Near Real Time Radio Intelligent Controller

Since 2018, when the ORAN Alliance was born, TIM has identified the Near Real Time Radio Intelligent Controller (Near RT RIC) as a software platform that is also a fundamental network node for effective monitoring and management of the quality of services in real time.
The Near RT RIC was introduced by the ORAN Alliance to decouple the intelligent part of the network from the one that provides connectivity. This node in fact behaves like a network node (Master), able to control the behavior of the (Slave) part of the 4G and 5G nodes which are in charge of providing connectivity. In particular, TIM actively participates in the Working Group 3 of the O-RAN Alliance, which has the task of defining the interfaces and functions associated with the RIC, such as Quality of Experience, Quality of Service, Load Balancing and Network Monitoring of the network.
Thanks to the RIC, the ability to interact in real time with the network nodes allows TIM, in line with the spirit of the ORAN Alliance aimed at decoupling the intelligence of the radio nodes from the ability to provide connectivity, to enable innovative Machine Learning based solutions for a better understanding and management of the mobile network.

During the Open RAN Plugfest 2021, held in November in the TIM Innovation lab in Turin, TIM used a tool, developed by Keysight to emulate the behavior of multiple network nodes (both 4G and 5G) as well as the communication interfaces provided in O-RAN, in order to verify the correct functioning of the Near RT RIC developed by TIM before its commissioning.
The Near RT RIC "made by TIM" is a software platform that collects network data in real time and exposes them on a Shared Data Layer (SDL), so that they can be analysed by various applications (also developed by third parties) named by ORAN Alliance as xApp. The xApps have the task of analyzing network data, using Machine Learning techniques to find possible problems and identify improvements in the functioning of the 4G / 5G network.
The success of the laboratory tests on the RIC "made by TIM" represents a further step forward for the introduction of greater intelligence on the network, in compliance with the logic of Open Innovation.