Matter Standard Namespaces

Version 1.3

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Abstract:	The Matter specification defines fundamental requirements to enable an interoperable application layer solution for smart home devices over the Internet Protocol.
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Matter Semantic Tag Namespaces

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Revision History

Revision	Date	Details	Editor
1	October 18, 2023	Version 1.2	Robert Szewczyk
2	April 17, 2024	Version 1.3	Robert Szewczyk

Chapter 1. Introduction

This document contains namespaces as part of the semantic tag feature.

The standard namespaces are defined in this appendix. They consist of the common namespaces and device-specific namespaces.

The Common namespaces start with Namespace ID 0x01 and contains semantic tags that can apply to any domain. Examples include direction words like 'left', 'right', 'up' and 'down' or location words like 'inside' and 'outside'.

Device-specific namespaces begin with Namespace ID 0x41. The semantic tags defined in the device-specific namespaces SHALL be restricted for use within each device type or set of device types.

NOTE Some namespaces specific to certain group of device types (related to Energy and Laundry) have been assigned an ID from the common range, even though they are only applicable to a certain set of device types only.

A TagList MAY combine several of these tags, as appropriate for the device, provided that for any given device type the tags come from the namespace for that device type as well as any of the common namespaces, and/or from a manufacturer-specific namespace. Example: An outdoor luminaire with two light units, one shining upwards and one shining downwards. One light unit would be represented by an endpoint with a TagList which has TagStructs with Tags "Location.Outdoor" and "Position.Top" and "Direction.Upward", while the other light unit would be represented by an endpoint with a TagList which has TagStructs with Tags "Location.Outdoor" and "Position.Bottom" and "Direction.Downward".

ID	Namespace	Summary
Common namespaces		
0x01	Common Closure Namespace	Tags which are useful in describing things related to closing and opening
0x02	Common Compass Direction Namespace	Tags which are useful in describing things related to compass direction
0x03	Common Compass Location Namespace	Tags which are useful in describing things related to compass location
0x04	Common Direction Namespace	Tags which are useful in describing things related to direction
0x05	Common Level Namespace	Tags which are useful in describing things related to level

ID	Namespace	Summary
0x06	Common Location Namespace	Tags which are useful in describing things related to location
0x07	Common Number Namespace	Tags which are useful in describing things related to numbering
0x08	Common Position Namespace	Tags which are useful in describing things related to position
0x0A	Electrical Measurement Namespace	Tags which are useful in describing electrical loads
0x0E	Laundry Namespace	Tags which are useful with laundry device types
0x0F	Power Source Namespace	Tags which are useful with power source device types
Device-specific namespaces		
0x41	Refrigerator Namespace	Tags which are useful with refrigeration device types
0x42	Room Air Conditioner Namespace	Tags which are useful with Room Air Conditioner device types
0x43	Switches Namespace	Tags which are useful with switch device types

1.1. CSA Reference Documents

Reference	Reference Location/URL	Description //
[CoreSpec]	https://groups.csa-iot.org/wg/members-all/document/27349	Core Matter Specification //
[DeviceLibrary]	https://groups.csa-iot.org/wg/members-all/document/27351	Device Library //
[AppClusters]	https://groups.csa-iot.org/wg/members-all/document/27350	Application Clusters

Chapter 2. Common Closure Semantic Tag Namespace

This section contains the Common Closure semantic tag namespace as part of the semantic tag feature.

The tags contained in this namespace MAY be used in any domain or context, to indicate an association with a feature of a Closure, e.g. the button to activate opening a garage door.

ID	Namespace
0x01	Common Closure

The following tags are defined in this namespace.

ID	Name	Summary
0x00	Opening	Move toward open position
0x01	Closing	Move toward closed position
0x02	Stop	Stop any movement

Chapter 3. Common Compass Direction Semantic Tag Namespace

This section contains the Common Compass Direction semantic tag namespace as part of the semantic tag feature.

The tags contained in this namespace MAY be used in any domain or context, to indicate an association with a movement into a certain compass direction. Note the difference with Chapter 4, *Common Compass Location Semantic Tag Namespace*.

ID	Namespace
0x02	Common Compass Direction

The following tags are defined in this namespace.

ID	Name	Summary
0x00	Northward	
0x01	North-Eastward	
0x02	Eastward	
0x03	South-Eastward	
0x04	Southward	
0x05	South-Westward	
0x06	Westward	
0x07	North-Westward	

Chapter 4. Common Compass Location Semantic Tag Namespace

This section contains the Common Compass Location semantic tag namespace as part of the semantic tag feature.

The tags contained in this namespace MAY be used in any domain or context, to indicate an association with a position in a certain compass direction (e.g. an outdoor sensor in the North garden). Note the difference with Chapter 3, *Common Compass Direction Semantic Tag Namespace*.

ID	Namespace
0x03	Common Compass Location

The following tags are defined in this namespace.

ID	Name	Summary
0x00	North	
0x01	North-East	
0x02	East	
0x03	South-East	
0x04	South	
0x05	South-West	
0x06	West	
0x07	North-West	

Chapter 5. Common Direction Semantic Tag Namespace

This section contains the Common Direction semantic tag namespace as part of the semantic tag feature.

The tags contained in this namespace MAY be used in any domain or context, to indicate an association with a movement in a certain direction relative to the device. Note the difference with Chapter 9, *Common Position Semantic Tag Namespace*.

ID	Namespace
0x04	Common Direction

The following tags are defined in this namespace.

ID	Name	Summary
0x00	Upward	
0x01	Downward	
0x02	Leftward	
0x03	Rightward	
0x04	Forward	
0x05	Backward	

Chapter 6. Common Level Semantic Tag Namespace

This section contains the Common Level semantic tag namespace as part of the semantic tag feature.

The tags contained in this namespace MAY be used in any domain or context, to indicate an association with a certain level for a feature of a device (e.g. a button to set the speed of a fan).

ID	Namespace
0x05	Common Level

The following tags are defined in this namespace.

ID	Name	Summary
0x00	Low	
0x01	Medium	
0x02	High	

Chapter 7. Common Location Semantic Tag Namespace

This section contains the Common Location semantic tag namespace as part of the semantic tag feature.

The tags contained in this namespace MAY be used in any domain or context, to indicate an association with a location of a device (e.g. an outdoor temperature sensor).

ID	Namespace
0x06	Common Location

The following tags are defined in this namespace.

ID	Name	Summary
0x00	Indoor	Element is indoors or related to indoor equipment/conditions (e.g. the "indoor" temperature).
0x01	Outdoor	Element is outdoors or related to outdoor equipment/conditions (e.g. the "outdoor" temperature).
0x02	Inside	Element is located inside the equipment (e.g. a sensor "inside" a cabinet).
0x03	Outside	Element is located outside the equipment (e.g. a sensor "outside" a cabinet)

Chapter 8. Common Number Semantic Tag Namespace

This section contains the Common Number semantic tag namespace as part of the semantic tag feature.

The tags contained in this namespace MAY be used in any domain or context, to indicate an association with a certain numeric feature of a device (e.g. a numeric input button).

ID	Namespace
0x07	Common Number

The following tags are defined in this namespace.

ID	Name	Summary
0x00	Zero	
0x01	One	
0x02	Two	
0x03	Three	
0x04	Four	
0x05	Five	
0x06	Six	
0x07	Seven	
0x08	Eight	
0x09	Nine	
0x0A	Ten	

Chapter 9. Common Position Semantic Tag Namespace

This section contains the Common Position semantic tag namespace as part of the semantic tag feature.

The tags contained in this namespace MAY be used in any domain or context, to indicate an association with a position relative to the device (e.g. the temperature sensor in the top drawer of a refrigerator, or location of the buttons on a multi-button switch device). Note the difference with Chapter 5, *Common Direction Semantic Tag Namespace*.

ID	Namespace
0x08	Common Position

The following tags are defined in this namespace.

ID	Name	Summary
0x00	Left	
0x01	Right	
0x02	Top	
0x03	Bottom	
0x04	Middle	
0x05	Row	Numeric value provided in Label field
0x06	Column	Numeric value provided in Label field

When multiple endpoints are used for device types, and the associated consumer-facing locations of those endpoints are organized in a straight line, grid or matrix, these endpoints SHOULD be allocated in top-to-bottom, left-to-right order.

For grids or arrays larger than 3 elements in any direction, the Row and Column tags SHOULD be used.

If the Row or Column tags are used, the Label field in the same Semantic Tag structure SHALL be filled with a number comprised of Arabic numerals encoded as a string to indicate the row/column of the item. Number words (e.g. "one", "two", etc.) SHALL NOT be used to describe the position of the item. The first row/column SHALL use Label "1".

9.1. Examples

The following example illustrates a composed device comprised of 9 endpoints arranged in a 3x3 grid. This example uses position tags to indicate position.

Composed device arranged in a 3x3 grid		
Top Left	Top Middle	Top Right
Middle Left	Middle	Middle Right
Bottom Left	Bottom Middle	Bottom Right

The endpoints would be populated in this order (showing the TagList in their Descriptor cluster):

- EP 21: Top Left
- EP 22: Top Middle
- EP 23: Top Right
- EP 24: Middle Left
- EP 25: Middle
- EP 26: Middle Right
- EP 27: Bottom Left
- EP 28: Bottom Middle
- EP 29: Bottom Right

The following example illustrates a composed device comprised of 8 endpoints arranged in a 2x4 grid. This example uses the Row and Column tags along with Arabic numeral Labels to indicate position.

Row "1" Column "1"	Row "1" Column "2"	Row "1" Column "3"	Row "1" Column "4"
Row "2" Column "1"	Row "2" Column "2"	Row "2" Column "3"	Row "2" Column "4"

The endpoints would be populated in this order (showing the TagList in their Descriptor cluster):

- EP 31: {Row, "1"}, {Column, "1"}
- EP 32: {Row, "1"}, {Column, "2"}
- EP 33: {Row, "1"}, {Column, "3"}
- EP 34: {Row, "1"}, {Column, "4"}
- EP 35: {Row, "2"}, {Column, "1"}
- EP 36: {Row, "2"}, {Column, "2"}
- EP 37: {Row, "2"}, {Column, "3"}
- EP 38: {Row, "2"}, {Column, "4"}

Chapter 10. Electrical Measurement Semantic Tag Namespace

This section contains the standard semantic tag namespace for electrical measurement as part of the semantic tag feature.

The tags contained in this namespace are restricted for use in the electrical measurement domain and SHALL NOT be used in any other domain or context.

ID	Namespace
0x0A	Electrical Measurement

The following tags are defined in this namespace.

ID	Name	Summary
0x00	DC	Indicates values measured for a DC load
0x01	AC	Indicates values measured for a single-phase AC load, or values measured for the collective load on a polyphase AC power supply
0x02	ACPhase1	Indicates values measured for an AC load on phase 1 of a polyphase power supply
0x03	ACPhase2	Indicates values measured for an AC load on phase 2 of a polyphase power supply
0x04	ACPhase3	Indicates values measured for an AC load on phase 3 of a polyphase power supply

Chapter 11. Laundry Semantic Tag Namespace

This section contains the standard semantic tag namespace for laundry as part of the semantic tag feature.

The tags contained in this namespace are restricted for use in the laundry domain and SHALL NOT be used in any other domain or context.

ID	Namespace
0x0E	Laundry

The following tags are defined in this namespace.

ID	Name	Summary
0x00	Normal	
0x01	Light Dry	
0x02	Extra Dry	
0x03	No Dry	

Chapter 12. Power Source Semantic Tag Namespace

This section contains the standard semantic tag namespace for power sources as part of the semantic tag feature.

The tags contained in this namespace are restricted for use in the power source domain and SHALL NOT be used in any other domain or context.

ID	Namespace
0x0F	Power Source

The following tags are defined in this namespace.

ID	Name	Summary
0x00	Unknown	The Power Source cluster is related to power provided from an unknown source
0x01	Grid	The Power Source cluster is related to power provided from the electrical grid
0x02	Solar	The Power Source cluster is related to power provided from a solar panel array
0x03	Battery	The Power Source cluster is related to power provided from a battery
0x04	EV	The Power Source cluster is related to power provided from an electric vehicle

12.1. Grid Tag

Power Source clusters with this tag SHALL implement the WIRED feature.

12.2. Solar Tag

Power Source clusters with this tag SHALL implement the WIRED feature.

12.3. Battery Tag

Power Source clusters with this tag SHALL implement the BAT feature.

12.4. EV Tag

Power Source clusters with this tag SHALL implement the BAT feature.

Chapter 13. Refrigerator Semantic Tag Namespace

This section contains the standard semantic tag namespace for refrigerators as part of the semantic tag feature.

The tags contained in this namespace are restricted for use in the refrigerator domain and SHALL NOT be used in any other domain or context.

ID	Namespace
0x41	Refrigerator

The following tags are defined in this namespace.

ID	Name	Summary
0x00	Refrigerator	
0x01	Freezer	

Chapter 14. Room Air Conditioner Semantic Tag Namespace

This section contains the standard semantic tag namespace for room air conditioners as part of the semantic tag feature.

The tags contained in this namespace are restricted for use in the room air conditioner domain and SHALL NOT be used in any other domain or context.

ID	Namespace
0x42	Room Air Conditioner

The following tags are defined in this namespace.

ID	Name	Summary
0x00	Evaporator	
0x01	Condenser	

Chapter 15. Switches Semantic Tag Namespace

This section contains the standard semantic tag namespace for switches as part of the semantic tag feature.

The tags contained in this namespace are restricted for use in the switches domain and SHALL NOT be used in any other domain or context. They are intended to indicate the function of a button on a switch device to allow a client to make an optimized user interface which matches the actual device without requiring a-priori knowledge of the layout of each specific switch device.

Please see the rules for applying these and other tags for switch devices, e.g. from the Common Position Namespace and the Common Number Namespace in the Generic Switch device type section in the Device Library.

ID	Namespace
0x43	Switches

The following tags are defined in this namespace.

ID	Name	Summary
tags to identify intended function of a button		
0x00	On	
0x01	Off	
0x02	Toggle	
0x03	Up	e.g. dim up (light)
0x04	Down	e.g. dim down (light)
0x05	Next	e.g. select next scene
0x06	Previous	e.g. select previous scene
0x07	Enter/OK/Select	
0x08	Custom	Textual description provided in Label field

15.1. Custom Tag

When this value is used, the Label field in the same Semantic Tag structure SHALL be filled with a textual description of the function indicated on the button, such as a label or icon printed on the button, e.g. "dining".