit into the other categories. | | | |
| groupID | Identity of group in organization for that generic subscriber. | | | |
| groupAdministrator | Administrator of the group | | | |
| companyType | Type of the company | | | |
| vatEnabled | Value Added Tax enabled | | | |
| vatNumber | VAT number of organization for that generic subscriber | | | |
| createIP | External IP/Port used to create account if available | | | |
| createTime | Creation time for the subscriber | | | |
| modifiedDate | Modification time for the subscriber | | | |

| 1.b. Individual Info parameters | | Strict necessity for retention | | |
|---------------------------------|---|--------------------------------|----|-------|
| Field name | Value | Yes | No | Maybe |
| name | Name of the individual | | | |
| contactAddress | Address and contact details for individual (email address, contact address, contact number, additional email addresses) | | | |
| dateofBirth | Date of birth | | | |
| gender | Male / Female | | | |
| identificationnumber | Provides a nationally-unique reference number | | | |
| authenticationInfo | Record how the individual authenticated themselves with with the service provider | | | |
| profession | Profession of the individual | | | |
| otherAddresses | Used if there are addresses for the individual which do not fit into the other categories | | | |
| createTime | Creation time for the subscriber | | | |

| 1.c. Payment details | | Strict necessity for retention | | |
|----------------------|--|--------------------------------|----|-------|
| Field name | Value | Yes | No | Maybe |
| billingMethod | Method of billing (e.g. debit, transfer, prepaid etc.) | | | |
| bankAccount | Sequence of specific data identifying the subscriber account within his bank | | | |
| billingAddress | Contact details of the billing address | | | |

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DATA CATEGORIES

- 1. Subscriber data**
- 1.a. Organization Info parametres
- 1.b. Individual Info parameters
- 1.c. Payment details
- 2. Usage data**
- 2.a Usage data (call records)
- 2.b Telephony service Usage
- 3. Equipment data**
- 4. Network element data**
- 4.a. Network element data
- 4.b. GSM and UMTS Location parameters
- 5. Billing data**

| 2.a Usage data (call records) | | Strict necessity for retention | | |
|--------------------------------|---|--------------------------------|----|-------|
| Field name | Value | Yes | No | Maybe |
| partyInformation | List of partyInformation structures for the people involved in the communication | | | |
| communicationTime | Total time for this service usage | | | |
| reasonCause | Cause code for the end of call | | | |
| communicationType | Type of bearer service used in the session | | | |
| bearerService | The brarer service for the communication | | | |
| qualityOfService | The quality of service parameter for the communication | | | |
| ringDuration | Ring duration, given in seconds for VoIP | | | |
| callID | Identifier of the retained call data, e.g SIP callID, for correlating data from different DR sources in CSP | | | |
| originalCallID | Identifier of the retained call data before any modifications made to correlate data by different DR sources in CSP | | | |
| callState | State reached by the session with reference to the calles subscriber connection, e.g reached, alerted, answered | | | |
| answerTime | Date and time when the communication has been answered by the called party | | | |
| contentType | List of the media type of the message body, e.g. application/sdp, text/html | | | |
| mediaComponents | List of media component changes during the session | | | |
| imsInformation | IMS-specific information | | | |
| nationalMultimediaServiceUsage | Defined on a national basis | | | |
| serviceID | A unique idenetifier wuthin the operator for the service or tariff | | | |
| providerID | A unique identifier for the service provider. | | | |
| cdrNumber | Identifier for record - Format of value defined by CSP | | | |
| clientIP | IP of client at time of service usage | | | |
| relayIP | IP of relay | | | |

| 2.b Telephony service Usage | | Strict necessty for retention | | |
|-----------------------------|---|-------------------------------|----|-------|
| Field name | Value | Yes | No | Maybe |
| partyNumber | Telephone number of interest in the call | | | |
| partyRole | Role of the telephone number specified | | | |
| timeSpan | A range of times for the startof the call | | | |

| 3. Equipment (Telephony Device) data | | Strict necessity for retention | | |
|--------------------------------------|--|--------------------------------|----|-------|
| Field name | Value | Yes | No | Maybe |
| deviceIDType | Indicates the type of identifier used in TelephonyDeviceID | | | |
| telephonyDeviceID | Unique identifier for the telephony device. | | | |
| subscriberID | Identity of a known user of this equipment | | | |

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DATA CATEGORIES

- 1. Subscriber data**
- 1.a. Organization Info parametres
- 1.b. Individual Info parameters
- 1.c. Payment details
- 2. Usage data**
- 2.a Usage data (call records)
- 2.b Telephony service Usage
- 3. Equipment data**
- 4. Network element data**
- 4.a. Network element data
- 4.b. GSM and UMTS Location parameters
- 5. Billing data**

| | | | | |
|----------|--|--|--|--|
| vmLength | Voice mail length given as an integer in seconds | | | |
| reason | Reason description | | | |

| 4.a. Network element data (TelephonyNetworkElement) | | Strict necessity for retention | | |
|---|---|--------------------------------|----|-------|
| Field Name | Value | Yes | No | Maybe |
| telephonyNetworkID | Unique identifier for the network element (e.g. MSC ID) | | | |
| cellInformation | Location information for this network element (see location parameters 4.b.) | | | |
| validity | Time period during which the information given in this structure is or was valid | | | |
| nationalTelephonyNetworkElement | Defined on a national basis | | | |
| transmitterDetails | Characteristics of the transmitter (e.g. beam-width, radiated power, antenna height, frequency, technology) | | | |

| 4.c. Location parametres (general) | | Strict necessity for retention | | |
|------------------------------------|---|--------------------------------|----|-------|
| Field name | Value | Yes | No | Maybe |
| e164-Number | E.164 number in ISUP format (see ETSI EN 300 356 [7]) | | | |
| globalCellID | Global cell ID in ETSI TS 100 974 [8] | | | |
| rAI | Routing Area Identifier in current SGSN, in 3GPP TS 24.008, withour Routing Area Identification IEI | | | |
| gsmLocation | GSM location | | | |
| umtsLocation | UMTS location | | | |
| sAI | Service Area Identifier, 3GPP TS 25.413 | | | |
| oldRAI | Routing area identifier in old SGSN, in 3GPP TS 24.008, without Routing Area Identification IEI | | | |
| postalLocation | Postal address of the location | | | |
| extendedLocation | Extended location information | | | |
| userLocationInformati | This field contain the User Location Information of the MS as defined in 3GPP TS 29.274 for EPC case, if available. (Non-EPC case user location information is covered by the above parameters in this table i.e. globalCellID, rAI, sAI) | | | |

| 4.b. GSM and UMTS Location parameters | | Strict necessity for retention | | |
|---------------------------------------|--|--------------------------------|----|-------|
| Field name | Value | Yes | No | Maybe |
| geoCoordinates | Geographical latitude-longitude location | | | |
| utmCoordinates | Universal Transverse Mercator location | | | |
| utmRefCoordinates | Universal Transverse Mercator reference coordinates | | | |
| wgs84Coordinates | WGS84 coordinates | | | |
| geoCoordinatesDec | Geographical decimal latitude-longitude location | | | |
| point | Geographical latitude-longitude location | | | |
| pointWithUncertainty | longitude location with additional uncertainty | | | |
| polygon | Sequence of latitude-longitude locations that define a polygon | | | |

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DATA CATEGORIES

- 1. Subscriber data**
- 1.a. Organization Info parameters
- 1.b. Individual Info parameters
- 1.c. Payment details
- 2. Usage data**
- 2.a. Usage data (call records)
- 2.b. Telephony service Usage
- 3. Equipment data**
- 4. Network element data**
- 4.a. Network element data
- 4.b. GSM and UMTS Location parameters
- 5. Billing data**

| | | | | |
|-------------------|--|--|--|--|
| tAI | The "Tracking Area Identity" (TAI) is coded in accordance with 3GPP TS 29.118 [34] without the TAI IEI. The tAI parameter is applicable only to the CS traffic cases (e.g. SMS over SGs) where the available location information is the one received from the Mobility Management Entity (MME) according to [35] | | | |
| eCGI | The "E-UTRAN Cell Global Identity" (E-CGI) is coded in accordance with 3GPP TS 29.118 [34] without the E-CGI IEI. The eCGI parameter is applicable only to the CS traffic cases (e.g. SMS over SGs) where the available location information is the one received from the Mobility Management Entity (MME) according to [35] | | | |
| maritimeTransport | Provides information about the mobile cells embarked on ships using satellite transponder backhaul | | | |