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| Memo  |  |  |  |
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|  | Notes on mapping IDACS<>OCPI<>DATEX II | Kees NieuwstadKees.nieuwstad@ndw.nu+31-6-50419575 |
|  |  |  |
|  | Date | Reference |
|  | 14th of December 2021 | 2021.12.02 IDACS Data Categories mapped to DATEX II.xlsx |
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**Purpose of this document**

A mapping from IDACS Data Categories / OCPI v2.1.1 to DATEX II v3.2 for information about charging infrastructure for electric cars has been made. This document contains notes regarding this mapping which is included in the accompanying Excel file.

**Mapping of IDACS<>OCPI<>DATEX II**

The worksheet 'IDACS data categories' contains the resulting mapping. The properties of the OCPI are mapped to the attributes of the DATEX II energy infrastructure publication.

A note here is that IDACS has space for the telephone number of a helpdesk (Telephone). DATEX II also has an attribute for this (telephoneNumber of organisationUnit.contactinformation). However, this attribute was not found in the OCPI. This is marked in orange in the worksheet.

**Mapping of hierarchy levels between OCPI and DATEX II**

The 'Hierarchy' worksheet contains the mapping of the 'charging topology' as included in the OCPI specification on IDACS and DATEX II. A note here is that in the OCPI a concept like 'Charging pool' (IDACS)/'EnergyInfrastructureSite' (DATEX) does not exist, see the ??? in the table below. There are no further comments for this mapping. This information is primarily included for reference later in this document.

|  |  |  |  |
| --- | --- | --- | --- |
| ***Level*** | ***IDACS terminology*** | ***OCPI*** | ***DATEX II related concept*** |
| 1 | Charging pool | ??? | EnergyInfrastructureSite |
| 2 | Charging station | Location | EnergyInfrastructureStation |
| 3 | Charging point (EVSE) | EVSE | RefillPoint.ElectricChargingPoint |
| 4 | Connector | Connector | Connector |

**Mapping of enumerations**

Seven enumerations have been mapped for the conversion from OCPI to DATEX. See the overview in the table below.

|  |  |  |
| --- | --- | --- |
| ***OCPI enumeration*** | ***Is mapped to DATEX enumeration*** | ***Using mapping in worksheet*** |
| PowerType | ChargingModeEnum | MAP PowerType |
| ConnectorType | ConnectorTypeEnum | MAP ConnectorType |
| EnergySourceCategory | ElectricEnergySourceTypeEnum | MAP EnergySourceCategory |
| ConnectorFormat | ConnectorFormatTypeEnum | MAP ConnectorFormat |
| Status | RefillPointStatusEnum | MAP Status |
| TariffDimensionType | PricingPolicyEnum | MAP TariffDimensionType |
| Capability | authenticationAndIdentificationMethods | MAP CapabilityEnum |

Some remarks:

* There are no remarks for matching enumeration literals of the OCPI enumerations ConnectorType, EnergySourceCategory and PricingPolicyEnum to DATEX II.
* OCPI enumeration PowerType is mapped on DATEX II enumeration ChargingModeEnum. This does not fit 100% perfectly, because the powertype is only one a component of a chargingmode. For the OCPI literal DC in DATEX II mode4DC is the only logical option. For this mapping, linking AC\_3\_PHASE to mode3AC3p and linking AC\_1\_PHASE to mode2AC1p is considered the most and logical pragmatical match.
* In OCPI enumeration ConnectorFormat literals CABLE and SOCKET are available. SOCKET is matched to socket, for CABLE the most pragmatical and logical match is to link it to cableMode3, because data converted will mainly not be for mode2 (home charging), but for charging with mode3 charging equipment.
* In the OCPI, the payment method is included in the 'Capability' enumeration. This enumeration has a scope larger than payment method alone. This is not a problem for mapping, as for payment information not relevant enumeration literals can simply be ignored when mapping to DATEX II authenticationAndIdentificationMethods.

**Mapping of Ad hoc price**

*Remark 1.* The ad hoc price is included in the OCPI in the Tariff object. Tariff.type determines which price type a tariff applies to. The ad-hoc rate is specified as Tariff.type = AD\_HOC\_PAYMENT.

But the OCPI documentation also states for Tariff.type that "When omitted, this tariff is valid for all sessions."\*) So, if no rate types are included, it is (implicitly) that rate applies to all sessions, including an ad-hoc session. In short, a missing property has meaning.

*Remark 2.* Earlier in this document, the hierarchy levels of OCPI and DATEX II have been introduced. In OCPI, a tariff is specified for a connector, while in DATEX II rates are specified at the electricChargingPoint level. In worksheet ‘MAP Ad hoc price’ mapping of ad hoc price is described.

**References**

\*) <https://github.com/ocpi/ocpi/blob/release-2.2-bugfixes/mod_tariffs.asciidoc>