A blue flag with yellow stars

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Summary

The IRAM project investigates architectural innovations in 6G Radio Access Networks, with a focus on the planning of flexible and densely deployed NG-RANs integrating IAB (Integrated Access and Backhaul) nodes. It addresses two core challenges: unsupervised radio node configuration and reliable mmWave backhauling. A key objective is the design of adaptive NG-RAN infrastructures capable of responding dynamically to variations in traffic demand, node failures, and network conditions.

The project is conducted at Sabanci University in collaboration with local research institute, targets the automated, low-cost deployment and operation of NG-RANs, especially:

* Unsupervised planning and optimization: Developing scalable, automated techniques to determine optimal node configurations, and network recovery strategies without manual intervention.
* mmWave fronthauling/backhauling (RP2): Designing reliable, mmWave link resilient to blockage and node failure, considering mobility.

The research incorporates experimental results and advanced theoretical frameworks (e.g., random network and information theory) to ensure realistic and impactful outcomes aligned with 3GPP and EU 6G visions.

Awards

**Intelligent New Radio Access Network: Deployment and Management 101130826**

European Commission