



## *Embedded Network Services for 5G Experiences*

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### Deliverable D3.3

## **5G ESSENCE Pre-integration – CESC, Main DC and cSD-RAN controller**

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## **Executive Summary - Abstract**

The objective of this deliverable is to describe the implementation of the 5G ESSENCE platform components and to evaluate them under realistic conditions with the purpose to provide a pre-integrated prototype to the demonstration phase.

Therefore, the deliverable has a practical orientation, focusing on the specification of the APIs, the interfaces, the workflows, and the interaction of the components and the mechanisms that compose the pre-integrated prototype of the 5G ESSENCE platform, which were introduced in previous deliverables. In addition, hardware and software requirements are also provided. Finally, demonstration and evaluation under realistic conditions are presented, aiming at results that are relevant for the 5G ESSENCE Use Cases according to the defined Key Performance Indicators (KPIs).

The deliverable places its main focus on the cSD-RAN Controller, which is the key element of the Main DC and which also determines the architecture and functionalities of the Light DC regarding the RAN part. In particular, the implementation and evaluation of three different realizations are presented, which demonstrate the 5G ESSENCE cSD-RAN Controller concept including, *among others*, multi-RAT, multi-tenancy, RAN slicing and cRRM capabilities. In addition to these specific realizations, the implementation of other significant components and functions of the Edge DC is described in details, covering RAN slicing, RRM, NFVI-VIM optimisation, Telemetry and Security topics.

Finally, the deliverable also considers the integration with other modules of the 5G ESSENCE architecture; especially the CESC, which will interface the different components located at the Main DC in order to allow the remote management of the RAN by the infrastructure provider or the tenants. In addition, it is provided a brief description of the adaptation and integration efforts regarding the Use Cases targeted in the 5G ESSENCE, considering the RATs and services that will be deployed in the demonstrations.

### **5G-PPP Disclaimer:**

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