

# ETSI GS CIM 014 V2.1.1 (2024-04)



## Context Information Management (CIM); NGSI-LD Test Suite

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## Foreword

This Group Specification (GS) has been produced by ETSI Industry Specification Group (ISG) cross-cutting Context Information Management (CIM).

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## Modal verbs terminology

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## Executive summary

The present document is providing a detailed description of the implementation of the NGSI-LD Test Suite. It describes the architecture of the Test Suite, then goes into the details of the source code structure, the tests interfaces and the tests libraries.

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## Introduction

The ISG CIM group has defined an API for exchange of information contextualised in time, space and relation to other information using a property graph model with the intent that the associated protocol (called NGSI-LD) becomes the "glue" between all kinds of applications and databases associated with services for Smart Cities, Smart Agriculture, Smart Manufacturing, etc.

To be successful, the NGSI-LD API specification needs to be well understood and well implemented. The community of users will not be solely highly professional engineers employed by big companies but will include many small teams and SMEs and even hobbyists. Therefore, it is essential that the developers have access to not only the standard but also a test specification and a testing environment to check that their work is (and remains) conformant to the ETSI NGSI-LD specification.

The developers will usually write integration tests to validate the behaviour of their NGSI-LD implementation, but it is important to assert compliance to the specification based on a Test Suite agreed by the group creating the API specification, i.e. ETSI ISG CIM. Therefore, it is very important to create a set of ETSI-approved test cases.

What is more, the existence of such a Test Suite will likely help to increase the adoption of the NGSI-LD specification by giving developers a ready to use and complete set of sample requests.

The present document describes the general architecture of the Test Suite, the overall organization of the source code, the tests interfaces, the tests framework components, then the tests strategies. It concludes with a list of identified untestable Tests Purposes.

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# 1 Scope

The present document defines the organization or grouping of test cases based on the functionality to be tested (e.g. registration, subscription, query, etc.) and - most importantly - selects minimal subsets ("narrower scope") of functionality to permit testing of the main features of an operating NGSI-LD system.

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## 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 at <https://docbox.etsi.org/Reference>.

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 GS CIM 009 \(V1.5.1\)](#): "Context Information Management (CIM); NGSI-LD API".
- [2] [ETSI GS CIM 013](#): "Context Information Management (CIM); NGSI-LD Test Purposes Descriptions".

### 2.2 Informative references

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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] [ISG CIM repository at ETSI Forge](#): "Example code to implement NGSI-LD Test Purposes Descriptions".
- [i.2] [ETSI GR CIM 015](#): "Context Information Management (CIM); NGSI-LD Testing Environment Validation".

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## 3 Definition of terms, symbols and abbreviations

### 3.1 Terms

For the purposes of the present document, the following terms apply:

NOTE: The letters "NGSI-LD" were added to most terms to confirm that they are distinct from other terms of similar/same name in use in other organizations, however, in the present document the letters "NGSI-LD" are generally omitted for brevity.