ETSI TS 103 878-3 V1.1.1 (2025-05)

TECHNICAL SPECIFICATION

**Core Network and Interoperability Testing (INT);
Network Interoperability Test Description for
IPv6-only services over 5G;
Part 3: Abstract Test suite**

ETSI

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3 ETSI TS 103 878-3 V1.1.1 (2025-05)

Contents

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Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Core Network and Interoperability Testing (INT).

The present document is part 3 of a multi-part deliverable. Full details of the entire series can be found in ETSI TS 103 878-1 [1] and ETSI TS 103 878-2 [2].

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

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1   Scope

The present document specifies the Abstract Test Suite (ATS) for the IPv6-only services over 5G in compliance with the relevant requirements and in accordance with the relevant guidance given in ISO/IEC 9646-7 [i.1].

The test notation used in the ATS is TTCN-3 (see ETSI ES 201 873-1 [i.2]).

The following test specification and design considerations can be found in the body of the present document:

- the overall test suite structure;

- the testing architecture;

- the test methods and port definitions;

- the test configurations;

- TTCN styles and conventions;

- the modules containing the TTCN-3 ATS.

2   References

2.1   Normative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found in the ETSI docbox.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are necessary for the application of the present document.

[1]   ETSI TS 103 878-1: "Core Network and Interoperability Testing (INT); Network Interoperability Test Description for IPv6-only services over 5G; Part 1: Test Purposes".

[2]   ETSI TS 103 878-2: "Core Network and Interoperability Testing (INT); Network Interoperability Test Description for IPv6-only services over 5G; Part 2: Test Description".

2.2   Informative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

[i.1]   ISO/IEC 9646-7: "Information technology -- Open Systems Interconnection -- Conformance testing methodology and framework -- Part 7: Implementation Conformance Statements".

[i.2]   ETSI ES 201 873-1: "Methods for Testing and Specification (MTS);The Testing and Test Control Notation version 3; Part 1: TTCN-3 Core Language".

3   Definition of terms, symbols and abbreviations

3.1   Terms

Void.

3.2   Symbols

Void.

3.3   Abbreviations

Void.

4   Abstract Test Method (ATM)

4.1   Introduction

The following clauses describes the ATM used to test the interoperability IPv6-only services over 5G.

4.2   Test architecture

The test architecture foreseen is a complex system of all involved components. The following figures give an overview.
Figure 1 shows the network entities involved in the interoperability testing and the mapping to test components.
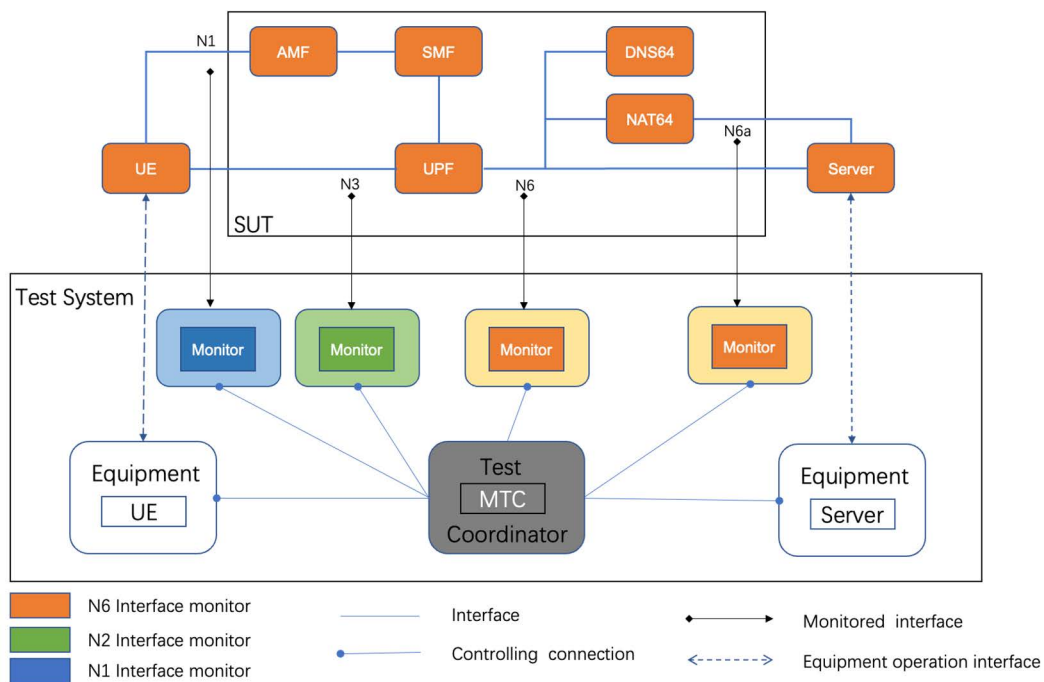Figure 2 adds a more technical view of the implementation plans for the test system components.

Figure 1: IPv6-only service over 5G interoperability test system configuration
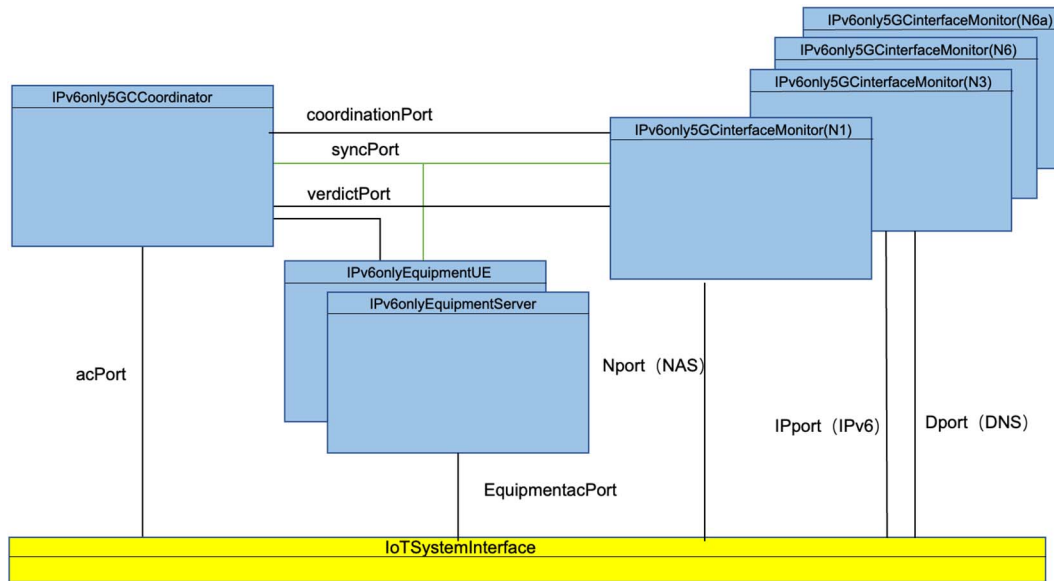
Figure 2: IPv6-only service over 5G interoperability test component view

4.3   Interconnection of TS and SUT

The interconnection of the Test System (TS) and the System Under Test (SUT) is depicted in figure 2.

The IPv6only5GCCoordinator controls the overall test execution by coordinating theIPv6only5GCInterfaceMonitor components on the IPv6 and DNS interfaces under observation. It synchronizes those test components and receives individual test verdicts from them which are processed for the determination of the final overall test verdict.

IPv6only5GCCoordinator and the IPv6only5GCInterfaceMonitor components connect through the IoTSystemInterface to the SUT. The IPv6onlyEquipmentUE entity is responsible for the connection and management of external UE equipment. The IPv6onlyEquipmentServer entity is responsible for the connection and management of external server equipment.

4.4   Implementation of TS

The implementation of the TS in TTCN-3 is depicted in figure 3 which gives the names of all test components and the related TTCN-3 ports, variables and timers. It also shows the connections between the test components via CoordinationPort, VerdictPort and SyncPort and the connections to the IotSystemInterface via NasPort, ipPort,dnsPort, eaPort and acPort.
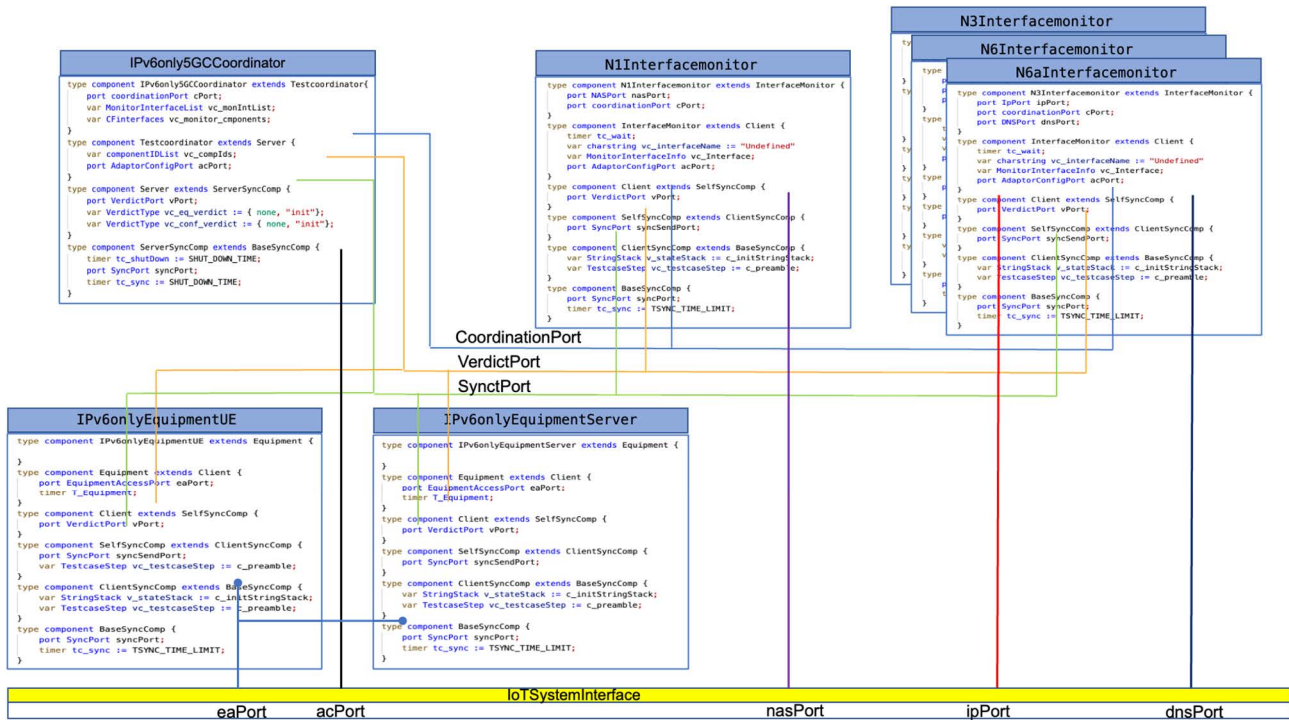
Figure 3: IPv6-only services over 5G interoperability test component implementation

4.5 Test Adapter

For execution of the tests the Test Adapter (TA) will be developed.

History

Document history		
V1.1.1	May 2025	Publication