

Table of Contents

Participating Partners	1
Project Overview	2
Kick-off Meeting	3
Recruitment Process	3

5G STEP FWD proposes a new architecture that uses UDWDM PONs as the backhaul of mmWave networks in order to achieve high capacity and low latency backhauling. The proposed architecture takes full advantage of the ultra-narrow wavelength spacing of the UDWDM technology, in order to provide connectivity to a dense small-cell population.

5G System Technological Enhancements Provided by Fiber Wireless Deployments (5G STEP FWD) is a project under the Marie Skłodowska-Curie Actions of the EU H-2020 program. The mission of 5G STEP FWD is to create a vibrant EU-based training and research environment for young European and international researchers, aiming at designing architectures, systems and algorithms for building the 5G cellular network of tomorrow. 5G STEP-FWD aims at solving several fundamental research challenges for the convergence of the fiber-wireless architecture, which will define and motivate the research conducted by the ESRs.

Participating Partners

Nine academic and industrial partners participate, which are based in six European countries.

1. IQADRAT Informatica S.L (IQU), Spain.

The company has significant experience in R&D smart protocols design & analysis. Equipped with R&D equipment to host the ESRs and realistic simulators for cellular & wireless networks analysis and an SDN platform.

2. Centre National de la Recherche Scientifique (CNRS), France.

Internationally recognized in the field of stochastic spatial network modelling and wireless network protocols. Equipped with advanced cluster of computers and simulation suites for wireless systems analysis.

3. Centre Tecnològic Telecomunicacions Catalunya (CTTC), Spain.

Internationally recognized in the field of wireless communication. Equipped with advanced software tools for management & simulators of wireless networks.

4. Aristotle University of Thessaloniki (AUTH), Greece.

Internationally experienced in design and analysis of converged optical/wireless networks. Equipped with optical testbed for evaluation of mmWave Radio-over-Fiber signals.

5. Technische Universiteit Eindhoven (TU/e), Netherlands.

Internationally recognized in converged fiber-wireless networks physical layer design. Equipped with radio-over-fiber apparatus enabling experimental demonstrations in mmWave frequencies.

Contact

Project Coordinator
Iquadrat Informàtica S.L.

Dr. Elli Kartsakli
ellik@iquadrat.com
Dr. John Vardakas
jvardakas@iquadrat.com
Ms. Melani Gurdiel
pm@iquadrat.com

Web: <https://www.5gstepfwd.eu>



6. OTEAcademy (OTE), Greece.

Equipped with large R&D laboratories and realistic coverage planning tools for analysis, design, and optimization of optical/wireless networks.

7. III-Vlab (IVL), France.

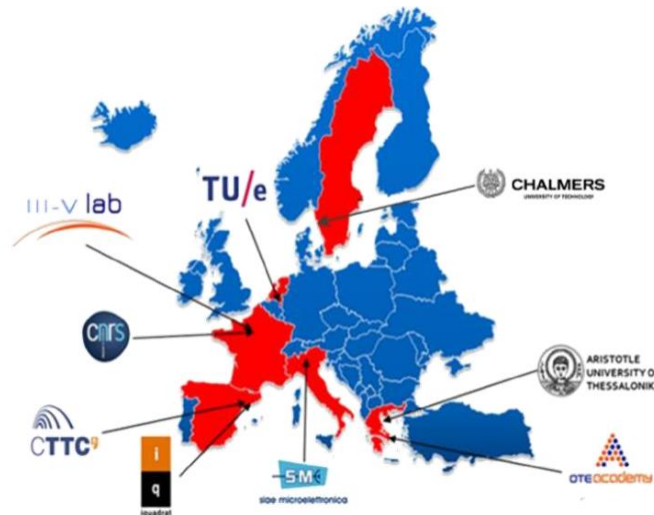
Significant R&D experience in photonics components design. IVL manufactures photonic components from design to characterization.

8. SIAE MICROELETTRONICA SPA (SIAE), Italy.

The company has significant experience and real products (Easy Cell 60) while it has fully equipped labs spanning from simulators to test.

9. Chalmers Tekniska Högskola (CHALMERS), Sweden.

Internationally recognized in MAC protocol design and converged fiber-wireless networks. Equipped with advanced software tools and hardware for analysis/optimization of converged networks.



Project Overview

5G STEP FWD proposes a new architecture that uses UDWDM PONs as the backhaul of mmWave networks in order to achieve high capacity and low latency backhauling. The proposed architecture takes full advantage of the ultra-narrow wavelength spacing of the UDWDM technology, in order to provide connectivity to a dense small-cell population. At the physical layer domain, 5G STEP FWD aims at providing a comprehensive framework based on a disruptive device- or user-centric cellular concept, which will allow smart overlaid peer-to-peer communications, while it will also optimally allocate small cells where the fiber goes.

At the network layer domain, we envision the modelling and optimization of the 5G STEP FWD network resource usage through the incorporation of a Software-Defined-Network (SDN) framework, which integrates multiple wireless and backhaul resources into a single pool, and could play a key role in supporting multi-tenancy and enabling the network operation management and optimization.

Contact

Project Coordinator
Iquadrat Informática S.L.

Dr. Elli Kartsakli
ellik@iquadrat.com
Dr. John Vardakas
jvardakas@iquadrat.com
Ms. Melani Gurdziel
pm@iquadrat.com

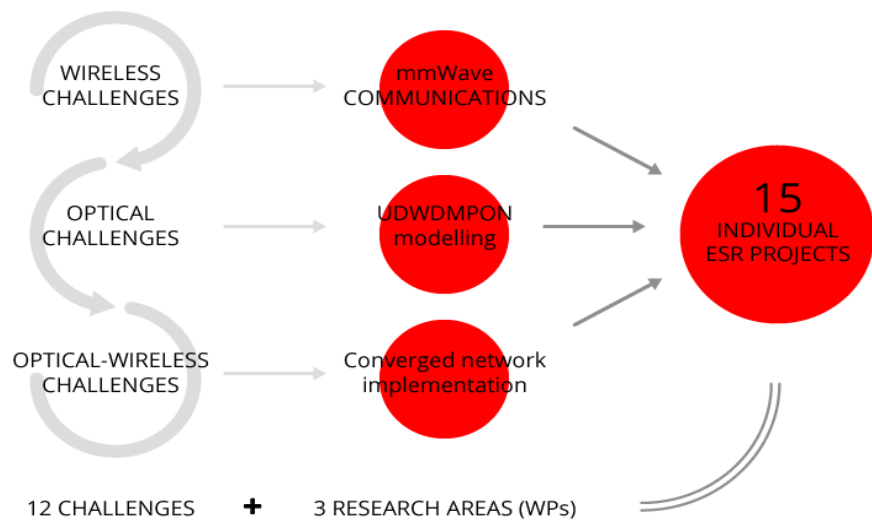
Web: <https://www.5gstepfwd.eu>



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement number 722429 Call: H2020-

Moreover, the mission of 5G STEP FWD is to create a vibrant EU-based training and research environment for young European and international researchers, aiming at designing architectures, systems and algorithms for building the 5G cellular network of tomorrow.

In 5G STEP FWD, the spectral, delay, and energy efficiency requirements of 5G are achieved by proposing novel design approaches not only for the access, but also for backhaul networks. Moreover, the project will define the overall 5G network architecture, in both optical and wireless domains, by taking into account cross-layer and cross-system design requirements, while the UDWDM PON as the backhaul of mmWave cellular networks will be proposed as candidate solution for 5G networks. Specifically, we aim to provide innovative contributions in three research areas for the wireless, optical and converged optical-wireless networks.



Kick-off Meeting

The kick-off meeting of the 5GSTEPFWD project was held in Barcelona, Spain on 29 June 2017 and was hosted by Iquadrat. The Consortium held an afternoon meeting on 28 June 2017. The Project Officer Ms. Maria Vili attended the kick-off meeting and gave a presentation on how to manage the project and cost categories. After the meeting, she also visited Iquadrat premises.

Recruitment Process

At this moment, two ESRs, Dimitrios Konstantinou (TUE-1) and Toms Salgals (TUE-2) are recruited at TU/e, meanwhile others are under process. Each ESR is hired with a contract of maximum 36 months length.

Contact

Project Coordinator
Iquadrat Informática S.L.

Dr. Elli Kartsaki
ellik@iquadrat.com
Dr. John Vardakas
jvardakas@iquadrat.com
Ms. Melani Gurdziel
pm@iquadrat.com

Web: <https://www.5gstepfwd.eu>



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement number 722429 Call: H2020-