Evaluation of MEC for 5G Cloud-RAN networks over Fed4FIRE+

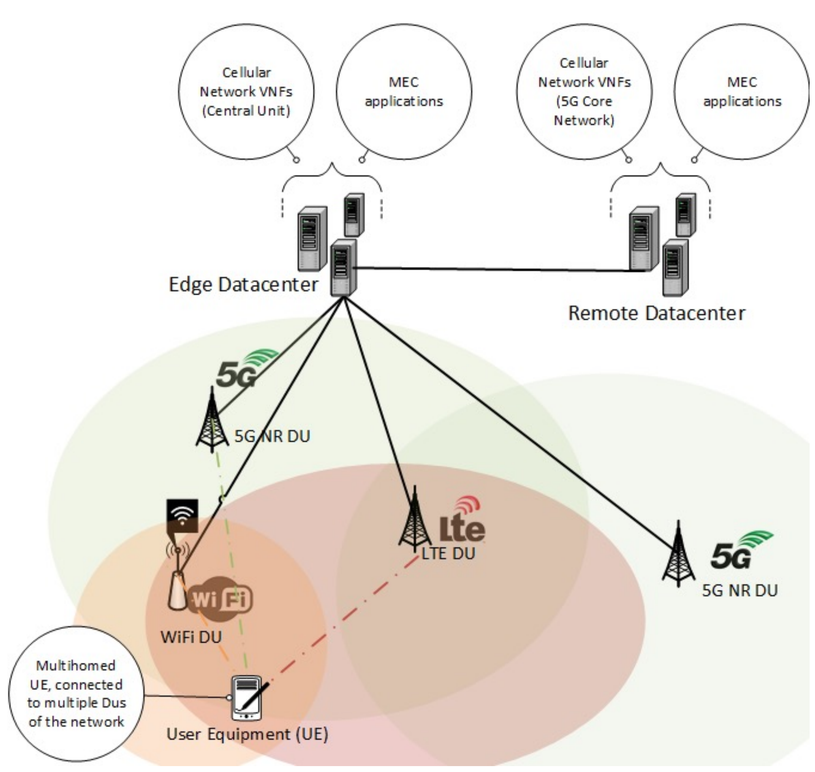
GOALS

- 5G networks are expected to widely apply in practice Multi-access Edge Computing (MEC) resources
  - ➢ Relying on bringing devices closer to the network edge
  - ➢ Regardless of the technology used to access the network
- 5G redefines the operation of the cellular stack through the integration of splits over the stack
- **How can we integrate edge resources and bring services closer to the network?**

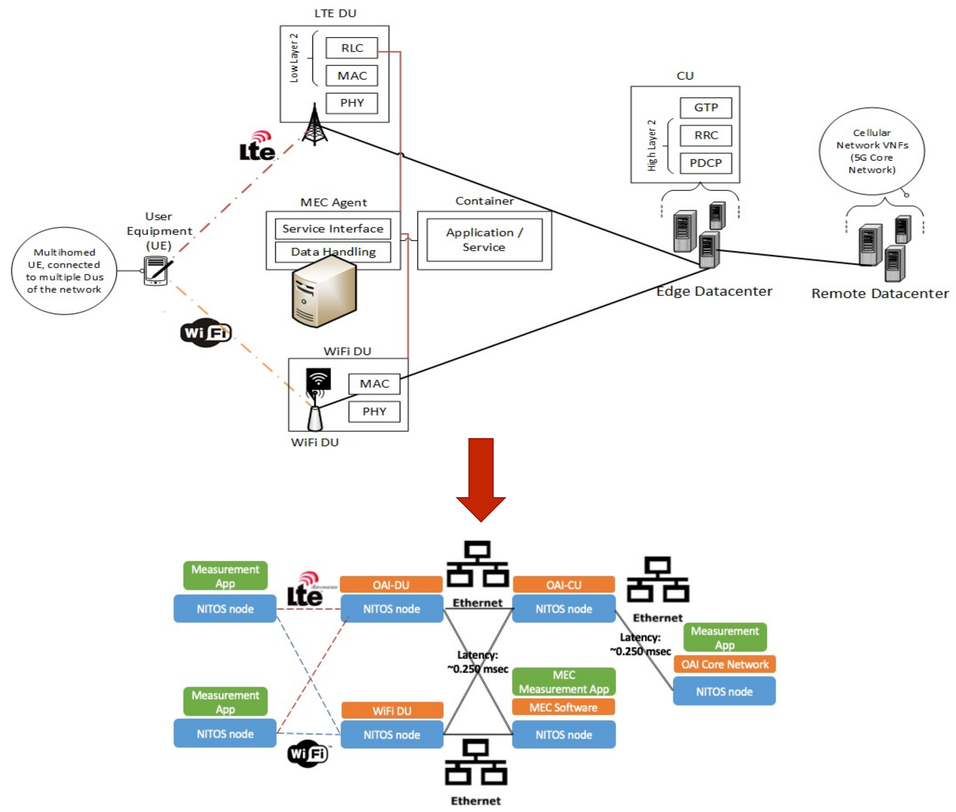
MECinFIRE Highlights

- Given the 5G architecture for base stations, with part of them running at the Cloud, we want to develop and test a solution for Multi-access edge computing
- ***Development and evaluation of a solution for collocating the edge computing services with the access part of the network.***
- ***Dynamically switching among technologies serving the end user based on the measured latency***
- ***Experimental evaluation of the solution***
- ***Comparison of our solution with the ETSI proposed method for collocating the services with the Core Network.***

MECinFIRE Architecture

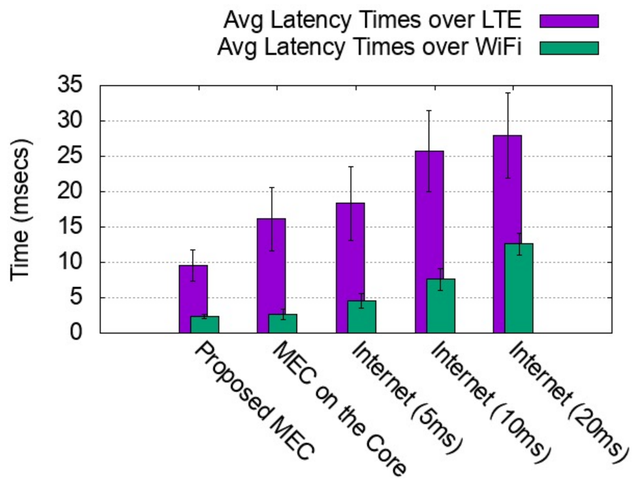


Mapping the experiment to the testbed

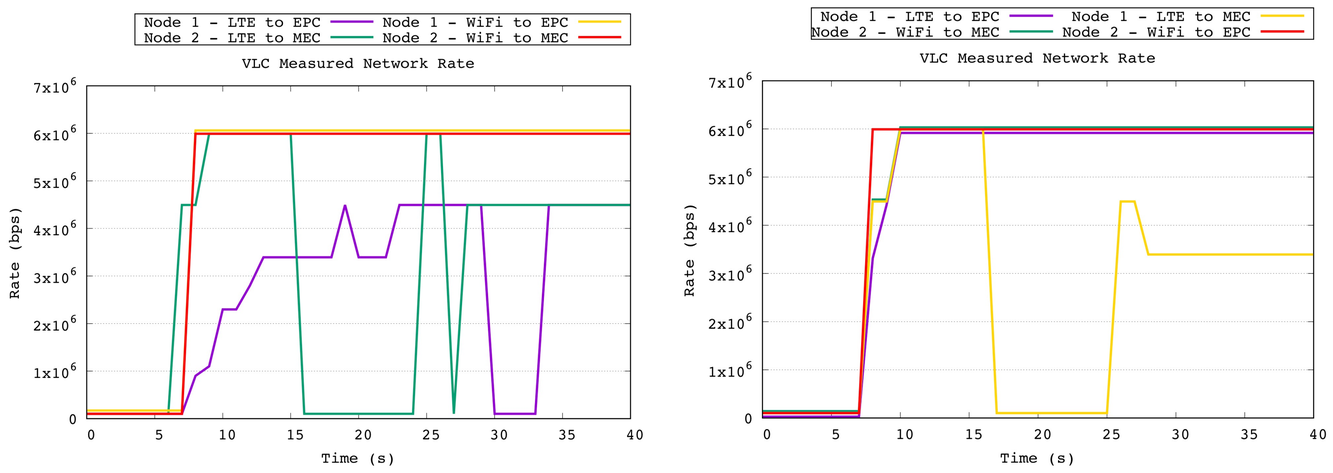


RESULTS

Latency Experiments for the deployed framework:



Adaptive Video experiments for different technologies and different placements of the service



CONCLUSIONS

- Latency results show a very clear benefit of our solution compared to other placements.
- Video results show that the MEC users are highly benefited from the placement of the service
- Dynamic changing of the access technology can also benefit the users in the video case
  - Users using lower latency links converge more quickly to the higher quality video streams

POST MORTEM

- Successfully evaluated our approach in the Fed4FIRE+ testbeds
- Demonstrated clear benefits of our solution against other suggested MEC placements for 5G networks
- *We were able to observe in practice the benefits of the Multi-access Edge Computing technology and successfully evaluate our software prototype – would not have done this without F4F+*