

NAP Data Extension

OCPI Data Exchange for National Access Points under AFIR

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https://github.com/ocpi & https://evroaming.org

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The EVRoaming Foundation strives to keep OCPI as free from IPR as possible. If you want to contribute by adding new functionality/features, you are required to send us the signed Contributor Agreement (CA) document before contributing. To get the CA, ask for it by send an e-mail to: info@evroaming.org.

Version History

Version	Date	Contributors	Description
1.0	2026-09-24	• OCPI Development Work Group *EVRoaming Foundation* • DOT-NL *NDW (Dutch NAP)* • Ben van Gameren *ihomer* • Tim Ververs *ihomer* • Reinier Lamers *SWTCH Energy* • Michel Bayings *EVRoaming Foundation / Emobility Consulting*	Release of the NAP Data Extension

1. Motivation

Under Regulation (EU) 2023/1804 (the Alternative Fuels Infrastructure Regulation, AFIR,) [1] and its Implementing Regulation (EU) 2025/655 [2], operators of publicly accessible recharging and refuelling points for alternative fuels — or, by arrangement, the owners of those points — must make static and dynamic data available free of charge through the National Access Points (NAPs). This data must be open and accessible on a non-discriminatory basis to any data user, and its format, update frequency, and quality are standardised so that data users receive reliable information.

AFIR is a broad regulation on the deployment of alternative fuels infrastructure. This document is concerned solely with the data-provision obligation towards the NAPs set out in Article 20 of the AFIR [1]; it is, in that sense, a NAP data document. It defines how the AFIR-mandated NAP data set is expressed and exchanged in OCPI, so that the wider AFIR regulation is only referenced where it underpins that data set.

From 14 April 2026, this data must be provided using the data model for alternative fuels data in DATEX II format [4], at least according to technical specification CEN/TS 16157-10:2022 [3]. Static data must be updated when a change occurs and, at the latest, within 24 hours; dynamic data within 1 minute.

DATEX II is not an OCPI format. Because the market already communicates in OCPI [10], the shortest route to help CPOs comply with the legislation is to map the AFIR data requirements onto OCPI 2.3.0. With support of the Dutch Ministry of Infrastructure and Water Management (I&W), the EVRoaming Foundation has commissioned a NAP OCPI Test Tool Module so that a CPO can validate whether it meets the legislation. A 100% mapping onto OCPI is not possible. A number of AFIR data types therefore require new fields that a CPO must also send towards the NAP. The purpose of this extension is to define and standardise those data elements at the OCPI level, enabling interoperability between market parties, allowing CPOs to demonstrate AFIR-NAP compliance, and allowing the OCPI Test Tool to validate both the standard and the new fields. This extension is designed to be applicable across multiple OCPI versions.

The EVRoaming Foundation NAP Task Group has considered the following groups of AFIR data, following the Annex tables of Implementing Regulation (EU) 2025/655 [2]:

- Static data for publicly accessible recharging and refuelling infrastructure (Annex Table A) — reported mainly at station level.
- Further static data for publicly accessible electric recharging infrastructure (Annex Table B) — reported mainly at recharging-point level.
- Dynamic data for publicly accessible recharging and refuelling infrastructure (Annex Table F) — operational status, availability, and ad-hoc price.

2. Domain

To support AFIR-NAP-compliant data provision through OCPI, it is essential that every mandated data type can be expressed and exchanged unambiguously between CPOs, NAP operators, and data users.

The data types that must be made available are defined in the Annex to Commission Implementing Regulation (EU) 2025/655 [2], which implements Article 20(2) of the AFIR [1]. Each data type is reported either at the level of a recharging or refuelling **station** or an individual recharging **point**. This section lists those data types, grouped by category and split into static and dynamic data; they are reproduced verbatim from the regulation in AFIR data specifications. Where a data format follows a specific standard, that standard is cited: ISO 3166-1 [5], NUTS [6], ISO 8601 [7], ISO 4217 [8], and the UN/ECE vehicle classification [9].

2.1. Static Data

This data must be updated whenever a change occurs, and in any case no later than 24 hours after the change [2]. The quality requirements for all data include completeness, accuracy, consistency, timeliness, and reliability.

2.1.1. General Information

- **Legal name**
  Name of the operator or owner of the charging or refuelling point
- **Commercial name**
  Name of the operator or owner of the charging or refuelling point as presented to the public
- **Number of points**
  Number of charging or refuelling points that can be used simultaneously
- **Service support**
  Presence of on-site personnel at the station
- **Helpdesk telephone**
  Telephone number of the helpdesk operated by the operator or owner, visibly displayed at the station
- **Facilities**
  Associated services, such as covered/illuminated parking, catering services, toilets, rest facilities, other

2.1.2. Geographic Location Data

- **Geographic coordinates (GNSS)**
  Longitude and latitude according to the WGS84 standard
- **Additional location information**
  Such as parking garage level or parking area
- **Country**
  According to ISO 3166-1 alpha-2 codes [5]
- **Region**
  According to the NUTS-1 geocode standard [6]
- **City or municipality**
  Name of the municipality or stop location (e.g. motorway, area) if not directly related to a city or municipality
- **Postal code**

Postal code of the location of the charging or refuelling station

- **Address**
  Street name and house number of the charging or refuelling station

2.1.3. Accessibility Data

- **Opening hours**
  Weekdays with time ranges during which the charging or refuelling station is open and publicly accessible
- **Time zone**
  According to ISO 8601 [7]
- **Compatible vehicle types**
  According to the UNECE vehicle classification [9] (L, M1, M2 or M3, N1, N2 or N3, other)
- **Permitted vehicle specifications**
  Maximum vehicle mass, height, length, and width, including trailers
- **Number of parking spaces**
  Parking spaces that can be used for a charging or refuelling session
- **Accessible parking spaces**
  Number of parking spaces for persons with disabilities that are accessible for charging or refuelling points

2.1.4. Payment Options

- **Bank card reader**
  Payment device for physical insertion of Europay, Mastercard, and Visa cards
- **Contactless payment**
  Payment device capable of reading payment cards via contactless functionality such as NFC
- **Other ad-hoc payment options**
  Such as a specific QR code, payment via website, cash, other
- **Accepted payment providers**
  Additional information on accepted payment service providers
- **Contract-based payment**
  Contract-based (subscription) payment option

2.1.5. Additional Static Data for Publicly Accessible Charging Infrastructure

- **Charging point ID code**
  Connector identification code, including the unique identification code of the operator issued by IDRO
- **Number of connectors**
  Number of connectors per charging point
- **Connector type**
  Plug type, such as Type 2, Combo2/CCS, Megawatt Charging System (MCS), CHAdeMO, other
- **Type of current**
  Alternating current (AC) or direct current (DC)
- **Charging station maximum power**
  Maximum power of the charging station, in kW

- **Charging point maximum power**
  Maximum power of the charging point, in kW
- **Contract-based mobility service providers**
  Mobility service providers offering contract-based charging
- **Plug & charge**
  Capability for automatic authentication and authorization
- **Smart charging services**
  Such as remote monitoring and control, configuration of user preferences, bidirectional charging, other
- **Renewable electricity**
  Electricity supplied is 100% renewable, with EU guarantees of origin

2.2. Dynamic Data

This data must be updated whenever a change occurs, and in any case no later than one minute after the change [2].

2.2.1. Dynamic Data for Publicly Accessible Charging and Refuelling Infrastructure for Alternative Fuels

- **Operational status**
  Operational or non-operational status of the charging or refuelling point
- **Availability**
  Expressed as in use, reserved, or not in use
- **Ad-hoc price**
  Price for end users charging on an ad-hoc basis (per kWh, per minute, or per session), in national currency and including all applicable price components

3. AFIR support in OCPI 2.3.0

This section maps the AFIR data types set out in the Domain onto OCPI 2.3.0 objects and properties. It begins by establishing how the AFIR and OCPI level models correspond, because they do not line up one-to-one, and then maps the individual data types. The AFIR data types are reproduced verbatim in AFIR data specifications. The OCPI 2.3.0 types and enumerations this extension adds or extends are documented in OCPI 2.3.0 Type definitions.

The mapping follows the same category outline as the Domain, split into static and dynamic data. Within each AFIR data category, a separate table is given for each OCPI 2.3.0 object (Location, EVSE, Connector, Parking, Tariff) whose properties carry that data. Each table is keyed by the OCPI property; for data types classified as *New* the property shown is the new field defined by this extension.

This extension defines a `services` field on the Location, with a `LocationService` enumeration, to carry the service-support AFIR data. Every mapping is classified as:

- **Existing** — a native OCPI 2.3.0 property already carries the data.
- **Conversion** — a native OCPI 2.3.0 property exists, but the value must be converted to the AFIR format.
- **New** — no property exists; a new field is defined by this extension.

The `#` column refers to the row number in the AFIR tables (AFIR data specifications): `A` for Table A, `B` for Table B.

3.1. Levels and terminology

AFIR and OCPI 2.3.0 describe charging infrastructure using different level models, so the correspondence between them must be established before the individual data types can be mapped. The two models are set out below, followed by the mapping between them.

3.1.1. AFIR levels

AFIR builds on the following concepts; recharging pool, recharging station, and recharging point are defined in Article 2 of the AFIR [1]:

- **Recharging pool**
  One or more recharging stations at a specific location.
- **Recharging station**
  A physical installation at a specific location, comprising one or more recharging points.
- **Recharging point**
  A fixed or mobile interface capable of recharging only one electric vehicle at a time.
- **Connector**
  The physical interface between a recharging point and the vehicle.

3.1.2. OCPI 2.3.0 levels

OCPI 2.3.0 uses a three-tier model:

- **Location**
  A site that groups one or more EVSEs.
- **EVSE**

The part that controls the power supply to a single EV in a single session.

- **Connector**
  The socket, or the cable and plug, available for the EV to use at an EVSE.

3.1.3. Correspondence

Placing the two models side by side gives the following correspondence:

AFIR	OCPI 2.3.0
Recharging pool	Location
Recharging station	-
Recharging point	EVSE
Connector	Connector

OCPI 2.3.0 has no Charging Station level, so the AFIR recharging station has no OCPI object of its own. Its station-level data is therefore mapped onto the Location and/or the EVSE. Most of it is carried on the Location; the payment and service-provider data (A20–A24, B7) is carried on the EVSE, where OCPI 2.3.0 models those capabilities. The one station-level item carried elsewhere is the ad-hoc price (F3), on the Tariff.

- **Location**
  The AFIR recharging pool, and the object that carries most station-level AFIR data.
- **EVSE**
  An AFIR recharging point, a unit that charges one EV at a time. Also carries the station-level payment and service-provider data.
- **Connector**
  The physical plug or socket used to connect the vehicle.

3.2. Static Data

Static data must be updated when a change occurs and, in any event, within twenty-four hours [2]. The quality requirements are completeness, accuracy, consistency, timeliness, and reliability.

3.2.1. General Information

3.2.1.1. Location

#	Data type	Property	Status	Notes
A1	Legal name of the operator or owner	• `owner.legal_name` • `operator.legal_name` • `suboperator.legal_name`	New	BusinessDetails holds a single `name`; a separate `legal_name` is added to distinguish it from the commercial name (A2).

#	Data type	Property	Status	Notes
A2	Commercial name of the operator or owner	• `owner.name` • `operator.name` • `suboperator.name`	Existing	BusinessDetails holds a single `name`; which is used to distinguish it from the legal name (A1).
A3	Number of recharging or refuelling points	size of `evses`	Conversion	Derived from the number of EVSEs, excluding those with status `REMOVED`.
A4	Service support	`services (ASSISTANCE)`	New	AFIR service support is present when `services` includes `ASSISTANCE`.
A5	Helpdesk telephone	`help_phone`	Existing	—
A6	Facilities offering associated services	• `facilities` • `parking_places`	Conversion	Derive each AFIR facility from the OCPI value: • `facilities` `RESTAURANT`/`CAFE` → catering • `facilities` `REST_AREA` → resting (new value added to the `Facility` open-enum) • `facilities` `TOILETS` → bathrooms (new value added to the `Facility` open-enum) • `parking_places.roofed` → roofed • `parking_places.lighting` → illuminated • other → no OCPI equivalent (would need a new OpenEnum value)

NOTE This extension defines the Location `services` field and its `LocationService` `ASSISTANCE` value.

3.2.2. Geographic Location Data

3.2.2.1. Location

#	Data type	Property	Status	Notes
A7	GNSS geographic location	`coordinates`	Existing	GeoLocation of the Location, in WGS84. Use this Location-level value for the AFIR station coordinates; it is mandatory in OCPI.

#	Data type	Property	Status	Notes
A8	Additional geographic location information	• `related_locations` • `directions`	Conversion	Take the AFIR additional location info from `related_locations` (the canonical target) and the Location's own `directions`; per-point detail is also available on the EVSE (`floor_level`, `physical_reference`, `directions`).
A9	Country	`country`	Conversion	`country` is the location's country in ISO 3166-1 alpha-3; convert to AFIR's alpha-2.
A10	Region	`region`	New	A new free-form `region` string on the Location. As OCPI is international, the field is not tied to a specific standard; for AFIR it carries the NUTS-1 region code (e.g. `NL3`).
A11	City or town	`city`	Existing	—
A12	Postal code	`postal_code`	Existing	—
A13	Address name	`address`	Existing	Street name and number.

3.2.2.2. EVSE

#	Data type	Property	Status	Notes
A8	Additional geographic location information	• `floor_level` • `physical_reference` • `directions`	Existing	Supplementary per-point detail

NOTE A7 — GNSS geographic location: use the Location coordinates, not the EVSE coordinates.

NOTE A8 — Additional geographic location information: available on both the Location and the EVSE.

3.2.3. Accessibility Data

3.2.3.1. Location

#	Data type	Property	Status	Notes
A14	Opening time	`opening_times`	Conversion	Derive the AFIR opening times from OCPI `Hours`: • `twentyfourseven` • `regular_hours` • `exceptional_openings` • `exceptional_closings`

#	Data type	Property	Status	Notes
A15	Time zone	`time_zone`	Conversion	Convert the OCPI IANA time-zone name (e.g. `Europe/Amsterdam`) to the ISO 8601 form AFIR expects.
A18	Number of parking spaces	count of `parking_places`	Conversion	Derived from the number of Parking objects at the Location.

3.2.3.2. Parking

The Parking object is carried in the Location's `parking_places` list.

#	Data type	Property	Status	Notes
A16	Vehicle-type compatibility	`vehicle_types`	Conversion	Map the OCPI `VehicleType` values to the AFIR/UNECE categories (L, M1, M2/M3, N1, N2/N3); not 1:1.
A17	Vehicle specifications permitted	• `max_vehicle_weight` • `max_vehicle_height` • `max_vehicle_length` • `max_vehicle_width`	Conversion	Convert the OCPI kilograms and centimetres to the tonnes and metres AFIR uses.
A19	Number of parking spaces for people with disabilities	count of `parking_places` with `vehicle_types` `DISABLED`	Conversion	Derived: count the Parking objects whose `vehicle_types` includes `DISABLED`. `Parking.standards` (e.g. PAS 1899) documents the accessibility standard applied.

3.2.4. Payment Options

All payment data is carried on the EVSE: native `capabilities` values where they exist, three added `capabilities` values for the ad-hoc means, and one new field for the accepted card brands.

3.2.4.1. EVSE

#	Data type	Property	Status	Notes
A20	Payment device with bank card reader	`capabilities` (`CHIP_CARD_SUPPORT`)	Existing	AFIR "yes" when `capabilities` includes `CHIP_CARD_SUPPORT` (or `CREDIT_CARD_PAYABLE` / `DEBIT_CARD_PAYABLE` / `PED_TERMINAL`).
A21	Payment device with contactless functionality	`capabilities` (`CONTACTLESS_CARD_SUPPORT`)	Existing	AFIR "yes" when `capabilities` includes `CONTACTLESS_CARD_SUPPORT`.

#	Data type	Property	Status	Notes
A22	Other ad-hoc payment option	`capabilities` (new values)	New	Extends the Capability OpenEnum: `QR_CODE_PAYABLE` (dynamic QR), `WEBSITE_PAYABLE` (website / static QR), `CASH_PAYABLE` (cash). The AFIR flags are set from these; AFIR's free-text "other" has no value.
A23	Additional information about payment providers accepted	`payment_brands`	New	Derive the AFIR accepted-providers list from `payment_brands` — a new EVSE field (array of `PaymentBrand`: `VISA`, `MASTERCARD`, `MAESTRO`, `AMERICAN_EXPRESS`, `V_PAY`, `CB`, `INTERAC`). 2.3.0 has no native card-brand field.
A24	Contract-based (subscription) payment	`accepted_service_providers`	Existing	AFIR "yes" when `accepted_service_providers` lists one or more contract mobility service providers (supported by `capabilities` `RFID_READER`).

3.2.5. Additional Static Data for Publicly Accessible Charging Infrastructure

3.2.5.1. EVSE

#	Data type	Property	Status	Notes
B1	Recharging point / connector ID	`evse_id`	Existing	eMI3 EVSE ID; the per-connector identifier is `Connector.id`.
B2	Number of connectors	count of `connectors`	Conversion	Derived from the number of Connector objects on the EVSE.
B7	Mobility service providers offering contract-based recharging	`accepted_service_providers`	Existing	The AFIR MSP list is taken directly from `accepted_service_providers` (new in 2.3.0).
B9	Smart recharging services	`capabilities`	Existing and New	AFIR smart-recharging services are present when `capabilities` include `CHARGING_PROFILE_CAPABLE` / `CHARGING_PREFERENCES_CAPABLE` (native); bidirectional (V2G) is the added `capabilities` value `BIDIRECTIONAL_CAPABLE`.

3.2.5.2. Connector

#	Data type	Property	Status	Notes
B3	Type of connector (plug)	`standard`	Conversion	Map the OCPI `ConnectorType` value (includes `MCS`) to the AFIR plug list.

#	Data type	Property	Status	Notes
B4	Type of current	`power_type`	Conversion	Collapse the phase-granular `PowerType` (`AC_1_PHASE`, `AC_3_PHASE`, …) to AFIR's AC/DC.
B6	Recharging point maximum power	• `max_electric_power` • `max_voltage` • `max_amperage`	Conversion	The point max power is the **highest** `max_electric_power` across the EVSE's connectors — not the sum — since only one connector can charge at a time. Convert watts → kW; when `max_electric_power` is absent, derive it from `max_voltage` × `max_amperage`.
B8	Plug-and-charge	`capabilities`	Existing	AFIR "yes" when the Connector `capabilities` include `ISO_15118_2_PLUG_AND_CHARGE` or `ISO_15118_20_PLUG_AND_CHARGE`.

3.2.5.3. Location

#	Data type	Property	Status	Notes
B5	Recharging station maximum power	aggregate of the EVSEs' max power	Conversion	OCPI 2.3.0 has no Charging Station level, so the Location represents the station. Sum the maximum power of every EVSE at the Location — each EVSE's value derived as in B6 (the highest `max_electric_power` across its connectors) — and convert watts → kW. This is an upper bound: a shared grid connection may cap the true simultaneous total lower, which 2.3.0 cannot express.
B10	Electricity supplied is 100% renewable	`energy_mix.is_green_energy`	Conversion	Read the AFIR yes/no from `is_green_energy`. OCPI has no renewable-% or Guarantee-of-Origin evidence field.

NOTE B5 is a theoretical maximum — the sum of the EVSE maxima. Any grid or circuit limitation on the simultaneous total is not taken into account, because OCPI 2.3.0 cannot express it.

3.3. Dynamic Data

Dynamic data must be updated when a change occurs and, in any event, within one minute [2].

3.3.1. Dynamic Data for Publicly Accessible Charging and Refuelling Infrastructure for Alternative Fuels

3.3.1.1. EVSE

#	Data type	Property	Status	Notes
F1	Operational status	`status`	Conversion	Derive operational / non-operational from `EVSE.status` (`INOPERATIVE`, `OUTOFORDER`, `PLANNED`, `REMOVED`, `UNKNOWN` → non-operational; otherwise operational).
F2	Availability	`status`	Conversion	Derive in use / reserved / not in use from `EVSE.status` (`CHARGING`/`BLOCKED` → in use, `RESERVED` → reserved, `AVAILABLE` → not in use). OCPI overloads one `status` field for both F1 and F2.

3.3.1.2. Tariff

#	Data type	Property	Status	Notes

F3	Ad hoc price	• `type`
		• `currency`
		• `elements.price_components`
		  ◦ `type`
		  ◦ `price`
		  ◦ `vat`
		  ◦ `step_size`
		• `min_price` / `max_price`
		  ◦ `before_taxes`
		  ◦ `after_taxes`
		• `tax_included`
			Conversion	Assemble the AFIR ad-hoc price from the `AD_HOC_PAYMENT` Tariff. Each price component's dimension sets the AFIR unit: `ENERGY` → per kWh, `TIME` → per minute, `FLAT` → per session, and `PARKING_TIME` → an additional idle/parking fee. Tariff `elements` may be gated by `restrictions`, so tiered pricing must be flattened into a single ad-hoc price. Tariffs attach via `Connector.tariff_ids`.

3.4. Summary of changes

This section summarises everything this extension adds to, or changes in, the OCPI 2.3.0 data model. Each entry exists to carry an AFIR data type that OCPI 2.3.0 cannot otherwise express, or to guarantee that a mandatory AFIR data element is always present. The # column refers to the AFIR data tables (AFIR data specifications).

3.4.1. Added types and enumerations

Name	Kind	#	Purpose
PaymentBrand	OpenEnum	A23	Card brands or schemes accepted for ad-hoc payment at an EVSE. Values: `VISA`, `MASTERCARD`, `MAESTRO`, `AMERICAN_EXPRESS`, `V_PAY`, `CB`, `INTERAC`.
LocationService	Enum	A4	Services offered at the Location by the CPO or affiliated parties. Value: `ASSISTANCE`.

No other new types are introduced. `BusinessDetails` is an existing OCPI type that this extension extends with a property (see below); the `LocationService` enum is defined by this extension.

3.4.2. Added properties

Object	Property	#	Purpose
BusinessDetails	`legal_name`	A1	Legal name of the operator or owner, kept distinct from the commercial name carried by `name` (A2).
EVSE	`payment_brands`	A23	The card brands accepted at the EVSE, as an array of `PaymentBrand`. OCPI 2.3.0 has no native card-brand field.
Location	`services`	A4	Used to express service support (`ASSISTANCE`).
Location	`region`	A10	Region of the Location, as a free-form string; carries the NUTS-1 geocode for AFIR.

3.4.3. Added enumeration values

Enumeration	Value	#	Purpose
Capability	`BIDIRECTIONAL_CAPABLE`	B9	The EVSE supports bidirectional (V2G) charging — an AFIR smart-recharging service.
Capability	`QR_CODE_PAYABLE`	A22	Ad-hoc payment via a dynamically generated QR code.
Capability	`WEBSITE_PAYABLE`	A22	Ad-hoc payment via a website, for example a static QR code.
Capability	`CASH_PAYABLE`	A22	Ad-hoc payment with cash.
Facility	`TOILETS`	A6	Toilets are available at or near the Location.
Facility	`REST_AREA`	A6	A rest area or resting facilities are available at or near the Location.

NOTE The `TOILETS` and `REST_AREA` values are carried by the existing native `Location.facilities` field, so no new property is added for them (A6).

3.4.4. Changed required fields

To guarantee AFIR completeness, this extension makes a number of OCPI 2.3.0 optional properties mandatory. The table below lists the required set per object as defined by this extension; the conditional column captures the cases a flat required list cannot express.

Object	Required properties	Conditional requirement
Location	`coordinates`, `address`, `city`, `postal_code`, `country`, `region`, `help_phone`, `opening_times`, `time_zone`, `energy_mix`, `evses`, `parking_places`	At least one of `operator` / `owner` must be present (A1/A2); `parking_places` must be non-empty (A16–A19).
EVSE	`evse_id`, `connectors`, `status`, `capabilities`, `parking`	`parking` must be non-empty (A16–A19).
Connector	`standard`, `power_type`, `tariff_ids`	`max_electric_power`, or both `max_voltage` and `max_amperage` as the B6 fallback; `tariff_ids` must be non-empty (F3).
Parking	`vehicle_types`, `roofed`, `lighting`, `max_vehicle_weight`, `max_vehicle_height`, `max_vehicle_length`, `max_vehicle_width`	— (all vehicle specifications are mandatory for A17)
Tariff	`type`, `currency`, `elements`, `tax_included`	—
Hours	`twentyfourseven`	`regular_hours` is required when `twentyfourseven` is `false` (A14).
PriceLimit	`before_taxes`, `after_taxes`	—
BusinessDetails	`legal_name`, `name`	—

Relative to native OCPI 2.3.0, the notable tightenings are: making `help_phone`, `opening_times`, `time_zone` and `energy_mix` mandatory on the Location (A5/A14/A15/B10), adding a mandatory `region` field for the AFIR NUTS-1 region (A10), and requiring a non-empty `parking_places` (A16–A19); requiring `capabilities`, `status` and a non-empty `parking` reference on every EVSE (payment and operational-status data, A20–A24/F1/F2, and the per-point parking link for A16–A19); requiring `standard`, `power_type`, a power value and a non-empty `tariff_ids` on every Connector (B3/B4/B6, plus the tariff link that resolves the F3 ad-hoc price); requiring all four vehicle-dimension fields on Parking (A17); and adding `type` to the Tariff so the `AD_HOC_PAYMENT` tariff is always identifiable (F3).

4. AFIR support in OCPI 3.0

NOTE

OCPI 3.0 has not yet been released. It is part of an ongoing standardisation process at CENELEC, and the mapping described in this section is therefore based on the latest available draft version; details may still change before the final release. Where this document relies on OCPI 3.0 objects, fields, or enumerations, those references reflect that draft.

In finalising the OCPI 3.0 mapping, the EVRoaming Foundation NAP Task Group will, as far as possible, also take into account any AFIR-NAP changes that result from the AFIR review.

This section maps the AFIR data types set out in the Domain onto OCPI 3.0 objects and properties, following the same outline as the OCPI 2.3.0 mapping. It first sets out how the AFIR and OCPI 3.0 level models correspond — in OCPI 3.0 the two share the same four-tier model and line up one-to-one — and then maps the individual data types. The AFIR data types are reproduced verbatim in AFIR data specifications. The OCPI 3.0 types and enumerations this extension adds or extends are documented in OCPI 3.0.0 Type definitions.

The mapping follows the same category outline as the Domain, split into static and dynamic data. Within each AFIR data category, a separate table is given for each OCPI 3.0 object (Location, Charging Station, EVSE, Connector, Parking, Tariff) whose properties carry that data. Each table is keyed by the OCPI property; for data types classified as *New* the property shown is the field defined by this extension.

OCPI 3.0 carries the relevant service data natively (in particular the `LocationService` `ASSISTANCE` value). Every mapping is classified as:

- **Existing** — a native OCPI 3.0 property already carries the data.
- **Conversion** — a native OCPI 3.0 property exists, but the value must be converted to the AFIR format.
- **New** — no property exists; a new field is defined by this AFIR extension.

The `#` column refers to the row number in the AFIR tables (AFIR data specifications): `A` for Table A, `B` for Table B, `F` for the dynamic table.

The extension defines its new fields on top of two change requests to OCPI 3.0: (1) replacing the card-only `CardPaymentOptions` object with `PaymentOptions` (a `methods` list plus card `physical_interfaces`, `brands`, and free-text `other`; `ChargingStation.card_payment` becomes `payment_options`), so a single object covers card and non-card ad-hoc payment (A20–A23); and (2) adding `TOILETS` and `REST_AREA` values to the native `Facility` enum (amenities at or near the Location) for the AFIR bathrooms and resting facilities (A6). Aside from these, the OCPI 3.0 data model is used unchanged.

OCPI 3.0 needs far fewer additions than 2.3.0. Its four-tier model (with a dedicated Charging Station object), native payment options that already include the accepted card brands, the native `ASSISTANCE` service, a Location-level `max_power`, and the separation of EVSE presence from operational status together cover most AFIR data types directly. The AFIR extension adds only a `legal_name` on `BusinessDetails` (A1) and a `BIDIRECTIONAL_CAPABLE` capability value (B9) of its own. It relies on two change requests to OCPI 3.0: replacing `CardPaymentOptions` with `PaymentOptions` (field `payment_options`, A20–A23), and adding `TOILETS` and `REST_AREA` values to `Facility` (A6).

4.1. Levels and terminology

AFIR and OCPI 3.0 describe charging infrastructure using the same four-tier model, so — unlike OCPI 2.3.0 — the two line up one-to-one. The AFIR recharging pool, recharging station, and recharging point are defined in Article 2 of the

AFIR [1]. The correspondence is:

AFIR	OCPI 3.0
Recharging pool	Location
Recharging station	Charging Station
Recharging point	EVSE
Connector	Connector

Unlike OCPI 2.3.0, OCPI 3.0 has a Charging Station object for the AFIR recharging station. Even so, most AFIR station-level data is carried on the Location rather than the Charging Station, because a recharging pool typically shares it. The one station-level item carried elsewhere is the ad-hoc price (F3), on the Tariff.

- **Location**
  The AFIR recharging pool, and the object that carries most station-level AFIR data: operator and owner details, address, geographic location, opening hours, time zone, facilities, parking, energy mix, helpdesk number, and the station maximum power (B5).
- **Charging Station**
  The AFIR recharging station, holding its EVSEs. Carries the physical-station specifics: the payment options (A20–A23), the form factor, and the supplementary location detail (A8: floor level, physical reference, directions).
- **EVSE**
  An AFIR recharging point, a unit that charges one EV at a time. Also carries the contract-based service-provider data (A24, B7).
- **Connector**
  The physical plug or socket used to connect the vehicle.

4.2. Static Data

Static data must be updated when a change occurs and, in any event, within twenty-four hours [2]. The quality requirements are completeness, accuracy, consistency, timeliness, and reliability.

4.2.1. General Information

4.2.1.1. Location

#	Data type	Property	Status	Notes
A1	Legal name of the operator or owner	• `owner.legal_name` • `operator.legal_name` • `suboperator.legal_name`	New	BusinessDetails holds a single `name`; the extension adds a separate `legal_name` to distinguish it from the commercial name (A2).
A2	Commercial name of the operator or owner	• `owner.name` • `operator.name` • `suboperator.name`	Existing	The BusinessDetails `name` is the commercial name, used to distinguish it from the legal name (A1).

#	Data type	Property	Status	Notes
A3	Number of recharging or refuelling points	EVSEs in `charging_pool`	Conversion	Count the EVSEs across all Charging Stations in the Location's `charging_pool`, excluding EVSEs whose `presence` is `REMOVED`.
A4	Service support	`services` (`ASSISTANCE`)	Existing	AFIR service support is present when the Location `services` include `ASSISTANCE` (native in OCPI 3.0).
A5	Helpdesk telephone	`help_phone`	Existing	—
A6	Facilities offering associated services	• `facilities` • `parking_places`	Conversion	Derive each AFIR facility from the OCPI value: • `facilities` `RESTAURANT`/`CAFE` → catering • `facilities` `REST_AREA` → resting (change request: adds `REST_AREA` to the native `Facility`) • `facilities` `TOILETS` → bathrooms (change request: adds `TOILETS` to the native `Facility`) • `parking_places.roofed` → roofed • `parking_places.lighting` → illuminated • other → no OCPI equivalent (would need a new OpenEnum value)

4.2.2. Geographic Location Data

4.2.2.1. Location

#	Data type	Property	Status	Notes
A7	GNSS geographic location	`address.coordinates`	Existing	GeoLocation of the Location, in WGS84. Mandatory in OCPI 3.0; use this Location-level value for the AFIR station coordinates.
A8	Additional geographic location information	`related_locations`	Conversion	Take the AFIR additional location info from `related_locations`; per-station detail is also available on the Charging Station (`floor_level`, `physical_reference`, `directions`).
A9	Country	`address.country`	Conversion	`country` is the location's country in ISO 3166-1 alpha-3; convert to AFIR's alpha-2.

#	Data type	Property	Status	Notes
A10	Region	`address.region`	New	A new free-form `region` string on the Address. As OCPI is international, the field is not tied to a specific standard; for AFIR it carries the NUTS-1 region code (e.g. `NL3`).
A11	City or town	`address.city`	Existing	—
A12	Postal code	`address.postal_code`	Existing	—
A13	Address name	`address.street_address`	Existing	Street name and number.

4.2.2.2. Charging Station

#	Data type	Property	Status	Notes
A8	Additional geographic location information	• `floor_level` • `physical_reference` • `directions`	Existing	Supplementary per-station detail (the EVSE also carries a `physical_reference`).

NOTE A7 — GNSS geographic location: use the Location coordinates.

NOTE A8 — Additional geographic location information: available on both the Location and the Charging Station.

4.2.3. Accessibility Data

4.2.3.1. Location

#	Data type	Property	Status	Notes
A14	Opening time	`opening_times`	Conversion	Derive the AFIR opening times from OCPI `Hours`: • `twentyfourseven` • `regular_hours` • `exceptional_openings` • `exceptional_closings`
A15	Time zone	`time_zone`	Conversion	Convert the OCPI IANA time-zone name (e.g. `Europe/Amsterdam`) to the ISO 8601 form AFIR expects.
A18	Number of parking spaces	count of `parking_places`	Conversion	Derived from the number of Parking objects at the Location.

4.2.3.2. Parking

The Parking object is carried in the Location's `parking_places` list and referenced per EVSE via `EVSE.parking`.

#	Data type	Property	Status	Notes
A16	Vehicle-type compatibility	`vehicle_types`	Conversion	Map the OCPI `VehicleType` values to the AFIR/UNECE categories (L, M1, M2/M3, N1, N2/N3); not 1:1.
A17	Vehicle specifications permitted	• `max_vehicle_weight` • `max_vehicle_height` • `max_vehicle_length` • `max_vehicle_width`	Conversion	Convert the OCPI kilograms and centimetres to the tonnes and metres AFIR uses. OCPI 3.0 additionally exposes `parking_space_length` / `parking_space_width`.
A19	Number of parking spaces for people with disabilities	count of `parking_places` with `vehicle_types` `DISABLED`	Conversion	Derived: count the Parking objects whose `vehicle_types` includes `DISABLED`. `Parking.standards` (e.g. PAS 1899) documents the accessibility standard applied.

4.2.4. Payment Options

All payment data is carried on the Charging Station's `payment_options` field (a `PaymentOptions` object). A change request to OCPI 3.0 replaces the card-only `CardPaymentOptions` with `PaymentOptions` (and renames `ChargingStation.card_payment` to `payment_options`), so a single object covers every ad-hoc means: a `methods` list (`PaymentMethod`: `CARD`, `CASH`, `WEBSITE`, `QR_CODE`), the card `physical_interfaces` and `brands`, and a free-text `other`. The card interface and brand enums are the native ones renamed (`CardPaymentPhysicalInterface` to `PaymentPhysicalInterface`, `CardPaymentType` to `PaymentType`).

4.2.4.1. Charging Station

#	Data type	Property	Status	Notes
A20	Payment device with bank card reader	`payment_options.physical_interfaces` (`CHIP` / `MAGSTRIPE`)	Existing	AFIR "yes" when `physical_interfaces` includes `CHIP` or `MAGSTRIPE`.
A21	Payment device with contactless functionality	`payment_options.physical_interfaces` (`CONTACTLESS`)	Existing	AFIR "yes" when `physical_interfaces` includes `CONTACTLESS`.
A22	Other ad-hoc payment option	`payment_options.methods`	New	The non-card ad-hoc means are carried by the `PaymentOptions` `methods` list (`PaymentMethod`): `CASH`, `WEBSITE` (website / static QR), and `QR_CODE` (dynamic QR); `CARD` in the same list covers terminal payment (A20/A21). The `PaymentOptions` change request that replaces `CardPaymentOptions` provides this list, and AFIR's free-text "other" maps to `payment_options.other`.

#	Data type	Property	Status	Notes
A23	Additional information about payment providers accepted	`payment_options.brands`	Existing	The AFIR accepted-providers list is taken from `brands` (`PaymentType`: `VISA`, `MASTERCARD`, `MAESTRO`, `AMERICAN_EXPRESS`, `V_PAY`, `CB`, `INTERAC`), the native card brands (`CardPaymentType`, renamed `PaymentType` by the change request).
A24	Contract-based (subscription) payment	`accepted_service_providers` (EVSE)	Existing	AFIR "yes" when the EVSE `accepted_service_providers` lists one or more contract mobility service providers (supported by the Charging Station capability `RFID_READER`).

4.2.5. Additional Static Data for Publicly Accessible Charging Infrastructure

4.2.5.1. EVSE

#	Data type	Property	Status	Notes
B1	Recharging point / connector ID	`evse_id`	Existing	eMI3 EVSE ID; the per-connector identifier is `Connector.id`.
B2	Number of connectors	count of `connectors`	Conversion	Derived from the number of Connector objects on the EVSE.
B7	Mobility service providers offering contract-based recharging	`accepted_service_providers`	Existing	The AFIR MSP list is taken directly from `accepted_service_providers`.

4.2.5.2. Charging Station

#	Data type	Property	Status	Notes
B9	Smart recharging services	`capabilities`	Existing and New	AFIR smart-recharging services are present when the Charging Station `capabilities` include `CHARGING_PROFILES` / `CHARGING_PREFERENCES` (native); bidirectional (V2G) is the added `ChargingStationCapability` value `BIDIRECTIONAL_CAPABLE`.

4.2.5.3. Connector

#	Data type	Property	Status	Notes
B3	Type of connector (plug)	`standard`	Conversion	Map the OCPI `ConnectorType` value (includes `MCS`) to the AFIR plug list. OCPI 3.0 also exposes `compatibility_labels` for the EU Directive 2014/94/EU labels.

#	Data type	Property	Status	Notes
B4	Type of current	`power_type`	Conversion	Collapse the phase-granular `PowerType` (`AC_1_PHASE`, `AC_3_PHASE`, …) to AFIR's AC/DC.
B6	Recharging point maximum power	• `max_electric_power` • `max_voltage` • `max_amperage`	Conversion	The point max power is the **highest** `max_electric_power` across the EVSE's connectors — not the sum — since only one connector can charge at a time. Convert watts → kW; when `max_electric_power` is absent, derive it from `max_voltage` × `max_amperage` (both mandatory in OCPI 3.0).
B8	Plug-and-charge	`capabilities`	Existing	AFIR "yes" when the Connector `capabilities` include `ISO_15118_2_PLUG_AND_CHARGE` or `ISO_15118_20_PLUG_AND_CHARGE`.

4.2.5.4. Location

#	Data type	Property	Status	Notes
B5	Recharging station maximum power	`max_power`	Conversion	OCPI 3.0 adds a Location-level `max_power` (`MaxPower`: `unit` + `value`) giving the real grid-limited maximum the Location can draw — resolving the theoretical-sum caveat of the 2.3.0 mapping. Convert to kW. Where a pool contains multiple Charging Stations, per-station maxima are derived by aggregating each station's connector maxima as in B6.
B10	Electricity supplied is 100% renewable	`energy_mix.is_green_energy`	Conversion	Read the AFIR yes/no from `is_green_energy`. OCPI has no renewable-% or Guarantee-of-Origin evidence field.

NOTE B5 — OCPI 3.0's `Location.max_power` reflects the actual grid connection limit, so unlike the 2.3.0 mapping the simultaneous total is expressible.

4.3. Dynamic Data

Dynamic data must be updated when a change occurs and, in any event, within one minute [2].

4.3.1. Dynamic Data for Publicly Accessible Charging and Refuelling Infrastructure for Alternative Fuels

4.3.1.1. EVSE

#	Data type	Property	Status	Notes
F1	Operational status	`presence` + `EVSEStatus`	Conversion	Derive operational / non-operational from the EVSE's `presence` and status: non-operational when `presence` is `PLANNED` or `REMOVED`, or when the status is `INOPERATIVE` / `OUTOFORDER` / `UNKNOWN`; otherwise operational.
F2	Availability	`EVSEStatus`	Conversion	Derive in use / reserved / not in use from the status (`CHARGING`/`BLOCKED` → in use, `RESERVED` → reserved, `AVAILABLE` → not in use). OCPI 3.0 separates physical presence (`PresenceStatus`) from operational status (`EVSEStatus`), so — unlike 2.3.0 — F1 and F2 are not overloaded onto a single field.

4.3.1.2. Tariff

#	Data type	Property	Status	Notes

F3	Ad hoc price	• `currency`
		• `tax_included`
		• `energy.price_per_kwh` / `vat`
		• `time.price_per_hour` / `vat`
		• `flat.price` / `vat`
		• `min_cost` / `max_cost`
		  ◦ `before_taxes`
		  ◦ `after_taxes`
			Conversion	Assemble the AFIR ad-hoc price from the Tariff whose `TariffAssociation` `audiences` include `AD_HOC_PAYMENT`. Each element type sets the AFIR unit: `energy` → per kWh, `time` → per hour, `flat` → per session. OCPI 3.0 removed `step_size` and replaced the generic price components with typed `energy` / `time` / `flat` elements, simplifying the mapping. Tariffs attach to connectors via `TariffAssociation`. This extension requires that at least one `TariffAssociation` with `audiences` including `AD_HOC_PAYMENT` reference every publicly accessible Connector, so the ad-hoc price is always resolvable.

4.4. Summary of changes

This section summarises everything the AFIR extension adds to the OCPI 3.0 data model, together with the cardinalities it tightens and the two change requests it relies on. Each entry exists to carry an AFIR data type that OCPI 3.0 cannot otherwise express, or to guarantee that a mandatory AFIR data element is always present. The `#` column refers to the AFIR data tables (AFIR data specifications).

Because OCPI 3.0 already carries most AFIR data natively — a dedicated Charging Station object, payment options with accepted card brands, the native `ASSISTANCE` service, a Location-level `max_power`, and mandatory connector electrical fields — the additions needed are far fewer than in the 2.3.0 extension.

4.4.1. New and renamed types

Name	Kind	#	Purpose
PaymentOptions	Replaces `CardPaymentOptions` (change request)	A20–A23	Replaces the card-only `CardPaymentOptions` so one object covers all ad-hoc payment; `ChargingStation.card_payment` becomes `payment_options`. Carries a `methods` list, plus card `physical_interfaces`, `brands`, and free-text `other`.
PaymentMethod	New OpenEnum (change request)	A22	The ad-hoc payment methods offered: `CARD`, `CASH`, `WEBSITE`, `QR_CODE`. `CARD` covers terminal payment; the rest are the non-card means.
PaymentPhysicalInterface	Renames `CardPaymentPhysicalInterface` (change request)	A20/A21	How a card is presented to the terminal: `CONTACTLESS`, `CHIP`, `MAGSTRIPE`.
PaymentType	Renames `CardPaymentType` (change request)	A23	Accepted card brands or schemes: `VISA`, `MASTERCARD`, `MAESTRO`, `AMERICAN_EXPRESS`, `V_PAY`, `CB`, `INTERAC`.

These types make up the `PaymentOptions` change request. The `ASSISTANCE` service (`LocationService`) is native in OCPI 3.0.

4.4.2. Added properties

Object	Property	#	Purpose
BusinessDetails	`legal_name`	A1	Legal name of the operator or owner, kept distinct from the commercial name carried by `name` (A2).
Address	`region`	A10	Region of the Location, as a free-form string; carries the NUTS-1 geocode for AFIR.

4.4.3. Added enumeration values

Enumeration	Value	#	Purpose
ChargingStationCapability	`BIDIRECTIONAL_CAPABLE`	B9	The Charging Station supports bidirectional (V2G) charging — an AFIR smart-recharging service (extension).
Facility	`TOILETS`	A6	Toilets are available at or near the Location. Proposed as an OCPI 3.0 change request; the native `Facility` has no toilets value.
Facility	`REST_AREA`	A6	A rest area or resting facilities are available at or near the Location. Proposed as an OCPI 3.0 change request.

The CARD / CASH / WEBSITE / QR_CODE values belong to the new PaymentMethod enum (part of the PaymentOptions change request), not to a native enum. Card brands (A23) use the renamed PaymentType enum (formerly CardPaymentType), which needs no new value. The TOILETS and REST_AREA values are carried by the existing native Location.facilities field, so no new property is needed for them.

4.4.4. Changed required fields

To guarantee AFIR completeness, the AFIR extension makes a number of OCPI 3.0 optional properties mandatory. The table below lists the required set per object; the conditional column captures the cases a flat required list cannot express.

Object	Required properties	Conditional requirement
Location	address, charging_pool, time_zone, opening_times, energy_mix, help_phone, parking_places	At least one of operator / owner must be present (A1/A2); parking_places must be non-empty (A16–A19).
Address	street_address, city, postal_code, country, coordinates, region	region carries the AFIR NUTS-1 region (A10); postal_code carries A12.
Charging Station	id, evses, payment_options, capabilities	—
EVSE	uid, evse_id, presence, connectors, parking	parking is already required and non-empty in native OCPI 3.0 (A16–A19).
Connector	standard, power_type, max_voltage, max_amperage	—
Parking	vehicle_types, roofed, lighting, max_vehicle_weight, max_vehicle_height, max_vehicle_length, max_vehicle_width	— (all vehicle specifications are mandatory for A17)
Tariff	currency, tax_included	—
TariffAssociation	tariff_id, connectors, audiences	Every publicly accessible Connector must be referenced by at least one TariffAssociation whose audiences include AD_HOC_PAYMENT, so the F3 ad-hoc price resolves.
Hours	twentyfourseven	regular_hours is required when twentyfourseven is false (A14).
CostLimit	before_taxes, after_taxes	—
BusinessDetails	legal_name, name	—

Relative to native OCPI 3.0, the notable tightenings are: making help_phone, opening_times, energy_mix and the address postal_code mandatory on the Location (A5/A14/B10/A12), adding a mandatory address region field for the AFIR NUTS-1 region (A10), and requiring a non-empty parking_places (A16–A19); requiring capabilities on every Charging Station (smart-recharging data, B9); requiring evse_id on every EVSE (B1); and requiring roofed, lighting and the four vehicle-dimension fields on Parking (A6/A17). OCPI 3.0 already mandates the Connector electrical fields (standard, power_type, max_voltage, max_amperage), the card payment arrays, and a non-empty EVSE.parking, so — unlike 2.3.0 — those need no tightening. As the 3.0 counterpart of the mandatory Connector.tariff_ids in 2.3.0, the extension instead requires, as a completeness rule, that every publicly accessible Connector be covered by an AD_HOC_PAYMENT

`TariffAssociation` so the F3 ad-hoc price can be resolved; the association object itself is already fully required in native OCPI 3.0.

References

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- [2] Commission Implementing Regulation (EU) 2025/655 of 2 April 2025 laying down rules for the application of Regulation (EU) 2023/1804 as regards specifications and procedures relating to the availability and accessibility of data on alternative fuels infrastructure. https://eur-lex.europa.eu/eli/reg_impl/2025/655/oj/eng
- [3] CEN/TS 16157-10:2022 — Intelligent transport systems — DATEX II data exchange specifications for traffic management and information — Part 10: Energy infrastructure publications.
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- [6] Nomenclature of territorial units for statistics (NUTS) — NUTS-1 level geocode standard.
- [7] ISO 8601 — Date and time representations.
- [8] ISO 4217 — Codes for the representation of currencies.
- [9] UNECE vehicle categorisation — Consolidated Resolution on the Construction of Vehicles (R.E.3), vehicle categories L, M and N. https://unece.org/fileadmin/DAM/trans/main/wp29/wp29resolutions/ECE-TRANS-WP.29-78r6e.pdf
- [10] Open Charge Point Interface (OCPI), developed and managed by the EVRoaming Foundation. https://github.com/ocpi — https://evroaming.org

Appendix A: AFIR data specifications

This appendix reproduces the AFIR data types verbatim from the Annex to Commission Implementing Regulation (EU) 2025/655 [2], which implements Article 20(2) of the AFIR [1]. It serves as the reference for the AFIR tables cited from the mapping section. Each data type is reported either at the level of a recharging or refuelling **station** or an individual recharging **point**, and is shown with its data category, data level, description, and required data format. The required data formats refer to ISO 3166-1 [5], NUTS [6], ISO 8601 [7], ISO 4217 [8], and the UNECE vehicle categorisation [9].

Static Information

Static data describes the characteristics of the infrastructure that change infrequently. Per Article 2(a) of Implementing Regulation (EU) 2025/655 [2], static data must be updated when a change occurs and, in any event, no later than twenty-four hours after the change. Two Annex tables are relevant for electric recharging infrastructure: **Table A** lists the static data common to all publicly accessible recharging and refuelling infrastructure for alternative fuels, and **Table B** adds the further static data specific to electric recharging infrastructure. Both tables are reproduced below.

Table A — Static data for publicly accessible recharging and refuelling infrastructure for alternative fuels

Source: Annex, Table A, Commission Implementing Regulation (EU) 2025/655 [2].

#	Data category	Data type	Data level	Description	Data format
1	General information	Legal name of the recharging or refuelling point operator or owner	Station	Legal name of the operator responsible for the management and operation of the publicly accessible recharging and refuelling points for alternative fuels, or, in accordance with the arrangements between them, the owner of those points, which provides a recharging or refuelling service to end users, including in the name and on behalf of a mobility service provider.	Discrete value (string/text)
2	General information	Commercial name of the recharging or refuelling point operator or owner	Station	Commercial name of the recharging or refuelling point operator or, in accordance with the arrangements between them, the owner of those points as it is presented to the public when offering recharging or refuelling services.	Discrete value (string/text)

#	Data category	Data type	Data level	Description	Data format
3	General information	Number of recharging or refuelling points	Station	Number of recharging points or refuelling points that can be used at the same time in a recharging or refuelling station. An electric recharging point may have one or more connectors, however only one can be used at the same time.	Numeric value (number)
4	General information	Service support	Station	Information regarding the presence of physical persons attending the recharging or refuelling station.	Discrete value (string/text)
5	General information	Helpdesk telephone	Station	Telephone number of the helpdesk, managed by the recharging or refuelling point operator or owner, that is readable in the recharging station.	Format based on notation applicable to Union telephone numbers containing at least the following elements: Country code <space> complete number including the regional code (if there is one) in one separate block with the starting zero. Extension numbers shall be added with a dash directly after the complete number. No other dashes, spaces or brackets may be used in the helpdesk telephone number.
6	General information	Facilities offering associated services to the user	Station	The recharging or refuelling station has in its immediate surrounding area facilities offering associated services to customers. The following facilities and services shall be reported (yes/no): • Roofed recharging or refuelling parking location. • Illuminated recharging or refuelling parking location. • Catering service (e.g. food, beverage) • Bathrooms. • Resting facilities. • Other (expressed as free text).	Discrete value (string/text) in list format

#	Data category	Data type	Data level	Description	Data format
7	Geographic location	Global Navigation Satellite System (GNSS) geographic location information	Station	Latitude and longitude coordinates of the recharging or refuelling station.	Latitude and Longitude coordinates in WGS84 decimal standard.
8	Geographic location	Additional geographic location information	Station	Additional concrete information that may be relevant to reach the recharging or refuelling station in certain situations, such as parking level, parking lot, etc.	Discrete/numeric value (combination of string/text and numeric)
9	Geographic location	Country	Station	Name of the Member State where the recharging or refuelling station is located.	Format according to standard ISO 3166-1 alpha-2 codes
10	Geographic location	Region	Station	Name of the Member State region where the recharging or refuelling station is located, expressed in the nomenclature of territorial units for statistics (NUTS) 1 level.	Format according to NUTS-1 geocode standard
11	Geographic location	City or town	Station	Name of the Member State city or town where the recharging station is located. It shall include information on the municipality or stop name (e.g. highway, area) if not directly associated with the city or town.	Discrete value (string/text)
12	Geographic location	Postal code	Station	Postal code where the recharging or refuelling station is located, including potential additional identification information attending to the concrete characteristics of the postal code in that location.	Discrete/numeric value (combination of string/text and numeric)
13	Geographic location	Address name	Station	Where relevant, name of the street where the recharging or refuelling station is located, including the number.	Discrete/numeric value (combination of string/text and numeric) indicating the street name followed by the street number
14	Accessibility	Opening time	Station	Information regarding the time periods when a recharging or refuelling station is open and accessible to the public for recharging or refuelling, where applicable taking into account the time schedules of the building/facility that gives physical access to that recharging or refuelling station.	Discrete/numeric value (combination of string/text and numeric) indicating the weekdays followed by the time ranges when a recharging or refuelling station is open and accessible to the public

#	Data category	Data type	Data level	Description	Data format
15	Accessibility	Time zone	Station	Time zone where the recharging or refuelling station is located. This data type shall be used in combination with other data types to ensure that the availability of a recharging or refuelling point is shown correctly and to make reservation possible and accurate.	Format according to standard ISO 8601
16	Accessibility	Vehicle-type compatibility	Station	Type of vehicle that may use a recharging or refuelling station. The type of vehicle shall be specified in accordance with UNECE vehicle categorisation. The following vehicle categories shall be reported (yes/no): • Two and three wheel vehicles and quadricycles (L) • Passenger cars (M1) • Buses and coaches (M2 or M3) • Vans (N1) • Trucks (N2 or N3) • Other (expressed as free text)	Discrete/numeric value (combination of string/text and numeric) in list format
17	Accessibility	Vehicle specifications permitted	Station	Where relevant, specific limitations to the mass and dimensions of vehicles (including trailers, semi-trailers, etc.), allowed to access the recharging or refuelling station. The following vehicle specifications, including trailers, shall be reported (yes/no): • Maximum vehicle mass. • Maximum vehicle height. • Maximum vehicle length. • Maximum vehicle width.	Discrete/numeric value (combination of string/text and numeric) indicating maximum vehicle mass in tonnes and maximum vehicle height, length and width in metres, including trailer.

#	Data category	Data type	Data level	Description	Data format
18	Accessibility	Number of parking spaces	Station	Number of parking spaces that may be used at a recharging or refuelling station to conduct a recharging or refuelling session. It may be different to the number of recharging or refuelling points of that station.	Numeric value (integer number)
19	Accessibility	Number of parking spaces for people with disabilities	Station	Number of parking spaces with accessible recharging or refuelling points for people with disabilities in compliance with relevant accessibility requirements defined in existing standards, guidelines or national legislation.	Numeric value (integer number)
20	Payment options	Payment device with bank card reader	Station	Indication on the existence (yes/no) of a payment terminal with the ability to enable the bank card (debit/credit) to be physically inserted in the terminal for the Europay, Mastercard and Visa (EMV) chip to be read.	Discrete value (string/text)
21	Payment options	Payment device with a contactless functionality that is at least able to read payment cards	Station	Indication on the existence (yes/no) of a payment terminal that is at least able to read bank cards (debit/credit) with a contactless functionality (e.g. Near Field Communication – NFC).	Discrete value (string/text)
22	Payment options	Other ad hoc payment option	Station	Indication on the existence (yes/no) of the following ad hoc payment options: • Specific (e.g. dynamically generated) QR code • Payment through a website (e.g. static QR code) • Cash • Other (expressed as free text)	Discrete value (string/text)
23	Payment options	Additional information about payment providers accepted	Station	Additional information indicating the payment service providers that accept electronic payments in the ad hoc payment option.	Discrete value (string/text) in list format

#	Data category	Data type	Data level	Description	Data format
24	Payment options	Contract-based (subscription) payment option	Station	Possibility to pay for a recharging or refuelling service on the basis of a contract-based payment (yes/no) between the end user and the mobility service provider.	Discrete value (string/text)

Table B — Further static data for publicly accessible recharging infrastructure

Source: Annex, Table B, Commission Implementing Regulation (EU) 2025/655 [2].

#	Data category	Data type	Data level	Description	Data format
1	General information	Recharging Point ID code (Connector)	Point	Unique ID of the recharging point, which includes the unique ID code of the recharging point operator issued by the IDRO (ID Registration Organisation). It supports the identification, including for billing and booking purposes, of the recharging point within a recharging station.	Discrete/numeric value (combination of string/text and numeric)
2	General information	Number of connectors	Point	Number of connectors in a recharging point. An electric recharging point may have one or more connectors, however only one can be used at the same time.	Numeric value (integer number)
3	General information	Type of connector (plug)	Point	Identification of connectors available in each recharging point within a recharging station: • Type 2 (AC) • Combo2/CCS (DC) • Megawatt Charging System (MCS) • CHAdeMO (DC) • Other (expressed as free text)	Discrete value (string/text) in list format
4	Type of current	Type of current	Point	Type of electric current flow delivered at the recharging point, differentiating between alternating current (AC) or direct current (DC).	Discrete value (string/text) differentiating between AC and DC

#	Data category	Data type	Data level	Description	Data format
5	Power output	Recharging station maximum power	Station	Total maximum power that the recharging points of the station can provide at the same time.	Numeric value (number) expressed in kW
6	Power output	Recharging point maximum power	Point	Maximum power that can be provided by the recharging point to the electric vehicle at a given time.	Numeric value (number) expressed in kW
7	Payment options	Mobility service providers offering contract-based recharging	Station	Information indicating the name of those mobility service providers that are offering contract-based payment options and are accepted in a recharging station.	Discrete value (string/text) in list format
8	Automatic authentication	Plug-and-charge	Point	Possibility of conducting automatic authentication and authorisation of the recharging session on the basis of a contract-based payment concluded between the end user and the mobility service provider (yes/no) in a recharging point.	Discrete value (string/text)
9	Smart recharging functionalities	Smart recharging services	Point	Possibility of using smart recharging services in a recharging point. The possibility of using the following smart recharging services must be indicated (yes/no): • Remote monitoring and control recharging. • User preference configuration for recharging power optimization. • Bidirectional recharging. • Other (expressed as free text)	Discrete value (string/text)
10	Renewable electricity	Electricity supplied is 100% renewable	Station	The recharging station exclusively supplies 100% renewable electricity (yes/no) (EU Guarantee of Origin (GO) scheme).	Discrete value (string/text)

Dynamic Information

Dynamic data reflects the real-time situation of the infrastructure. Per Article 2(b) of Implementing Regulation (EU) 2025/655 [2], dynamic data must be updated when a change occurs and, in any event, no later than one minute after the change. **Table F** lists the dynamic data common to all publicly accessible recharging and refuelling infrastructure for

alternative fuels: operational status, availability, and ad hoc price.

Table F — Dynamic data for publicly accessible recharging and refuelling infrastructure for alternative fuels

Source: Annex, Table F, Commission Implementing Regulation (EU) 2025/655 [2].

#	Data category	Data type	Data level	Description	Data format
1	Functionality	Operational status	Point	Capability of the recharging or refuelling point to perform its function. The operational status of a recharging or refuelling point expressed as operational or non-operational: • Operational: it can be used in normal conditions during the opening time that is accessible to the public. • Non-operational: it cannot be used due to a technical problem or maintenance works.	Discrete value (string/text) expressed as operational or non-operational
2	Functionality	Availability	Point	Possibility to use a recharging or refuelling point at present time and, when technically possible, at a specific future time, the availability of a recharging or refuelling point expressed as in use, reserved or not in use: • In use: it is occupied • Reserved: it is booked by an end user • Not in use: it is non-occupied, thus available for use	Discrete value (string/text) expressed as in use, reserved or not in use

#	Data category	Data type	Data level	Description	Data format
3	Price	Ad hoc price	Station	For recharging infrastructure, indication of the end user price for recharging on an ad hoc basis, including all applicable price components. These must be indicated and expressed in national currency per kWh, national currency/min, or national currency/session. Any other price component that may apply in addition must be equally indicated. For refuelling infrastructure, indication of the end user price for refuelling on an ad hoc basis, expressed in national currency per kg of fuel.	Discrete/numeric value (combination of string/text and numeric) in list format expressed for recharging infrastructure in national currency per kWh, national currency/min, or national currency/session and for refuelling infrastructure in national currency per kg of fuel. National currencies shall be expressed according to ISO 4217, which establishes internationally recognised codes for the representation of currencies.

Appendix B: OCPI 2.3.0 Type definitions

This appendix documents the OCPI 2.3.0 types and enumerations that this extension adds or extends. For each, it lists the properties and enumeration values the extension defines, together with the cardinalities it makes mandatory.

PaymentBrand *OpenEnum*

A brand or scheme of payment card accepted at the EVSE for ad-hoc card payment. Backported from OCPI 3.0: it mirrors the native OCPI 3.0 `CardPaymentType` enum — carried there by `CardPaymentOptions.card_types` on the Charging Station — which OCPI 2.3.0 lacks. The value set is identical to `CardPaymentType`, so accepted-card-brand data maps across the two versions without conversion.

Value	Description
AMERICAN_EXPRESS	American Express (AmEx) credit cards.
CB	The French CB (*Carte Bancaire*) system.
INTERAC	The Canadian Interac Direct Payment system.
MAESTRO	The Maestro debit card system operated by MasterCard.
MASTERCARD	Payment cards branded MasterCard.
VISA	Payment cards branded VISA.
V_PAY	The V Pay debit card system operated by VISA.

LocationService *OpenEnum*

An enumeration of services that are offered at the Location by the CPO or affiliated parties. Backported from OCPI 3.0, where the `LocationService` enum and the `Location.services` field that carries it are native. OCPI 2.3.0 has no equivalent, so this extension reproduces the enum (limited to the `ASSISTANCE` value that AFIR needs) and adds the `services` field to the Location. The value set and semantics match OCPI 3.0, so data maps across the two versions without conversion.

Value	Description
ASSISTANCE	Assistance from on-site staff is available to help a Driver charge at the Location.

BusinessDetails *Class*

Provides information about an organization and its contacts.

Property	Type	Cardinality	Description
legal_name	string[1..100]	1	Legal name of the operator or owner, kept distinct from the commercial name carried by `name`. New in this extension.
name	string[1..100]	1	Name of the company. Made mandatory by this extension.

Capability *OpenEnum*

The capabilities of an EVSE. The values added by this extension carry data that OCPI 3.0 expresses through dedicated types (see the individual value descriptions); OCPI 2.3.0 has no such objects, so they are folded into the `Capability` enum here.

Value	Description
BIDIRECTIONAL_CAPABLE	The EVSE supports bidirectional (V2G) charging; the EV can discharge power back to the grid. In OCPI 3.0 this is the `ChargingStationCapability` value of the same name.
QR_CODE_PAYABLE	EVSE supports ad-hoc payment via a dynamically generated QR code. In OCPI 3.0 this ad-hoc means is modelled by the `AdHocPaymentOption` value `QR_CODE`.
WEBSITE_PAYABLE	EVSE supports ad-hoc payment via a website, for example a static QR code. In OCPI 3.0 this ad-hoc means is modelled by the `AdHocPaymentOption` value `WEBSITE`.
CASH_PAYABLE	EVSE supports ad-hoc payment with cash. In OCPI 3.0 this ad-hoc means is modelled by the `AdHocPaymentOption` value `CASH`.

Connector *Class*

A Connector is the socket or cable and plug available for the EV to use. This extension relaxes the core requirement that both `max_voltage` and `max_amperage` are present, allowing `max_electric_power` as the fallback.

Property	Type	Cardinality	Description
max_voltage	int	?	Maximum voltage of the connector (line to neutral for AC_3_PHASE), in volt [V]. Conditionally required.
max_amperage	int	?	Maximum amperage of the connector, in ampere [A]. Conditionally required.
max_electric_power	int	?	Maximum electric power that can be delivered by this connector, in Watts (W). Conditionally required as the fallback.
tariff_ids	string<=36	+	Identifiers of the currently valid charging tariffs. Made mandatory and non-empty by this extension so the F3 ad-hoc price can be resolved.

EVSE *Class*

The EVSE object describes the part that controls the power supply to a single EV in a single session.

Property	Type	Cardinality	Description
payment_brands	PaymentBrand	*	The card brands accepted for ad-hoc card payment at this EVSE. OCPI 2.3.0 has no native field for accepted card brands, so this field is added by the extension; it backports the data that OCPI 3.0 carries natively in `CardPaymentOptions.card_types` (`CardPaymentType`).

Property	Type	Cardinality	Description
capabilities	Capability	1	List of functionalities that the EVSE is capable of. Made mandatory by this extension (payment and smart-charging data).
evse_id	string[1..48]	1	The EVSE ID in the eMI3 format. Made mandatory by this extension.
parking	EVSEParking	+	List of parking place references for this EVSE. Made mandatory and non-empty by this extension so the A16-A19 parking data resolves per recharging point.

Facility *OpenEnum*

Amenities available at or near the Location that a Driver can make use of while charging. The values added by this extension carry the AFIR bathrooms and resting facilities (A6), for which OCPI 2.3.0 has no native `Facility` value. In OCPI 3.0 these are the `TOILETS` and `REST_AREA` values proposed for the native `Facility` enum.

Value	Description
TOILETS	Toilet facilities are available at or near the Location.
REST_AREA	A rest area or resting facilities are available at or near the Location.

Hours *Class*

Opening and access hours of the location.

Property	Type	Cardinality	Description
regular_hours	RegularHours	*	Regular hours, weekday-based. Made conditionally required by this extension when `twentyfourseven` is `false`.

Location *Class*

The Location object describes the location and its properties where a group of EVSEs that belong together are installed.

Property	Type	Cardinality	Description
services	LocationService	*	Optional list of services that are offered at the Location by the CPO or their affiliated partners. New in this extension, backported from OCPI 3.0 where `services` is a native field on the Location.
facilities	Facility	*	List of amenities at or near the Location. This extension adds `TOILETS` and `REST_AREA` to the `Facility` enum for the AFIR bathrooms and resting facilities (A6).

Property	Type	Cardinality	Description
energy_mix	EnergyMix	1	Details on the energy supplied at this location. Made mandatory by this extension.
evses	EVSE	+	List of EVSEs that belong to this Location. Made mandatory by this extension.
help_phone	CiString[1..25]	1	A telephone number that a Driver using the Location may call for assistance. Made mandatory by this extension.
opening_times	Hours	1	The times when the EVSEs at the location can be accessed for charging. Made mandatory by this extension.
postal_code	string[1..10]	1	Postal code of the location. Made mandatory by this extension.
region	string<=50	1	Region of the Location. For AFIR it carries the region per the NUTS-1 geocode standard. New in this extension (A10).
parking_places	Parking	+	List of parking places at the Location. Made mandatory and non-empty by this extension (A16-A19).
operator	BusinessDetails	?	Information of the operator. At least one of `operator` / `owner` is required by this extension.
owner	BusinessDetails	?	Information of the owner. At least one of `operator` / `owner` is required by this extension.

Parking *Class*

Describes a parking space that a vehicle can be parked in while charging. This extension makes all vehicle-specification fields mandatory.

Property	Type	Cardinality	Description
roofed	boolean	1	Whether the parking place is roofed. Made mandatory by this extension.
lighting	boolean	1	Whether the parking place has lighting. Made mandatory by this extension.
max_vehicle_weight	number	1	Maximum vehicle weight in kg. Made mandatory by this extension.
max_vehicle_height	number	1	Maximum vehicle height in centimeters. Made mandatory by this extension.
max_vehicle_length	number	1	Maximum vehicle length in centimeters. Made mandatory by this extension.
max_vehicle_width	number	1	Maximum vehicle width in centimeters. Made mandatory by this extension.

PriceLimit *Class*

Price limit with before and after taxes values.

Property	Type	Cardinality	Description
after_taxes	number	1	Maximum or minimum cost including taxes. Made mandatory by this extension.

Tariff *Class*

A Tariff object consists of a list of one or more Tariff Elements, which in turn consist of Price Components.

Property	Type	Cardinality	Description
type	TariffType	1	Defines the type of the tariff. Made mandatory by this extension so the `AD_HOC_PAYMENT` tariff is always identifiable.

Appendix C: OCPI 3.0.0 Type definitions

This appendix documents the OCPI 3.0.0 types and enumerations that this extension adds or extends. For each, it lists the properties and enumeration values the extension defines, together with the cardinalities it makes mandatory.

Address *Class*

Address and geographical location of the Location.

Property	Type	Required	Description
region	string<=50	yes	Region of the Location. For AFIR it carries the region per the NUTS-1 geocode standard. New in this extension (A10).
postal_code	string	yes	Postal code of the Location. Made mandatory by this extension (A12).

BusinessDetails *Class*

Provides information about an organization and its contacts.

Property	Type	Required	Description
legal_name	string[1..100]	yes	Legal name of the operator or owner, kept distinct from the commercial name carried by `name`. New in this extension.
name	string[1..100]	yes	Name of the company. Made mandatory by this extension.

ChargingStationCapability *OpenEnum*

The capabilities of a Charging Station.

Value	Description
BIDIRECTIONAL_CAPABLE	The Charging Station supports bidirectional (V2G) charging; the EV can discharge power back to the grid. Added by this extension.

Facility *OpenEnum*

An amenity located at or near the Location that a Driver can make use of while charging. A Facility is not part of the charging offering itself; it answers "is there an X at or near this charger?". Services actively provided by the operator are listed in `LocationService` instead. The `TOILETS` and `REST_AREA` values are added by this extension for the AFIR bathrooms and resting facilities (A6), proposed as an OCPI 3.0 change request.

Value	Description
TOILETS	Toilet facilities are available at or near the Location.
REST_AREA	A rest area or resting facilities are available at or near the Location.

LocationService *string*

ChargingStation *Class*

The ChargingStation object describes a device that is physically distinct and has a single user interface.

Property	Type	Required	Description
capabilities	Array of ChargingStationCapability	yes	List of functionalities that the Charging Station is capable of. Made mandatory by this extension (smart-recharging data).
payment_options	PaymentOptions	yes	Options for paying directly at the Charging Station, by payment card or another ad-hoc means. Made mandatory by this extension.

EVSE *Class*

The EVSE object describes the part that controls the power supply to a single EV in a single session.

Property	Type	Required	Description
evse_id	CiString[1..48]	yes	An identifier for the EVSE in the eMI3 format. Made mandatory by this extension.

Location *Class*

Represents a location in the OCPI schema.

Property	Type	Required	Description
address	Address	yes	Address and geographical location of the Location. Made mandatory by this extension.
facilities	Array of Facility	no	Optional list of amenities at or near the Location. This extension adds `TOILETS` and `REST_AREA` to the `Facility` enum for the AFIR bathrooms and resting facilities (A6).
charging_pool	Array of ChargingStation	yes	The list of Charging Stations that make up the physical charging infrastructure of this Location. Made mandatory by this extension.
parking_places	Array of Parking	yes	List of parking places at the Location. Made mandatory and non-empty by this extension (A16-A19).

Property	Type	Required	Description
energy_mix	EnergyMix	yes	Details on the energy supplied at this Location. Made mandatory by this extension.
help_phone	CiString[1..25]	yes	A telephone number that a Driver using the Location may call for assistance. Made mandatory by this extension.
opening_times	Hours	yes	The times when the EVSEs at the Location can be accessed for charging. Made mandatory by this extension.
operator	BusinessDetails	no	Information of the operator. At least one of `operator` / `owner` is required by this extension.
owner	BusinessDetails	no	Information of the owner. At least one of `operator` / `owner` is required by this extension.

Parking *Class*

Describes a parking space that a vehicle can be parked in while charging. This extension makes all vehicle-specification fields mandatory.

Property	Type	Required	Description
roofed	boolean	yes	Whether the vehicle will be parked under a roof while charging. Made mandatory by this extension.
lighting	boolean	yes	Whether the parking space for the EVSE is lit by artificial lighting. Made mandatory by this extension.
max_vehicle_weight	decimal	yes	The maximum vehicle weight that can park at the EVSE, in kilograms. Made mandatory by this extension.
max_vehicle_height	decimal	yes	The maximum vehicle height that can park at the EVSE, in centimeters. Made mandatory by this extension.
max_vehicle_length	decimal	yes	The maximum vehicle length that can park at the EVSE, in centimeters. Made mandatory by this extension.
max_vehicle_width	decimal	yes	The maximum vehicle width that can park at the EVSE, in centimeters. Made mandatory by this extension.

Hours *Class*

Opening and access hours of the Location.

Property	Type	Required	Description
regular_hours	Array of RegularHours	no	Regular hours, weekday-based. Made conditionally required by this extension when `twentyfourseven` is `false`.

CostLimit *Class*

The CostLimit class defines the maximum or minimum cost for a charging session, with or without taxes.

Property	Type	Required	Description
after_taxes	decimal	yes	Maximum or minimum cost including taxes. Made mandatory by this extension.

PaymentOptions *Class*

The ways a Driver can pay for an ad-hoc charging Session at a Charging Station (payment without a prior contract): by bank card at a terminal, or by cash, website, or QR code. Contract-based (subscription) payment is not an ad-hoc means and is expressed separately through accepted_service_providers.

Property	Type	Required	Description
methods	Array of PaymentMethod	no	Which ad-hoc payment methods are offered. `CARD` covers payment at a card terminal.
physical_interfaces	Array of PaymentPhysicalInterface	no	For card payment, how the card is presented to the terminal. Relevant when `methods` includes `CARD`.
brands	Array of PaymentType	no	For card payment, the accepted card brands or schemes. Relevant when `methods` includes `CARD`.
other	string<=255	no	Any other ad-hoc payment means, as free text.

PaymentMethod *OpenEnum*

A method by which a Driver can pay ad-hoc at a Charging Station.

Value	Description
CARD	Payment with a bank card at a terminal on the station (see `physical_interfaces` and `brands`).
CASH	Payment with cash.
WEBSITE	Payment through a website, for example reached via a static QR code.
QR_CODE	Payment via a dynamically generated QR code shown at the station.

PaymentPhysicalInterface *OpenEnum*

The way a payment card is physically presented to a terminal.

Value	Description
CONTACTLESS	Contactless, also known as "tap".

Value	Description
CHIP	A chip reader that can read a card with contact surfaces.
MAGSTRIPE	A reader for the lengthwise magnetic stripe on many payment cards.

PaymentType *OpenEnum*

A brand or scheme of payment card that may be accepted.

Value	Description
AMERICAN_EXPRESS	American Express (AmEx) credit cards.
CB	The French CB (Carte Bancaire) system.
INTERAC	The Canadian Interac Direct Payment system.
MAESTRO	The Maestro debit card system operated by MasterCard.
MASTERCARD	Payment cards branded MasterCard.
VISA	Payment cards branded VISA.
V_PAY	The V Pay debit card system operated by VISA.