

**Project in Software Analysis and Design**

**IT Asset Management  
System - Abissnet**

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# IT Asset Management System

## 1. Overview

This proposed IT Asset Management System is designed specifically for **Abissnet**, an Internet Service Provider (ISP) to efficiently handle and keep track of all their technological tools and software. This system points out several key features:

- **Inventory Management:** It maintains an updated list of all the Abissnet's hardwares, noting important details like brand, type, and their locations. This helps them know what they have and where it's located.
- **Asset Tracking:** The system keeps an eye on these hardwares throughout their lifecycle, making it easy to find them, check their condition, and plan for repairs or replacements when needed.
- **Software License Management:** It ensures Abissnet stays within the rules by monitoring the software they use. This prevents unnecessary spending and ensures they're using software properly.
- **Auditing:** It creates a history log of everything that happens with the hardware and software, making it simple to check if things were done correctly and who did what.
- **Financial Analysis:** This feature helps Abissnet understand how much their hardware is worth, where they should spend money to improve, and when it's time to get new hardwares.
- **Reports and Analytics:** It generates detailed reports showing how much hardware is being used, when they might need fixing or replacing, and other useful information.
- **Integration:** It will be integrated with Otello making it easier for everyone to share important information, especially in the case of support and where there are problems solving different problems and issues that customer experience and they really don't know how to explain in technical terms.

### Benefits for the Company:

- **Time Saving:** It makes work quicker by organizing everything, so employees spend less time searching for things.
- **Cost Saving:** It prevents unnecessary spending on software and helps make smarter decisions about where to invest money.
- **Better Decision-Making:** The reports provide valuable insights, making it easier to decide which hardware needs attention and when.
- **Regulation Compliance:** It ensures that Abissnet is following the rules and keeping records properly.
- **Team Collaboration:** By connecting with other systems, it promotes teamwork and simplifies data sharing among different departments.

## 2. Stakeholders

### 2.1 Stakeholders Table

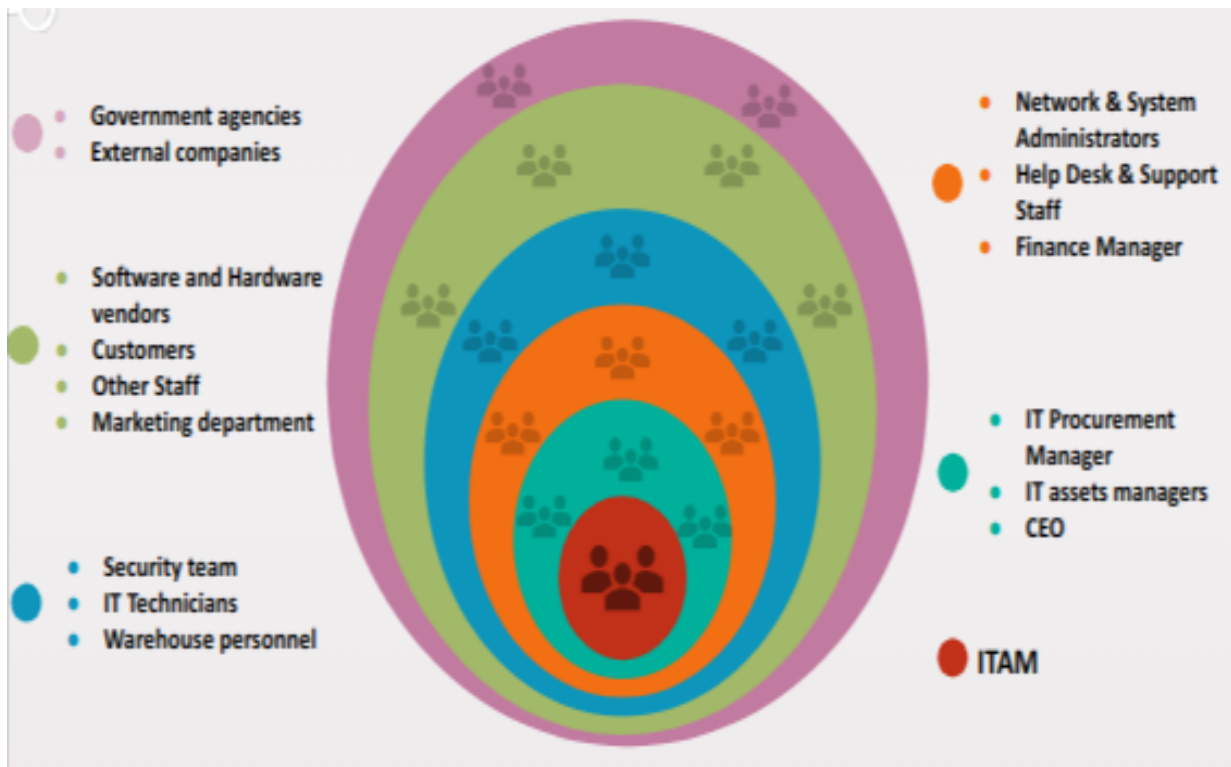
Stakeholder	Stakeholder Role/ Responsibility	Importance	Influence	Interests/ Positive Impacts	Concerns
ITAM Manager	Supervise ITAM strategies and operations	<i>High</i>	<i>High</i>	Ensure efficient asset tracking and costs	Security and compliance
CEO	Set IT strategy and align ITAM with business goals	<i>High</i>	<i>High</i>	Overall IT efficiency, cost savings	Security, complaints, budget constraints
IT Procurement Manager	Manage IT asset procurement	<i>High</i>	<i>High</i>	Wise and cost efficient purchases	Budget constraints, delayed procurement
Network & System Administrators	Provide technical support for assets	<i>High</i>	<i>Medium</i>	Efficient problem resolution, reduced downtime	Workload, resource availability
Help Desk & Support Staff	Deal with complaints from customers in accordance with itam	<i>High</i>	<i>Medium</i>	Update/refer to ITAM for an efficient and useful interaction	Technical issues
Finance Manager	Monitor ITAM financial implications	<i>High</i>	<i>Medium</i>	Accurate financial reporting and controlling costs	Unpredicted and too large Expenses
Security Team	Guarantee IT asset security and data protection	<i>High</i>	<i>Medium</i>	Data security according to security policies	Data breaches and vulnerabilities
Warehouse personnel	Manage inventory of assets	<i>Medium</i>	<i>Medium</i>	Keep track of inventory of assets	Assets might be delayed or damaged
IT Technicians	Update hardwares lifecycle after solving a related	<i>Medium</i>	<i>Medium</i>	Fix technical issues related to IT assets	Not up-to-date informations about the hardwares/soft wares

## IT Asset Management System

	problem				
<b>Software and Hardware vendors</b>	<b>Supply IT assets and services</b>	<i>Medium</i>	<i>Medium</i>	<b>Provide efficient hardware and softwares with profitable contracts</b>	<b>Supply chain issues</b>
<b>Customers</b>	<b>Use IT assets according to their subscriptions</b>	<i>Medium</i>	<i>Low</i>	<b>Reliable &amp; functional softwares and hardwares</b>	<b>Interruptions</b>
<b>Other staff</b>	<b>Use IT assets for their daily tasks</b>	<i>Low</i>	<i>Low</i>	<b>Up-to-date and reliable hardwares and softwares</b>	<b>Interference, learning levels</b>
<b>Marketing department</b>	<b>Communicate with potential customers for subscriptions</b>	<i>Low</i>	<i>Low</i>	<b>Useful and up-to-date hardwares/softwares to advertise to potentials.</b>	<b>IT Technicians delays.</b>
<b>Government Agencies</b>	<b>Provide with auditing and financial regulations</b>	<i>Low</i>	<i>Low</i>	<b>Accurate, updated financial statements and auditing</b>	<b>Hiding real costs of IT assets.</b>
<b>External Companies</b>	<b>Buy hardwares when their life cycle is coming to an end</b>	<i>Low</i>	<i>Low</i>	<b>Buying useful hardwares with reasonable prices</b>	<b>Assets might be too damaged or obsolete</b>

# IT Asset Management System

## 2.2 Onion Diagram



### 3. Requirements

#### 3.1 Functional Requirements

ID	Description	Priority	Date
#Req_1	Asset managers should be able to create, modify and delete asset requests (procurement).	High	27/10/2023
#Req_2	Asset managers should be able to assign assets by performing view, add and update functions. (deployment)	High	27/10/2023
#Req_3	Only after procurement has been processed, asset managers should be able to insert new asset details that can be assigned through deployment.	High	24/11/2023
#Req_4	Asset managers should be able to track asset assignment details such as asset usage history.	High	27/10/2023
#Req_5	Disposal of the asset should be checked, and if the asset is reusable, it can be assigned to another user.	High	24/11/2023
#Req_6	Admin should be able to get insights about asset procurement by analyzing older assets.	High	27/10/2023
#Req_7	Asset administrators should be able to transfer ownership of an asset from one to another person.	High	24/11/2023
#Req_8	Asset administrator should be able to revoke ownership of an asset of a user (either customer or employee) when leaving.	High	24/11/2023
#Req_9	Asset managers should be able to view, add and modify all asset repair details.	High	03/11/2023
#Req_10	Asset managers should be able to view repair history.	High	03/11/2023
#Req_11	Admin should manage service requests integrated in real-time from the Otello system.	Medium	24/11/2023
#Req_12	Asset managers should receive alerts on recent asset warranty expiry items.	Medium	27/10/2023
#Req_13	Asset managers should view and renew warranty by modifying asset warranty details.	Medium	27/10/2023
#Req_14	Budgeting, depreciation and cost allocation for IT assets.	Medium	27/10/2023

## IT Asset Management System

#Req_15	Asset managers should receive notifications on low inventory items.	Medium	03/11/2023
#Req_16	Asset managers should be able to manage vendor and supplier relationships, including contact information and performance records.	Medium	03/11/2023
#Req_17	Asset managers should be able to maintain asset catalog by inserting new categories, deleting old categories, updating new details about assets items.	Low	27/10/2023
#Req_18	Managers should be able to manage documents and FAQs related to asset management by reviewing, updating and deleting.	Low	03/11/2023
#Req_19	Admin should be able to get customized reports on asset management.	Low	27/10/2023
#Req_20	Asset managers should be able to view user accounts.	Low	24/11/2023
#Req_21	Admin should be able to view, update, activate or deactivate user accounts.	Low	24/11/2023
#Req_22	Asset managers should be able to import and export data to and from the ITAM system.	Low	03/11/2023



### 3.2 Non-Functional Requirements

#### 3.2.1 Product Requirements

##### *Usability*

- The system should have an intuitive and easy-to-navigate user interface
- Simplify the process of entering asset data by providing templates, upload options, and auto-population features whenever possible.
- Implement robust search and filter capabilities to quickly locate specific assets within the system, especially when dealing with a large number of assets.
- Offer pre-built and customizable reports and analytics tools.
- Ensure the ITAM system is responsive and works well on mobile devices.
- Ensure that data input is validated to prevent errors, duplicates, and inconsistent data, maintaining data accuracy.

##### *Efficiency*

- Design the system to handle the growth of asset data and user volume over time without a significant drop in performance.
- Implement failover and load balancing solutions to ensure system availability and distribute workloads across multiple servers or data centers.
- **Space Requirements** : The system should be able to handle 800 users at once.

##### *Dependability*

- Guarantee the integrity of asset data by implementing measures to prevent unauthorized access or data corruption.
- Ensure that the ITAM system is designed for high availability (24/7), minimizing downtime and ensuring that it remains accessible to users at any geographical position having internet connection and a browser(e.g Chrome, Microsoft Edge, Safari) installed.
- Continuously monitor system performance, resource utilization, and potential issues to proactively address any problems.

##### *Security*

- Implement role-based access control to restrict access to sensitive asset information.
- Ensure that the ITAM system supports compliance with relevant data protection regulations, industry standards, and organizational policies.
- Use data redundancy and replication to safeguard against data loss or corruption, ensuring that asset information is always available and consistent.
- Regularly apply security patches and updates to the ITAM system to address vulnerabilities and protect against security threats.

### 3.2.2 Organizational Requirements

#### *Environmental Requirements*

- The system shall be an on-premise application, so it will be hosted in a server, since Abissnet has its own servers and make it easier to maintain and update accordingly.

#### *Development Requirements*

- We will use MVC architecture with LAMP(linux,apache,mysql,php) stack because of the following reasons/benefits :
  - Its platform independent
  - Security
  - Easy setup
  - Scalable
  - Customization
  - Flexibility

#### *Operational Requirements*

- Define a compliance framework that includes industry standards and regulations relevant to ITAM, such as ISO 19770-1 and software licensing agreements.

### 3.2.3 Domain Requirements

- Marketing department should use the system to see the current status and state of hardware and software when advertising them to the customers for any subscriptions.
- IT technicians should update the lifecycle of an hardware when doing maintenance actions and/or upgrades,updates,etc.
- Support department should be able to refer to data about software and hardware so as to solve problems as efficiently as possible and consequently update their corresponding lifecycle.
- Finance management should use the system to do auditing based on data history recorded as well as to analyze the calculations of costs, depreciation, ROI, etc.
- Network and system administrators should use the system to solve any reported asset-related problems and also to analyze the performance,usage of the software and hardware.

### 3.2.4 External Requirements

- Handling personal information should be compliant to European Union's General Data Protection Regulation (GDPR)
- Also, the system should take into consideration : customer protection laws, government procurement and financial regulations.

### 4. User Scenarios

#### *User Onboarding*

##### **Scenario:**

A new IT administrator has joined the company and needs to set up their account in the IT asset management system.

##### **Steps:**

1. Log in to the system.
2. Navigate to the user management section.
3. Create a new user profile for the new IT administrator, specifying their role and access permissions.
4. Assign assets and responsibilities to the new user.

#### *Procurement Request*

##### **Scenario:**

The IT department identifies the need for new laptops and initiates a procurement request.

##### **Steps:**

1. The IT department identifies the need for new laptops and initiates a procurement request.
2. Creates a new procurement request specifying the quantity, type, and specifications of the laptops needed.
3. Submits the procurement request for approval.

#### *Procurement Approval*

##### **Scenario:**

The procurement request undergoes an approval process before the purchase is authorized.

##### **Steps:**

1. The system notifies the relevant approver(s) about the new procurement request.

2. Approvers review the request, considering budget constraints and departmental needs.
3. Approvers review the request, considering budget constraints and departmental needs.

### *Purchase Order Generation*

#### **Scenario:**

Upon approval, the system generates a purchase order for the approved procurement request.

#### **Steps:**

1. The system automatically generates a purchase order with details such as vendor information, item specifications, and quantities.
2. The purchase order is sent to the selected supplier for fulfillment.

### *Asset Registration*

#### **Scenario:**

The inspected laptops are now ready to be registered in the asset management system.

#### **Steps:**

3. The IT administrator logs in to the system.
4. Accesses the asset registration module.
5. Enters details for each laptop, including serial number, model, purchase date, and other relevant information.
6. Associates the laptops with the procurement request, linking them to the corresponding purchase order.

### *Deployment*

#### **Scenario:**

The registered laptops are now ready for deployment to end-users or specific departments.

#### **Steps:**

1. The IT administrator updates the deployment status of each laptop in the system.
2. The IT administrator updates the deployment status of each laptop in the system.
3. Generates deployment reports for tracking and future reference.

### *Asset Documentation*

#### **Scenario:**

New software is installed on a server, and the IT team needs to document the details of the installation for future reference.

#### **Steps:**

1. The IT administrator logs in to the system.
2. Navigates to the asset documentation section.
3. Attaches any relevant installation documentation or licenses to the asset record.

### *Asset Maintenance*

#### **Scenario:**

A network printer undergoes routine maintenance, and the IT team needs to document the maintenance activities.

#### **Steps:**

1. The IT administrator accesses the asset documentation module.
2. Selects the network printer in question.
3. Adds entries for the maintenance activities, including the date, type of maintenance performed, and any replacement parts.

### *Employee Transfer*

#### **Scenario:**

An employee is transferred to another department, and their assigned laptop needs to be transferred to the new department.

#### **Steps:**

1. The IT administrator logs in to the system.
2. Navigates to the asset transfer module.
3. Selects the employee's laptop for transfer.
4. Specifies the new owner (employee or department) and confirms the transfer.

### *Asset Disposal*

#### **Scenario:**

A server has reached the end of its operational life, and the IT team needs to decommission and dispose of it properly.

#### **Steps:**

1. The IT administrator logs in to the system.
2. Accesses the asset disposal module.
3. Selects the server for decommissioning.
4. Specifies the reason for disposal and any relevant documentation.
5. Confirms the disposal, removing the server from active inventory.

### *Asset Salvage*

#### **Scenario:**

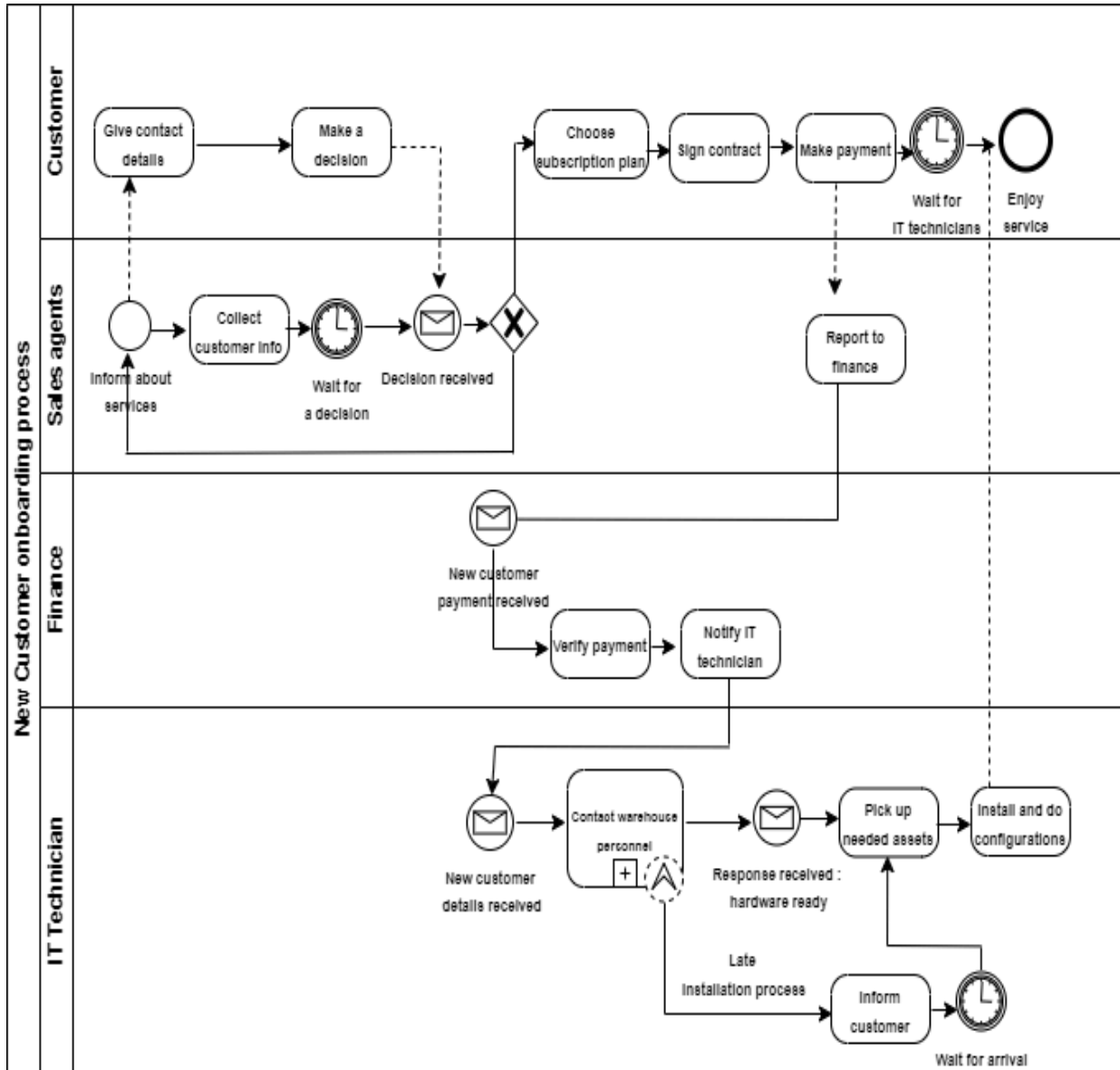
Some components of a decommissioned server are salvageable and can be reused for other purposes.

#### **Steps:**

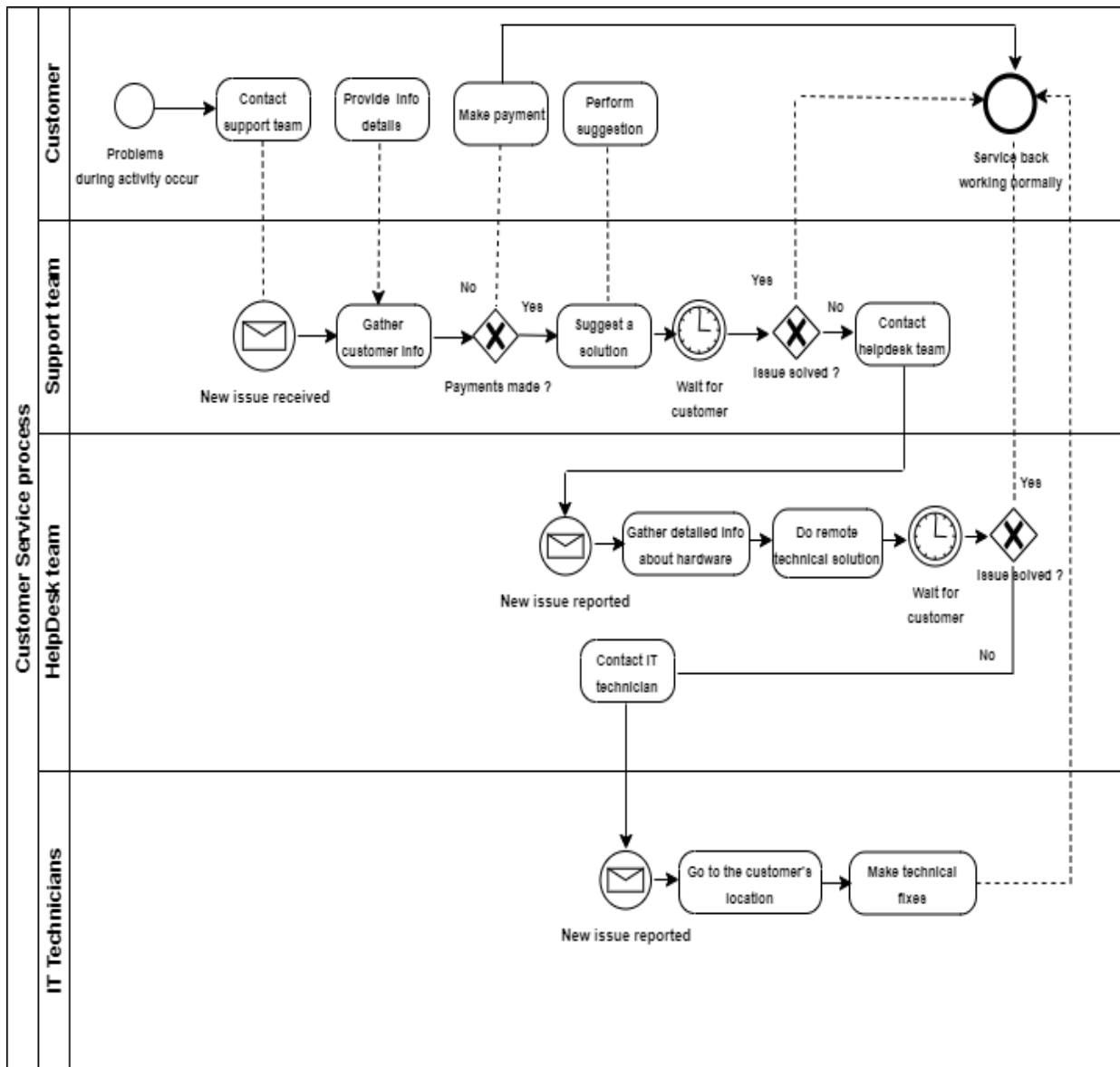
1. The IT administrator accesses the asset disposal module.
2. Identifies the server with salvageable components.
3. Removes and logs these components separately for potential reuse by updating the system.

## 4. BPMN

### 4.1 BPMN - New customer process



## 4.2 BPMN - Support/helpdesk process

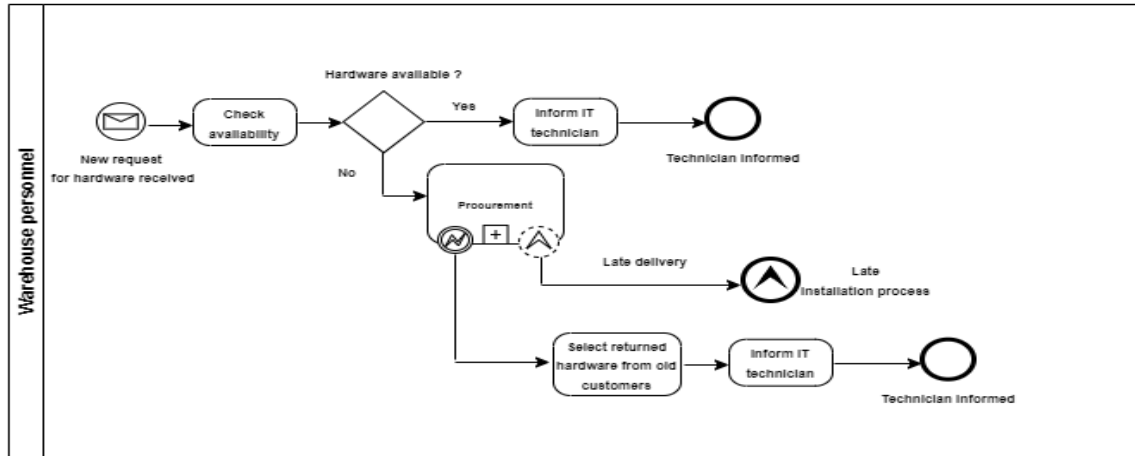




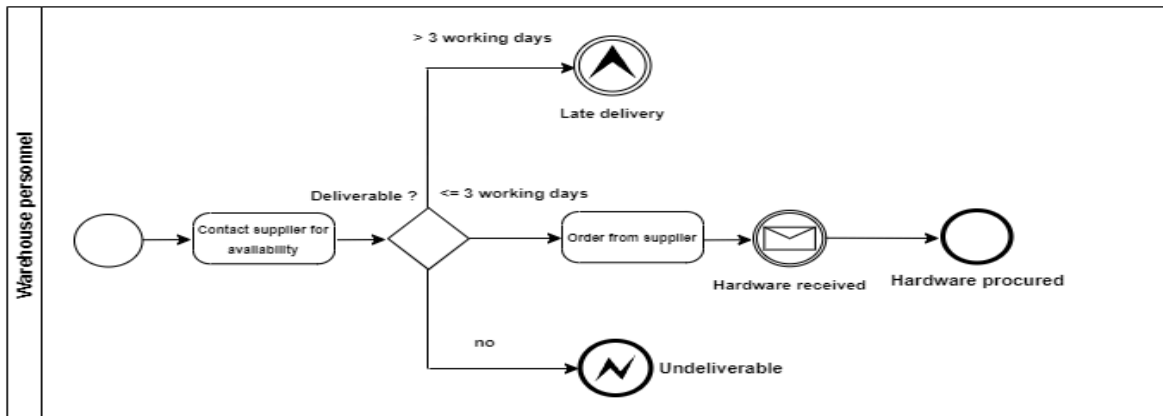
# IT Asset Management System

## 4.3 BPMN - Warehouse, procurement and stock maintenance processes

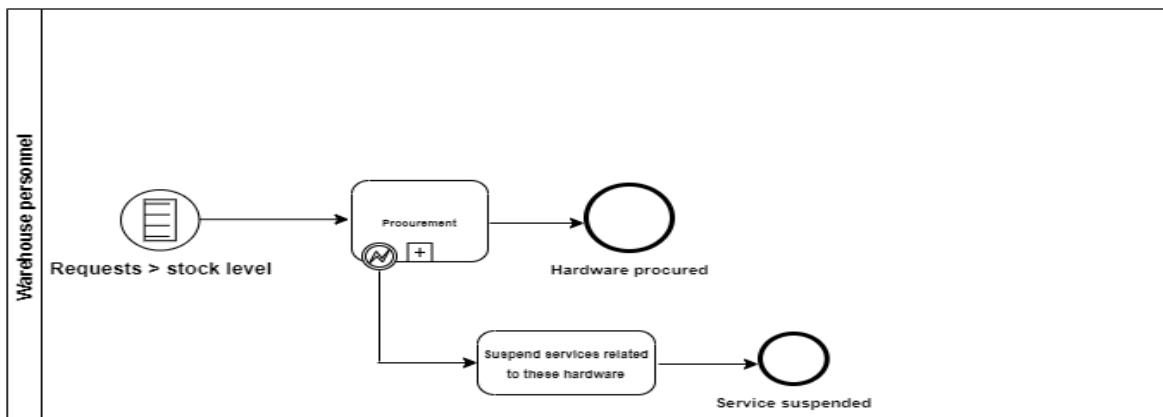
### Warehouse personnel sub-process



### Procurement sub-process

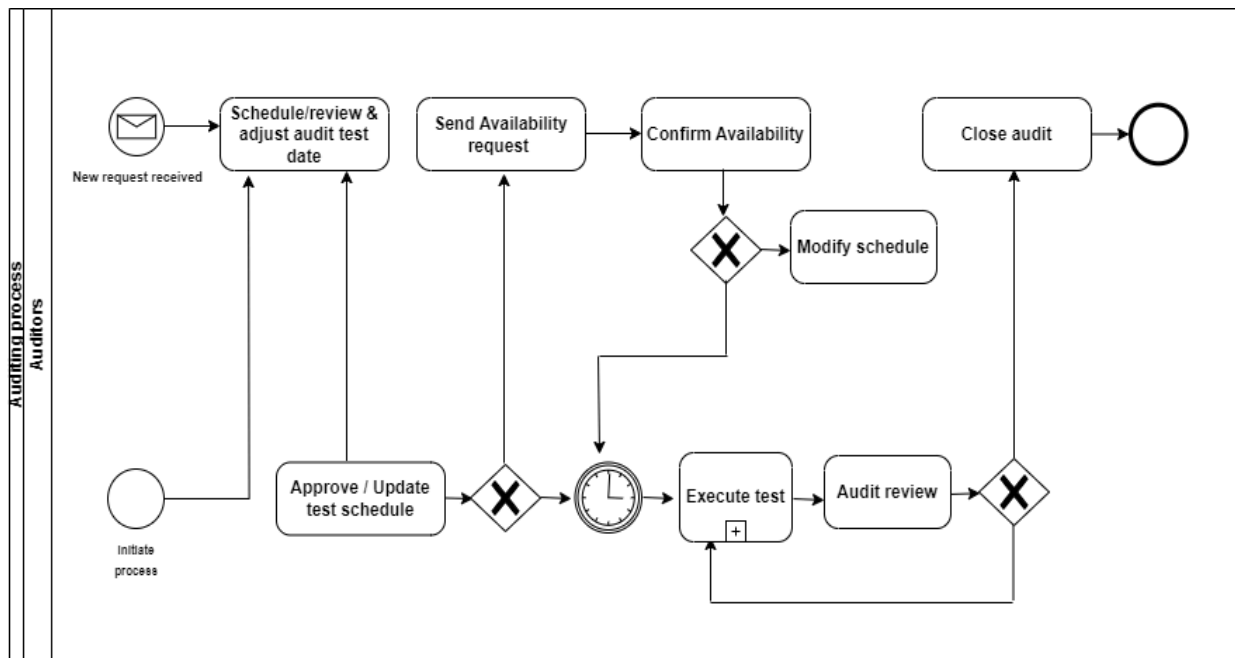


### Stock maintenance process

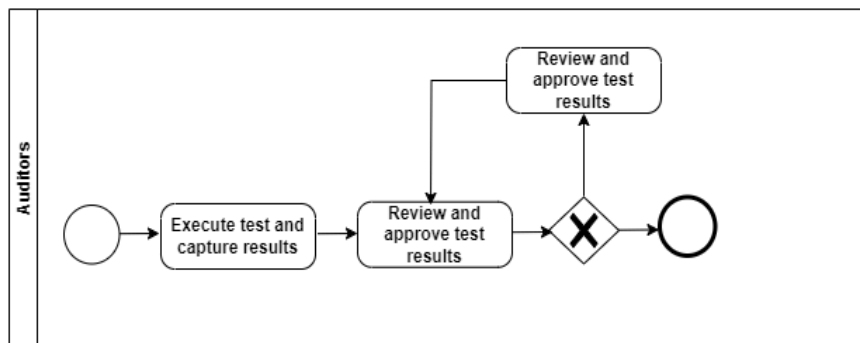


## 4.4 BPMN - Audit process and its *execute test* subprocess

# IT Asset Management System



## Execute test sub-process



### 5. UML Diagrams

#### 5.1 Use Cases

##### 5.1.1 Use Cases Table

<b>USE CASE ID</b>	<b>UC01</b>	
<b>Description</b>	Manage financial aspects related to IT assets including budgeting, cost tracking, and asset depreciation.	
<b>Preconditions</b>	Access to financial tools, budget allocations, asset cost information.	
<b>Success End Condition</b>	Financial data accurately tracked, budget managed effectively, and asset depreciation accounted for.	
<b>Failed End Condition</b>	Financial data inconsistency, budget overrun, incorrect depreciation calculations.	
<b>Actors</b>	Manager, Financial Manager	
<b>Trigger</b>	Financial period initiation or asset acquisition.	
<b>TASKS</b>	<b>Step</b>	<b>Action</b>
	1	Allocate budget for IT assets
	2	Track expenses and costs
	3	Calculate asset depreciation
<b>Exceptions</b>	1a 2a 3a	Budget constraints affecting asset acquisition Incorrect cost entries affecting tracking Depreciation calculation errors

<b>USE CASE ID</b>	<b>UC02</b>	
<b>Description</b>	User Management	
<b>Preconditions</b>	Access to user management functionalities	
<b>Success End Condition</b>	User management actions are successful	
<b>Failed End Condition</b>	User management actions fails	
<b>Actors</b>	Manager	
<b>Trigger</b>	Request to manage users	
<b>TASKS</b>	<b>Step</b>	<b>Action</b>
	1	Access user management interface.
	2	Perform user-related actions like create, update, or delete users.
	3	Record and audit user management activities.
<b>Exceptions</b>	1a 2a	Invalid user permission levels Action not permitted.

## IT Asset Management System

<b>USE CASE ID</b>	<b>UC03</b>	
<b>Description</b>	Grant user permission	
<b>Preconditions</b>	User has necessary permissions and access to the system.	
<b>Success End Condition</b>	Permissions granted successfully	
<b>Failed End Condition</b>	Permissions not granted	
<b>Actors</b>	Manager	
<b>Trigger</b>	Request for permission change	
<b>TASKS</b>	<b>Step</b>	<b>Action</b>
	1	Select specific user
	2	Grant or modify user permissions
	3	Click update button
	4	Notify relevant users about the permission change.
<b>Exceptions</b>	2a	Notify relevant users about the clearance.

<b>USE CASE ID</b>	<b>UC04</b>	
<b>Description</b>	Generate customized reports based on IT asset data for analysis	
<b>Preconditions</b>	Access to reporting tools and required data sources.	
<b>Success End Condition</b>	Accurate and complete reports generated as per user specifications.	
<b>Failed End Condition</b>	Report generation failure, incomplete or inaccurate reports.	
<b>Actors</b>	Manager	
<b>Trigger</b>	User requests report generation or scheduled report generation.	
<b>TASKS</b>	<b>Step</b>	<b>Action</b>
	1	Define report parameters
	2	Retrieve necessary data
	3	Generate and format the report
<b>Exceptions</b>	1a	Insufficient data for report generation
	3a	Report formatting errors
	3b	System overload affecting report generation

## IT Asset Management System

<b>USE CASE ID</b>	<b>UC05</b>	
<b>Description</b>	Document IT asset configurations, FAQs, and related information for reference and troubleshooting.	
<b>Preconditions</b>	Access to documentation platform and necessary information.	
<b>Success End Condition</b>	Comprehensive and accessible documentation available for users.	
<b>Failed End Condition</b>	Incomplete or inaccessible documentation blocking troubleshooting.	
<b>Actors</b>	Manager	
<b>Trigger</b>	Continuous documentation updates or user query for information.	
<b>TASKS</b>	<b>Step</b>	<b>Action</b>
	1	Create/Update configuration documentation
	2	Compile FAQs and troubleshooting guides
	3	Organize documentation for easy access
<b>Exceptions</b>	1a	Outdated documentation
	2a	Incomplete FAQs or troubleshooting guides

<b>USE CASE ID</b>	<b>UC06</b>	
<b>Description</b>	Procurement request management	
<b>Preconditions</b>	User identification and authentication Asset category should be available before asset request.	
<b>Success End Condition</b>	New asset request should be generated and the user may add more items to the same request.	
<b>Failed End Condition</b>	Request submission fails	
<b>Actors</b>	Asset Admin, Warehouse personnel	
<b>Trigger</b>	Request to initiate procurement	
<b>TASKS</b>	<b>Step</b>	<b>Action</b>
	1	Fill in procurement request details
	2	Submit request for approval.
	3	Notify concerned parties about the request submission.
<b>Exceptions</b>	1a	Invalid request details.

## IT Asset Management System

<b>USE CASE ID</b>	<b>UC07</b>	
<b>Description</b>	Procurement request approval/rejection	
<b>Preconditions</b>	Valid procurement request is in the system	
<b>Success End Condition</b>	Request is approved/rejected	
<b>Failed End Condition</b>	The status of the request doesn't change accordingly.	
<b>Actors</b>	Admin	
<b>Trigger</b>	Request to initiate procurement	
<b>TASKS</b>	<b>Step</b>	<b>Action</b>
	1	Review the procurement request details.
	2	Make a decision to approve or deny the request
	3	Update status and notify relevant stakeholders
<b>Exceptions</b>	2a	Inadequate information for decision-making

<b>USE CASE ID</b>	<b>UC08</b>	
<b>Description</b>	Asset maintenance	
<b>Preconditions</b>	1. Asset must be registered in the ITAM system 2. Maintenance schedule or requirement should be identified.	
<b>Success End Condition</b>	Asset successfully undergoes maintenance and is updated with the latest status/details in the ITAM system.	
<b>Failed End Condition</b>	Maintenance process fails or is incomplete	
<b>Actors</b>	Asset Admin, System Admin, Support team	
<b>Trigger</b>	Scheduled maintenance date reached or identified issue requiring immediate maintenance.	
<b>TASKS</b>	<b>Step</b>	<b>Action</b>
	1	Identify the asset requiring maintenance
	2	Plan and schedule maintenance activities.
	3	Execute maintenance tasks (repair, update, inspection, etc.).
	4	Update asset records in the ITAM system with maintenance details (date, performed tasks, changes made).
<b>Exceptions</b>	1a	Unavailability of required maintenance resources.
	3a	Discovery of additional issues during maintenance, requiring further actions.
	4a	Failure to update asset information due to system errors or connectivity issues.

## IT Asset Management System

<b>USE CASE ID</b>	<b>UC09</b>	
<b>Description</b>	Asset tracking	
<b>Preconditions</b>	Asset is not retired and available	
<b>Success End Condition</b>	Assets are accurately located and recorded within the ITAM system, providing real-time information on their status and location.	
<b>Failed End Condition</b>	Assets cannot be tracked or their information is inaccurately recorded, leading to discrepancies in the system's data.	
<b>Actors</b>	Asset Admin, System Admin, Support Team	
<b>Trigger</b>	-Asset allocation -Change ownership of asset -Regular audit or check-in intervals.	
<b>TASKS</b>	<b>Step</b>	<b>Action</b>
	1	Input asset details into the ITAM system.
	2	Assign or update asset location and ownership information
	3	Generate reports on asset status and location.
<b>Exceptions</b>	1a	Incorrect data entry leading to tracking errors.

<b>USE CASE ID</b>	<b>UC10</b>	
<b>Description</b>	Allocate an asset	
<b>Preconditions</b>	Asset inventory exists	
<b>Success End Condition</b>	Asset is successfully allocated	
<b>Failed End Condition</b>	Allocation process fails.	
<b>Actors</b>	Asset Manager	
<b>Trigger</b>	Request to allocate an asset	
<b>TASKS</b>	<b>Step</b>	<b>Action</b>
	1	User request for an asset.
	2	Verify asset availability for allocation.
	3	Asset manager selects the asset from asset inventory.
	4	Asset managers select the user to assign the selected asset.
	5	Update asset records with allocation details.
<b>Exceptions</b>	1a	The asset details are incomplete or inaccurate.
	2a	Asset is not available for allocation.

## IT Asset Management System

<b>USE CASE ID</b>	<b>UC11</b>	
<b>Description</b>	Change ownership of asset from one to another	
<b>Preconditions</b>	1-Access to the ITAM system with appropriate permissions. 2-Identification of the asset to be transferred. 3-Availability of accurate information on the new owner or entity.	
<b>Success End Condition</b>	The ownership of the asset is successfully transferred from the current to the intended one. The system reflects the updated ownership details accurately.	
<b>Failed End Condition</b>	The ownership transfer process fails or encounters errors. The system retains the previous ownership details.	
<b>Actors</b>	Asset Admin	
<b>Trigger</b>	Request to change ownership of asset.	
<b>TASKS</b>	<b>Step</b>	<b>Action</b>
	1	Identify the asset to be transferred.
	2	Verify the details of the current owner and the new owner.
	3	Update the asset records with the new ownership information.
	4	Validate and confirm the successful transfer of ownership.
<b>Exceptions</b>	2a	Incomplete or inaccurate information provided for the new owner
	4a	Conflicting requests or changes being processed simultaneously for the same asset.

<b>USE CASE ID</b>	<b>UC12</b>	
<b>Description</b>	Revoke ownership of asset - Asset manager should able to clear(unassign) asset of a selected user	
<b>Preconditions</b>	Assets to be cleared(unassigned) should already have an ownership.	
<b>Success End Condition</b>	Asset is successfully cleared (unassigned) from the selected user	
<b>Failed End Condition</b>	Clearance process fails	
<b>Actors</b>	Asset Manager	
<b>Trigger</b>	Request to clear asset.	
<b>TASKS</b>	<b>Step</b>	<b>Action</b>
	1	Validate asset clearance request details.
	2	Update asset records to reflect clearance.
	3	Notify relevant users about the clearance.
<b>Exceptions</b>	1a	Insufficient clearance information provided



## IT Asset Management System

<b>USE CASE ID</b>	<b>UC13</b>	
<b>Description</b>	Import or export IT asset data or configurations for backup or transfer purposes.	
<b>Preconditions</b>	Access to export/import functionalities and necessary permissions.	
<b>Success End Condition</b>	Successful export or import of data/configuration without loss or corruption.	
<b>Failed End Condition</b>	Data corruption, incomplete export/import.	
<b>Actors</b>	System admin	
<b>Trigger</b>	User initiates export/import process.	
<b>TASKS</b>	<b>Step</b>	<b>Action</b>
	1	Select data to export/import
	2	Execute export/import operation
	3	Verify data integrity
<b>Exceptions</b>	1a	Insufficient permissions for export/import
	2a	Network interruptions during transfer
	3a	Format incompatibility causing data corruption

<b>USE CASE ID</b>	<b>UC14</b>	
<b>Description</b>	Maintain information about IT asset suppliers for procurement and support purposes.	
<b>Preconditions</b>	Access to updated supplier information.	
<b>Success End Condition</b>	Accurate and up-to-date supplier information available for reference.	
<b>Failed End Condition</b>	Outdated or inaccurate supplier information affecting procurement or support.	
<b>Actors</b>	Asset admin, Warehouse personnel	
<b>Trigger</b>	Supplier updates or procurement activities.	
<b>TASKS</b>	<b>Step</b>	<b>Action</b>
	1	Update supplier information
	2	Verify supplier details
	3	Manage supplier relationships
<b>Exceptions</b>	1a	Lack of updated supplier information
	2a	Incomplete supplier details affecting procurement
	3a	Supplier communication issues

## IT Asset Management System

<b>USE CASE ID</b>	<b>UC15</b>	
<b>Description</b>	Manage IT asset warranties, licenses, contracts.	
<b>Preconditions</b>	Access to license/contract database, renewal notifications.	
<b>Success End Condition</b>	Successful renewal of licenses/contracts before expiration.	
<b>Failed End Condition</b>	Errors in renewal, resulting in expired licenses or contracts.	
<b>Actors</b>	Asset Admin	
<b>Trigger</b>	Receive renewal notifications or schedule renewals.	
<b>TASKS</b>	<b>Step</b>	<b>Action</b>
	1	Review existing warranties/licenses
	2	Initiate renewal process
	3	Confirm successful renewal
<b>Exceptions</b>	1a	Missed renewal notifications
	3a	Payment issues affecting renewal
	3b	Contract negotiation delays

<b>USE CASE ID</b>	<b>UC16</b>	
<b>Description</b>	Asset disposal process	
<b>Preconditions</b>	Asset retirement plan, data backup/archiving, decommissioning guidelines.	
<b>Success End Condition</b>	Proper retirement and disposal of assets, data security ensured.	
<b>Failed End Condition</b>	Inadequate retirement process, data exposure, improper disposal.	
<b>Actors</b>	Asset Admin, System admin	
<b>Trigger</b>	End of asset life cycle or asset decommission request.	
<b>TASKS</b>	<b>Step</b>	<b>Action</b>
	1	Back up or archive necessary data
	2	Decommission assets securely
	3	Dispose of assets following environmental regulations
<b>Exceptions</b>	1a	Incomplete data backup leading to data loss
	2a	Improper disposal causing environmental impact
	3a	Security breach due to incomplete decommissioning

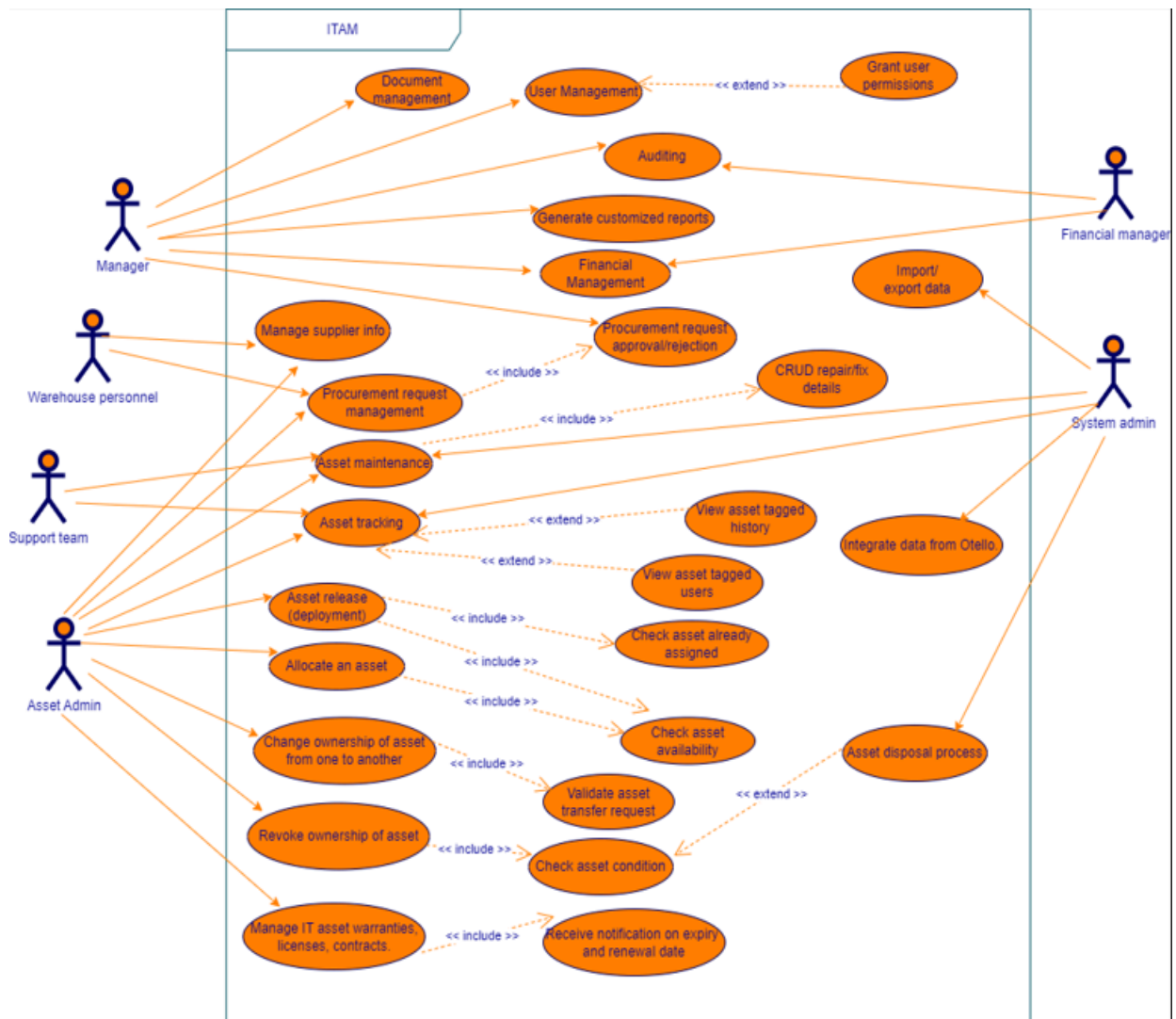
## IT Asset Management System

<b>USE CASE ID</b>	<b>UC17</b>	
<b>Description</b>	Integrate data from Otello.	
<b>Preconditions</b>	Compatibility between new and existing systems.	
<b>Success End Condition</b>	Related tickets/issues and other data related to users and assets should be integrated between systems.	
<b>Failed End Condition</b>	Integration failure, system disruption.	
<b>Actors</b>	System Admin	
<b>Trigger</b>	Deployment of new assets or new issue/ticket generated in Otello.	
<b>TASKS</b>	<b>Step</b>	<b>Action</b>
	1	Login with system admin credentials.
	2	Open interface related to integrated data.
	3	Click on the refresh button to see newly added data.
	4	Verify user data from Otello correspond to asset data stored in ITAM.
<b>Exceptions</b>	3a	API service not available or throws an error.
	4a	Incomplete or inaccurate information provided resulting in mismatch with those in ITAM.

<b>USE CASE ID</b>	<b>UC18</b>	
<b>Description</b>	Auditing - Audit IT assets and processes to ensure compliance with standards and regulations.	
<b>Preconditions</b>	System access and authorization for auditing.	
<b>Success End Condition</b>	Successful completion of the audit with all compliance requirements met.	
<b>Failed End Condition</b>	Audit failure, non-compliance discovered.	
<b>Actors</b>	Manager, Financial Manager	
<b>Trigger</b>	Scheduled audit or triggered by compliance checks.	
<b>TASKS</b>	<b>Step</b>	<b>Action</b>
	1	Collect and analyze data
	2	Identify inconsistency or non-compliance
	3	Document findings and recommendations
<b>Exceptions</b>	1a	Lack of access permissions for auditing
	2a	Incomplete or inaccurate data
	3a	Non-compliance issues unresolved

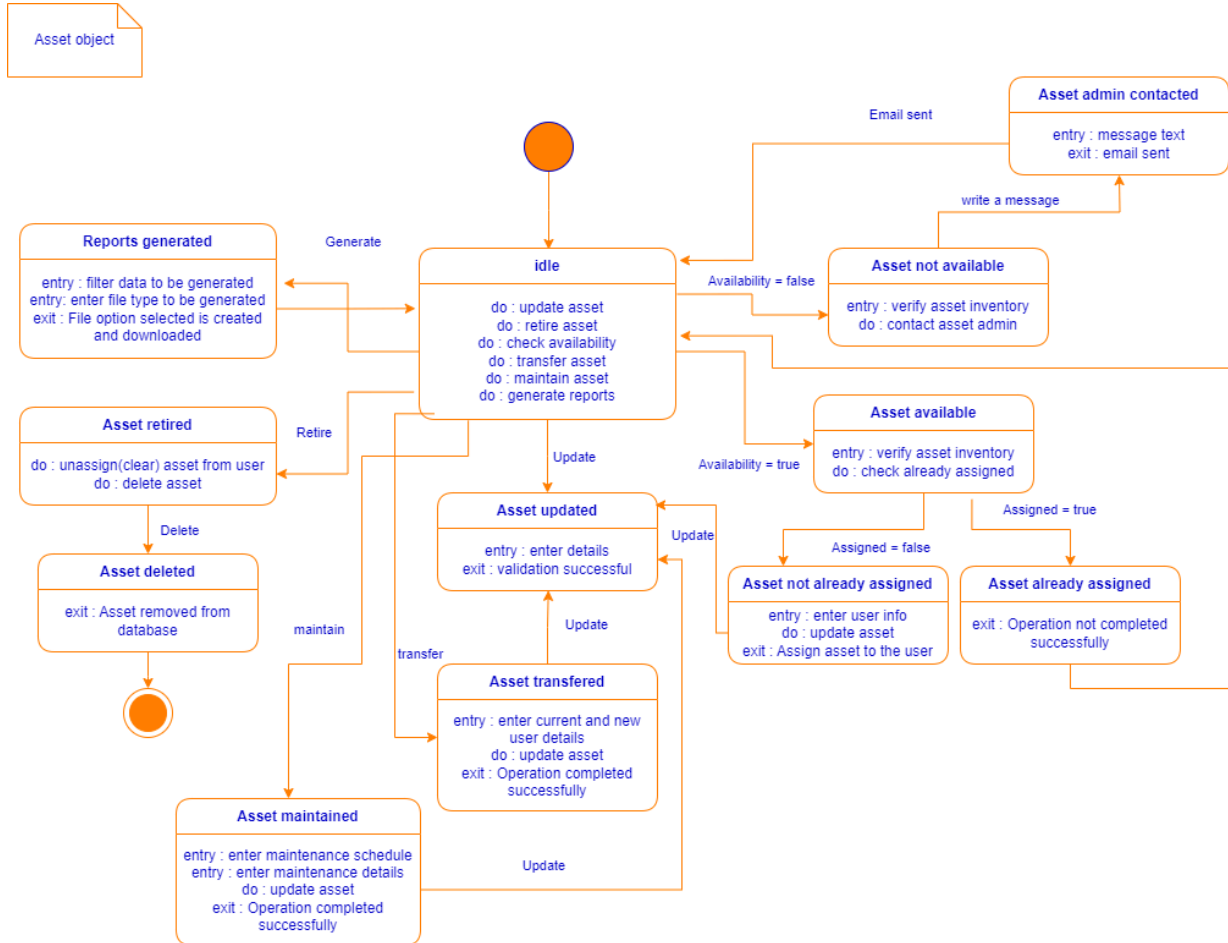
# IT Asset Management System

## 5.1.2 Use Cases Diagram

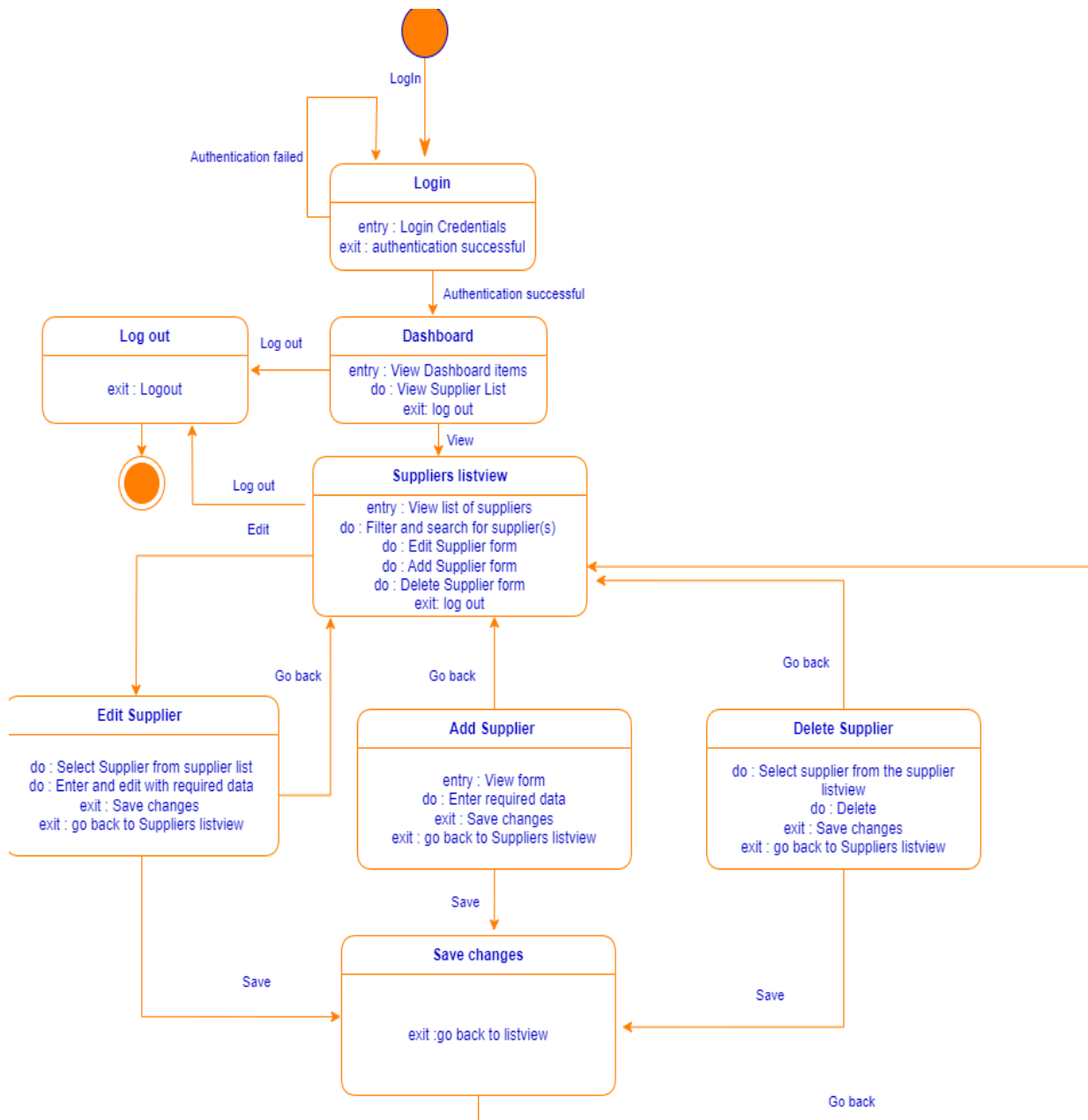


## 5.2 State Diagram

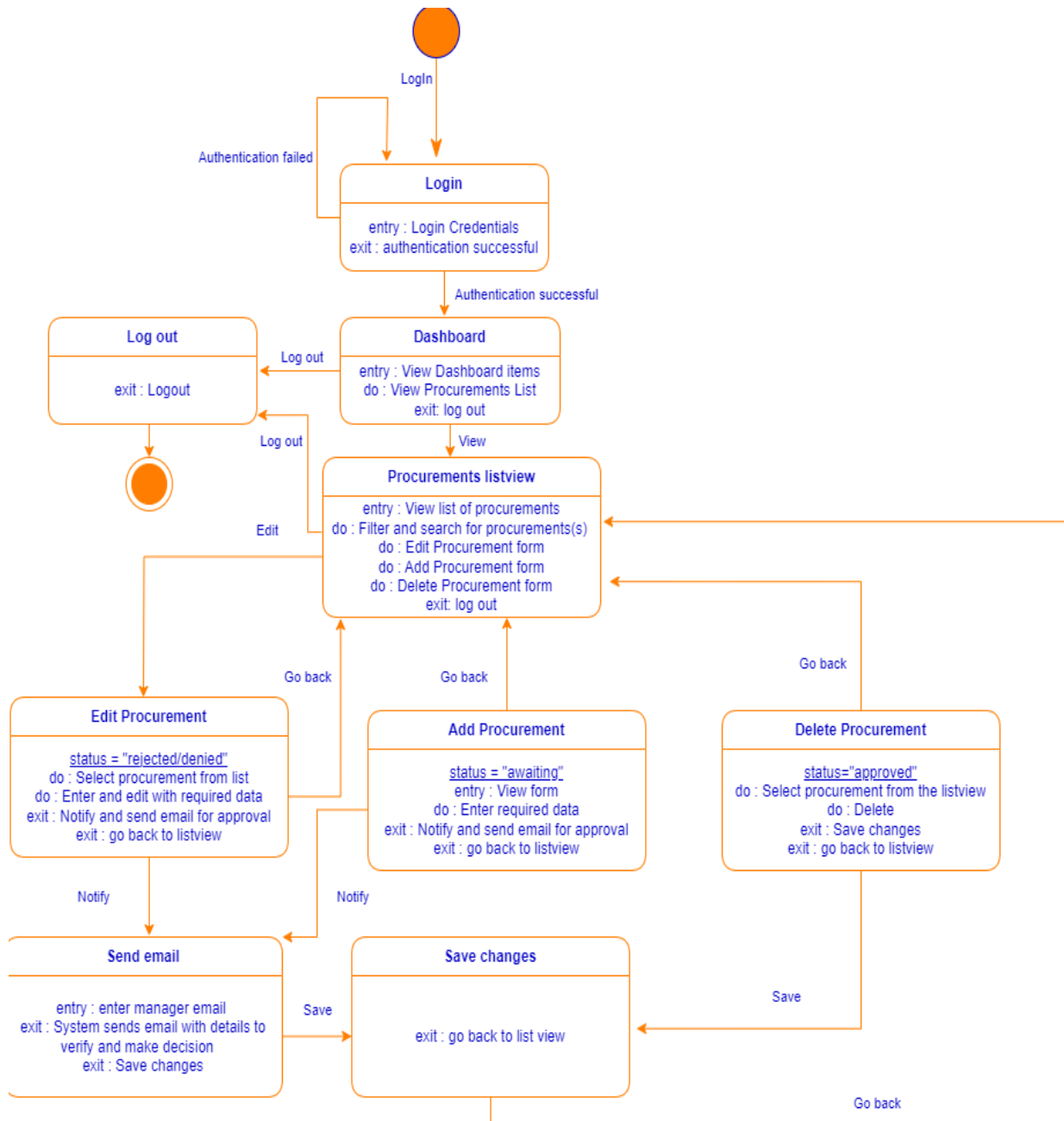
### 5.2.1 State Diagram - Asset Object



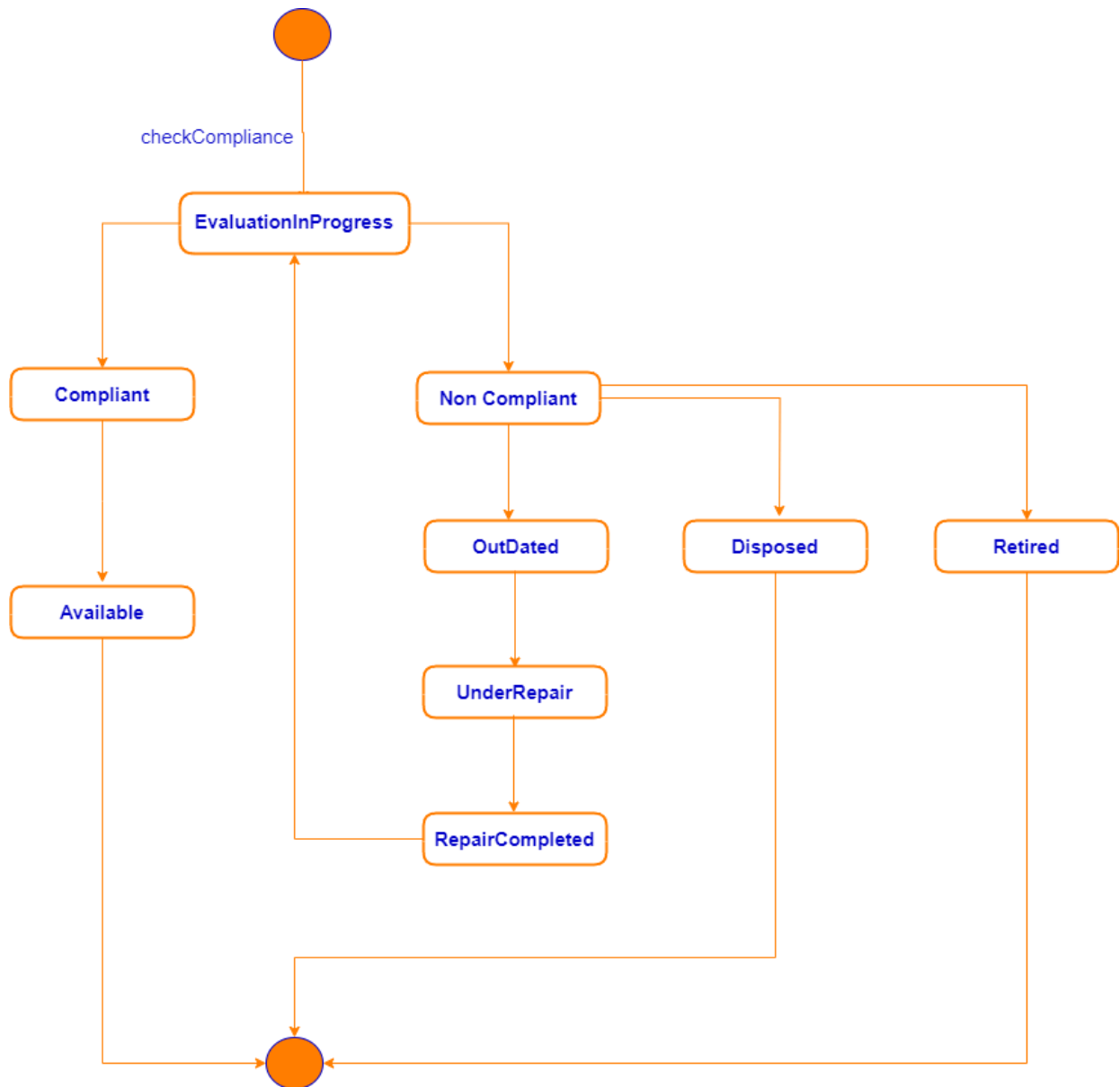
## 5.2.2 State Diagram - Manage Supplier



## 5.2.3 State Diagram - Procurement

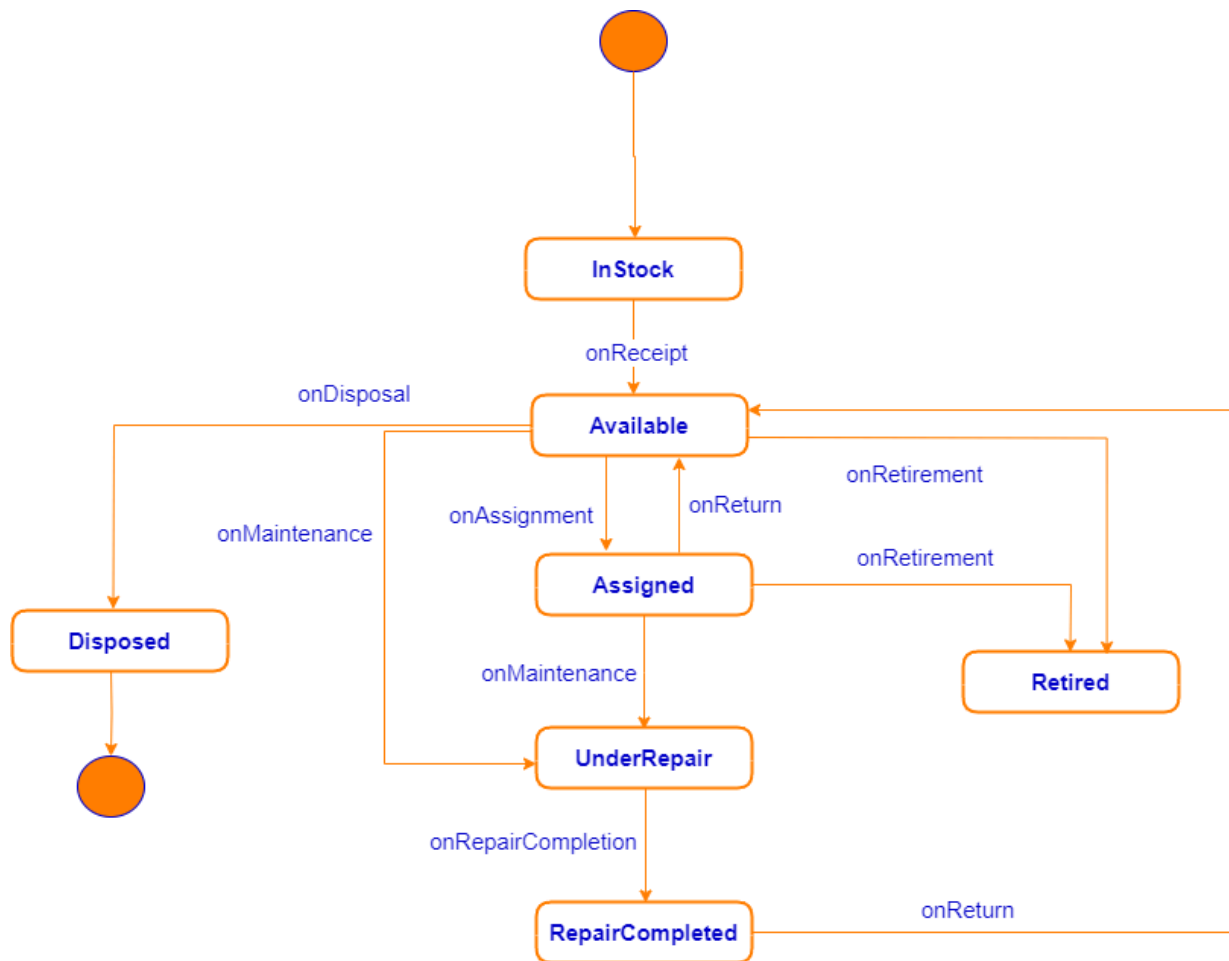


## 5.2.4 State Diagram - Asset Compliance

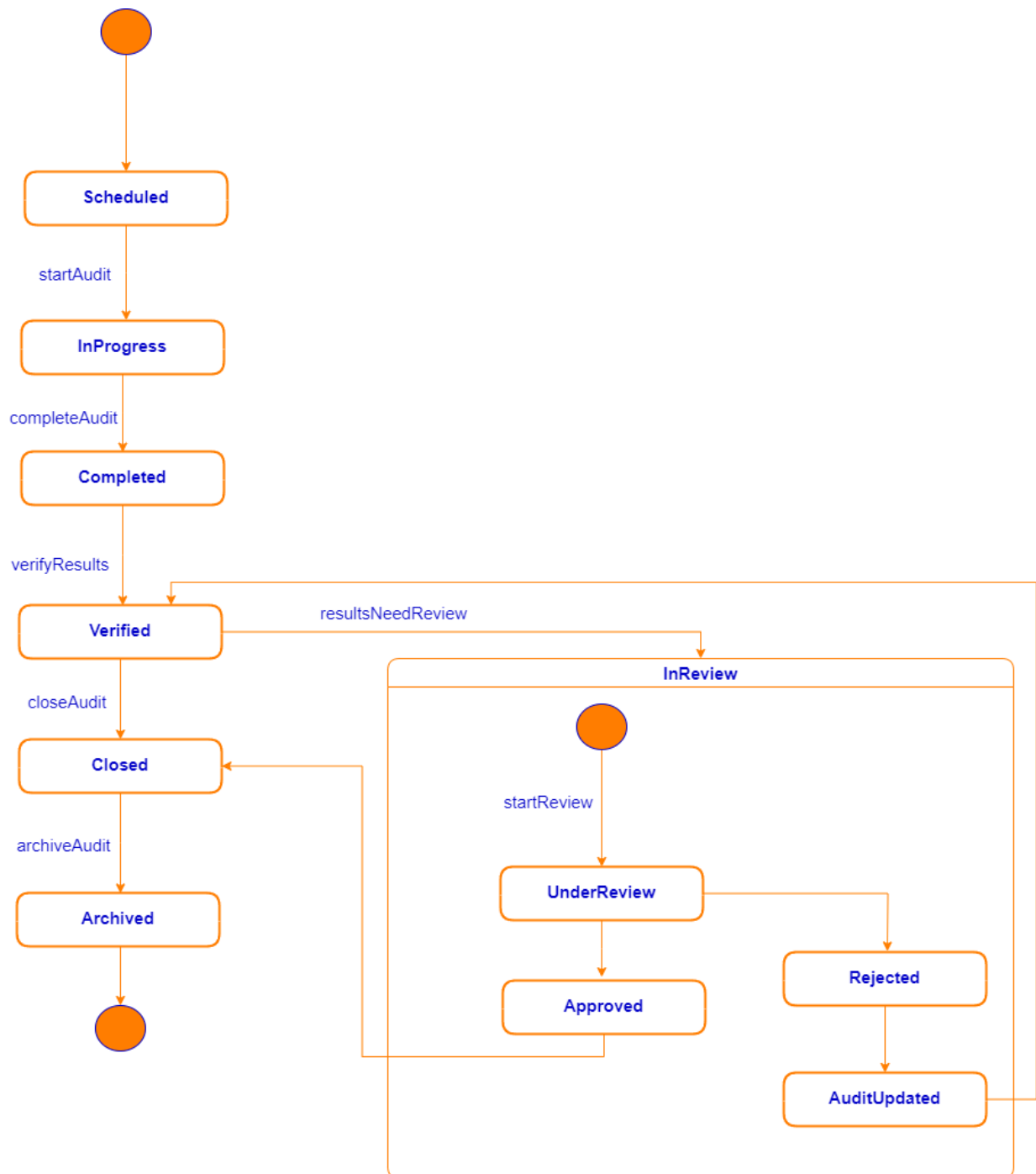




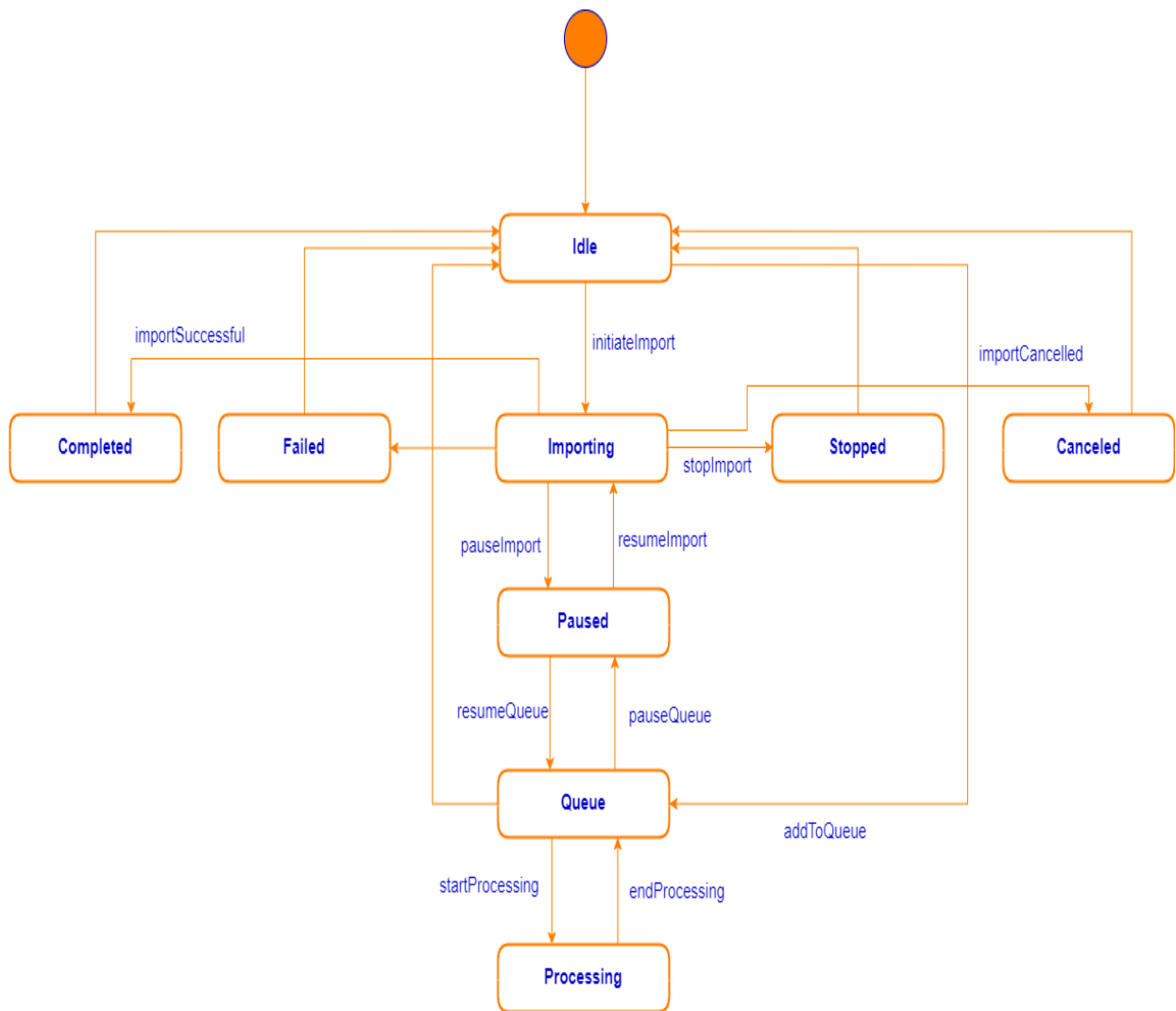
## 5.2.5 State Diagram - Asset Tracking



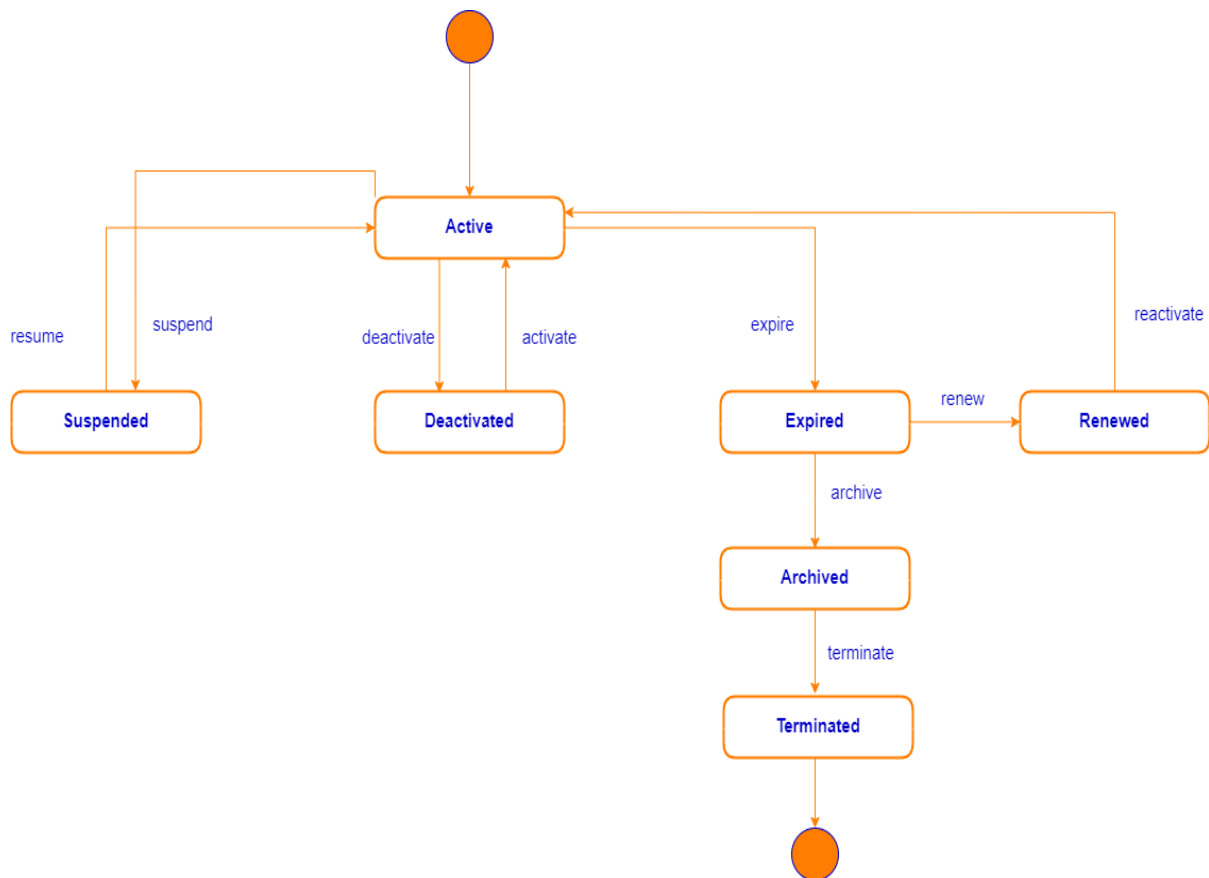
## 5.2.6 State Diagram - Audit



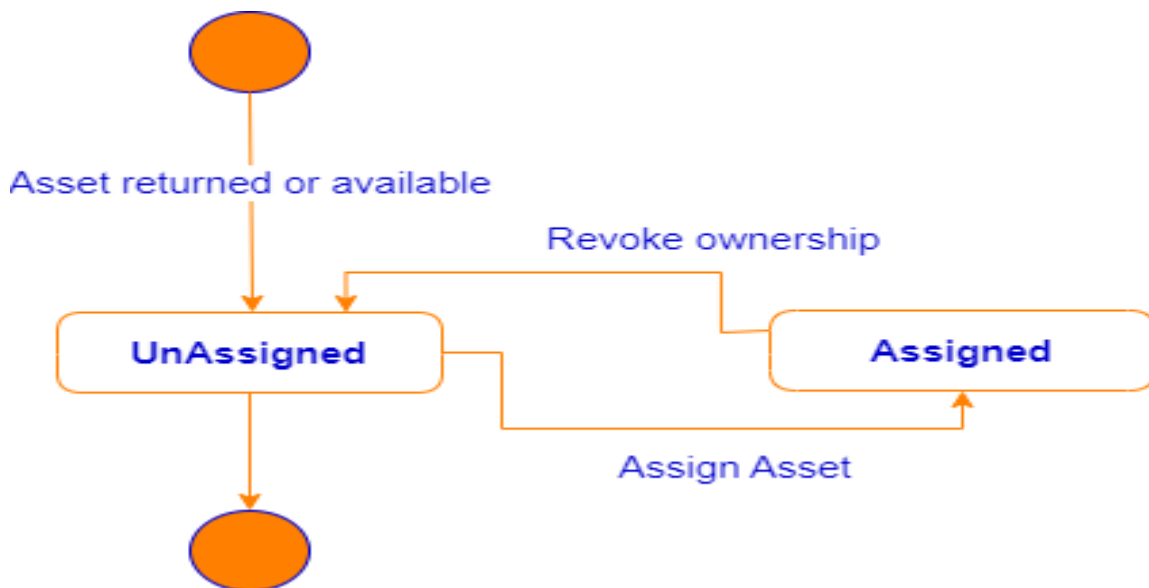
## 5.2.7 State Diagram - Data Import



## 5.2.8 State Diagram - Licenses and Warranties

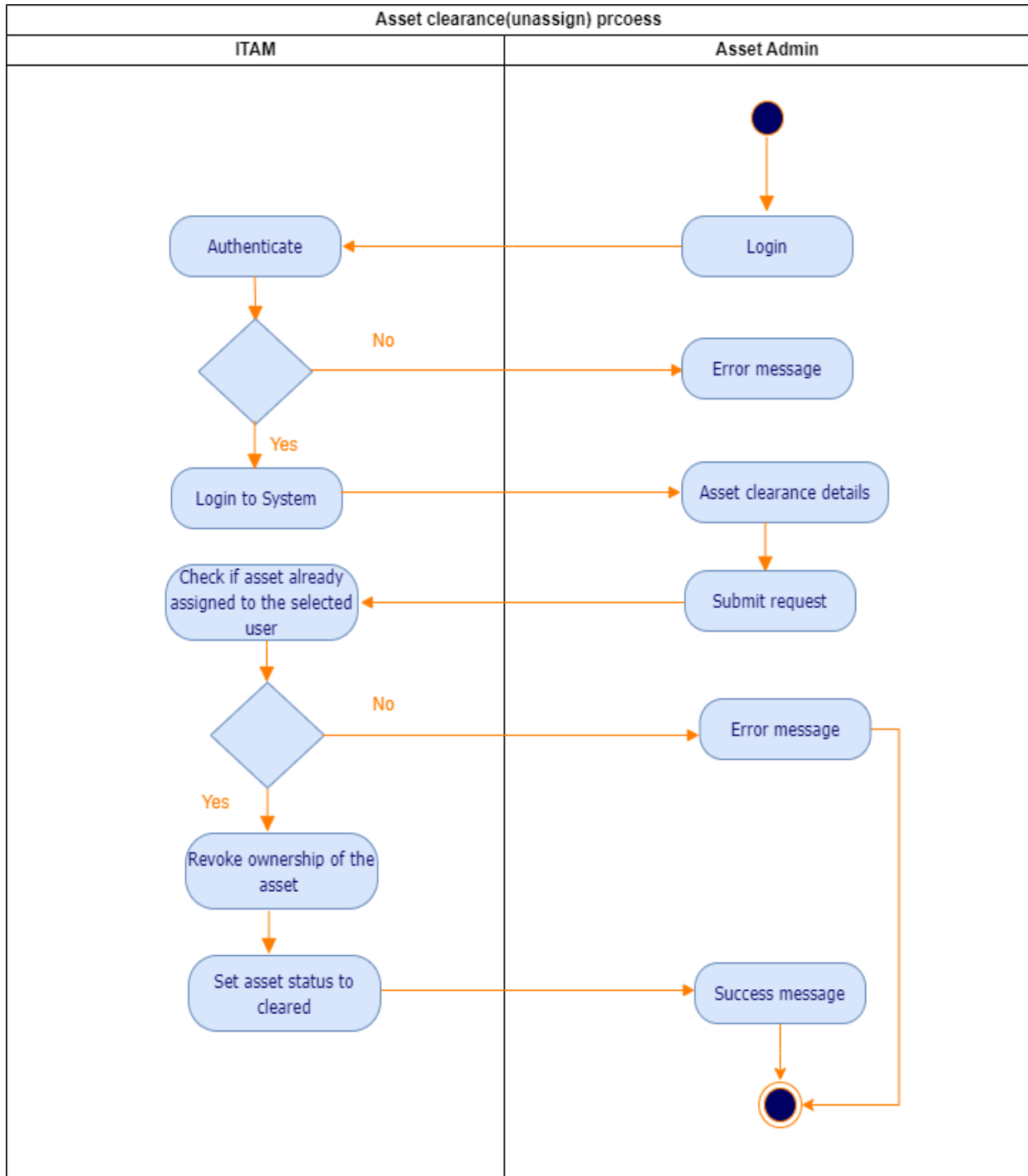


## 5.2.9 State Diagram - Licenses and Warranties

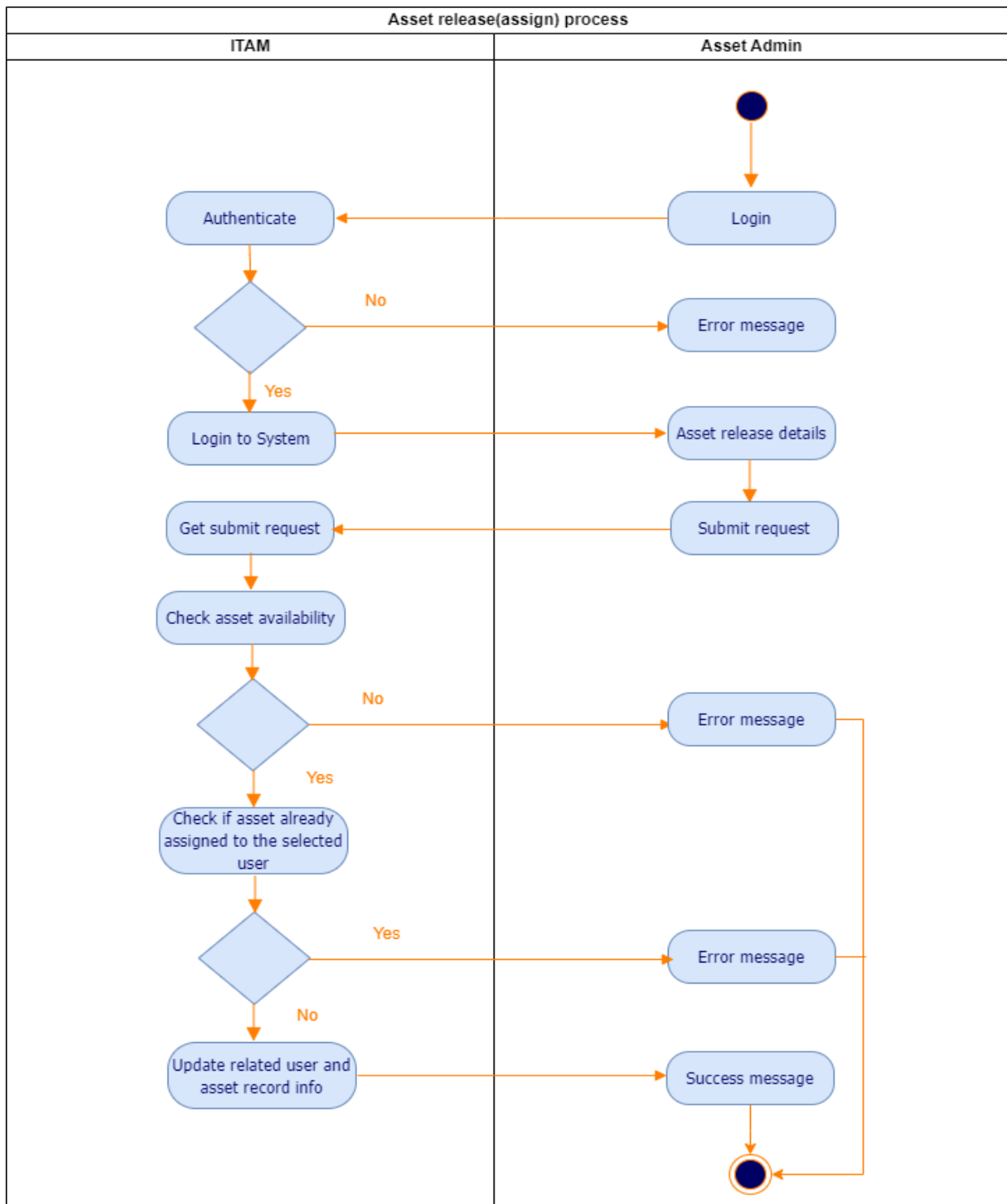


## 6.3 Activity Diagram

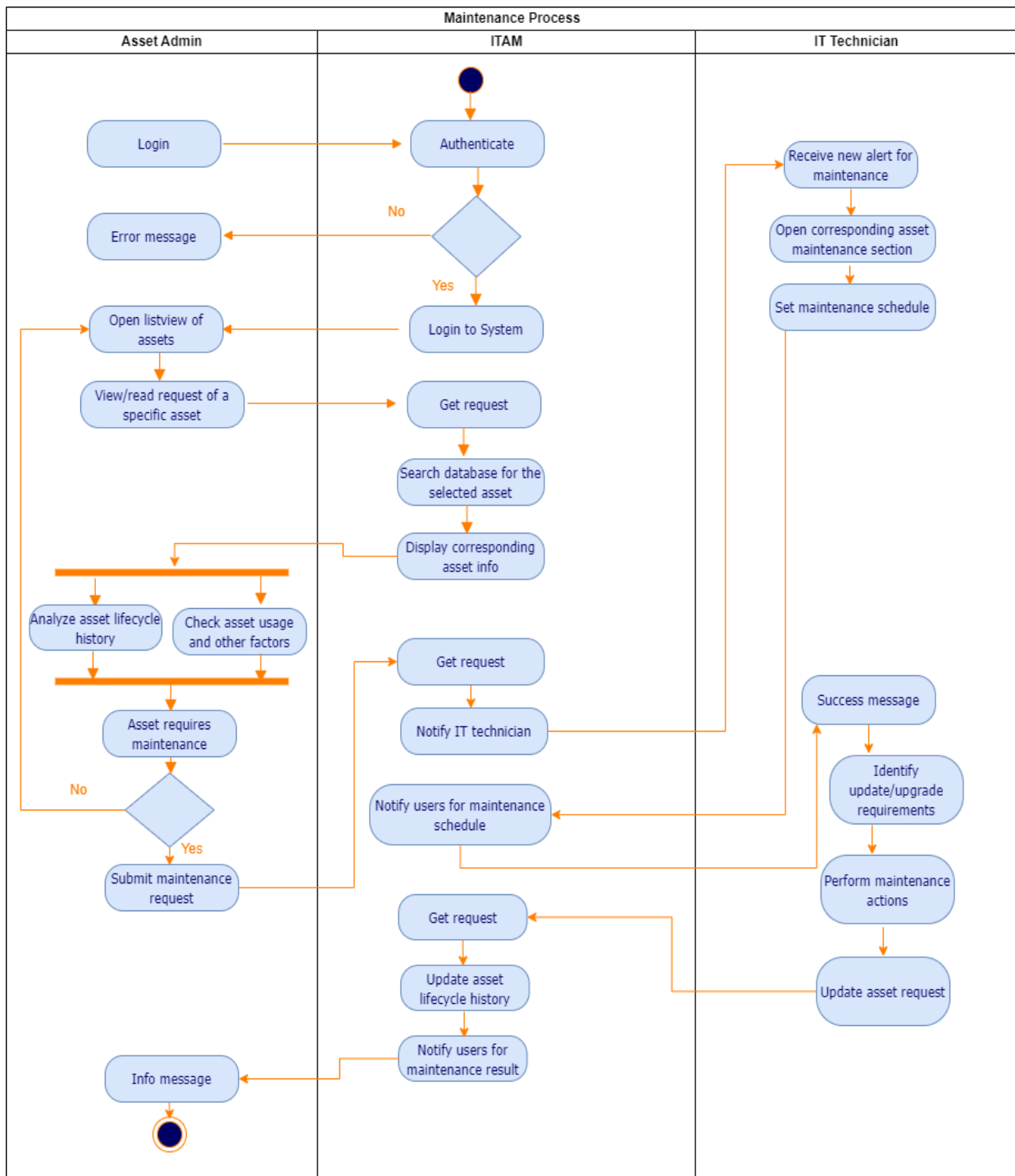
### 6.3.1 Activity Diagram - Asset Clearance



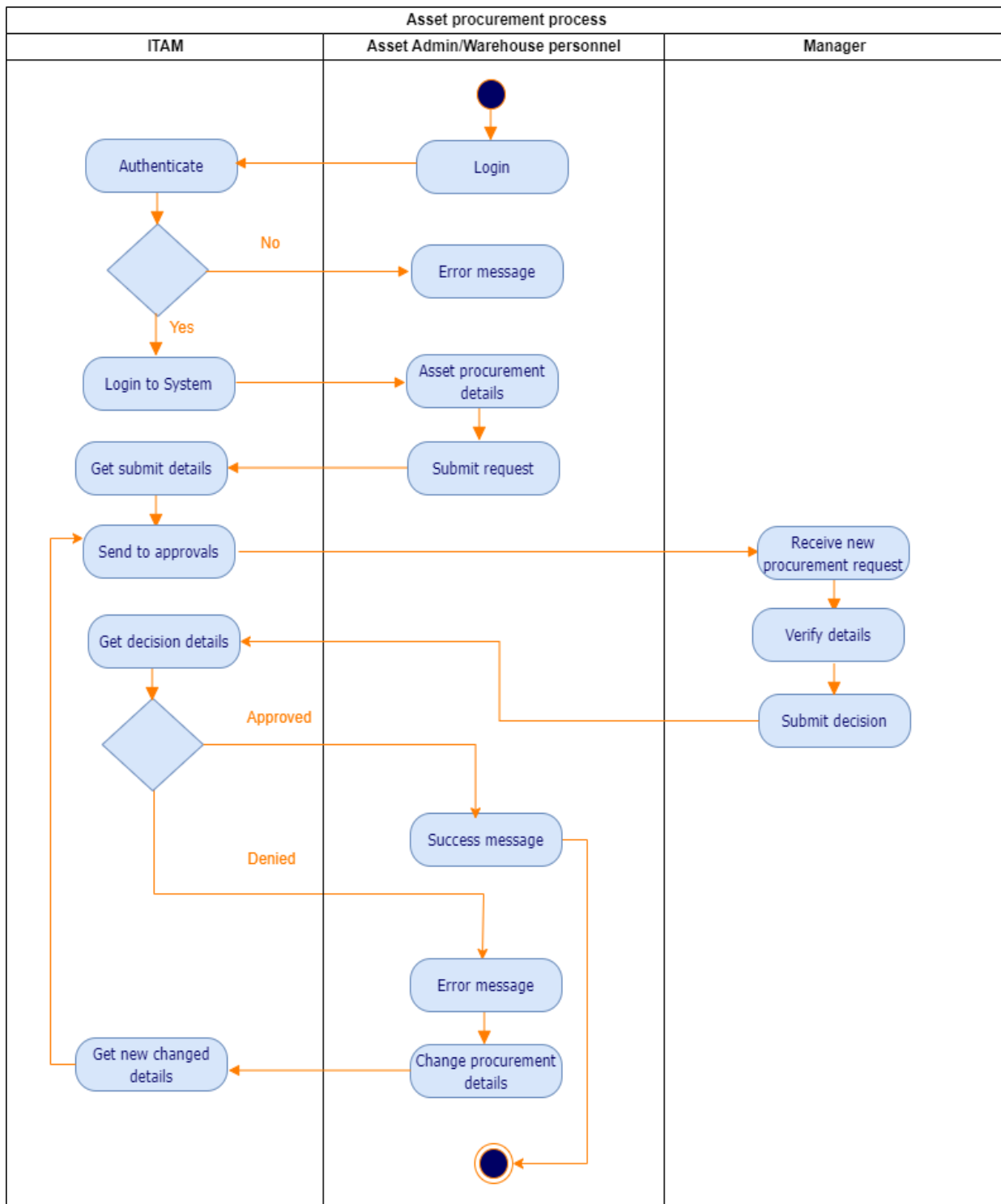
## 6.3.2 Activity Diagram - Asset Release



## 6.3.3 Activity Diagram - Asset Maintenance

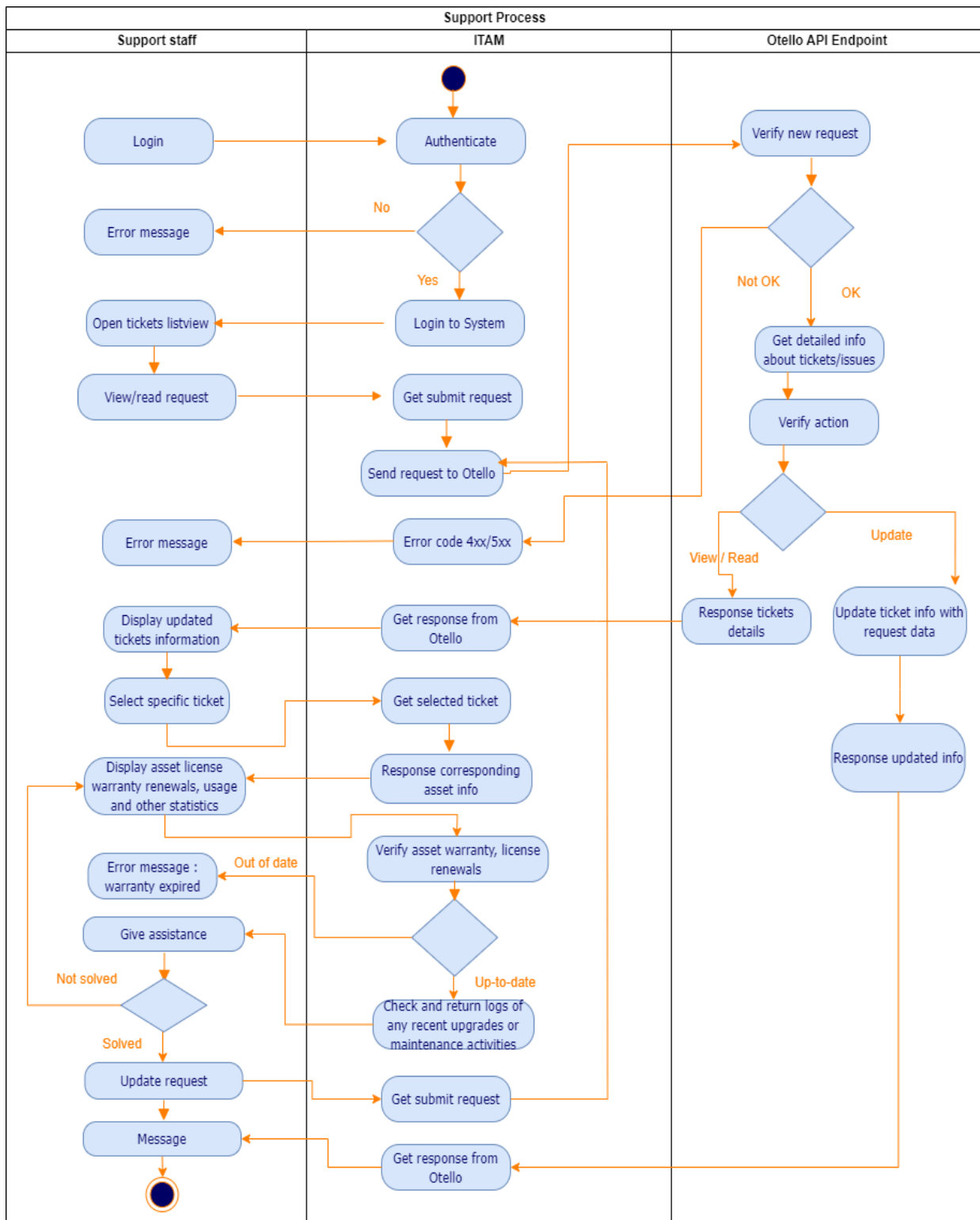


## 6.3.4 Activity Diagram - Procurement

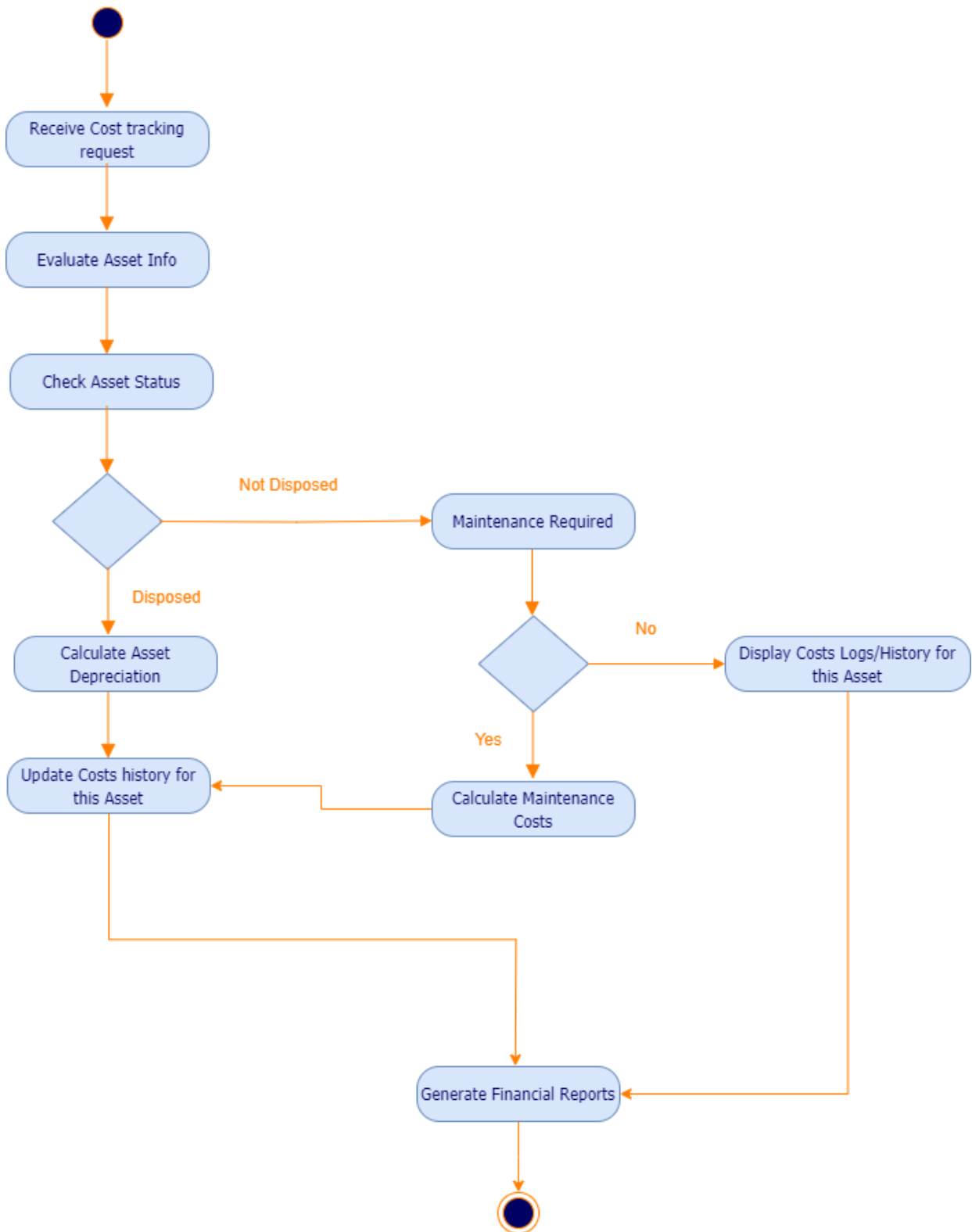




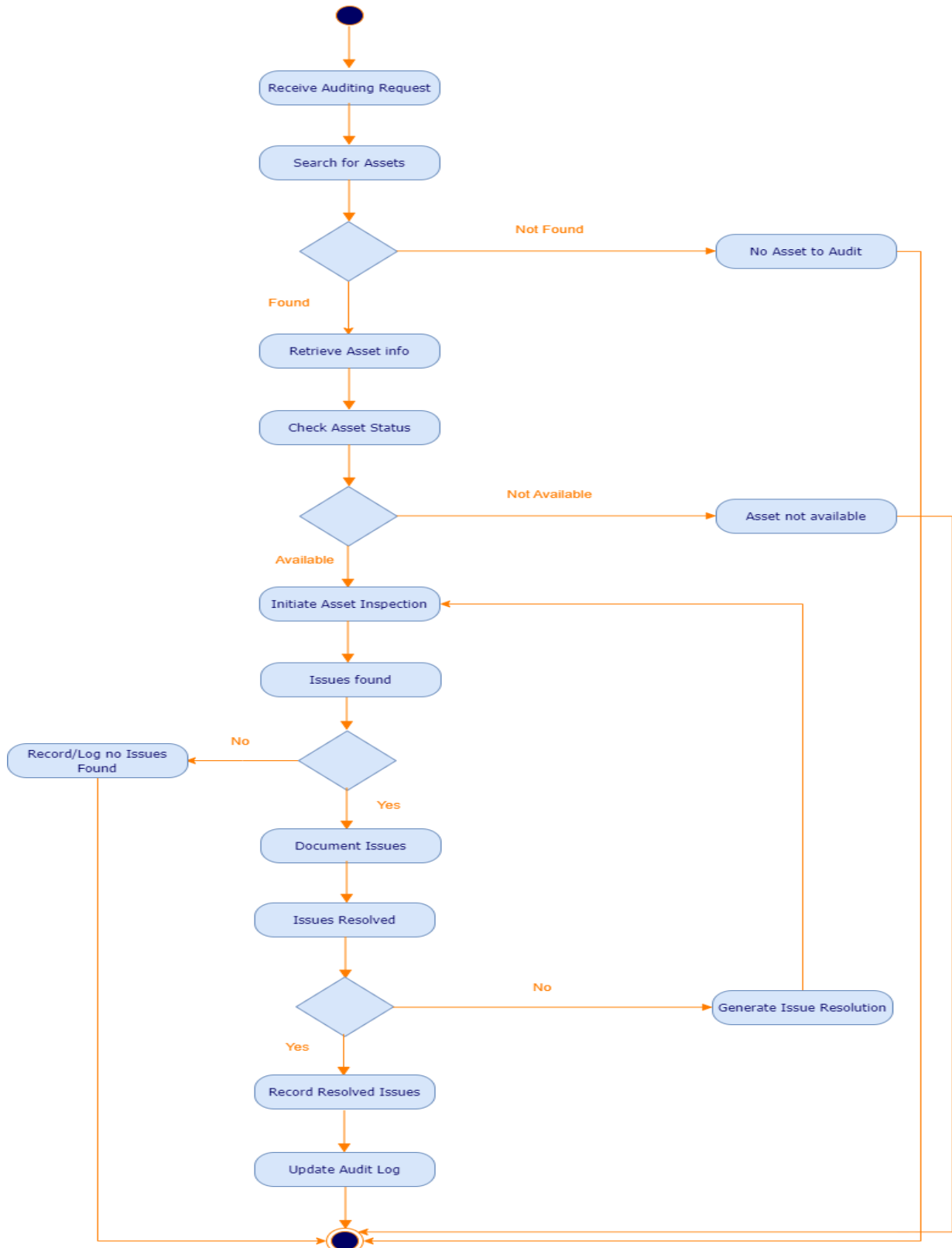
## 6.3.5 Activity Diagram - Support



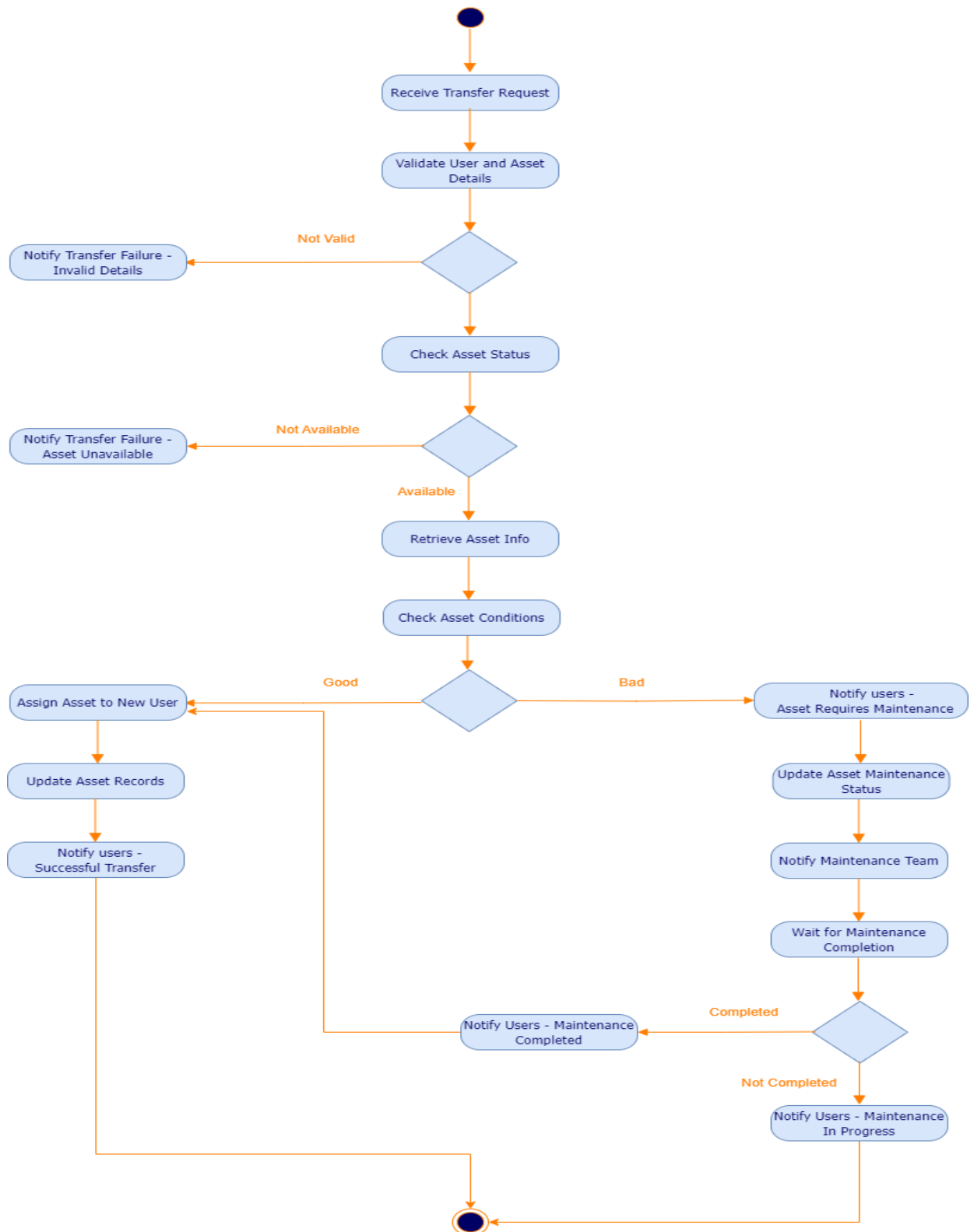
## 6.3.6 Activity Diagram - Asset Financial



## 6.3.7 Activity Diagram - Audit

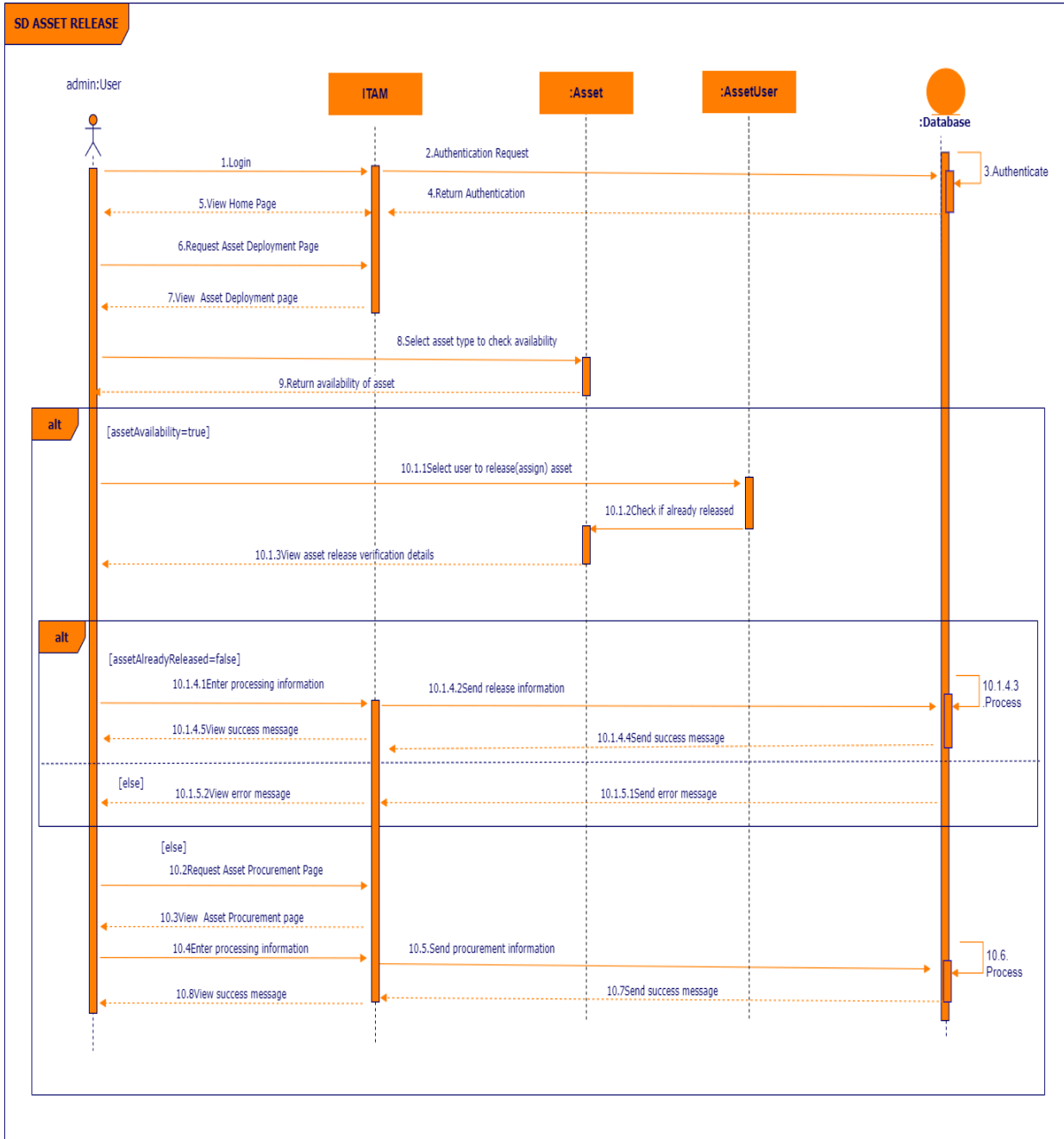


## 6.3.8 Activity Diagram - Transfer

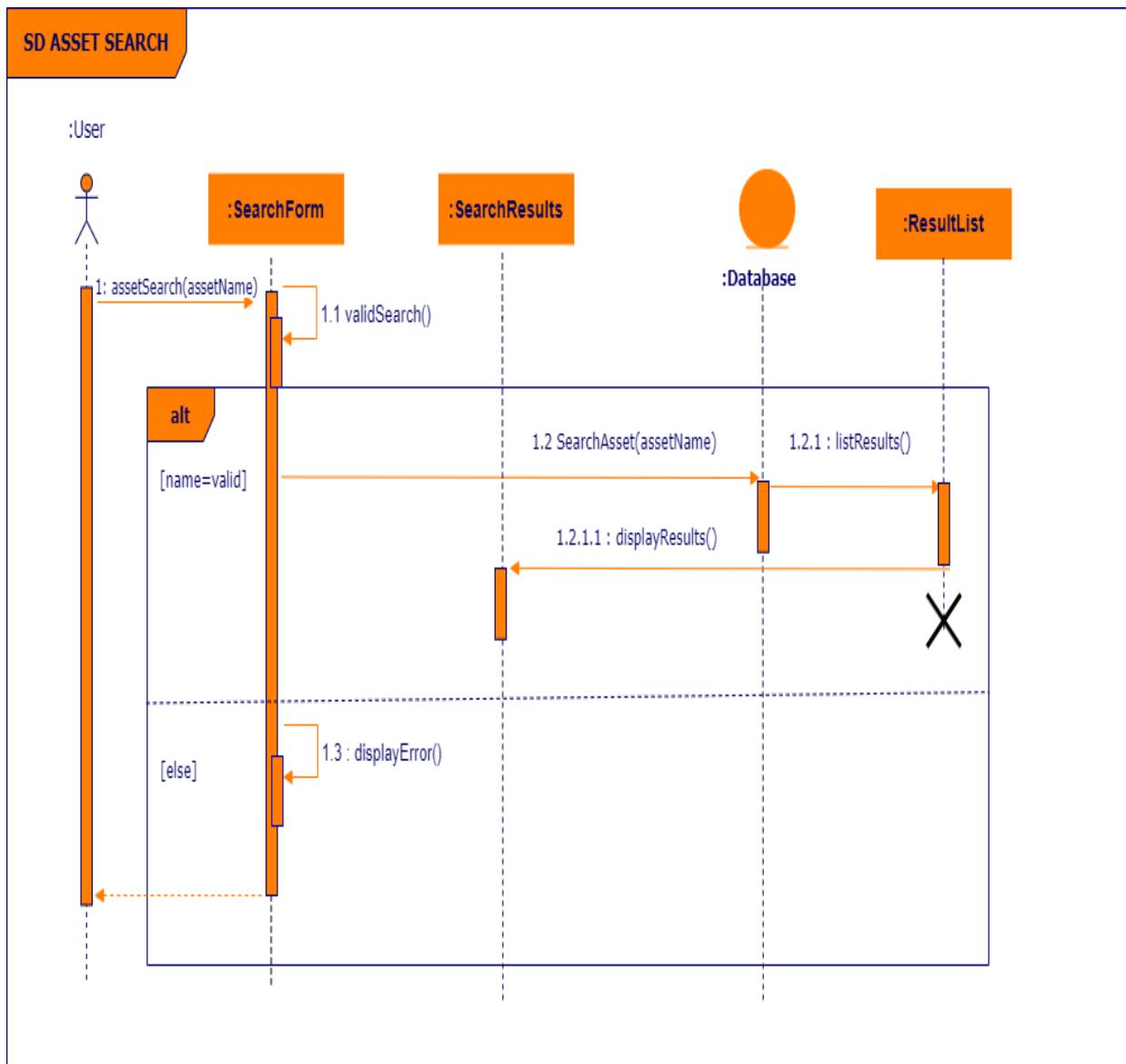


## 6.4 Sequence Diagram

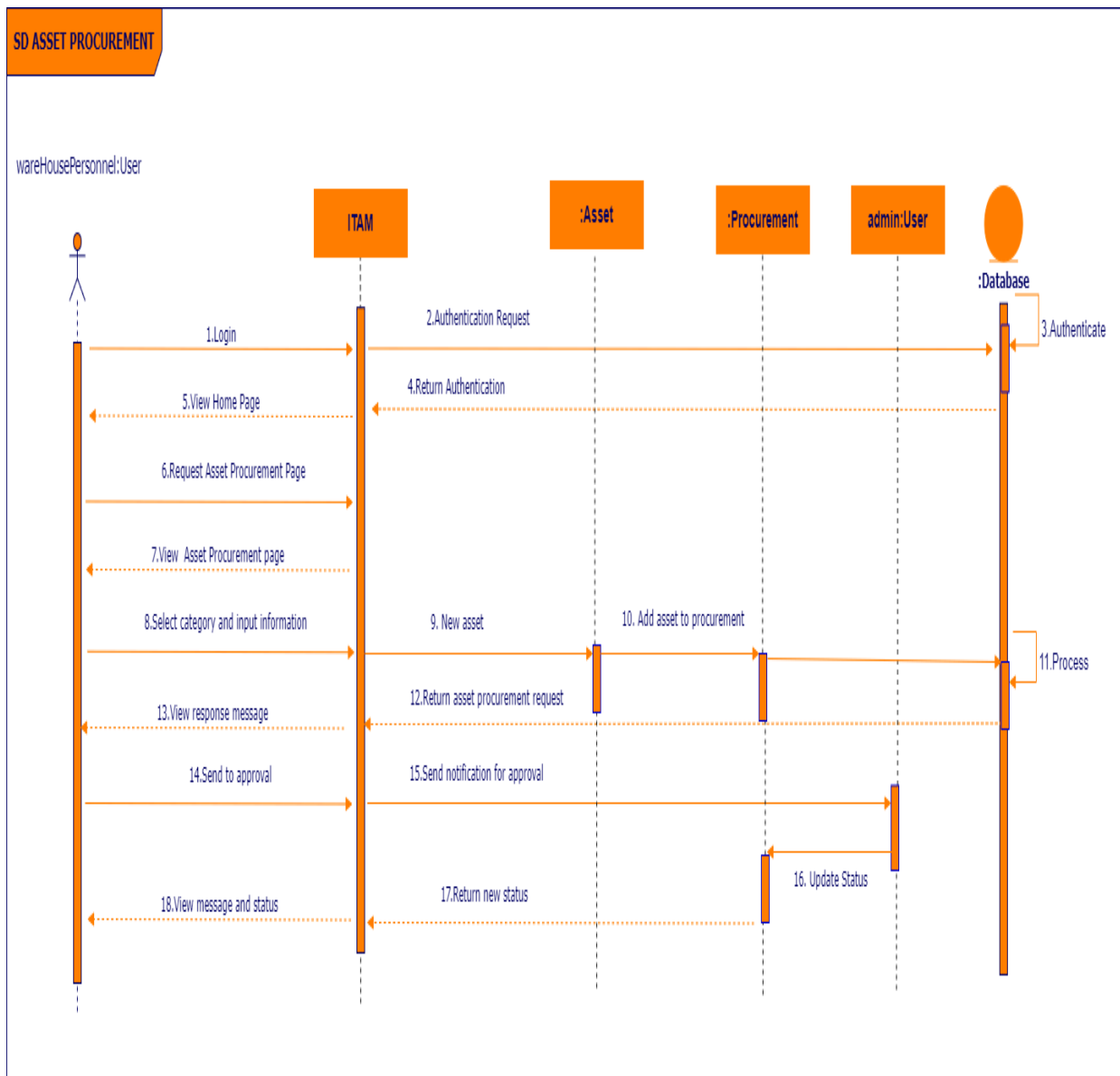
### 6.4.1 Sequence Diagram - Asset Release



## 6.4.2 Sequence Diagram - Asset Search



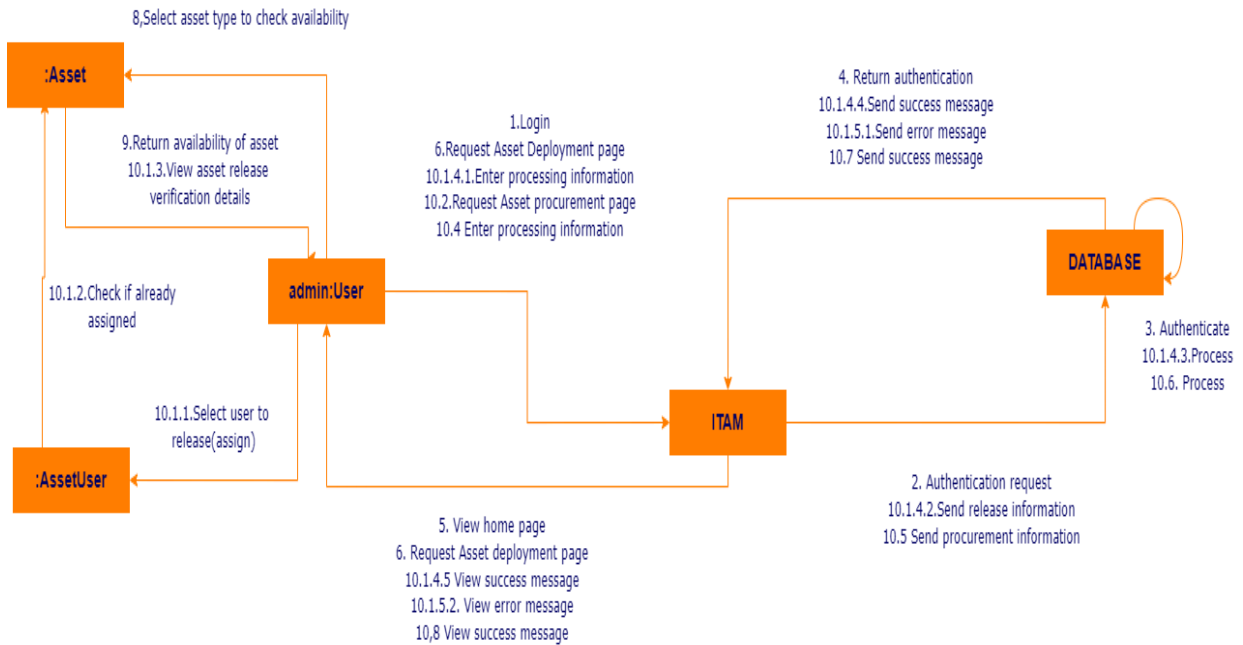
## 6.4.3 Sequence Diagram - Procurement



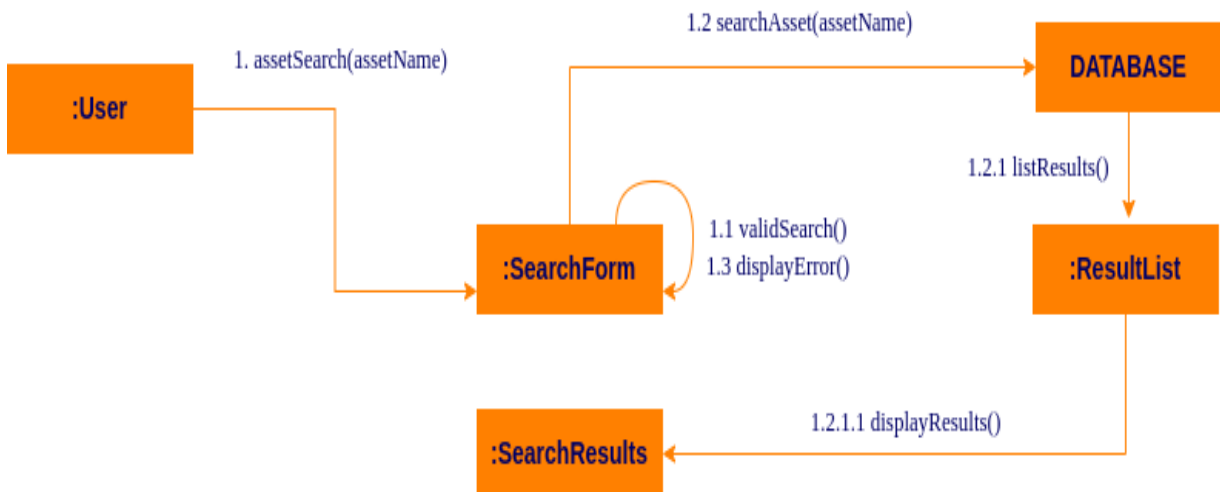
**\*\*Note: Other sequence diagrams are displayed in the section of design patterns for better understanding**

## 6.5 Communication Diagram

### 6.5.1 Communication Diagram - Asset Release

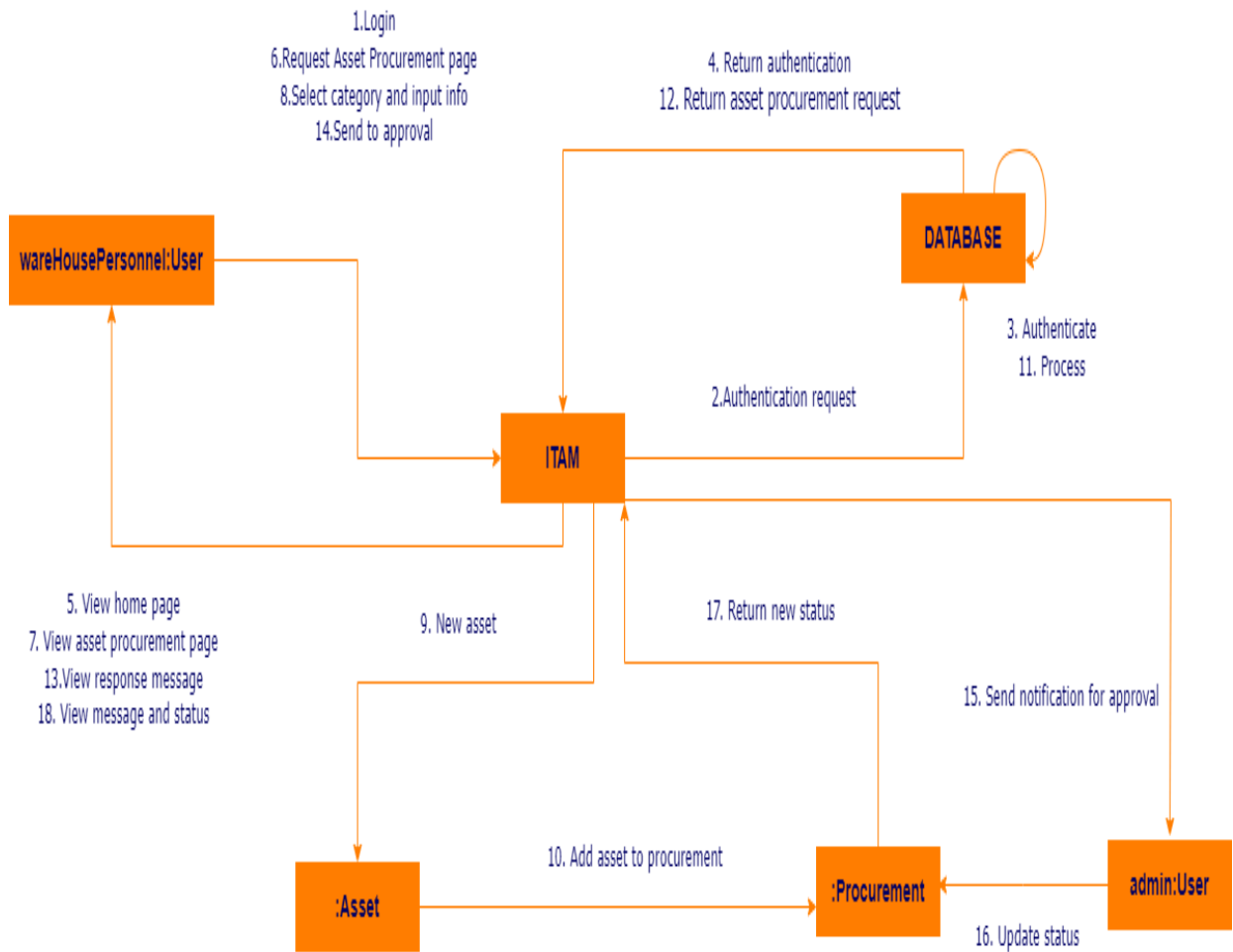


### 6.5.2 Communication Diagram - Asset Search





## 6.5.3 Communication Diagram - Asset Procurement



### 6.6 Class Diagram

#### 6.6.1 CRC Cards

Class : AssetUser	
Responsibilities	Collaborators
Display Allocated Asset	Asset
Generate Reports	ReportStrategy
Display Role	User
Allocate an Asset	AssetAllocationOperations

Class : Asset	
Responsibilities	Collaborators
Display Warranties	Warranty
Get Location	Location
Show Documents	Document
Check if Procured	Procurement

Class : Supplier	
Responsibilities	Collaborators
Get Procurements Initiated	Procurement
Get info details	User

Class : HardwareAsset	
Responsibilities	Collaborators
Display components	Component
Display Manufacturers	Manufacture

## IT Asset Management System

Class : Procurement	
Responsibilities	Collaborators
Display Assets included	Asset
Display Supplier	Supplier
Display AssetAdmin to approve the request	AssetAdmin

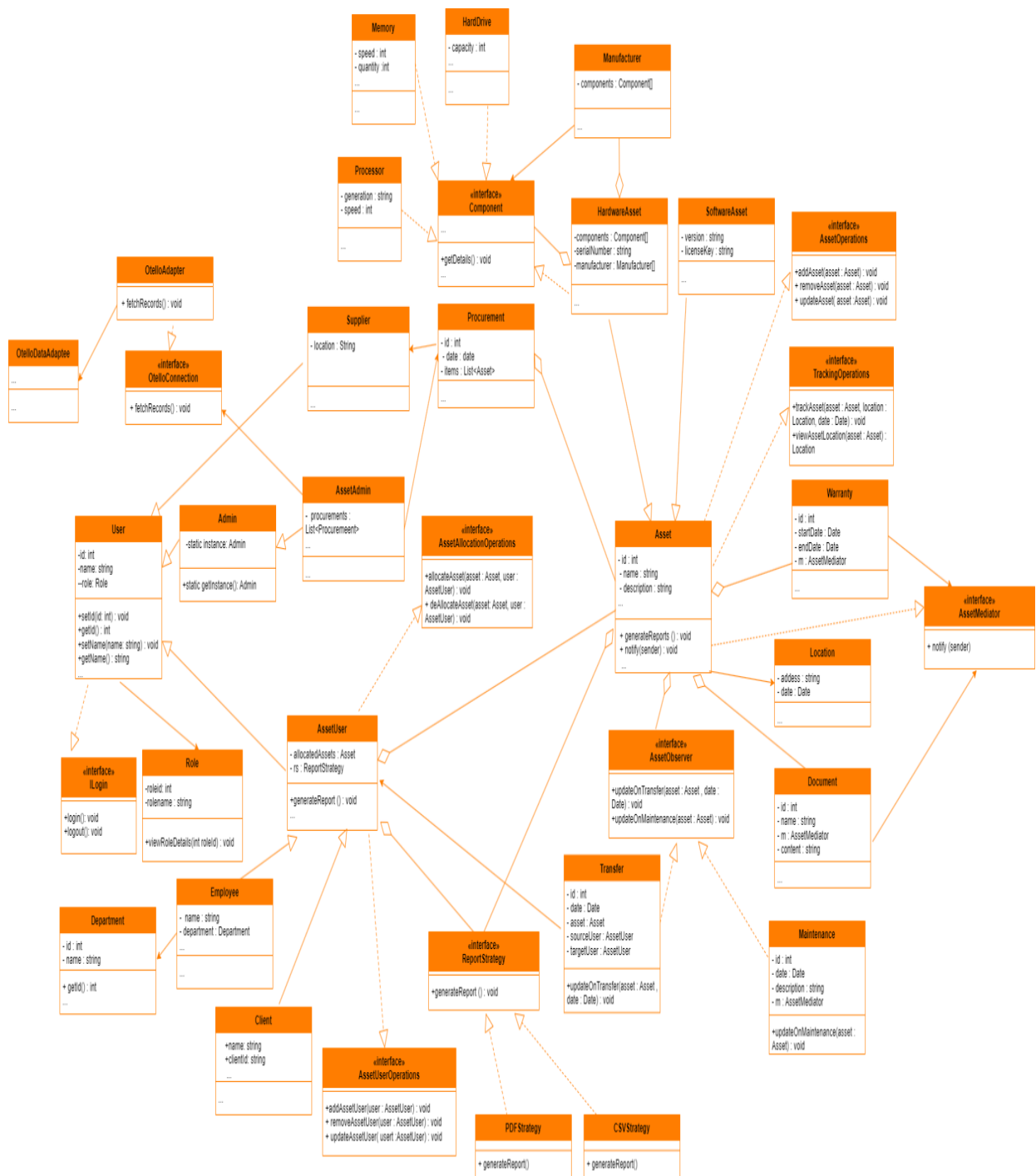
Class : Transfer	
Responsibilities	Collaborators
Display targetAsset	Asset
Display targetUser	AssetUset

Class : Document	
Responsibilities	Collaborators
Display related asset	Asset
Display content	

Class : Maintenance	
Responsibilities	Collaborators
Display related asset	Asset
Show start/end dates	
Display description	

## IT Asset Management System

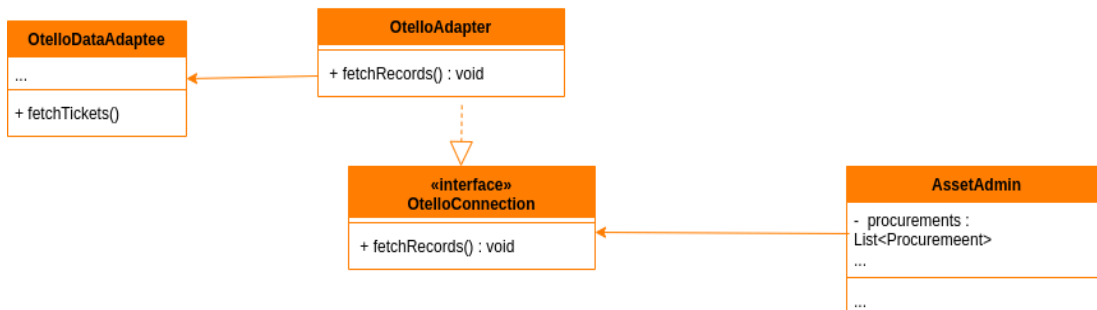
### 6.6.2 Class Diagram



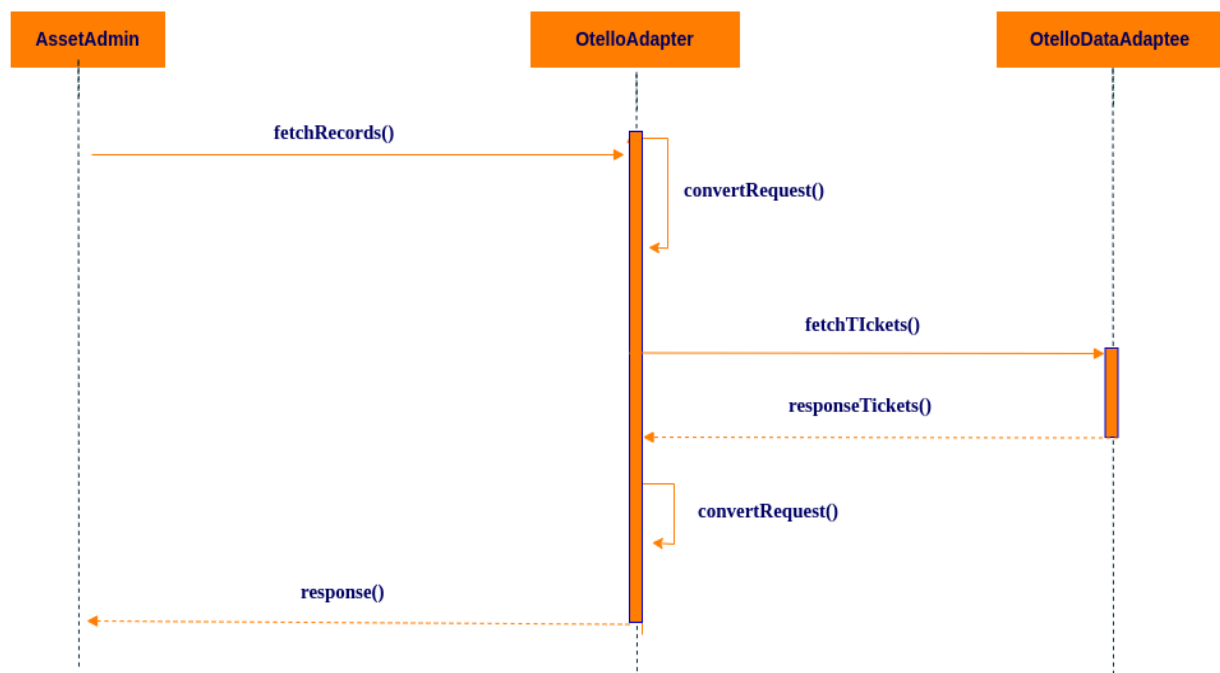
## 6.6.3 Design Pattern

### 6.6.3.1 Adapter

#### CLASS DIAGRAM

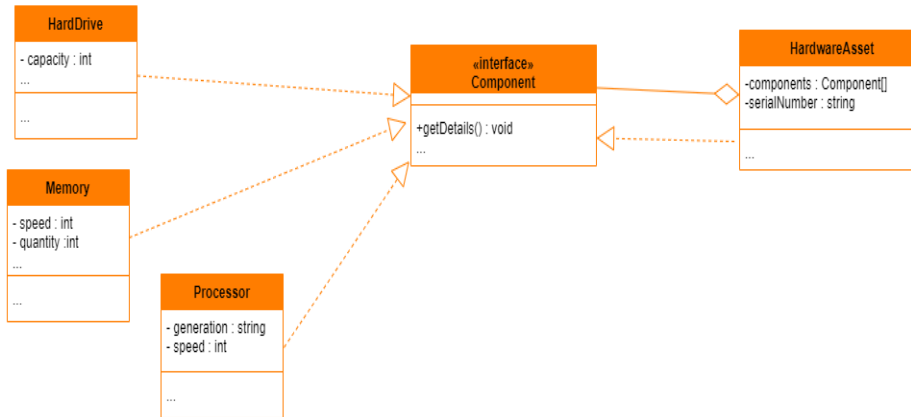


#### SEQUENCE DIAGRAM

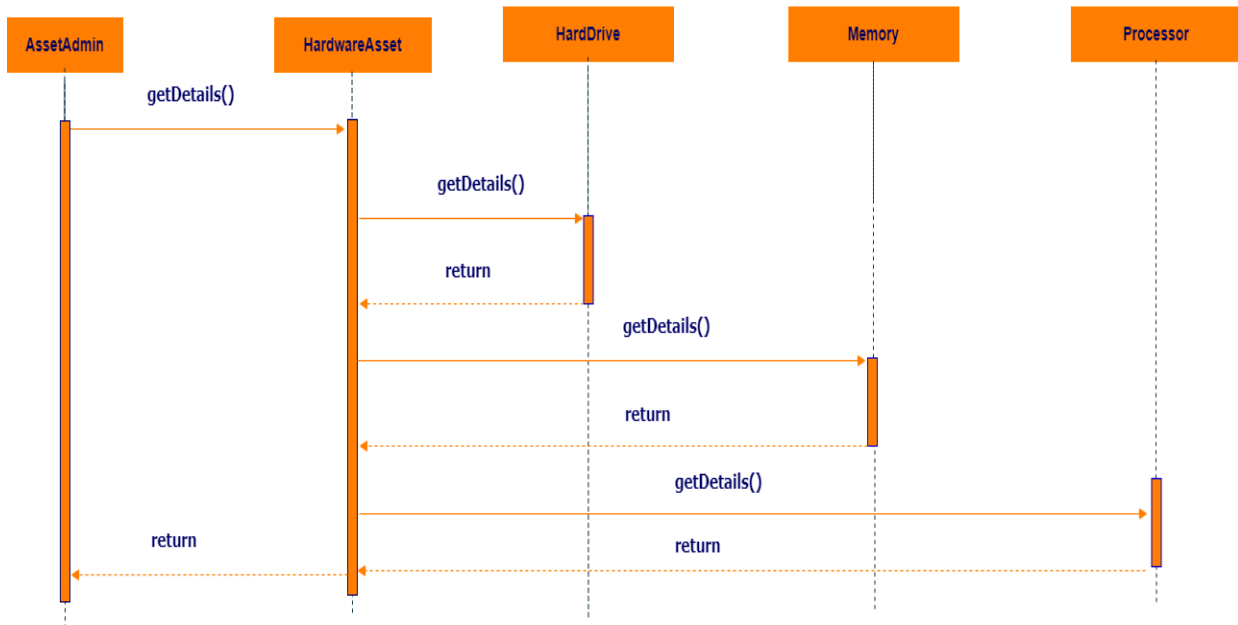


## 6.6.3.2 Composite

### CLASS DIAGRAM

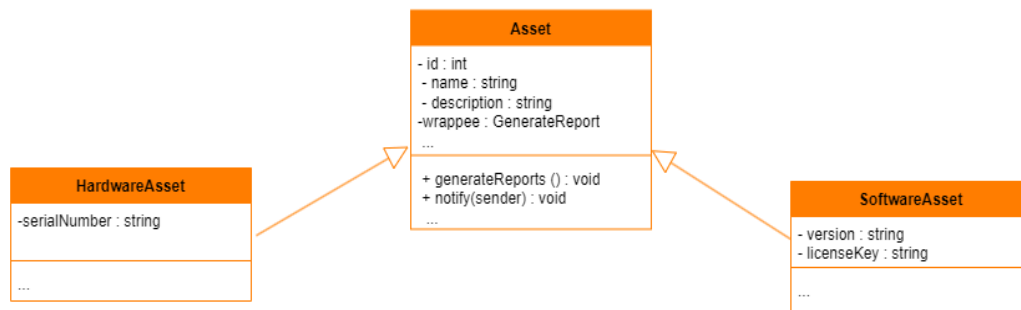


### SEQUENCE DIAGRAM

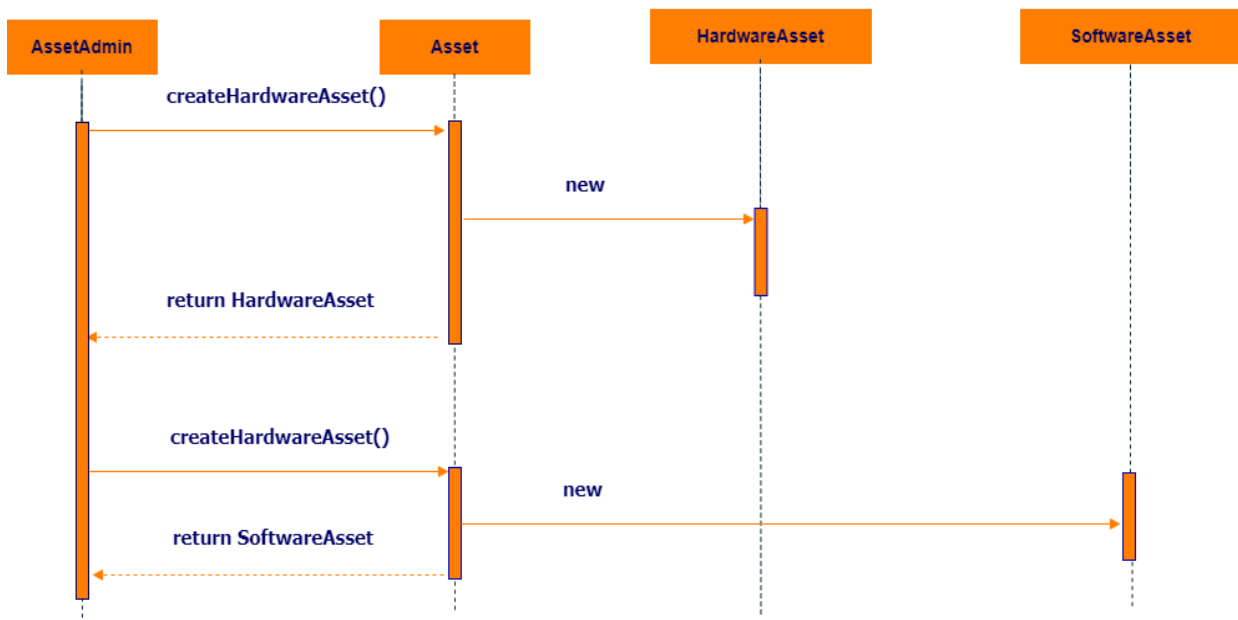


## 6.6.3.3 Factory Method

### CLASS DIAGRAM

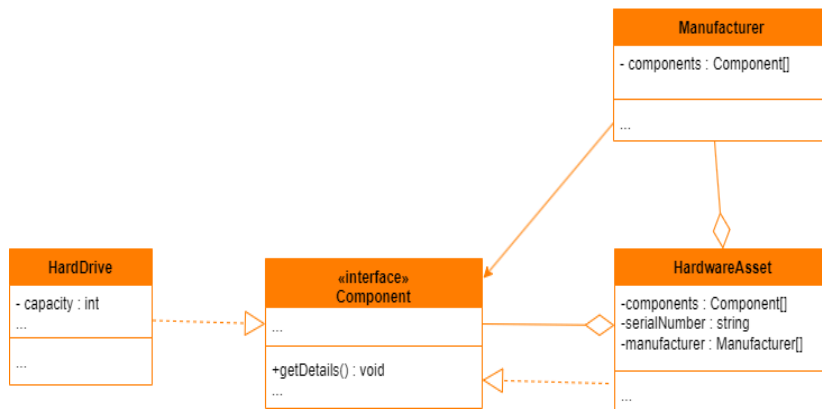


### SEQUENCE DIAGRAM

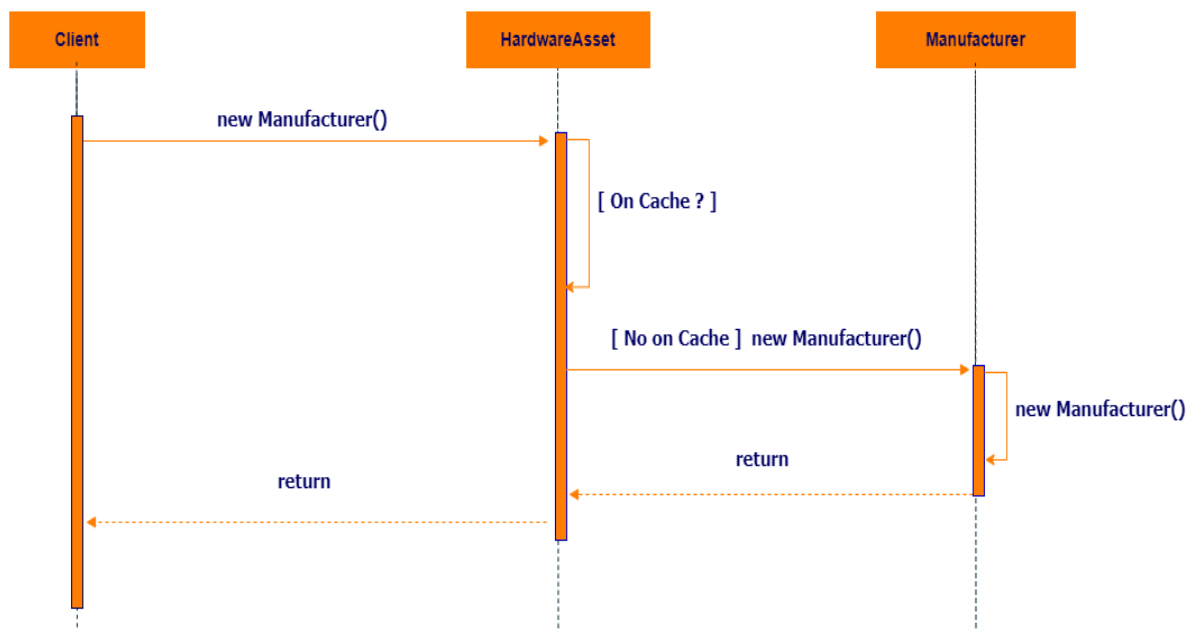


## 6.6.3.4 Flyweight

### CLASS DIAGRAM



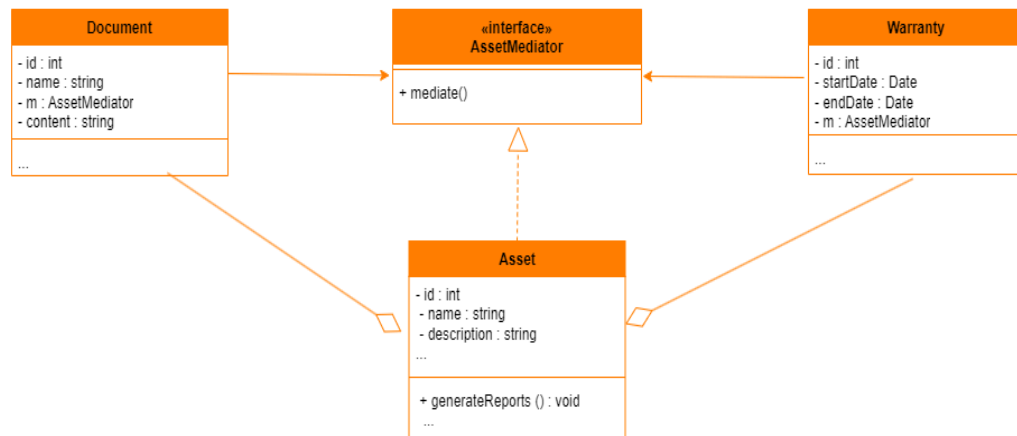
### SEQUENCE DIAGRAM



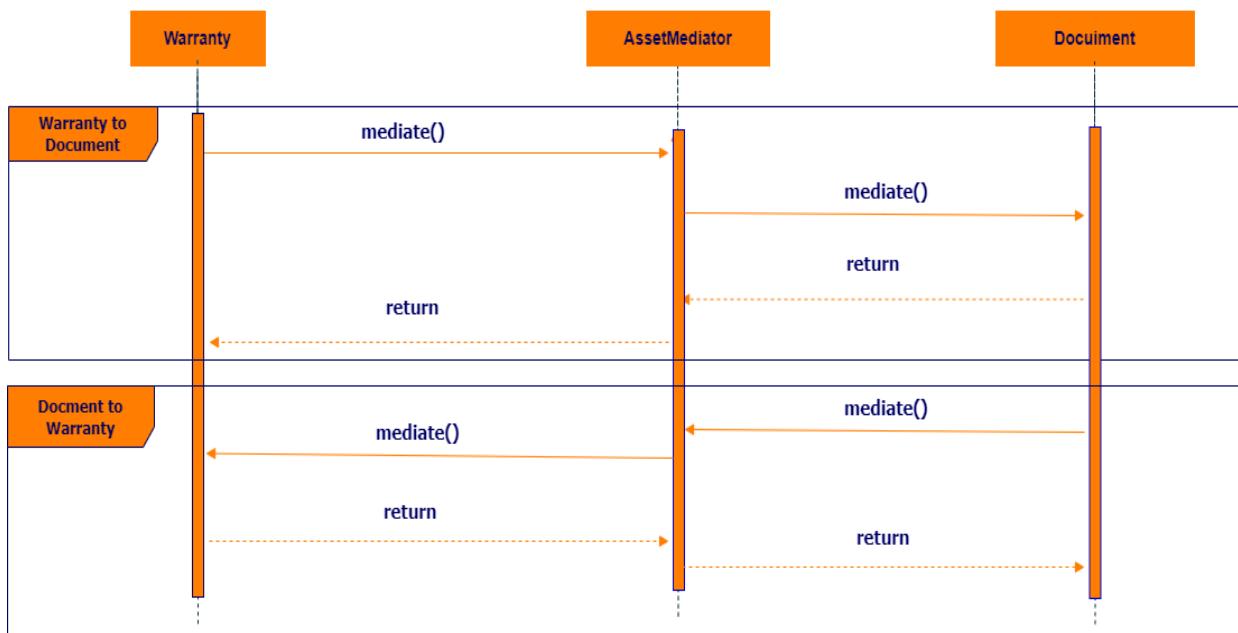


## 6.6.3.5 Mediator

### CLASS DIAGRAM

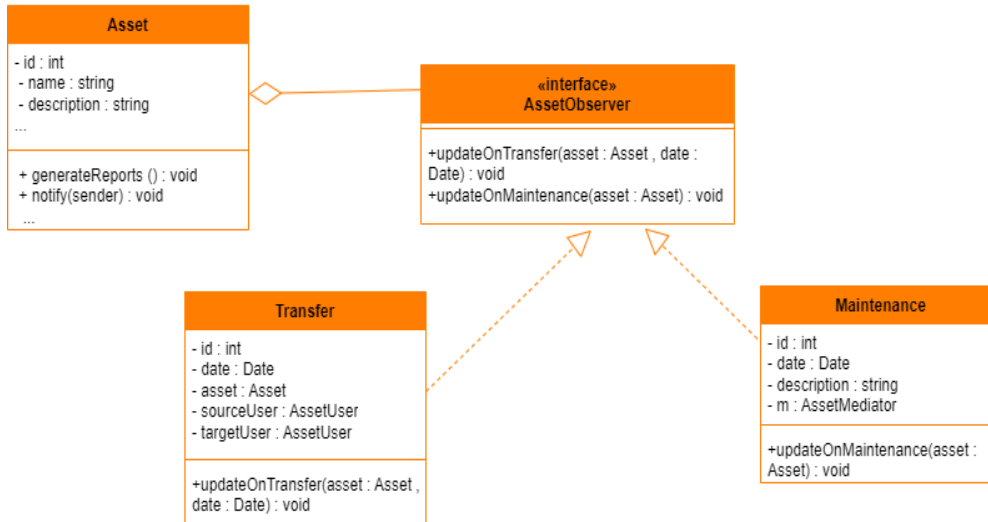


### SEQUENCE DIAGRAM

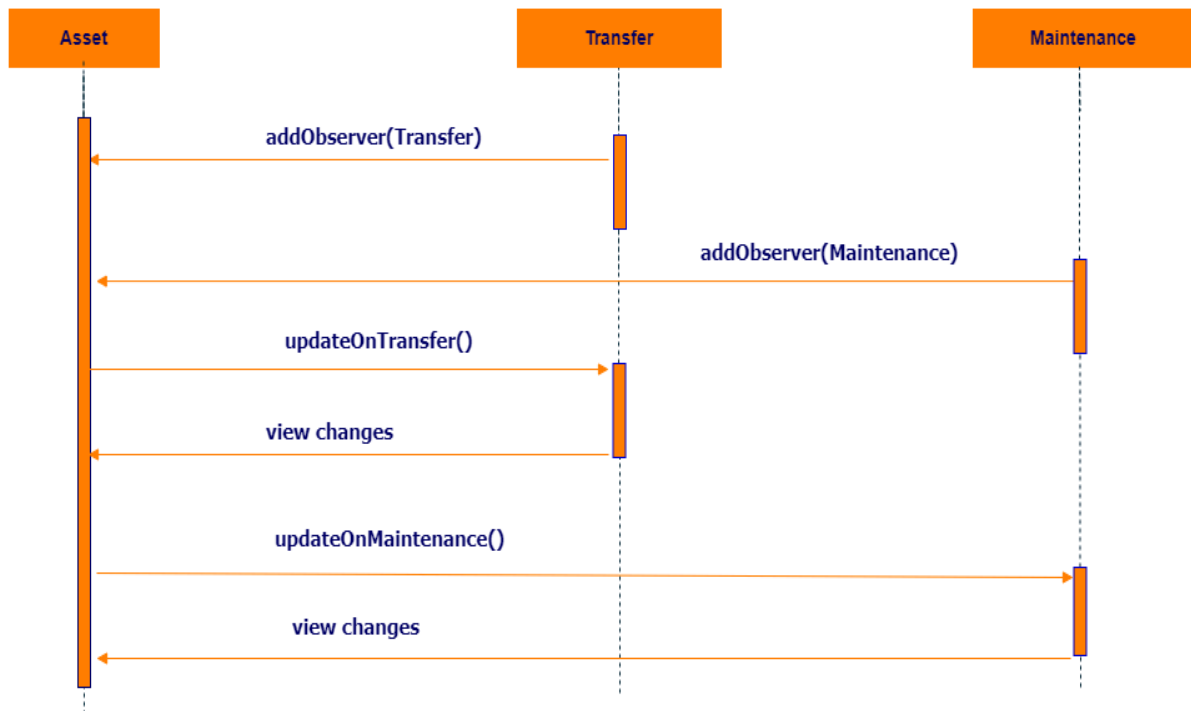


## 6.6.3.6 Observer

### CLASS DIAGRAM

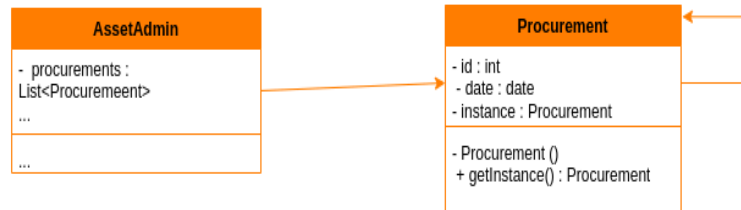


### SEQUENCE DIAGRAM

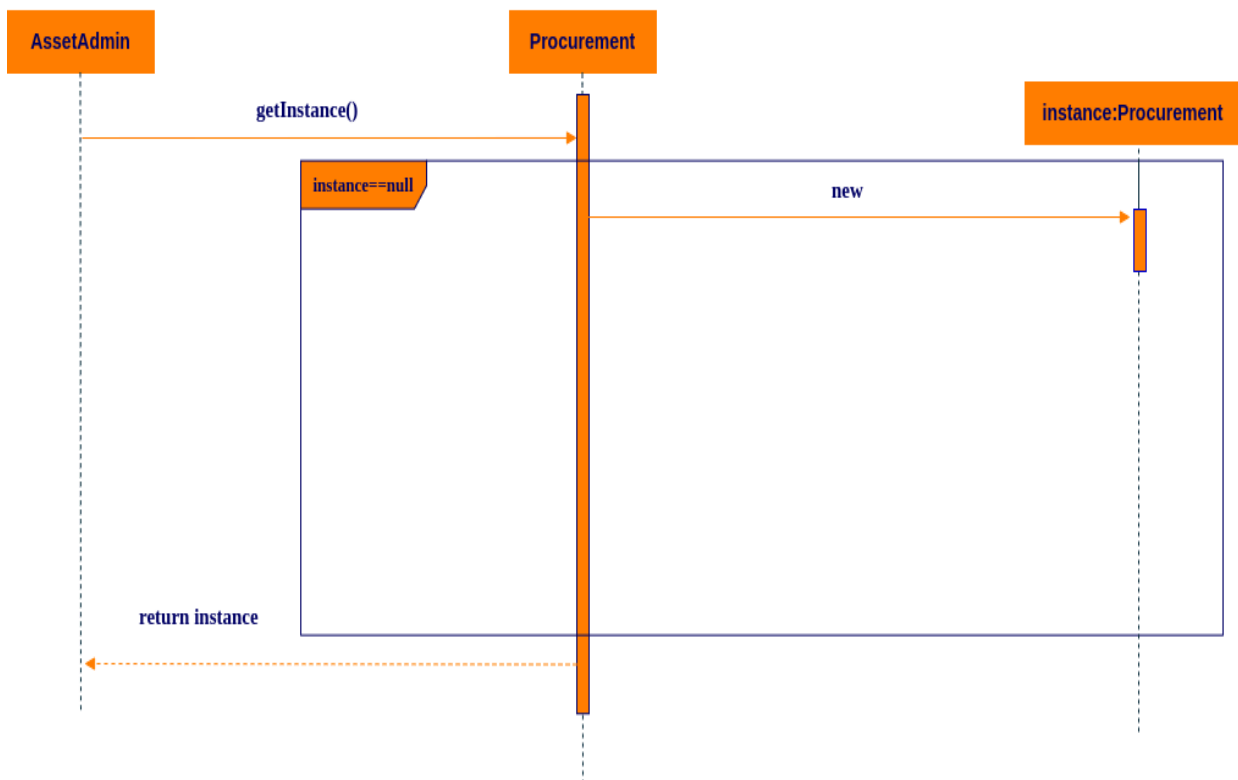


## 6.6.3.7 Singleton

### CLASS DIAGRAM

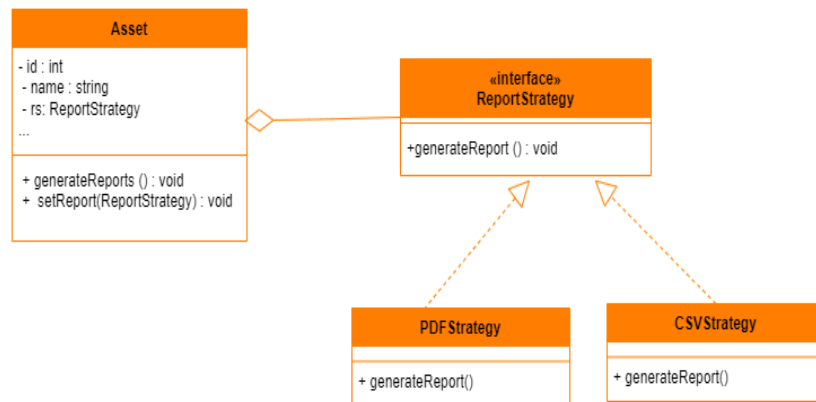


### SEQUENCE DIAGRAM

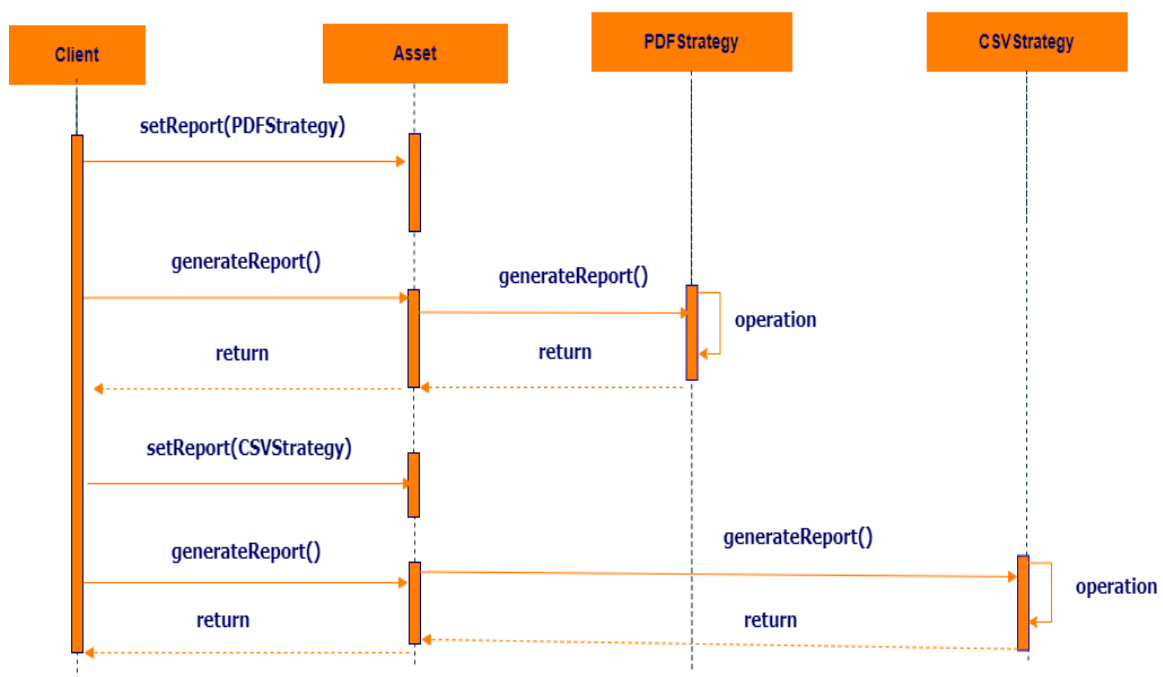


## 6.6.3.8 Strategy

### CLASS DIAGRAM

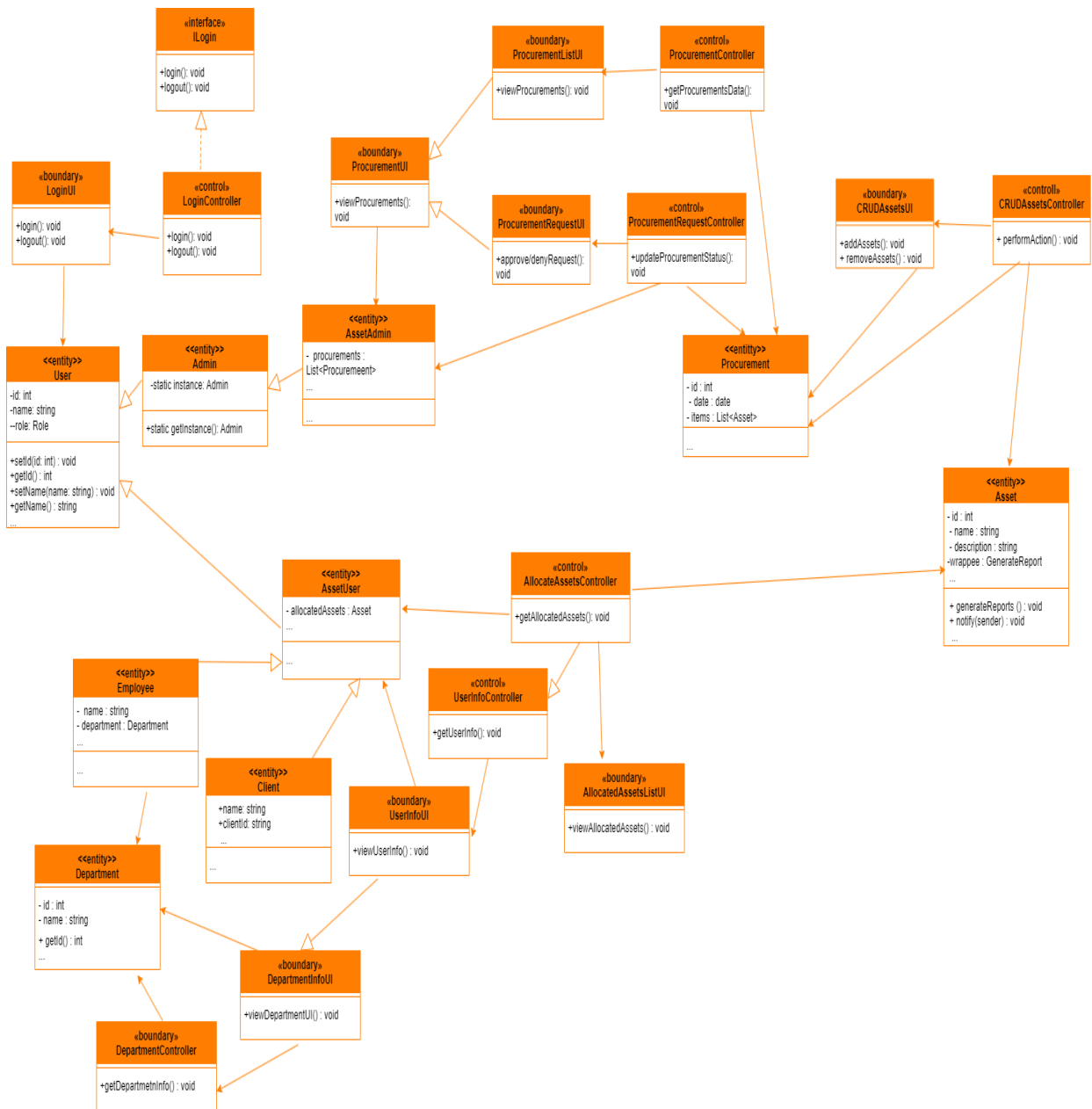


### SEQUENCE DIAGRAM

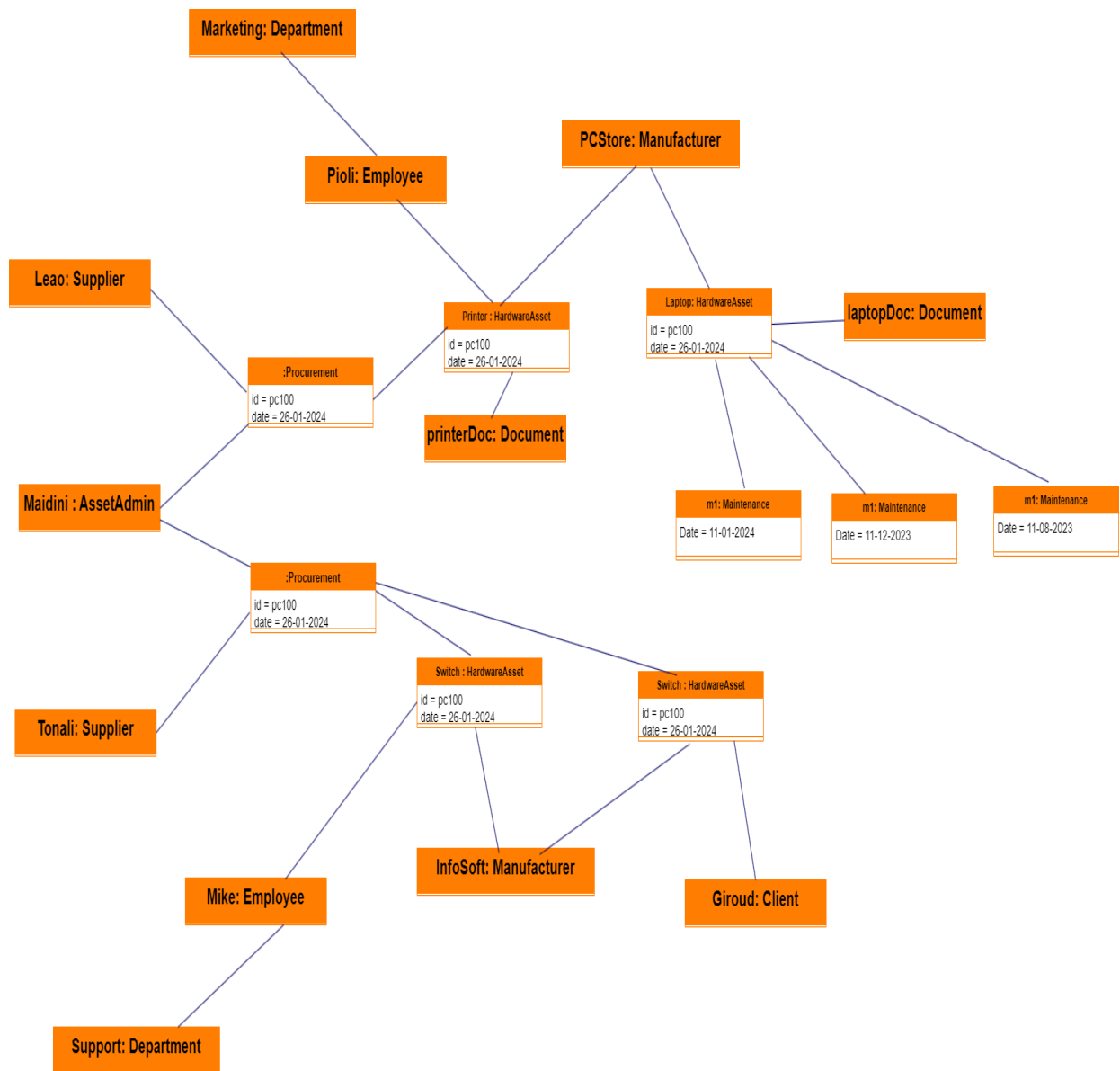


## IT Asset Management System

### 6.6.4 EBC Diagram

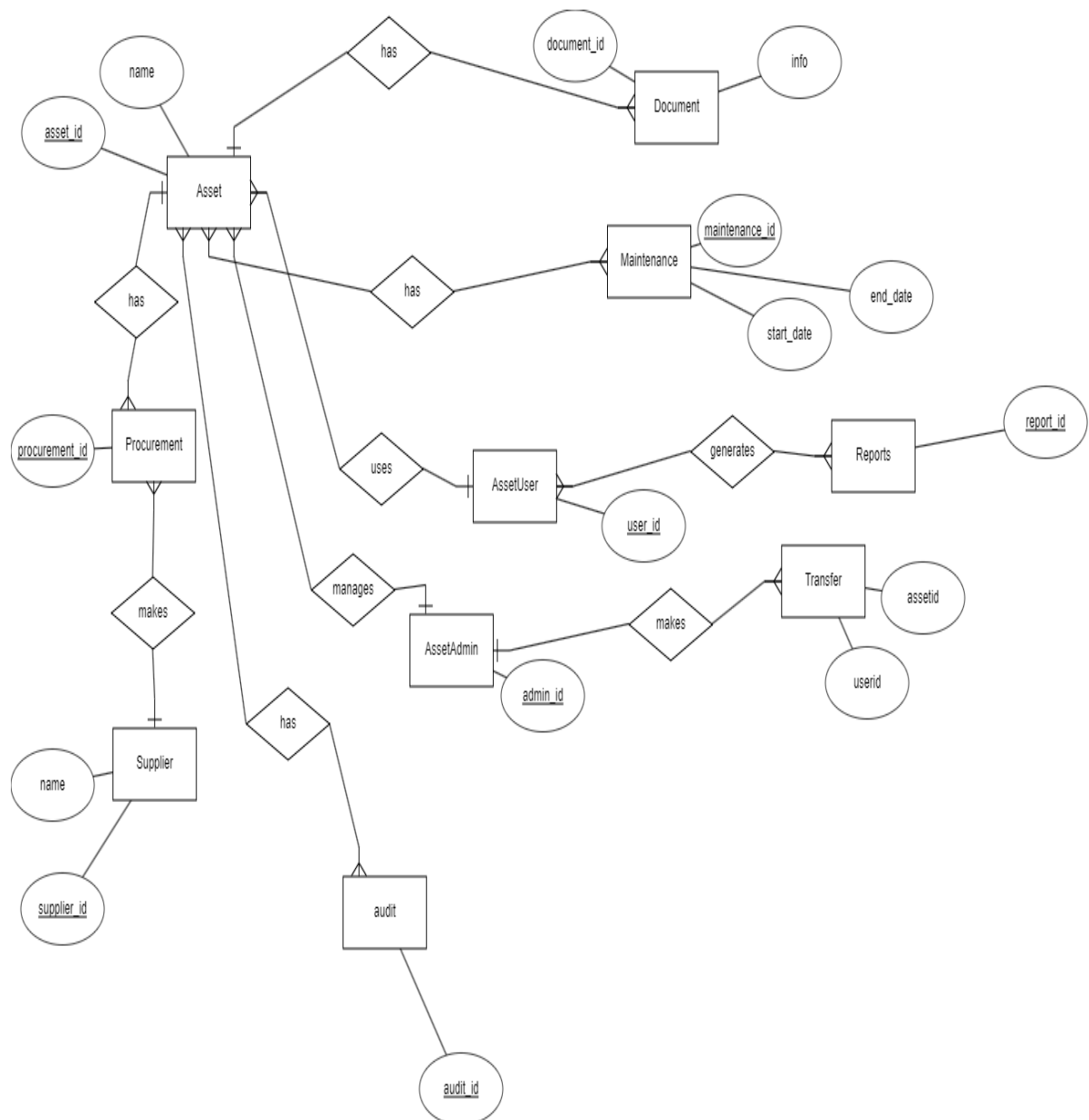


## 6.7 Object Diagram

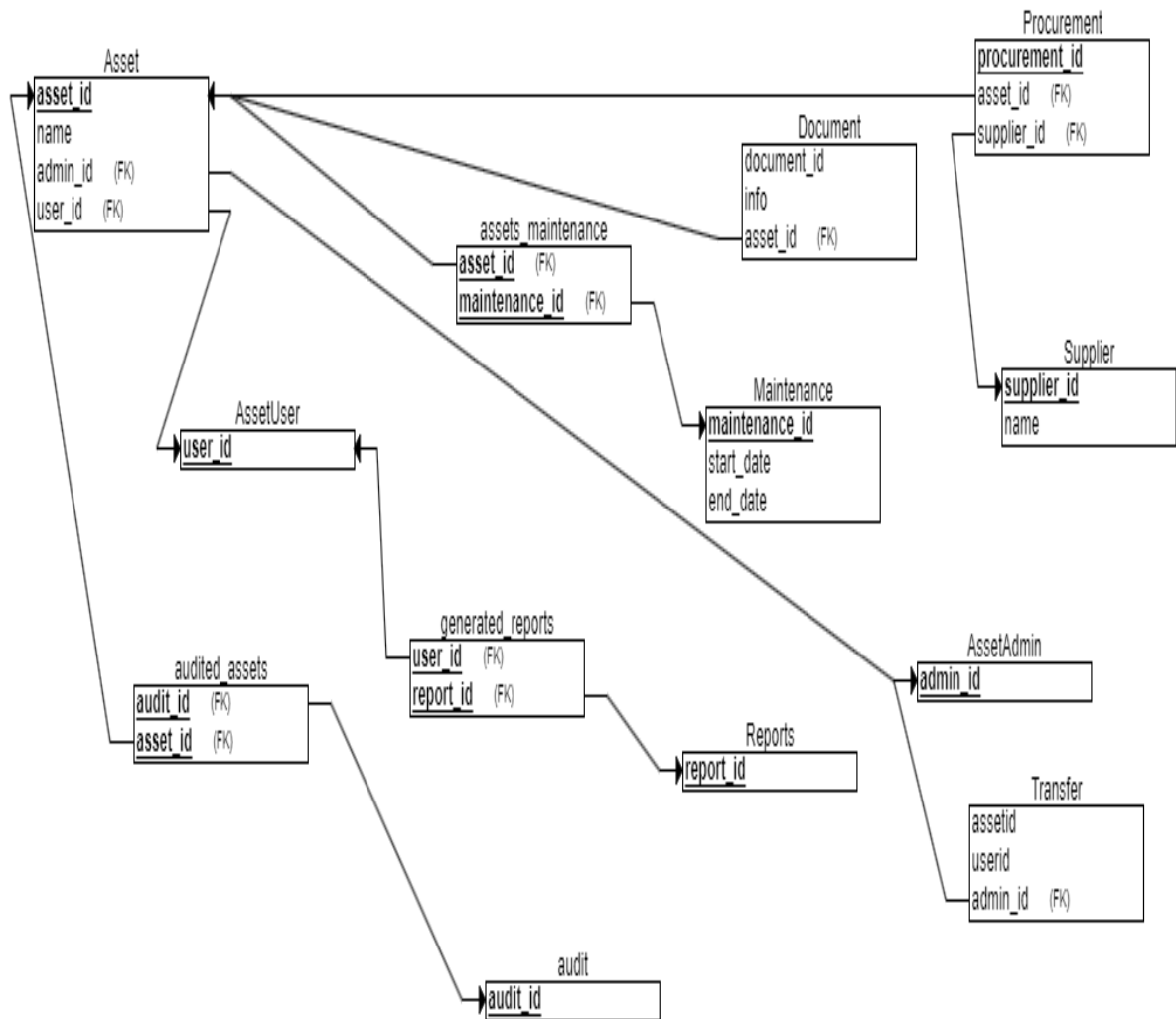


# IT Asset Management System

## 7 ERD Diagram



## 8 RS Schema

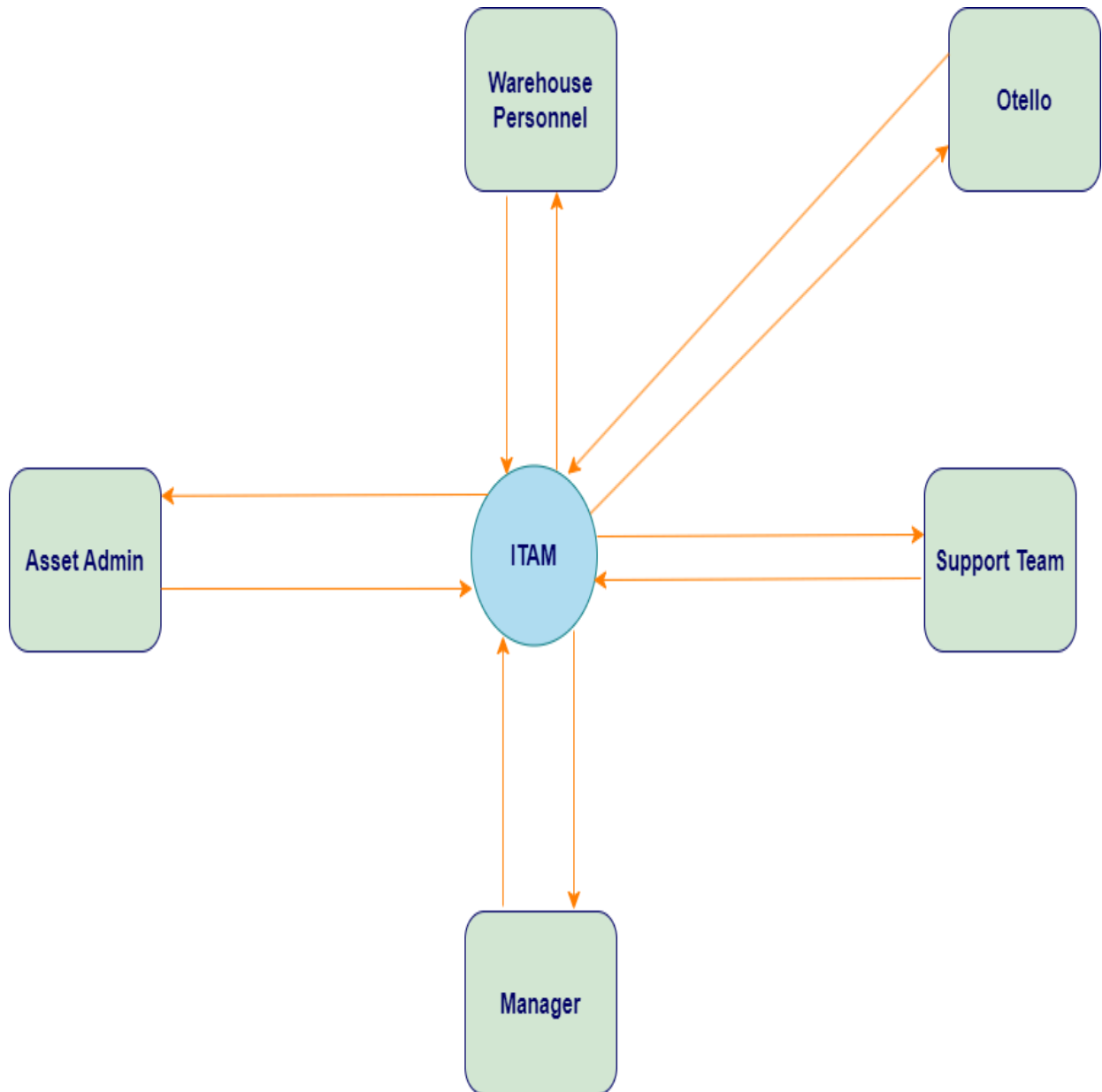




# IT Asset Management System

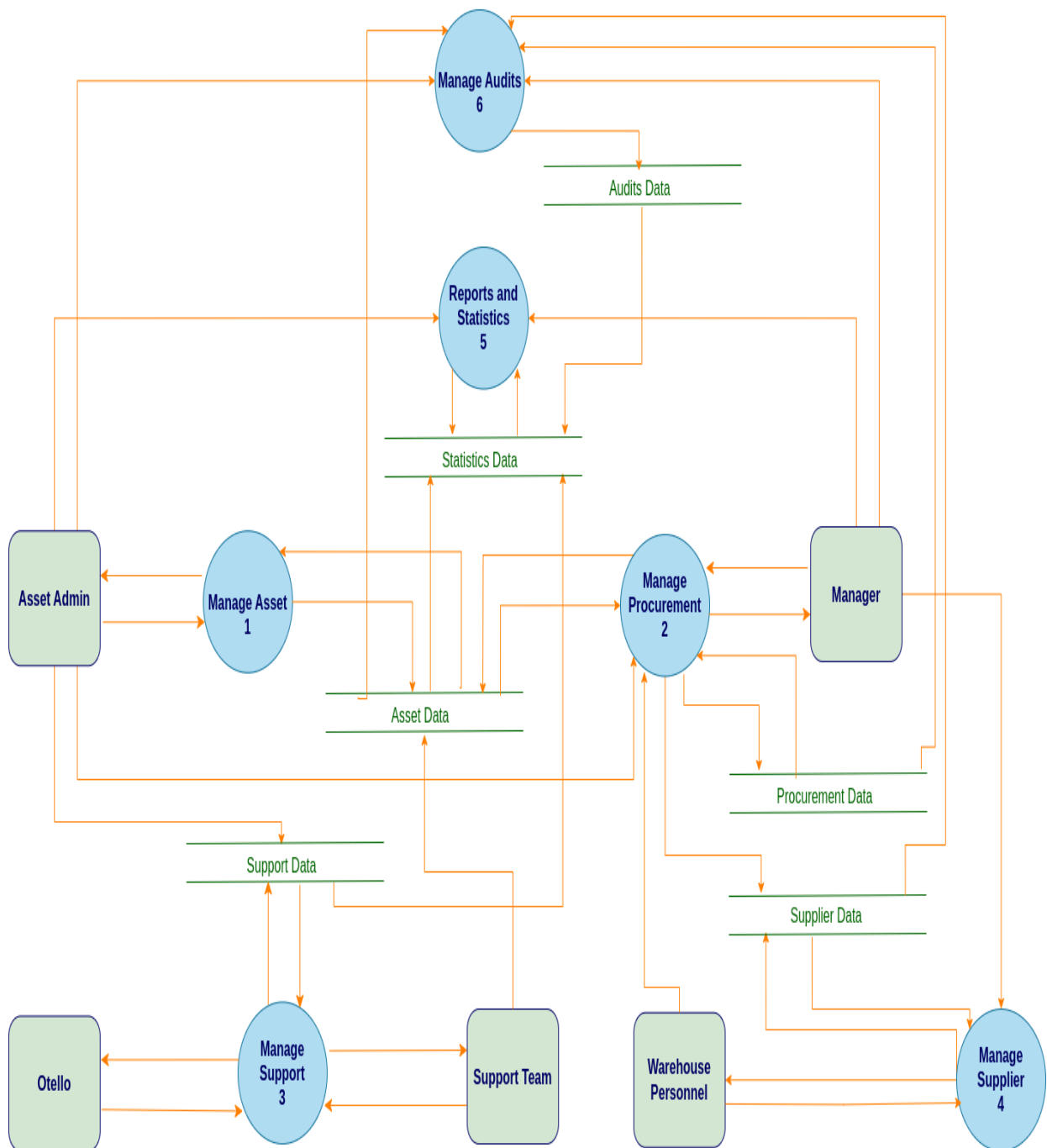
## 9 DFD Diagram

### 9.1 Level 0



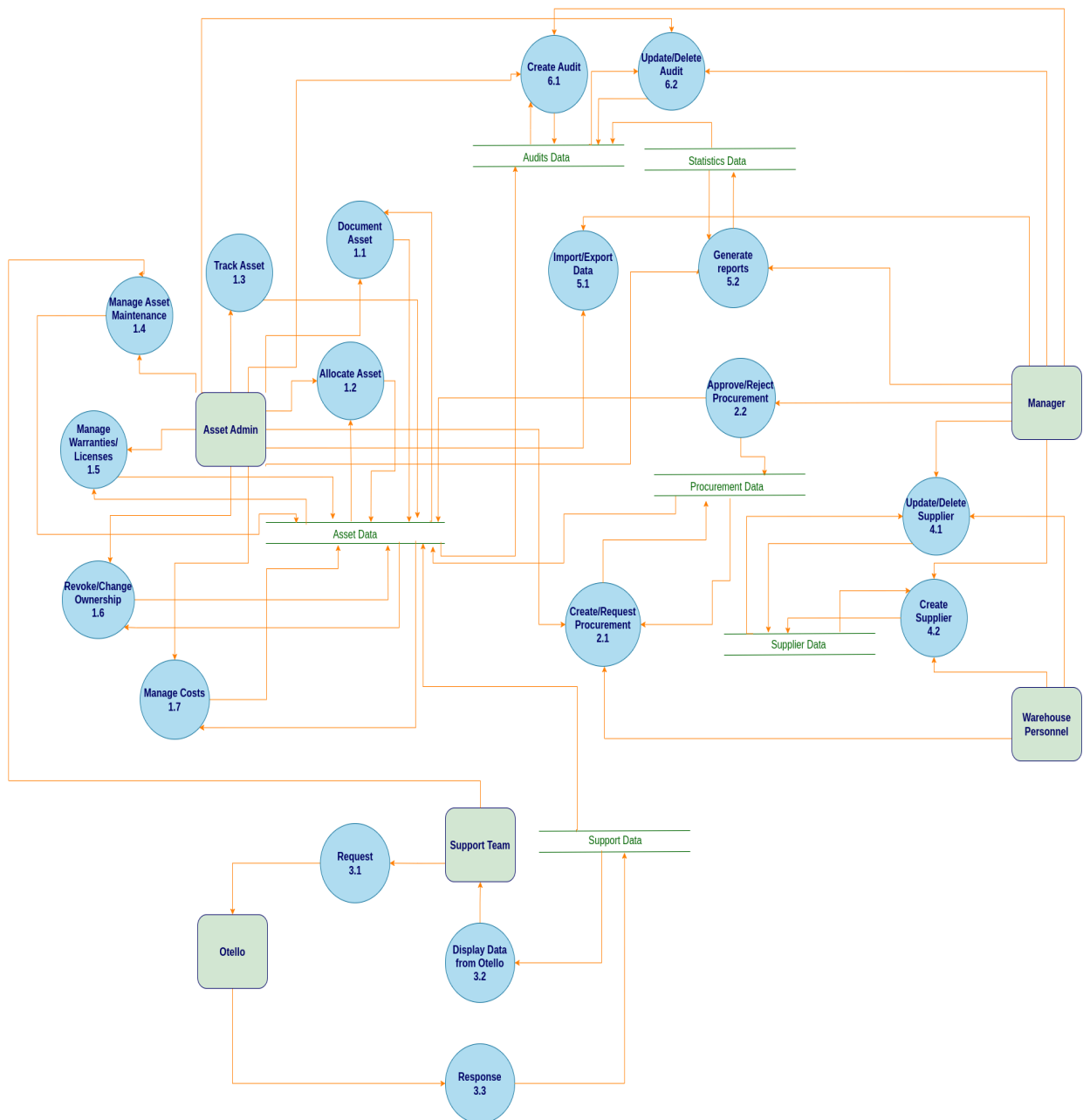
# IT Asset Management System

## 9.2 Level 1



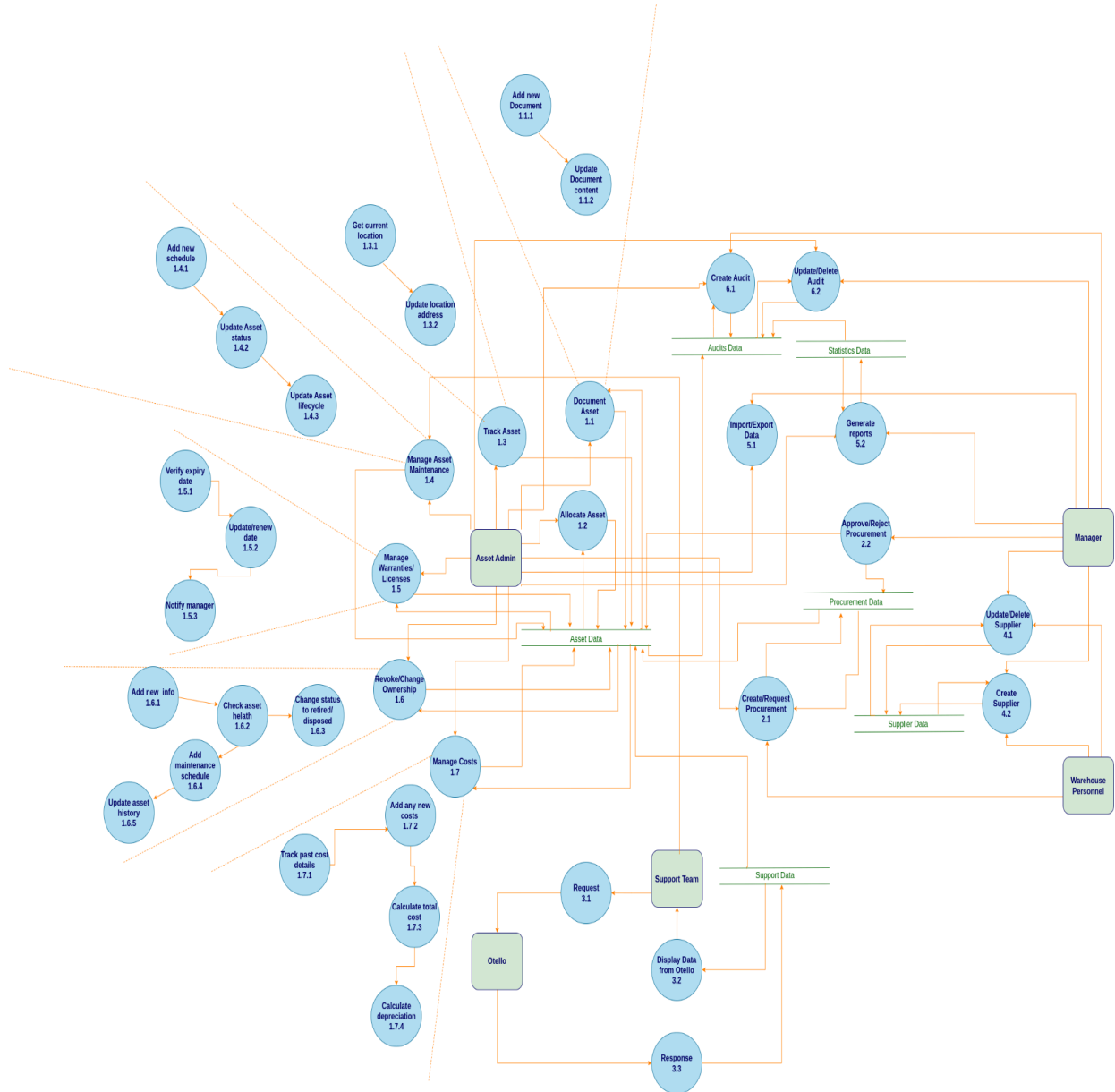
# IT Asset Management System

## 9.3 Level 2



# IT Asset Management System

## 9.4 Level 3



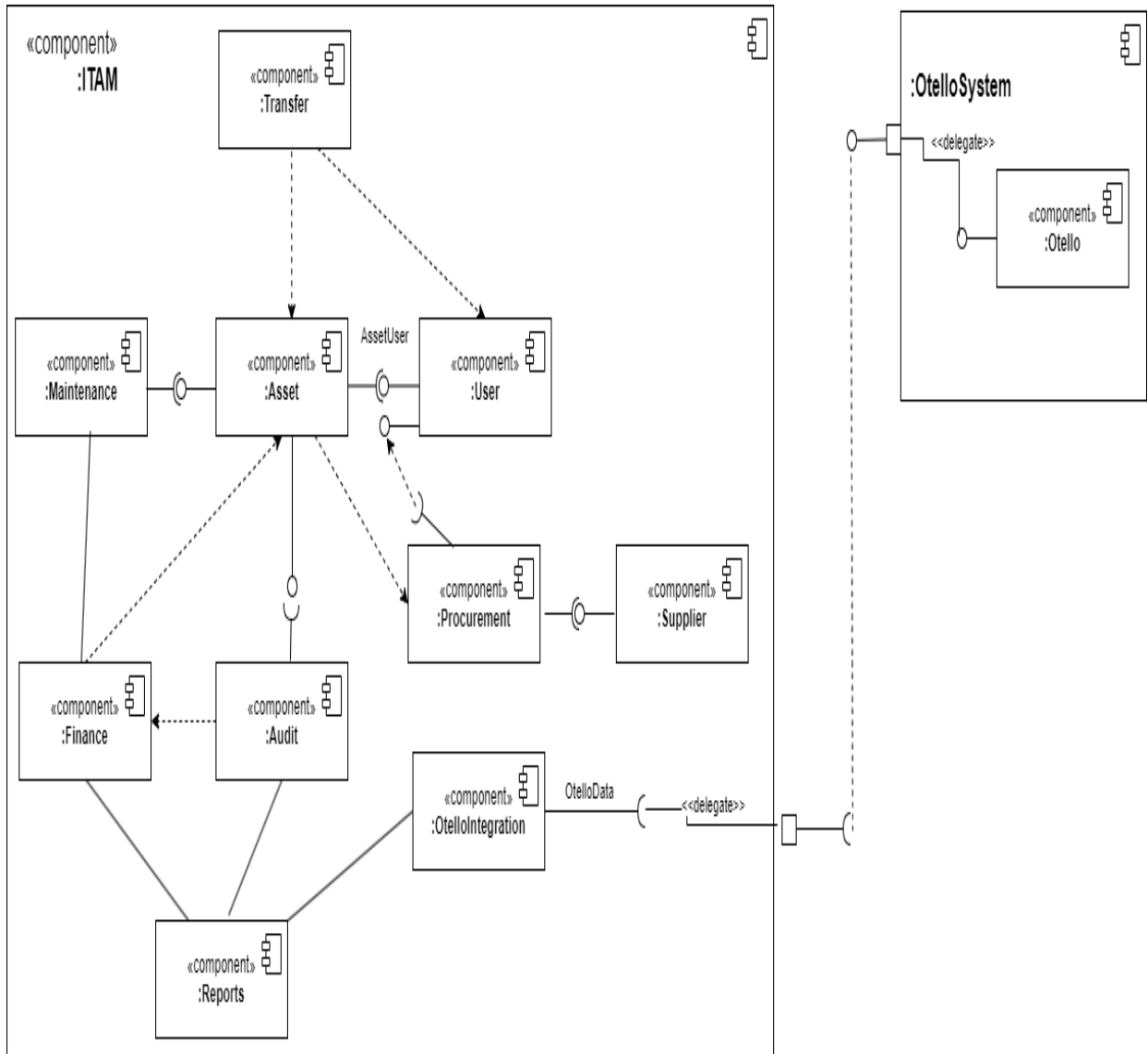
## 10. Package Diagram

As it is asked/acquired in the non-functional requirements, we are going to use MVC architecture, so our package diagram will follow MVC pattern principles.

### MVC ARCHITECTURE PATTERN



## 11. Component Diagram



## 12. Deployment Diagram

Based on the defined non-functional requirements, since we are going to use LAMP stack with MVC architecture, this is how the deployment diagram would be:

