NET
EMERGING NETWORKS & APPLICATIONS

ABOUT US

A COMPETENCE CENTER

p-NET is the first Competence Center in Greece for Emerging Smart **5G/6G Networks and Services**. It is a private company incorporated in Patras in December 2021.

COMPETENCE CENTERS are public-private partnerships designed to bridge the gap between supply and demand of specialized innovation and technology transfer services in one or more value chains.

Co-financed by Greece and the European Union

European Union
European Regional Development Fund

HELLENIC REPUBLIC
MINISTRY OF DEVELOPMENT AND INVESTMENTS
SPECIAL SECRETARIAT FOR ERDF & CF PROGRAMMES
MANAGING AUTHORITY OF EPAnEK

GENERAL SECRETARIAT FOR RESEARCH AND INNOVATION

EPAnEK 2014–2020
OPERATIONAL PROGRAMME
COMPETITIVENESS
ENTREPRENEURSHIP
INNOVATION

ΕΣΠΑ 2014-2020
ανάπτυξη - εργασία - αλληλεγγύη
Partnership Agreement 2014 - 2020

Co-financed by Greece and the European Union

Total Initial Funding of ~2M€

- Public Funding: 60%
- Private Funding: 40%

OUR PARTNERS – SHAREHOLDERS

Other Services

HAEC HELLENIC AMERICAN COLLEGE

ORANGE GROVE

bpm BUSINESS CONSULTING

ΣΕΒ ΙΒΕΠΕ

Verticals

ΚΩΤΣΟΒΟΛΟΣ

e-trikala

SQLearn e-learning experts

TITAN CEMENT GROUP

SARMED logistics made perfect

Integrators
Software Developers
Manufacturers

UBITECH ubiquitous solutions

Qualtek

pragma.

INTRACOM TELECOM

SPACE

ACTA LTD

uni systems

Info Quest TECHNOLOGIES

WINGS ICT SOLUTIONS

5G Infrastructures

ΔΗΜΟΚΡΙΤΟΣ

ICCS

ΠΑΝΕΠΙΣΤΗΜΙΟ ΠΑΤΡΩΝ UNIVERSITY OF PATRAS

Institute of Accelerating Systems and Applications

OUR MANDATE

The mandate of p-NET as a COMPETENCE CENTER is to prepare the business and civic worlds for the introduction and wide uptake of emerging innovations in Smart Networks and Services.

P-NET aims to empower selected sectors of the Greek economy, through

a. the provision of specialized and innovative services and solutions
b. technology transfer and capacity building to businesses, especially SMEs.

How can Greece lead in 5G / 6G and Sector Digitalisation

Based on:

- Studies already performed for Greece
- What we see abroad (success / failures)
- Our capabilities

Suggested Areas of Focus (5G Testbeds)

- 5G and Metaverse (Education, Tourism)
- 5G Ports / Industrial Campuses / Smart Chains
- Public Protection Disaster Relief PPDR
- 5G Smart City / Smart Island
- Open RAN

How Greece can lead in METAVERSE / XR and 5G/6G?

A Testbed / Platform across Greece which enables Artists, Content Creators, Technologists and Educators

Where is the need?:
- Global Gap for XR arts testing
- Develop XR content
- Platform for XR content and applications
- Test and identify new biz models
- Educate on XR Technology
- Educate on XR Digital Arts
- Regular Exhibitions, Shows, Events

Underlying Technology:
- 5G Private Network in one or more cultural locations
- Graphics / Computation ability to handle parallel users
- XR Platform for content
- XR Devices
- XR App

Benefits:
- New Jobs
- New Visitors
- New Services
- New Revenue
- New ways of Education

Partners Needed:
- A Mobile Network Operator
- A Museum or Archeological Site
- Metaverse Platform Operator
- XR Experts
- Digital Art School
- AI Experts

Steps

Concept | Design | Consortium | Test Bed | Solution | Deploy

Ancient artifacts in 3DHD on position

Many new jobs for Artists and Archaeo.

* 3D asset of Acropolis marbles by p-NET and OARC

XR Opera/Ballet Rehearsals, Performance

New Jobs and Tourists for Performing Arts

* First collaborative XR Opera by GNO

International XR Art Installations

New revenue from International Art

* 16 XR artifacts exhibition in the US

Digital Art in Museums

New Jobs and revenue

* NFT installation at the MOMA

5G Ports

What is it for:
- Port Automation
- Ship Connection as a service
- Situational Awareness
- Staff / Cargo Safety
- Supply chain automation
- 5G Corridor connectivity
- Drone and underwater surveillance

Technology:
- 5G Private Network in a port
- Edge compute platform for I4 & DT
- IoT, DT, AI processing layer
- Cranes, Drones, underwater
- Sensors and platforms
- ML platforms

Benefits:
- Greek ports become competitive
- New efficiencies in operations
- End to end digital twins
- Enhanced safety
- New services to ships
- New revenue
- New solutions

Partners Needed:
- An innovative port
- An MNO
- A Systems Integrator
- Digital Solutions Companies
- Maritime Companies
- Startups

Steps

Ports Discussions → Use Cases → Conference → Consortium → Proposal → Launch 2024

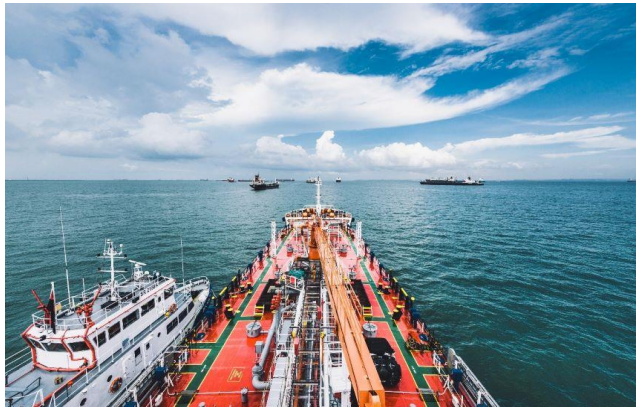
Port Surveillance

Connectivity, Camera/Drone, Public
Productivity, Savings, Security

Port Automation

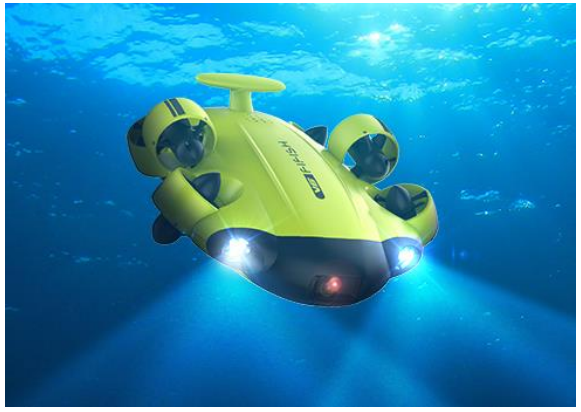
Connectivity, Cranes, UAVs, Cameras
Loading speed, Opex, Safety, Security

5G as a Service



Connectivity to ships, DTs, IoT
New revenue, Preferred route

5G Over underwater drones



New revenue, maintenance, safety
Maintenance, Opex, Safety

5G/6G For Industry and Construction Applications (& Digital Twins)

What is it for:
- Enable 5G Private Networks in GR
- Help GR industrial digitalisation
- Test applications in I4 & DT
- Test and identify new biz models
- Industry Education in Private 5G
- Industry Education in I4, AI, DT
- Platform for Startups

Technology:
- 5G Private Network in one or more ETVA Industrial Areas
- Edge compute platform for I4 & DT
- IoT, DT, AI processing layer
- Sensors and platforms
- ML platforms

Benefits:
- Revive BIPE areas across GR
- Higher efficiencies
- New Solutions
- Increased security
- Greece becomes attractive to large manufacturers
- New Jobs
- New Revenue

Partners Needed:
- An innovative BIPE
- A high-tech factory
- An MNO
- A Systems Integrator
- Advanced Solution providers
- Startups

Steps

On premise / Assessment → Use Cases → MOU → Consortium → Proposals → Launch 2024

5G Industrial Area

Connectivity, Camera/Drone, Public
Productivity, Savings, Security

5G Production Line / DT

Connectivity, IoT, Cobots, DT, Cameras
Speed, Maintenance, Automation, Sec

5G Wearhouse

UAV, E2E Supply Chain, JIT
Connectivity, Asset Track, Speed

5G Construction

Coverage, Cranes, Drones, DTs
Connectivity, Speed, Safety, Supply

We can put it all together in a comprehensive Smart-Supply-Chain system

End-to-End 5G Digital Supply Chain

BIPE: 5G Private Network

Road or Rail: 5G Network Slice

Port: 5G Private Network

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5G Smart-City (Smart-Island)

What is it for:
- Provide new services to locals and visitors
- Reduce migrations
- Increase number and value of visitors
- Improve quality of life (health, education, tourism, yachting etc.)

Technology:
- 5G island with network slice
- IoT, Cameras, Drones, 5G FWA
- Vertical digital solutions (health, education, society, tourism)
- End to end integration of solutions

Benefits:
- Reduce travel costs
- Increase revenue from existing services
- Increase new revenue
- Improve society quality of life
- Attract high end visitors and nomads

Partners Required:
- Mobile Network Operator
- Island municipality
- Vertical solution providers
- Healthcare provider
- School / Library
- Systems integrator

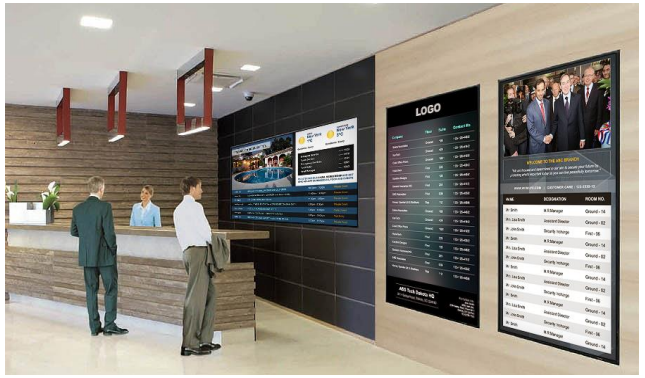
Remote Health Centre

Save money, attract residents
Increase independence

5G School

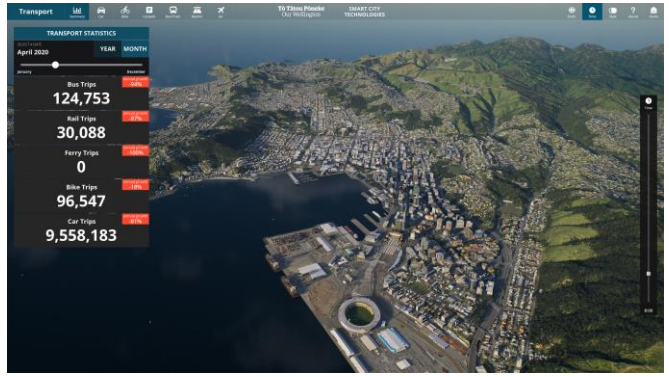
High speed, digital divide Reduce migrations, attract residents

Smart Hotel



New services, high-end Nomads
Attractive to biz customers

Digital Twin



Real-time info, quality of life, new services, attract new visitors

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5G Public Protection Disaster Relief

What is it for:
- Allow a horizontal communication solution across first responders
- Enable advance digital communications including video, drones, IoT, etc.
- Prioritize groups in case of emergency

Technologies:
- Wide Area MVNO (secure slicing)
- Advanced digital service platforms
- Highly capable network edge computing and AI
- PPDR prioritization

Benefits:
- Network is available and capable in case of crises
- High quality services are available to first responders
- Advanced prioritization of utility and functions
- Group definitions

Partners Required:
- All MNOs
- Relevant Gov departments
- First response centers private and public
- Advanced digital service providers

Advanced Services

Video, Drones, Sensors, Location
All integrated and available

Sharable Services Across Departments

Police, Fire, Health, Military
Have access and interoperability

Best Model for Greece

Access network	Core network, Telco apps	PS apps	PS Customer care	Public safety authorities/agencies — MNO: Commercial networks — Pros	Cons
1 Deployable	MNO			• Benefits from MNO spectrum • Fast time-to-market	• No control over subs • No control over coverage • No traffic separation
2 Deployable	S-MVNO			• Controls and secures the subscriber database and apps	• No control over coverage
3 Deployable	Hybrid			• Increases the RAN availability on critical hot spots	• Increases complexity of network management
4 Deployable	Dedicated			• Provides full control to the public safety agency	• Need spectrum • Expensive!

Different models in different countries. Greece should select the best for our needs

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THANK YOU

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