

# 5G Connected Danube Delta

## Transforming Connectivity in the Danube Delta Region

CEF-Digital 2021-2027



Co-funded by  
the European Union

5G and Edge Cloud for Smart Communities,  
Grant Agreement 101181137



-  Digital education
-  Telemedicine
-  Slow tourism
-  Environmental monitoring



Asociația  
Ivan Patzaichin - Mila 



CONSILIUL JUDEȚEAN TULCEA



Fundația



Telios



# Romania Digital Decade 2025 – country report

Digital Decade KPI <sup>(1)</sup>	Romania				EU		Digital Decade target by 2030	
	DESI 2024 (year 2023)	DESI 2025 (year 2024)	Annual progress	National trajectory 2024 (3)	DESI 2025	Annual progress	RO	EU
Fixed Very High Capacity Network (VHCN) coverage	95.0%	95.9%	0.9%	-	82.5%	4.9%	99.0%	100%
Fibre to the Premises (FTTP) coverage	95.0%	95.7%	0.8%	-	69.2%	8.4%	99.0%	-
Overall 5G coverage	32.8%	46.8%	42.7%	33.0%	94.3%	5.9%	62.0%	100%
Edge Nodes (estimate)	5	11	120.0%	-	2257	90.5%	-	10000
SMEs with at least a basic level of digital intensity (2)	-	69.1%	14.7%	-	72.9%	2.8%	75.0%	90%
Cloud	15.5%	-	-	-	-	-	40.0%	75%
Artificial Intelligence	1.5%	3.1%	103.3%	-	13.5%	67.2%	10.0%	75%
Data analytics	21.9%	-	-	-	-	-	15.0%	75%
AI or Cloud or Data analytics	28.7%	-	-	-	-	-	-	75%
Unicorns	0	0		-	286	4.4%	-	500
At least basic digital skills	27.7%	-	-	-	-	-	50.0%	80%
ICT specialists	2.6%	2.8%	7.7%	-	5.0%	4.2%	4.0%	~10%
eID scheme notification		Yes						
Digital public services for citizens	52.2	62.7	20.2%	-	82.3	3.6%	100.0	100
Digital public services for businesses	50.0	55.1	10.2%	-	86.2	0.9%	100.0	100
Access to e-Health records	58.6	75.1	28.2%	-	82.7	4.5%	-	100

ref: [digital-strategy.ec.europa.eu/en/factpages/romania-2025-digital-decade-country-report](https://digital-strategy.ec.europa.eu/en/factpages/romania-2025-digital-decade-country-report)

# CEF-Digital 2021-2027

5G coverage along  
transport corridors

Backbone connectivity for  
Digital Global Gateways

Quantum Communication  
Infrastructure

5G and Edge for Smart  
Communities

Backbone networks for  
pan-European cloud  
federations

Operational Digital  
Platforms



Development of 5G and Edge Cloud  
infrastructure elements that allow the  
implementation of innovative applications for the  
digitalization of public services of general  
interest

# 5G Connect Danube Delta

**Scope:** development of a communications network based on 5G Stand-Alone and Edge Cloud technology in 23 localities in the Danube Delta to support digital education, telemedicine, slow tourism and environmental monitoring applications

## Consortium:

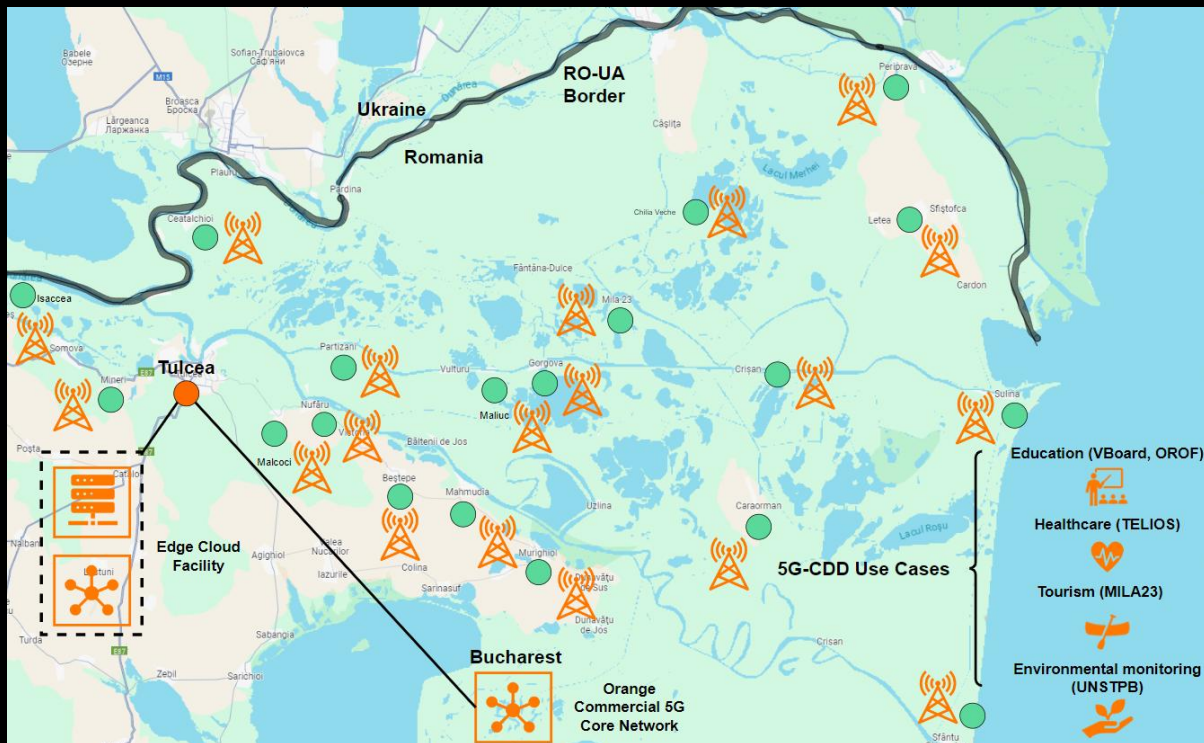
- Orange Romania
- Fundatia Orange
- Asociatia Ivan Patzaichin – Mila 23
- UNST Politehnica Bucuresti
- Virtual Board
- Consiliul Judetean Tulcea
- Telios Care

Oct 2024 – Sept 2027

[5glab.orange.ro/5g-cdd](https://5glab.orange.ro/5g-cdd)



# 5G Connect Danube Delta – infrastructure



**Malcoci**

**Mineri**

**Bestepe**

**Crisan**

**Partizani**

**Gorgova**

**Dunavatu de Jos**

**Mila 23**

**Chilia Veche**

**Sf. Gheorghe**

**Periprava**

**A Rosetti**

**Patlageanca**

**Caraorman**

**Ceatalchioi**

**Mahmudia**

**Sulina**

**Isaccea**

**Murighiol**

**Plauru**

**Tatanir**

**Letea**

**Nufaru**



# 5G Connect Danube Delta – use cases

## Digital education



Orange Foundation programs and VBoard remote education solution

Hybrid teaching real time collaboration between students and teachers

Orange Digital Center in Mila 23

Leveraging on the Digitaliada educational content

Piloting XR education in 1 school from Tulcea (6G-PATH)

Target: **1,470 beneficiaries** in **17 schools** and **600 beneficiaries** through the **Orange Digital Center**



## Telemedicine



Legacy portable medical devices using 5G-enabled laptops / tablets

Telios Care telemedicine eHealth solution

Deploying the remote medical control mobile app

Deploying instances of the Point of Care concept with the associated clinical devices

Sinergy with Ministry of Health telemedicine program

Target: **5,218 beneficiaries** in **10 medical units**



# 5G Connect Danube Delta – use cases

## Slow tourism

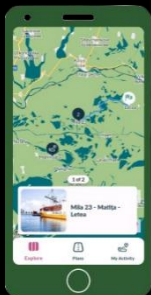


MILA23 mobile app 'Delta lui Ivan' that augments the visitor's experience in the Danube Delta biosphere

Includes educational content, routes and points of interest, geo-fencing and dangerous events reporting capabilities

Tourism points of interest monitoring with 5G-enabled smart surveillance cameras

Target: **2,050 tourists** and **explorers**



## Environmental monitoring

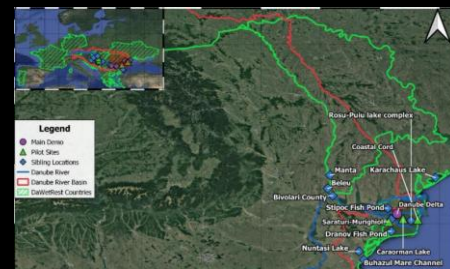


Based on the DaWetRest Horizon Europe project of Politehnica Bucharest and TrialsNet of Orange RO

Key protected areas to be fitted with environmental monitoring sensors connected to 5G routers

Targets the improvement of local hydrological conditions, water surface cleanness and natural reed cultures

Target: public authorities implementing environmental policies, **climate protection NGOs**



# 5G Connect Danube Delta – planning

## Project start (Phase 0)

Equipment procurement and sites-related authorizations

## 5G network evolution (Phase 1)

5G/5G+ activation on the remaining sites  
Construction of new sites  
Transmission upgrades (MW, FO)

## Project validation (Phase 3)

Final network performance (KPIs) assessment  
Social impact assessment  
Dissemination of application results

10/2024-  
03/2025

03/2025-  
05/2025

06/2025-  
12/2025

01/2026-  
12/2026

01/2027-  
09/2027

## 5G network construction (Phase 1)

Construction of the underlying 5G/5G+ infrastructure needed for the project implementation  
Edge-Cloud infrastructure implementation  
Transmission upgrades (MW, FO)

## Use cases deployment (Phase 2)

Deploying the proposed applications over the developed 5G infrastructure  
Onboarding and training with use cases beneficiaries

## Project sustainability (Phase 4)

Applications' improvements  
Sustainability report  
Call for additional applications

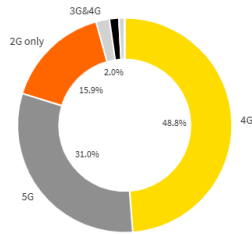


# 5G Connect Danube Delta – Phase 1

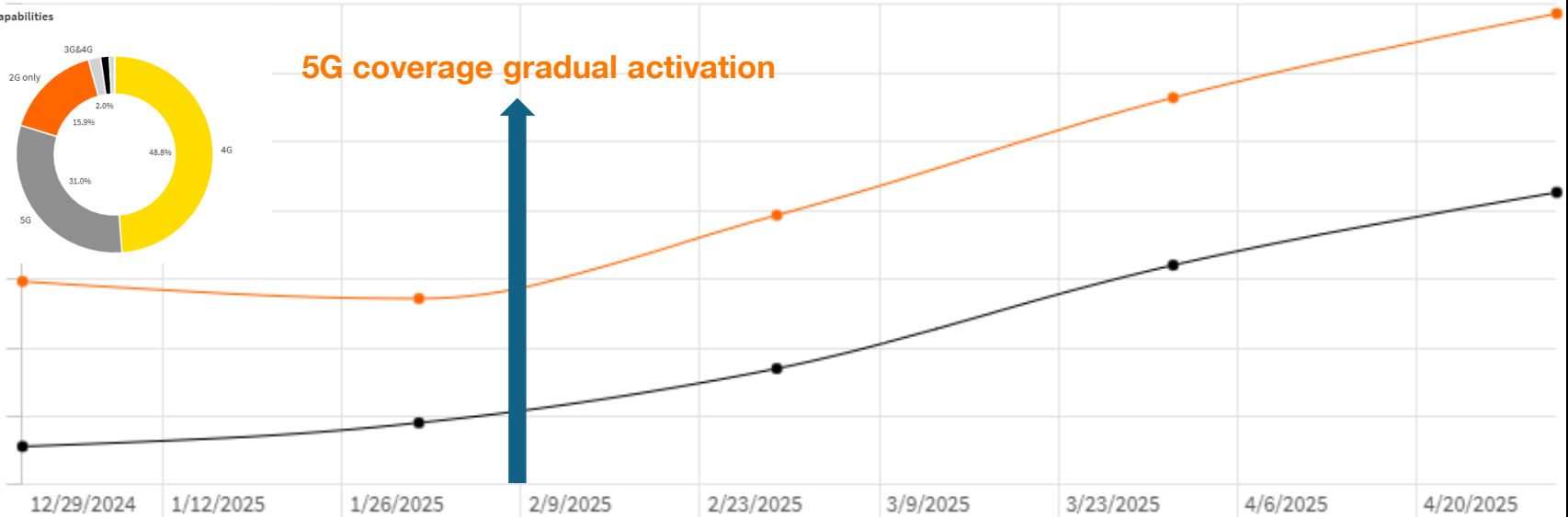
## Users Number

Unique Users Day Unique Users Night

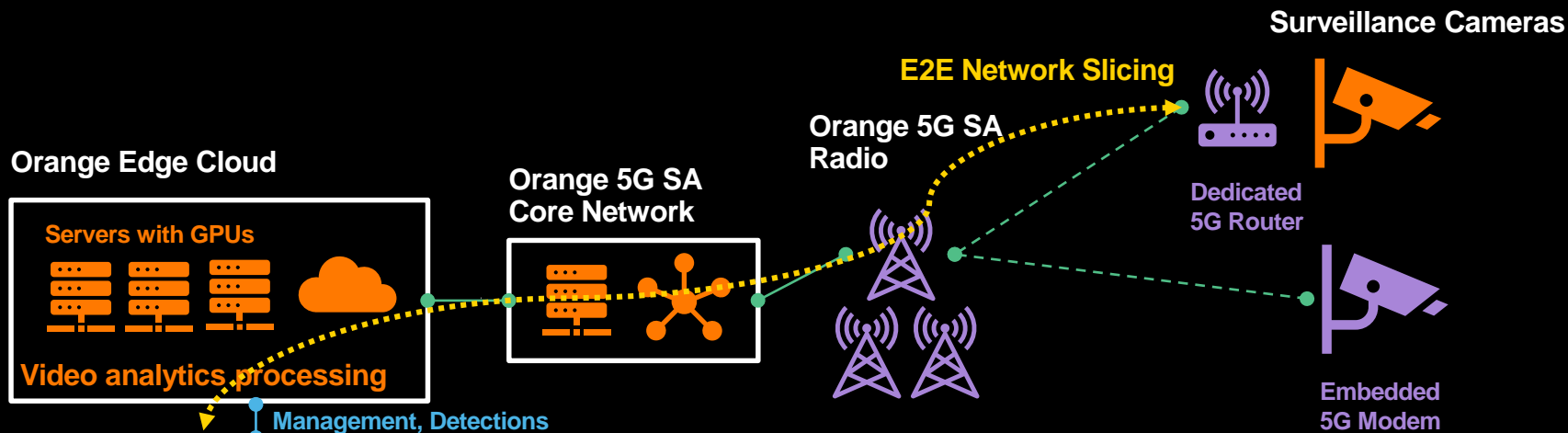
Device capabilities



5G coverage gradual activation



# 5G-enabled video analytics architecture



AV **VISION**

Video Flux Management RENEWAL ORANGE FREE 30 DAY

### Detection Dashboard

Video Cameras

Show 10 entries

ID	Name	Device	Creation date	Tags	State	Status	Actions
3213	webcam	ATTORBOARD ORANGE	2024-04-23	PURPOSE	START PROCESSING	UP	<a href="#">EDIT</a> <a href="#">DELETE</a> <a href="#">STOP</a>
3756	Camera Mileight M1a 23	SYSTEM ANY	2025-05-05	FACE	STOP PROCESSING	UP	<a href="#">EDIT</a> <a href="#">DELETE</a> <a href="#">STOP</a>
3241	CAK1	SYSTEM ANY	2024-05-16	FACE	STOP PROCESSING	UP	<a href="#">EDIT</a> <a href="#">DELETE</a> <a href="#">STOP</a>
3255	Video anonymization	SYSTEM ANY	2024-05-22	FACE	STOP PROCESSING	UP	<a href="#">EDIT</a> <a href="#">DELETE</a> <a href="#">STOP</a>
3261	Video anonymization Clone	SYSTEM ANY	2024-05-29	FACE	STOP PROCESSING	UP	<a href="#">EDIT</a> <a href="#">DELETE</a> <a href="#">STOP</a>
3446	usb00000000	SYSTEM ANY	2024-07-11	FACE	STOP PROCESSING	UP	<a href="#">EDIT</a> <a href="#">DELETE</a> <a href="#">STOP</a>
3450	Orange-usb0	SYSTEM ANY	2024-07-16	FACE	STOP PROCESSING	UP	<a href="#">EDIT</a> <a href="#">DELETE</a> <a href="#">STOP</a>
3626	Orange-usb0	SYSTEM ANY	2025-01-12	FACE	STOP PROCESSING	UP	<a href="#">EDIT</a> <a href="#">DELETE</a> <a href="#">STOP</a>
3757	Camera Mileight M1a 23 - v2	SYSTEM ANY	2025-05-06	FACE	STOP PROCESSING	UP	<a href="#">EDIT</a> <a href="#">DELETE</a> <a href="#">STOP</a>

Showing 1 to 9 of 9 entries

- Counting – boats, people, birds
- Obstacles detection
- Fires and floods detection
- Danube bank erosion monitoring
- Perimeter security

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