



PIANC French Section

# PIANC Mediterranean Days and Conference «Port of the future» by Cerema 25 to 27 october 2023 in Sete France

«Cold ironing» facilities in the general interest  
ports of the Balearic Islands

JORGE MARTÍN JIMÉNEZ

Port Authority Balearic Islands

Head of Quality, Enviroment, Innovation and RSC



environmental priorities of the port sector over the years

	1996	2009	2013	2018	2019	2020	2021	2022
1	Port development (water)	Noise	Air quality	Air quality	Air quality	Air quality	Air quality	Climate change
2	Water quality	Air quality	Garbage/ Port waste	Energy consumption	Energy consumption	Climate change	Climate change	Air quality
3	Dredging disposal	Garbage/ Port waste	Energy consumption	Noise	Climate change	Energy efficiency	Energy efficiency	Energy efficiency
4	Dredging operations	Dredging operations	Noise	Relationship with the local community	Noise	Noise	Noise	Noise
5	Dust	Dredging disposal	Ship waste	Ship waste	Relationship with the local community	Relationship with the local community	Relationship with the local community	Water quality
6	Port development (land related)	Relationship with the local community	Relationship with the local community	Port development (land related)	Ship waste	Ship waste	Water quality	Relationship with the local community
7	Contaminated land	Energy consumption	Dredging operations	Climate change	Garbage/ Port waste	Water quality	Ship waste	Ship waste
8	Habitat loss/ degradation	Dust	Dust	Water quality	Port development (land related)	Garbage/ Port waste	Dredging operations	Garbage/ Port waste
9	Traffic volume	Port development (water)	Port development (land related)	Dredging operations	Dredging operations	Dredging operations	Port development (land related)	Port development (land related)
10	Industrial effluent	Port development (land related)	Water quality	Garbage/ Port waste	Water quality	Port development (land related)	Garbage/ Port waste	Dredging operations

## Main Goal:

- Supply the electrical demand of vessel berthed in port from the electrical grid without keeping auxiliary engines in operation achieving the reduction of polluting gas emissions, noise and vibrations.

## Background:

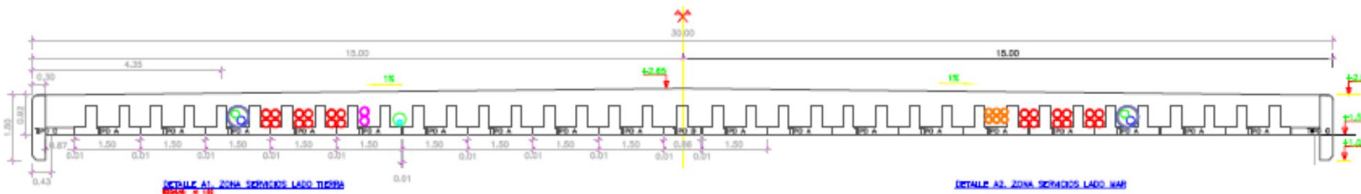
- In May 2006 the "Commission Recommendation on the promotion of the use of electricity in ports by ships at berth in Community ports" was published.
- In 2012 the APB drafted the basic project to provide one of the docks closest to the city with a low and medium voltage connection.
- In 2019 the construction project was written by means of a consortium led by Spanish Ports Bureau where 20% European was financed by European funding (OPS MASTER PLAN SPANISH PORTS).



# Works in progress (2011-2012)



LDSA TIPO II





## OPS MASTER PLAN SPANISH PORTS



España



Islas Baleares



Mallorca



Puerto de Palma de Mallorca



Muelle de Paraires



File	Tender date	Start date	Planned date end	Real date end	Tender budget	Final budget
<b>Project</b>	-	-	-	<b>jun-19</b>	-	16.536,20 €
<b>works</b>	18/09/2019	11/05/2020	11/04/2021	<b>30/12/2021</b>	1.742.017,57 €	1.555.328,58 €
<b>EMGC</b>		18/06/2021	18/02/2022	<b>25/05/2022</b>	495.000,00 €	375.000,00 €
<b>Distribution red.</b>	07/07/2020	25/09/2020	25/03/2021	<b>01/10/2022</b>	50.729,04 €	50.729,04 €
<b>ATDO</b>	-	-	-	-	-	36.659,06 €
						<b>2.034.252,88 €</b>

### PARTIALLY ELIGIBLE ACTION

- Agreement N° INEA/CEF/TRAN/M2015/1128893
- Action N° 2015-EU-TM-0417- **SOPS MASTERPLAN** for Spanish ports.
- Eligibles Costs: **1.251.880,18 €**
- Maximun subsidy: **26,46%**



European  
Commission

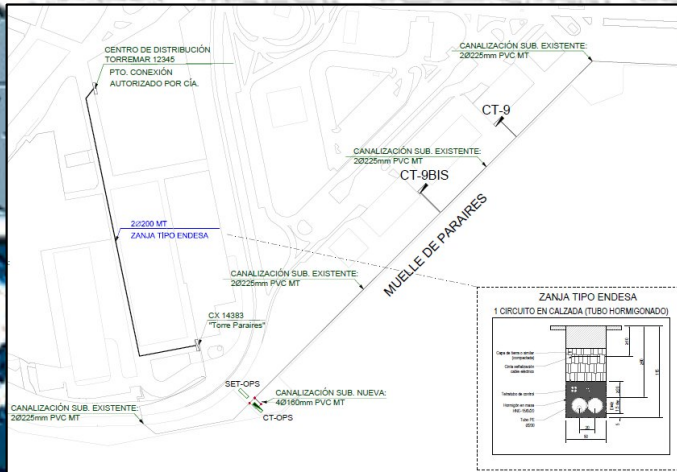




Provide electricity supply to the ferries that usually operate in the Paraires dock of the port of Palma.

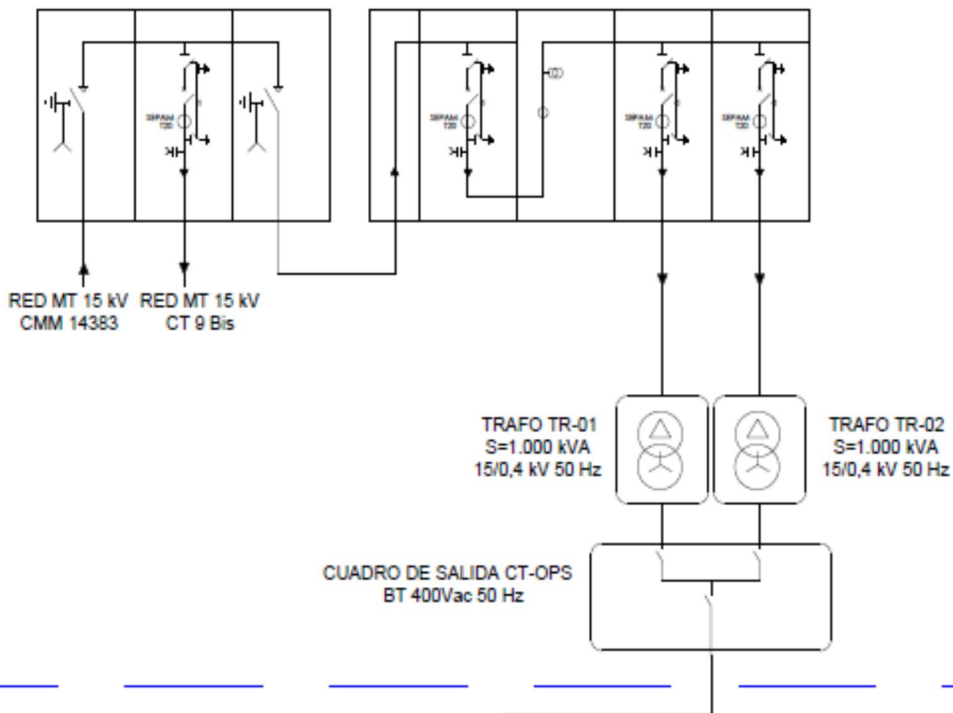
- Vessel fast-ferry: **ELEANOR ROOSVELT**
- Maximum power required: **800 Kw in Low Voltage**
- Electric grid 400V / three-phase voltage / **50Hz**

## BALEARIA



## ESQUEMA DE PRINCIPIO - PROYECTO OPS MUELLE DE PARAIRES

## CENTRO DE SECCIONAMIENTO, MEDIDA Y TRANSFORMACIÓN - CT-OPS



**SET-OPS**

transformer sub station

## CT-OPS

- Function: to connect the power company's distribution network to the port's electrical network.
- MV switchgear for sectioning and protection of the installation.
- MV Metering Module for power supply.
- Power to be installed 2 MVA.
- MV/LV transformers 15/0.4 kV.
- Prefabricated concrete building.





## Low voltage socket 400V supply

- 5 PC5 sockets. Complies with IEC 80005:3.
- 3 phase female connector + ground + 4 pilots. 1000V.
- Rated voltage: 1000V.
- Rated current: 350 A.
- 2 sockets for the control wiring of the wiring management system. 1 toma para cableado de comunicaciones.
- 1 socket for communications wiring.

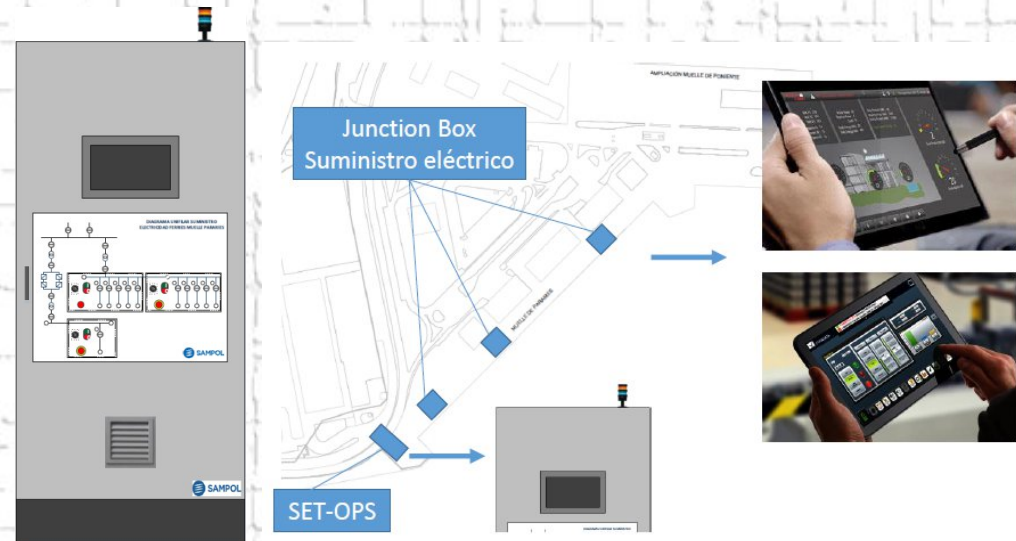


## Medium Voltage socket 11kV supply

- 2 PC6 sockets. Complies with IEC 80005:3
- three-phase + ground + 3 pilot socket.
- Rated voltage: 12 kV.
- Rated current: 350 A.
- 2 sockets for control wiring 1 socket for communications wiring.



- Important signals are wired. Statistical signals and event logs are communicated.
- Programmable Logic Controller (PLC)
- SET-OPS touch screen control panel
- SCADA visualization and operation of the OPS system
- Remote operator management with tablet
- integration of other ICT systems Balearic Ports



## December 2021 th

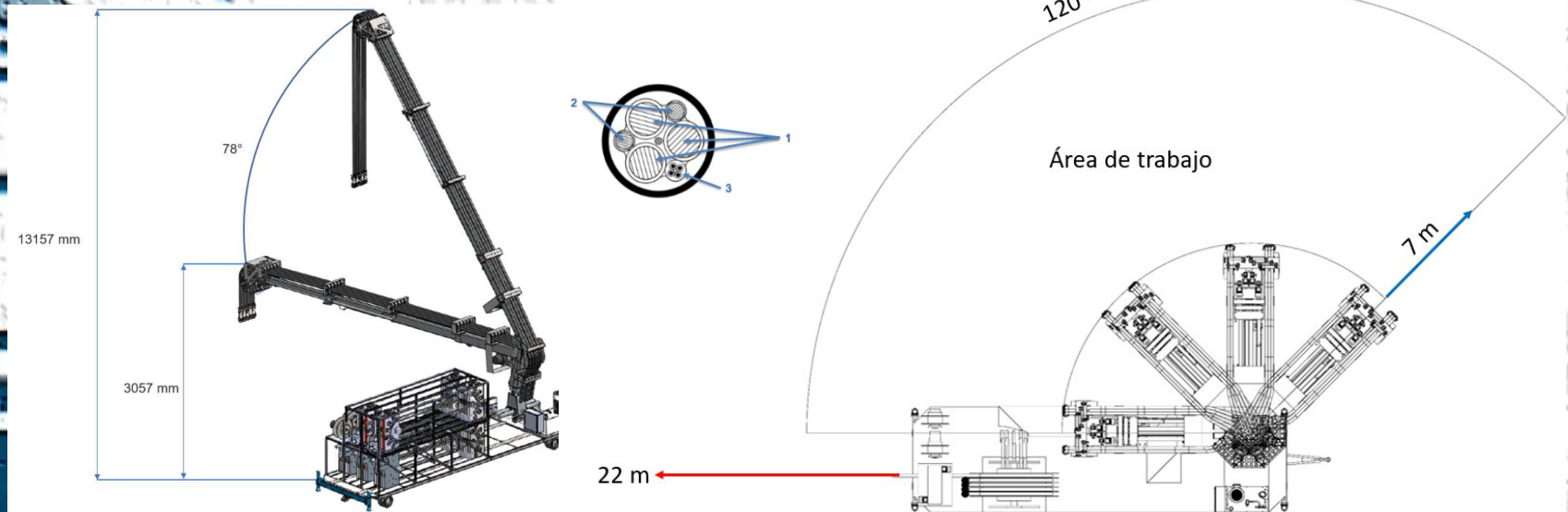
- Operation under the same conditions as with auxiliary engines.
- Great reduction of noise.
- Medium Voltage connection to be inaugurated soon



## Mobile cable management equipment.

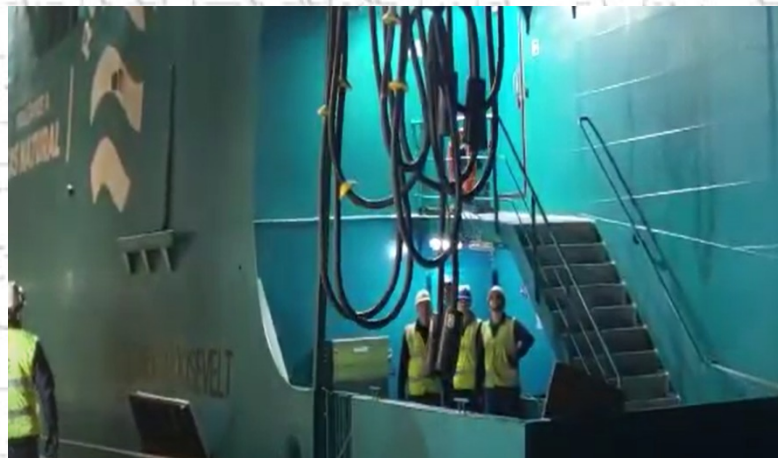
Is used for the connection of the wiring between the vessel and the shore connection sockets.

Equipment defined specifically design and adapted to the features of the pier for this pier. three free movements to make easier the connection of different vessels to the quay.



# Bunkering is a port service

REGULATION (EU) 2017/352 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 15 February 2017 establishing a framework for the provision of port services and adopting common rules on financial transparency in ports.

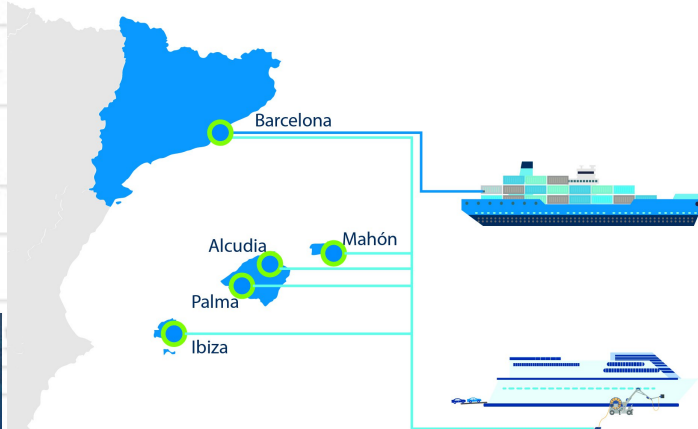


# Upcoming projects OPS



**Puerto de Palma. Muelles Comerciales.**  
1MW 2.400.000€ 2024

**Puerto de Eivissa Pantalanes Botafoc.**  
2MW 4.200.000€ 2024



**Puerto de Maó. Muelles del Cós Nou**  
1MW 2.300.000€ 2024

**Puerto de Alcudia. Muelles de Poniente**  
1MW 2.300.000€ 2024





**THANK YOU VERY MUCH  
FOR YOU ATTENCION**

**Jorge Martín Jiménez (jmartin@portsdebalears.com)**

**Rafael Grau Grau (rafaelgrau@portsdebalears.com)**

**Borja Zamácola (borjazamacola@portsdebalears.com)**

