**Functional Specification Document: Access Management Framework**

**1. Introduction**

The Access Management Framework is designed to provide a generic solution for managing access to functionalities within software systems. This document outlines the key features, entities, and functionalities of the framework to guide its development and implementation.

**2. System Overview**

**2.1 System Modes**

* The system can operate in two modes:
  + Standalone mode: Intended for single-instance deployment.
  + Software as a Service (SaaS) mode: Supports multiple instances with varying configurations.

**2.2 Entities**

* **Member**: Represents a subscriber of the system. Each member may have one or more users associated with it.
* **User**: An entity accessing the system, associated with a member and assigned roles within workspaces.
* **Workspace Type**: Defines structural divisions of an organization's working area.
* **Workspace**: Represents an instance of a workspace type.
* **Role**: Defines a group of logically related actions, assigned to users within workspaces.
* **Role Group**: Bundles a set of roles for convenient assignment to users within a workspace.
* **Application**: Represents a logical grouping of modules and actions.
* **Module**: Represents a subset of functionalities within an application.
* **Action**: Individual functionalities within a module.

**3. System Functionality**

**3.1 Member Management**

* Creation of Members:
  + Members can be created in both standalone and SaaS modes.
  + Each member is associated with a root workspace type.

**3.2 User Management**

* Creation of Users:
  + Users are automatically created upon member creation.
  + Members can have one or more users associated with them.

**3.3 Workspace Management**

* Creation of Workspaces:
  + Workspace types define structural divisions of an organization.
  + Each member has a root workspace automatically created upon membership.
  + Workspaces represent instances of workspace types.

**3.4 Role Management**

* Creation of Roles:
  + Roles define groups of actions assigned to users within workspaces.
  + Roles are defined at the member level.

**3.5 Role Group Management**

* Creation of Role Groups:
  + Role groups bundle sets of roles for convenient assignment to users within workspaces.
  + Role groups are only used for assignment purposes and are not set as references to users within workspaces.

**3.6 Application and Action Management**

* Creation of Applications:
  + Applications represent logical groupings of modules and actions.
* Creation of Modules and Actions:
  + Modules encompass sets of functionalities within applications.
  + Actions represent individual functionalities within modules.

**3.7 Access Control**

* Users are assigned roles within workspaces.
* Role assignments determine access to functionalities within applications.

**3.8 Subscription Management**

* Members can subscribe to one or more applications.
* Applications may contain various functionalities bundled into application packages.
* Application package groups allow members to subscribe to multiple applications as one package.

**4. Conclusion**

The Access Management Framework provides a flexible and scalable solution for managing access to functionalities within software systems. By defining entities such as members, users, workspaces, roles, and applications, along with their respective management functionalities, the framework facilitates efficient access control and subscription management.

Review Comments: