**ภาคผวก A04  
โปรไฟล์เพื่อการเชื่อมโยงข้อมูล SAP\_OMS**

การพัฒนาเชื่อมโยงข้อมูลระหว่างซอฟต์แวร์จำเป็นต้องมีข้อกำหนดกลางเพื่อการเชื่อมโยงข้อมูล มาตรฐาน ไออีซี ซิม หรือ IEC CIM (Common Information Model) เป็นมาตรฐานสากลเพื่อการเชื่อมโยงข้อมูลเกี่ยวกับ การจำหน่ายกระแสไฟฟ้าและการบริหารไฟฟ้าขัดข้อง ที่สำคัญได้แก่ IEC-61970 และ IEC-61968 มาตรฐานสากลดังกล่าวจัดทำขึ้นเพื่อใช้เป็นข้อกำหนดกลางในการรับส่งข้อมูลระหว่างซอฟต์แวร์ที่แตกต่างกัน เพื่อลดเวลา ลดค่าใช้จ่าย และเพิ่มประสิทธิภาพในการพัฒนาเชื่อมโยงข้อมูลระหว่างกัน ปัจจุบันผลิตภัณฑ์ซอฟต์แวร์ที่พัฒนาขึ้นเพื่อสนับสนุนการปฏิบัติระบบไฟฟ้าและบริหารไฟฟ้าขัดข้อง มักมีความสามารถในการเชื่อมโยงข้อมูลตามมาตรฐานนี้

โปรไฟล์เพื่อการเชื่อมโยงข้อมูล (CIM Profile) คือ ข้อกำหนดขอบเขตและคุณลักษณะเฉพาะของข้อมูลภายใต้บริบทหนึ่ง ประกอบด้วย ชื่อข้อมูล ความหมายและรูปแบบข้อมูล เพื่อใช้ในการพัฒนาระบบเชื่อมโยงข้อมูลภายใต้วัตถุประสงค์หนึ่ง ตัวอย่างโปรไฟล์มาตรฐาน ได้แก่ IEC-61970-452, IEC-61970-453, IEC-61970-456 องค์กรสามารถกำหนดโปรไฟล์ที่เหมาะสมกับบริบทของตนได้ โดยการกำหนดรายการข้อมูลเฉพาะส่วนที่จำเป็นสำหรับการเชื่อมโยงข้อมูลภายใต้บริบทนั้น มักมีขนาดเล็กและง่ายต่อการพัฒนา โปรไฟล์การเชื่อมโยงข้อมูลนี้จัดทำขึ้นตามมาตรฐานสากล IEC-61970-501 จัดทำขึ้นโดยใช้ซอฟต์แวร์เครื่องมือเพื่อใช้สร้างโปรไฟล์ อาทิ เช่น CIMtool เป็นต้น

เอกสารนี้อธิบายโปรไฟล์เพื่อการเชื่อมโยง ระบบ SAP-HR ชื่อว่า HR\_OMS หรือเนมสเปสชื่อเต็มว่า

CIM profile: [http://pea.co.th/cim/profile/SAP\_OMS#](http://pea.co.th/cim/profile/SAPERP_OMS)

ประกอบด้วย เอกสารดังนี้

1. เอกสารอธิบายโปรไฟล์ : SAP\_OMS.rtf, SAP\_OMS.html
2. แฟ้มเอกสารอิเล็กทรอนิกส์ ข้อกำหนดโปรไฟล์ : SAP \_OMS.owl
3. แฟ้มเอกสารอิเล็กทรอนิกส์ IEC-61970-501 : SAP \_OMS.legacy-rdfs
4. แฟ้มเอกสารอิเล็กทรอนิกส์ IEC-61968-100 : SAP \_OMS.part100-ed2.xsd

ผู้รับจ้างต้องดำเนินการศึกษา ทบทวนและสอบทาน ข้อกำหนดโปรไฟลน์นี้ กับผู้ที่เกี่ยวข้องกับซอฟต์แวร์ที่จะเชื่อมโยงนั้น ปรับข้อกำหนดโปรไฟล์ให้สอดคล้องกับความต้องการของผู้เกี่ยวข้องและเสนอขอรับความเห็นชอบก่อนการดำเนินการ

**SAP\_OMS\_Profile Profile**

Profile namespace: http://pea.co.th/cim/profile/SAP\_OMS#

**Concrete Classes**

**Crew**

Group of people with specific skills, tools, and vehicles.

**Native Members**

|  |  |  |  |
| --- | --- | --- | --- |
| **name** | **mult** | **type** | **description** |
| mRID | 1..1 | string | Master resource identifier issued by a model authority. The mRID is unique within an exchange context. Global uniqueness is easily achieved by using a UUID, as specified in RFC 4122, for the mRID. The use of UUID is strongly recommended.For CIMXML data files in RDF syntax conforming to IEC 61970-552, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements. |
| aliasName | 1..1 | string | The aliasName is free text human readable name of the object alternative to IdentifiedObject.name. It may be non unique and may not correlate to a naming hierarchy.The attribute aliasName is retained because of backwards compatibility between CIM relases. It is however recommended to replace aliasName with the Name class as aliasName is planned for retirement at a future time. |
| description | 1..1 | string | The description is a free human readable text describing or naming the object. It may be non unique and may not correlate to a naming hierarchy. |
| name | 1..1 | string | The name is any free human readable and possibly non unique text naming the object. |
| CrewMembers | 1..\* | [CrewMember](#CrewMember) | All members of this crew. |
| CrewType | 1..1 | [CrewType](#CrewType) | Type of this crew. |
| Location | 1..1 | [Location](#Location) | The location this crew is assigned to. |
| status | 1..1 | [Status](#Status) | Status of this crew. |

**CrewMember**

Member of a crew.

**Native Members**

|  |  |  |  |
| --- | --- | --- | --- |
| **name** | **mult** | **type** | **description** |
| mRID | 1..1 | string | Master resource identifier issued by a model authority. The mRID is unique within an exchange context. Global uniqueness is easily achieved by using a UUID, as specified in RFC 4122, for the mRID. The use of UUID is strongly recommended.For CIMXML data files in RDF syntax conforming to IEC 61970-552, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements. |
| aliasName | 1..1 | string | The aliasName is free text human readable name of the object alternative to IdentifiedObject.name. It may be non unique and may not correlate to a naming hierarchy.The attribute aliasName is retained because of backwards compatibility between CIM relases. It is however recommended to replace aliasName with the Name class as aliasName is planned for retirement at a future time. |
| description | 1..1 | string | The description is a free human readable text describing or naming the object. It may be non unique and may not correlate to a naming hierarchy. |
| name | 1..1 | string | The name is any free human readable and possibly non unique text naming the object. |
| Names | 1..\* | [Name](#Name) | All names of this identified object. |
| Person | 1..1 | [Person](#Person) | Person having this role. |

**Abstract Classes**

**Appointment**

Meeting time and location.

**ConfigurationEvent**

Used to report details on creation, change or deletion of an entity or its configuration.

**CoordinateSystem**

Coordinate reference system.

**Native Members**

|  |  |  |  |
| --- | --- | --- | --- |
| **name** | **mult** | **type** | **description** |
| crsUrn | 1..1 | string | A Uniform Resource Name (URN) for the coordinate reference system (crs) used to define 'Location.PositionPoints'.An example would be the European Petroleum Survey Group (EPSG) code for a coordinate reference system, defined in URN under the Open Geospatial Consortium (OGC) namespace as: urn:ogc:def:crs:EPSG::XXXX, where XXXX is an EPSG code (a full list of codes can be found at the EPSG Registry web site http://www.epsg-registry.org/). To define the coordinate system as being WGS84 (latitude, longitude) using an EPSG OGC, this attribute would be urn:ogc:def:crs:EPSG::4.3.2.6A profile should limit this code to a set of allowed URNs agreed to by all sending and receiving parties. |

**CrewType**

Custom description of the type of crew. This may be used to determine the type of work the crew can be assigned to. Examples include repair, tree trimming, switching, etc.

**Native Members**

|  |  |  |  |
| --- | --- | --- | --- |
| **name** | **mult** | **type** | **description** |
| mRID | 1..1 | string | Master resource identifier issued by a model authority. The mRID is unique within an exchange context. Global uniqueness is easily achieved by using a UUID, as specified in RFC 4122, for the mRID. The use of UUID is strongly recommended.For CIMXML data files in RDF syntax conforming to IEC 61970-552, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements. |
| aliasName | 1..1 | string | The aliasName is free text human readable name of the object alternative to IdentifiedObject.name. It may be non unique and may not correlate to a naming hierarchy.The attribute aliasName is retained because of backwards compatibility between CIM relases. It is however recommended to replace aliasName with the Name class as aliasName is planned for retirement at a future time. |
| description | 1..1 | string | The description is a free human readable text describing or naming the object. It may be non unique and may not correlate to a naming hierarchy. |
| name | 1..1 | string | The name is any free human readable and possibly non unique text naming the object. |

**Location**

The place, scene, or point of something where someone or something has been, is, and/or will be at a given moment in time. It can be defined with one or more position points (coordinates) in a given coordinate system.

**Native Members**

|  |  |  |  |
| --- | --- | --- | --- |
| **name** | **mult** | **type** | **description** |
| direction | 1..1 | string | (if applicable) Direction that allows field crews to quickly find a given asset. For a given location, such as a street address, this is the relative direction in which to find the asset. For example, a streetlight may be located at the 'NW' (northwest) corner of the customer's site, or a usage point may be located on the second floor of an apartment building. |
| geoInfoReference | 1..1 | string | (if applicable) Reference to geographical information source, often external to the utility. |
| type | 1..1 | string | Classification by utility's corporate standards and practices, relative to the location itself (e.g., geographical, functional accounting, etc., not a given property that happens to exist at that location). |
| CoordinateSystem | 1..1 | [CoordinateSystem](#CoordinateSystem) | Coordinate system used to describe position points of this location. |
| PositionPoints | 1..\* | [PositionPoint](#PositionPoint) | Sequence of position points describing this location, expressed in coordinate system 'Location.CoordinateSystem'. |

**Name**

The Name class provides the means to define any number of human readable names for an object. A name is b>not/b> to be used for defining inter-object relationships. For inter-object relationships instead use the object identification 'mRID'.

**Native Members**

|  |  |  |  |
| --- | --- | --- | --- |
| **name** | **mult** | **type** | **description** |
| name | 1..1 | string | Any free text that name the object. |
| IdentifiedObject | 1..1 | [IdentifiedObject](#IdentifiedObject) | Identified object that this name designates. |
| NameType | 1..1 | [NameType](#NameType) | Type of this name. |

**NameType**

Type of name. Possible values for attribute 'name' are implementation dependent but standard profiles may specify types. An enterprise may have multiple IT systems each having its own local name for the same object, e.g. a planning system may have different names from an EMS. An object may also have different names within the same IT system, e.g. localName as defined in CIM version 14. The definition from CIM14 is:

The localName is a human readable name of the object. It is a free text name local to a node in a naming hierarchy similar to a file directory structure. A power system related naming hierarchy may be: Substation, VoltageLevel, Equipment etc. Children of the same parent in such a hierarchy have names that typically are unique among them.

**Native Members**

|  |  |  |  |
| --- | --- | --- | --- |
| **name** | **mult** | **type** | **description** |
| description | 1..1 | string | Description of the name type. |
| name | 1..1 | string | Name of the name type. |
| NameTypeAuthority | 1..1 | [NameTypeAuthority](#NameTypeAuthority) | Authority responsible for managing names of this type. |

**NameTypeAuthority**

Authority responsible for creation and management of names of a given type; typically an organization or an enterprise system.

**Native Members**

|  |  |  |  |
| --- | --- | --- | --- |
| **name** | **mult** | **type** | **description** |
| description | 1..1 | string | Description of the name type authority. |
| name | 1..1 | string | Name of the name type authority. |

**Person**

General purpose information for name and other information to contact people.

**Native Members**

|  |  |  |  |
| --- | --- | --- | --- |
| **name** | **mult** | **type** | **description** |
| mRID | 1..1 | string | Master resource identifier issued by a model authority. The mRID is unique within an exchange context. Global uniqueness is easily achieved by using a UUID, as specified in RFC 4122, for the mRID. The use of UUID is strongly recommended.For CIMXML data files in RDF syntax conforming to IEC 61970-552, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements. |
| aliasName | 1..1 | string | The aliasName is free text human readable name of the object alternative to IdentifiedObject.name. It may be non unique and may not correlate to a naming hierarchy.The attribute aliasName is retained because of backwards compatibility between CIM relases. It is however recommended to replace aliasName with the Name class as aliasName is planned for retirement at a future time. |
| description | 1..1 | string | The description is a free human readable text describing or naming the object. It may be non unique and may not correlate to a naming hierarchy. |
| firstName | 1..1 | string | Person's first name. |
| lastName | 1..1 | string | Person's last (family, sir) name. |
| mName | 1..1 | string | Middle name(s) or initial(s). |
| name | 1..1 | string | The name is any free human readable and possibly non unique text naming the object. |
| prefix | 1..1 | string | A prefix or title for the person's name, such as Miss, Mister, Doctor, etc. |
| specialNeed | 1..1 | string | Special service needs for the person (contact) are described; examples include life support, etc. |
| electronicAddress | 1..1 | [ElectronicAddress](#ElectronicAddress) | Electronic address. |
| landlinePhone | 1..1 | [TelephoneNumber](#TelephoneNumber) | Landline phone number. |
| mobilePhone | 1..1 | [TelephoneNumber](#TelephoneNumber) | Mobile phone number. |

**PositionPoint**

Set of spatial coordinates that determine a point, defined in the coordinate system specified in 'Location.CoordinateSystem'. Use a single position point instance to describe a point-oriented location. Use a sequence of position points to describe a line-oriented object (physical location of non-point oriented objects like cables or lines), or area of an object (like a substation or a geographical zone - in this case, have first and last position point with the same values).

**Native Members**

|  |  |  |  |
| --- | --- | --- | --- |
| **name** | **mult** | **type** | **description** |
| sequenceNumber | 1..1 | integer | Zero-relative sequence number of this point within a series of points. |
| xPosition | 1..1 | string | X axis position. |
| yPosition | 1..1 | string | Y axis position. |

**Compound Types**

**ElectronicAddress**

Electronic address information.

**Members**

|  |  |  |  |
| --- | --- | --- | --- |
| **name** | **mult** | **type** | **description** |
| email1 | 1..1 | string | Primary email address. |
| email2 | 1..1 | string | Alternate email address. |
| radio | 1..1 | string | Radio address. |

**TelephoneNumber**

Telephone number.

**Members**

|  |  |  |  |
| --- | --- | --- | --- |
| **name** | **mult** | **type** | **description** |
| localNumber | 1..1 | string | Main (local) part of this telephone number. |