



EVOLVED-5G

NEWSLETTER # 10

(April – June 2023)



[evolved-5g.eu](http://evolved-5g.eu)

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## ISSUE HIGHLIGHTS

The tenth issue of EVOLVED-5G Newsletter presents the project activities during the period April – June 2023 focusing on the communication and dissemination activities, upcoming events, and deliverables.

In numbers, the EVOLVED-5G activities are:

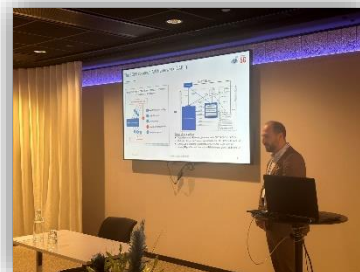
- 3 Publications
- 2 Presentations
- 1 Article
- 1 Co-organised Workshop
- EVOLVED-5G at DEFEA
- EVOLVED-5G Accelerator's Chapter 2 Workshops
- EVOLVED-5G in EuCNC & 6G Summit 2023
- 5GPPP & SNS Publications with EVOLVED-5G contributions
- 4 5GPPP Activities
- 1 Submitted Deliverable
- 1 GA meeting



## Communication and Dissemination Activities

### Conference Papers

- The EVOLVED-5G conference paper entitled **“The 3GPP Common API Framework: Open-Source Release and Application Use Cases”** has been accepted at the EuCNC & 6G Summit 2023 conference. The paper was presented during NET2 – AI/ML in service provisioning session by Dimitris Tsolkas of Fogus Innovations.



- The EVOLVED-5G conference paper entitled **“5G and B5G NEF exposure capabilities towards an Industrial IoT use case”** has been accepted at the EuCNC & 6G Summit 2023 conference. The paper was presented during AIU2 – IoT Solutions session by George Makropoulos of NCSR “DEMOKRITOS”.



### Book Chapter

- The EVOLVED-5G chapter entitled **“5G Network Programmability Enabling Industry 4.0 Transformation”**, (Chapter 6), in the Industrial Applications of the Internet of Things in 5G and 6G Networks, is available online. Find out more information: <https://www.igi-global.com/book/industrial-applications-internet-things-networks/276938>

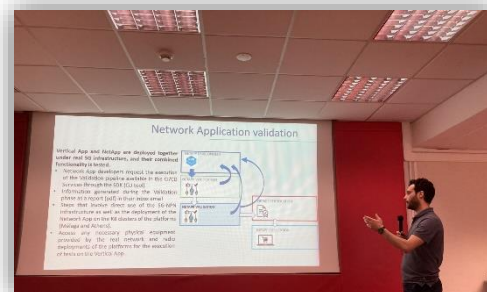


## Presentations

- Dimitris Fragkos presented **"5G Programmable Networks and Exposure Capabilities"** during "Smart networks and services – 5<sup>th</sup> and 6<sup>th</sup> generation technologies" event in NCSR "DEMOKRITOS" premises.



- George Makropoulos presented **"5G programmability in the EVOLVED-5G ecosystem"** during "Smart networks and services – 5<sup>th</sup> and 6<sup>th</sup> generation technologies" event in NCSR "DEMOKRITOS" premises.



## Article

- Harilaos Koumaras our technical manager gave an interview (in Greek) at Greek Network Magazine about how 5G connectivity can boost industry 4.0.



Χάρης Κουμαράς,  
Ερευνητής Ινστιτούτου  
Πληροφορικής &  
Τηλεπικοινωνιών, ΕΚΕΦΕ  
Δημόκριτος

### Νέες ευκαιρίες στην ανάπτυξη καινοτόμων εφαρμογών

Η συνεισφορά των ιδιωτικών δικτύων 5G στις επιχειρήσεις αναμένεται να είναι σημαντική, διότι πέρα από απλά δίκτυα πρόσβασης, τα δίκτυα 5G μπορούν να αξιοποιηθούν ως προγραμματιζόμενες πλατφόρμες, δημιουργώντας νέες ευκαιρίες στην ανάπτυξη καινοτόμων εφαρμογών. Σ' αυτό το πλαίσιο, οι εφαρμογές δεν θα λειτουργούν απλά πάνω από ένα γρηγορότερο δίκτυο με καλύτερες επιδόσεις, αλλά θα μπορούν να διασυνδεθούν με το υποκείμενο δίκτυο 5G, ώστε να αντιλήθουν επιπλέον πληροφορίες για τον χρήστη, οι οποίες θα εμπλουτίσουν το context awareness της εφαρμογής και θα υποστηρίξουν νέες καινοτόμες υπηρεσίες.

Αυτή η τεχνολογία είναι ήδη διαθέσιμη στο ευρωπαϊκό ερευνητικό πρόγραμμα EVOLVED-5G, το οποίο αναπτύσσει καινοτόμες εφαρμογές για δίκτυα 5G στο πλαίσιο της 4ης Βιομηχανικής Επανάστασης, ενώ ταυτόχρονα παρέχει υλικό εκπαίδευσης και πρόγραμμα κατάρτισης σε startup, σχετικά με τις νέες δυνατότητες που προσφέρουν τα ιδιωτικά δίκτυα 5G στην ανάπτυξη νέων εφαρμογών.

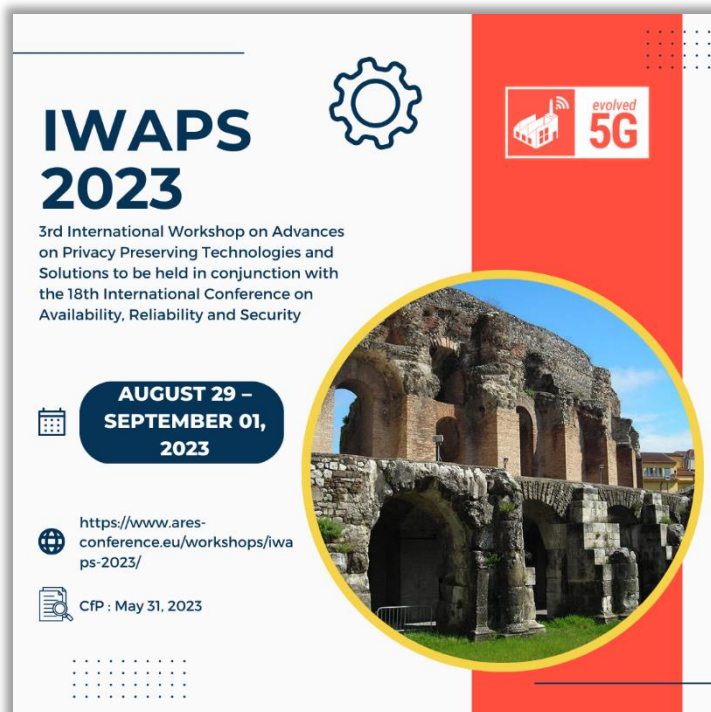
## EVOLVED-5G Co-organized Workshop



EVOLVED-5G project co-organises the **3rd International Workshop on Advances on Privacy Preserving Technologies and Solutions (IWAPS 2023)** in the context of **18th International Conference on Availability, Reliability and Security (ARES) conference**. The conference will take place from August 29 –September 1 2023 in Benevento, Italy.

This workshop aims to strengthen security and privacy through research and relevant activities in the models and design of secure, privacy-preserving and trust architectures, investments in cyber-defense, data analyses, fusion platforms, protocols, algorithms, services, and applications for next generation systems and solutions. We especially encourage security and privacy solutions that employ innovative machine learning techniques to tackle the issues of inspecting large data volumes, cyberattacks, and variety problems that are systemic in IoT platforms, theoretical and practical challenges related to the design of privacy-preserving AI systems and algorithms and will have strong multidisciplinary components, including soliciting contributions about policy, legal issues, and societal impact of privacy and affect the cyber risk of the participating entities.

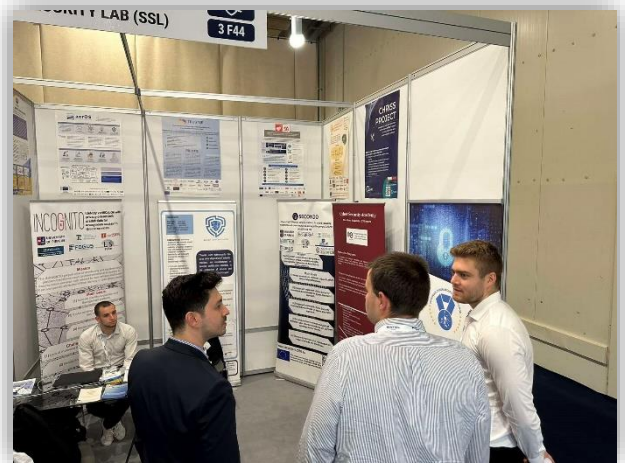
You may learn more here: <https://www.ares-conference.eu/workshops/iwaps-2023/>





## EVOLVED-5G in DEFEA 2023

- EVOLVED-5G project was present at DEFEA 2023 through InQbit - The Q-Bit Innovation's booth. Representatives of our project (by InQbit and INFOLYSiS) presented the nature and the scope of our project to our visitors. At this point we would like to thank Professor Christos Xenakis and his organisation for hosting us! DEFEA is a high-profile international defence exhibition where international companies present land, naval, aerospace, national and cyber security defence systems. DEFEA took place from 6th to 8th May 2023. It was organised under the auspices of the Hellenic Ministry of National Defence, with the cooperation of the SEKPY - Hellenic Manufacturers of Defence Material Association and is organised by ROTA Exhibitions Greece. Find out more here: <https://defea.gr/>



## EVOLVED-5G Accelerator's Chapter 2 Workshops

- EVOLVED-5G Accelerator's Chapter 2 Workshops took place on May! Our Project and Technical Manager along with other speakers from the consortium the members of the accelerator presented the fundamental elements of our project and to 5G Technology. During the 2nd workshop of the Introduction to 5G technologies & Network applications, INFOLYSIS, Internet Institute and Immersion partners presented our Network Applications to the members of our Accelerator Program.



**INFOLYSIS** INFOLYSIS in EVOLVED-5G

INFOLYSIS is part of the first pillar Innovation; the **Interaction of Employees and Machines** pillar.

For our chatbot application we take advantage of the **indoor location that 5G provides** to offer a solution for automating, some time-consuming procedures of factories.

In specific, a **Chatbot application for workers/engineers within a factory that facilitates the reporting procedure of faulty machinery, ensuring the workers' safety, and provides the authorized personnel with the necessary documentation for the repair.**

17/05/2023 EVOLVED-5G Accelerator Workshop

**QMON Test Automation**

- In production (TRL 9) – from 2015
- Mobile customer base
  - E2E QoS/QoE monitoring
  - Drive/benchmark testing
- Targeted customers
  - Mobile operators
  - Fixed operators
  - Cloud providers
  - National regulators
  - 5G vertical stakeholders (e.g. GSM-R, PublicSafety, Utilities,...)
  - Enterprise (SLA/SLS monitoring and enforcement)
- Technology highlights
  - 5G ready
  - Cloud ready
  - ETSI MANO ready
  - ELK&AI/ML (automated anomaly & outliers detection, predictions)

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**National Center of Scientific Research DEMOKRITOS**

**Athens 5G/B5G Open Experimentation Platform**

Dr. Harilaos Koumaras  
Head of FRONT Research Group

**5G Openness – a new Ecosystem**

Before 5G: Over the top Service Providers

In 5G: Network Service providers

Network Functions: Network, Data, UPF, DNS

Network Application: A third party application that interacts with the network through standardized APIs to provide network- or vertical- oriented services

## EVOLVED-5G in EuCNC & 6G Summit 2023

➤ EVOLVED-5G was present at EuCNC & 6G Summit 2023! The 2023 EuCNC & 6G Summit built on putting together two successful conferences in the area of telecommunications: EuCNC (European Conference on Networks and Communications), supported by the European Commission, and the 6G Summit, originated from the 6G Flagship programme in Finland, one of the very first in its area. It brought together cutting-edge research and world-renown industries and businesses, globally attracting in the last years more than 1300 delegates from more than 40 countries all over the world, presented and discussed the latest results, and an exhibition with more than 70 exhibitors, for demonstrating the technology developed in the area, namely within research projects from EU R&I programmes. EVOLVED-5G reserved a booth, presented accepted conference papers and introduced numerous visitors to the concept and the achievements of our project! Apart from the booth several other activities took place in the context of the conference. The following list tentatively describes the activities, performed there:

- "The 3GPP Common API Framework: Open-Source Release and Application Use Cases" Conference paper
- "5G and B5G NEF exposure capabilities towards an Industrial IoT use case" Conference paper
- "5G and B5G NEF exposure capabilities towards an Industrial IoT use case" paper presentation by George Makropoulos from NCSR "DEMOKRITOS"
- "The 3GPP Common API Framework: Open-Source Release and Application Use Cases" paper presentation by Dimitris Tsolkas from Fogus Innovations
- Pal Robotic's Video Demo. Find it online [here](#)
- Telefonica's Validation Pipeline flow demo video. Find it online [here](#)
- Overall's project presentation used at booth. Find it online [here](#)
- Internet Institute's live demo
- EVOLVED-5G project material could also be found at the SNS booth of EuCNC & 6G Summit 2023.

Find the overview of the conference by the organization here:

<https://www.youtube.com/watch?v=H1yW5vo2w1M>





## EVOLVED-5G in EuCNC & 6G Summit 2023



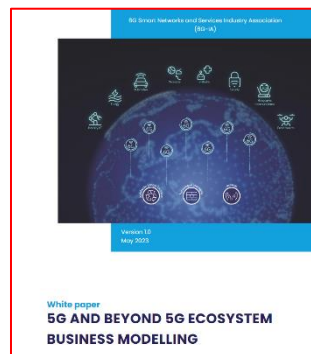


## 5GPPP & SNS Publications with EVOLVED-5G Contributions

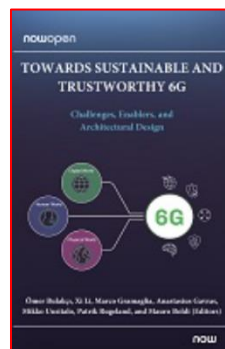
- 5G Annual Journal Paper 2023  
<https://5g-ppp.eu/the-european-5g-annual-journal-2023-is-out/>



- 6G-IA "5G and Beyond 5G Ecosystem Business Modelling" White Paper  
<https://zenodo.org/record/7640478#.ZGyIGHZBxD8>



- 5G-PPP 6G BOOK - Towards Sustainable and Trustworthy 6G: Challenges, Enablers, and Architectural Design, Chapter 7, Towards Continuously Programmable Networks  
<https://www.nowpublishers.com/article/BookDetails/9781638282389>



## 5GPPP ACTIVITIES

### 5GPPP Newsletter

- April 2023  
<https://5g-ppp.eu/newsletter-29-April-2023/>

### 5GPPP Newsflash

- March 2023 #74  
<https://5g-ppp.eu/newsflash-march-2023/>
- April 2023 #75  
<https://5g-ppp.eu/newsflash-april-2023/>
- May 2023 #76  
<https://5g-ppp.eu/newsflash-may-2023/>



## Submitted Deliverables

**D3.3 Implementations and integrations towards EVOLVED-5G framework realisation (final) (Public – M28):** This is the final version of the integrated framework (prototype development accompanied with report) considering the results of the Tasks T3.1-T3.3.

**D3.4 NetApp Certification Tools and Marketplace development (final) (Public – M30):** This deliverable will report on the final implementations of the Network Apps certification tools and marketplace development.

## Upcoming Deliverables

**D4.3 5G Exposure Capabilities for Vertical Applications (Final) (M32):** Final report on the use of the EVOLVED-5G tools considering the final release of the EVOLVED-5G open workspace.

**D4.4 NetApps for Interactions of Employees and Machines (M32):** Final prototype development accompanied by report on the implementation of NetApps in the first pillar

**D4.5 NetApps for FoF Operations (M32):** Final prototype development accompanied by report on the implementation of NetApps in the second pillar

**D4.6 NetApps for Security Guarantees and Risk Analysis (M32):** Final prototype development accompanied by report on the implementation of NetApps in the third pillar

**D4.7 NetApps for Production Line Infrastructures (M32):** Final prototype development accompanied by report on the implementation of NetApps in the fourth pillar

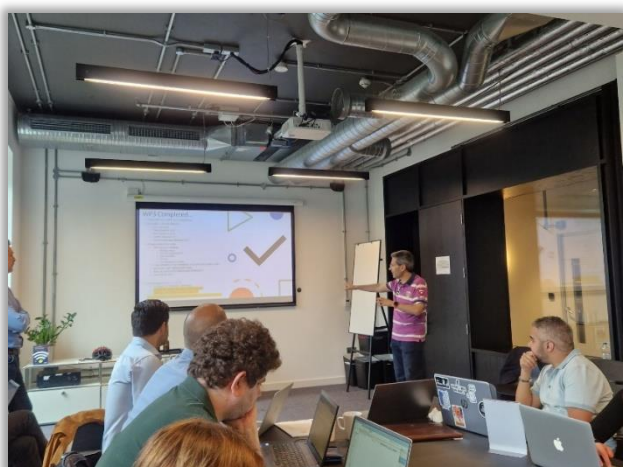
You may find all EVOLVED-5G deliverables (submitted & upcoming) at our website here:

<https://evolved-5g.eu/dissemination/deliverables/>



## 9<sup>th</sup> GA Plenary Meeting

The 9<sup>th</sup> EVOLVED-5G plenary meeting took place on 20<sup>th</sup> and 21<sup>st</sup> of June, in London, hosted by Unmanned Life. More than 30 representatives took part at the meeting discussing about the recent status of the project. Also, in this meeting partners had the chance to set the pace for the final period of the project and the implementation of the final technical achievements. There was also time for the traditional group photo.



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"This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101016608"

Call: H2020-ICT2018-2020

Topic: ICT-41-2020

Type of Action: Innovation Action

Duration: 36 Months

Start Date: 1 January 2021

**5G** PPP