



Neutral Host Modelling in Lucca

Lucca is a small sized historic town and represents within the project 5GCITY the challenges and issues that hundreds of other European historic towns will have to tackle when it comes to the take up of the next 5G networks.

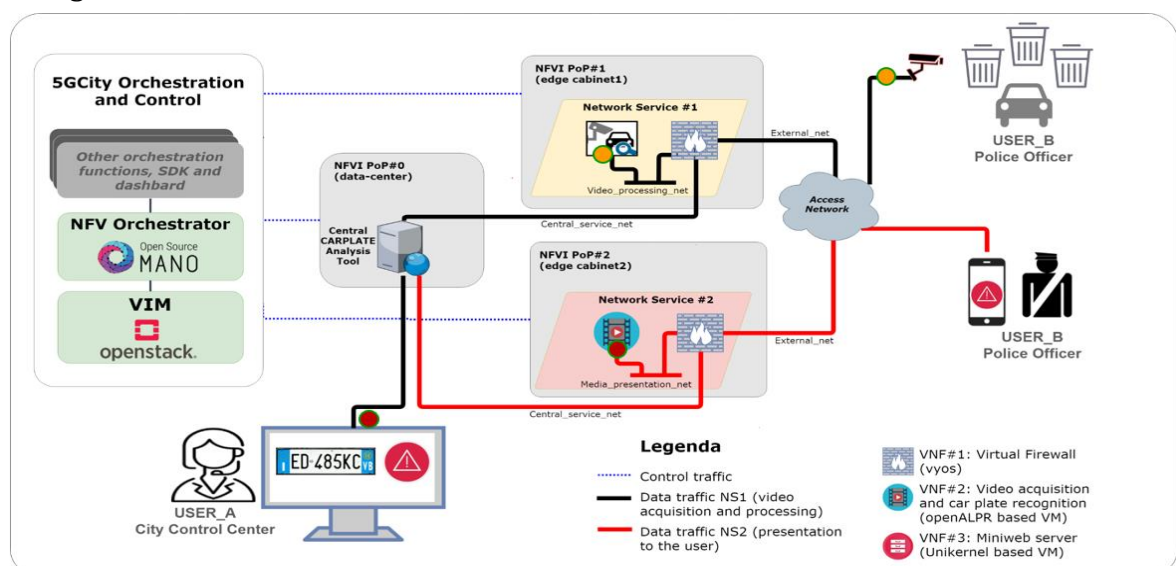
The project tested in Lucca the deployment of broadband services distributed on an experimental radio network infrastructure consisting of optical fibers and software / hardware control technologies and small cells operating with a low power (< 5 Watts) and authorized spectrum (2.6GHz LTE TDD, Band 38, currently used by 4G networks) to assess new models of services that are of interest of cities of the size of Lucca.

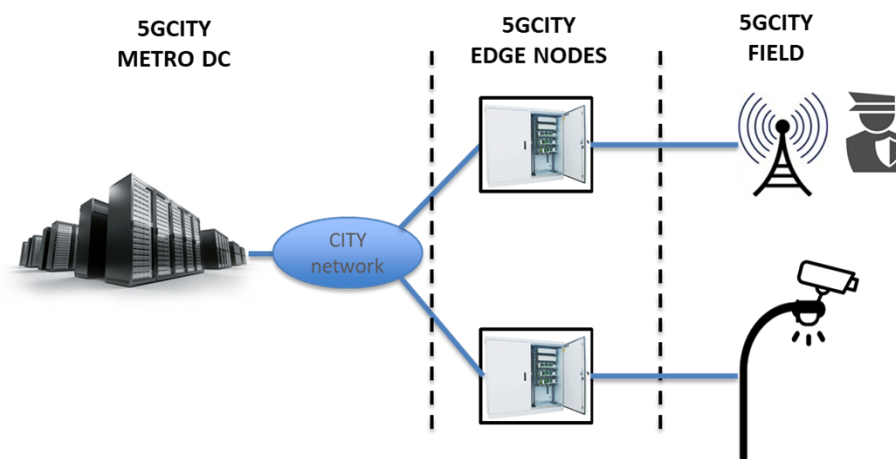
Lucca provided to the project the dense urban environment of a small historic European town where it is unrealistic to expect the deployment of hundreds of vertically-isolated access networks, also due to legal constrictions related to the conservation of the local built environment.

It represents therefore a scenario where network infrastructure sharing might be a fundamental element to unlock commercial take up of dense 5G wireless networks (Neutral Host modelling). Given this landscape, testing an operational model which envisions open access for operators represented an interesting option that may play key role on the deployment of 5G networks and may be useful for operators to overcome several issues related to densification in small cities historic urban environments.

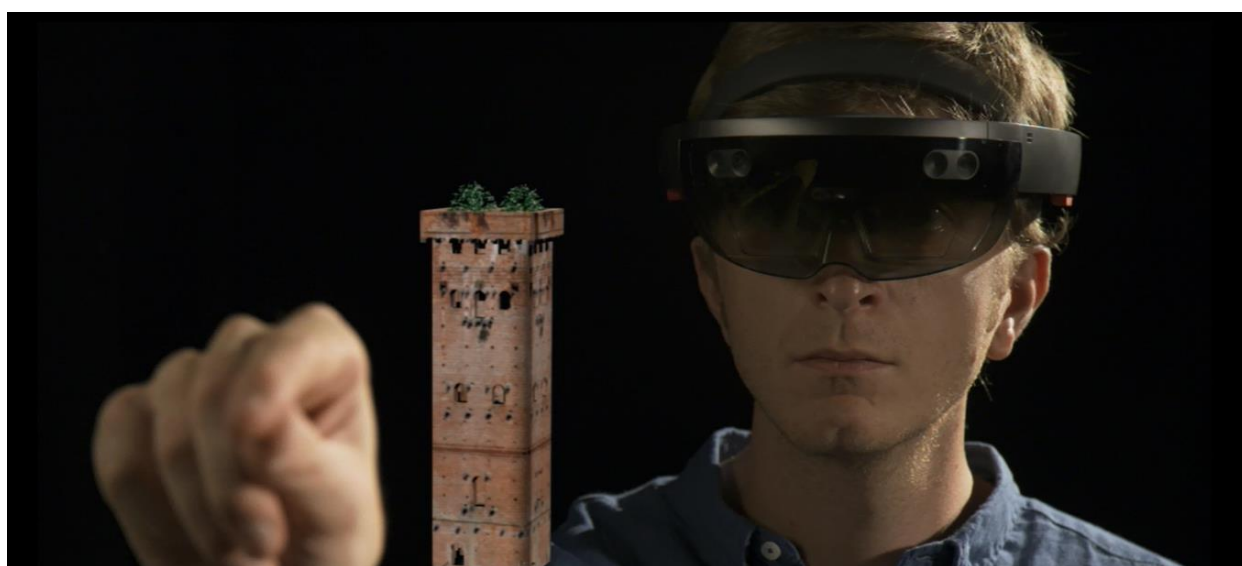
The most interesting services tested in Lucca are those related to:

- **prevention of unauthorized waste** disposal outside the provided spaces of the historic center of Lucca, where, through an ad hoc application, the video surveillance camera is able to alert the municipal police in real time in the event detection of possible infringements





- **UHD Video Distribution Immersive Service**, including videos shot in Lucca by the technical team of Research Center and Technological Innovation Rai of Turin (CRITS) at the Guinigi Tower and the Puccini House Museum. The footage is useful for the production of futuristic augmented reality video products and have been disseminated among European operators in the sector to illustrate the possibilities of the new technology and thus contribute to the promotion of the city in the world.



The involvement of Lucca in the project, gave to the town a possibility to investigate the issues related to both for the management of the technical and regulatory aspects that underlie the introduction of 5G and evaluating with a greater awareness the different opportunities for the local public administration that will arise from the introduction of the fifth generation mobile network services.

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