ANNOUNCEMENT LETTER

EPIC, a European cooperative research project, started on 1st September 2017 with a set duration of 36 months. It receives funding from The European Union's Horizon 2020 research and innovation program.

EPIC: Enabling Practical Wireless Tb/s Communications with Next Generation Channel Coding

EPIC aims to **develop a new generation of Forward-Error-Correction (FEC) codes** in order to enable practical wireless Terabyte per second (Tb/s) technology. This corresponds to a 10x–100x throughput improvement over the current state-of-the-art. The EPIC concept and methodology is shaped by the key finding that **routine progress in silicon technology in the next decade will not be sufficient** to allow FEC implementations to break the Tb/s barrier. Tb/s FEC will require not only help from silicon technology but also major innovations in FEC algorithm design and implementation domains.

Therefore, a key objective of EPIC is to **develop and utilize a disruptive FEC design** allowing to **advance state-of-the-art FEC schemes** and to obtain the principal channel codes for **beyond-5G (B5G) use-cases**. EPIC will validate and demonstrate the developed FEC technology in **virtual silicon tape-out** and provide a **first-in-class wireless Tb/s FEC chipset** architecture block. Virtual silicone methodologies proved a less time-consuming process during the development of new designs.

Furthermore, EPIC will make major contributions to the scientific community in the fields of **Turbo, LDPC, and Polar code design and implementation**. This collaborative initiative will engage in cross-project activities to maximize the impact of the work, ensure adoption in related work, and **reaffirm Europe's central role in information theory and Digital Signal Processing DSP research**. Industrial partners in EPIC will ensure early identification of commercialization potential and uptake in standardization bodies.

The goals of the EPIC project:

The EPIC consortium, which includes the lead inventors and institutes in the FEC domain, dynamic SMEs, and impactful industry partners, is dedicated to successfully reach the following objectives:

- EPIC will design and implement **next generation Forward-Error-Correction** for wireless Tb/s technology and Beyond-5G systems.
- EPIC will advance state-of-the-art codes and **develop the principal channel coding** technology for wireless Tb/s technology.
- EPIC will **devise a disruptive FEC design framework** to unify algorithmic and implementation domains.
- EPIC will **validate and demonstrate the developed FEC technology** in virtual silicon tape-out and provide first-in-class wireless Tb/s FEC chipset architecture block.
- EPIC puts the **scientific excellence and contributions to wireless industry** in the domain of B5G standardization and technology development at the **centre of the project execution**.

The EPIC consortium consists of **8 partners** from **7 different countries** (Austria, Belgium, France, Germany, Sweden, Turkey and United Kingdom). Due to **excellent cooperation** in the proposal creation phase the basis for a very **promising collaboration has already been set**.

The EPIC partners are:

- TECHNIKON Forschungs- und Planungsgesellschaft mbH, Austria
- InterDigitalEurope Ltd., UK
- Interuniversitair Micro-Electronica Centrum VZW, Belgium
- Polaran Yazilim Bilisim Dan. Ith.Ihr.Tic.Ltd.Sti, Turkey
- Technische Universität Kaiserslautern, Germany
- Ericsson AB, Sweden
- Institut Mines-Telecom, France
- Creonic GmbH, Germany

For more information visit **www.epic-h2020.eu** [coming soon]

Contact Information:

Project Coordinator:
Martina TRUSKALLER
TECHNIKON Forschungs- und Planungsgesellschaft mbH
Burgplatz 3a
9500 Villach, Austria
Email: coordination@epic-h2020.eu
Tel. +43 4242 23355 78

Technical Lead:
Prof. Dr.-Ing. Norbert WEHN
Technische Universität Kaiserslautern
Gottlieb-Daimler-Straße Geb. 47
67663 Kaiserslautern, Germany
Email: wehn@eit.uni-kl.de

Disclaimer: "The information in this document is provided "as is", and no guarantee or warranty is given that the information is fit for any particular purpose. The content of this document reflects only the author`s view – the European Commission is not responsible for any use that may be made of the information it contains. The users use the information at their sole risk and liability."