Sample Mapping #	Mapping Type	Topics/Substitutions	API	Template-Source	Target-Payload	Expected Result

01	JSON	mappingTopic: /plant1/+/+
		mappingTopicSample: /plant1/line1/device1_measure1_Type
		check: Create non existing device
		
		sub:
		1. [*
		_TOPIC_LEVEL_[1]&"_"&_TOPIC_LEVEL_[2]&"_"&$substringBefore(_TOPIC_
		LEVEL_[3],"_") -> _IDENTITY_.externalId]
		2. [$substringAfter(_TOPIC_LEVEL_[3],"_") -> type]
		3. [$now() -> time]
		4. [value -> measure1_Type.V.value]
			M	{
				"value": 100
				}
					{
					"measure1_Type": {
					"V": {
					"value": 110,
					"unit": "C"
					}
					},
					"time": "2022-08-05T00:14:49.389+02:00",
					"type": "c8y_TemperatureMeasurement"
					}
						For the device with external id: plant1_line1_device1 a measurement c8y_TemperatureMeasurement should be created.
						The device is created implicitly.

02	JSON	mappingTopic: devices/+
		mappingTopicSample: devices/device_best_01
		check: Create non existing device
		
		sub:
		1. [* _TOPIC_LEVEL_[1] -> _IDENTITY_.externalId]
		2. [mea.values[0].value ->
		c8y_ProcessLoadMeasurement.L.value]
		3. [$map($map(mea.values[0].timestamp, $number),
		function($v, $i, $a) { $fromMillis($v) }) -> time]
		check expand to array for this substitution
			M	{
				"mea": [
				{
				"tid": "uuid_01",
				"psid": "Crest",
				"devicePath":
				"path01_80_X03_VVB001StatusB_Crest",
				"values": [
				{
				"value": 4.6,
				"timestamp": 1648562285347
				}
				]
				},
				{
				"tid": "uuid_02",
				"psid": "Crest",
				"devicePath":
				"path01_80_X03_VVB001StatusB_Crest",
				"values": [
				{
				"value": 5.6,
				"timestamp": 1648563285347
				}
				]
				}
				]
				}
					{
					"c8y_ProcessLoadMeasurement": {
					"L": {
					"value": 110,
					"unit": "%"
					}
					},
					"time": "2022-08-05T00:14:49.389+02:00",
					"type": "c8y_ProcessLoadMeasurement"
					}
						For the device with external id: device_best_01 multiple measurements should be created.
						The device is created implicitly.

03	JSON	mappingTopic: device/express/+
		mappingTopicSample: device/express/berlin_01
		check: Use external id
		
		sub:
		1. [* _TOPIC_LEVEL_[2] -> _IDENTITY_.externalId]
		2. [customType -> type]
		3. [operator&"-"&line -> name]
		4. [capacity -> capacity]
			I	{
				"line": "Bus-Berlin-Rom",
				"operator": "EuroBus",
				"customFragment": {
				"customFragmentValue": "Express"
				},
				"capacity": 64,
				"customArray": [
				"ArrayValue1",
				"ArrayValue2"
				],
				"customType": "type_International"
				}
					{
					"c8y_IsDevice": {},
					"com_cumulocity_model_Agent": {},
					"name": "Bus Name",
					"type": "type_bus",
					"capacity": 100,
					"time": "2022-08-05T00:14:49.389+02:00",
					}
						Create device with:
						1. external id: berlin_01
						2. name: EuroBus-Bus-Berlin-Rom
						3. type: type_International

04	JSON	mappingTopic: event/+
		mappingTopicSample: event/berlin_01
		check: Use external id
		
		sub:
		
		1. [* _TOPIC_LEVEL_[1] -> _IDENTITY_.externalId]
		2. [txt->text]
		3. [msg_type -> type]
		4. [$now() -> time]
			E	{
				"msg_type": "c8y_BusStopEvent",
				"txt": "Bus stopped at petrol station today!",
				"td": "2022-09-08T16:21:53.389+02:00",
				"ts": "1665473038000"
				}
					{
					"text": "This is a new test event.",
					"time": "2022-08-05T00:14:49.389+02:00",
					"type": "c8y_GeneralBusEvent"
					}
						Event for existing device should be created
						
						mention [
						$fromMillis($number(deviceTim
						estamp))->time]

05	JSON	mappingTopic: measurement/+/gazoline
		mappingTopicSample: measurement/berlin_01/gazoline
		check: Use external id
		
		sub:
		1. [* _TOPIC_LEVEL_[1] -> _IDENTITY_.externalId]
		2. [fuel -> c8y_FuelMeasurement.F.value]
		3. [$now() -> time]
			M	{
				"fuel": 65,
				"ts": "2022-08-05T00:14:49.389+02:00",
				"mea": "c8y_FuelMeasurement"
				}
					{
					"c8y_FuelMeasurement": {
					"L": {
					"value": 110,
					"unit": "L"
					}
					},
					"time": "2022-10-18T00:14:49.389+02:00",
					"type": "c8y_FuelMeasurement"
					}
						Add c8y_FuelMeasurement to bus.

Sample Mapping #	Mapping Type	Topics/Substitutions	API	Template-Source	Target-Payload	Expected Result

06	JSON	mappingTopic: multiarray/devices
		mappingTopicSample: multiarray/devices
		check: Use external id
		
		sub:
		1. [* device -> _IDENTITY_.externalId] , choose option “Expand Array”
		2. [types.type_A -> type]
		3. [$map(used_name, function($v, $i, $a) { $contains($v,'d1') ? $join(['Special_i0', $string($i)]) : $join([$string($v), $string($i)]) }) -> name] , choose option “Expand Array”
			I	{
				"device": [
				"d1_id",
				"d2_id"
				],
				"types": {
				"type_A": "type_A",
				"type_B": "type_B"
				},
				"used_name": [
				"Pressure_d1",
				"Pressure_d2"
				]
				}
					{
					"c8y_IsDevice": {},
					"name": "Vibration Sensor",
					"type": "maker_Vibration_Sensor"
					}
						New Devices:
						1. Pressure_d21
						2. Special_i00
						should be created.
						
						All device have the same type “type_A”

07	JSON	mappingTopic: arrayType/devices
		mappingTopicSample: arrayType/devices
		check: Create non existing device
		check: Use external id
		
		sub:
		1. [$substringBefore($[0].devicePath,"_AL") -> _IDENTITY_.externalId]
		2. [$[].values[0].value -> c8y_TemperatureMeasurement.T.value] , choose option “Expand Array”
		3. [$map($map($[].values[0].timestamp, $number), function($v) { $fromMillis($v)}) -> time] , choose option “Expand Array”
			M	[
				{
				"tid": "5e4bac9f-b47a-499e-8601-68fc16a9847c",
				"psid": "Crest",
				"devicePath": "c2818e07-4c09-42f0-ba24-ddb712573ab5_AL1352_192168221_80_X03_VVB001StatusB_Crest",
				"processDataUnit": "20",
				"values": [
				{
				"value": 4.6,
				"timestamp": 1648562285347
				}
				]
				},
				{
				"tid": "5e4bac9f-b47a-499e-8601-68fc16a9847c",
				"psid": "Crest",
				"devicePath": "c2818e07-4c09-42f0-ba24-ddb712573ab5_AL1352_192168221_80_X03_VVB001StatusB_Crest",
				"processDataUnit": "20",
				"values": [
				{
				"value": 5.6,
				"timestamp": 1648562285347
				}
				]
				}
				]
					{
					"c8y_TemperatureMeasurement": {
					"T": {
					"value": 110,
					"unit": "C"
					}
					},
					"time": "2022-08-05T00:14:49.389+02:00",
					"type": "c8y_TemperatureMeasurement"
					}
						Create one device implicitly with the name: device_c8y_Serial_c2818e07-4c09-42f0-ba24-ddb712573ab5 and for this device create two measurements of type: "c8y_TemperatureMeasurement"

08	JSON	mappingTopic: eventObject/+
		mappingTopicSample: eventObject/berlin_01
		check: Use external id
		
		sub:
		1. [_TOPIC_LEVEL_[1] -> _IDENTITY_.externalId]
		2. [txt -> text]
		3. [msg_type -> type]
		4. [$now() -> time]
		5. [model -> customProperties]
		choose Repair Strategy: REMOVE_IF_MISSING_OR_NULL
			E	{
				"msg_type": "c8y_BusStopEvent",
				"txt": "Bus stopped at petrol station today!",
				"td": "2022-09-08T16:21:53.389+02:00",
				"model": {
				"name": "MAN e-Bus"
				}
				}
					{
					"text": "This is a new test event.",
					"time": "2022-08-05T00:14:49.389+02:00",
					"type": "c8y_TestEvent",
					"customProperties": "dummy"
					}
						Create event for device.
						If the source payload contains the fragment model it is mapped to customProperties.
						If it does not contain th e fragment the customProperties is removed from the target payload.

09	JSON	mappingTopic: measurementObject/+/gazoline
		mappingTopicSample: measurementObject/berlin_01/gazoline
		check: Use external id
		
		sub:
		1. [* _TOPIC_LEVEL_[1] -> _IDENTITY_.externalId]
		2. [mea -> type]
		3. [$now() -> time]
		4. [fuel*3.78541 -> c8y_FuelMeasurement.Tank.value]
		5. [(oil?{"Motor": {"value":oil, "unit":"l"}}:null) -> c8y_OilMeasurement]
		choose Repair Strategy:
		REMOVE_IF_MISSING_OR_NULL
			M	{
				"fuel": 65,
				"oil": 4.5,
				"ts": "2022-08-05T00:14:49.389+02:00",
				"mea": "c8y_FuelMeasurement"
				}
					{
					"c8y_FuelMeasurement": {
					"Tank": {
					"value": 110,
					"unit": "l"
					}
					},
					"c8y_OilMeasurement": "undefined",
					"time": "2022-08-05T00:14:49.389+02:00",
					"type": "c8y_FuelMeasurement"
					}
						This mapping makes use of the option "REMOVE_IF_MISSING_OR_NULL". The incoming payload can contain either properties: "fuel", "oil" or both. Depending on this the relevant fragments n the Cumulocity measurement are created.

Sample Mapping #	Mapping Type	Topics/Substitutions	API	Template-Source	Target-Payload	Expected Result

10	HEX	mappingTopic: hex/+
		mappingTopicSample: hex/berlin_01
		check: Use external id
		
		sub:
		
		1. [* _TOPIC_LEVEL_[1] -> _IDENTITY_.externalId]
		2. [$number($substring(message,0,6)) -> value]
			E	Hex Code: 0x41b1
				No leading 0x, only the plain payload as hexadecimal numbers
					{
					"text": "This is a new test event.",
					"time": "2022-08-05T00:14:49.389+02:00",
					"type": "c8y_TestEvent",
					"value": 99
					}
						Snoop recorded message

11	JSON	mappingTopic: operation/+
		mappingTopicSample: operation/berlin_01
		check: Use external id
		
		sub:
		
		1. [* _TOPIC_LEVEL_[1] -> deviceId]
		2. [$join([text,"_",$now()]) -> description]
			O	{
				"text": "Special operation restart"
				}
					{
					"description": "New camera operation!",
					"type": "maintenance_operation"
					}
						Create operation "maintenance_operation" for device with extenralId berlin_01

12	HEX	mappingTopic: hexEvent/+
		mappingTopicSample: hexEvent/berlin_01
		check: Use external id
		
		sub:
		
		1. ["Temp: "&$number($substring(message,0,4))&" C" -> text]
		2. [* _TOPIC_LEVEL_[1] -> _IDENTITY_.externalId]
		3. [$now() -> time]
			E	Hex Code: 0x5a75
				No leading 0x, only the plain payload as hexadecimal numbers
					{
					"text": "This is a new test event.",
					"time": "2022-08-05T00:14:49.389+02:00",
					"type": "c8y_TestEvent"
					}
						Send c8y_TestEvent to device with externalId berlin_01

13	JSON	mappingTopic: device/update/+
		mappingTopicSample: device/update/berlin_01
		check: Use external id
		
		sub:
		1. [* _TOPIC_LEVEL_[2] -> _IDENTITY_.externalId]
		2. [customType->type]
			I	{
				"customType": "type_Overnight"
				}
					{
					"type": "type_any"
					}
						Update type of existing device.

14	PROTOBUF_INTERNAL	mappingTopic: protobuf/measurement
		mappingTopicSample: protobuf/measurement
		check: Use external id
		
		sub:
		Defined in cumulocity-dynamic-mapper/dynamic-mapping-service/src/main/java/dynamic/mapping/processor/processor/fixed/StaticProtobufProcessor.java
			M	Send message in protobuf format:
				
				option java_package = "mqtt.mapping.processor.protobuf";
				option java_outer_classname = "MeasurementProto";
				message CustomMeasurement {
				int64 timestamp = 1;
				float value = 2;
				string unit = 3;
				string externalIdType = 4;
				string externalId = 5;
				string measurementType = 6;
				}
				
				Use test client:
				cumulocity-dynamic-mapper/dynamic-mapping-service/src/test/java/dynamic/mapping/ProtobufMqttClient.java
					{
					"c8y_GenericMeasurement": {
					"Module": {
					"value": 110,
					"unit": "l"
					}
					},
					"time": "2022-08-05T00:14:49.389+02:00",
					"type": "c8y_GenericMeasurement_type"
					}
						Use test client:
						cumulocity-dynamic-mapper/dynamic-mapping-service/src/test/java/dynamic/mapping/ProtobufMqttClient.java to create a new measurement for bus "berlin_01"

15	EXTENSION_SOURCE	mappingTopic: protobuf/event
		mappingTopicSample: protobuf/event
		check: Use external id
		
		sub:
		Defined in cumulocity-dynamic-mapper/dynamic-mapping-extension/src/main/java/dynamic/mapping/processor/extension/external/ProcessorExtensionCustomEvent.java
		
		In selection: Extensions for PROCESSOR_EXTENSION
		choose:
		dynamic-mapping-extension
		
		In selection: Events for dynamic-mapping-extension
		choose:
		CustomEvent
			E	Send message in protobuf format:
				
				syntax = "proto3";
				package processor.protobuf;
				
				option java_package =
				"mqtt.mapping.processor.extension.external";
				option java_outer_classname = "CustomEventOuter";
				
				message CustomEvent {
				int64 timestamp = 1;
				string txt = 2;
				string unit = 3;
				string externalIdType = 4;
				string externalId = 5;
				string eventType = 6;
				}
				
				Use test client:
				cumulocity-dynamic-mapper/dynamic-mapping-extension/src/test/java/dynamic/mapping/ProtobufMqttClient.java
					{
					"text": "This is a new test event.",
					"time": "2022-08-05T00:14:49.389+02:00",
					"type": "c8y_TestEvent"
					}
						Use test client:
						cumulocity-dynamic-mapper/dynamic-mapping-extension/src/test/java/dynamic/mapping/ProtobufMqttClient.java
						to create a new event for bus "berlin_01"

Sample Mapping #	Mapping Type	Topics/Substitutions	API	Template-Source	Target-Payload	Expected Result

16	JSON	mappingTopic: panel
		mappingTopicSample: panel
		check: Create non existing device
		check: Use external id
		
		sub:
		1. [* deviceId -> _IDENTITY_.externalId]
		2. [$fromMillis($number(deviceTimestamp)) -> time]
		3. [temperature -> c8y_TemperatureMeasurement.T.value]
			M	{
				"deviceId": "863859042393327",
				"version": "1",
				"deviceType": "20",
				"deviceTimestamp": "1665473038000",
				"deviceStatus": "BTR",
				"temperature": 90
				}
					{
					"c8y_TemperatureMeasurement": {
					"T": {
					"value": 110,
					"unit": "C"
					}
					},
					"time": "2022-08-05T00:14:49.389+02:00",
					"type": "c8y_TemperatureMeasurement"
					}
						Devices with external id: 863859042393327 does not exist and is implicitly created.
						For this device an new measurement is created.

17	JSON	mappingTopic: panel
		mappingTopicSample: panel
		check: Use external id
		
		sub:
		1. [deviceId -> _IDENTITY_.externalId]
		2. [[$now() -> time]]
		3. ['New device status: ' & deviceStatus & '!' -> text]
			E	{
				"deviceId": "863859042393327",
				"version": "1",
				"deviceType": "20",
				"deviceTimestamp": "1665473038000",
				"deviceStatus": "BTR",
				"temperature": 90
				}
					{
					"text": "New device status: BTR!",
					"time": "2022-11-24T00:14:49.389+02:00",
					"type": "c8y_GeneralPanelEvent"
					}
						For this device an new event is created.

18	JSON	mappingTopic: flexM/+/gazoline
		mappingTopicSample: flexM/berlin_01/gazoline
		check: Use external id
		
		sub:
		1. [* _TOPIC_LEVEL_[1] > _IDENTITY_.externalId]
		2. [Measurementname & "_type" -> type]
		3. [Measurementname = "Airsensor" ? {Seriesname:{"value": value, "unit": unit}} : null -> Airsensor]]
		select: Repair Strategy: REMOVE_IF_NULL_OR_MISSING
		4. [Measurementname = "Liquidsensor" ? {Seriesname:{"value": value, "unit": unit}} : null -> Liquidsensor]
		select: Repair Strategy: REMOVE_IF_NULL_OR_MISSING
		5. [$now() -> time]
			M	{
				"Measurementname": "Airsensor",
				"Seriesname": "Humidity",
				"value": 10,
				"unit": "%"
				}
					{
					"Airsensor": "dummy",
					"Liquidsensor": "dummy",
					"time": "2022-08-05T00:14:49.389+02:00",
					"type": "c8y_measurementtype"
					}
						Depending on the content in the payload:
						1. is "Airsensor" present
						2. is "Liquidsensor" present either mapping 3. or 4. is evaluated and the relevant fragment in the measurement is crrested.

19	JSON	mappingTopic: alarm/tires
		mappingTopicSample: alarm/tires
		check: Use external id
		
		sub:
		1. [bus_id -> _IDENTITY_.externalId]
		2. [msg_type -> type]
		3. [tx -> text]
			A	{
				"msg_type": "c8y_FlatTireAlarm",
				"tx": "Left rear tire loses air!",
				"bus_id": "berlin_01"
				}
					{
					"type": "c8y_FlatTireAlarm",
					"text": "Left rear tire loses air!",
					"severity": "MAJOR",
					"status": "ACTIVE",
					"time": "2022-03-19T12:03:27.845Z"
					}
						An alarm should be created for the device berlin_01.

20	EXTENSION_SOURCE	mappingTopic: measurementExt
		mappingTopicSample: measurementExt
		mapppingType: Processor Extension Source
		check: Use external id
		
		sub:
		Extension for PROCESSOR_EXTENSION_SOURCE:
		dynamic-mapping-externsion
		Events for dynamic-mapping-extension: CustomMeasurement
		
		Defined in
		cumulocity-dynamic-mapper/dynamic-mapping-extension/src/main/java/dynamic/mapping/processor/extension/external/ProcessorExtensionCustomMeasurement.java
			M	{
				"temperature": 120.5,
				"unit": "Celsius",
				"time": "2023-07-12T16:21:53.389+02:00",
				"externalId": "berlin_01",
				"unexpected": 17.5
				}
					{
					"time": "2022-08-05T00:14:49.389+02:00",
					"type": "c8y_Temperature",
					"c8y_Temperature": "dummy",
					"c8y_Fragment_to_remove": "remove_me"
					}
						A measasurement should be created for the device berlin_01.
						The fragment "c8y_Fragment_to_remove" is not included in the created measurement, as the repair strategy is "REMOVE_IF_NULL". In addition the reapair strategy "CREATE_IF_MISSING" is used. This is required to map the node "unexpected" to the target fragment "c8y_Unexpected". This is created, due to the used reapir strategy.

21	JSON	mappingTopic: v2/things/+
		mappingTopicSample: v2/things/berlin_01
		check: Use external id
		
		1. [* _TOPIC_LEVEL_[2] -> _IDENTITY_.externalId]
		2. [$now() -> time]
		3. [values{key: {'Measurement':{'value':value, 'key': 'U'}}} -> $]
			M	{
				"values":[
				{
				"key":"velocidad_cabezal",
				"value":136.34
				},
				{
				"key":"temperature",
				"value":25
				}
				]
				}
					{
					"time":"2022-08-05T00:14:49.389+02:00",
					"type":"c8y_FlexibleMeasurement"
					}
						A measurement with two fragments:
						1. velocidad_cabezal
						2. temperature
						is created.
						It demonstrates the use of a substitution using "$" as a target. This results in merging the extracted content with the predefined target template.

Sample Mapping #	Mapping Type	Topics/Substitutions	API	Template-Source	Target-Payload	Expected Result

22	JSON	mappingTopic: v3/things/+
		mappingTopicSample: v3/things/berlin_01
		check: Use external id
		
		1. [* _TOPIC_LEVEL_[2] -> _IDENTITY_.externalId]
		2. [$now() -> time]
		3. [$map(values, function ($v) { {$v.key: {'Measurement':{'value':$v.value, 'unit': 'U'}}}}) -> $ }]
		select: Expand as array
			M	{
				"values":[
				{
				"key":"velocidad_cabezal",
				"value":136.34
				},
				{
				"key":"temperature",
				"value":25
				}
				]
				}
					{
					"time":"2022-08-05T00:14:49.389+02:00",
					"type":"c8y_FlexibleMeasurement"
					}
						Two measurements with different fragments:
						1. velocidad_cabezal
						2. temperature
						are created.
						It demonstrates the use of a substitution using "$" as a target. This results in merging the extracted content with the predefined target template in combination with the attribute "expand2Array". See as well mapping 21.

23	JSON	mappingTopic: datalogger/0018
		mappingTopicSample: datalogger/0018
		check: Use external id
		
		1. [* ID -> _IDENTITY_.externalId]
		2. [$replace(ts,' ','T') -> time]
		3. [$map($spread(meas), function($v, $k) { { $keys($v): {
		"value": $lookup($v,$keys($v))[0], "unit": "l/h" } } })~>$merge()
		-> onguardMeasurement]
			M	{
				"ID": "0018",
				"meas": {
				"Product1_Flow": [
				14.93
				],
				"Water_Flow": [
				18.54
				],
				"Product2_Flow": [
				272.9
				],
				},
				"ts": "2024-06-18 13:20:45.000Z",
				"timestampUTC": "2024-06-18T13:20:45.000Z"
				}
					{
					"onguardMeasurement": null,
					"time": "2022-08-05T00:14:49.389+02:00",
					"type": "onguardMeasurement"
					}
						Map the structure under meas as fragments in the measurements. The number of keys in meas can vary and must therefore be generated dynamically.

24	EXTENSION_SOURCE_TARGET	mappingTopic: extension/source_target
		mappingTopicSample: extension/source_target
		check: Use external id
		
		Extensions for Processor Extension Source Target:
		select
		Events for:
		select
		
		Defined in
		cumulocity-dynamic-mapper/dynamic-mapping-extension/src/main/java/dynamic/mapping/processor/extension/external/ProcessorExtensionCustomAlarm.java
			A	{
				"alarmType": "MAJOR",
				"message": "This is an alamr for the extension!",
				"type": "c8y_ExtensionAlarm",
				"externalId": "berlin_01",
				"time": "2024-06-18T13:20:45.000Z"
				}
					{
					"onguardMeasurement": null,
					"time": "2022-08-05T00:14:49.389+02:00",
					"type": "onguardMeasurement"
					}
						the extraction and the substitution in the tagetPayload are implemented in java, see. ProcessorExtensionCustomAlarm.java.
						This is useful if the processing of the source payload can't be achieved in JSONata and the building of the tragetP payload (Cumulocity) cant be achieved by standard substitutions.

25	JSON	mappingTopic: alarm/tires_c8ySourceId
		mappingTopicSample: alarm/tires_c8ySourceId
		~~check: Use external id~~
		
		sub:
		1. [bus_c8ySourceId -> _IDENTITY_.c8ySourceId]
		2. [msg_type -> type]
		3. [tx -> text]
			A	{
				"msg_type": "c8y_FlatTireAlarm",
				"tx": "Left rear tire loses air!",
				"bus_c8ySourceId": "10203040"
				}
					{
					"type": "c8y_FlatTireAlarm",
					"text": "Left rear tire loses air!",
					"severity": "MAJOR",
					"status": "ACTIVE",
					"time": "2022-03-19T12:03:27.845Z"
					}
						An alarm should be created for the device identified by a Cumulocity id.
						This is in contrast to the mapping 19, which uses the external id: "berlin_01"

51	JSON
	OUTBOUND
		publishTopic: evt/outbound/#
		mappingTopicSample: evt/outbound/berlin_01
		filterMapping: bus_event
		NOTE: for outbound mappings no tt (template topic) is defined.
		check: Use external id
		
		sub:
		1. [_IDENTITY_.c8ySourceId -> _TOPIC_LEVEL_[2]]
		2. [type -> eventType]
		3. [$now() -> time]
		4. [bus_event -> bus_event]
		5. [_IDENTITY_.externalId -> deviceId]
			E	{
				"type": "c8y_BusEvent",
				"text": "Bus was stopped",
				"time": "2022-08-05T00:14:49.389+02:00",
				"bus_event": "stop_event"
				}
					{
					"deviceId": "909090",
					"description": "This is a new test event.",
					"time": "2022-08-05T00:14:49.389+02:00",
					"eventType": "TestEvent",
					"bus_event": "stop_event",
					"_TOPIC_LEVEL_": [
					"evt",
					"outbound",
					"berlin_01"
					]
					}
						Publish mqtt msg. with event on topic 'evt/outbound/berlin_01'
						Use following command to create sample event:
						c8y events create --device "YOUR_DEVICE_ID" --data 'bus_event="stop_event", text="Bus was stopped today!", type="c8y_BusEvent"'

Sample Mapping #	Mapping Type	Topics/Substitutions	API	Template-Source	Target-Payload	Expected Result

52	JSON
	OUTBOUND
		publishTopic: opp/outbound/#
		mappingTopicSample: opp/outbound/berlin_01
		filterMapping: bus_opp
		check: Use external id
		
		NOTE: for outbound mappings no tt (template topic) is defined.
		
		sub:
		1. [_IDENTITY_.externalId -> _TOPIC_LEVEL_[2]]
		choose: Resolve to externalId
		2. [bus_opp -> decription]
		3. [* _IDENTITY_.c8ySourceId -> c8y_Id]
			O	{
				"bus_opp": "New engine restart operation!"
				}
					{
					"c8y_Id": "909090",
					"decription": "dummy operation",
					"type": "bus_operation",
					"_TOPIC_LEVEL_": [
					"opp",
					"outbound",
					"berlin_01"
					]
					}
						Publish mqtt msg. with operation on topic 'opp/outbound/berlin_01'
						Use following command to create sample event:
						c8y operations create --device "YOUR_DEVICE_ID" --data 'bus_opp="New engine restart operation!"'
						Note: The option "resolve2ExternalId = false" esures that the C8Y internal device id is used in substitution 3.

53	JSON
	OUTBOUND
		publishTopic: evt/outDeviceId/#
		mappingTopicSample: evt/outDeviceId/berlin_01
		filterMapping: bus_event
		NOTE: for outbound mappings no tt (template topic) is defined.
		check: Use external id
		
		sub:
		1. [_IDENTITY_.externalId -> _TOPIC_LEVEL_[2]]
		2. [type -> eventType]
		3. [$now() -> time]
		4. [bus_event -> bus_event]
		5. [_IDENTITY_.c8ySourceId -> c8y_Id]
		6. [text -> description]
			E	{
				"type": "c8y_BusEvent",
				"text": "Bus was stopped",
				"time": "2022-08-05T00:14:49.389+02:00",
				"bus_event": "stop_event"
				}
					{
					"c8y_Id": "909090",
					"description": "This is a new test event.",
					"time": "2022-08-05T00:14:49.389+02:00",
					"eventType": "TestEvent",
					"bus_event": "stop_event",
					"_TOPIC_LEVEL_": [
					"evt",
					"outbound",
					"berlin_01"
					]
					}
						Publish mqtt msg. with event on topic 'evt/outbound/berlin_01'
						Use following command to create sample event:
						c8y events create --device "YOUR_DEVICE_ID" --data 'bus_event="stop_event", text="Bus was stopped today!", type="c8y_BusEvent"'

54	JSON
	OUTBOUND
		publishTopic: ednvcfnr-event
		mappingTopicSample: ednvcfnr-event
		filterMapping: bus_event
		NOTE: for outbound mappings no tt (template topic) is defined.
		check: Use external id
		check: Use message context
		
		sub:
		1. [_IDENTITY_.externalId -> _CONTEXT_DATA_.key]
		2. [type -> eventType]
		3. [$now() -> time]
		4. [bus_event -> bus_event]
		5. [_IDENTITY_.externalId -> deviceId]
			E	{
				"type": "c8y_BusEvent",
				"text": "Bus was stopped",
				"time": "2022-08-05T00:14:49.389+02:00",
				"bus_event": "stop_event"
				}
					{
					"deviceId": "909090",
					"description": "This is a new test event.",
					"time": "2022-08-05T00:14:49.389+02:00",
					"eventType": "TestEvent",
					"bus_event": "stop_event",
					"_TOPIC_LEVEL_": [
					"evt",
					"outbound",
					"berlin_01"
					]
					}
						Publish msg. to kafka with event on topic 'ednvcfnr-event'
						Use following command to create sample event:
						c8y events create --device "YOUR_DEVICE_ID" --data 'bus_event="stop_event", text="Bus was stopped today!", type="c8y_BusEvent"'.
						The Cumulocity device id is added as key (message context).