

WORTECS will explore Terabit/s capability of above 90GHz spectrum, combining radio and optical wireless technologies

Achievement

In the framework of Information and Communication Technology (ICT) H2020* European call for projects, the proposed research project **WORTECS (Wireless Optical/Radio TErabit CommunicationS)** has been recently accepted for funding, despite high competition. The kick-off took place in Orange Labs Rennes on Sep. 26th-27th 2017.

Next steps

The primary challenge of WORTECS is to propose “scientific and technology advances for novel use of the spectrum potential, de-risking technological building blocks at frequencies above 90 Ghz up to Thz communications backed by innovative usage scenarios*”, for instance, **Virtual Reality (VR)**. It will also “address visible light communications and develop radically new approaches for spectrum efficiency*”.

WORTECS aims to offer:

- **Optical Wireless Communication and radio over 90 GHz** Proof of Concept with several Gigabit per second (Gbps) throughput: innovation on antenna, coding ...
- **Heterogeneous wireless Network** architecture studies with new architectures and protocols for routing, latency and caching.



Figure: Virtual Reality use case example (pictures sources: Pixabay & Orange)



Photo: Project team (photo source: Orange)

Last but not least, the **customer views** will be taken into account through interviews, questionnaires or **field tests**. The purpose is to provide a Virtual Reality **user-friendly** interface with a solution including terabit/s data rate, reduced latency and multi-user environment associated with an accurate tracking.

With a **3 million euro** budget, WORTECS consortium brings together several European industrial and institutes players in this market (Orange, Oledcomm and B-Com from France, IHP Microelectronics from Germany) as well as academics recognized in this area (University of Oxford from United Kingdom and University of Las Palmas from Spain).

During the kick-off, the main partner contributions have been listed showing a complementarity between the partners in terms of topic. The resource efforts were also pointed out with challenged specifications and platforms capabilities. For instance, two main groups have been identified: Radio group with Orange, IHP and b◊com, Optical Wireless Communication (OWC) group with Orange, PureLiFi, University of Oxford, University of Las Palmas and Oledcomm. The very first deliverable is under finalization; it gives an overview of spectrum situation in Europe beyond 90GHz, the goal being to propose bands of interest for WORTECS studies and proofs of concept.

Contributors & Contacts

Web site: <https://wortecs.cms.orange-labs.fr/>

Contact: Olivier Bouchet – Orange Labs - WORTECS Project manager - + 33 2 99 12 46 08 – olivier.bouchet@orange.com

* Networking research beyond 5G: <http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/ict-09-2017.html>