

# EV charging payment using IFSF, OCPI and OCPP standards

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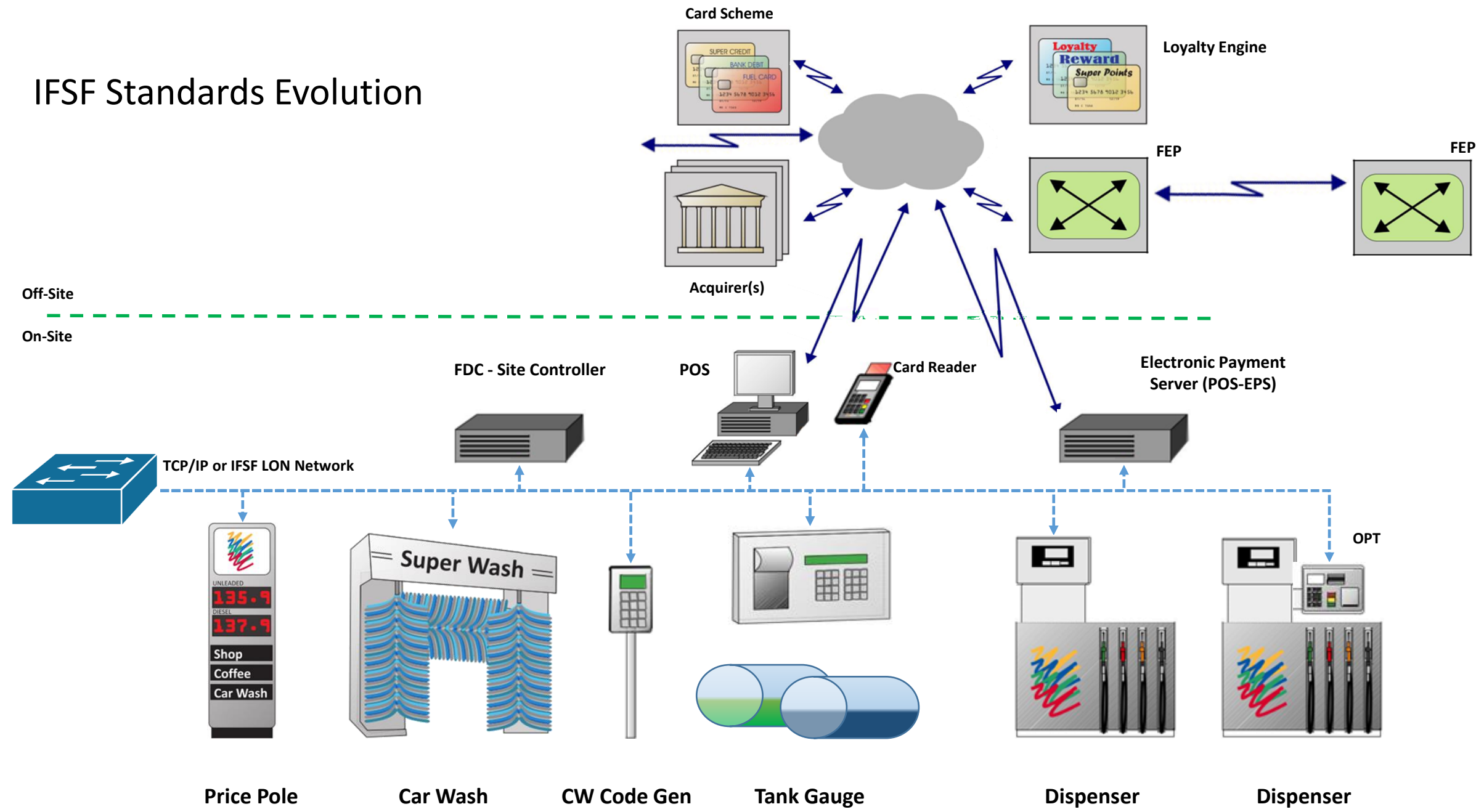
# IFSF is a community dedicated to enabling technology standards for the benefit of retailers of automotive fuel and energy.

IFSF's objective is to ensure harmonisation of equipment interconnectivity and communication standards

IFSF's approach is to collaborate with other standards organisations and relevant institutions to achieve common standards for interoperability of forecourt and convenience devices and services. IFSF depends on support from retailers, suppliers and other industry stakeholders who contribute to, and benefit from, shared standards.

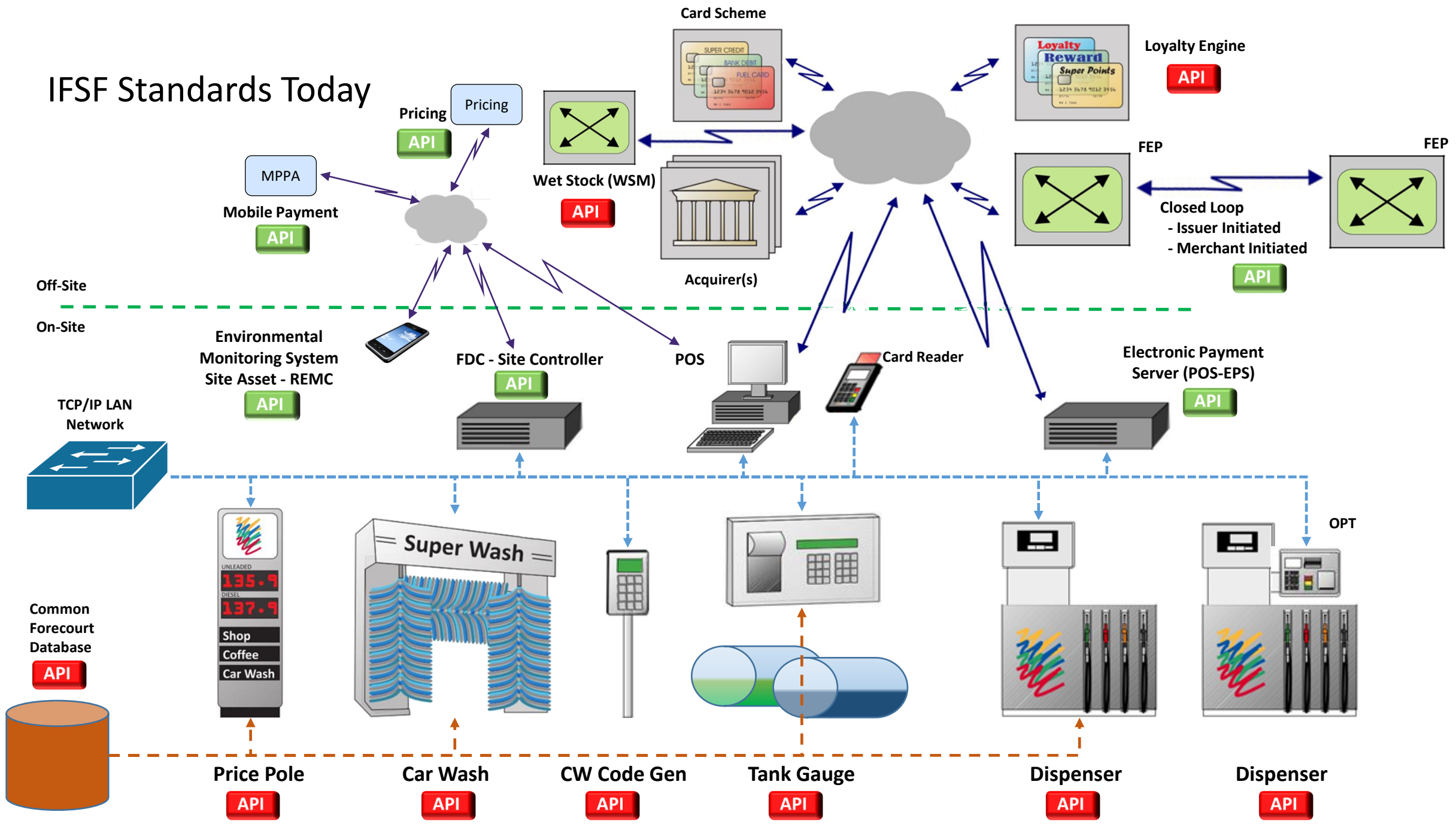


# IFSF Standards Evolution





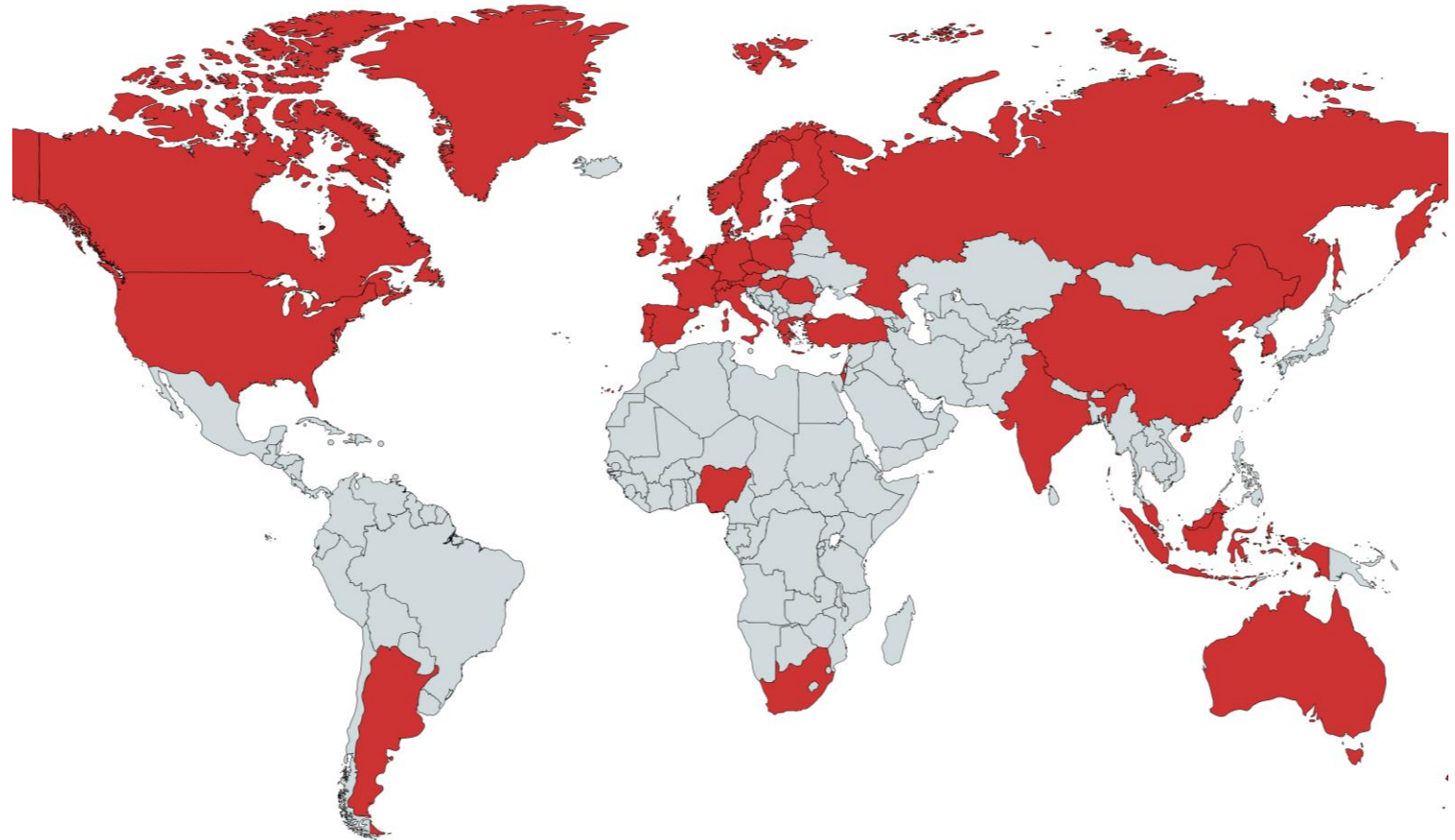
# IFSF Standards Today



# IFSF Globally

- Full Members
  - BP
  - Circle K
  - ExxonMobil
  - OMV
  - Q8
  - Shell
  - TotalEnergies
- Associate Members
  - ENI, MOL, YX Norway
- Technical Associates (~130 -> See [website](#) for full list)

Partners:



Created with mapbox



# Objective of study

**“To identify how IFSF, OCPI and OCPP standards can be used together to support a merchant running a network of charging stations (CS)”**

## ➤ Approach

- Workshops with Open Charge Alliance and EV Roaming Foundation
- Discussions with IFSF vendors with current experience of implementing Charging Station solutions
- Dedicated IFSF Work Group sessions to discuss business model, use cases and processes
- Seek to minimise changes to standard except where needed to provide a quality customer experience





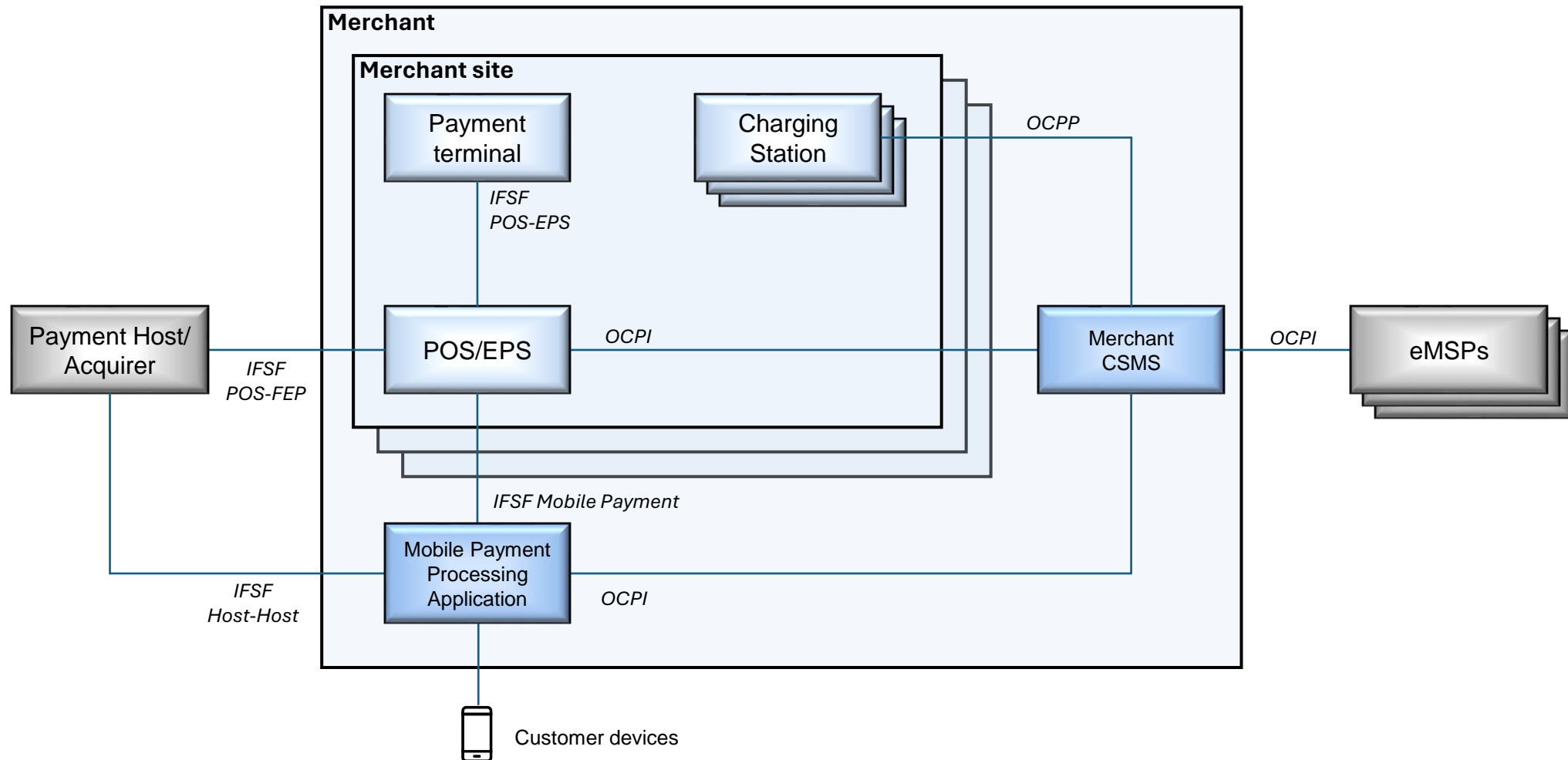
# Business model for Charging Station Operation

- **The Merchant:**
  - Owns and operates Charging Stations across multiple retail sites
  - Has an agreement with an energy supplier
  - Has agreements with e-Mobility Service Providers (eMSPs) and can accept multiple eMSP cards
  - Controls the Charging Stations with a central Charge Station Management System (CSMS)
  - Has existing payment infrastructure supporting banks cards, fuel cards and loyalty cards they want to leverage



*Avia mobility hub*

# Architecture





# Benefits

- Leverage existing standards to simplify and reduce cost of implementation
- Leverage IFSF payment standards with their proven support for secure PCI compliant payment
- Exploit merchant's investment in existing payment infrastructure
- Provide support for existing customer loyalty offers
- Ability to support integration with other merchant processes (e.g. Pricing, Reconciliation) in future



Shell charging hub

# Business scenarios (use cases)

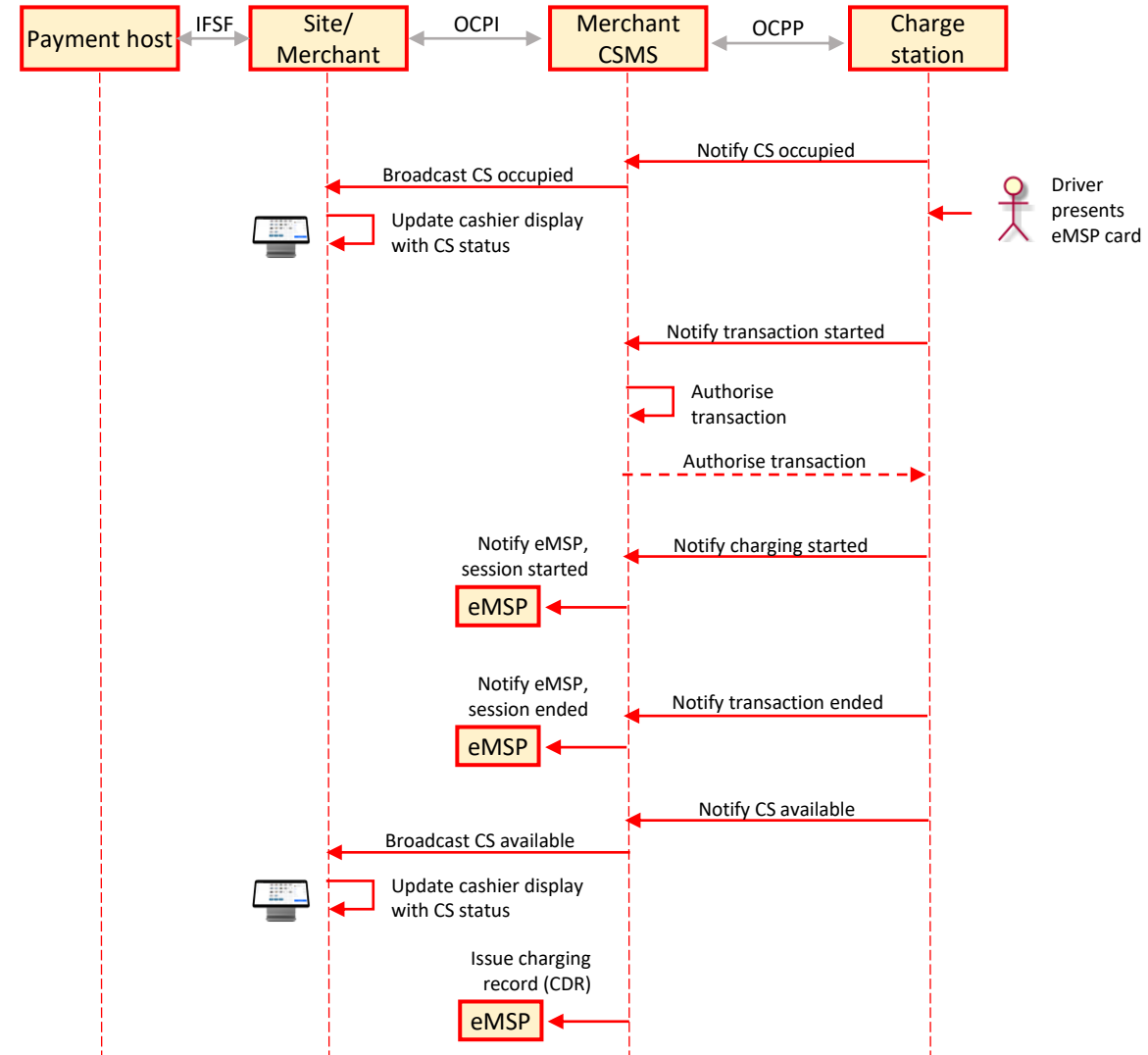
Business scenarios were developed by separating out the payment process from the control of the charging station. It was then considered that each of these processes can be triggered by the Merchant Site or the Charging Station/CSMS.

		Authorises payment	
		Merchant CSMS	Merchant/ Site
Initiates charging	Charging Station	1. Driver touches eMSP card at CS	3. Driver presses "Pay in Shop" button
	Merchant/Site	4. Driver touches eMSP card at Merchant terminal	2. Driver presents bank card at Merchant terminal

# Scenario 1: Charging Station initiates charging and CSMS authorises payment



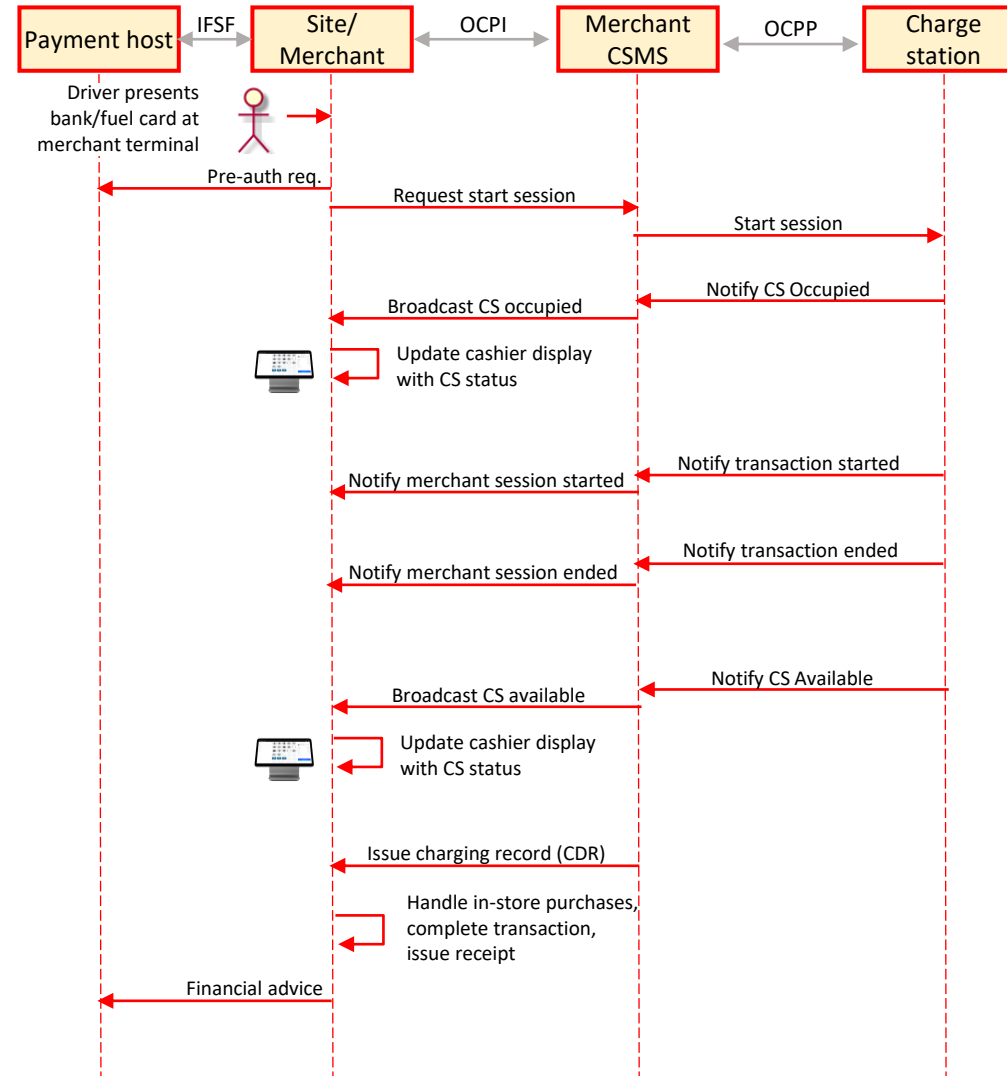
Driver presents eMSP card at Charging Station



## Scenario 2: Merchant site initiates charging and authorises payment



**Driver presents bank card or fuel card at Merchant's payment terminal (at charging station or at OPT)**

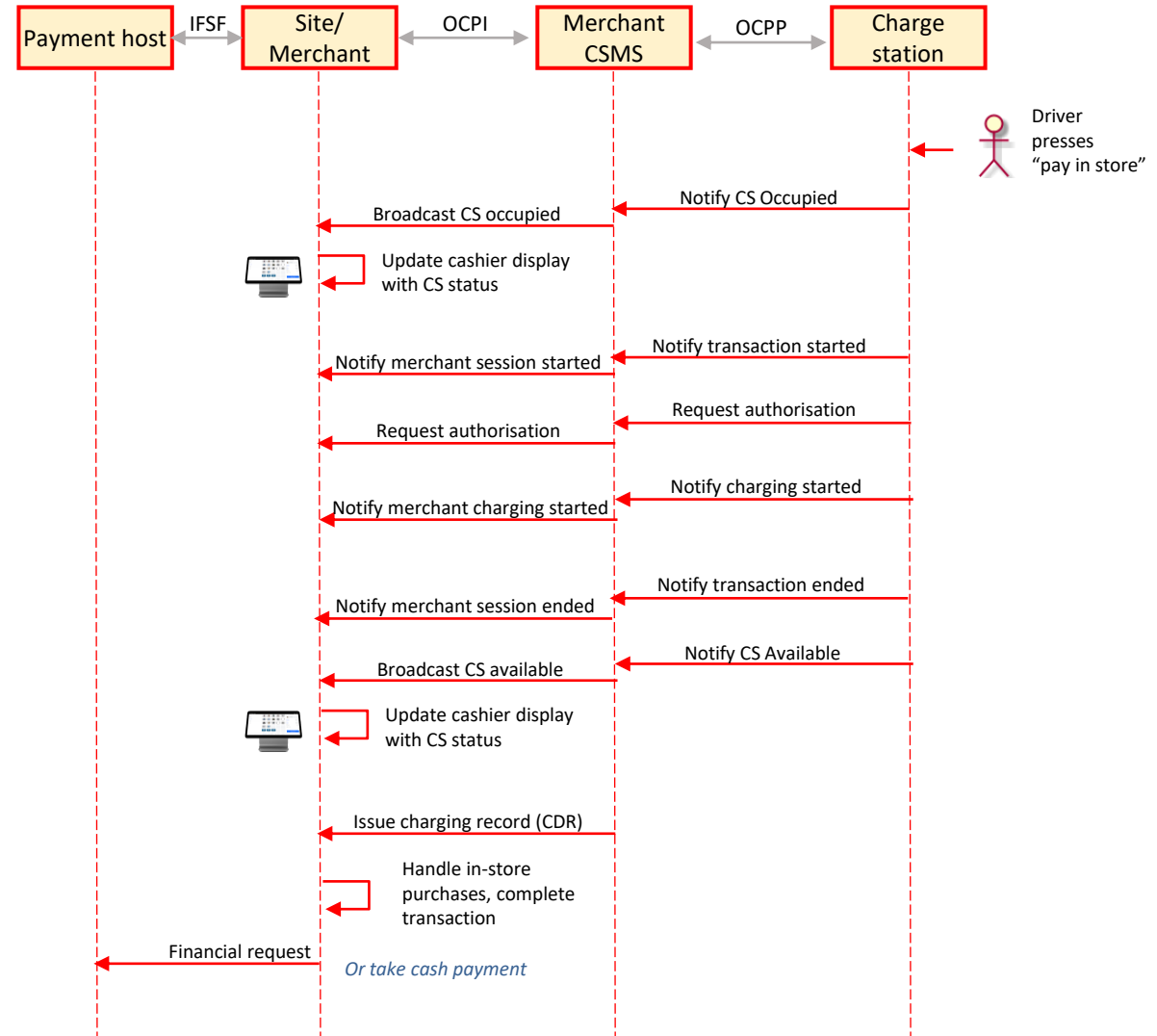




## Scenario 3: Charging Station initiates charging, Merchant site authorises payment



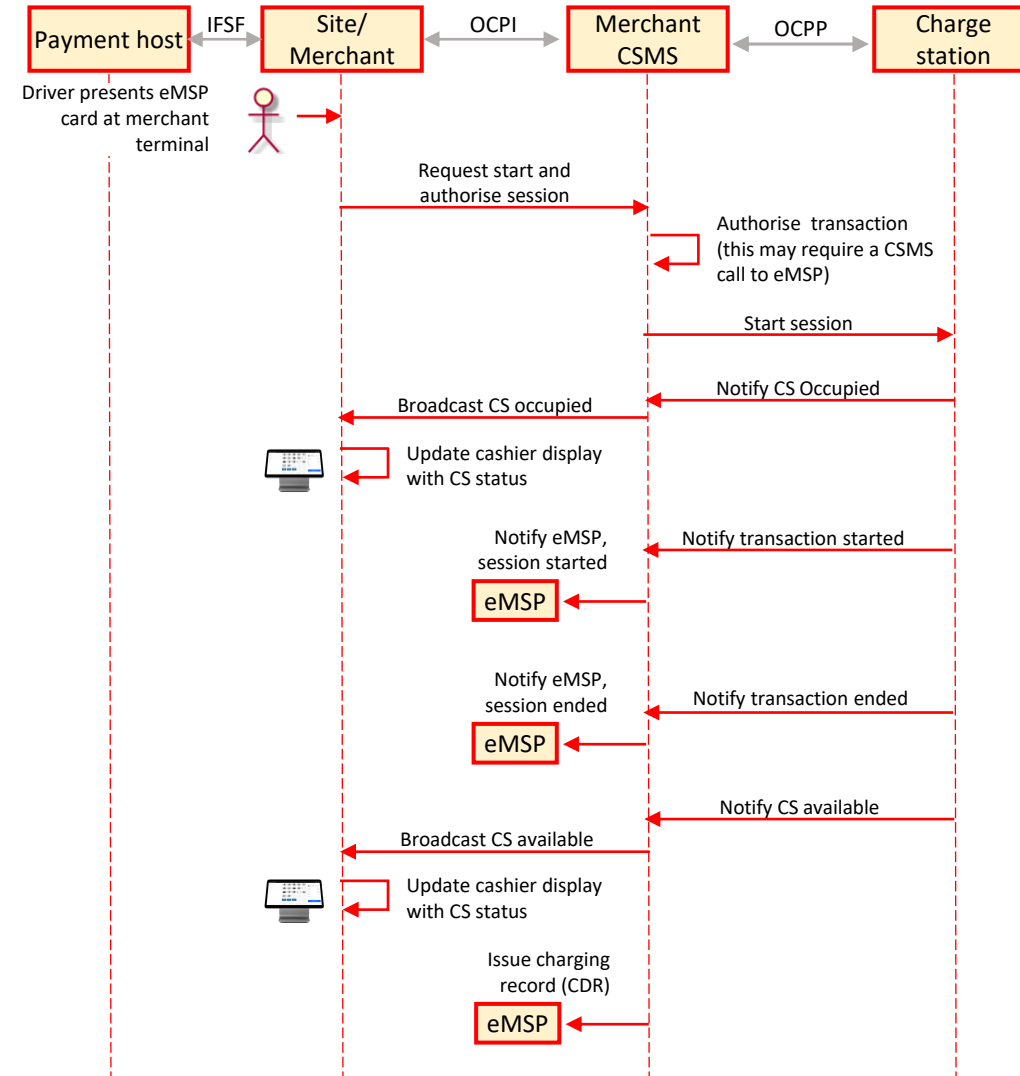
Driver presses Pay in Store button to post pay in shop – cash or card



## Scenario 4: Merchant site initiates charging, CSMS authorises payment



**Driver presents eMSP card at Merchant's terminal/contactless reader**



# Conclusions

- A charging station operation can be implemented using IFSF, OCPI and OCPP standards
- Benefits:
  - Supports eMSP cards and all existing payment methods e.g. bank cards, fuel cards
  - Leverages proven security of IFSF payment standards
  - Supports loyalty
- Minimal changes to standards required
  - Support for Pay in Store button
  - Allow on-site merchant to request transaction start with eMSP token that requires authorisation
- A white paper summarising findings to be published soon



# Thank You

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For more information about IFSF and how to join, contact us or scan the QR code:

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