

AVEVA PI WORLD

The journey to sustainable and smart port Operations

PI System to reduce port emissions

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The AVEVA logo is displayed in white, bold, sans-serif capital letters. It is positioned in the bottom right corner of the slide, partially overlapping the abstract background graphics. The background features a series of concentric, glowing arcs in shades of blue, purple, and orange, creating a sense of motion and technology.

Fundación Valenciaport

- Fundación Valenciaport is a centre for **Applied Research, Innovation and Training**, serving the port-logistics cluster
- Since its creation, it has developed projects in more than sixty countries, mainly in the Mediterranean, the rest of Europe, Asia and Latin America
- Promoting innovation, by fostering the design, implementation and execution of R&D&I projects aimed at enhancing the competitiveness of companies and institutions in the sector

Knowledge areas



Agenda

- Green C Ports project
- Valencia port case studies
- PI System Architecture
- Results
- Future plans

Green C Ports project

Environmental impact of ports' operations

April 2020 – March 2023

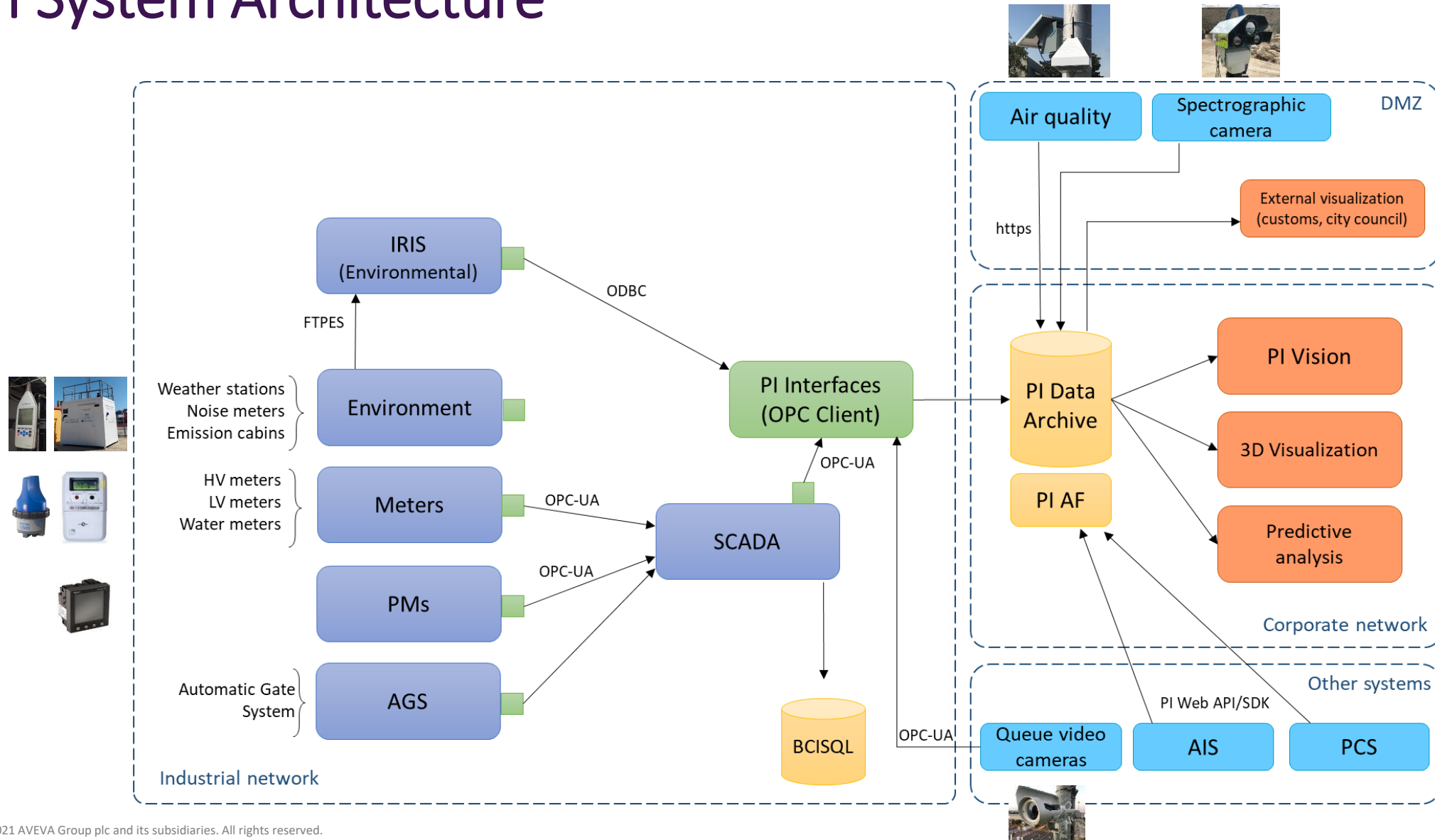
- Digitalisation tools and technologies to support port environmental sustainability and performance of port operations in the TEN-T Core Network
- Decreasing port traffic congestion and CO2 emissions
- Predicting air quality and noise levels in the Ports of Valencia
- Informing shippers about the real emissions generated by their shipments



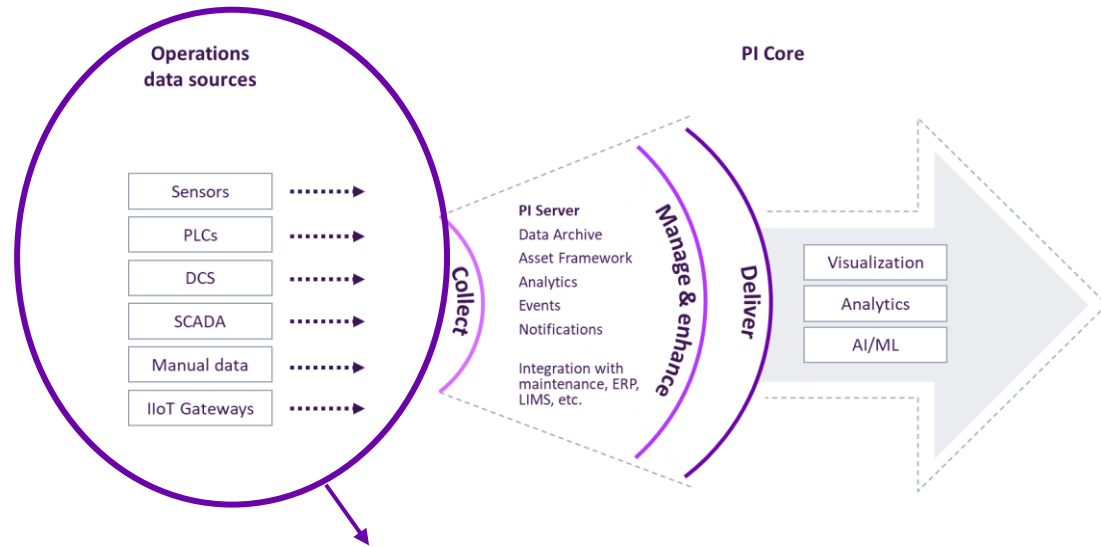
Valencia port Case Studies



PI System Architecture

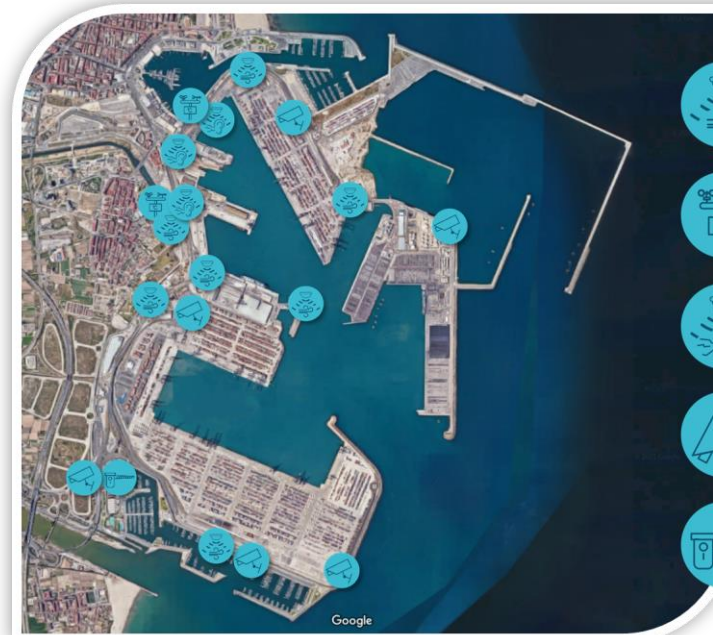


PI System Architecture



- 2 Environmental Control Stations
- 3 Noise meters
- 8 Queue cameras
- 7 Air quality sensors
- 1 Spectrographic camera

Data consumers



Air quality sensors



Environmental control stations



Noise sensors



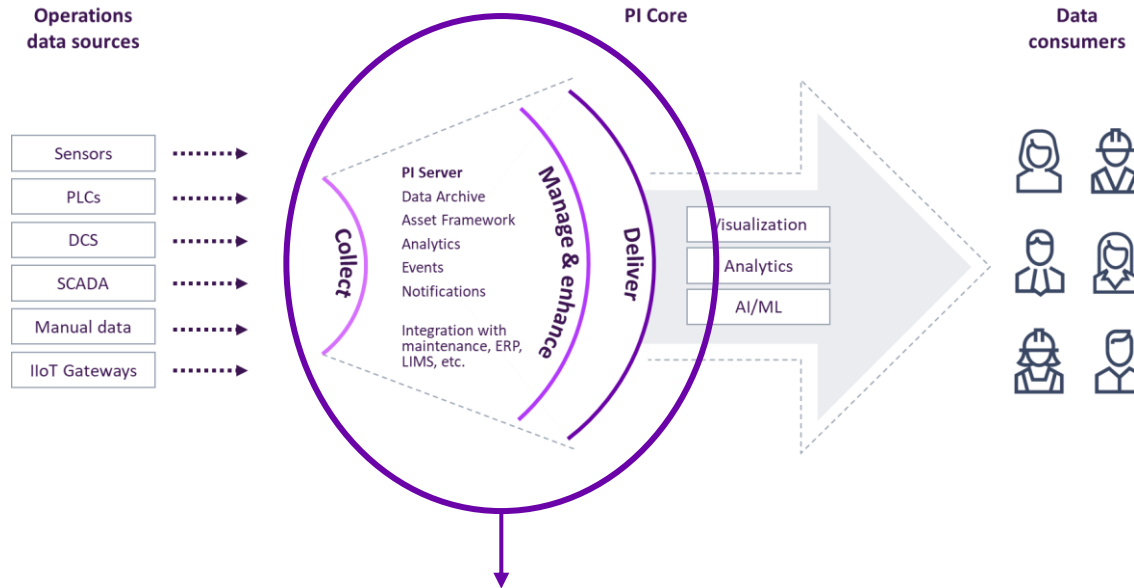
Congestion cameras



Automatic gate access

AVEVA

PI System Architecture



- Digital twin of sensors and systems
- Analysis for calculating new signals
- Event frames for logistics event

Elements

- Puerto de Valencia
 - Accesos
 - Entrada Sur
 - Línea3
 - Línea4
 - Línea5
 - Línea6
 - Línea7
 - Salida Sur
 - Carri3
 - Carri4
 - Carri5
 - Carri6
 - Carri7
 - AIS
 - AIS_APV
 - Alarmas
 - Bombas
 - Puertas FFCC
 - Viento
 - Analizadores de Red
 - Calidad aire
 - E1
 - E2
 - E3
 - E4
 - E5
 - E6
 - E7
 - Camara espectrografica
 - Camara espectrografica FV
 - Monitorización

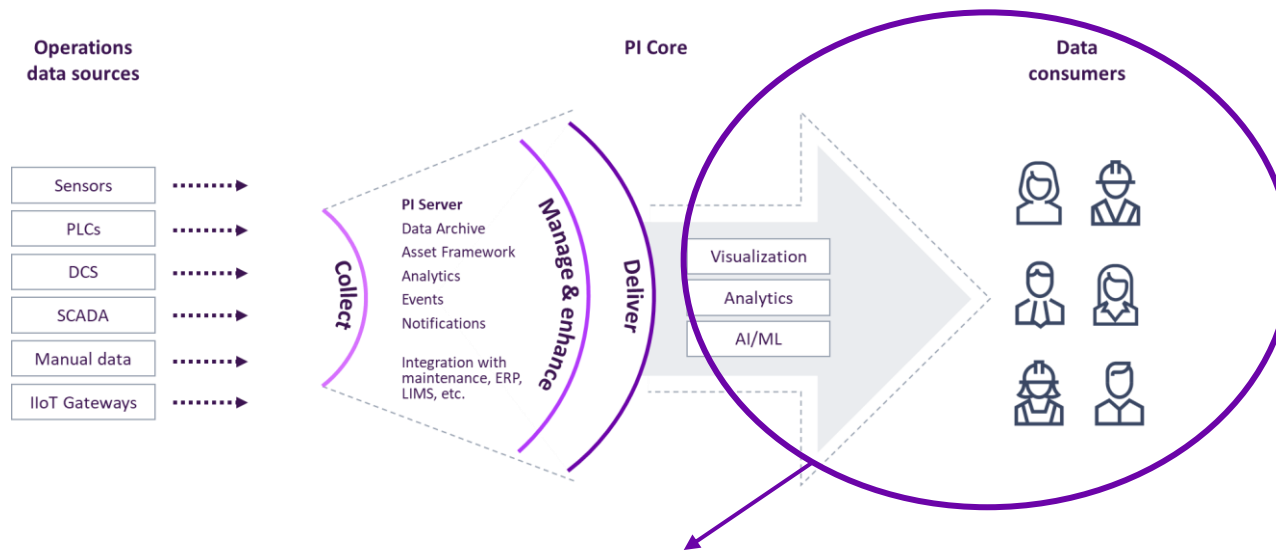
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✓	■	Humedad_Flag		V				
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	■	Localizacion		Rotonda acceso Norte				
	■	Longitud		-0.328639				
	■	Modelo		AQMesh				
	■	NO		0,99 ppb				
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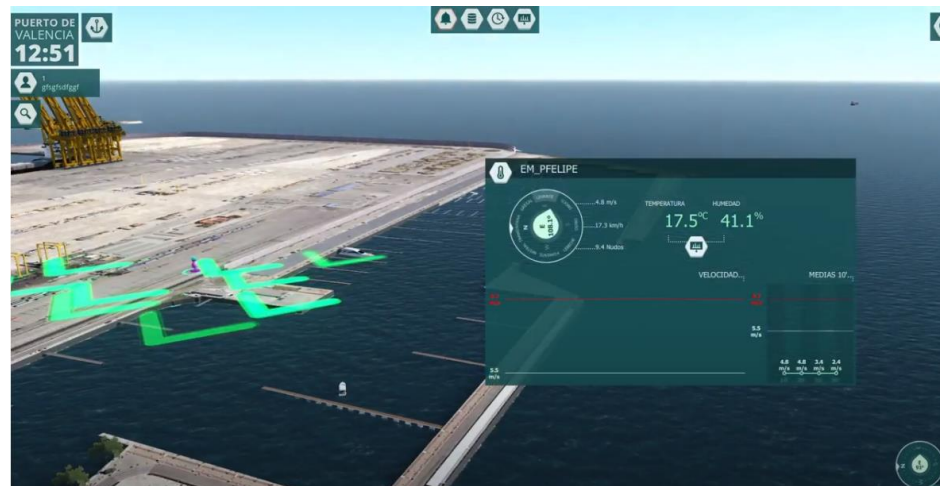
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LPR_TRUCK_CONF	96	09/09/2021 6:39:40.503	Matricula procesada

PI System Architecture



- PI Vision displays
- 3D visualization
- Predictive analysis





Results

- Integrate several information sources in an single platform
- Create digital twins of devices and systems
- Create events aggregating the data related to a specific events
- Visualize in an easy way the required data



Future plans

- Make predictions from the data in PI System
- Create customized dashboards depending on the user
- Integrate new data sources
- Create alerts to internal and external users



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