

Singapore International Water Week 2022
Digital Transformation of the Water Sector and Role of Digital Twins Workshop
17th April 2022 –Sands Expo & Convention Centre, Singapore



global omnium

Overview of digital transformation in water collection, treatment, and distribution network

speaker: Miguel Angel Ayllón (maayllon@globalomnium.com)

GLOBAL OMNIUM IN FIGURES

OUR BUSINESS LINES

- 1 Potable and wastewater treatment plants
- 2 O&M of drinking water and sewage networks
- 3 Engineering & construction
- 4 Water-related services
- 5 Aquariums

+130

YEARS OF
EXPERIENCE

+400

MUNICIPALITIES
MANAGED

450M€

REVENUES

15

COUNTRIES

+4M

HOUSEHOLDS
SERVED

+3,100

EMPLOYEES



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DIGITAL TRANSFORMATION PROCESS IN GLOBAL OMNIUM



Water scarcity
OPEX reduction

2003 - 2006

Customer exp. improvement
Standardization of operations

2007 - 2012

Traceability
Advanced cross-use cases

2013 - 2018

Since 2019

 **IDRICA**

Born from a water utility
Self management
Agile

go-aigua



DWTP & networks
instrumentation + DMAs
Hydraulic modelling project

Smart metering deployment
Inhouse solutions development

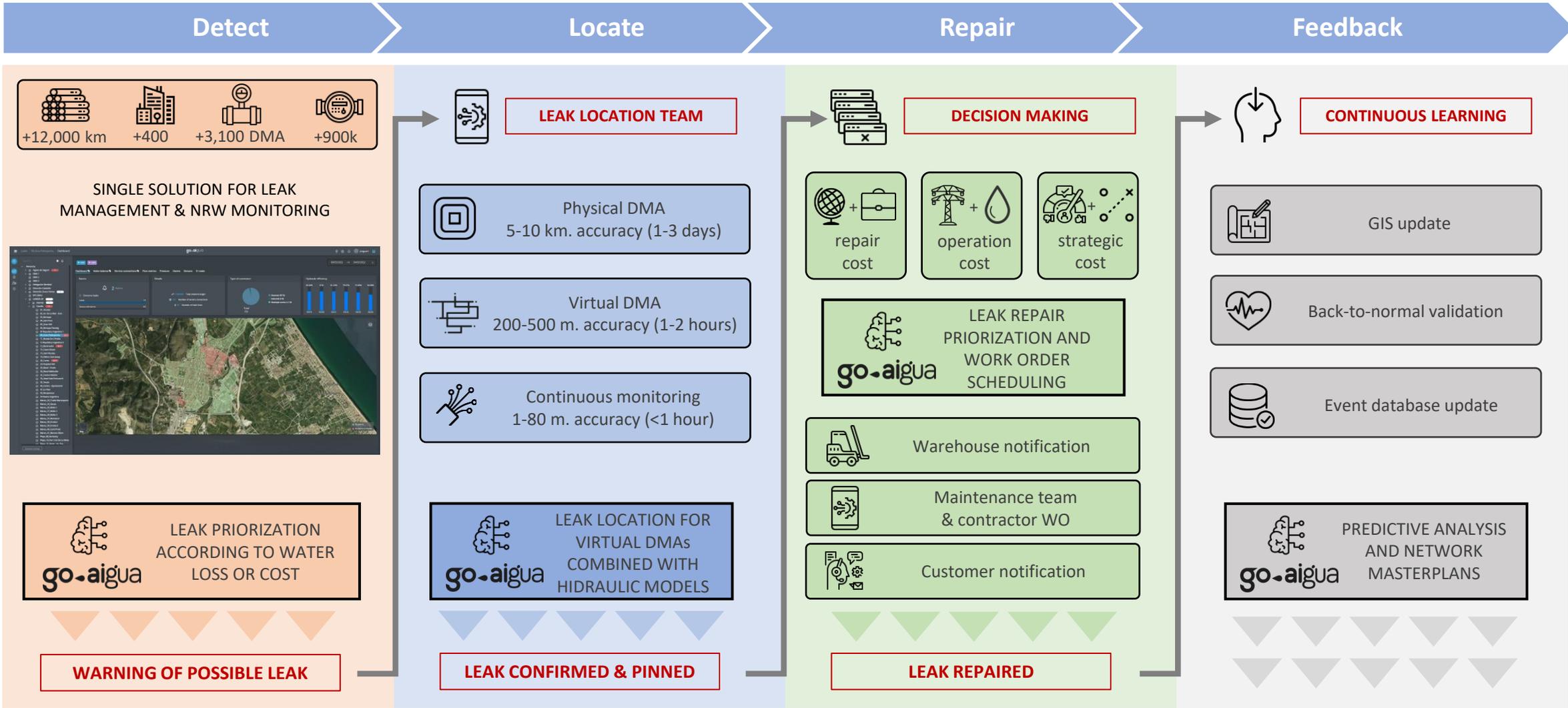
Data centric architecture
New corporate culture



CURRENT MAJOR PROJECTS AROUND THE WORLD



CASE OF USE #01: NRW REDUCTION SYSTEM



go-aigua SOC (SERVICE OPERATION CENTRE) – CENTRALIZED MANAGEMENT



CASE OF USE #02: DRINKING WATER NETWORK DIGITAL TWIN

Valencia & metropolitan area
48 municipalities
1.6 million inhabitants

+250 km. mains (24"-64")
+1,400 km. network (2"-48")

+1,700 data/sec (hydraulic, water quality, physical security, energy, assets status, alarms,...)

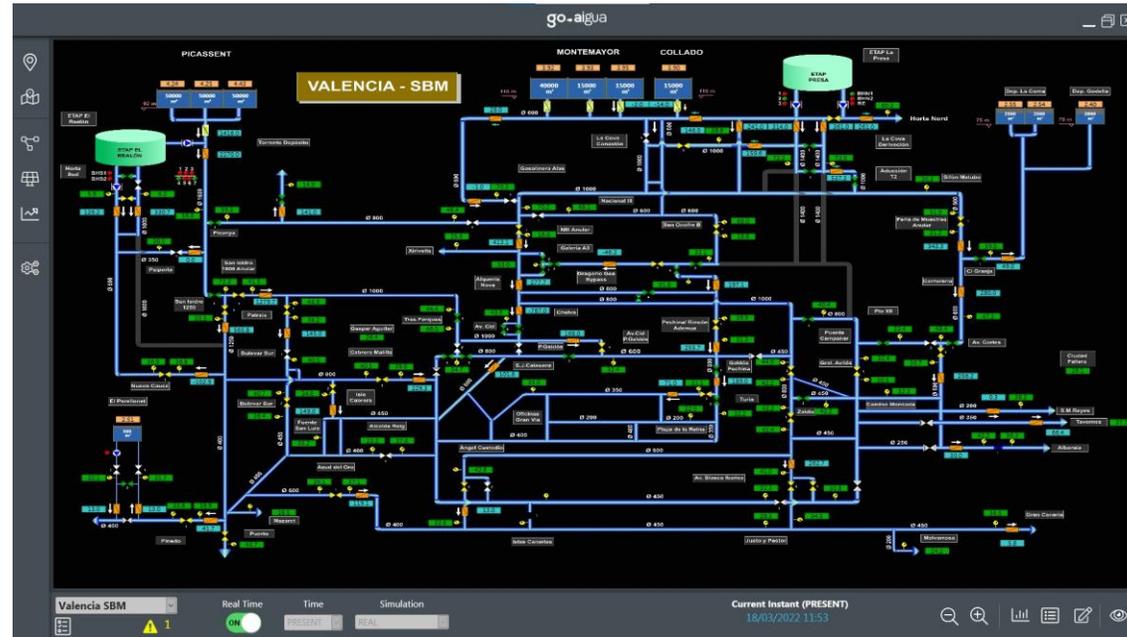
+250 km. mains (24"-64")
+850 km. network (4"-48")

204 flowmeters
426 pressure transducers
28 water tanks level
254 control valves
47 pump stations

+400k smart meters

Demand forecasting
3rd party data aggregation
Indicators
Leak detection for virtual DMAs

go-aigua WATER TWIN ACE



real-time connected digital twin

96%

flow accuracy

98%

pressure accuracy

Operators training

Hidden failure detection

What-if analysis

Future simulations

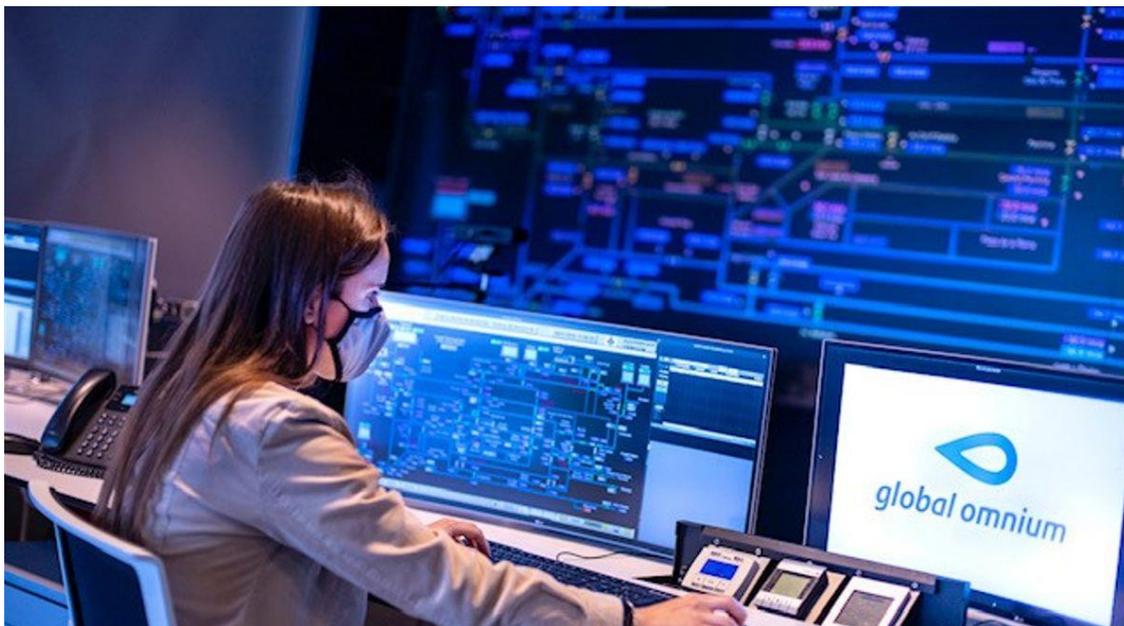
Maintenance scheduling

Energy saving strategy

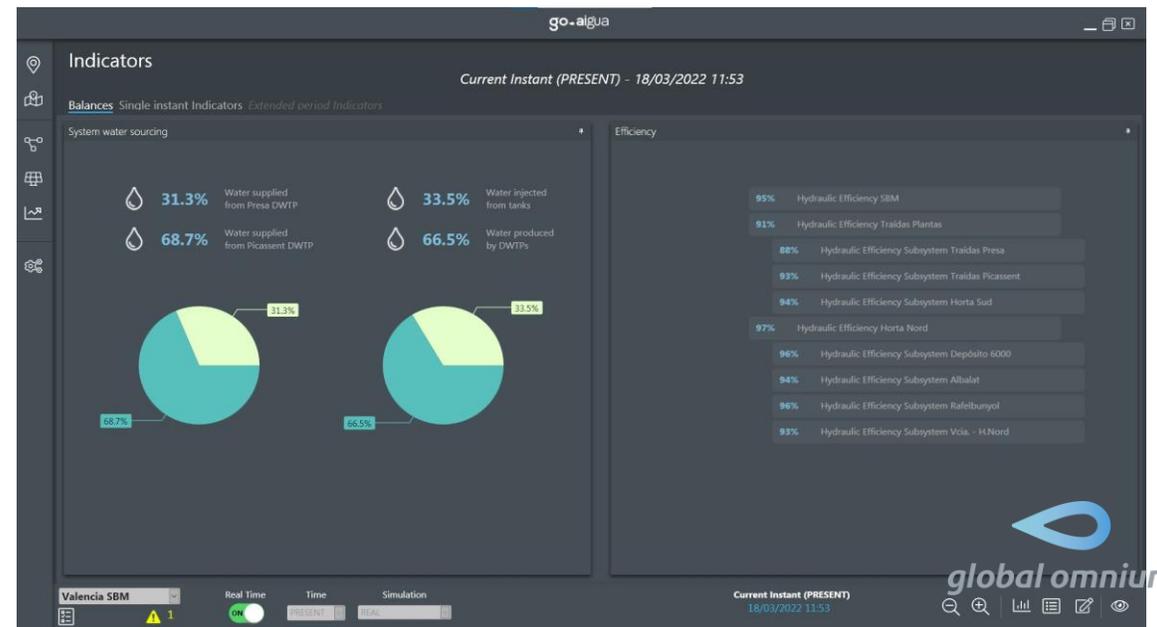
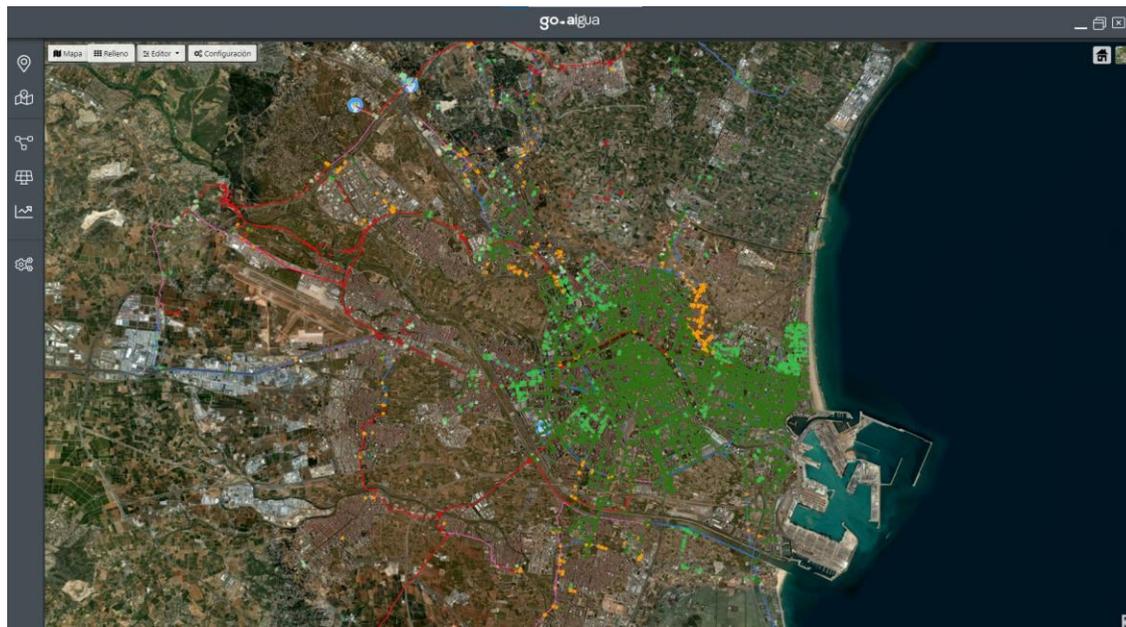
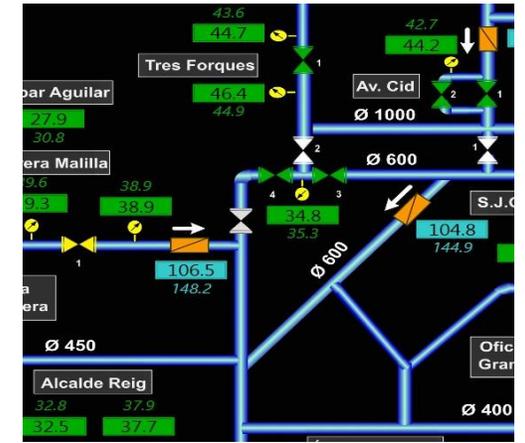
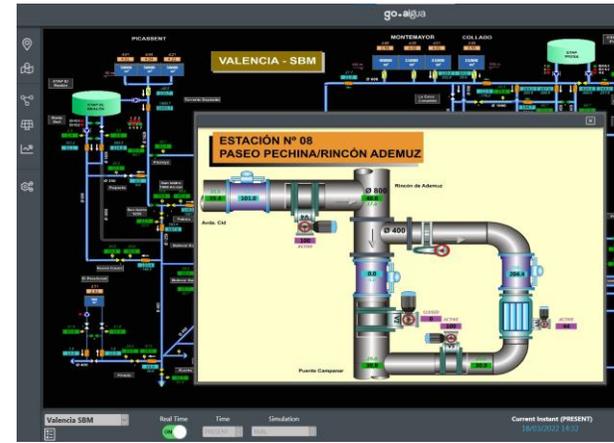
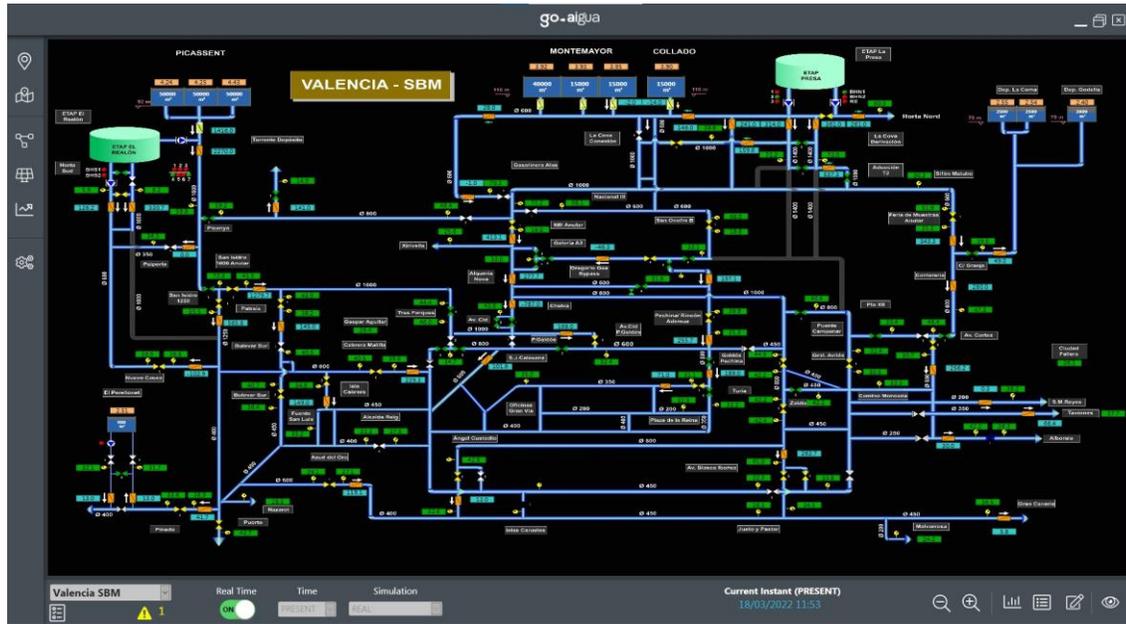
Real-time quality model

Breakdown & safety alarm

CASE OF USE #02: WATER NETWORK DIGITAL TWIN



CASE OF USE #02: WATER NETWORK DIGITAL TWIN



OUTCOMES OF DIGITAL TRANSFORMATION IN GLOBAL OMNIUM



+9Bn data processed per year	+800 SCADAS	+400 hydraulic systems remotely monitored or operated
+6M invoices per year	~1M smart meters	+3,100 DMAs with hourly balance
~ 100k work orders processed automatically		



4 Hm3 water saved	+45% improvement in administrative tasks related to field work	+60% complaint reduction related to invoicing	0.3 Hm3 water saved in household leaks
+18% NRW reduction	+19% reduction in maintenance cost	x10 customers registered in GO virtual office	7,000 Ton CO ₂ saved/year
+15% energy efficiency	597 leaks detected per month (avg)	1,250 household leaks detected	0 people lost their job




Address from **multiple angles**: IT, hydraulic & people



Can help us to **make the difficult easy**



Is the way to achieve **excellence in operation**



OUTCOMES OF DIGITAL TRANSFORMATION IN GLOBAL OMNIUM

digital transformation is
not an **easy** road,
but it's an **exciting** one



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Miguel Angel Ayllón



maayllon@globalomnium.com



+34 690112732



[linkedin.com/in/miguelangelayllon/](https://www.linkedin.com/in/miguelangelayllon/)



Victor Lorente



victor.lorente@idrica.com



+34 963860500



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