



**CONSORTIUM**

*Connecting internet apps to emergency services*

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# User Information Conveyance in PEMEA

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PEMEA-CONS-Spec-UserInfo-001

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## Contributors

Name	Company
James Winterbottom Miguel Ortega	Deveryware
Urban Sedlar	University of Ljubljana

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## 1. Introduction

PEMEA was originally designed to allow mobile emergency applications to roam across Europe and was viewed as a stepping-stone to NG112, which based off the North American NENA i3 approach to NG9-1-1, using SIP to establish media sessions. To support this stepping-stone approach, PEMEA reuses the location data structure (PIDF-LO) [R.2] and the AdditionalData structures [R.3] for caller and provider information.

If one were developing these structures from scratch then location would be provided in GeoJSON and similar JSON structures would be defined for the provider and caller information. However, to meet the stepping-stone requirements the original XML data structures were used and the core PEMEA messages are also defined in XML. Having the core PEMEA messages defined by an XSD has the advantage that they can be readily validated making conformance and compliance easier to assure.

All of that having been said, the AdditionalData specification for *SubscriberInfo* is inadequate for general usage and largely incapable of supporting the requirements necessary to meet European circumstances. To address these inadequacies, partners in the NEXES project created a JSON schema to better define user information, making it more useful to PSAPs and fully support necessary information about the user.

This document describes the NEXES *UserInfo* data structure and how to use it.

## 2. Terms and Definitions

The following terms and definitions are used in this document:

App	Application
AP	Application Provider
ASP	Aggregating Service Provider
EENA	European Emergency Number Association
EMTEL	Emergency Communications
ETSI	European Telecommunications Standards Institute
GDPR	General Data Protection Regulation
GHALE	Geo-Hub Advanced Location Entity
JSON	Java Script Object Notation
NEXES	NEXt generation Emergency Services
PEMEA	Pan-European Mobile Emergency Application
PIM	PSAP Interface Module
PRA	PEMEA Registration Authority
PSAP	Public Safety Answering Point
PSP	PSAP Service Provider
REST	REpresentational State Transfer
SIP	Session Initiated Protocol
TS	Technical Specification
XML	eXtensible Markup Language
XSD	XML Schema Definition

## 3. References

### 3.1 Normative References

- [R.1] [“Emergency Communications \(EMTEL\); Pan-European Mobile Emergency Application”](#), ETSI TS 103 478 V1.1.1 (2018-03).
- [R.2] ["A Presence-based GEOPRIV Location Object Format"](#), RFC 4119, December 2005.
- [R.3] [“Additional Data Related to an Emergency Call”](#), RFC 7852, July 2016.
- [R.4] IANA language subtag registry. <http://www.iana.org/assignments/language-subtag-registry/language-subtag-registry>

### 3.2 Informative References

None

## 4. UserInfo Structure

The basic structure of the UserInfo element is shown in Figure 1. The overall container is the user, and the elements shown in **yellow** are mandatory to provide.

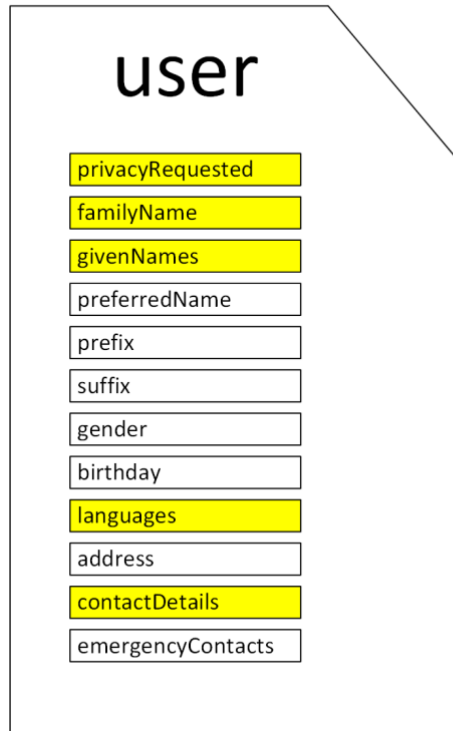


Figure 1: UserInfo structure

### 4.1 privacyRequested

**Presence:** *Mandatory*

This is a boolean indicating whether the user wants the information displayed to the PSAP call taker or not. The indication may be ignored if the receiving jurisdiction requires that the information be provided.

### 4.2 familyName

**Presence:** *Mandatory*

Is the family name or surname of the caller.

### 4.3 givenNames

**Presence:** *Mandatory*

The given names of the caller, for example "Anthony James".

## 4.4 preferredName

**Presence:** *Optional*

This is the name that the caller goes by. For example, if the caller's given names are "Anthony James", the user may go by his/her second name which would be "James".

## 4.5 prefix

**Presence:** *Optional*

These are the common salutations, for example:

- Mr
- Mrs
- Ms
- Miss
- Dr

## 4.6 Suffix

**Presence:** *Optional*

These are the common name suffixes, such as:

- Jr
- Snr
- II

## 4.7 gender

**Presence:** *Optional*

In order to accommodate current gender variance this value is a string allowing the user to specify any gender to which they feel aligned.

## 4.8 birthday

**Presence:** *Optional*

This field contains the year, month and day that the user was born specified as YYYY-MM-DD.

## 4.9 Languages

**Presence:** *Mandatory*

The languages element allows the user to specify how they best communicate. This is important, because the PSAP may have caller-station preferences based on languages or special needs, or may have other advanced capabilities such as automatically bridging in interpreters.

Languages are broken up into three categories:

- spoken
- written
- sign

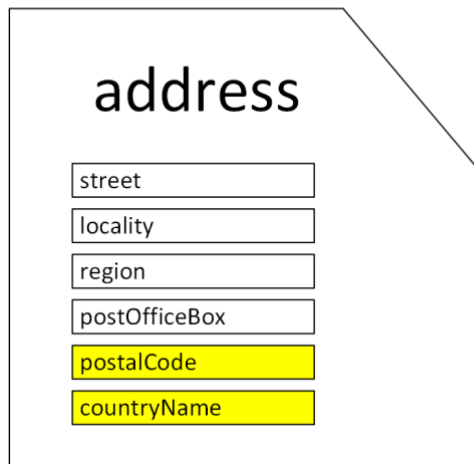
# UserInfo for PEMEA

Each of these categories contains an array of strings representing the languages that the user can use to communicate in the category. This list of languages in the category is in preferred order, that is the first element in the array is the user's most preferred option for communication.

## 4.10 address

**Presence:** *Optional*

The address is a compound element and is designed to provide the street or civic address of the user. The structure is shown in Figure 2, while inclusion of the structure is optional, if it is provided then the fields in **yellow** must be supplied.



**Figure 2: address element structure**

### 4.10.1 street

**Presence:** *Optional*

The street element is a free form string that is designed to take the:

- suite number
- floor
- street number
- street name
- any prefix or suffix

### 4.10.2 locality

**Presence:** *Optional*

This is the municipality, city or suburb

### 4.10.3 region

**Presence:** *Optional*

This is the state or province.



## 4.10.4 postOfficeBox

**Presence:** *Optional*

This is the post office box belonging to the caller. It is optional and not terribly useful.

## 4.10.5 postalCode

**Presence:** *Mandatory*

This is one of the two mandatory fields in the address element.

## 4.10.6 countryName

**Presence:** *Mandatory*

This is the second of two mandatory fields in the address element and is the country of origin of the caller.

## 4.11 contactDetails

**Presence:** *Mandatory*

The contact details is an array of media and value attributes.

The media specifies how to contact the user for example:

- work email; home email
- home phone; work phone
- private mobile; work mobile
- skype; whatsapp; messenger

The value, or id, specifies the value associated with the specified media. Something like:

- [james.winterbottom@deveryware.com](mailto:james.winterbottom@deveryware.com)
- Hahaha.. not giving you my home phone
- +61-448-266-004
- Winterb

And example of this is provided in Clause 4.13.

## 4.12 emergencyContacts

**Presence:** *Optional*

Emergency contact details provide information to the call-taker or first responders about who to contact in the case where the caller is unresponsive or unable to make decisions for themselves.

This is a compound structure. It takes the contact details described previously, but binds them to the name of the emergency contact the relationship of the contact to the caller.

- fullName
- relationship
- contactDetails, this has the same structure as the contactDetails in Clause 4.11.

The emergency contact element is an array of these structures so that a number of options are available.

## 4.13 user example

Here is an example user document.

```
{
  "user": {
    "privacyRequested": true,
    "familyName": "Clarke",
    "givenNames": "Arthur Charles",
    "preferredName": "Arty",
    "prefix": "Sir",
    "suffix": "Jr",
    "gender": "male",
    "birthdate": "1917-12-16",
    "languages": {
      "spoken": ["es", "en"],
      "written": ["es"],
      "sign": ["en"]
    },
  },
  "address": {
    "street": "fake street, 123, 1°, A",
    "locality": "Colombo",
    "region": "Colombo",
    "postaOfficeBox": "10230213",
    "postalCode": "00002",
    "countryName": "Sri Lanka"
  },
  "contactDetails": [{
    "media": "private mobile",
    "id": "+94 78 618 3579"
  }, {
    "media": "work email",
    "id": "SirArthurCClarke@genius.com"
  }],
  "emergencyContacts": [{
    "fullname": "Marilyn Mayfield",
    "relationship": "spouse",
    "contactDetails": [{
      "media": "private mobile",
      "id": "+94 78 619 2671"
    }, {
      "media": "home email",
      "id": "marimay@genius.com"
    }
  ]
}, {
  "fullname": "Stephen Baxter",
  "relationship": "co-worker",
  "contactDetails": [{
    "media": "work mobile",
    "id": "+94 78 413 9842"
  }, {
    "media": "work email",
    "id": "stephyter@genius.com"
  }
}
```

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```
    }  
  }  
}
```

## 5. User Information conveyance

### 5.1 Description

The AdditionalData specification [R.3] not only defines the data structures to be used, but also describes how they may be conveyed. They may be conveyed over SIP using the *Call-Info* header field, by value in the *provided-by* element of the PIDF-LO, or by reference as a URI in the *provided-by* element of the PIDF-LO.

The PIDF-LO is an XML structure and including a JSON object into it is messy. On top of that, user information is sensitive and so conveyance, storage and usage of it needs to be done in accordance with GDPR. Consequently, to simplify everything and keeping in line with GDPR, user information is only sent by reference. This reference is included in the *provided-by* element of the PIDF-LO and is denoted as *UserInfo*.

### 5.2 Example

```
<geopriv xmlns="urn:ietf:params:xml:ns:pidf:geopriv10"
  xmlns:ecd="urn:ietf:params:xml:ns:EmergencyCallData"
  <location-info/>
  <usage-rules/>
  <provided-by>
    <ecd:EmergencyCallDataReference
      purpose="EmergencyCallData.UserInfo"
      ref="https://coolAP.pemea.org:7865/duheuh38x894nxe3iu3iu"/>
  </provided-by>
</geopriv>
```

It should be noted that this is not strictly speaking legal XML at this point since *UserInfo* is not a registered Emergency Call Data Type as stipulated in Section 11.1.9 of [R.3]. This registry is defined as a "Specification Required" registry, which usually means that an RFC is required.

## 6. User Information JSON schema

```
{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "definitions": {
    "contactDetails": {
      "description": "List of user contact media information.",
      "type": "array",
      "minItems": 1,
      "items": {
        "type": "object",
        "properties": {
          "media": {
            "description": "This is the type of identifier being used, in terms of what communications application the identifier is applicable to.",
            "type": "string"
          },
          "id": {
            "description": "This is the actual value of the caller id.",
            "type": "string"
          }
        }
      },
      "required": [
        "media",
        "id"
      ]
    },
    "languages": {
      "description": "The list of acceptable language abbreviations. Abbreviations must match IANA language subtag registry. http://www.iana.org/assignments/language-subtag-registry/language-subtag-registry",
      "type": "array",
      "minItems": 1,
      "uniqueItems": true,
      "items": {"type": "string"}
    }
  },
  "type": "object",
  "properties": {
    "user": {
      "type": "object",
      "properties": {
        "privacyRequested": {
          "description": "if set to 'true' adherence is determined by the destination jurisdiction not the originating jurisdiction.",
          "type": "boolean"
        },
        "familyName": { "type": "string" },
        "givenNames": {
          "description": "Given names of the caller.",
          "type": "string"
        },
        "preferredName": {
          "description": "Name by which the caller prefer to be called.",
          "type": "string"
        },
        "prefix": {
          "description": "Prefix salutation of the caller.",
          "type": "string"
        },
        "suffix": {
```

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```
    "description": "Any name suffixes that the caller may have.",
    "type": "string"
  },
  "gender": {
    "description": "Gender of the caller.",
    "type": "string"
  },
  "birthdate": {
    "description": "Birthday of the caller allowing age of caller to be
determined. it must be provided in the form YYYY-MM-DD.",
    "type": "string",
    "pattern": "^[0-9]{4}(-[0-9]{2}){2}$"
  },
  "languages": {
    "type": "object",
    "anyOf": [
      {"required": ["spoken"]},
      {"required": ["written"]},
      {"required": ["sign"]}
    ],
    "properties": {
      "spoken": {"$ref": "#/definitions/languages"},
      "written": {"$ref": "#/definitions/languages"},
      "sign": {"$ref": "#/definitions/languages"}
    }
  },
  "address": {
    "type": "object",
    "properties": {
      "street": {
        "description": "Street address, street name, number, suite and floor if
applicable.",
        "type": "string"
      },
      "locality": {
        "description": "Municipality, city or suburb.",
        "type": "string"
      },
      "region": {
        "description": "State or Province.",
        "type": "string"
      },
      "postaOfficeBox": {
        "description": "The Postal office box of the caller. Use is not
recomended.",
        "type": "string"
      },
      "postalCode": {
        "description": "The post code of the caller.",
        "type": "string"
      },
      "countryName": {
        "description": "Country name.",
        "type": "string"
      }
    }
  },
  "required": [
    "postalCode",
    "countryName"
  ],
  "contactDetails": {
    "$ref": "#/definitions/contactDetails"
  },
}
```

# UserInfo for PEMEA

---

```
    "emergencyContacts": {
      "description": "Next of kin or family member information to contact if
required.",
      "type": "array",
      "items": {
        "type": "object",
        "properties": {
          "fullname": {
            "description": "Name of the emergency contact.",
            "type": "string"
          },
          "relationship": {
            "description": "The relationship between the caller and the contact.",
            "type": "string"
          },
          "contactDetails": {"$ref": "#/definitions/contactDetails"}
        },
        "required": [
          "fullname",
          "relationship",
          "contactDetails"
        ]
      }
    },
    "required": [
      "privacyRequested",
      "familyName",
      "givenNames",
      "languages",
      "contactDetails"
    ]
  },
  "required": [
    "user"
  ]
}
```

## 7. HISTORY

Document history		
V0.1	20 August 2021	Initial Draft
V0.2	22 August 2021	Corrected schema and examples
V1.0	01 September 2021	Released