



Orchestration and Reconfiguration Control Architecture

Open Call 1

First ORCA Competitive Call for Extensions

FINS - Federating Interface for Network Slicing

Call - Identifier

ORCA-OC1-EXT1

Organisation name:

FBK CREATE-NET

Section A Project Summary

FINS proposes a new modular, extensible and flexible framework focused on extending the ORCA platform with end-to-end slicing capabilities. A centralized module will act as Slice Controller, providing the necessary coordinated management of SDN and SDR resources for the dynamic instantiation, management and reconfiguration of hybrid Radio-Wired slices in the experimentation testbed. Specialized remote agent modules will interface with the SDR and SDN resource controllers to enforce the actions needed to dynamically change the configuration of radio and testbed network and retrieve the needed data about radio and network operation.

Besides the SDN-SDR integration and slicing capabilities the that proposed solution offers, FINS brings in the following characteristics:

- Automation, with the introduction of descriptors and catalogues, describing the combination of the instantiable RAN and core network resources needed to define, implement and manage multiple slices and services.
- Extensibility, providing separation of functionalities and isolating controller specific decisions in dedicated modules, FINS can extend to support new types of SDR or SDN controller or platforms, through the development of new specialised adapter modules.
- Modularity and flexibility, thanks to which an experiment supported by FINS can be extended in complexity by plugging other existing experiments or by including, under a certain extent, also external resources or testbeds.

For supporting the experimentation of end-to-end network services, FINS will expose control and management functionalities to experimenters through APIs. Besides, a set of pre- defined descriptors will be provided, making it easier for the experimenters to get started and lowering the learning curve.

Even if FINS architecture has a wide-reaching applicability, the proposal itself has as main target the IRIS virtualised testbed, where the solution can be provided as an additional integrated service and its software components also delivered as virtual machines or containers.