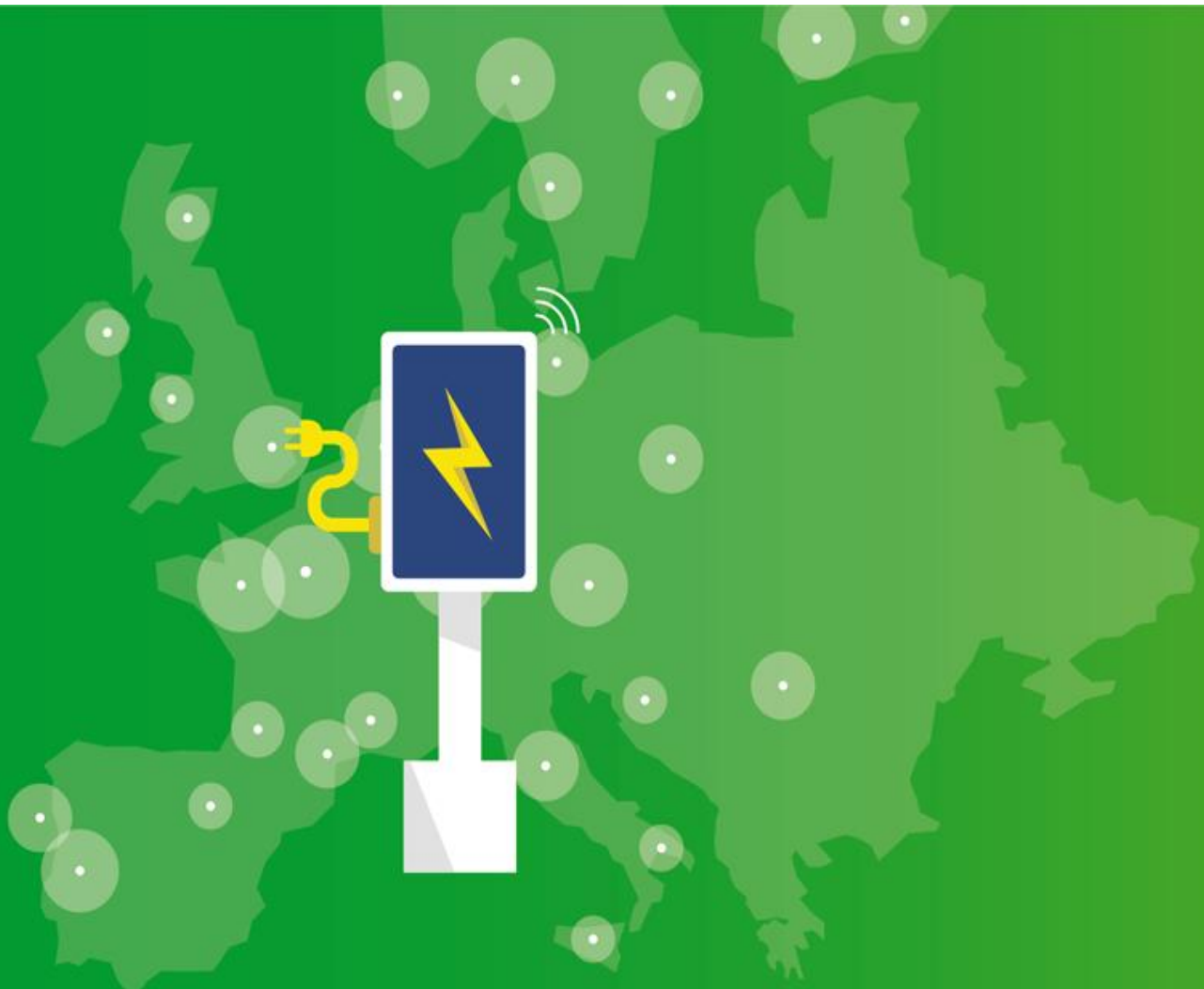




# GIREVE

## Interoperability of EV Charging



GIREVE, the company

## Timeline

### 2018-2019 - Development of our activity

Roaming: +500k drivers charging on +75k charge points in 20 countries in EU  
ePOI: +135k charge points description including 70k with real-time availability

FULL EUROPEAN COVERAGE  
EXTENDED RANGE OF SERVICES



2018  
2019

2017

### 2017 - Roaming services

Launch of our Roaming services  
Interoperability platform for E-mobility operators

2016

### 2016 - EU Development

Development of our services  
throughout Europe

2014

### 2014 - Database creation

Launch of our ePOI services + Creation of an aggregated  
ePOI Database

2013

### 2013 - Creation

Creation of the company by 5  
stakeholders

# The company - Team & Shareholders

## GIREVE's organisation

### EXECUTIVE COMMITTEE



Bruno  
Lebrun  
CEO



Sophie  
Duval  
COO



Jean-Marc  
Rives  
CTO



Vianney  
Devienne  
CSO

- 23 employees based in Paris
- GIREVE's experts are dedicated to our core activities: **Innovation, Operations, Marketing**
- Additional flexible outsourced IT team (5 to 15 IT developers based in France)

### SECURED START-UP WITH SOLID SHAREHOLDERS

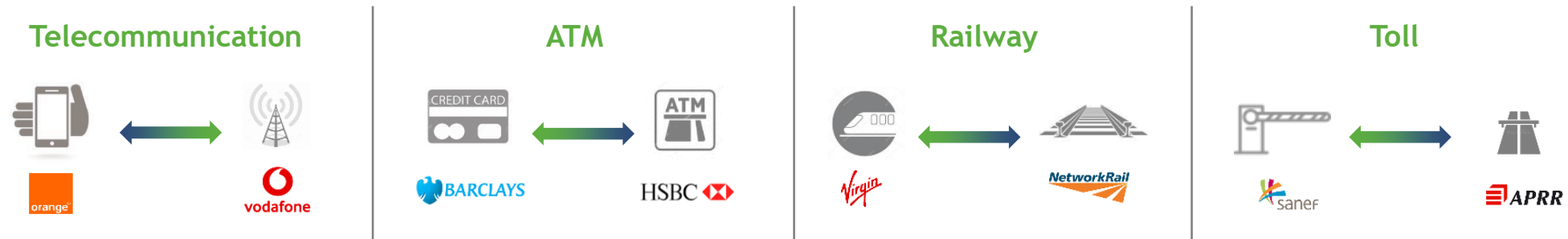


# Introduction to Roaming

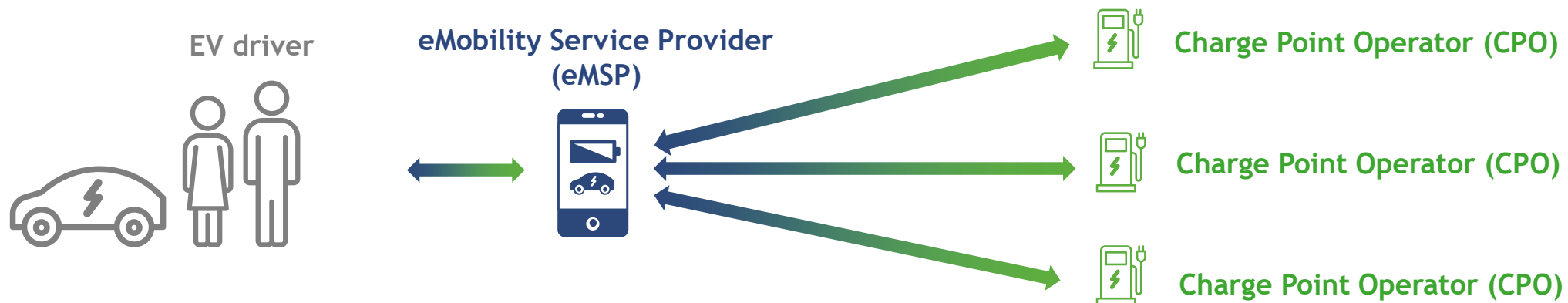


# Introduction to Roaming - Explanation of the concept

**Roaming:** ability for a consumer to use the services of network without dedicated subscription



**Roaming in the e-Mobility sector:** ability for an EV-Driver to charge on charging stations, using only one subscription provided by one operator



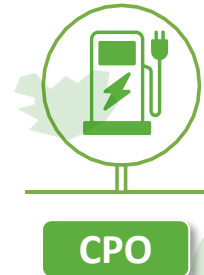
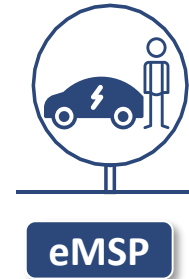
# Direct payment brings kWh where an eMSP brings mobility service



## >80% of public charges in EU

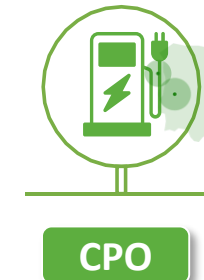
- 1 unique subscription
- Aggregated EU coverage
- Connected services (App)
- Comes along with the EV

### eMSP Subscription plan



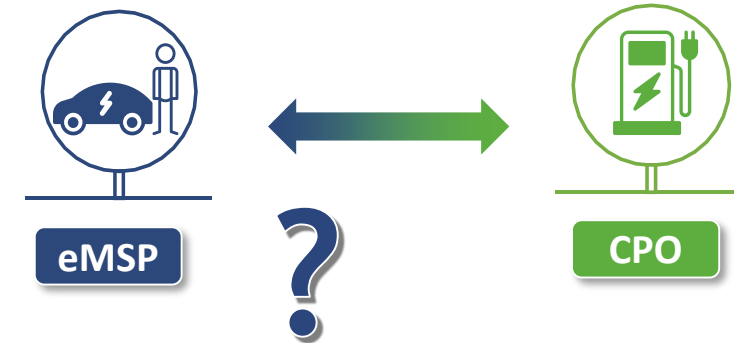
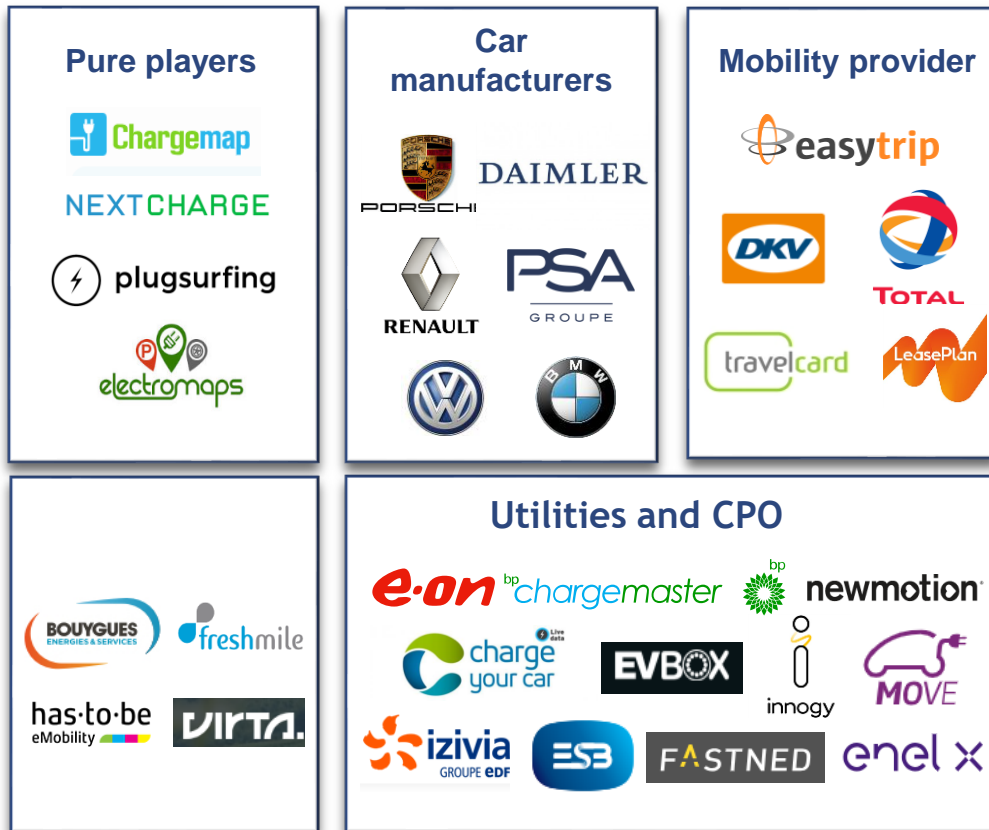
- 1 payment app per network
- No connected service
- Higher price

### Direct payment (anonymous)



1. EV charging services require connected services delivered by eMSP
2. eMSP services require eRoaming capabilities

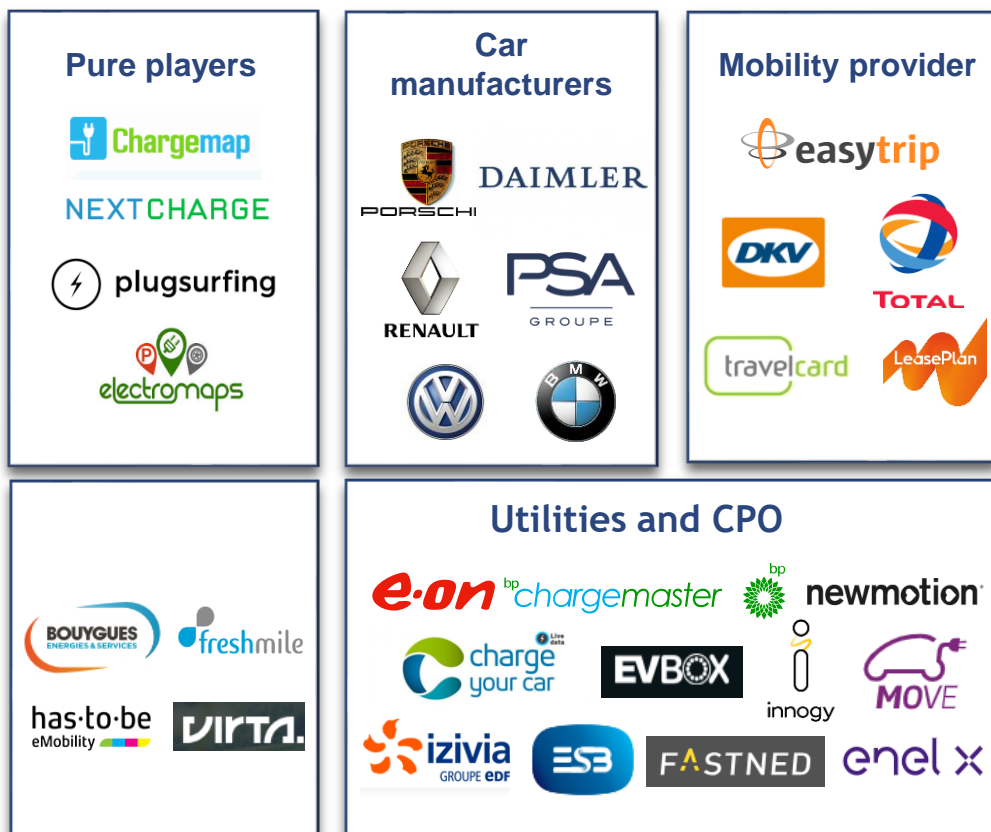
# eRoaming implies costly business relationship between eMSP and CPO



1. eRoaming requires complex and costly business relationship between a large number of eMSP and CPO (> 1000)



# eRoaming from an eMSP or CPO standpoint: “Make” or “Buy”?



Most of eMSP and CPO go for a mix of « make » and « buy » options

# Introduction to Roaming - GIREVE offers a one stop shop for Roaming

GIREVE reduces the complexity between operators, to lower the total cost of roaming

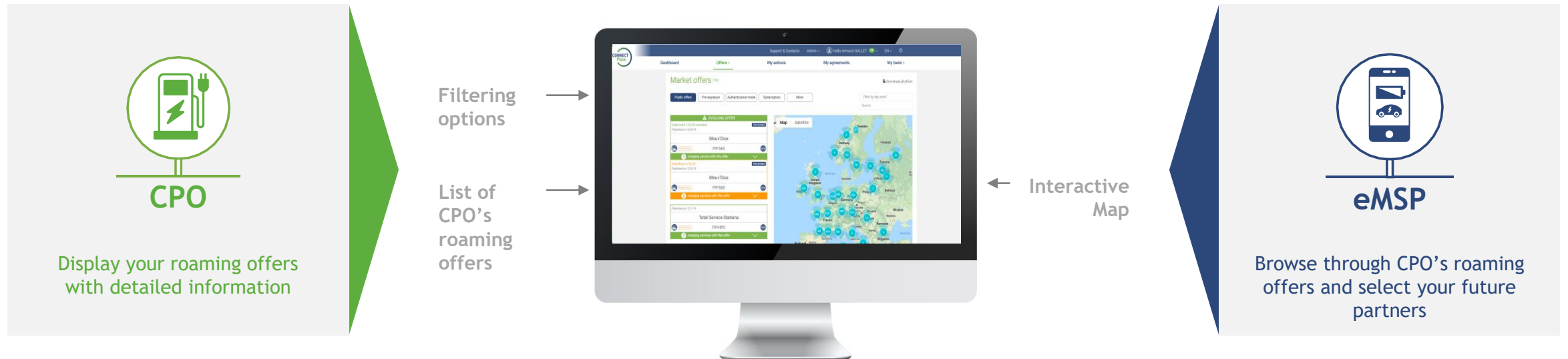




## Business Services

- Setting up your Connect Place account
- Publishing & Selecting roaming offers
- Signing & Managing roaming agreements
- Messaging

**Connect Place:** publish, select, sign your roaming agreement in one place



## Key Features

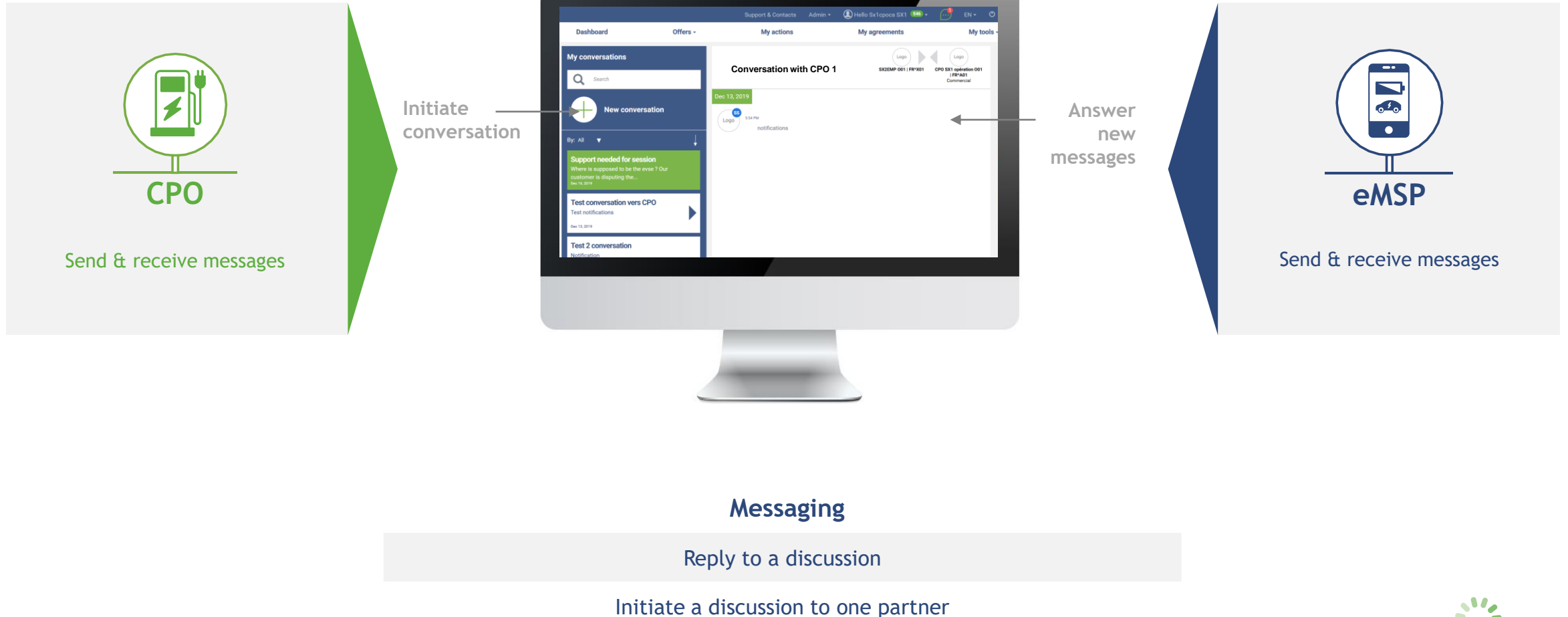
Set Up Your Account

Roaming Offers

Standardized Roaming Agreement Template

Messaging Services

## Messaging: negotiate & exchange with future partners on the Connect Place





## Roaming Services

- Location
- Booking
- Charging
- Monitoring
- Messaging

## Charging: Enable EV drivers to charge everywhere, no matter the network



### Charging services

Local & Remote authentication

Send/Receive Charge Detail Records

Action request (eMSP to CPO during a session)

Event report (CPO to eMSP during a session)

Intermediate CDR (CPO to eMSP during a session)

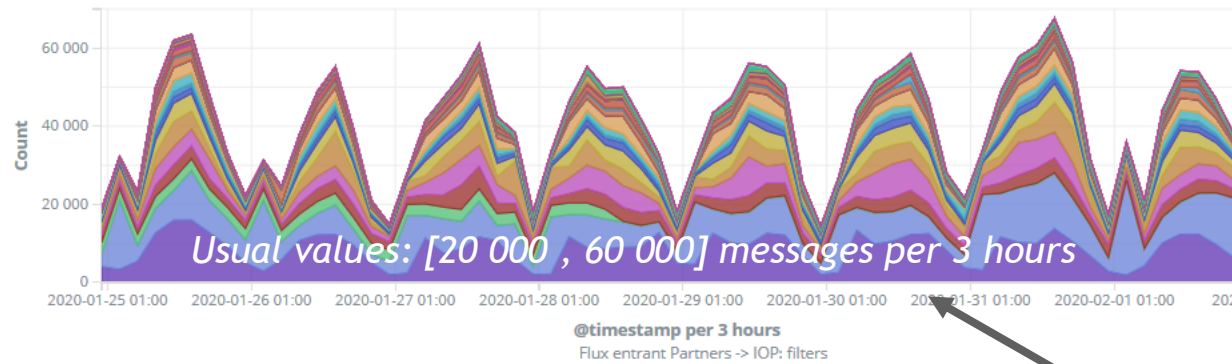
API for dynamic tariff data upload & reception of tariff change

# Quality Improvement and Supernumerary Messages filtering - DashBoard

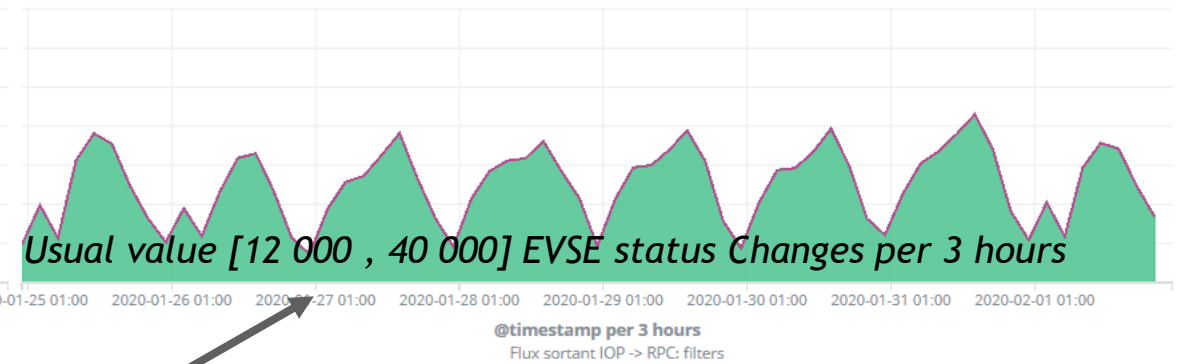
**Usual situation**



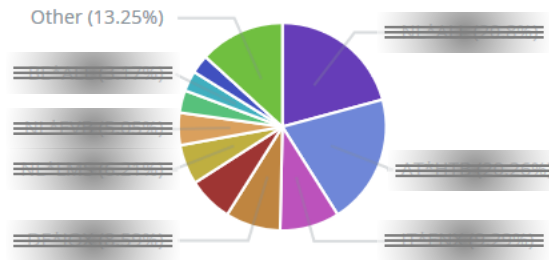
**Incoming Flows: Nb of messages (per CPO comm-Partner)**



**Outgoing Flows: Nb of EVSE Status Charge**

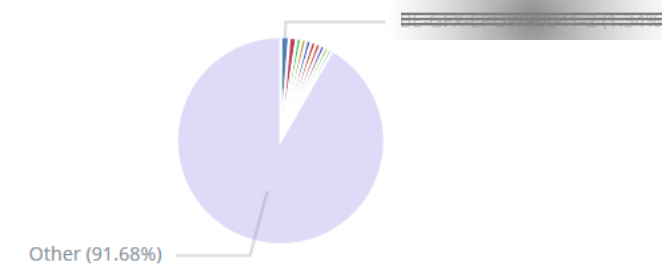


**Main CPO comm-Partner**



**120 000 msg  
filtered each  
day**

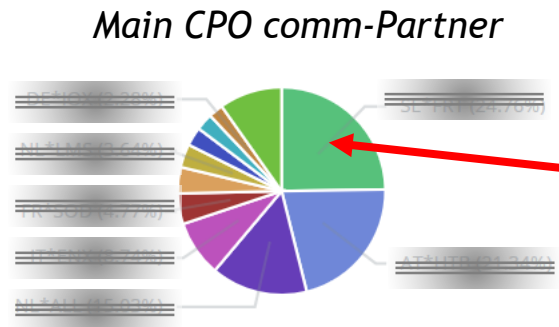
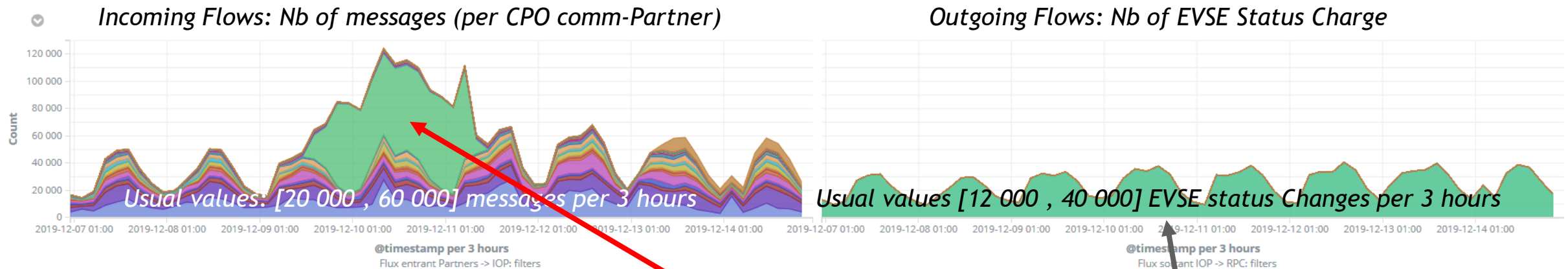
**Main EVSE**



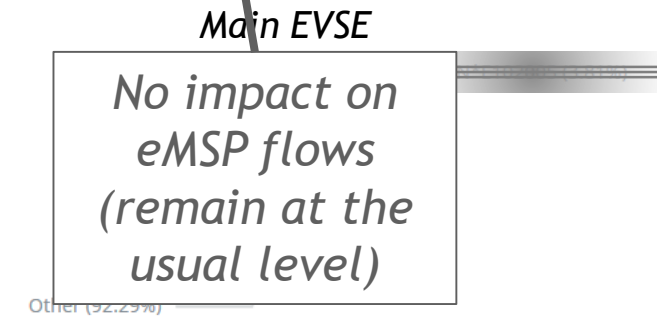


# Quality Improvement and Supernumerary Messages filtering - DashBoard

**Abnormal situation #1**  
(Dec 9<sup>th</sup> 2019 - Dec 11<sup>th</sup> 2019)

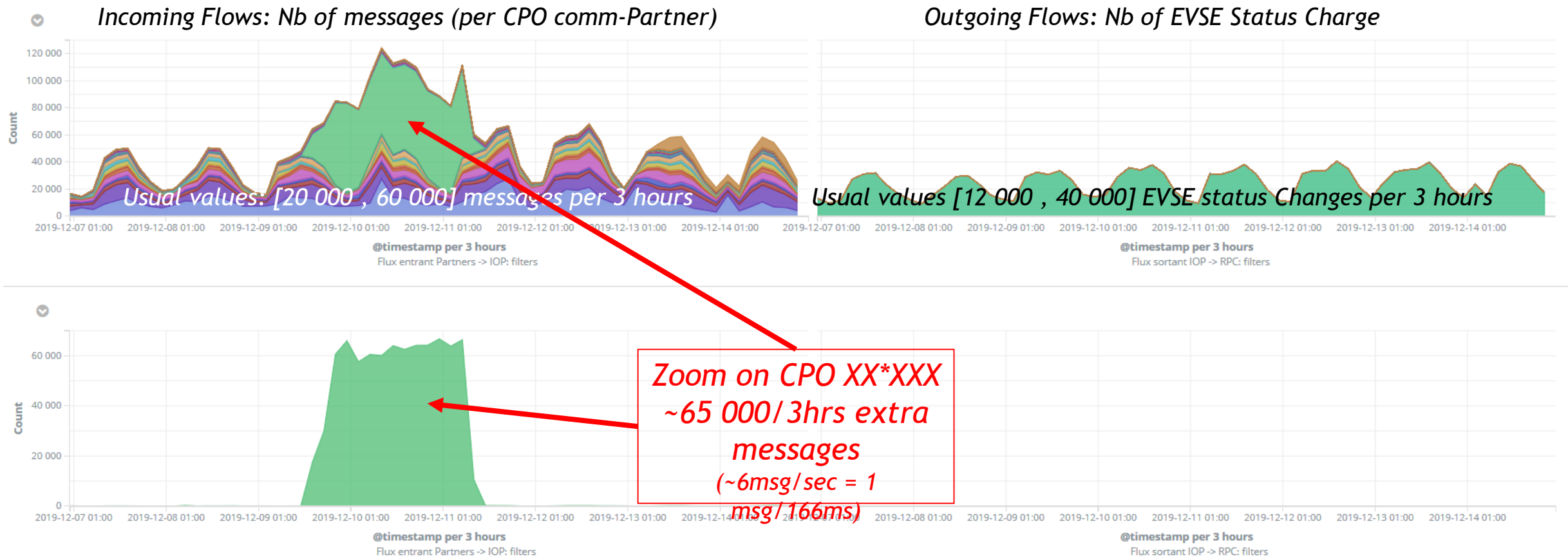
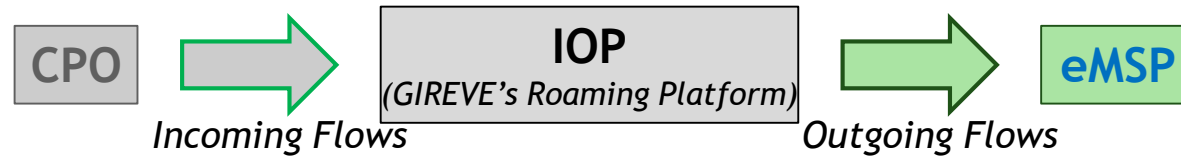


**The CPO XX\*XXX  
sends  
~65 000/3hrs extra  
messages  
(~6msg/sec = 1  
msg/166ms)**



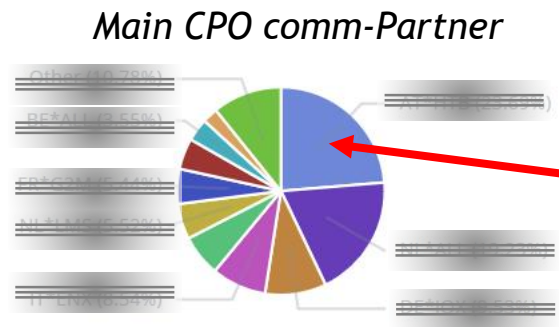
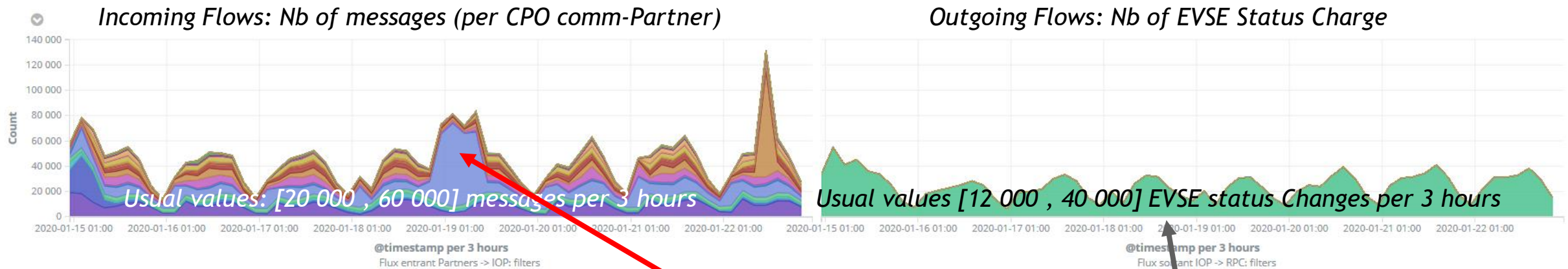
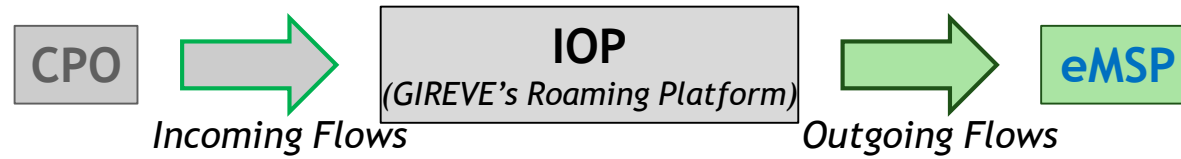
# Quality Improvement and Supernumerary Messages filtering - Dashboard

**Abnormal situation #1**  
(Dec 9<sup>th</sup> 2019 - Dec 11<sup>th</sup> 2019)

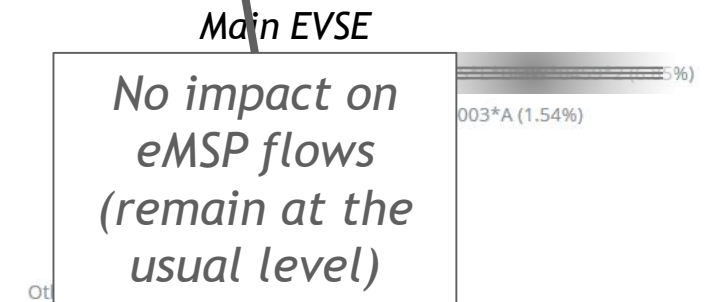


# Quality Improvement and Supernumerary Messages filtering - Dashboard

**Abnormal situation #2**  
(Jan 18<sup>th</sup> 2019 - Jan 19<sup>th</sup> 2019)

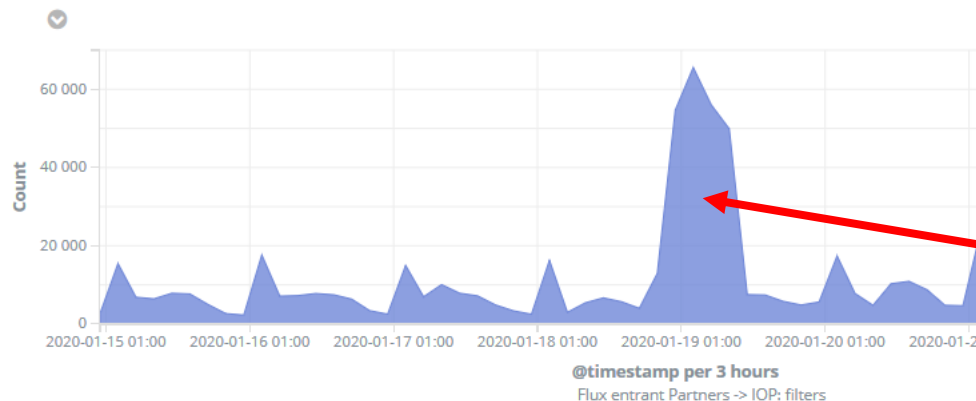
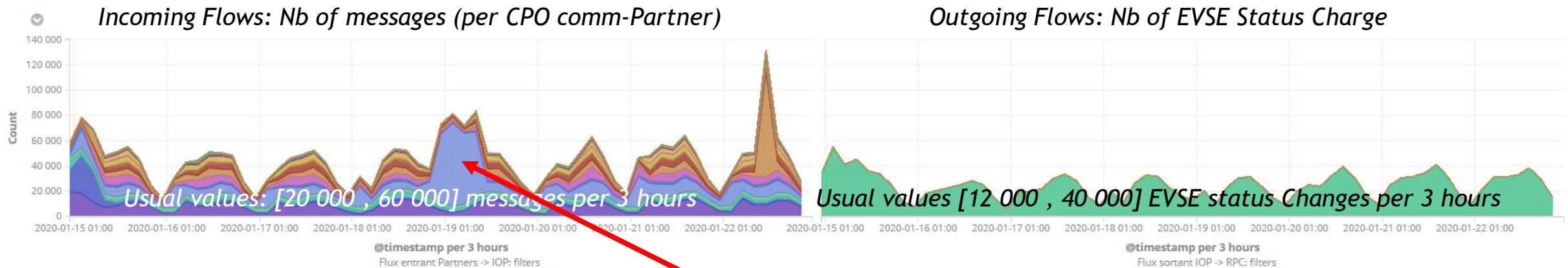


**The CPO YY\*YYY sends  
~55 000/3hrs extra  
messages  
(~5msg/sec = 1 msg/200ms)**



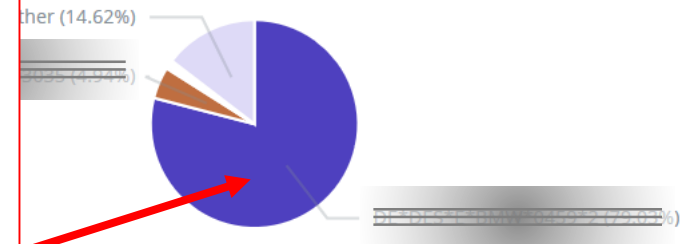
# Quality Improvement and Supernumerary Messages filtering - DashBoard

**Abnormal situation #2**  
(Jan 18<sup>th</sup> 2019 - Jan 19<sup>th</sup> 2019)



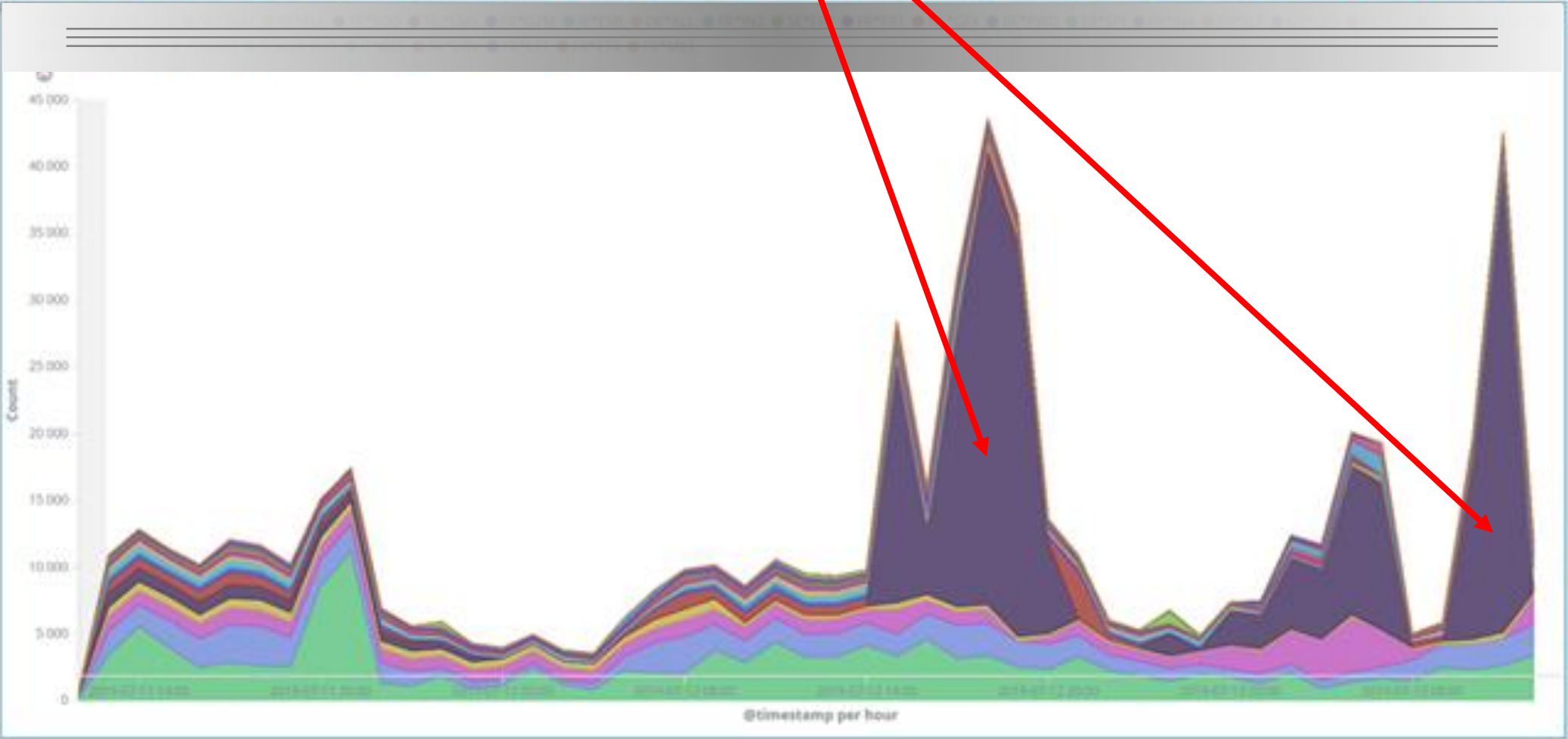
**Zoom on CPO YY\*YYY:**  
~55 000/3hrs extra  
messages  
(~5msg/sec = 1 msg/200ms)

**For ~only one EVSE !!**

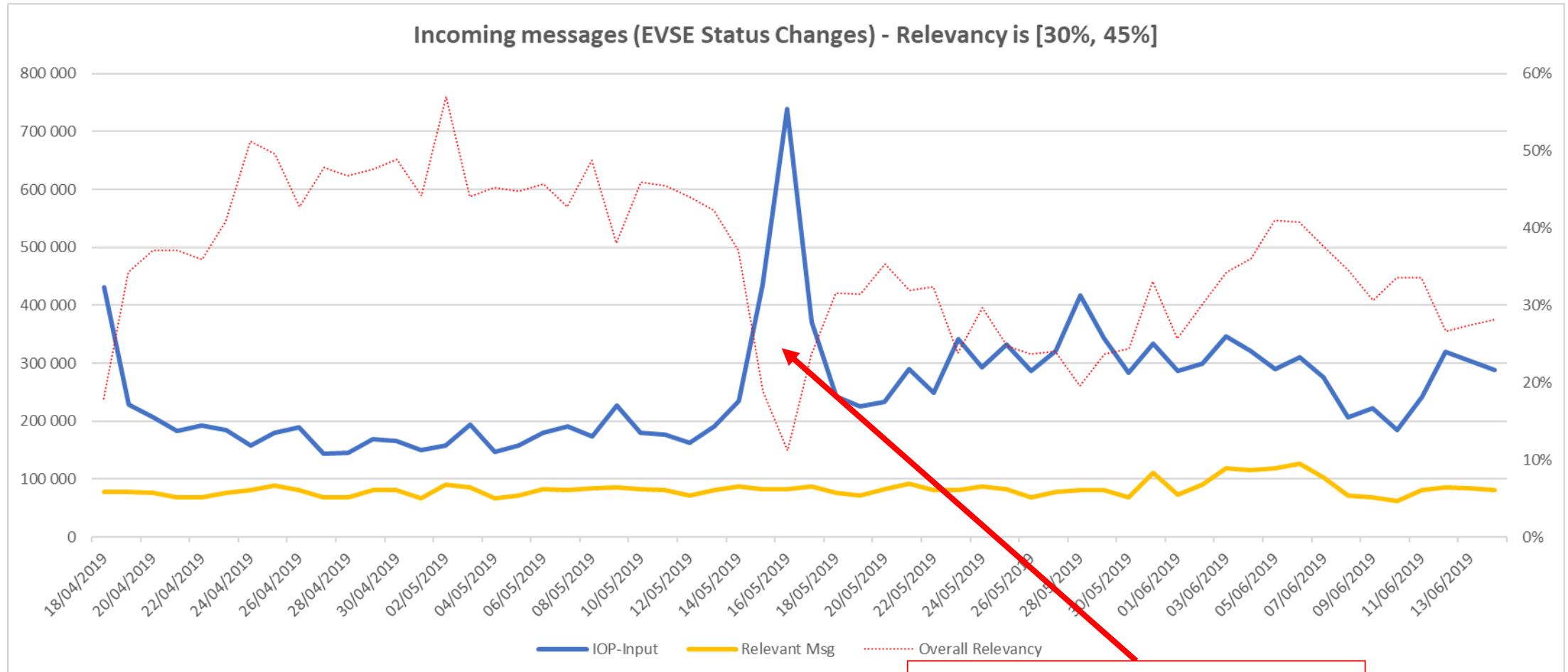


**Abnormal situation #3**  
(Jul 12<sup>th</sup> 2019 - Jul 14<sup>th</sup> 2019)

*CPO WW\*WWW:*  
*~35 000/1hrs extra*  
*messages*  
(~10msg/sec = 1 msg/ 100ms)



# Only 35% of the incoming messages are relevant (others are duplicates)



Massive « attack » from a CPO

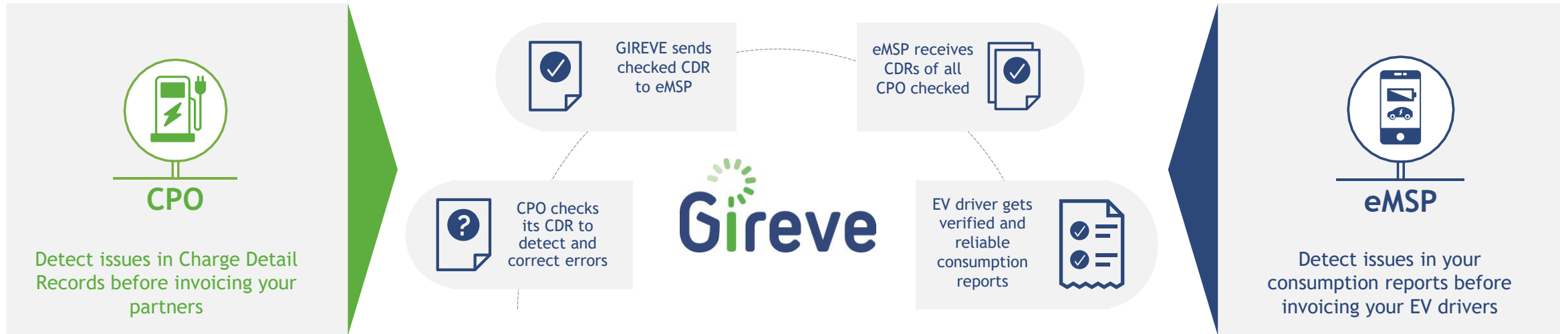


## Clearing Services

- Follow-up & Quality Control
- Billing & Invoicing
- Dispute
- Messaging



## Quality Control : Detect errors before invoicing your customers



### Consumption follow-up

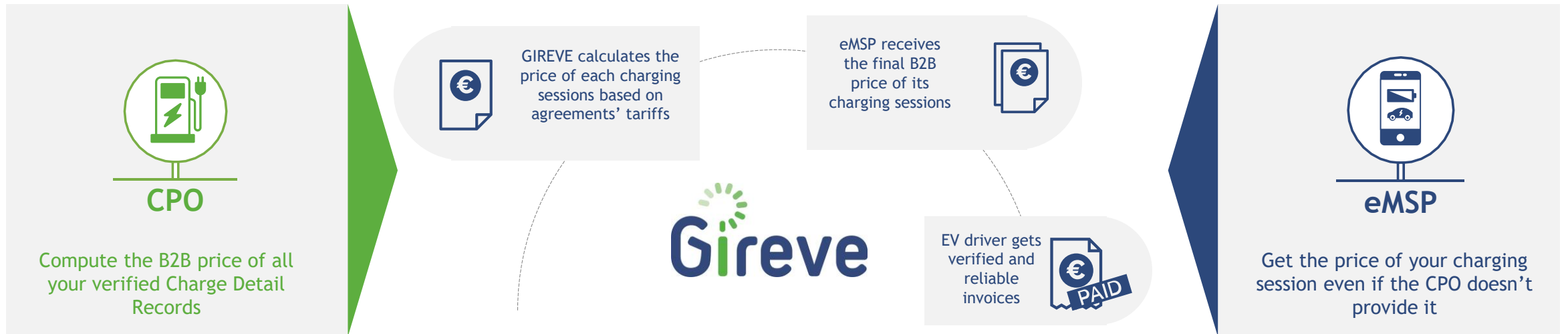
Follow-up of charging sessions on your Connect Place account

### Quality control

Access GIREVE's quality control of CDR



## Invoicing: bill your CDR automatically and manage your invoicing process



### Billing & Invoicing

Calculate a charging session's final price  
*based on the tariff conditions of your roaming agreement*

Send invoices to your eMSP / Receive invoices on your Connect Place account

**Dispute:** your workflow tool to reduce cost before invoicing



## Dispute

Inform your eMSP partners of your invoicing intention for each charging session

Send invoicing intentions to your eMSP / Receive invoicing intentions of CPO

Receive & Reply to disputes / dispute a CDR to your CPO partner

## UK, IE - 3,000 charging points



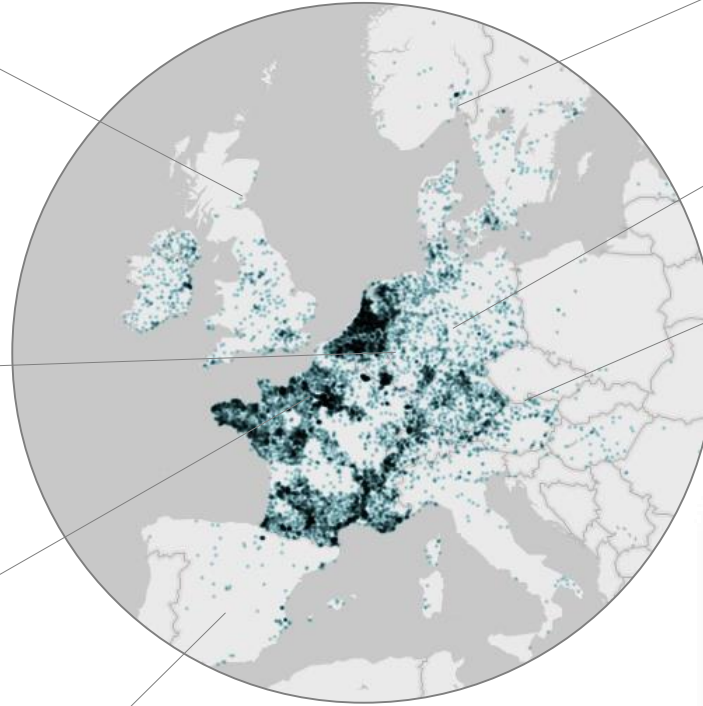
## BE, NE, LU - 42,000 charging points



## FR - 20,000 charging points



## ES - 250 charging points



## FI, SE, DK, LV,LT, NO - 1,400 charging points



## AT, DE CH, IT - 11,700 charging points



## PL, RO, CZ, RU, SK, SV, HU, HR - 172 charging points



**75,000**

charging points  
open through  
GIREVE in Europe

**>80%**

coverage in 5  
countries\*

**2,000**

roaming  
agreements signed  
on GIREVE










List of all our partners available at : <https://www.gireve.com/en/nos-partenaires>

\*EAFO statistics from 11,2019, Note that they include non roaming compatible EVSE.

# Our eMSP Partners

	Bosch
	Blue Corner
	Bouygues Energies et Services
	Chargemap
	ChargePoint Network
	CLEM', SAS MOPEASY
	Digital Charging Solutions GmbH (DCS)
	Duferco Energia S.p.A.
	E TOTEM
	Electromaps S.L.
	Eneco eMobility B.V.
	EVBox B.V.
	Freshmile Services
	Go Electric Stations SRLS

	GreenFlux Assets B.V.
	Has.to.be GmbH
	Izivia (ex-Sodetrel)
	Justplugin
	Kiwi Pass Solutions SAS
	Kuwait Petroleum N.V.
	Liikennevirta Oy (VIRTA)
	Mairie de Paris
	Mobilygreen
	MOVE Mobility SA
	Plugsurfing GmbH
	Porsche AG
	Route220 S.R.L.
	ServiceHouse B.V.
	Spark Horizon SAS

	The New Motion B.V.
	Threeforce B.V.
	Total Marketing & Services
	Travelcard B.V.
	Vandebon Energie B.V.
	Wirelane GmbH
	ZE Eborne
	ZE-WATT
	Tank & Rast*
	Get Charge*
	ChargeHub*

\* : available soon




















































## Car Manufacturers



DAIMLER



# Our Backend Provider Partners

	Allego		Connect Groupe E		Go Electric Stations		Porsche AG
	Atomelec		Digital Charging Solutions		GreenFlux Assets		Powerdale
	Blue Corner		DKV Euro Service		Grønn Kontakt		Route220
	Robert Bosch		Driivz Ltd.		Has.to.be		SAP Labs France*
	Bouygues Energies et Services		DRIVECO		Ineo Tinea		SGA Automation*
	Chargecloud*		Duferco Energia		Izivia (ex-Sodetrel)		ServiceHouse
	ChargeHub*		Easytrip		Lafon		SPIE CityNetworks
	ChargeIT mobility GmbH		Electric 55 Charging		Liikennevirta Oy (VIRTA)		Tank & Rast*
	Chargemap		Electromaps		Mobilygreen		Total EV Charge
	ChargePoint Network		ETREL*		PARKNPLUG*		Threeforce
	Chargepoint Services Limited		Enio*		NewMotion		Vandebron
	CLEM', SAS MOPEASY		EV-Box		Optimile*		Wirelane
	Cogelum IDF		Fortum Charge & Drive B.V.		Plugsurfing		ZE-WATT
			Freshmile Services				

“Operational excellence at the lowest costs”

Eric Feunteun, EV & New Business Director, Groupe Renault



“Connecting to GIREVE’s platform was essential for Chargemap to achieve its mission”

Yoann Nussbaumer, Chairman of the Board, Chargemap



“Partnerships like the one we are implementing with GIREVE will serve to [...] expand Allego’s market position.”

Anja Van Niersen, CEO, Allego



“We are very satisfied with the technical platform’s stability and reliability, the Connect Place’s simplicity and the client service’s reactivity.”

Sabrine Labiadh, Market Manager, Digital Charging Solutions



“Excellent roaming service”

Robert Byrne, Founder & Managing Director, Franklin Energy



“I found GIREVE to be very professional, supportive and innovative. They offer open technology such as OCPI and many opportunities for network expansion”

Francesco Barrile, CEO, Go Electric Stations



# Thank you for your attention