

# ETSI TS 103 246-5 V1.2.1 (2017-03)



TECHNICAL SPECIFICATION

## **Satellite Earth Stations and Systems (SES); GNSS based location systems; Part 5: Performance Test Specification**

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Reference

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## Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Satellite Earth Stations and Systems (SES).

The present document is part 5 of a multi-part deliverable covering GNSS-based Location Systems (GBLS), as identified in part 1 [1].

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## Modal verbs terminology

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## Introduction

The increasing expansion of location-based applications aims to satisfy more and more complex and diversified user requirements: this is highlighted for example by the widespread adoption of multi-functional smart-phones or by the ever wider adoption of tracking devices (e.g. in transport), etc. This requirement for new and innovative location-based applications is generating a requirement for increasingly complex location systems.

The wide spectrum of location-based applications identified in ETSI TR 103 183 [i.1] calls for a new and broader concept for location systems, taking into account solutions in which GNSS technologies are complemented with other technologies to improve robustness and performance. The notion of **GNSS-based location systems** is introduced and defined in the present document.

Additional clauses and information related to the implementation in **GNSS-based location systems** of the various differential GNSS technologies, namely D-GNSS, RTK and PPP are also included in order to facilitate the use of this set of standards by manufacturers and service providers.

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# 1 Scope

This multi-part deliverable addresses integrated GNSS based location systems (GBLS) that combine Global Navigation Satellite Systems (GNSS), with other navigation technologies, as well as with telecommunication networks in order to deliver location-based services to users. As a consequence the present document is not applicable to GNSS only receivers.

The present document specifies the procedures for testing conformance of complex GNSS based Location System (GBLS) with the performance requirements specified in ETSI TS 103 246-3 [3].

This multi-part deliverable proposes a list of functional and performance requirements and related test procedures. For each performance requirement, different classes are defined allowing the benchmark of different GNSS Based Location Systems (GBLS) addressing the same applications.

The tests specified are of a complete GBLS, considered as "Black Box" i.e. the tests are made at outputs of the system in response to stimuli applied at the inputs. The tests are defined for laboratory testing only, and not in the "field".

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## 2 References

### 2.1 Normative references

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

- [1] ETSI TS 103 246-1: "Satellite Earth Stations and Systems (SES); GNSS based location systems; Part 1: Functional requirements".
- [2] ETSI TS 103 246-2: "Satellite Earth Stations and Systems (SES); GNSS based location systems; Part 2: Reference Architecture".
- [3] ETSI TS 103 246-3: "Satellite Earth Stations and Systems (SES); GNSS based location systems; Part 3: Performance requirements".
- [4] ETSI TS 103 246-4: "Satellite Earth Stations and Systems (SES); GNSS based location systems; Part 4: Requirements for location data exchange protocols".

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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] ETSI TR 103 183: "Satellite Earth Stations and Systems (SES); Global Navigation Satellite Systems (GNSS) based applications and standardisation needs".