DINAPSIS

# Digital Transformation for Sustainable Management of Water and Environmental Health

**DINAPSIS Región de Murcia**
C/ Jabonerías, 32
30201 – Cartagena
SPAIN

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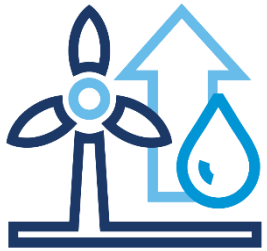
# A common challenge:

To offer collaborative solutions to address the challenges of climate change

## CLIMATE CHANGE

### A GROWING WORLD PROPULATION

It is estimated that by **2050** the world's population will have grown to **9.7** billion people and **60%** will live in large cities.



### INCREASING DEMAND OF RESOURCES

Energy demand will increase by **50%**, and the world's water requirements will exceed available supply by **50%** by **2050**

### AIR POLLUTION

An estimated **7 million people** die every year from urban air pollution

### WATER SCARCITY

By **2050**, more than **40%** of the world's population will live in areas with water scarcity. Spain is among the most impacted countries.

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# Keys for a sustainable city

Digitized services connected to people

DIGITAL

CIRCULAR

COLLABORATIVE

EFFICIENT

CLEAN

GREEN

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# DINAPSIS is...

**DI**gital

si**NAPSIS** (*synapse*)

**...a network of digital transformation hubs for water management, environmental health and the ecological transition of the territory**

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# Dinapsis with local vision

Dinapsis enables digital solutions to be scaled and adapted to each region's real needs, thus ensuring optimum resource management.

**Albacete**
Water stress and regional development

**Valencia**
Sustainable city and circular economy

**Smart Metering & IoT**
**Cybersecurity**

**Water Resources and Environmental Health**

**Barcelona**
Resilient water and social commitment

**Islas Canarias: Gran Canaria and Tenerife**
Desalinated water and sustainable tourism

**Costa Blanca**
Urban water management, $H_2O$, blue and green infrastructures

**Costa del Sol**
Water resilience and carbon neutrality

**Región de Murcia**
Efficiency in Water Uses and Climate Risk

**Granada**
Metropolitan water and decarbonisation

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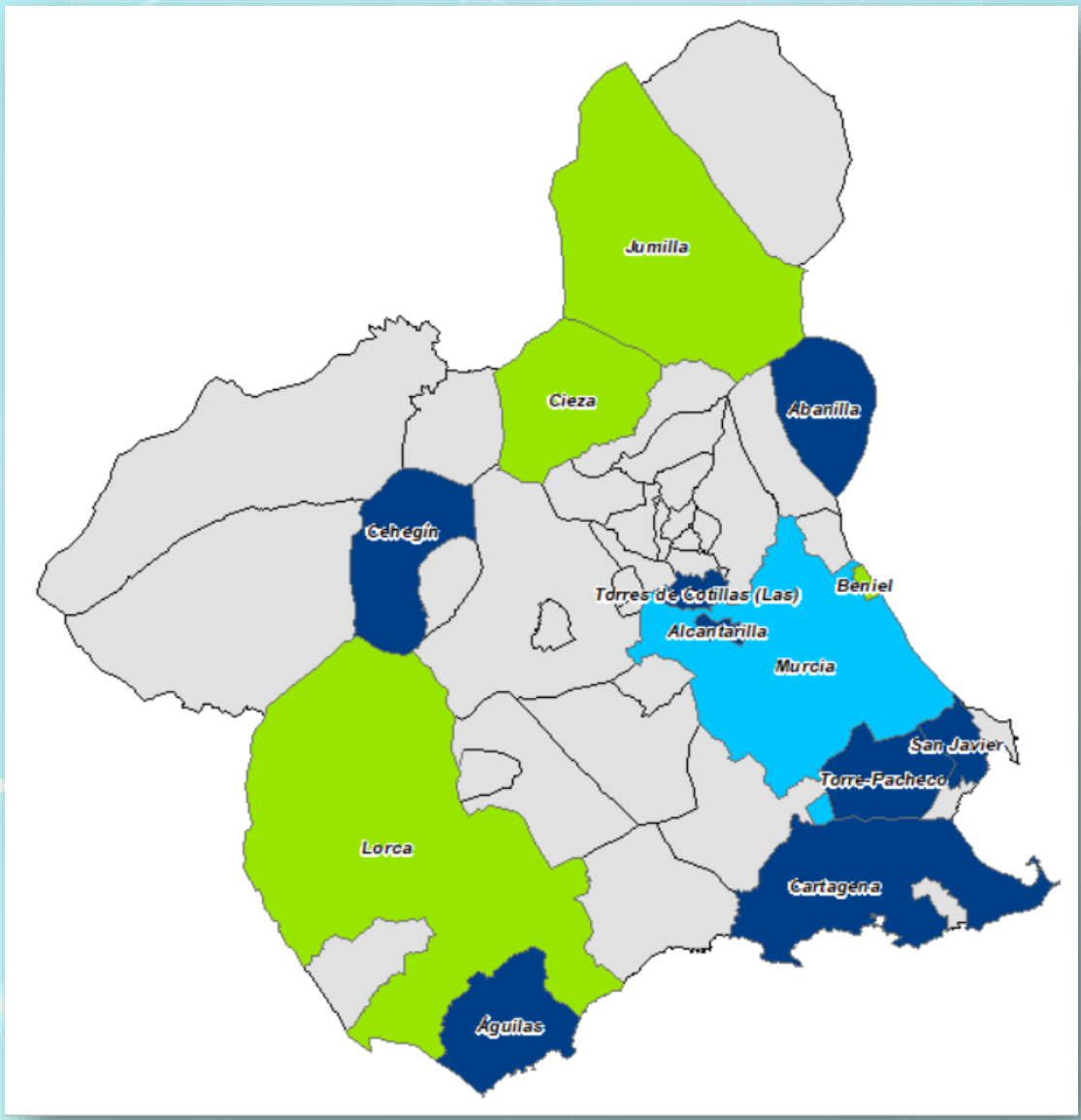
# DINAPSIS Región de Murcia

Región de Murcia




- Región de Murcia
  - 1.5M inhabitants
  - 11,300 Km$^2$
  - 45 municipalities
- HiDROGEA: 8 municipalities (1/3 population)
- EEMM: (1/3 population)
  - 4 municipalities
  - EMUASA (Aguas de Murcia)

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# Dinapsis with local vision

Dinapsis enables digital solutions to be scaled and adapted to each region's real needs, thus ensuring optimum resource management.

HIDROGEA

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# Efficiency in Water Uses

## Uses

- Domestic
- Industrial
- Agricultural

## Operational Hub

- 24/7
- All HiDROGEA municipalities

## Reclaimed Water

- **Region of Murcia: 98% reused (of 99% treated) – 121 Hm3 in 2023**
- **Spain: 9% reused**
- **Europe: 5% reused**

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# Climate

# Risk

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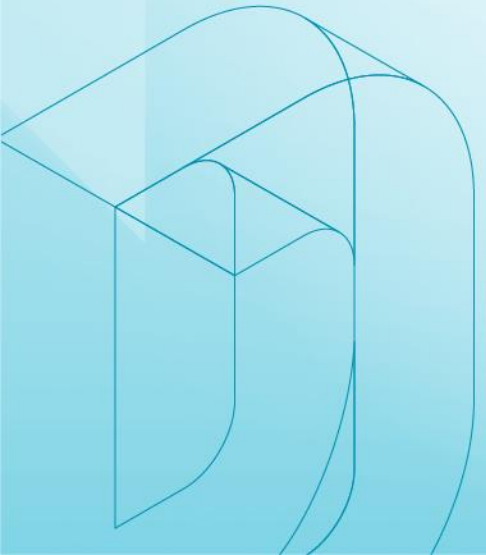
# Our basic pillars

TECHNOLOGY

EXPERIENCE

INTEGRATION



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## Experience

# Dinapsis' intelligence is based on the diversity and volume provided by more than 150 years of information

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# Technology

## Leaders in integrating disruptive technologies in environmental health and complete water management

IoT

Drones

Artificial Intelligence

Predictive Analytics

Virtual Reality

BIM

Business Discovery

Smart GEO

Machine Learning

Computer Vision

Mixed Reality

Numerical Modelling

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# Integration

## Experts in operational efficiency through **centralized planning**

PEOPLE

PROCESSES

TOOLS

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# Digital services
# to serve the public

Tracking of water consumption to control expenditure

Improved bathing water quality

Knowledge of environmental health at municipal level

Increased availability of green spaces

Reduced impact of extreme weather events

Preservation of natural resources for current and future generations

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# DINAPSIS is...

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**...a network of digital transformation hubs for water management, environmental health and the ecological transition of the territory**

A Smart Operational Hub

A Suite of Digital services

A Place for Co-Creation and Alliances

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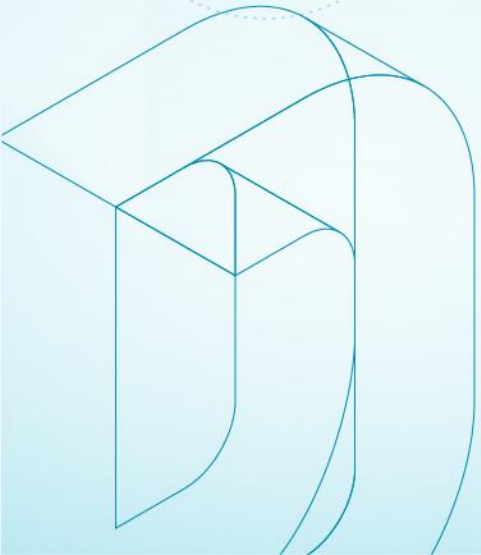
# An operational hub
# that enables integrated operation of the region's water and environmental health services

**Sustainable management**
of water and the environment

**Access to digitization**
for all municipalities regardless of their size

**Transparency** and being close to the public

**Swift response**
to our customers' needs



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Operational Hub

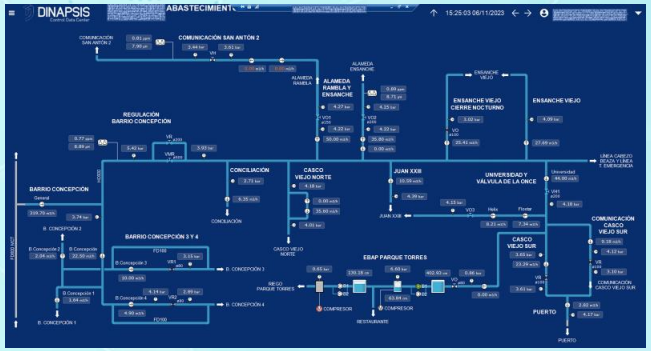
# DINAPSIS Región de Murcia

- ❑ **24/7 Service**
- ❑ All HiDROGEA municipalities
- ❑ 500.000 inhabitants (1/3 R.Murcia)
- ❑ 5.500 Km pipe networks
- ❑ 30.000 real-time signals
- ❑ 132.000 Work Orders/year
- ❑ Digital Transformation
- ❑ DINAPSIS Suite Solutions
- ❑ **Centralized Planning**
- ❑ More Efficient Service
- ❑ Increased Sustainability

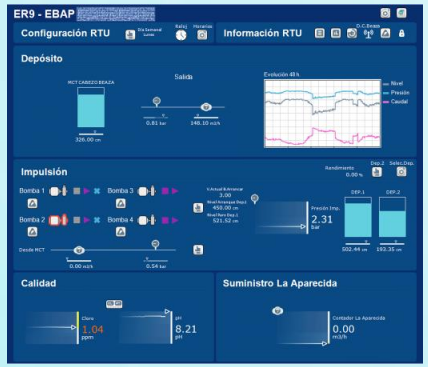
- ➢ 24/7
  - ❖ 7 Control Center Operators
  - ❖ 3 Planners
- ➢ NRW Manager
- ➢ Asset Manager
- ➢ Energy Manager
- ➢ Suite Continuous Deployment

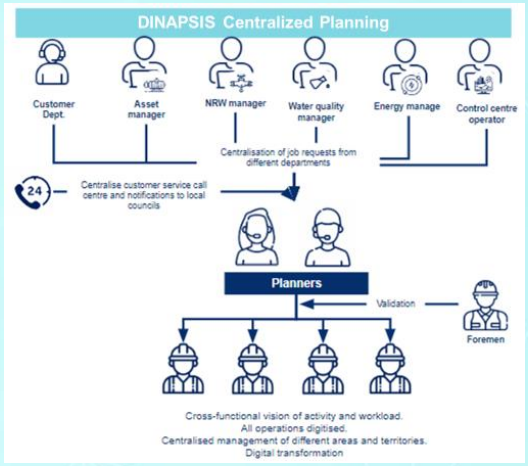
Operational Hub

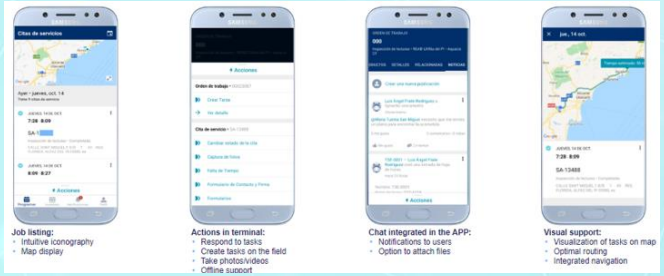
# DINAPSIS Región de Murcia

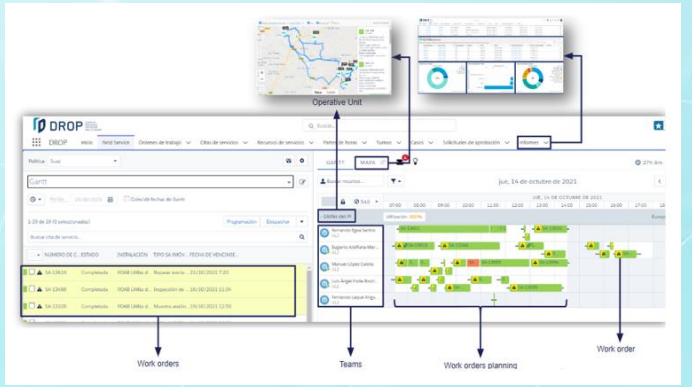


- **Monitoring & Control**
- High-Level Data
- Dashboards
- Graphs
- Low-Level Data
- **Control Center Operators**




- *DINAPSIS Centralized Planning*
  - Planners
- Real Time
- KPIs

- ✓ **More Efficient**
- ✓ **Better Service**
- ✓ **More Sustainable**

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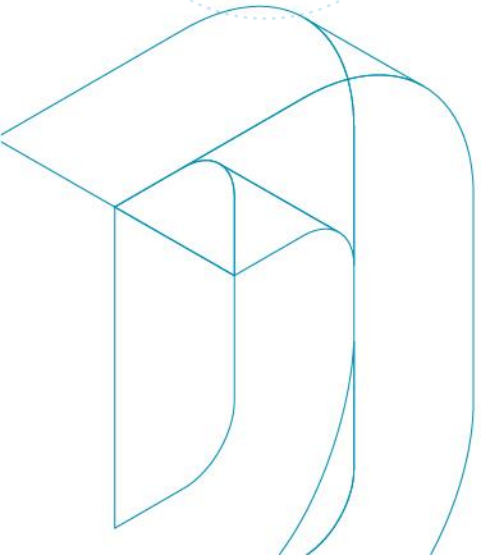
An operational hub

A suite of digital services

A place for co-creation and alliances



# A suite of digital services

24/7

REAL-TIME MANAGEMENT

CYBERSECURITY AND BUSINESS CONTINUITY

UX

USABILITY OF SERVICES

**2,300,000**
SMART METERS INSTALLED

**15**
TERABYTES OF DATA GENERATED EVERY DAY

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A suite of digital services

# Our digital services

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DINAPSIS for Water

Digital services for the transformation **of the water cycle**

DINAPSIS for City

Digital services to help municipalities in their **ecological transition**

DINAPSIS Circular Economy

Digital services to boost the **circular economy** in the **industry-city alliance**

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# Digital services to transform the water cycle

DINAPSIS for Water

- CUSTOMER EXPERIENCE AND SALES PROCESSES
- SMART OPERATION OF SUPPLY AND SEWAGE NETWORKS. 360º VISION
- SMART METERING
- ADVANCED ASSET MANAGEMENT AND FIELD WORK
- ADVANCED PLANT OPERATION: ROUTE TOWARD ECOFACTORIES
- INTEGRATED WATER RESOURCES MANAGEMENT
- INTEGRAL LOGISTICS MANAGEMENT

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# Digital services to help municipalities in their ecological transition

DINAPSIS for City

- URBAN EPIDEMIOLOGY SURVEILLANCE
- ENVIRONMENTAL HEALTH AND URBAN MOBILITY
- URBAN AGENDA AND CITY INDICATORS
- SUSTAINABLE TOURISM
- CLIMATE CRISIS MANAGEMENT AND URBAN RESILIENCE
- GREEN SPACE AND BIODIVERSITY MANAGEMENT
- DECARBONISATION

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# Digital services to boost circular economy in the industry-city alliance

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Circular Economy

ADVANCED OPERATION OF INDUSTRIAL WATER TREATMENT PLANTS

SUSTAINABLE MANAGEMENT OF WATER RESOURCES IN INDUSTRY

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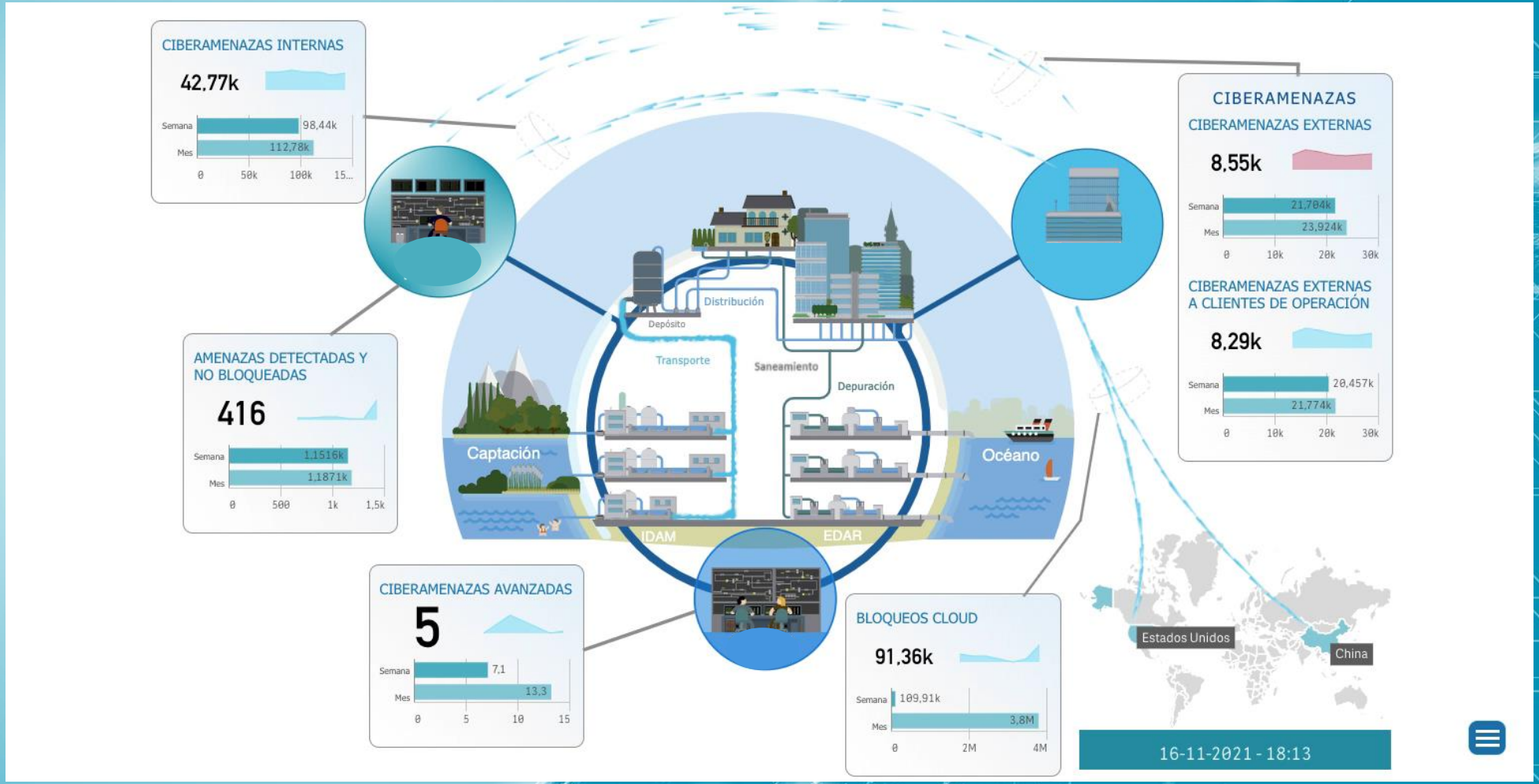
# Cybersecurity

## Infographic Cyber Attacks - Corporate Critical Infrastructure



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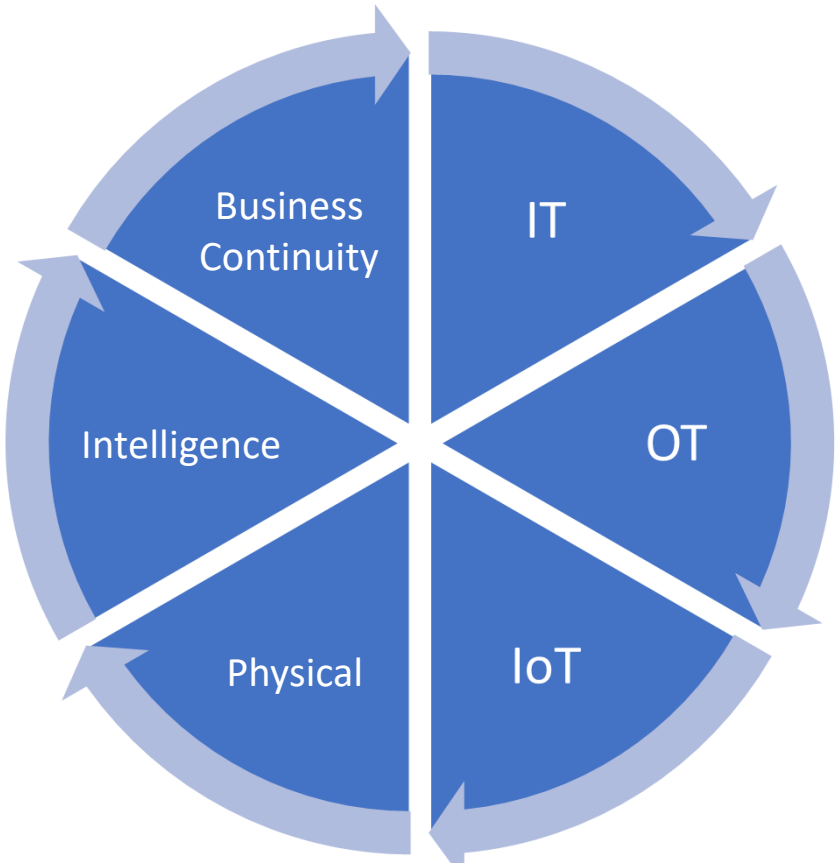
# Cybersecurity

## Full Coverage




ISO 22301:2012

ISO 27001

ens Esquema Nacional de Seguridad

ENSI_C4V certsi

LEET SECURITY ICT Rating PASSED

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# A place for cocreation and alliances between public administrations, companies, universities, technology centers and start-ups

## AN INNOVATION NETWORK

with experts of multiple regions

## DINAPSIS DIGITAL PAPER

sharing knowledge and best practices

## IOT HACKATHONS

with universities and students

## DINAPSIS OPEN CHALLENGE

testing, validating, scaling and marketing innovative technologies

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# DINAPSIS Región de Murcia

## EVENTS

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Digital Paper

EU Projects

AGBAR
Chairs Network

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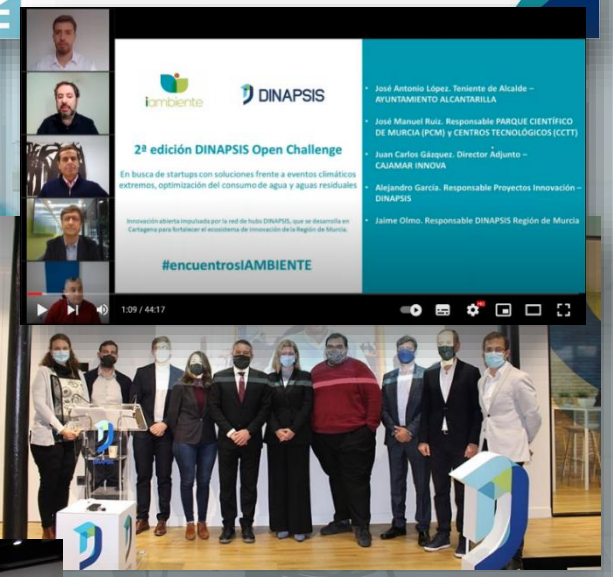
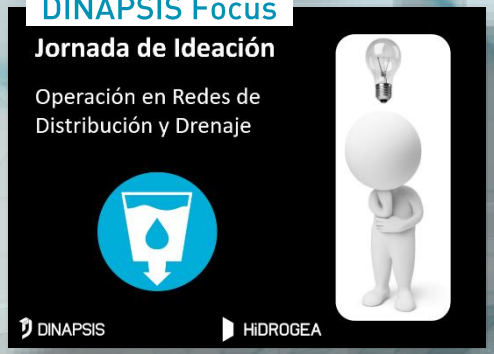
Open Challenge




DINAPSIS Focus



Mar Menor
Technical Table

Working Days

DINAPSIS Breakfasts

# DINAPSIS Región de Murcia

## EXTERNAL EVENTS

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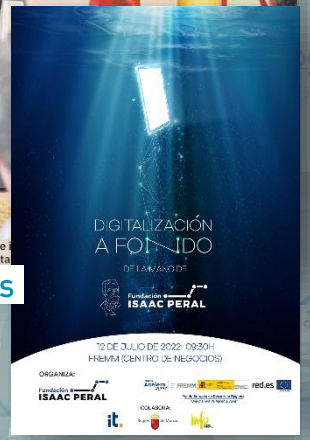
De izq. a dcha., el director del Centic, Germán Sancho García; el responsable de Desarrollo de Negocio en Soluciones de
y el director del centro Dinapsis Región de Murcia, Jaime Olmo Serra, ayer, durante la mesa redonda de la jornada 'Digita




Presentations

Radio Programs

Conferences

Interviews

Round Tables

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We want to be your ally
to overcome the challenges
of sustainable development
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