HDV Booking – eco system
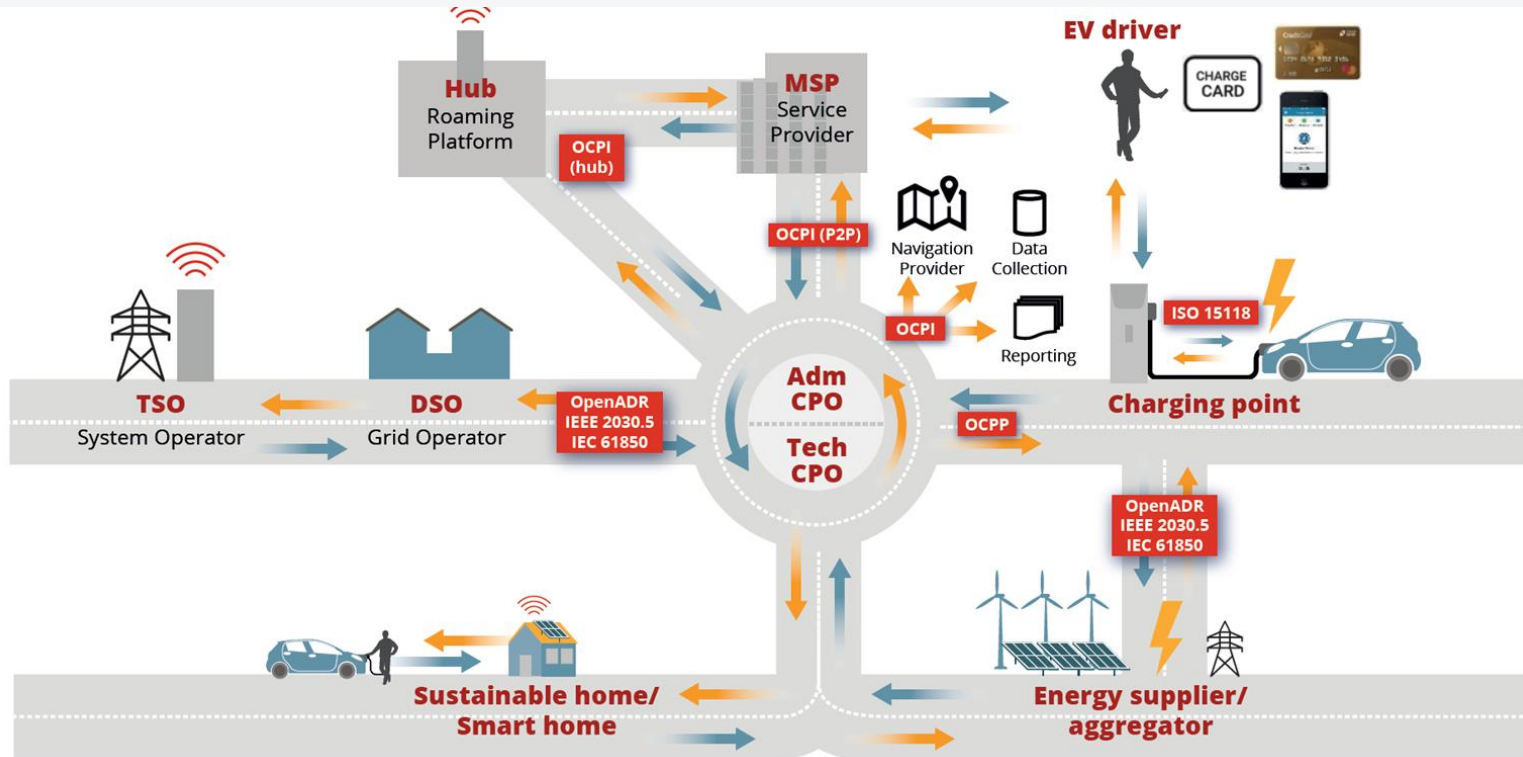
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Host:

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EV market actors and protocols

Mentioned roles to take into account

✓ Driver - Customer who want to charge (can also be the fleet manager or owner of the vehicle)
✓ Truck OEM
✓ Dispatchers / Planners
✓ Fleet managers
✓ Depot managers / charging site owner
✓ DSO/TSO
✓ CPO
✓ MSP
✓ Roaming Hubs
✓ Navigation and routing providers
✓ Other data collectors (e.g. NAP) ?
✓ Reporting parties (e.g. governments)?
• Freight forwarder
• Schedule aggregators (new role..)
• Customer where the the driver need to deliver goods ?
• Helpdesk Operator

HDV Eco-system v.04

Note: One company can act in different market roles. E.g. CPO and MSP
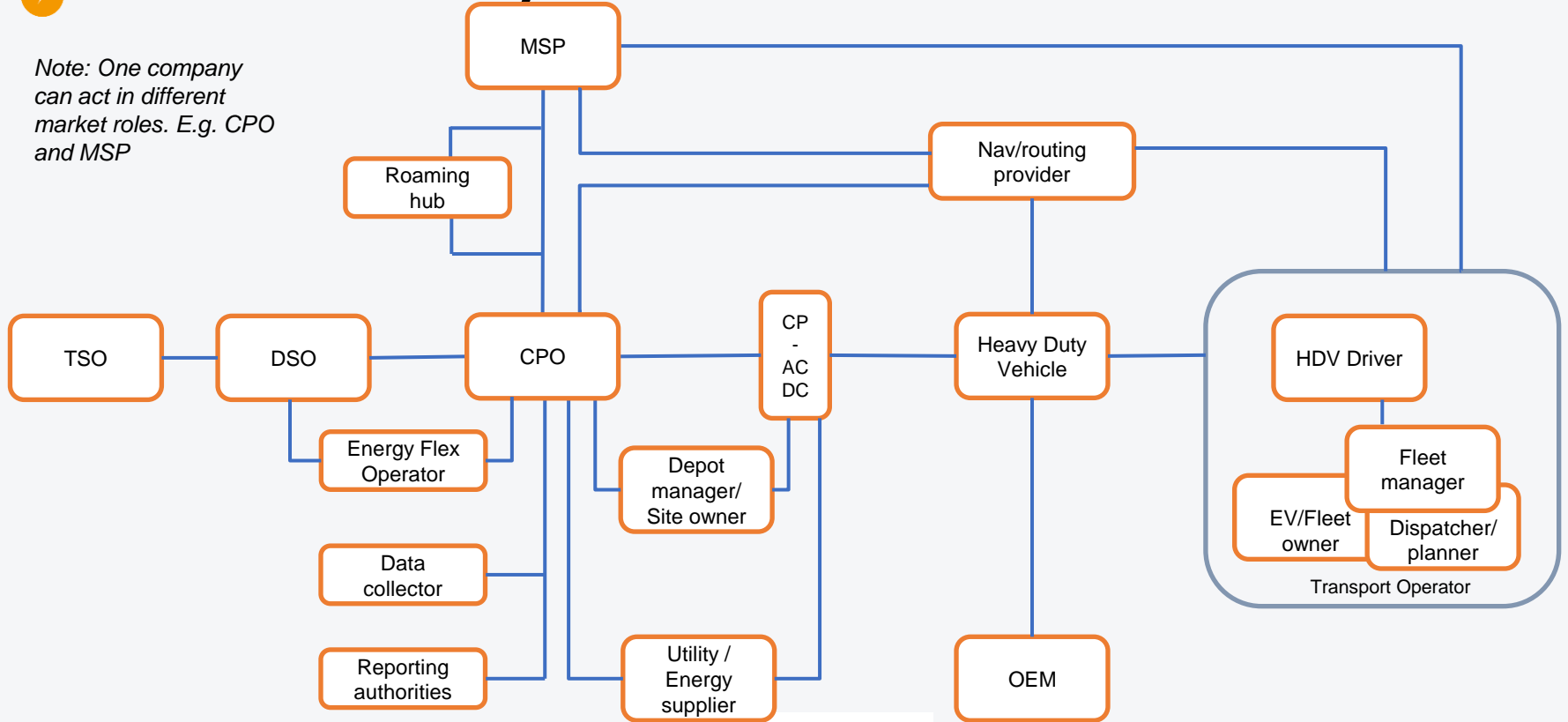
Add. Information on eco-system

- Independent HDV drivers are seen as HDV driver, with all roles done by one or two persons

- Fleet manager or transport management system interacts with planning and booking

- One company can act in many roles. E.g. a company can have both roles CPO and MSP.

- The roles of HDV Driver, Fleet Manager, Dispatcher/Planner & Owner are allocated into one group with the overall role of "Transport Operator" (TO).

- The TO roles will use different channels (web, mobile app, or vehicle cluster) depending on the use case and the situation; hence the different channels lead to the overall Transport operator role.

- The Fleet manager/TO can be directly connected to the CPO without and MSP in case of depot-charging, with only logging of power but no contracts or invoicing.

- Fleet management system (which route and where to charge) is part of Fleet manager activities, but can also be outsourced to separate organization.

- Navigation and routing can be combined, but can also be separate activities and be executed by separate companies

Explanation roles and responsibilities 1/2

- The Transport Operator: managing and operating the transport. This can be the HDV driver, the Fleet manager, the Dispatch/planner or the owner of the vehicle. Depending on the organisation, these roles can be executed by the same person(s).
    - HDV Driver: driver of the heavy duty vehicle, which can be a bus, truck, large van, etc. Connected to the HDV driver are the Fleet manager and/or Dispatch/planner and the Owner of the HDV vehicle.
    - Fleet manager: managing the whole HDV fleet of a company
    - Dispatcher/planner: responsible for the planning of the route
    - Owner: vehicle owner

- Heavy Duty Vehicle: the physical vehicle, manufactured by the OEM

- OEM: manufacturer of the vehicle

- CP: AC/DC: physical charge point, which can be AC or DC including HPC (High Power Charging) and MCS (Megawatt Charging System)

- Depot manager / site owner: this is the owner of where the charge point(s) are located. This can either be at a depot or at specific charging site. The Depot manager is connected to the CPO and the charge point (CP) for the usage of the charge point

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Explanation roles and responsibilities 2/2

- Utility / Energy supplier: the energy supplier delivering the energy to the charge point. This can be done via contract from the CPO or from the site owner.

- CPO: Charge Point Operator, also called Charge Station Operator (CSO). Operating the charge points. Often split in technical CPO: monitoring and managing the charge point on technical level. And the Administrative CPO: managing the usage of the charge point. The CPO can also offer charge point booking/reservation services for their charge points.

- Data collector: organisations that collect usage and performance data of charge points. This can be for planning, or usage statistics, but it can also be the National Access Point which is in Europe an obligation to share location, availability and tariff information of publice accessible charge points

- Reporting authorities: authorities that want to know information about usage or performance e.g. uptime and availability of charge stations. This are often governements and obligations are often part of laws and regulations. The real collection of this data can be outsourced to a Data Collector.

- Roaming Hub: central place for supporting multiple connections between CPO and MSP.

- MSP: Mobility Service Provider, providing mobility services like charge point access for electric vehicle drivers

- Navigation/routing provider: The party offering navigation tools based on location from both charge point and the vehicle taking into account user preferences.

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CPO <-> MSP <-> Transport Operator Responsibilities

The illustration below shows the responsibilities of the CPO, MSP & Transport Operator (TO).
The interaction in the booking process starts with different roles in the TO, and via the MSP an actual booking is executed via the OCPI protocol.

The MSP manages the transport operator interfaced services, finding and booking a charging slot through varios end user tools.

OCPI is the information contract between the CPO and MSP that should enable the repective partner services.

The CPO mangages the booking offer with regards to available charging infrastructure, energy supply and price.