NETWORK AWARE COMPUTE RESOURCE MANAGEMENT USE CASE FOR ORAN NON-RT RIC

ABSTRACT

A system, method and device for optimizing O-Cloud resources using rApps of a Non-RT RIC. The system may include an O-Cloud including a plurality of physical nodes configured to host virtualized network functions (VNFs), the VNFs including O-RAN centralized units (O-CUs) and O-RAN distributed units (O-DUs); and a Service Management and Orchestration (SMO) framework configured to manage and orchestrate the O-Cloud, the SMO including anchored functionalities, a Non-RT RIC, an O1 interface for communication with the VNFs and an O2 interface for communication with Infrastructure Management Services (IMS) and Deployment Management Services (DMS) of the O-Cloud, wherein the Non-RT RIC is configured to implement one or more rApps to: collect O-Cloud inventory and telemetry data on node level or O-Cloud level over the O2 interface, collect cellwise traffic data, including mobility and neighbor cell load data, over the O1 interface, train and deploy an artificial intelligence/machine learning (AI/ML) model to generate policies based on collected O1 and O2 data, and generate policies for the O-Cloud or VNFs based on at least one of priority, load, and energy consumption, and wherein the anchored functionalities of the SMO framework are configured to receive and manage the policies for the O-Cloud from the Non-RT RIC, and generate optimization controls for transmission to the O-Cloud via the O2 interface and/or transmit the policies to the IMS and DMS via the O2 interface for implementation.

[FIG. 1]