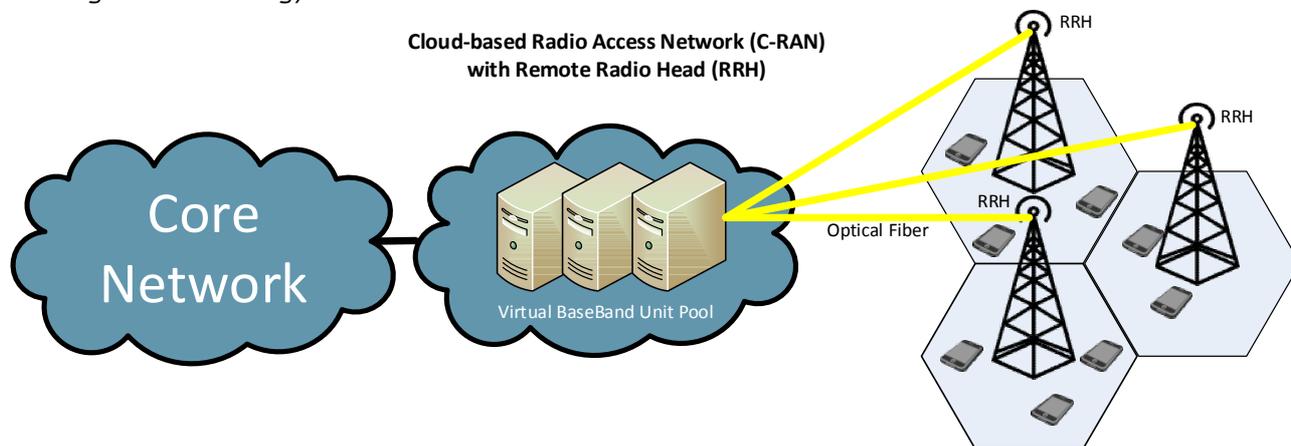


Cloud-based technology for 5G mobile networks

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With the appearance of 5G mobile networks ultra-fast data transfer is expected, creating a need for a completely new network infrastructure. Danish companies can have crucial influence on the design of future systems for transfer of data. The Innovation Foundation and technology partners invest 27 MDKK in a project that will provide solutions for realizing such a technology.



Mobile users' increased use of mobile TV, gaming and other high bandwidth applications and the need for machines to be connected in Internet of Things (IoT) is expecting to increase the capacity needed in wireless networks by a factor 1000. This explosive capacity increase is one of the parameters that next generation mobile networks, also called 5G, should handle without increasing energy consumption and price. It requires new technologies and methods to design and control the mobile network.

Data will no longer be processed locally on the base station at the mobile antenna site but in data centers in the cloud. This concept, called Cloud RAN, is being drafted at all major players in the world market for mobile infrastructure, and is the focus for a newly established technology consortium consisting of DTU Fotonik, Comcores and Vitesse Semiconductor.

The project is named ERAN and is aiming a providing technologies that enable the C-RAN concept, as well as provide more flexibility and cost reductions in the network that connects data centers and antennas in a wireless network by making use of low-cost Ethernet technology.

Specifically the project will make a gateway that connects the data streams from the antennas with the processing units in the data centers. This requires the development of new Ethernet technology and algorithms for efficient mapping of antenna data in Ethernet frames.

A part of the project is focusing on new methods of managing and controlling the network based on a new paradigm called Software Defined Networking.

"Software Defined Networking is a promising technology, that will give mobile operators completely new possibilities", says Associate Professor Michael S. Berger from DTU Fotonik.

"It is no longer a question about raw capacity but also about administration of data and scaling of the data required", says Lars Ellegård from Vitesse.

The objective of the project is at first to make a prototype that can bring value to mobile network infrastructure vendors like Ericsson, Alcatel-Lucent and Nokia Networks.

"The details of cloud RAN is not yet agreed upon in the marked but there is a significant interest in finding solutions and partners that can contribute to defining and implementing a solution. This project creates an enormous momentum in Denmark and forms a leading cluster within this next generation technology", says Founder Thomas Gerner Nørgaard from Comcores.

ERAN technology is expected to be available in 2016.

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