5G standard emerges at a particular time in technology history when cloud transforms deeply almost all industries and services: it becomes obvious that innovations have to be made cloud-native for being successful. 5G must become the ubiquitous fabric blending universal connectivity (to humans, robots, sensors ...) with cloud versatility and scalability. For realizing this vision, another model than IaaS must be adopted, the Platform as a Service (PaaS), which should be built to support telco-grade requirements and combine all sort of third-party applications. These are the core objectives of the Next Generation Platform as a Service (NGPaaS) project, a H2020 5G PPP Phase 2 project. The paper presents the project fundamentals, its architectural proposal and most relevant features.