

Abissnet
IT ASSET MANAGEMENT SYSTEM
Version 1.0



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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

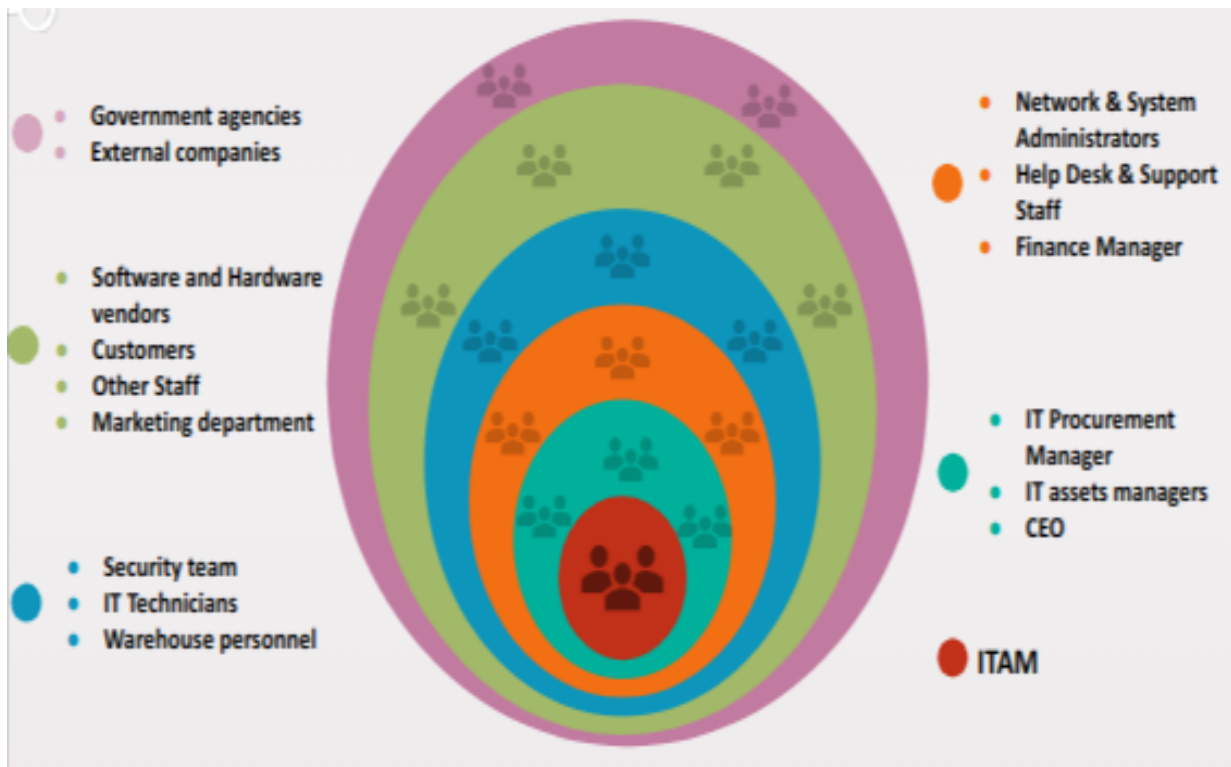
Stakeholder	Stakeholder Role/ Responsibility	Importance	Influence	Interests/ Positive Impacts	Concerns
ITAM Manager	Supervise ITAM strategies and operations	<i>High</i>	<i>High</i>	Ensure efficient asset tracking and costs	Security and compliance
CEO	Set IT strategy and align ITAM with business goals	<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

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

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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

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#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.

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 a cloud-based application.

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.

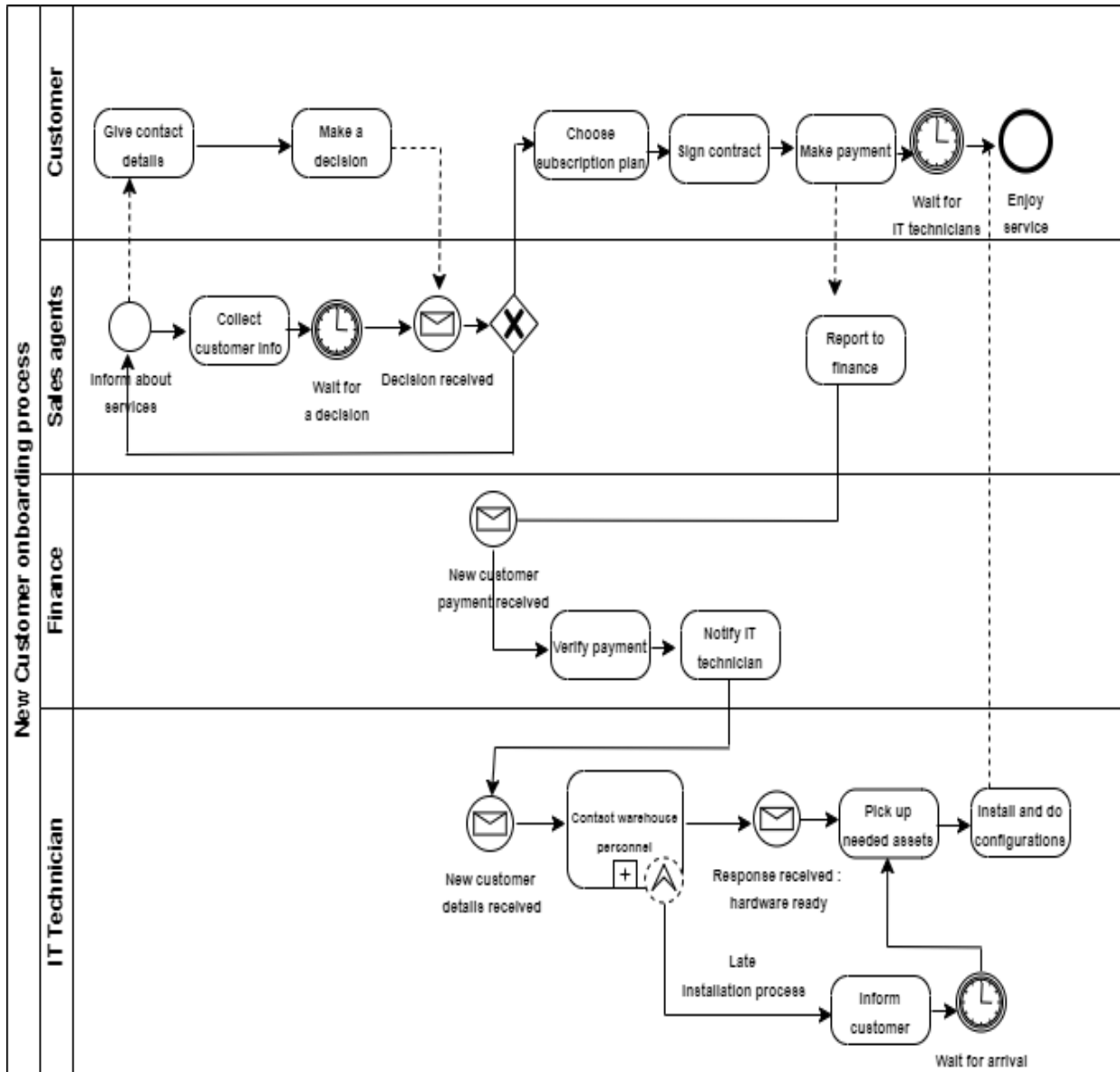
3.2.4 External Requirements

- 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.

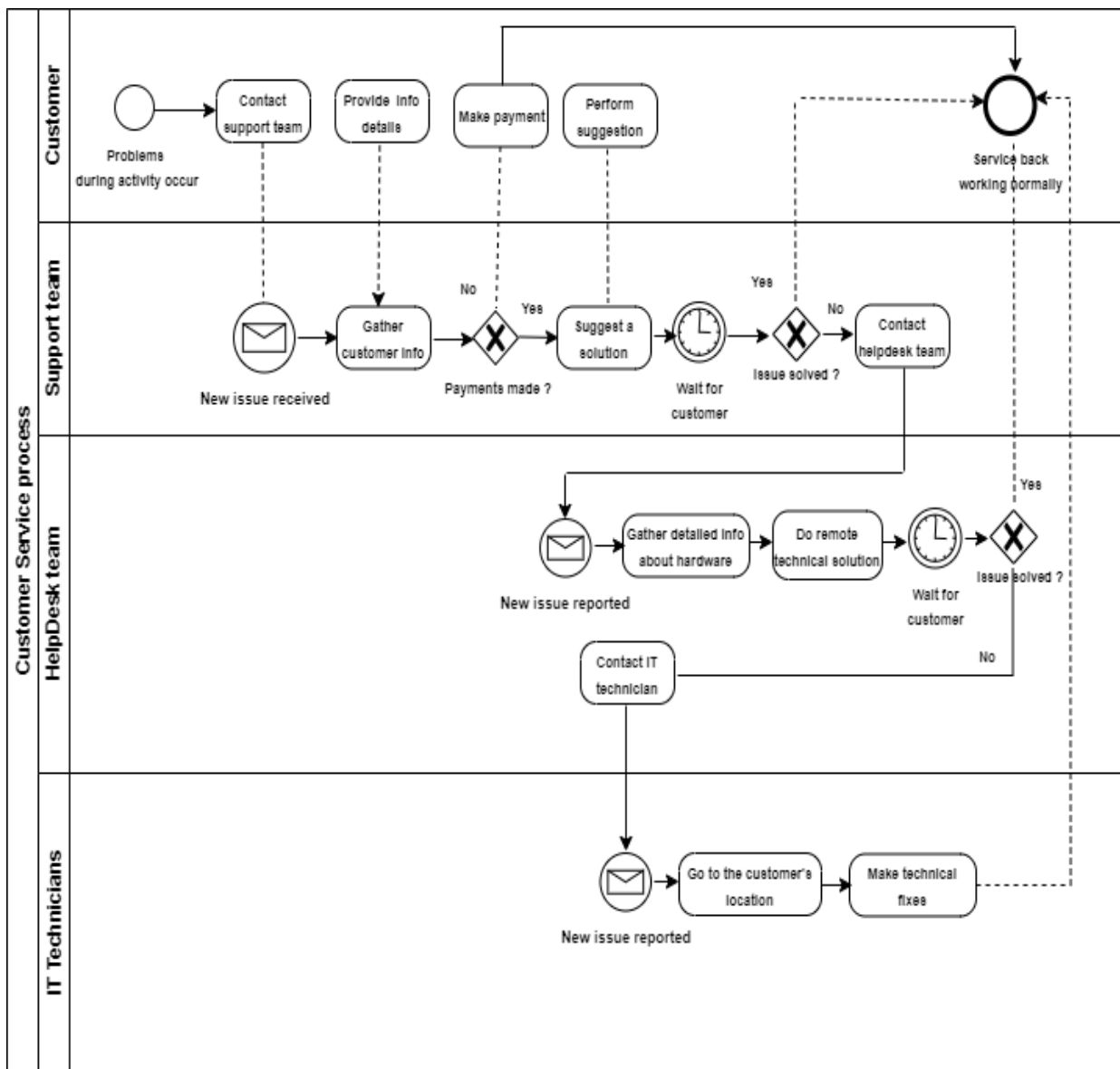
IT Asset Management System

4. BPMN

4.1 BPMN - New customer process

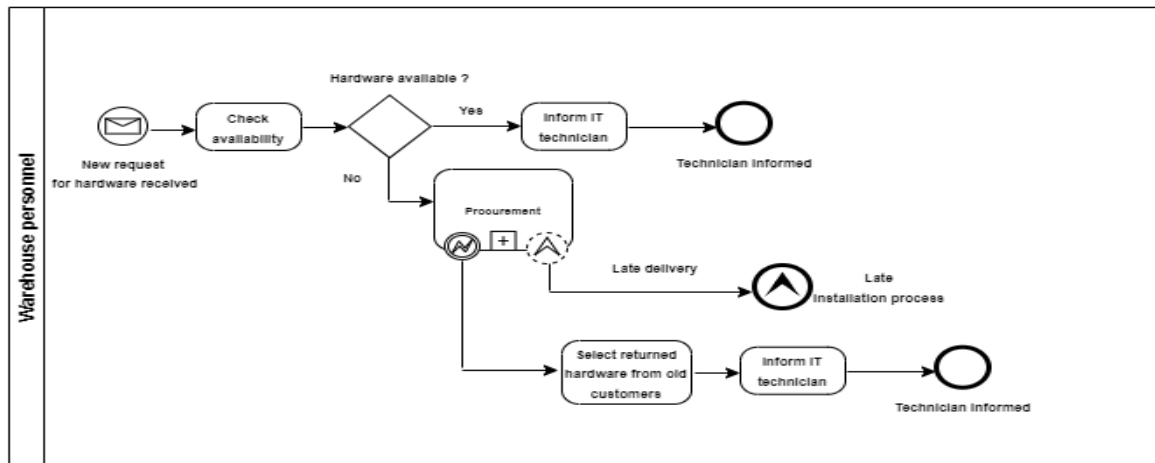


4.2 BPMN - Support/helpdesk process

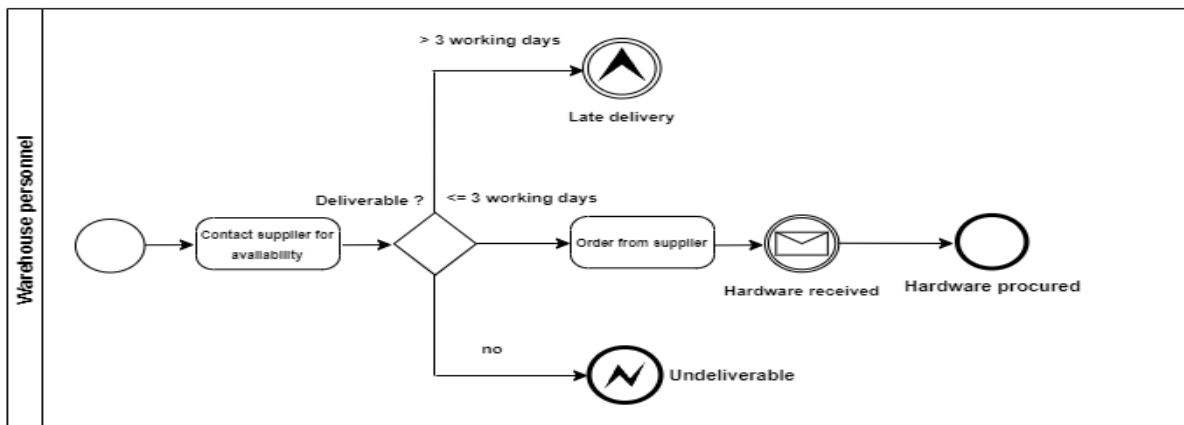


4.3 BPMN - Warehouse, procurement and stock maintenance processes

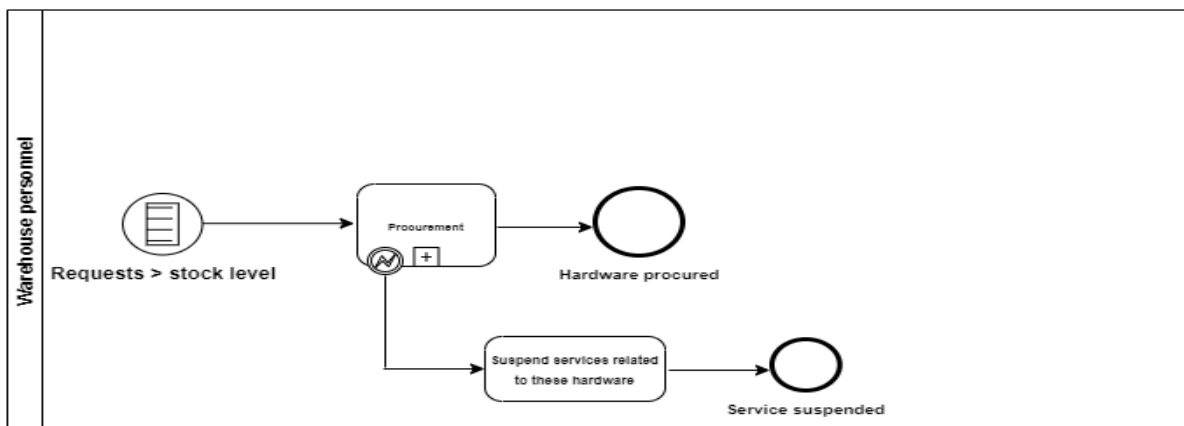
Warehouse personnel sub-process



Procurement sub-process

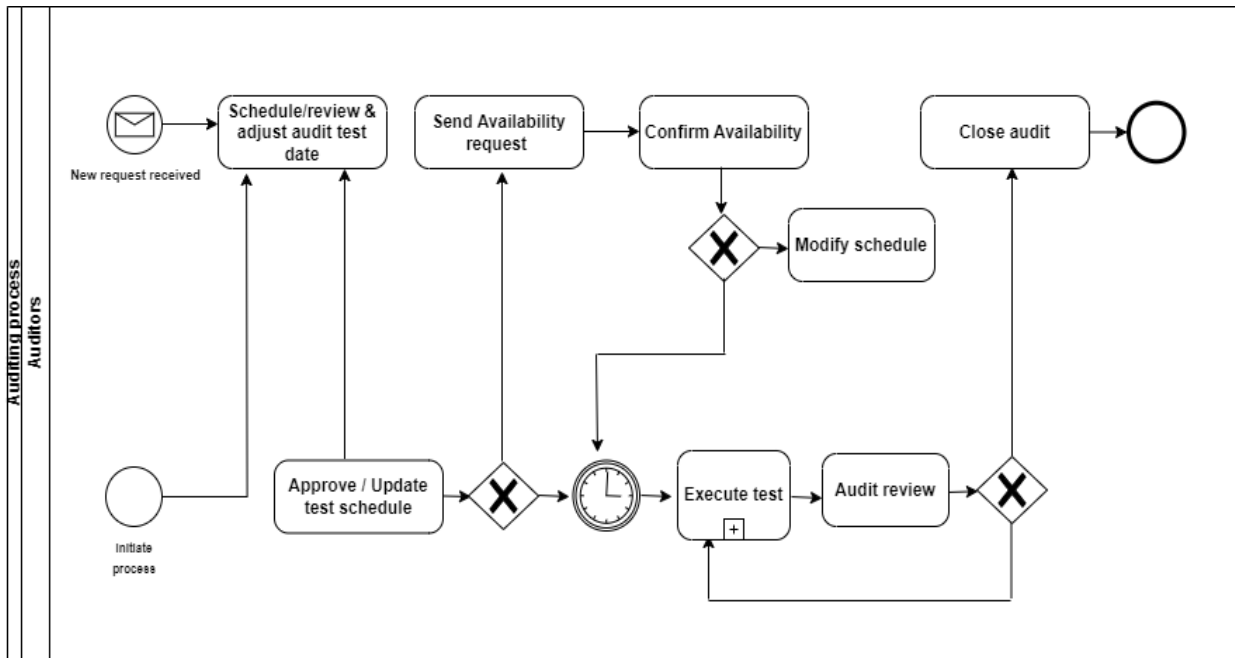


Stock maintenance process

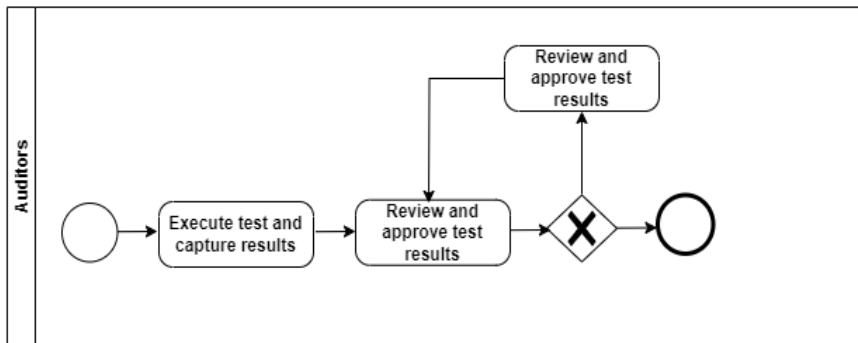


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4.4 BPMN - Audit process and its *execute test* subprocess



Execute test sub-process



5. UML Diagrams

5.1 Use Cases

5.1.1 Use Cases Table

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

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

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

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

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

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

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

USE CASE ID	UC08	
Description	Asset maintenance	
Preconditions	1. Asset must be registered in the ITAM system 2. Maintenance schedule or requirement should be identified.	
Success End Condition	Asset successfully undergoes maintenance and is updated with the latest status/details in the ITAM system.	
Failed End Condition	Maintenance process fails or is incomplete	
Actors	Asset Admin, System Admin, Support team	
Trigger	Scheduled maintenance date reached or identified issue requiring immediate maintenance.	
TASKS	Step	Action
	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).
Exceptions	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.

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

USE CASE ID	UC10	
Description	Allocate an asset	
Preconditions	Asset inventory exists	
Success End Condition	Asset is successfully allocated	
Failed End Condition	Allocation process fails.	
Actors	Asset Manager	
Trigger	Request to allocate an asset	
TASKS	Step	Action
	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.
Exceptions	1a	The asset details are incomplete or inaccurate.
	2a	Asset is not available for allocation.

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USE CASE ID	UC11	
Description	Change ownership of asset from one to another	
Preconditions	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.	
Success End Condition	The ownership of the asset is successfully transferred from the current to the intended one. The system reflects the updated ownership details accurately.	
Failed End Condition	The ownership transfer process fails or encounters errors. The system retains the previous ownership details.	
Actors	Asset Admin	
Trigger	Request to change ownership of asset.	
TASKS	Step	Action
	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.
Exceptions	2a	Incomplete or inaccurate information provided for the new owner
	4a	Conflicting requests or changes being processed simultaneously for the same asset.

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

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

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

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

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

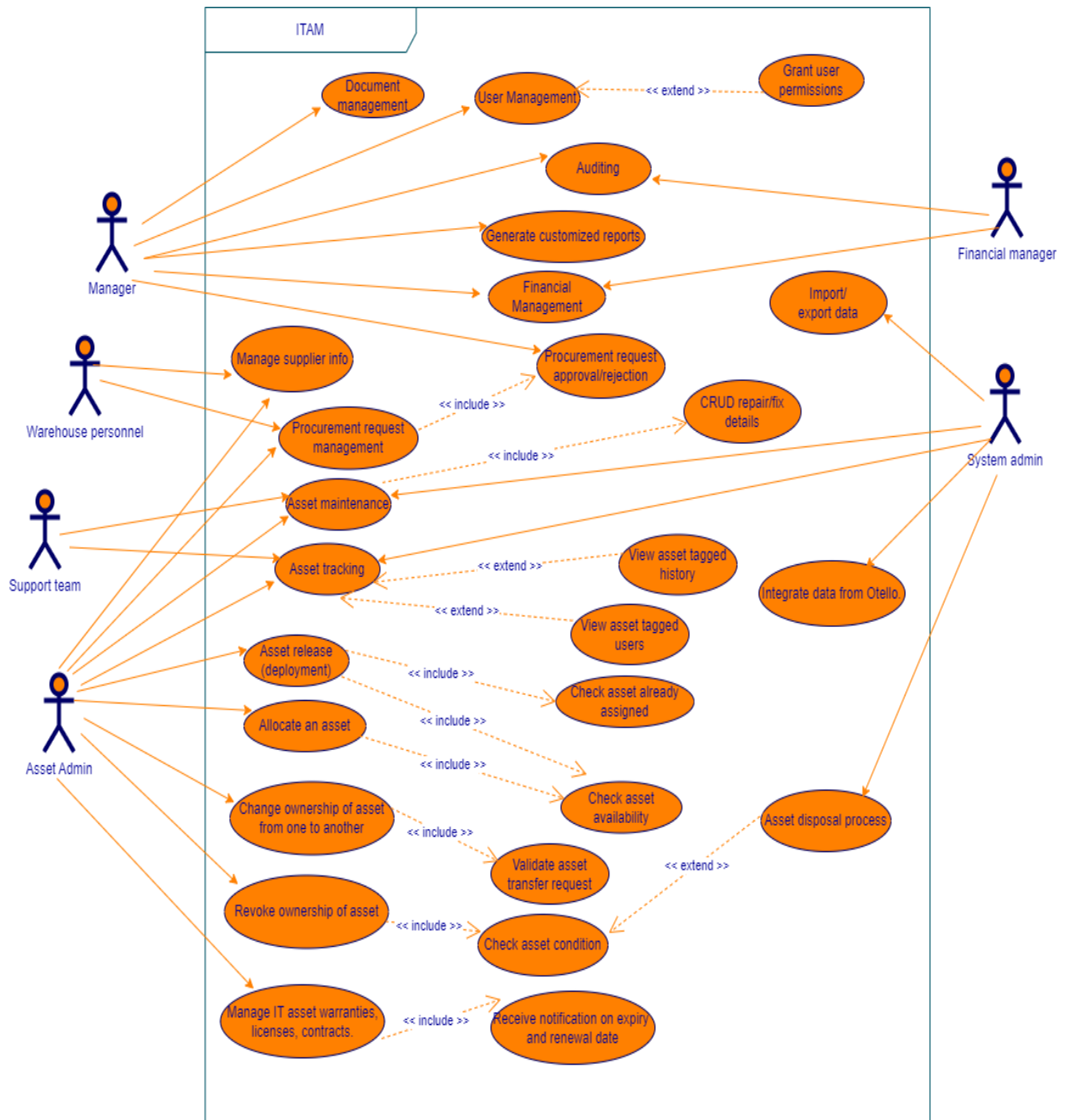
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USE CASE ID	UC17	
Description	Integrate data from Otello.	
Preconditions	Compatibility between new and existing systems.	
Success End Condition	Related tickets/issues and other data related to users and assets should be integrated between systems.	
Failed End Condition	Integration failure, system disruption.	
Actors	System Admin	
Trigger	Deployment of new assets or new issue/ticket generated in Otello.	
TASKS	Step	Action
	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.
Exceptions	3a	API service not available or throws an error.
	4a	Incomplete or inaccurate information provided resulting in mismatch with those in ITAM.

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

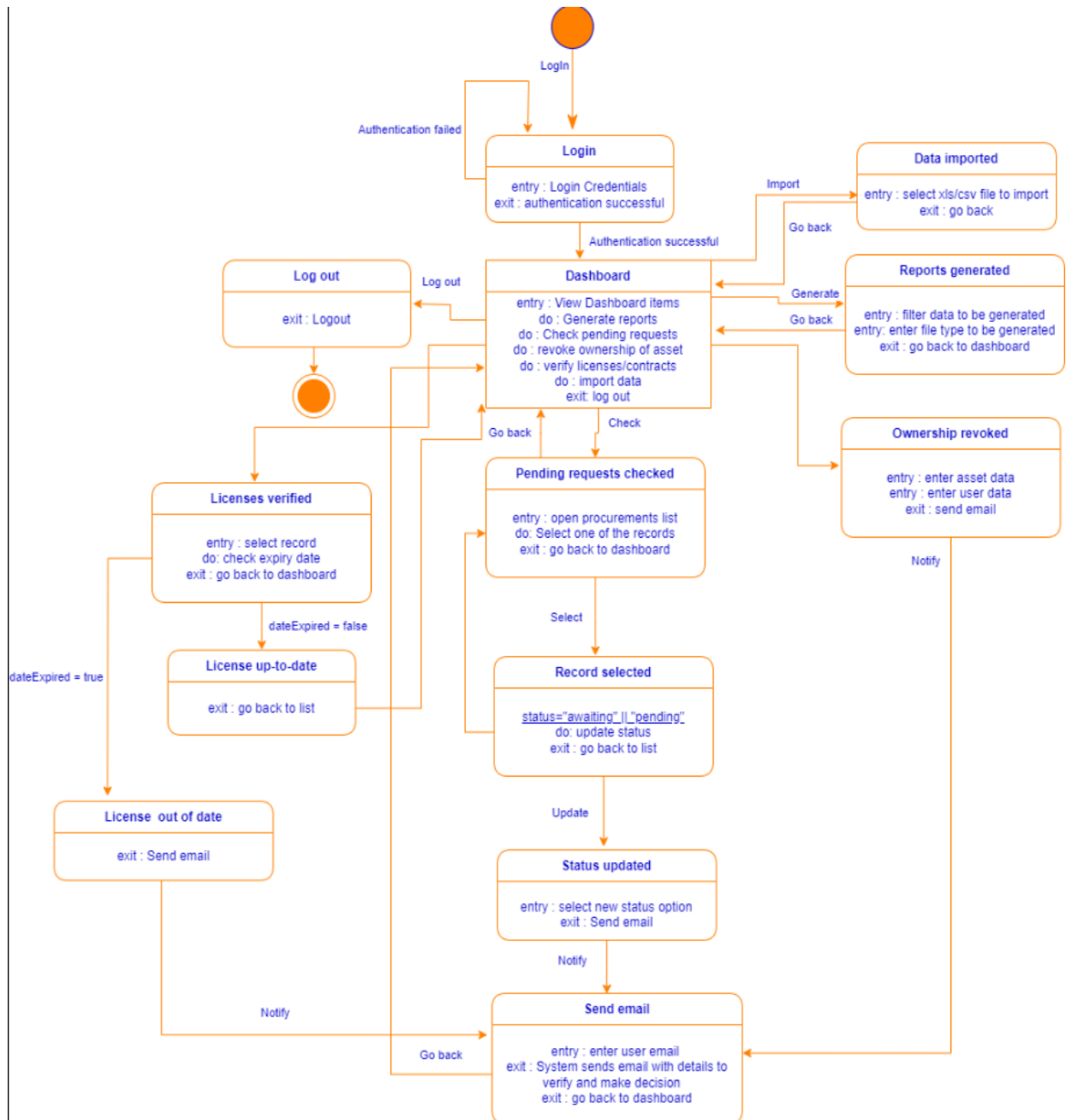
IT Asset Management System

5.1.2 Use Cases Diagram

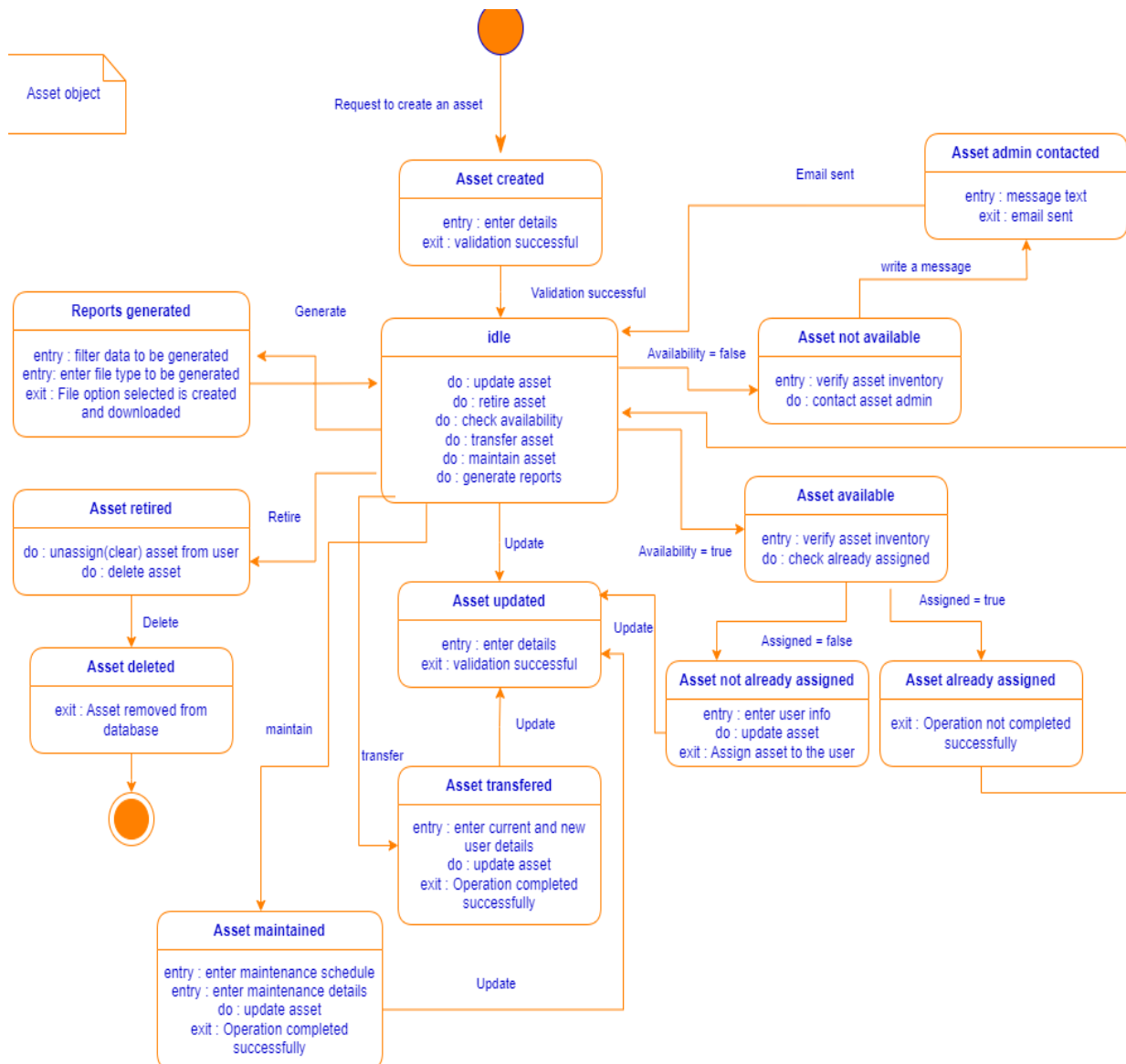


5.2 State Diagram

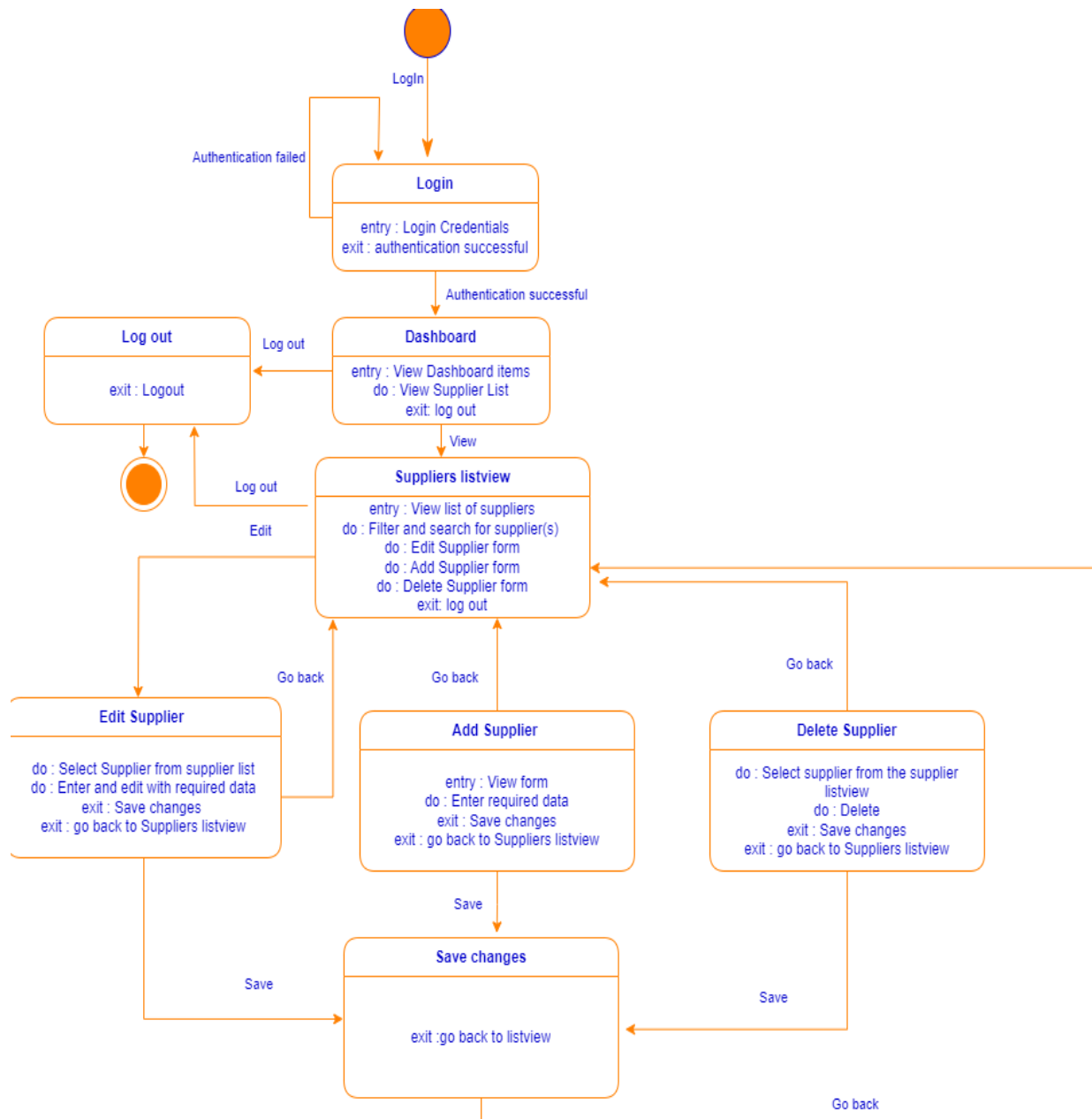
5.2.1 State Diagram - Asset Admin



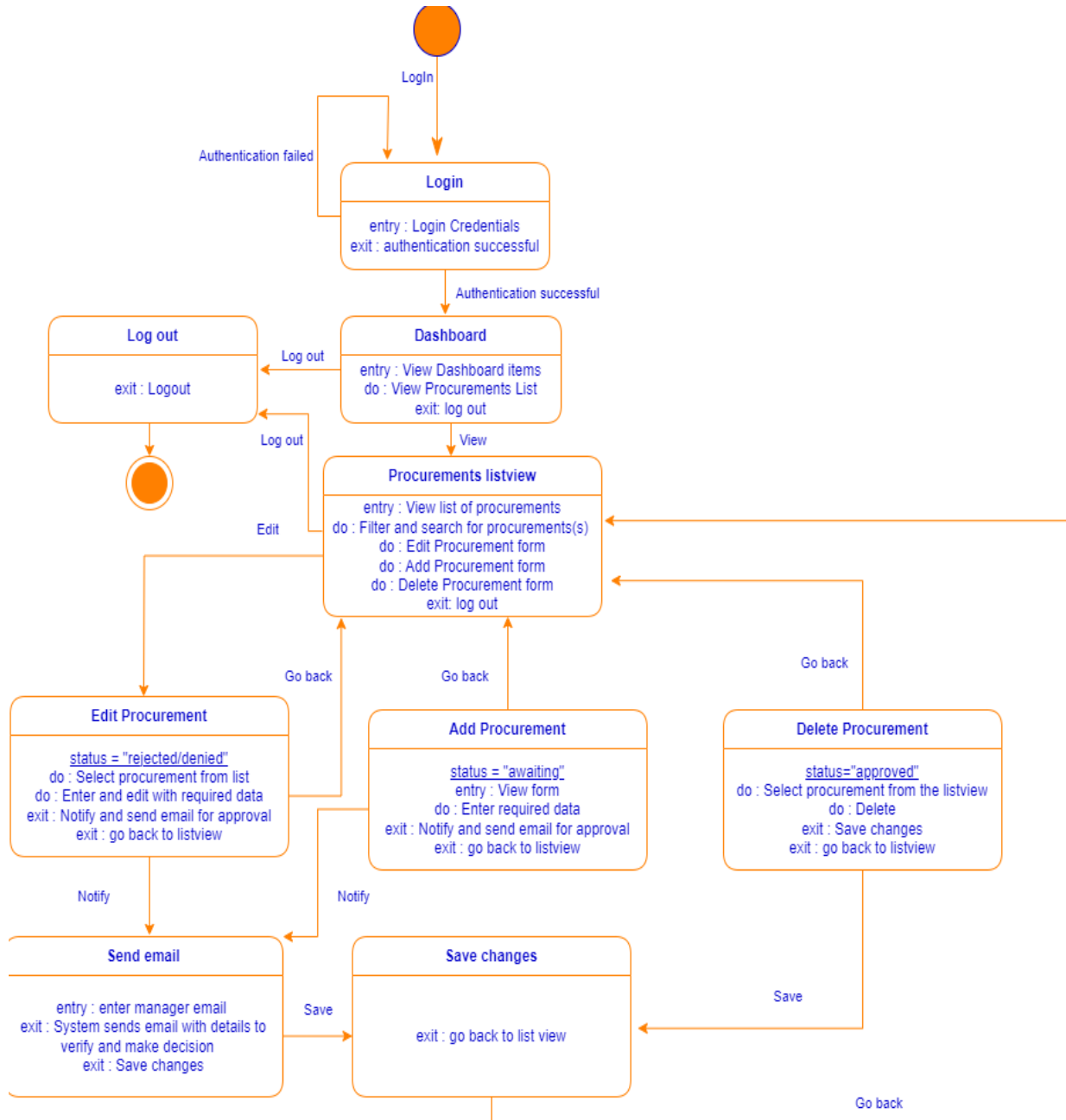
5.2.2 State Diagram - Asset Object



5.2.3 State Diagram - Manage Supplier

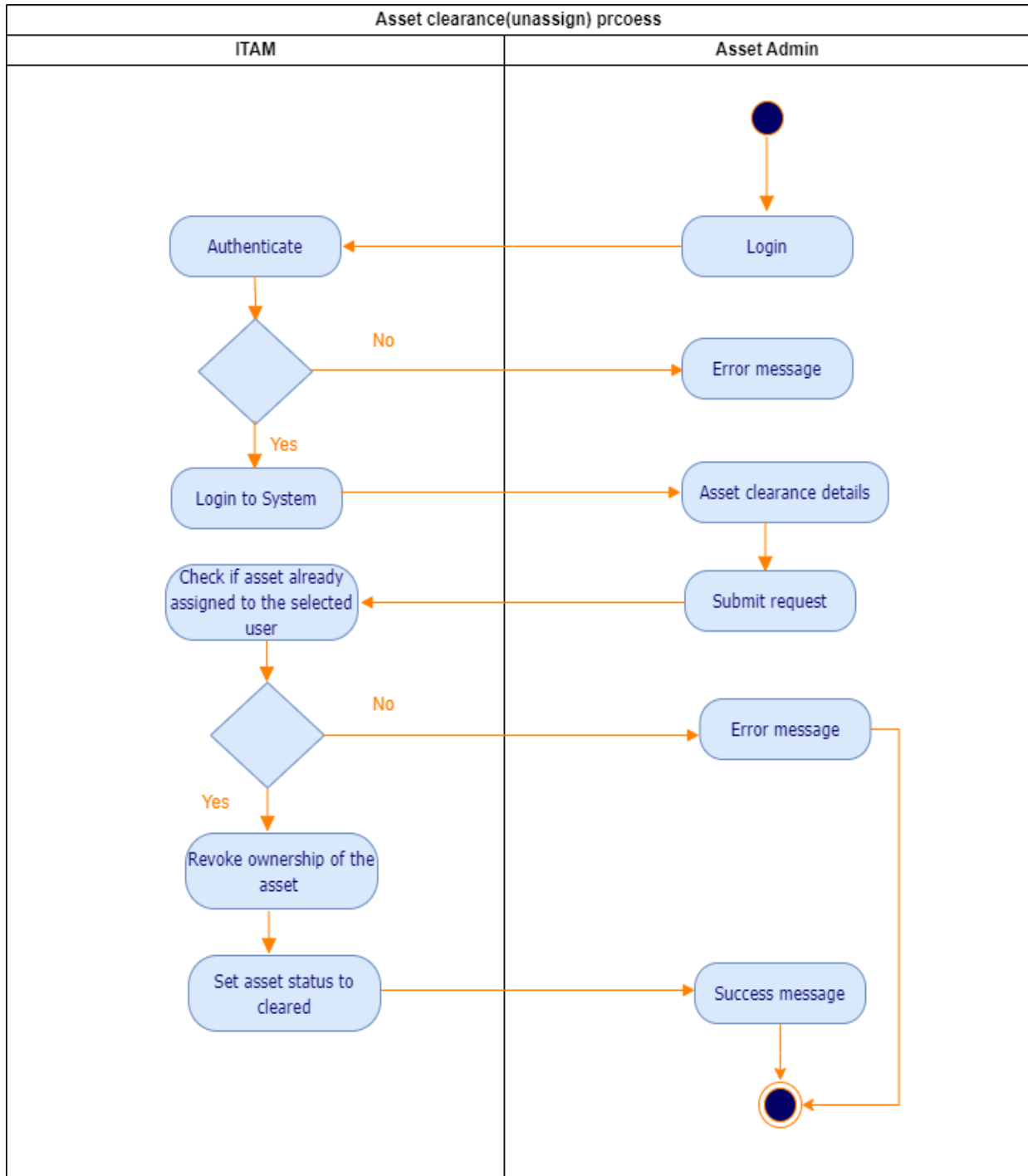


5.2.4 State Diagram - Procurement

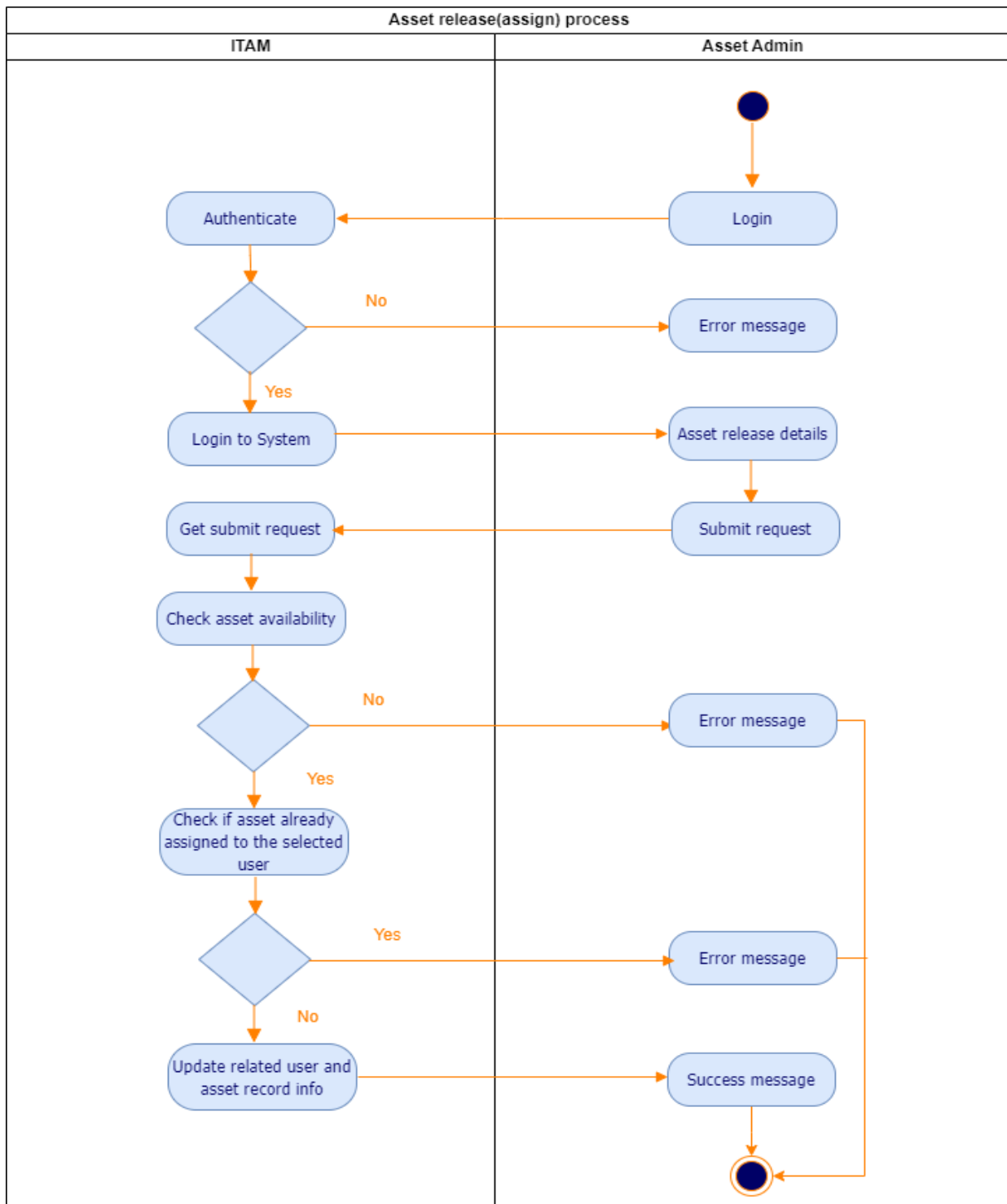


5.3 Activity Diagram

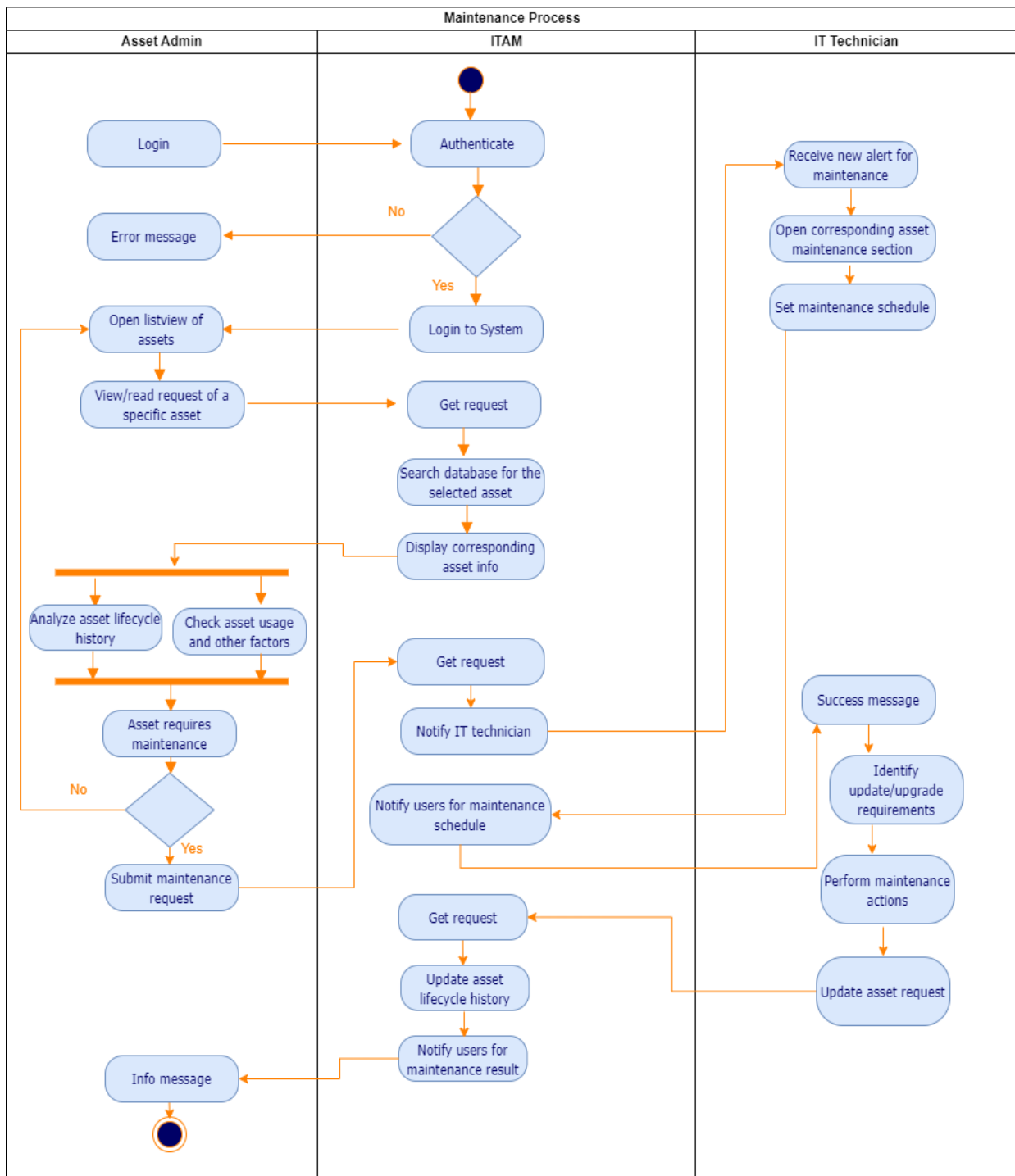
5.3.1 Activity Diagram - Asset Clearance



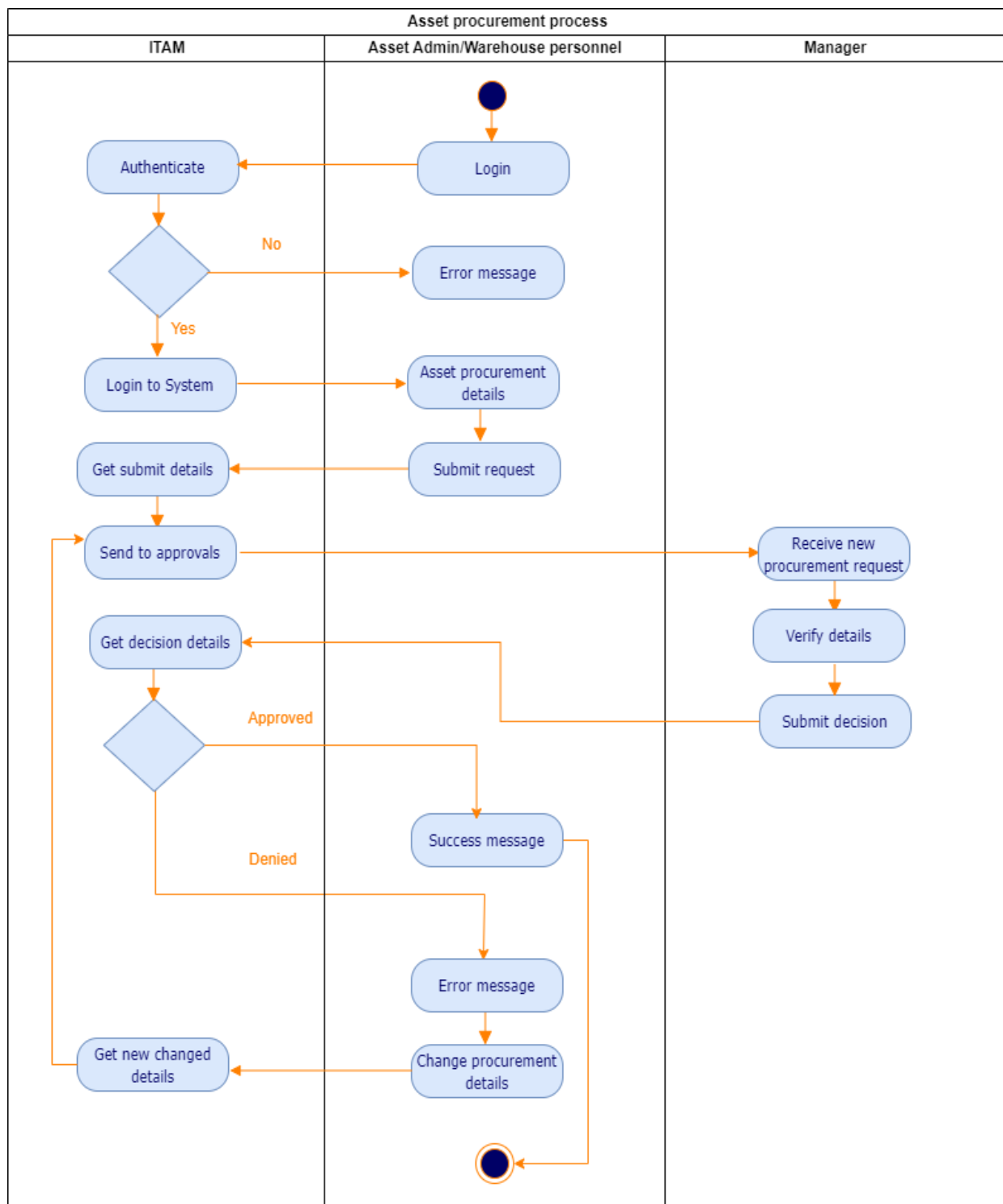
5.3.2 Activity Diagram - Asset Release



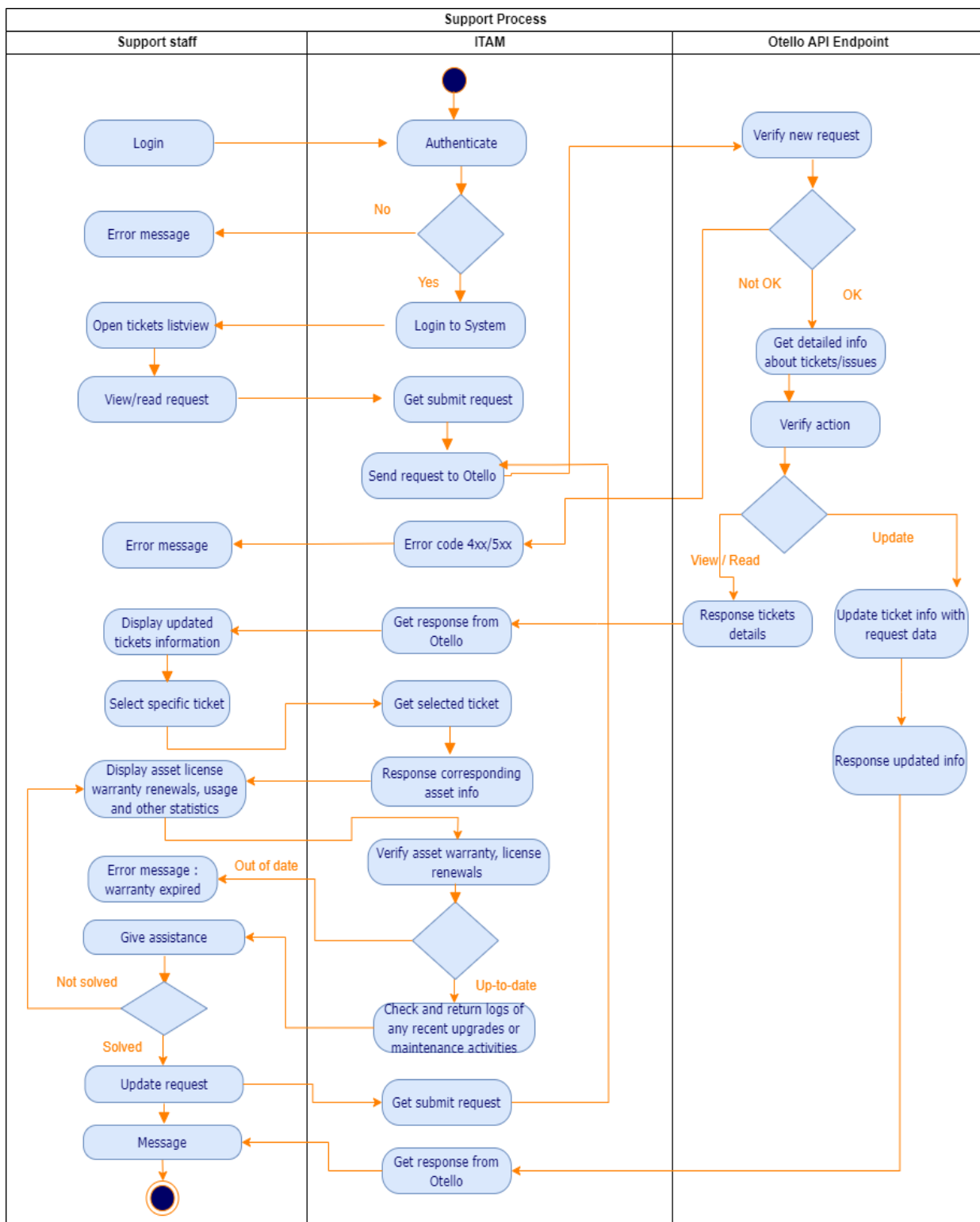
5.3.3 Activity Diagram - Asset Maintenance



5.3.4 Activity Diagram - Procurement

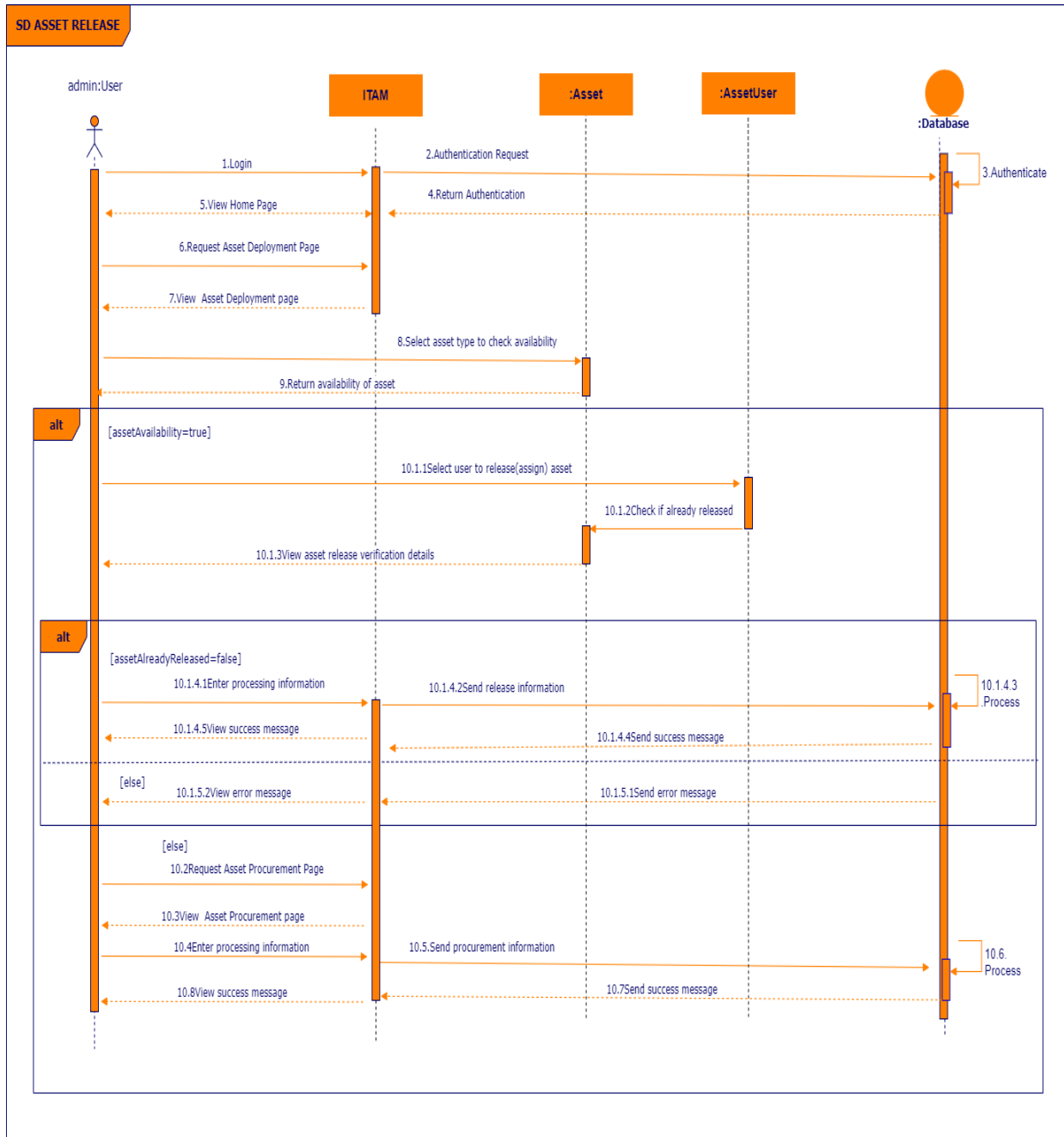


5.3.5 Activity Diagram - Support

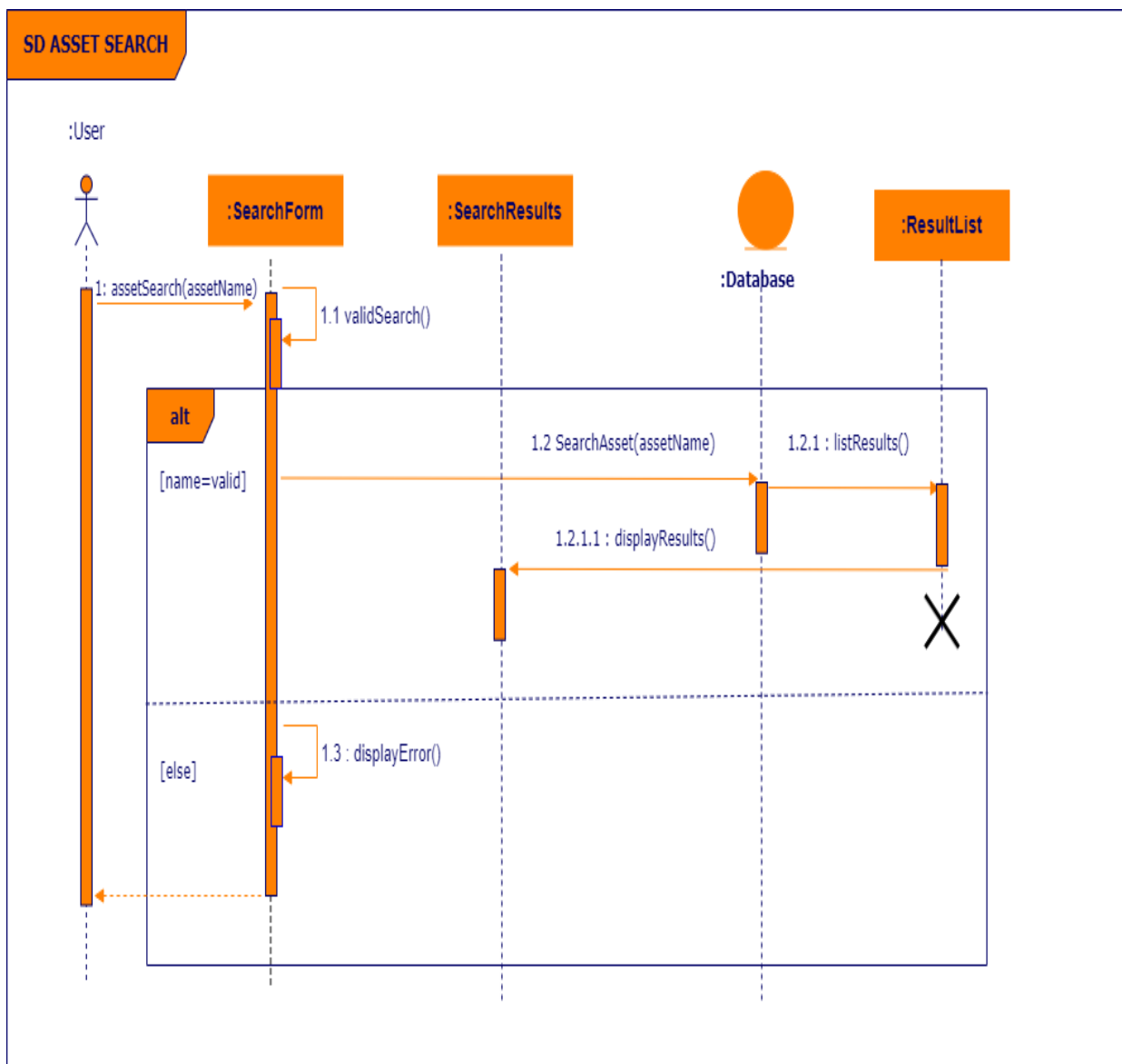


5.4 Sequence Diagram

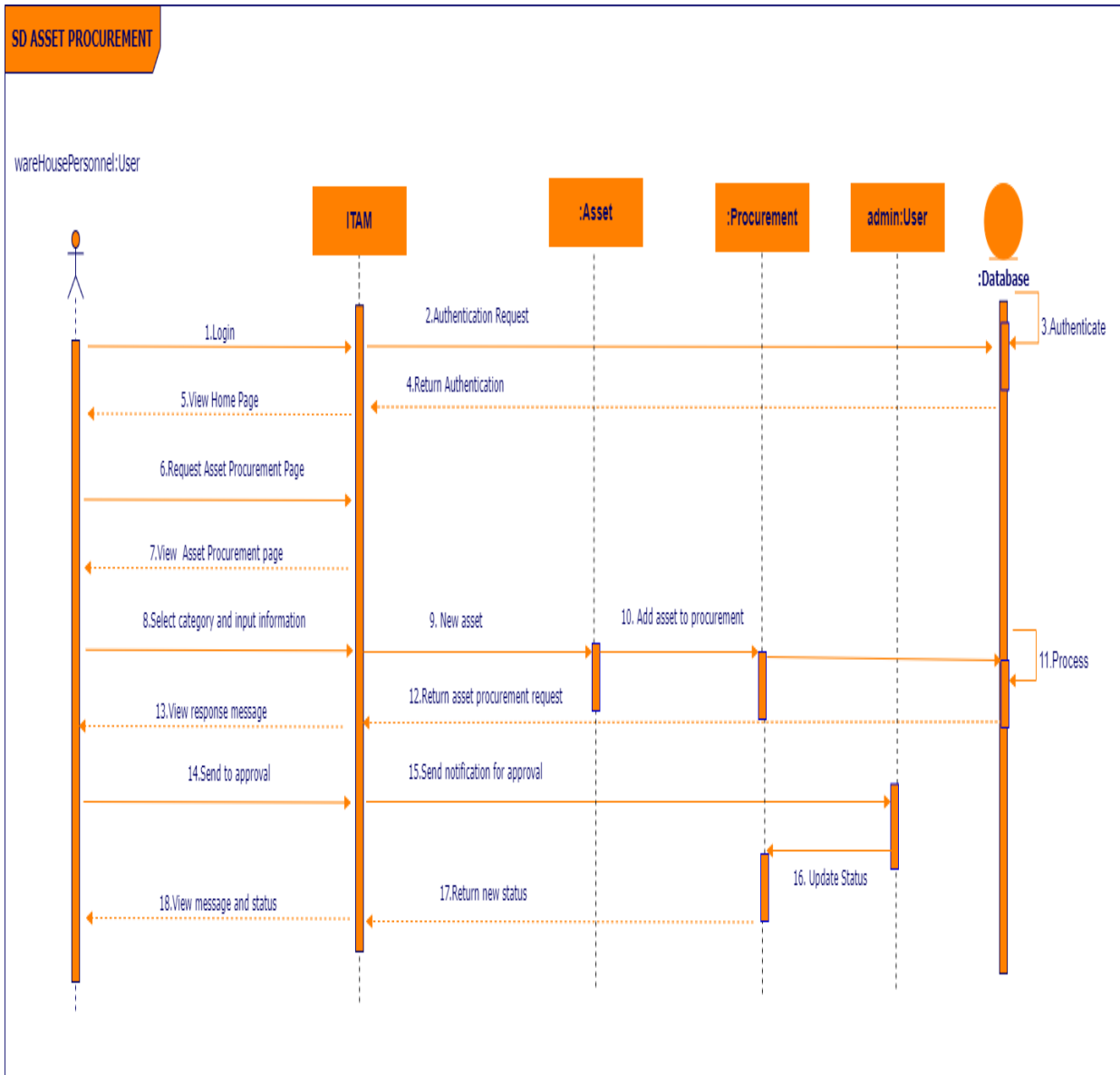
5.4.1 Sequence Diagram - Asset Release



5.4.2 Sequence Diagram - Asset Search

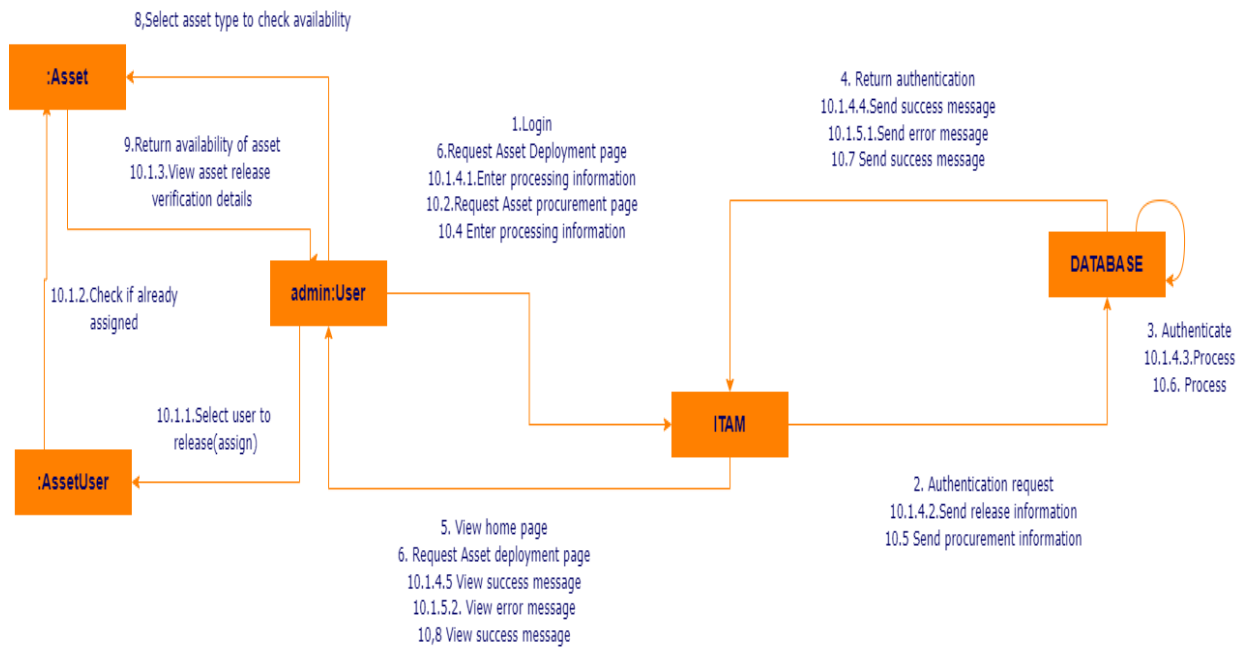


5.4.3 Sequence Diagram - Procurement

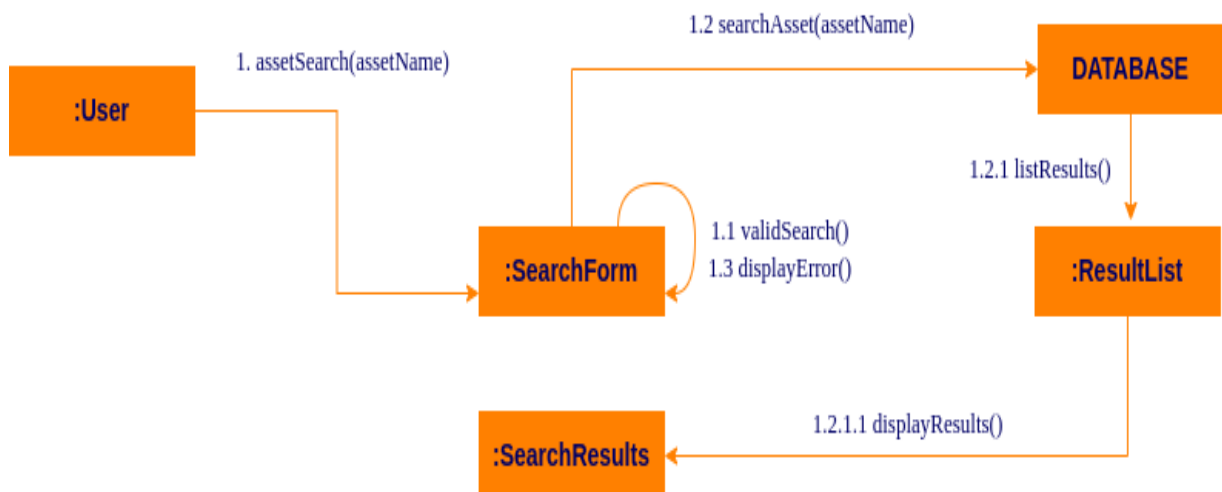


5.5 Communication Diagram

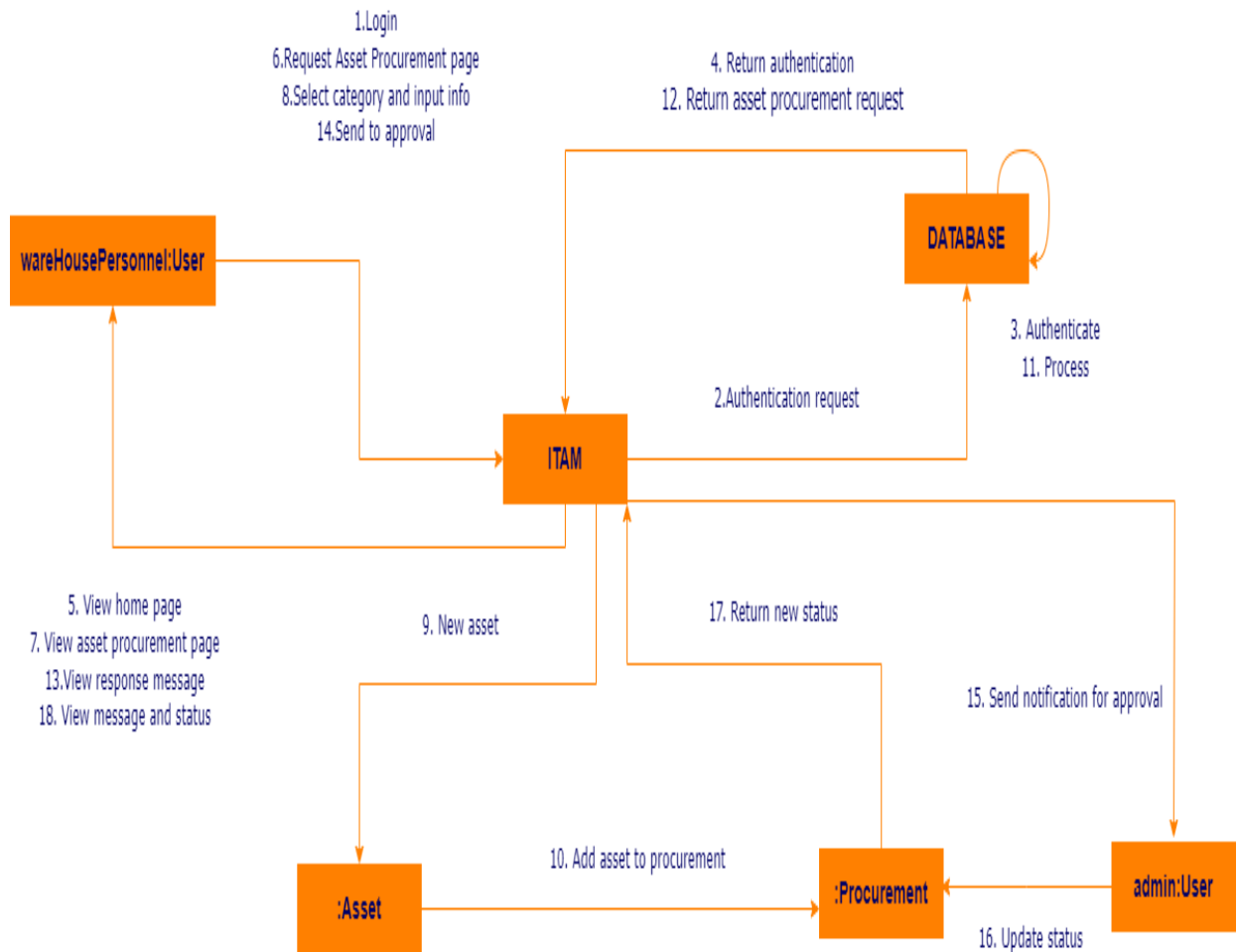
5.5.1 Communication Diagram - Asset Release



5.5.2 Communication Diagram - Asset Search



5.5.3 Communication Diagram - Asset Procurement



IT Asset Management System

5.6 Class Diagram

