



iCirrus Consortium

University of
Kent

ADVATM
Optical Networking



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Future Radio Technology


iCirrus



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For more information, visit the project website:
<http://www.icirrus-5gnet.eu/>

 <https://www.facebook.com/pages/Icirrus-5G/748941148509013>

 <https://www.twitter.com/Icirrus5g>

 <https://www.linkedin.com/groups/iCIRRUS-5G-H2020-project-6930274/about>

iCirrus

intelligent
Converged Network
consolidating Radio
and optical access
aRound User
equipment

iCirrus Overview

iCIRRUS proposes an intelligent virtualised Radio Access Network (vRAN) which brings together optical fibre technology, highly flexible and low cost Ethernet networking, wireless resource management for device-to-device (D2D) communication and introduces a mobile cloud with clone-to-clone (C2C) technology to enhance spectrum utilization and energy efficiency.

System Concept

- ◆ Low cost optical Ethernet in an evolved fronthaul.
- ◆ Intelligent operation brought to fronthaul
- ◆ Added intelligence for D2D operation
- ◆ Centralised functions available to mobile cloud processing

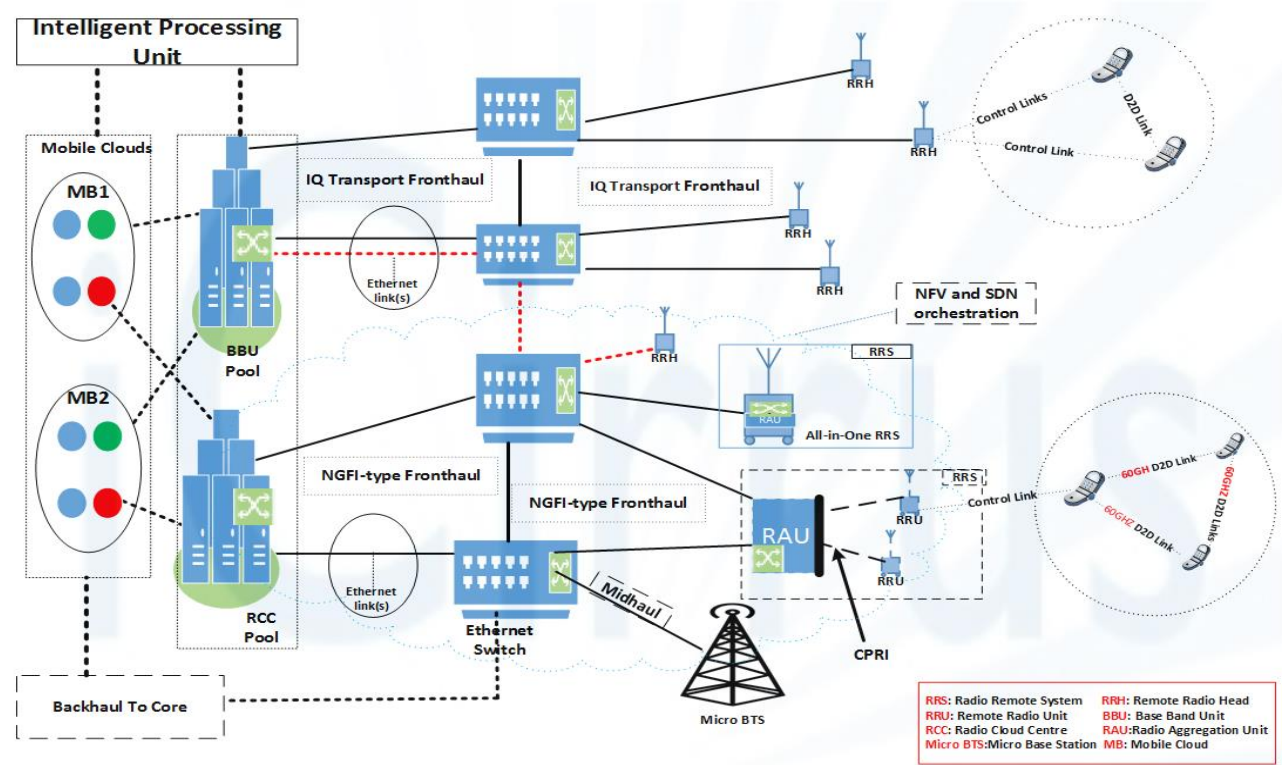
The project is moving towards the validation of key concepts through integrated testing and demonstration in the consortium’s research labs. Dedicated hardware has been developed to facilitate the fronthaul verification.



A “show-case” demonstration of key concepts, integrating evolved and legacy fronthaul over Ethernet, high-speed optical fronthaul, D2D and mobile clone technologies will be staged at Telekom Slovenije in Ljubljana, March 2018.



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The evolved Ethernet fronthaul can transport sampled waveforms (generic IQ or CPRI-type) and next generation fronthaul interface (NGFI) split point data, for different split points. The same Ethernet network can transport backhaul, midhaul and fixed access traffic. Probe-based, real-time monitoring enables optimisation of the performance of the fronthaul and Radio Access Network. In the future, full virtualisation of the RAN, will enable the monitoring to be used in orchestration of NFV and SDN.

The mobile cloud functions can be moved closer to the user – in the above at the radio cloud centre/base station pool. Clone-to-clone communication offloads traffic from the mobile network and RAN.

The novel feature of iCIRRUS is to enable a converged 5G access network, that also supports legacy mobile and fixed line services based on Ethernet transport and intelligent monitoring.

D2D communication and mesh networking, under control of the mobile network also offloads traffic. Localisation through remote radio units leads to a reduction in signalling complexity and overhead.