User guide for Sofia Airport Asset Management System

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General description of the system

This guide effectively describes functionality and usage of the asset management system we developed with TG. System is devoted to keeping the record on all Assets in airport's possession, their condition/service status and planning the maintenance of assets as well as capital expenditure projects. For you as a user we tried to make it as simple as it possible and follow all the possible and reasonable integrity constraints. Now we will guide you through the architecture and main functionality of the system.

I.   ASSET TABLE CODES

Asset Table Codes is the section you see in the upper-right corner on the main page. The logic behind the section in keeping all the high-level information about the asset. Besides, here you can find information about high-level owners or managers of entities as, for example, Asset Type. You can find more information about specific entities and their properties below.

Asset Class & Asset Type

As a user you sometimes don't want to spend an attention on every specific asset and rather manage them all-together based on some of their characteristics. You want to somehow centralize them. Here come Asset Class and Asset Type. Asset Class is a high-level classification category for assets. Among possible classes are vehicles, networks, signs, lights etc. There is no explicit list of possible Asset Classes so any new Class can be created. As a user of the system you can specify unique Asset Class with following required properties:

'name' - unique identifier of an Asset Class. The minimum length of the name is 3 symbols.
'desc' - place all the relevant details about this Asset Class in this field.

Asset Type is associated with AssetClass and represents a specific type of an asset, e.g. fire engine, control tower, baggage handling system. Asset Type has following properties required:

'name' - unique identifier of an Asset Type

'desc' - description for an additional information about the type

'assetClass' - respective value of Asset Class. Asset Class must be chosen among classes created before

'active' - represents if this AssetType is being used. Deactivating asset types does not delete them from the system, but indicates they are not in airport's inventory.

Asset Type Ownership, Operationship & Management

Users are able to record the details about ownership, operatorship and management of assets and their types on the platform. The example of the situation when you want to record the ownership of an asset type could be the ownership of control towers. As a rule, each specific control tower (so the whole type) belongs to the airport. Similar logic could be applied for asset type operatorship and management. For recording one of the asset type ownership, operatorship or management details, please go to the AssetTypeOwnership, AssetTypeOperatorship or AssetTypeManagement correspondingly and specify following properties:

'assetType' - required, respective value of the AssetType. Asset type must already exist in the database. In our example - control tower.

'startDate' - required, start date of the ownership etc.

'role', *'businessUnit'*, *'organization'* - one of those is required, however any two of the are mutually exclusive. Could be of the types Role, BusinessUnit or Organization respectively. Chosen from the database, so should exist before an assignment.

Asset Ownership, Operationship & Management

In the case, when you have an asset owner that is distinct from the owner of its type, you can specify it by creating the entity of AssetOwnership by the analogy to AssetType-Ownership. Otherwise, the ownership for the asset woulb be default to the ownership of the corresponding asset type. Similar logic is applied for the asset management and asset operatorship.

II.   ASSET SERVICE CODES

Condition Rating & Service Status

As a user, you want to know the condition of your assets and details about their maintenance. ConditionRating and ServiceStatus classes implement the ability to specify the condition of an asset, its service status and keep an eye on them. Condition Rating of an asset contains the description of Asset's condition. Example of a Condition Rating can be: 'needs repair', 'functioning' etc. It has two required properties: rating and description. Service Status has similar implementation. If you want to create new ConditionRating or ServiceStatus you simply go to the corresponding fields in Asset Service Codes menu and specify all the required properties.

Asset Service Status

Just having several Service Statuses entities don't give any added value to you as a user of the platform. What we really want for maintaining assets is to specify the service statuses of specific assets. If you want to specify the service status of an asset, just go to the Asset Service Status field in Asset Service Codes menu and fill in following required fields:

'asset' - asset you want to specify the maintenance details for, should already exist in the database
'startDate' - start date of the service
'serviceStatus' - the current service status of an asset, should alsready exist un the database

III.   ORGANIZATIONAL

In the lower-right corner in the main menu you see the icon for Organizational menu. Here you are able to add and manage organizational entities that could own, operate or manage assets or asset types.

Role, Business Unit & Organization

For now there are three types of entities that could own, operate or manage asset or asset type: Role, Business Unit and Organization. The logic behind them is straightforward and the functional of entities is fully the same. If you want to register new Role, Business Unit or Organization, simply go to the Organizational field in the main menu, choose the appropriate type and fill in following required fields:

'name' - unique identifier of a Role, Business Unir or Organization
'desc' - description for an additional information about the class.

IV.   ASSET ACQUISITION

Asset & Asset Financial Details

Asset is associated with Asset Type and represents a concrete asset. Asset has following properties:

'number' - unique identifier of an Asset Type. 6-digit id is automatically generated upon save operation. Integrity contraints apply, and an Asset which saving operation wasn't successful will keep its id when the information is corrected and successful save proceeds.
'desc' - description for an additional information about the asset
'AssetType' - respective value of Asset Type. Asset Type must be chosen among classes created before.
'regulatory' - a flag that shows that variable is under any real legal regulation. To be used during generation of reports for the Commision.
'active' - represents if an Asset is being in active use. Deactivated Asset means it has been deprecated. *'keyService'* *'loadingRate'* - value from 0 to 100 which indicates to which extent the Asset is used. Value of 0 means that it is spare, whilst value of 100 - that current operator uses it to 100% and it cannot be used by anybody else.

Asset Financial Details has a one-to-one correspondence with Asset and represents relevant financial details about it. All properties are optional.
Properties:

'acquireDate' - date when the Asset was purchased.

'initCost' - the cost of purchasing or creating an Asset.

'project' - capital expenditure project for which the Asset was acquired.

Following integrity constraints apply to Asset Financial Details:

If project is specified acquireDate must fall into the project duration(from startDate to finishDate). If acquireDate is not specified but the project is assigned - acquireDate is defualted to the project startDate.

Project

Entity Project is needed for managing capital expenditures including acquiring new assets and upgrading existing ones.

Properties:

'name' - unique identifier of the project. Required property.

'startDate' - date when the project begins. Required property.

'finishDate' - date when the project is completed. Not required, so projects with open peroids are allowed.

With the project entity Assets can be grouped and operated in logical groups. Information about the project a specific Asset belongs to can be recorded in Asset Financial Details.

Asset Ownership, Operationship & Management

Step-by-step: how to create an asset

Creation of an Asset. Go to the Asset Master and follow the instructions:
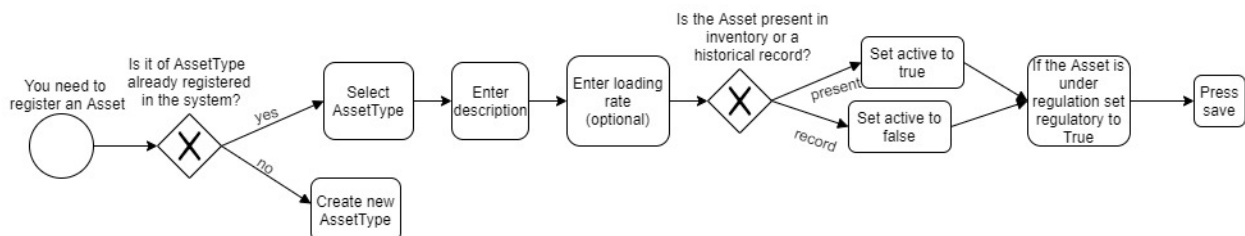
After save operation Asset is persisted into the database and unique number is generated

for it.

Creating new Asset Type:

If Asset Types that are present in the system do not align with your Asset's type you may want to create a new Asset Type. If the Asset Class(a higher level category is present in the system, than simply go to Asset Type master, select corresponding Asset Class, specify name, fill relevant details in description and set active property if the Asset Type is in active use. If you cannot find an Asset Class you need, consider creating a new one from the Asset Class master in the very similar way Asset Type is created.

Specifying Project and Financial Details:

After Asset is saved respective Financial Details entity is associated with it. To specify relevant financial details go to the Asset Fin Det centre, find your Asset and press 'Edit'. In the window that appeared you can specify acquisition date, initial cost and project that this asset belongs to. Please note, that all properties are optional, e.g. Asset could be purchased independently of any capital expenditure projects. If both acquire date and project are specified acquire date must fall into project period(in case of projects with open period - after project start date), otherwise, an error would be raised. Also, if project is provided and acquire date is not, the acquire date is by default set to project start date.