

Ticket Management

Business Service Specification

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TICKET MANAGEMENT

The following document is the specification of the REST API for the ticket resource. It includes the model definition as well as all available operations. Possible actions are creating and retrieving a Trouble Ticket, updating the whole Trouble Ticket or only do a patch update. Furthermore the HTTP GET allows filtering.

The Trouble ticketing API provides a standardized client interface to Trouble Ticket Management Systems for creating, tracking and managing trouble tickets among partners as a result of an issue or problem identified by a customer or another system. Examples of Trouble Ticket API originators (clients) include CRM applications, network management or fault management systems, or other trouble ticket management systems (e.g. B2B).

The API supports the ability to send requests to create a new trouble ticket specifying the nature and severity of the trouble as well as all necessary related information. The API also includes mechanisms to search for and update existing trouble tickets. Notifications are defined to provide information when a ticket has been updated, including status changes. A basic set of states of a trouble ticket has been specified to handle ticket lifecycle management.

Trouble ticketing API manages Trouble ticket resource:

A trouble ticket represents a record used for reporting and managing the resolution of resource problems

Main trouble ticket attributes are its description, severity, type, related dates (creation, target resolution, resolution), state, sub state and related information (change reason and change date), related parties (originator, owner, reviser, etc.) and notes

Trouble ticketing API performs the following operations on trouble ticket:

Retrieval of a trouble ticket or a collection of trouble ticket depending on filter criteria
Full update of a trouble ticket
Partial update of a trouble ticket
Creation of a trouble ticket

Notification of events on Trouble Ticket:

- o Ticket state change
- o Ticket change
- o Ticket clearance request
- o Information required

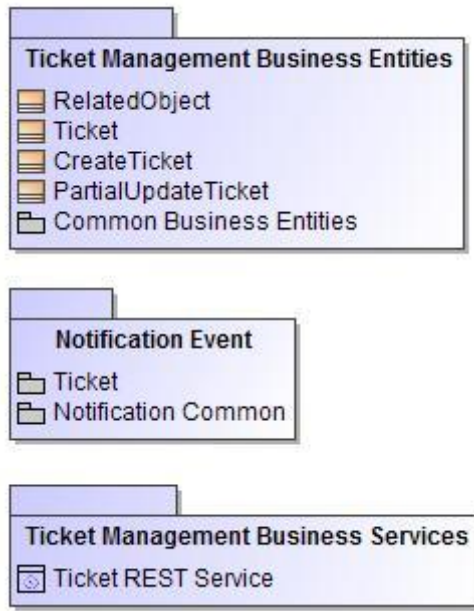


Figure 1. Ticket Management

TICKET MANAGEMENT BUSINESS ENTITIES

Trouble ticketing API manages Trouble ticket resource:

- A trouble ticket represents a record used for reporting and managing the resolution of resource problems
- Main trouble ticket attributes are its description, severity, type, related dates (creation, target resolution, resolution), state, sub state and related information (change reason and change date), related parties (originator, owner, reviser, etc.) and notes

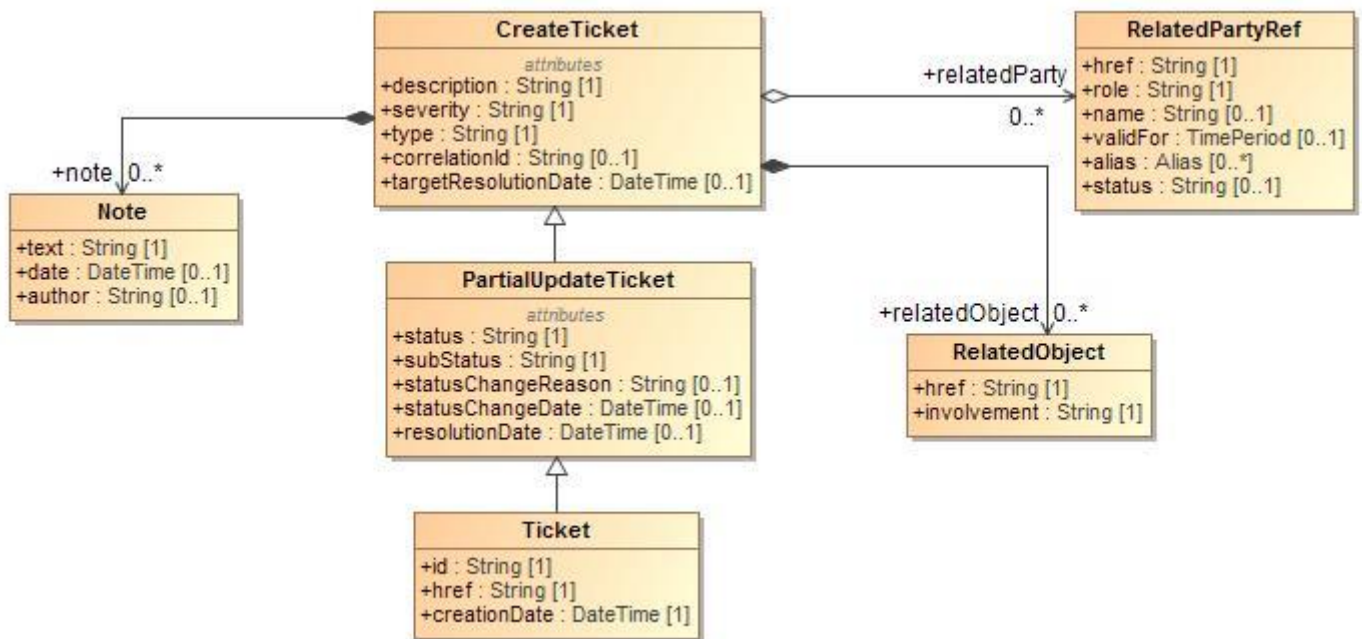


Figure 2. Ticket

BUSINESS ENTITY – CREATETICKET

Attributes

Name	Type	Multiplicity	Description
correlationId	String	0..1	Additional identifier coming from an external system
description	String	1	Description of the trouble
note	Note	0..*	Extra-information about the trouble ticket
relatedObject	RelatedObject	0..*	
relatedParty	RelatedPartyRef	0..*	Party playing a role within trouble ticket
severity	String	1	The severity of the trouble. It can be for example : minor, major, critical
targetResolutionDate	DateTime	0..1	Foreseen trouble resolution date
type	String	1	Type of trouble ticket

BUSINESS ENTITY – PARTIALUPDATETICKET

Attributes

Name	Type	Multiplicity	Description
correlationId	String	0..1	Additional identifier coming from an external system
description	String	1	Description of the trouble
note	Note	0..*	Extra-information about the trouble ticket
relatedObject	RelatedObject	0..*	
relatedParty	RelatedPartyRef	0..*	Party playing a role within trouble ticket
resolutionDate	DateTime	0..1	The date on which the service was brought back to its original condition
severity	String	1	The severity of the trouble. It can be for example : minor, major, critical
status	String	1	The current status of the Trouble Ticket - submitted, rejected, acknowledged, in progress (pending), in progress (held), cancelled, resolved, closed.
statusChangeDate	DateTime	0..1	The date of state change
statusChangeReason	String	0..1	The reason of state change
subStatus	String	1	The current subStatus of the Trouble Ticket - pending, held.
targetResolutionDate	DateTime	0..1	Foreseen trouble resolution date
type	String	1	Type of trouble ticket

Business Rules

Name	Severity	Specification	Message
can be updated		[description severity type targetResolutionDate status - submitted, rejected, acknowledged, in progress (pending), in progress (held), cancelled, resolved, closed subStatus - pending, held statusChangeReason statusChangeDate resolutionDate relatedParty[] relatedObject[] note[]]	

BUSINESS ENTITY – RELATEDOBJECT

Attributes

Name	Type	Multiplicity	Description
href	String	1	Identifier of the object
involvement	String	1	

BUSINESS ENTITY – TICKET

Attributes

Name	Type	Multiplicity	Description
correlationId	String	0..1	Additional identifier coming from an external system
creationDate	DateTime	1	The date on which the trouble was discovered

description	String	1	Description of the trouble
href	String	1	Reference to the ticket
id	String	1	Unique identifier of the trouble ticket
note	Note	0..*	Extra-information about the trouble ticket
relatedObject	RelatedObject	0..*	
relatedParty	RelatedPartyRef	0..*	Party playing a role within trouble ticket
resolutionDate	DateTime	0..1	The date on which the service was brought back to its original condition
severity	String	1	The severity of the trouble. It can be for example : minor, major, critical
status	String	1	The current status of the Trouble Ticket - submitted, rejected, acknowledged, in progress (pending), in progress (held), cancelled, resolved, closed.
statusChangeDate	DateTime	0..1	The date of state change
statusChangeReason	String	0..1	The reason of state change
subStatus	String	1	The current subStatus of the Trouble Ticket - pending, held.
targetResolutionDate	DateTime	0..1	Foreseen trouble resolution date
type	String	1	Type of trouble ticket

COMMON BUSINESS ENTITIES

BUSINESS ENTITY – ALIAS

Attributes

Name	Type	Multiplicity	Description
type	String		
value	String		

BUSINESS ENTITY – ARRAYUPDATE

Used to partially update an array

Attributes

Name	Type	Multiplicity	Description
op	String		Operation to be performed on the array - test, remove, add, replace, move, copy
path	String		The reference to the array to be modified
value	String		

BUSINESS ENTITY – BILLINGACCOUNTREF

BillingAccount to use to bill the ordered products.

Attributes

Name	Type	Multiplicity	Description
href	String	1	Reference of the billing account.

BUSINESS ENTITY – CHARACTERISTIC

Describes the characteristics of the individual or the organization such as individual hobbies, center of interests.

Attributes

Name	Type	Multiplicity	Description
name	String	1	Name of the characteristic.
value	String	0..1	Value of the characteristic.

BUSINESS ENTITY – CONTACTMEDIUM

Describes the contact mediums that could be used to contact the customer (Email, TelephoneNumber, PostalAddress).

Attributes

Name	Type	Multiplicity	Description
isPreferred	Boolean	0..1	If true, indicates that is the preferred contact medium.
medium	Medium	0..1	Describes the contact medium that can be

			used to contact the customer.
type	String	1	Email address, telephone number, postal address, etc.
validFor	TimePeriod	0..1	The time period that the contact medium is valid for.

BUSINESS ENTITY – CREATELISTENER

Attributes

Name	Type	Multiplicity	Description
callback	String		Callback address of the listener
query	String		

BUSINESS ENTITY – CREDENTIAL

Attributes

Name	Type	Multiplicity	Description
login	String		
password	String		
updateType	String		

BUSINESS ENTITY – HEADER

Attributes

Name	Type	Multiplicity	Description
key	String		URL Parameter Key e.g., Content-Type
value	String		Value e.g., application/json, application/xml

BUSINESS ENTITY – LISTENER

Attributes

Name	Type	Multiplicity	Description
callback	String		Callback address of the listener
href	String	1	Reference to the listener
id	String	1	
query	String		

BUSINESS ENTITY – MEDIUM

Describes the contact medium that can be used to contact the customer.

Attributes

Name	Type	Multiplicity	Description
city	String	0..1	
country	String	0..1	
emailAddress	String	0..1	Full e-mail address in standard format (e.g., fred.bloggs@thing.com)

number	String	0..1	Phone number
postcode	String	0..1	Postcode
stateOrProvince	String	0..1	State or province
street1	String	0..1	Describes the street
street2	String	0..1	Complementary street description
type	String	0..1	Type of medium (fax, mobile phone...)

BUSINESS ENTITY – MONEY

A base / value business entity used to represent money

Attributes

Name	Type	Multiplicity	Description
amount	Float	1	A positive floating point number.
currencyCode	String	1	Currency. Notes: refer to [ISO 4217]
digits	Integer	0..1	Number of digits to the right of the decimal point

BUSINESS ENTITY – NOTE

Extra-information about an entity (e.g. useful to add extra delivery information that could be useful for a human process : a digicode access to a building, ...).

Attributes

Name	Type	Multiplicity	Description
author	String	0..1	Author of the note
date	DateTime	0..1	Date of the note
text	String	1	Text of the note

BUSINESS ENTITY – PAYMENTMEANREF

Attributes

Name	Type	Multiplicity	Description
href	String	1	Reference of the payment means
name	String	0..1	Name of the payment means

BUSINESS ENTITY – PERIOD

defines the period of a recurring charge

Attributes

Name	Type	Multiplicity	Description
endPeriod	DateTime	0..1	End date of the period
startPeriod	DateTime	1	Start date of the period

Business Rules

Name	Severity	Specification	Message
StartPeriod Before EndPeriod	error	[startPeriod.before(endPeriod) or startPeriod = endPeriod]	The start period must be on or before the end period.

BUSINESS ENTITY – PLACEREF

Used to defined a place useful for the entity (for example a delivery geographical place).

Attributes

Name	Type	Multiplicity	Description
href	String	1	Reference of a place (for instance in Google map).
role	String	1	Role of the place (for instance delivery geographical place).

BUSINESS ENTITY – RELATEDPARTYREF

Defines party or partyRole linked to a specific entity. Used to represent an association between a resource and a party or role object playing a role regarding that object.

Attributes

Name	Type	Multiplicity	Description
alias	Alias	0..*	
href	String	1	Reference to the related party.
name	String	0..1	Name of the related party.
role	String	1	Role of the related party.
status	String	0..1	The status of the relationship between the party and the related entity.
validFor	TimePeriod	0..1	The period for which the related party is valid.

BUSINESS ENTITY – TIMEPERIOD

Attributes

Name	Type	Multiplicity	Description
endTime	DateTime	0..1	
startTime	DateTime	1	

Business Rules

Name	Severity	Specification	Message
Start DateTime Before End DateTime	error	[startTime.before(endDateTime) or startTime = endDateTime]	The start period must be on or before the end period.

NOTIFICATION EVENT

Refer to Common Management Spec for details on how to Register and Unregister a Listener.

The notification events supported by Ticket Management are:

- o Ticket state change
- o Ticket update
- o Ticket clearance request
- o Information required

The Event is published to the registered listener

REST Example:

POST client/listener

TICKET

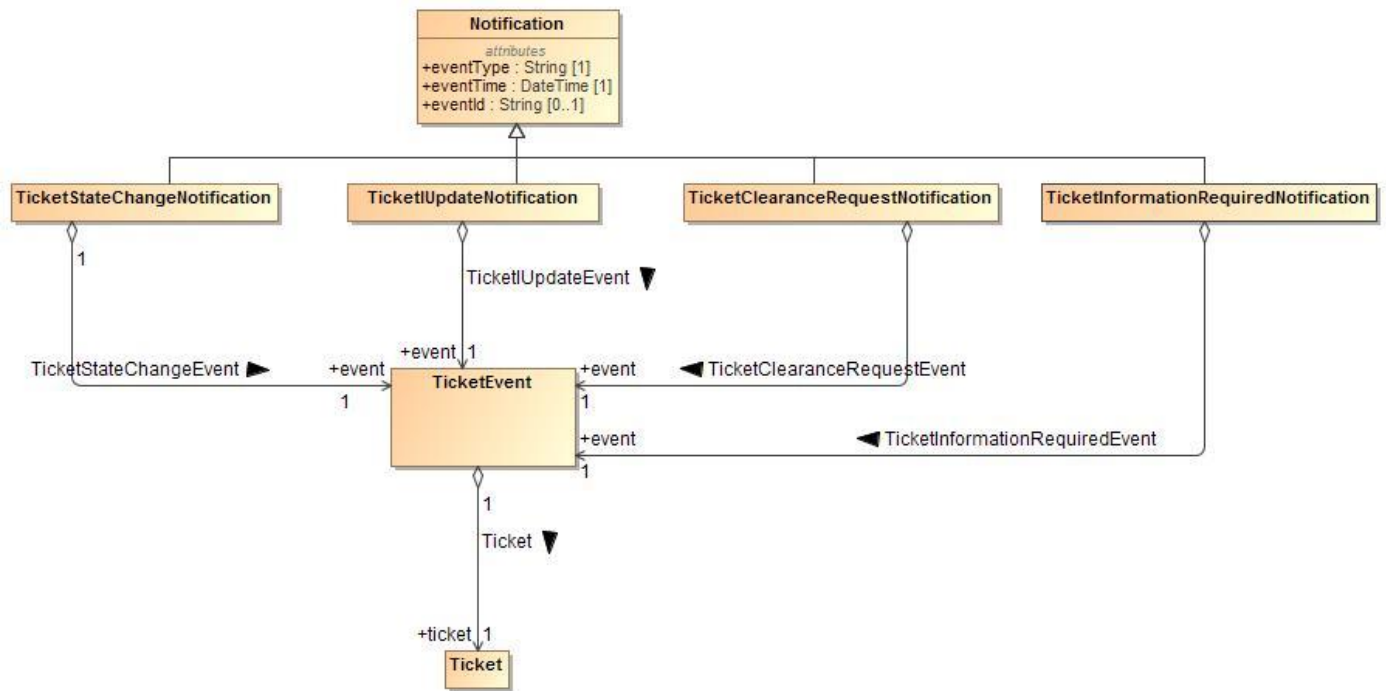


Figure 3. Ticket Notification

BUSINESS ENTITY – TICKETCLEARANCEREQUESTNOTIFICATION

Attributes

Name	Type	Multiplicity	Description
event	TicketEvent	1	
eventId	String	0..1	Unique identifier of the event
eventTime	DateTime	1	
eventType	String	1	

BUSINESS ENTITY – TICKETEVENT

Attributes

Name	Type	Multiplicity	Description
ticket	Ticket	1	

BUSINESS ENTITY – TICKETINFORMATIONREQUIREDNOTIFICATION

Attributes

Name	Type	Multiplicity	Description
event	TicketEvent	1	
eventId	String	0..1	Unique identifier of the event
eventTime	DateTime	1	
eventType	String	1	

BUSINESS ENTITY – TICKETLUPDATENOTIFICATION

Attributes

Name	Type	Multiplicity	Description
event	TicketEvent	1	
eventId	String	0..1	Unique identifier of the event
eventTime	DateTime	1	
eventType	String	1	

BUSINESS ENTITY – TICKETSTATECHANGENOTIFICATION

Attributes

Name	Type	Multiplicity	Description
event	TicketEvent	1	
eventId	String	0..1	Unique identifier of the event
eventTime	DateTime	1	
eventType	String	1	

NOTIFICATION COMMON**BUSINESS ENTITY – NOTIFICATION**

Attributes

Name	Type	Multiplicity	Description
eventId	String	0..1	Unique identifier of the event
eventTime	DateTime	1	
eventType	String	1	

STATEMACHINE

TicketSM

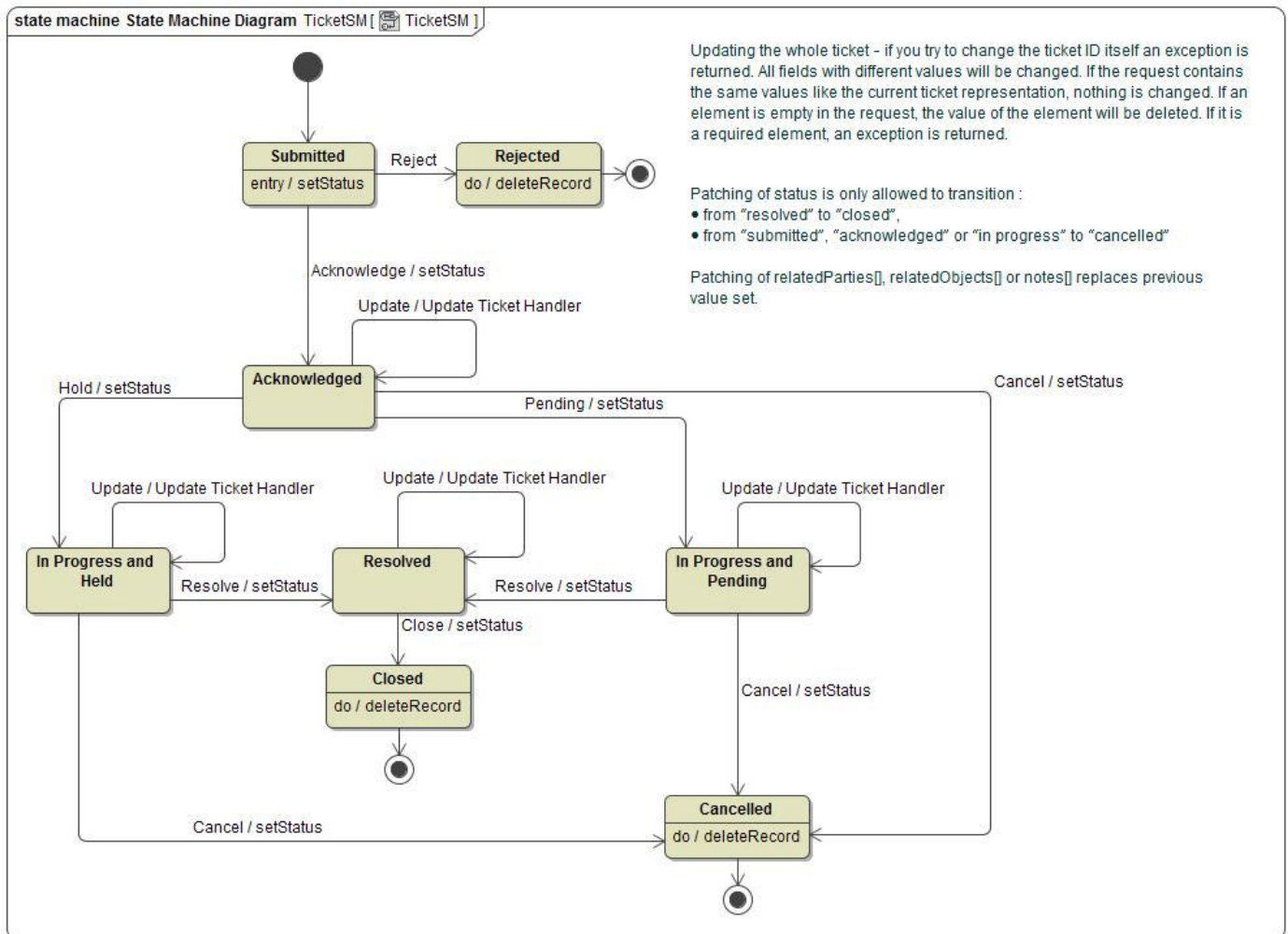


Figure 4. TicketSM

Name	Description
Acknowledged	The Trouble Ticket was accepted and allocated a unique Trouble Ticket ID by the TT handler.
Cancelled	
Closed	The Trouble Ticket's originator has acknowledged the Resolved state of the TT, or the timeframe for acknowledgment has passed without response from TT originator.
In Progress and Held	The Trouble Ticket was validated by the TT handler and is being processed. TT handler is confirming further details internally before completing a Trouble Ticket. An example is where TT handler for network infrastructure spare parts to progress with the Fault rectification.
In Progress and Pending	The Trouble Ticket was validated by the TT handler and is being processed. TT handler is awaiting further confirmation on details of a Fault from originator before it can progress the Fault. An example is where Appointment information is required.
Rejected	The Trouble Ticket was rejected because it: is not submitted; provides invalid information; fails to meet the Business Rules in respect of the Product which originator is raising a Trouble Ticket against; is otherwise defective.
Resolved	The Fault indicated in the Trouble Ticket was corrected by the TT handler and acknowledgment is awaited from its originator.

Submitted	The initial state of a Trouble Ticket when created by a TT originator.
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TICKET MANAGEMENT BUSINESS SERVICES

BUSINESS SERVICE – TICKET REST SERVICE

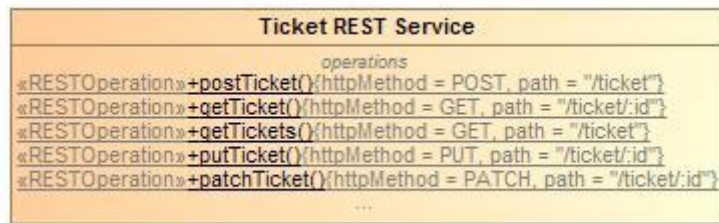


Figure 5. ticket Business Service

OPERATION – POSTTICKET

Description

This operation is used to create a ticket.

Business Rules

Name	Severity	Specification	Message
mandatory attributes		[description severity type]	

OPERATION – GETTICKET

Description

This operation is used to retrieve a ticket depending on filter criteria.

Business Rules

Name	Severity	Specification	Message
mandatory attributes		[id]	

OPERATION – GETTICKETS

Description

This operation is used to retrieve a collection of tickets depending on filter criteria.

OPERATION – PUTTICKET

Description

This operation is used to completely update the representation of a ticket.

Business Rules

Name	Severity	Specification	Message
mandatory attributes		[id]	

OPERATION – PATCHTICKET

Description

This operation is used to partially update the representation of a ticket.

Business Rules

Name	Severity	Specification	Message
can be updated		[description severity type targetResolutionDate status - submitted, rejected, acknowledged, in progress (pending), in progress (held), cancelled, resolved, closed subStatus - pending, held statusChangeReason statusChangeDate resolutionDate relatedParty[] relatedObject[] note[]]	
mandatory attributes		[id]	

HUB BUSINESS SERVICE

The notification events supported by Ticket Management are:

- o Ticket state change
- o Ticket change
- o Ticket clearance request
- o Information required

The Event is published to the registered listener

REST Example:

POST client/listener

BUSINESS SERVICE – HUB REST SERVICE

OPERATION – REGISTERLISTENER

Description

This operation is used to register a listener to be notified of the following events: create, update and delete.

Business Rules

Name	Severity	Specification	Message
mandatory attributes		[description severity type]	

OPERATION – UNREGISTERLISTENER

Description

This operation is used to unregister a listener.

Business Rules

Name	Severity	Specification	Message
mandatory attributes		[description severity type]	