Open APIs for interoperable testbed federations

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Experimentations in the ICT domain must be done in large testbed federations.

Fed4FIRE+ ([https://www.fed4fire.eu/](https://www.fed4fire.eu/)) is offering the largest federation worldwide of Next Generation Internet (NGI) testbeds.

The interconnection and the interoperability between all the Fed4FIRE+ testbeds are achieved through APIs developed since many years. Such APIs were never standardized in a SDO.
General architecture
The open APIs combine in fact several APIs:

Aggregate Manager API: Permits all the operations on the testbed resources like reservation.

Slice Authority API: Management of a set of resources (slice) linked to a user.

Member Authority API: Management of the users and their credentials.
# Standardization at ITU-T SG11

**International Telecommunication Union (ITU)**

**Telecommunication Standardization Sector (ITU-T)**

**Study Group 11 (SG11)**

**Question(s):** 16/11

**Source:** Editors

**Title:** Consent – baseline text of draft Recommendation ITU-T Q.4068 (ex. Q.API4TB) "Open APIs for interoperable testbed federations"

**Purpose:** Discussion

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**Keywords:** Conformance and interoperability; testing; testbed; open API

**Abstract:** This document contains the final baseline text of the draft Recommendation ITU-T Q.4068 (ex. Q.API4TB) "Open API for interoperable testbed federations" which was prepared based on the outcomes of discussions which took place during the Q16/11 RGM e-meeting, 7-16 July 2021. It is proposed for consent at the WP3/11 meeting (16 July 2021).
Objectives of the Recommendation

Definition of the potential improvements of testbed interoperability and federation.

Description of a reference model and technical framework for interoperable testbed federation.

Specification of open APIs for the interconnection and the interoperability of testbeds.

Definition of reference metrics to ease the integration and the interoperability.
How the objectives are met

Generic reference model for testbeds federations and key players, based on GANA
Potential of testbed interoperability and federation
Elements of a reference model of testbed federation
Testbeds federation APIs requirements
Some APIs for illustration of an instantiation of the generic model
Aggregate Manager (AM) API, Slice Authority (SA) API, Member Authority (MA) API
Reference Metrics
Examples of use cases for testbed federation
Fed4FIRE+: [https://www.fed4fire.eu/](https://www.fed4fire.eu/)
GANA: [https://www.etsi.org/deliver/etsi_ts/103100_103199/10319502/01.01.01_60/ts_10319502v010101p.pdf](https://www.etsi.org/deliver/etsi_ts/103100_103199/10319502/01.01.01_60/ts_10319502v010101p.pdf)

QUESTIONS ?
Thank you!

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