

ETSI GS CIM 013 V1.1.1 (2021-05)



Context Information Management (CIM); NGSI-LD Test Purposes Descriptions (standards.iteh.ai)

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Foreword

This Group Specification (GS) has been produced by ETSI Industry Specification Group (ISG) cross-cutting Context Information Management (CIM). <https://standards.iteh.ai/catalog/standards/sist/c1814faa-260c-4726-b0ea-95c1814faa260c/etsi-gs-cim-013-v1-1-1-2021-05>

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 contains the description of each abstract test case using the Test Template [i.2] and using the Test Purposes Description Language identified in ETSI GS CIM 012 [2] and ETSI GR CIM 011 [i.1]. The test cases are described in tabular form.

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.

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

- [1] ETSI GS CIM 009 (V1.3.1) (08-2020): "Context Information Management (CIM); NGSI-LD API".
- [2] ETSI GS CIM 012 (V1.1.1) (03-2021): "Context Information Management (CIM); NGSI-LD Test Suite Structure".
- [3] ISO 8601: 2004: "Data elements and interchange formats -- Information interchange -- Representation of dates and times".

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] ETSI GR CIM 011 (V1.1.1) (04-2021): "Context Information Management (CIM); NGSI-LD Testing Framework: Test Purposes Description Language (TPDL)".
- [i.2] ETSI GS CIM 016 (V1.1.1) (04-2021): "Context Information Management (CIM); NGSI-LD Testing Framework: Test Template".

3 Definition of terms, symbols and abbreviations

3.1 Terms

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

context registry: software functional element where Context Sources register the information that they can provide

context source: source of context information which implements the NGSI-LD consumption and subscription (and possibly provision) interfaces defined by the present document

entity: informational representative of something that is supposed to exist in the real world, physically or conceptually

valid: According to the specification references in the normative reference. For example a datatype needs to be represented as stated in the specification.

3.2 Symbols

Void.

3.3 Abbreviations

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

CF	Config Identifier
DEL	DELETE
HTTP	HyperText Transfer Protocol
JSON	Java Script Object Notation
PICS	Profile Implementation Conformance Statement
SUT	System Under Test
TP	Test Purpose
URI	Unified Resource Identification
URL	Unified Resource Location

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4 Test Purposes Descriptions

ETSI GS CIM 013 V1.1.1 (2021-05)

4.1 Context Information

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4.1.1 Provision

4.1.1.1 Entities

4.1.1.1.1 Create Entity

TP Id	TP/NGSI-LD/CI/Prov/E/001_01
Test objective	Check that you can create an entity
Reference	ETSI GS CIM 009 V1.3.1 [1], clause 5.6.1
Config Id	CF_01
Parent Release	V1.3.1
PICS Selection	PICS_5_6_1
Initial conditions	with { the SUT being in the "initial state" }

Expected behaviour	Test events		Direction
	when { the SUT receives a valid Create Entity Request from the client containing URL set to /ngsi-Id/v1/entities and method set to POST and Header: Content-Type set to \${contentType} and body set to \${entity} to be created }		SUT ← Client
	then { the SUT sends a valid Response containing Response Status Code set to 201 (CREATED) Created Entity set to \${entity} }		SUT → Client
Permutation on TP Id			
001_01_01	Application/json	Minimal entity	
001_01_02	Application/json+Id	Simple properties	
001_01_03	Application/json+Id	Relationship of properties	
001_01_04	Application/json+Id	With a location attribute	

TP Id	TP/NGSI-LD/CI/Prov/E/001_02	
Test objective	Check that you cannot create an entity with invalid content	
Reference	ETSI GS CIM 009 V1.3.1 [1], clause 5.6.1	
Config Id	CF_01	
Parent Release	V1.3.1	
PICS Selection	PICS_5_6_1	
Initial conditions	with { the SUT being in the "initial state" }	
Expected behaviour	Test events	
	when { the SUT receives a Create Entity Request from the client containing URL set to /ngsi-Id/v1/entities and method set to POST and Header: Content-Type set to application/ld+json and body set to \${invalid_body} }	SUT ← Client
	then { the SUT sends a valid Response containing Response Status Code set to 400 (Bad Request) and Response Body containing ProblemDetails element containing type element set to \${problem_type} and }	SUT → Client

	title element containing more information about the error	
	}	
Permutation on TP Id	`\${invalid_body}`	`\${problem_type}`
TP/NGSI-LD/CI/Prov/E/001_02_01	invalid JSON document	https://uri.etsi.org/ngsi-ld/errors/InvalidRequest
TP/NGSI-LD/CI/Prov/E/001_02_02	empty	https://uri.etsi.org/ngsi-ld/errors/BadRequestData
TP/NGSI-LD/CI/Prov/E/001_02_03	entity with no context	https://uri.etsi.org/ngsi-ld/errors/BadRequestData

TP Id	TP/NGSI-LD/CI/Prov/E/001_03	
Test objective	Check that you cannot create an entity with an existing id	
Reference	ETSI GS CIM 009 V1.3.1 [1], clause 5.6.1	
Config Id	CF_01	
Parent Release	V1.3.1	
PICS Selection	PICS_5_6_1	
Initial conditions	with { the SUT being in the "initial state" and containing an initial Entity with an id set to `\${entityId}` }	
Expected behaviour	Test events	Direction
	<p>when { the SUT receives a Create Entity Request from the client containing URL set to /ngsi-ld/v1/entities and method set to POST and Header: Content-Type set to application/ld+json and body containing `\${entity}` with the id set to `\${entityId}` }</p> <p>then { the SUT sends a valid Response containing Response Status Code set to 409 (Already Exists) and Response Body containing ProblemDetails element containing type element set to https://uri.etsi.org/ngsi-ld/errors/AlreadyExists and title element containing more information about the error }</p>	<p>SUT ← Client</p> <p>SUT → Client</p>

TP Id	TP/NGSI-LD/CI/Prov/E/001_04	
Test objective	Check that the @context is obtained from a Link Header if the Content-Type header is "application/json"	
Reference	ETSI GS CIM 009 V1.3.1 [1], clause 6.3.5	
Config Id	CF_01	
Parent Release	V1.3.1	
PICS Selection	PICS_6_3_5	
Initial conditions	with { the SUT being in the "initial state" }	
Expected behaviour	Test events	Direction
	when { the SUT receives a valid Create Entity Request from the client containing URL set to /ngsi-lld/v1/entities and Header: Content-Type set to application/json and Header: Link set to a @context containing terms used by the entity to create body set to entity to be created }	SUT ← Client
	then { the SUT sends a valid Response containing Response Status Code set to 201 (Created) and Persisted Entity contains type and attributes expanded as per the supplied @context }	SUT → Client

TP Id	TP/NGSI-LD/CI/Prov/E/001_05	
Test objective	Check that the default @context is used if the Content-Type header is "application/json" and the Link header does not contain a JSON-LD @context	
Reference	ETSI GS CIM 009 V1.3.1 [1], clause 6.3.5	
Config Id	CF_01	
Parent Release	V1.3.1	
PICS Selection	PICS_6_3_5	
Initial conditions	with { the SUT being in the "initial state" }	

Expected behaviour	Test events	Direction
	when { the SUT receives a valid Create Entity Request from the client containing URL set to /ngsi-lv1/entities and Header: Content-Type set to application/json and body set to entity to be created }	SUT ← Client
	then { the SUT sends a valid Response containing Response Status Code set to 201 (Created) and Persisted Entity contains type and attributes expanded as per the default @context }	SUT → Client

TP Id	TP/NGSI-LD/CI/Prov/E/001_06	
Test objective	Check that an HTTP error response of type BadRequestData is raised if the Content-Type header is "application/json" and the request payload body (as JSON) contains a "@context" term	
Reference	ETSI GS CIM 009 V1.3.1 [1], clause 6.3.5	
Config Id	CF_01	
Parent Release	V1.3.1	
PICS Selection	PICS_6_3_5	
Initial conditions	with { the SUT being in the "initial state" }	
Expected behaviour	Test events	Direction
	when { the SUT receives a valid Create Entity Request from the client containing URL set to /ngsi-lv1/entities and Header: Content-Type set to application/json and body set to entity containing a @context term }	SUT ← Client
	then { the SUT sends a valid Response containing Response Status Code set to 400 (Bad Request) and Response Body containing ProblemDetails element containing	SUT → Client

	type element set to https://uri.etsi.org/ngsi-ld/errors/BadRequestData and title element containing more information about the error }	
--	---	--

TP Id	TP/NGSI-LD/CI/Prov/E/001_07	
Test objective	Check that the @context is obtained from the request payload body itself if the Content-Type header is "application/ld+json"	
Reference	ETSI GS CIM 009 V1.3.1 [1], clause 6.3.5	
Config Id	CF_01	
Parent Release	V1.3.1	
PICS Selection	PICS_6_3_5	
Initial conditions	with { the SUT being in the "initial state" }	
Expected behaviour	Test events when { the SUT receives a valid Create Entity Request from the client containing ETSI GS CIM 013 V1.1.1 (2021-05) https://standards.iteh.ai/catalog/standards/sist/37ec50a4-d72b-47b0-a995-c1814aa260c/etsi-gs-cim-013-v1-1-1-2021-05 URL set to /ngsi-ld/v1/entities and Header: Content-Type set to application/ld+json and body set to entity containing a @context term }	SUT ← Client
	then { the SUT sends a valid Response containing Response Status Code set to 201 (Created) and Persisted Entity contains type and attributes expanded as per the supplied @context }	SUT → Client

TP Id	TP/NGSI-LD/CI/Prov/E/001_08	
Test objective	Check that an HTTP error response of type BadRequestData is raised if the Content-Type header is "application/ld+json" and the request payload body does not contain a @context term	
Reference	ETSI GS CIM 009 V1.3.1 [1], clause 6.3.5	
Config Id	CF_01	
Parent Release	V1.3.1	
PICS Selection	PICS_6_3_5	

Initial conditions	with { the SUT being in the "initial state" }	
Expected behaviour	Test events	Direction
	when { the SUT receives a valid Create Entity Request from the client containing URL set to /ngsi-lid/v1/entities and Header: Content-Type set to application/ld+json and body set to entity not containing a @context term }	SUT ← Client
	then { the SUT sends a valid Response containing Response Status Code set to 400 (Bad Request) and Response Body containing ProblemDetails element containing type element set to https://uri.etsi.org/ngsi-lid/errors/BadRequestData and title element containing more information about the error } https://standards.iteh.ai/catalog/standards/sist/37ec50a4-d72b-47b0-a995-c1814faa260c/etsi-gs-cim-013-v1-1-1-2021-05	SUT → Client

TP Id	TP/NGSI-LD/CI/Prov/E/001_09	
Test objective	Check that an HTTP error response of type BadRequestData is raised if the Content-Type header is "application/ld+json" and a JSON-LD Link header is present in the incoming HTTP request	
Reference	ETSI GS CIM 009 V1.3.1 [1], clause 6.3.5	
Config Id	CF_01	
Parent Release	V1.3.1	
PICS Selection	PICS_6_3_5	
Initial conditions	with { the SUT being in the "initial state" }	
Expected behaviour	Test events	Direction
	when { the SUT receives a valid Batch Entity Create Request from the client containing URL set to /ngsi-lid/v1/entities and Header: Content-Type set to application/ld+json and }	SUT ← Client

	Header: Link set to a @context containing terms used by the entity to create body set to entity to be created }	
	then { the SUT sends a valid Response containing Response Status Code set to 400 (Bad Request) and Response Body containing ProblemDetails element containing type element set to https://uri.etsi.org/ngsi-Id/errors/BadRequestData and title element containing more information about the error }	SUT → Client

4.1.1.1.2 Delete Entity

TP Id	TP/NGSI-LD/CI/Prov/E/002_01	
Test objective	Check that you can delete an entity by id	
Reference	ETSI GS CIM 009 V1.3.1 [1], clause 5.6.6	
Config Id	CF_01	
Parent Release	V1.3.1	
PICS Selection	PICS_5_6_6	
Initial conditions	with { the SUT being in the "initial state" and containing an initial Entity with an id set to \${entityId} }	
Expected behaviour	Test events	Direction
	when { the SUT receives a valid Delete Entity Request from the client containing URL set to /ngsi-Id/v1/entities/\${entityId} and method set to DEL }	SUT ← Client
	then { the SUT sends a valid Response containing Response Status Code set to 204 (No Content) and does not contain an entity with \${entityId} }	SUT → Client

TP Id	TP/NGSI-LD/CI/Prov/E/002_02	
Test objective	Check that you cannot delete an entity with invalid/missing id	
Reference	ETSI GS CIM 009 V1.3.1 [1], clause 5.6.6	
Config Id	CF_01	
Parent Release	V1.3.1	
PICS Selection	PICS_5_6_6	
Initial conditions	with { the SUT being in the "initial state" }	
Expected behaviour	Test events	Direction
	when { the SUT receives an invalid Delete Entity Request from the client containing URL set to /ngsi-lid/v1/entities/{entityld_invalid} and method set to DEL }	SUT ← Client
	then { the SUT sends a valid Response containing Response Status Code set to 400 (Bad Request) and Response Body containing ProblemDetails element containing type element set to \${problem_type} and title element containing more information about the error }	SUT → Client
Permutation on TP Id		
TP/NGSI-LD/CI/Prov/E/002_02_01	Empty	https://uri.etsi.org/ngsi-lid/errors/BadRequestData
TP/NGSI-LD/CI/Prov/E/002_02_02	invalid URI	https://uri.etsi.org/ngsi-lid/errors/BadRequestData

TP Id	TP/NGSI-LD/CI/Prov/E/002_03
Test objective	Check that you cannot delete an entity if the entity id is not known to the system
Reference	ETSI GS CIM 009 V1.3.1 [1], clause 5.6.6
Config Id	CF_01
Parent Release	V1.3.1
PICS Selection	PICS_5_6_6
Initial conditions	with { the SUT being in the "initial state" }