SOFTWARE REQUIREMENTS SPECIFICATION (SRS)

FOR

FINANCIAL AND ACCOUNTING MODULE

OF
ASSET REGISTER WITH DEPRECIATION CALCULATION

Version [1.0]

August 27, 2012

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Approved: Accepted:

_____   _____

[Project sponsor]   date   [Project Manager]   date

Assured By:

_____

[SQA Manager]   date

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Revision History

Date	Version	Description/Reason For Changes	Author
March 01, 2011	1.0	Initial Version	Md. Ashfaqul Haque, SA

1 PURPOSE

Automation of IWM Management & Financial System is an initiative by Institute of Water Modeling (IWM) intended to provide an integrated administrative and financial system with asset depreciation for their Departments/Sections to securely exchange the information electronically.

Asset Depreciation:

The purpose of depreciation is to match the cost of a productive asset (that has a useful life of more than a year) to the revenues earned from using the asset. Since it is hard to see a direct link to revenues, the asset's cost is usually allocated to (assigned to, spread over) the years in which the asset is used. Depreciation systematically allocates or moves the asset's cost from the balance sheet to expense on the income statement over the asset's useful life. In other words, depreciation is an allocation process in order to achieve the matching principle; it is not a technique for determining the fair market value of the asset.

The accounting entry for depreciation is a debit to Depreciation Expense and a credit to Accumulated Depreciation (a contra-asset account that is reported in the same section of the balance sheet as the asset that is being depreciated)

There are different types of method of depreciation and mode of depreciation of fixed asset. In our country two methods of depreciation are widely using and these methods are
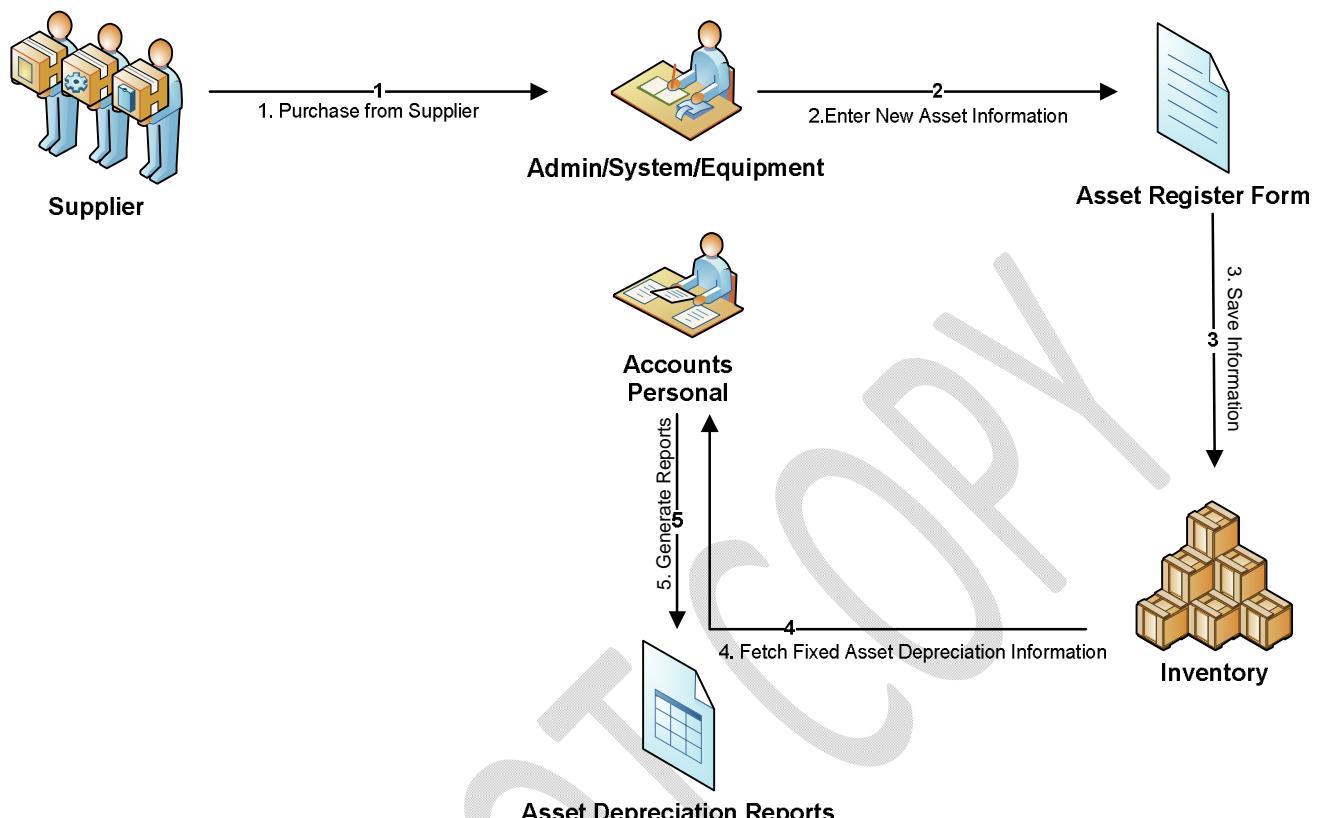
    i.   Straight Line Method and

    ii.   Reducing Balance Method

Our proposed system will follow Reducing Balance Method
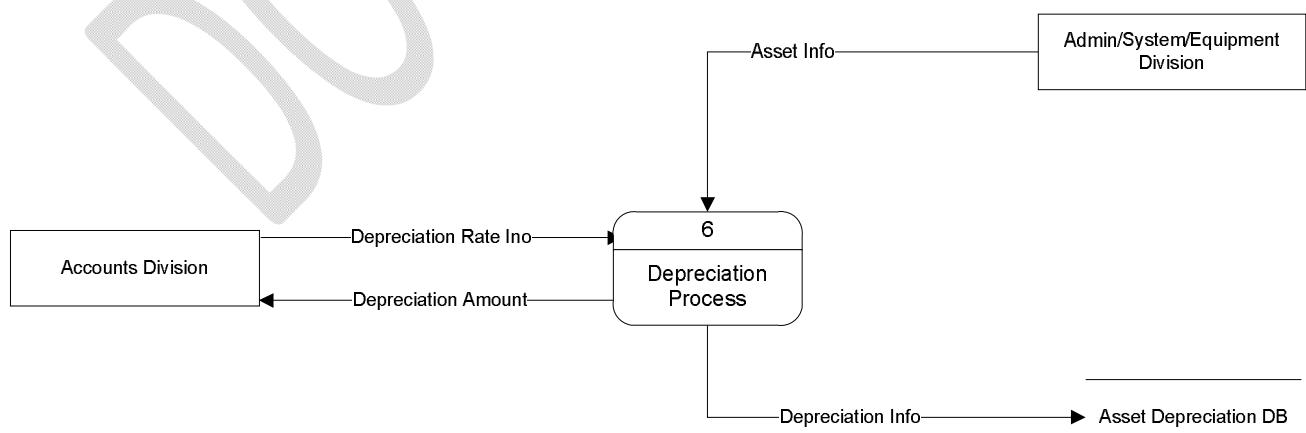
There are different types of mode to calculate depreciation of fixed asset are using in our country and some of them are mentioned below:

    i.   Yearly full year basis

    ii.   Yearly half year basis

    iii.   Yearly date of operation basis

    iv.   Monthly full month basis

    v.   Monthly half month basis

    vi.   Monthly date of operation basis

Our proposed system will follow "Monthly Full Month Basis" mode of depreciation. It states that system will process the depreciation for 12 times in a fiscal year.

**Figure 1: Workflow Diagram of Asset Depreciation System**

**Figure 2: Level-0 DFD Diagram of Asset Depreciation System**
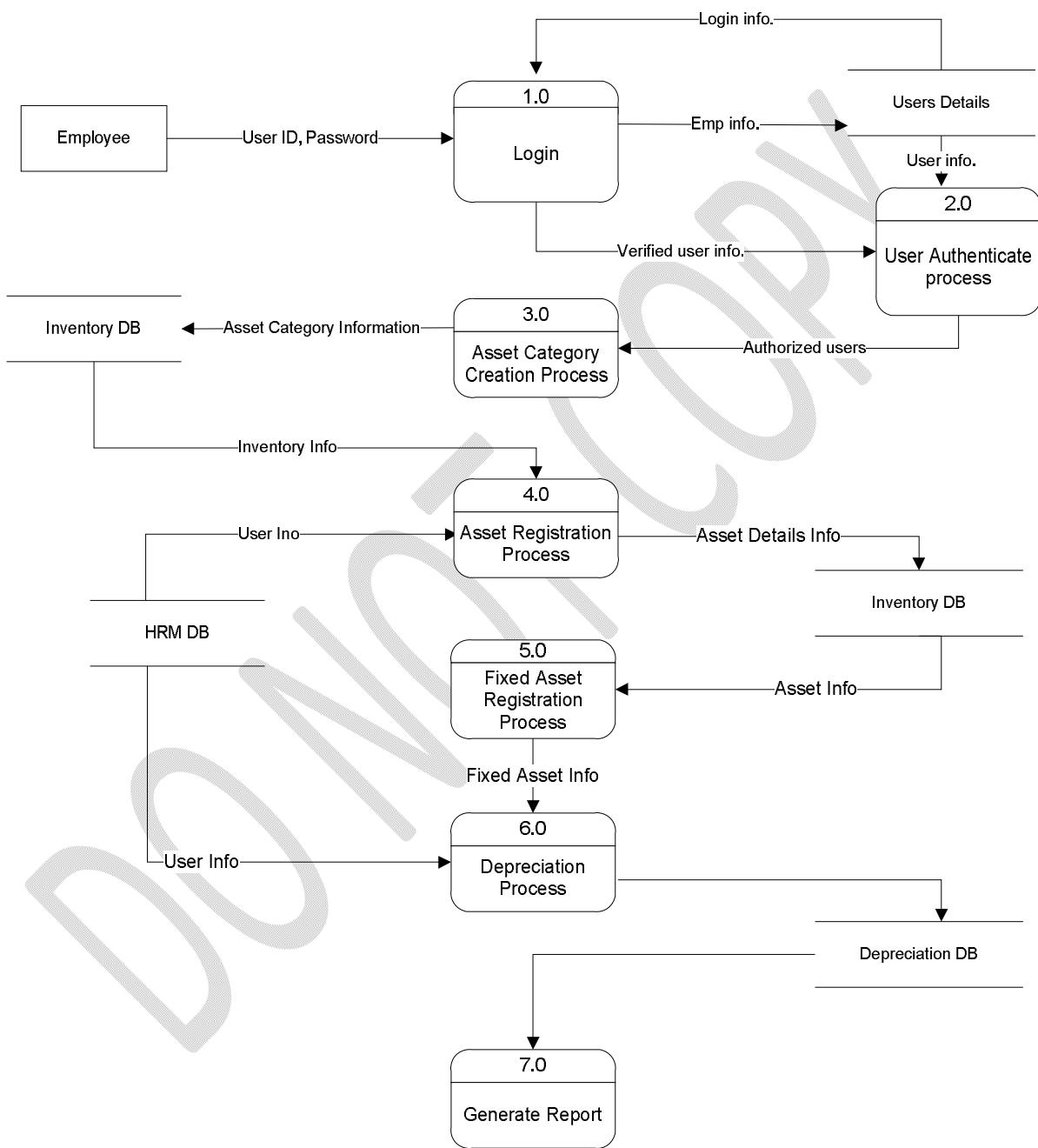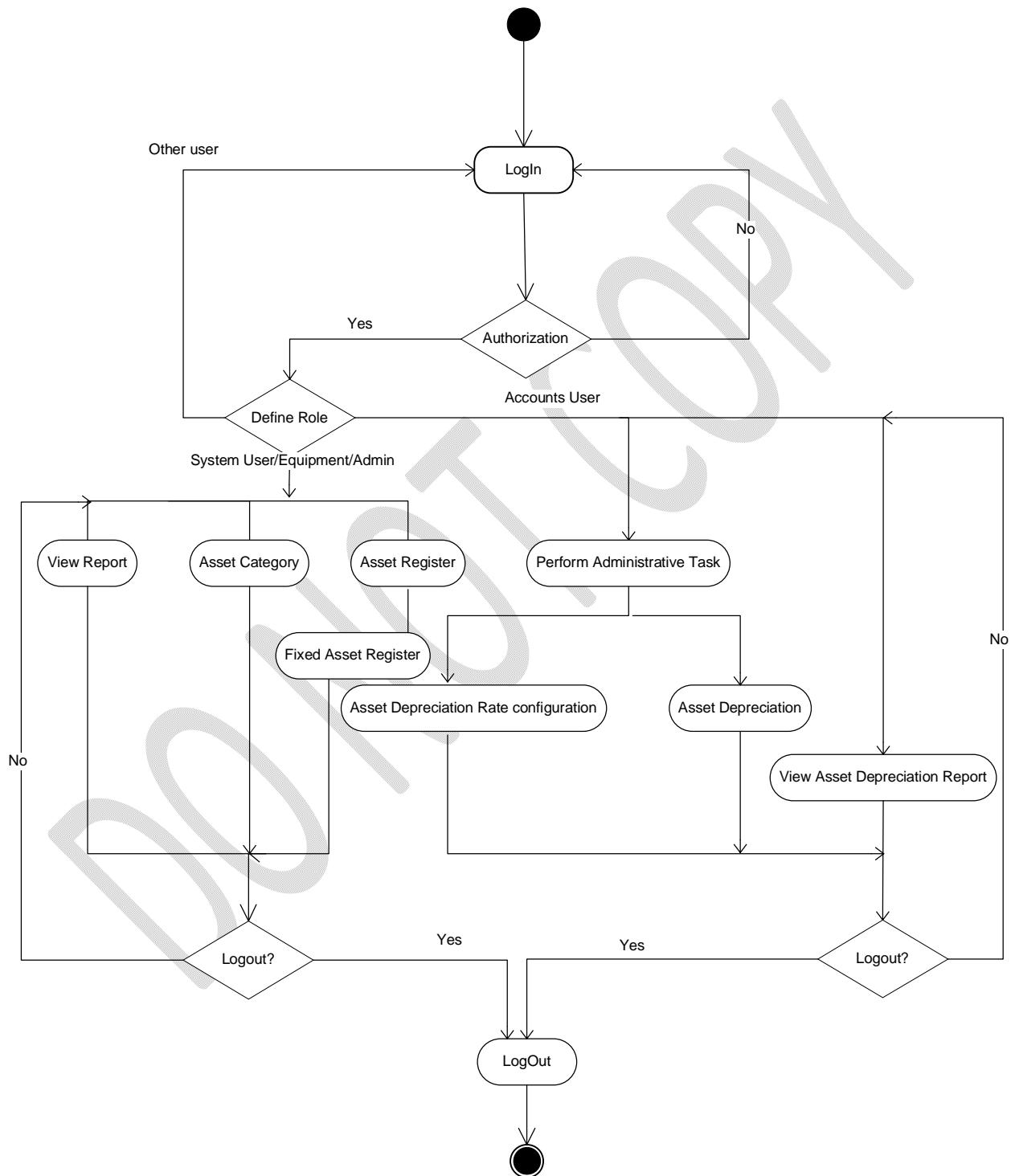
Figure 3: DFD Diagram of Asset Depreciation System

The DFD diagram shown in figure 5 identifies the major process of the Asset Depreciation System. The system begins with login by the employee.

- **Step 1:** By using login process; Employee logs in into the system with his user id & password and preserves Employee information into user details.

- **Step 2:** By using Authentication process; only authorized users can be login into the system.

- **Step 3:** User creates Asset category with asset depreciation rate information and stores it into the database. Asset category and rate information often created by Accounts division, but admin division or System Admin can also perform this action.

- **Step 4:** The Asset Registration process stores asset detail information into inventory database with Asset category Information. New Asset can be recorded through direct purchase, spot quotation or advertisement which will be described in Inventory module DFD. Assets Registration process will be often used by Admin, System and equipment division.

- **Step 5:** When an Asset is registered in Inventory module, asset which are Fixed asset type will be processed in this module. This information will help accounts user to generate depreciation on new or old asset.

- **Step 6:** The Depreciation process stores depreciated asset information with written and depreciated amount for each asset that is not disposed for particular month. This process is often triggered by Accounts Division.

- **Step 7:** Based on Depreciation process output data, this process generate different reports. This process is also accessed by Accounts Division. Amount related depreciation reports will be viewed by Accounts user

Figure 4: Activity Diagram of Asset Depreciation System

The system allow Authorized user to do work related to Inventory and Asset Depreciation.

- Authorized user based on Role will be able to perform task on different module.
- If the user is other than System/Admin/Equipment/Accounts role, user will not be able to do any of the tasks involving Asset Depreciation.
- System/Admin/Equipment role user will be able to Manage Category, Manager Asset Register and will be able to view some reports related to Asset Inventory. User can logout after completing one of the task or can perform one of 3 tasks.
- Accounts user will be able to Manage Asset Depreciation Rate configuration, Asset Depreciation, View reports. Based on Asset Depreciation Rate Configuration and Asset Information, depreciation for each asset will be performed. Accounts user will perform this depreciation once in a month. Accounts user will also be able to see depreciation reports. Depreciation amount information will not be available to any other user than accounts user.
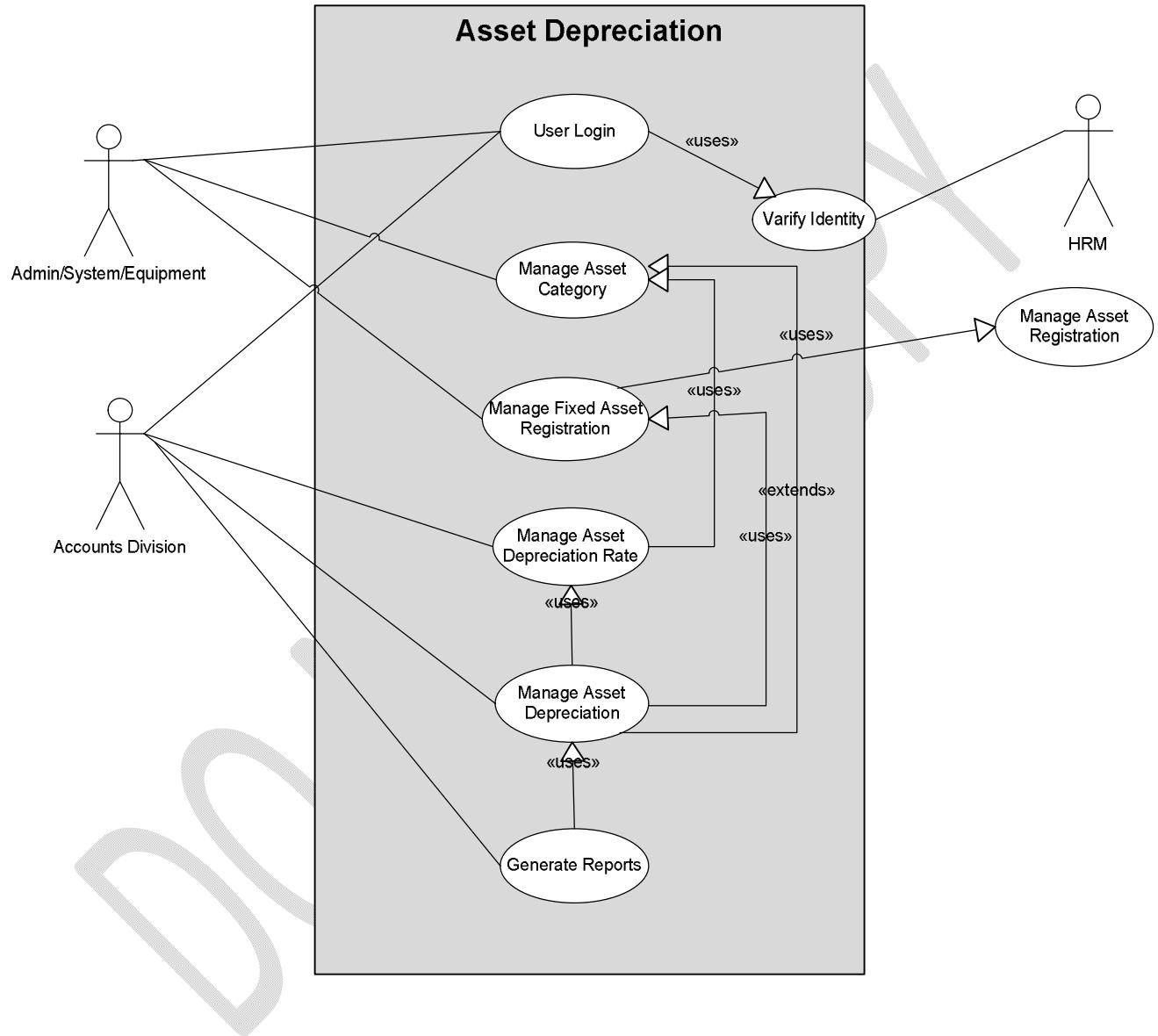
Figure 5: High Level Use Case Diagram of Asset Depreciation System

2 FUNCTIONAL REQUIREMENTS – SCOPES, ATTRIBUTES & USE CASES

2.1 Manage Common Configuration Information

1	Scope ID	:	**mfs/adc/sc/01**

General Description of Scope:
The common configuration will maintain name-value information. Common configuration types will be defined by the system and value for each type will be entered by the end user. There are following types of information will be available to certain scope. 1. Voucher Type [exp: PV, AV, IV, RV, JV] 2. Asset Category

Attribute List of mfs/adc/sc/01

Name of Attribute	Description	Field Size	Mandatory/ Optional	Language (Bangla/English)
Type	Text and Derived	100	M	E
Name	Text	100	M	E
Remarks	Text	200	O	E
Created By	Text	100	M	E
Created Date	Date and Time		M	E
Last Modified By	Text	100	O	E
Last Modifying Date	Date and Time		O	E

Use Cases

2.1.1.1 Add New Common Configuration Information

Use Case ID:	mfs/adc/uc/01-01

Use Case Description:	This use case describes the flows of storing common configuration information into the system.
Actors:	System Administrator
Preconditions:	1. System Administrator must be authorized user. System Administrator must be logged into the system. 2. System Administrator must have "Add New" access privilege on configuration information.
Post conditions:	1. System will store the information and will generate a confirmation message.

Normal Flows	1. **System Administrator:** initiates to add new configuration information.
	2. **System:** will show common configuration entry page.
	3. **System Administrator:** will select common configuration type and enters name of configuration and other information, Will click on Add/Save button after completion of required information.
	4. **System:** will do the following task
	    a. Alert Accounts Manager for mandatory information If Accounts Manager fails to enter mandatory information.
	    b. Alert Accounts Manager for duplication for duplicate entry.
	    c. Will save information.

Alternative Flows:	N/A
Exceptions:	3a. If configuration Type is not available **3a1 System:** Cancels to add new common configuration information.
Frequency of Use:	Low
Notes and Issues:	N/A
Cross References:	Mfs/fam/uc/09-01, mfs/fam/uc/11-01

2.1.1.2 View Common Configuration Information

Use Case ID:	**mfs/adc/uc/01-02**
Use Case Description:	This use case describes the flows of viewing detail information of common configuration information in the system.

Actors:	System Administrator
Preconditions:	1. System Administrator must be authorized user. System Administrator must be logged into the system. 2. System Administrator must have "View" access privilege on configuration information. 3. Common configuration information must have existed in system.
Post conditions:	1. System Administrator can see detail information of selected configuration information in the system.

Normal Flows	1. **System Administrator:** initiates to view the existing configuration information.
	
	2. **System:** Will display configuration page showing the available list of configuration information.
	
	3. **System Administrator:** Will choose the following parameter to find the desired information.
	
	    a. Configuration Type
	    b. Configuration Name
	
	4. **System:** Will display configuration information based on the selection criterion.

Alternative Flows:	N/A
Exceptions:	N/A
Frequency of Use:	Low
Notes and Issues:	N/A
Cross Reference:	Mfs/fam/uc/09-01, mfs/fam/uc/11-01, mfs/fam/uc/06-01

2.1.1.3 Update Common Configuration Information

Use Case ID:	**mfs/adc/uc/01-03**
Use Case Description:	This use case describes the flows of updating of an existing configuration into system.

Actors:	System Administrator
Preconditions:	1. System Administrator must be authorized user. System Administrator must be logged into the system. 2. System Administrator must have "Edit" access privilege on configuration information. 3. Configuration information must have existed in the system.
Post conditions:	1. System will generate a confirmation message 2. Audit trial will be generated into system.

Normal Flows	1. **System Administrator:** initiates to update the configuration information and selects the desired configuration using the use case mfs/vms/uc/01-01.
	2. **System:** will display the detail information in entry page.
	3. **System Administrator:** Will update the desired information
	4. **System:** will do the following task
	    a. Alert Accounts Manager for mandatory information If Accounts Manager fails to enter mandatory information.
	    b. Alert Accounts Manager for duplication for duplicate entry.
	    c. Will save updated information.

Alternative Flows:	N/A
Exceptions:	N/A
Frequency of Use:	Low
Notes and Issues:	N/A
Cross Reference:	mfs/fam/uc/09-01, mfs/fam/uc/11-01, mfs/fam/uc/06-01

2.1.1.4 Delete the Common Configuration Information

Use Case ID:	**mfs/adc/uc/01-04**
Use Case Description:	This use case describes the flows of deleting of existing configuration information from system.
Actors:	System Administrator
Preconditions:	1. System Administrator must be authorized user. System Administrator must be logged into the system. 2. System Administrator must have "Delete" access privilege on configuration

	information.
	3. Configuration information must have existed in system.
Post conditions:	1. Deleted configuration information will be removed from the system and generate a confirmation message.
	2. Audit trial will be generated into system.
Normal Flows	1. **System Administrator:** initiates to delete the configuration information and selects the desired configuration record by using the use case mfs/vms/uc/01-01.
	2. **System:** Will generate a confirmation message showing "Yes" and "No" button.
	3. **System Administrator:** click on either "Yes" or "No"
	4. **System:** if click on "Yes", Will delete the information.
Alternative Flows:	N/A
Exceptions:	3a. **System Administrator:** If click on "No" button
	3a1. System: Cancels the deletion activities
	4a. If parent-child relation exists
	4a1 System: Cancels the deletion activities
Frequency of Use:	Low
Notes and Issues:	N/A
Cross Reference:	mfs/fam/uc/09-01, mfs/fam/uc/11-01, mfs/fam/uc/06-01

2.1.1.4.1 Business Rule: NOT APPLICABLE

2.2 Manage Asset Depreciation Rate Information

1	Scope ID	:	**mfs/adc/sc/02**
General Description of Scope:			
In this scope user will be able to manage Depreciation rate Information by Asset Category wise which will be derived in Asset registration module. User can change/update depreciation rate for each asset from "Asset Registration Module" . Depreciation calculation will be based on each asset depreciation rate. For example, if IWM has 11 categories, 11 rows will be saved in this scope.			

Attribute List of mfs/adc/sc/02

Name of Attribute	Description	Field Size	Mandatory/ Optional	Language (Bangla/English)
Asset Category ID	Number, Derived from Inventory Module	10	M	E
Depreciation Rate	Number	10	M	E
Remarks	Text	1000	O	E

Use Cases

2.2.1.1   Create New Asset Depreciation Rate Information

Use Case ID:	mfs/adc/uc/02-01
Use Case Description:	This use case Describe 'Creating a new Asset Depreciation rate Information' into the system.
Actors:	Accounts Manager
Preconditions:	1. Accounts Manager must be authorized and logged into the system. 2. Accounts Manager must have access privilege to add new Asset Depreciation rate information. 3. Asset Category name must be available in the system.
Post conditions:	1. System will store the information and will generate a confirmation message. 2. System will generate audit log information into system.
Normal Flows	1. **Accounts Manager:** Will initiate to add new Asset Depreciation rate information. 2. **System:** Will show Asset Depreciation Rate information entry page and also populate available Asset Category name, Financial Year Name in the defined drop down list. 3. **Accounts Manager:** Will select Asset Category name and enter mandatory information as per above attribute list, Will click on Add/Save button after completion of required information.

	4. **System:** will do the following task
	a. Alert Accounts Manager for mandatory information If System Administrator fails to enter mandatory information.
	b. Alert Accounts Manager for duplication for duplicate entry.
	c. Will save information.
Alternative Flows:	
Exceptions:	2a. If Asset Category is not available **2a1. System:** Cancels to add new Asset Depreciation Rate information.
Frequency of Use:	Low
Notes and Issues:	
Cross Reference	mfs/adc/uc/01-01, mfs/adc/uc/04-01, Inventory Module

2.2.1.1.1 Business Rule:

1. User can not save more than one rate information for each category.

2.2.1.2   View New Asset Depreciation Rate Information

Use Case ID:	mfs/adc/uc/02-02
Use Case Description:	This use case Describe viewing list of "Asset Depreciation rate Information".
Actors:	Accounts Manager
Preconditions:	1. Accounts Manager must be authorized and logged into the system. 2. Accounts Manager must have access privilege to view Asset Depreciation Rate information. 3. "Asset Depreciation rate Information" must be available in the system.
Post conditions:	1. System will display Asset depreciation Rate information.
Normal Flows	1. **Accounts Manager:** Will initiate to view the existing Asset Depreciation Rate information. 2. **System:** Will display Asset Depreciation rate information page showing the available

	list of Asset Depreciation Rate information.
	3. **Accounts Manager:** Will choose the following parameter to find the desired information.
	a. Asset Category name
	4. **System:** Will display Asset Depreciation Rate information based on the selection criterion.
Alternative Flows:	N/A
Exceptions:	N/A
Frequency of Use:	Low
Notes and Issues:	N/A
Cross Reference	mfs/adc/uc/01-01, mfs/adc/uc/04-01, Inventory Module

2.2.1.2.1 Business Rule: NOT APPLICABLE

2.2.1.3   Update Asset Depreciation Rate Information

Use Case ID:	mfs/adc/uc/02-03
Use Case Description:	This use case Describe Updating an "Asset Depreciation rate Information" from details view.
Actors:	Accounts Manager
Preconditions:	1. Accounts Manager must be authorized and logged into the system.
	2. Accounts Manager must have "Edit" access privilege on "Asset Depreciation rate Information".
	3. "Asset Depreciation rate Information" must be existed in the system.
Post conditions:	1. System will store the updated information and will generate a confirmation message.
	2. System will generate audit log information into system.
Normal Flows	1. **Accounts Manager:** Will initiate to update the Asset Depreciation Rate information.
	2. **System:** Will show "Asset Depreciation rate Information" entry page
	3. **Accounts Manager:** Will select the desired Asset Category name from the system. And modify the desired information. After modifying the information accounts manager will click on update button. If user selects "*Update all asset under this category*", all the asset using this category will be updated with the new rate, by

	default this checkbox will not be selected and rate will be updated only in category level. 4. **System:** will do the following task a. Alert Accounts Manager for mandatory information If Accounts Manager fails to enter mandatory information. b. Alert Account Manager for duplication for duplicate entry. c. Will save updated information.
Alternative Flows:	N/A
Exceptions:	N/A
Frequency of Use:	Low
Notes and Issues:	N/A
Cross Reference	mfs/adc/uc/01-01, mfs/adc/uc/04-01, Inventory Module

2.2.1.3.1 Business Rule:

1. One Category Type can not have multiple depreciation information saved. User can change depreciation rate for category, which will be derived on Asset level rate setting.

2. Selecting "Update all assets under this category" will update asset level rate information. When user will depreciate asset in next month, depreciation will use the new asset rate information. This will also overwrite any asset rate that is previously configured.

2.2.1.4 Delete Asset Depreciation Rate Information

Use Case ID:	mfs/adc/uc/02-04
Use Case Description:	This use case Describe Deleting an "Asset Depreciation rate Information" record.
Actors:	Accounts Manager
Preconditions:	1. Accounts Manager must be authorized and logged into the system. 2. Accounts Manager must have "Delete" access privilege on "Asset Depreciation rate Information". 3. "Asset Depreciation rate Information" must be available in the system.

Post conditions:	1. Deleted information will be removed from the system and system will generate a confirmation message. 2. System will generate audit log information into system.
Normal Flows	1. **Accounts Manager:** initiates to delete the configuration information and selects the desired configuration record. 2. **System:** Will generate a confirmation message showing "Yes" and "No" button. 3. **Accounts Manager:** click on either "Yes" or "No" 4. **System:** if click on "Yes", Will delete the information.
Alternative Flows:	

Exceptions:	3a. **Accounts Manager:** If click on "No" button
	
	    3a1. System: Cancels the deletion activities
	
	4a. If parent-child relation exists
	
	    4a1 System: Cancels the deletion activities

Frequency of Use:	Low
Notes and Issues:	N/A
Cross Reference	mfs/adc/uc/01-01, mfs/adc/uc/04-01, Inventory Module

2.2.1.4.1 **Business Rule:** NOT APPLICABLE

2.3 Manage Fixed Asset Information

1	Scope ID	:	**mfs/adc/sc/03**
General Description of Scope:			
In this scope user will be able to manage IWM Fixed Asset information. Asset will be registered in Inventory Module, only record that has fixed asset as asset type will be automatically entered in this module at the time of entry. Admin, System, and Survey division's Authenticate user will entry asset information in Inventory Module. This saved information will help Account manager to generate Asset Depreciation report on fixed asset.			

Attribute List of mfs/adc/sc/03

Name of Attribute	Description	Field Size	Mandatory/ Optional	Language (Bangla/English)
Asset ID	Number, Incremental, system generated	10	M	E
Opening Balance of Cost	Number	100	M	E
Opening Balance of Depreciation	Number	10	M	E
Opening Balance of book value	Number	10	M	E
Depreciation Rate	Number	10	M	E
Depreciation effective date	Number	10	M	E
Is Dispose	Boolean, Default "No"	1	O	E

Use Cases

2.3.1.1 Create Fixed Asset Information

User will not be able to create fixed asset information from this scope.

2.3.1.1.1 Business Rule:

Two types of asset will be managed here and these two types are New asset and Old asset. New assets are considered the asset those will be purchased after implementing the software and old asset are considered the assets those have been using in the company for couple of years and yet not disposed by the authority. Separate business rules are mentioned below

1. User will register a new asset on Inventory Module. Only fixed asset type asset will automatically create a record using this scope.

   a. *If the asset is new*, For example an asset is purchased at 10,000 taka on January 01, 2010, then a row will be created in this scope using the following value.

- Asset ID – Inventory ID derived from Inventory Module. Example: INV-002
- Opening Balance of cost – 10,000.00 [This value will only be changed if the Asset has not been depreciated yet, user can not change this opening balance of cost from this scope. User will be able to change this value only from inventory module]
- Depreciation Rate – Default Rate will be derived from Asset Category module[Ref. mfs/adc/uc/02-01]. Suppose INV-002 is a laptop, and it is under asset category "Computer". For the asset category "Computer" 10% rate is defined in mfs/fam/uc/02-01. Then Depreciation Rate column will hold the value 10.User can change this 10% to 8% for a single asset INV-002, In that case 8 will be shown in this column as value.
- Depreciation effective date – If date of purchase is 01 January, 2011 and depreciation effective date is 01 February, 2011 and user makes the depreciation on item INV-002 on 30 Jan,2011, this item will not be depreciated and no depreciation row will be saved in mfs/adc/uc/04-01. Most of the time date of purchase and depreciation effective date is same. In some cases these two dates might differ. But in both cases, effective date must be later than purchase date.
- Opening Balance of depreciation – 0 for new asset
- Opening Balance of Book Value – 10,000.00 [purchase price of the new asset]

b. *If the asset is an old Asset*, For example, if an asset is already in organization and IWM is entering that asset information into the system. For those asset, an asset is purchased at 10,000 taka on January 01,2009, then a row will be created in this scope using the following value.

- Asset ID – Inventory ID derived from Inventory Module. Example: INV-003
- Opening Balance of cost – 10,000.00 [This value will never change, unless it is updated from Inventory module]
- Depreciation Rate – Default Rate will be derived from Asset Category module[Ref. mfs/adc/uc/02-01]. Suppose INV-003 is a Monitor, and it is under asset category "Computer". For the asset category "computer" 10% rate is defined in mfs/adc/uc/02-01. Then Depreciation Rate column will hold the value 10.
- Depreciation effective date – For old asset it is non editable and will be shown the first date of fiscal year.
- Opening Balance of depreciation – 1000, amount that is so far depreciated. User will enter this value based on last asset register
- Opening Balance of Book Value: Auto calculated, This is the subtract of Opening balance of cost – Opening balance of depreciation (10,000-1,000=9,000)

2.3.1.2 View Fixed Asset Information

Use Case ID:	**mfs/adc/uc/03-02**
Use Case Description:	This use case describes the flows of viewing detail information of Asset Information in the system.
Actors:	Accounts Manager
Preconditions:	1. Accounts Manager must be authorized user. Accounts Manager must be logged into the system. 2. Accounts Manager must have "View" access privilege on Fixed Asset information. 3. Fixed Asset information must have existed in system.
Post conditions:	1. Accounts Manager can see detail information of selected Fixed Asset information in the system.

Normal Flows	1. **Accounts Manager:** initiates to view the existing Fixed Asset Information for fixed asset.
	2. **System:** Will display Fixed Asset Information page showing the available list of Fixed Asset information.
	3. **Accounts Manager:** Will choose the following parameter to find the desired information.
	    a. Asset ID
	    b. Asset Category
	    c. Depreciation Effective Date
	4. **System:** Will display Fixed Asset information based on the selected parameter.

Alternative Flows:	N/A
Exceptions:	N/A
Frequency of Use:	Low
Notes and Issues:	IWM wants to Import this asset information data from excel, so that admin does not have reenter all asset information in the system.
Cross Reference:	mfs/adc/uc/01-01, mfs/adc/uc/04-01, mfs/fam/uc/04-01,Inventory Module

2.3.1.2.1 Business Rule: NOT APPLICABLE

2.3.1.3 Update Fixed Asset Information

Update operation will be performed using the Inventory Module Update use case. User can not update directly from this scope. Updating an Inventory item information of fixed asset type will update the corresponding asset id information.

2.3.1.3.1 Business Rule: NOT APPLICABLE

2.3.1.4 Delete Fixed Asset Information

Delete operation will be performed using the Inventory Module's delete use case. User can not delete directly from this scope. Deleting Inventory item information of fixed asset type, will delete the corresponding asset id information from this scope, unless the information in this scope is not reference somewhere else.

2.3.1.4.1 Business Rule: NOT APPLICABLE

2.4 Manage Asset Depreciation Information

1	Scope ID	:	**mfs/adc/sc/04**
General Description of Scope:			
In this scope user will be able to manage IWM Asset depreciation information. The actor of this scope is Accounts division. Admin/survey/Equipment will be able to view some report using the data saved in this scope.			

Attribute List of mfs/adc/sc/04

Name of Attribute	Description	Field Size	Mandatory/ Optional	Language (Bangla/English)
Asset ID	Number, Derived from Inventory module	10	M	E
Opening Balance of Cost	Number, exp: Purchase value for asset	10	M	E
Opening Balance of Book Value	Number, exp: Purchase value for new asset and Book value for old asset	10	M	E
Depreciation during this period	Number, exp: Current depreciation amount as per depreciation rate from mfs/adc/uc/02-01	10	M	E
Accumulated Depreciation	Number, exp: last asset depreciation amount saved in database or 0 for new asset	2	M	E
Rate	Number, exp: Current depreciation rate for the asset defined in mfs/adc/uc/02-01	2	M	E
Book Value	Number, exp: Opening Balance of book value – depreciation during this period.	10	M	E
Period	Date, here date might be the first or last date of depreciation period like 01/01/2011 or 31/01/2011	10	M	E
Date of processing	Date, exp: date on which depreciation has occurred	10	M	E

Use Cases

2.4.1.1 Create Asset Depreciation Information

Use Case ID:	mfs/adc/uc/04-01
Use Case Description:	This use case Describe 'Creating a new Asset Depreciation Information' into the system.
Actors:	Accounts Manager
Preconditions:	1. Accounts Manager must be authorized and logged into the system. 2. Accounts Manager must have access privilege to add new Asset Depreciation information. 3. Asset name must be available in the system. 4. Asset Category Must be available in the system.
Post conditions:	1. System will store the information and will generate a confirmation message. 2. System will generate audit log information into system.

Normal Flows	1. **Accounts Manager:** Will initiate to add new Asset Depreciation information.
	 2. **System:** Will show Asset Depreciation information entry page and also populate available Asset name, Financial Year, opening Balance of cost, Opening Balance of Book Value, Depreciation During this period, Accumulated depreciation, Rate, Book Value, Period, Date of processing. [See. Business rule for details]
	 3. **Accounts Manager:** Will be able to select a single "asset category" and do the depreciation for each asset under that category, or user can select single asset information to complete the depreciation on that asset. User will click on Add/Save button after completion of required information.
	 4. **System**: Will generate validation message when
	     a. Accounts manager is failed to input mandatory information.
	     b. Account manager enter duplicate information (if the asset depreciation information is already in database for a month).
	     c. Will save information.

Alternative Flows:	N/A
Exceptions:	2a. If Asset Category, Asset Information is not available **2a1 System:** Cancels to add new Asset depreciation information.

Frequency of Use:	Low
Notes and Issues:	N/A
Cross Reference	mfs/adc/uc/01-01, mfs/adc/uc/02-01, mfs/fam/uc/04-01,Asset Information Module

2.4.1.1.1 Business Rule:

1. Depreciation period for IWM is monthly. For example, A car is bought at 16,000.00 on Jan,2001 and depreciation rate for the car is 30% yearly. The depreciation value will be above.

2. Calculation Formula, Depreciation Amount = (Last Book Value * Rate of Depreciation)/100/12

Period	Depreciation Amount	Book Value
Jan,2001	(16,000*30)/12/100=400	15,600
Feb,2001	(15,600*30)/12/100=390	15,210
Mar,2001	(15210*30)/12/100=380.25	14829.75

3. Only asset that is not disposed or sold out will be depreciated.

Asset ID	Opening Balance of cost	Opening Balance of Book value	Depreciation Rate	Depreciation during this period	Accumulated Depreciation	Book Value	For the Month
INV-001	20,000.00	10,000.00	10	100	10,100.00	9,900.00	Jan
INV-002	20,000.00	10,000.00	10	100	10,100.00	9,900.00	Jan
INV-003	5,000.00	5,000.00	10	50	50.00	5,450.00	Jan

User will get a view something like the above table. After selecting the month and asset category, the asset under that category will be populated.

- Asset ID: Will be derived using mfs/adc/uc/03-01
- Asset Name: will be derived from inventory module.
- Opening Balance of Cost: Will be derived using mfs/adc/uc/03-01.
- Opening Balance of Book Value: Will be derived using mfs/adc/uc/03-01, if the asset is new and never been depreciated, otherwise the last depreciation book value for each asset will be in this column.
- Depreciation Rate: Will be derived using mfs/adc/uc/03-01.
- Depreciation during this period: Based on depreciation rate and "opening Balance of Book value" this amount will be populated. For example, if "opening Balance of book value" for an asset is 5,000.00 taka and for the asset depreciation rate is 10%, Depreciation during this period will be $(5000 *10)/100/12=41.66$ tk.
- Accumulated Depreciation: For new asset "Accumulated Depreciation is equal to Depreciation during this period". For asset that has already been depreciated and depreciation information is in the database, the amount will be [Accumulate Depreciation = Previous Accumulated Depreciation + Depreciation during this period]
- Book Value = Opening balance of cost – Accumulated depreciation

2.4.1.2 View Asset Depreciation Information

Use Case ID:	mfs/adc/uc/04-02
Use Case Description:	This use case Describe viewing list of Depreciated asset in category wise.
Actors:	Accounts Manager
Preconditions:	1. Accounts Manager must be authorized and logged into the system. 2. Accounts Manager must have access privilege to view Asset Depreciation information. 3. "Asset Depreciation Information" must be available in the system.
Post conditions:	1. System will display Asset depreciation information.
Normal Flows	1. **Accounts Manager:** Will initiate to view the existing Asset Depreciation information. 2. **System:** Will show Asset Depreciation information with available Asset name,

	Financial Year Name, opening Balance of cost, Opening Balance of Book Value, Depreciation During this period, Accumulated depreciation, Rate, Book Value, Period, Last month of depreciation, Date of processing. [See. Business rule for details]
	
	3. **Accounts Manager:** Will choose the following parameter to find the desired information.
	    a. Asset Category name
	    b. Asset Name
	    c. Inventory Number
	    d. Financial Year
	    e. Details/Last Depreciated
	    f. Month
	
	4. **System:** Will display Asset Depreciation information based on the selection criterion.

Alternative Flows:	N/A
Exceptions:	N/A
Frequency of Use:	Low
Notes and Issues:	N/A
Cross Reference	mfs/adc/uc/01-01, mfs/adc/uc/02-01, mfs/fam/uc/04-01,Asset Information Module

2.4.1.2.1 Business Rule:

1. This use case will only populate the asset information that has been depreciated at least once. By default, last depreciation information will be populated. User will be able to populate the depreciation history for a single asset also.

2.4.1.3 Update Asset Depreciation Information

Use Case ID:	mfs/adc/uc/04-03
Use Case Description:	This use case Describe Updating an "Asset Depreciation Information" from details view.
Actors:	Accounts Manager
Preconditions:	1. Accounts Manager must be authorized and logged into the system. 2. Accounts Manager must have "Edit" access privilege on "Asset Depreciation Information".

	3. "Asset Depreciation Information" must be existed in the system.
Post conditions:	1. System will store the updated information and will generate a confirmation message.
	2. System will generate audit log information into system.
Normal Flows	1. **Accounts Manager:** Will initiate to update the Asset Depreciation information.
	2. **System:** Will show "Asset Depreciation Information" entry page
	3. **Accounts Manager:** Will edit/modify/update the desired information and Will click on update button after completion of required information
	4. **System:** will do the following task
	a. Alert Accounts Manager for mandatory information If Accounts Manager fails to enter mandatory information.
	b. Will save updated information.
Alternative Flows:	N/A
Exceptions:	N/A
Frequency of Use:	Low
Notes and Issues:	N/A
Cross Reference	mfs/adc/uc/01-01, mfs/adc/uc/02-01, mfs/fam/uc/04-01,Asset Information Module

2.4.1.3.1 Business Rule:

1. An asset can be recorded in wrong category or using wrong purchase value. For example, an asset bought in July,2009 got depreciated 3 times. On October,2009 IWM found that the asset supposed to be in Computer category but it is in "computer accessories" category. In "Computer Accessories" category depreciation rate was 10% where as in "Computer" category depreciation rate was 15%. So admin will change the category from asset module and at the same time accounts manager can update those 3 rows using this scope. This is rare case, but accounts manager needs to have this feature. In this case, accounts manager will change the value of July first, then august and at last September. Accounts manager needs to change all information beginning from financial year for this type of situation and admin needs to inform accounts manager if mistake of this kind happen.

2.4.1.4 Delete Asset Depreciation Information

Use Case ID:	**mfs/adc/uc/04-04**
Use Case Description:	This use case Describe Deleting an "Asset Depreciation Information" record.
Actors:	Accounts Manager
Preconditions:	1. Accounts Manager must be authorized and logged into the system. 2. Accounts Manager must have "Delete" access privilege on "Asset Depreciation Information". 3. "Asset Depreciation Information" must be available in the system.
Post conditions:	1. Deleted information will be removed from the system and system will generate a confirmation message. 2. System will generate audit log information into system.
Normal Flows	1. **Accounts Manager:** Will initiate and select the desired Asset Depreciation information from the system by using the use case mfs/adc/uc/03-01. 2. **System:** Will generate a confirmation message showing "Yes" and "No" option. 3. **Accounts manager:** click on "Yes" option. 4. **System:** Will delete the information.
Alternative Flows:	N/A
Exceptions:	4a. If parent-child relation exists **System:** Cancels the deletion activities and generate a message to the user.
Frequency of Use:	Low
Notes and Issues:	N/A
Cross Reference	mfs/adc/uc/01-01, mfs/adc/uc/02-01, mfs/fam/uc/04-01,Asset Information Module

2.4.1.4.1 **Business Rule:**

1. Only the current financial year depreciation process information can be deleted from the system.

2.5 Reports

1	Scope ID	:	**mfs/adc/sc/05**
General Description of Scope:			
- Authorized user can generate different reports depending on their privileges. - Users can generate the following reports by selecting with the different parameter(s): - Generate report of Fixed Asset Schedule details - Generate report of Fixed Asset Schedule category wise			

Use Cases

2.5.1.1 Generate Report of Asset Depreciation In Details

Use Case ID:	**mfs/adc/uc/05-01**
Use Case Description:	The use case will allow authorized user to generate depreciation report on all existing asset with asset information.
Actors:	Accounts Division
Preconditions:	1. User must be authorized user. User must be logged into the system. 2. User must have this report access privilege.
Post conditions:	1. Depending on the parameter(s), system will generate report of the "Asset Depreciation in details".
Normal Flows	1. User logs into the system with his credential. 2. User Provide following parameter(s) and will click to generate report As On Date

	3. Depending on the selection of parameter(s), system will generate the following information's. [note: year and month will be changed based on user selection] • Inventory No • Purchase Date • Particulars • Total cost As on previous Period, Purchase Amount of asset [x] • Addition during this period [y] • Adjustment During this period [z] • Total Cost As on this period [E = x + y -z] • Depreciation Up to previous period [A] • Written down on previous period [W= Purchase Amount of asset - A] • Depreciation during this period [B] • Adjustment during this period [D] • Cumulative up to this period [C = A +B -D] • Written down value as on this period [U = E - C] see. details 4. User logs out of the system.
Alternative Flows:	3A. System produces an Alert message that it cannot show that particular report.
Exceptions:	N/A
Frequency of Use:	Low
Notes and Issues:	N/A

UI Guideline:

Report Reference mfs/fam/am/02

2.5.1.1.1 Business Rule

1. Inventory No will be derived from "Asset Module->Manage Asset Registration". scope's attribute "Inventory Number"

2. Purchase date will be derived from "Asset Module->Manage Asset Registration." scope's attribute "Purchase Number"

3. Particular column will be derived from "Asset Module->Manage Asset Registration " scope's attribute "Asset Name"

4. Total cost as on June,2009: will hold the value of "Opening Balance of Cost" using mfs/adc/sc/03. For asset that is not bought during that period this column will hold 0 values.

For example, a table INV-2001 is bought in Feb, 2009 in 15,000 taka . For that asset this column will hold 15,000 taka. But another asset is bought in 01 Sep,2009 with inventory number INV-2987. This asset amount will not be placed in this column. This asset amount will be placed in next column.

5. Addition during this period will be derived form newly purchased item. This value will be derived from mfs/adc/sc/03 considering the purchase date. Purchase date must be during this year. These asset may have depreciation amount in mfs/adc/sc/02

For example, a table, inventory number INV-9087 is bought on 23 Oct,2009 with 23,000.00 taka. For this asset this column will hold 23,000.00.

6. Adjustment during this year column value will be derived from mfs/adc/sc/02. This will only populate the amount for the product that has been disposed or discontinued. This amount will be same as purchase value.

For example, if a product cost is 2000 taka, when a product got disposed this column will show 2000 taka as well.

7. Total cost as on will follow the equation written in normal flow section, which is $E = x + y - z$, where x,y,z are report column.

8. Depreciation up to previous year will be calculated using mfs/adc/sc/02, considering the cumulative amount of "Depreciation Amount" starting from date of purchase for the Item. [A]

9. Written down on June will be calculated following the equation written in normal flow section in $W =$ Purchase value of Asset $- A$. Where A is cumulative depreciation amount up to previous year.

10. Depreciation during this year will be calculated using mfs/adc/sc/04. the cumulative amount for each asset during this financial period will be considered to find out the value. [B]

11. Adjustment during this year will be calculated for the current year, considering damaged/ sold asset. It will not consider sell value or repair value of the asset [D]. If the asset is disposed, the cumulative depreciation amount so far will be shown in this column.
    For example, a asset INV-009 has purchase value 10,000 and Book value 6,000 and cumulative depreciation so far is 4,000.00. Then this column will populate (4,000.00) for this asset.

12. Cumulative up to Month will follow the equation [C = A +B – D], Report Column Alias

13. Written down value will be calculated using the equation [U = E – C], Report Column Alias

2.5.1.2 Generate Report of Asset Depreciation category wise

Use Case ID:	mfs/adc/uc/05-02
Use Case Description:	The use case will allow authorized user to generate Asset depreciation report Category wise.
Actors:	Accounts Division
Preconditions:	1. User must be authorized user. User must be logged into the system. 2. User must have this report access privilege.
Post conditions:	1. Depending on the parameter(s), system will generate report of the "Asset Depreciation category wise".
Normal Flows	1. User logs into the system with his credential. 2. User Provide following parameter(s) and will click to generate report • As On Date 3. Depending on the selection of parameter(s), system will generate the following information's. [note: year and month will be changed based on user selection] • Particulars [Name of Asset Category] • Total Cost As On previous period [x, Summation of purchased Asset amount in each category] • Addition during this period [y] • Adjustment During this period [z] • Total Cost As on this Period [E = x + y -z] • Depreciation Up to previous Period [A] • Written down on Previous Period [W= - A] • Depreciation during this Period [B] • Adjustment during this period [D] • Cumulative up to this period [C = A +B -D] • Written down value as on this period [U = E - C]

	4. User logs out of the system.
Alternative Flows:	3A. System produces an Alert message that it cannot show that particular report.
Exceptions:	N/A
Frequency of Use:	Low
Notes and Issues:	N/A

UI Guideline:

Report Reference mfs/fam/am/01

2.5.1.2.1 Business Rule

1. This report will consider summation of all amounts in each Asset Category for each column.

2. Particular column will show the Name of each Asset category. IWM currently have 11 asset categories, in this case total 11 rows will be populated in the report.

3. Total cost as on Previous Period will hold the purchase amount so far using " mfs/adc/sc/03". It will populate the sum of Asset that has been bought since last year. Any product that is bought during this financial Year will not be considered in this summation.

4. Addition during this year will be derived form newly purchased item. This value will be derived from mfs/adc/sc/04 considering the purchase date. Purchase date must be during this year. These asset may have depreciation amount in mfs/adc/sc/04

5. Adjustment during this year column value will be derived from mfs/adc/sc/04. This will only populate the amount for the product that has been disposed or discontinued this year. This amount will be same as purchase value. For example, if a product cost is 2000 taka, when a product got disposed this column will show 2000 taka as well.

6. Total cost as on this period, will follow the equation written in normal flow section, which is $E = x + y - z$, where x,y,z are report column alias.

7. Depreciation up to previous year will be calculated using mfs/adc/sc/04, considering the cumulative amount of "Depreciation Amount " starting from date of purchase for the Item. [A]

8. Written down on Previous Financial Year closing will be calculated following the equation written in normal flow section in $W = E - A$. It can also be derived from item depreciation information for the month of June using mfs/adc/sc/04's column name Book Value.

9. Depreciation during this financial year will be calculated using mfs/adc/sc/04. the cumulative amount for each asset during this financial year will be considered to find out the value. [B]

10. Adjustment during this year will be calculated for the current year, considering damaged/ sold asset. It will not consider sell value or repair value of the asset. [D]. If the asset is disposed, the cumulative depreciation amount so far will be shown in this column.
    For example, a asset INV-009 has purchase value 10,000 and Book value 6,000 and cumulative depreciation so far is 4,000.00. Then this column will populate (4,000.00) for this asset.

11. Cumulative up to Month will follow the equation [C = A +B – D], Report Column Alias

12. Written down value will be calculated using the equation [U = E – C], Report Column Alias

3 SYSTEM REQUIREMENTS

3.1 Hardware:

Minimum Requirements for client PC:

- Processor   : 1.8 Gigahertz
- RAM   : 1 Gigabyte
- HDD   : 40 Gigabyte

3.2 Software:

Minimum Requirements:

Client side:

- Operating System   : Windows XP Professional Service Pack 2
- Browser   : Microsoft Internet Explorer 7,8, Mozilla Firefox, Crome

Server side:

- Operating System   : Windows 2003/2008 Server
- IIS   : Internet Information Services (IIS 6.0/7.0)
- Database Server   : Microsoft SQL Server 2008
- Framework   : Microsoft .Net Framework 4

4 NON-FUNCTIONAL REQUIREMENTS

4.1 External Interfaces

1. Project Information Management
2. Human Resource Management

4.2 Security

1. **User Level Security**

- **Role Creation:** User will able to create different role through the system like super admin, admin, and operator and so on.

- **Role based default authentication:** Based on the role, system will provide to set the default privileges of that role. For example: Operator is a role and the operator will get the privileges to add data into the system through all or selected screens or pages except security part of the system.

- **Default privileges:** System will be able to show role based default privileges. Suppose operator is a role and there may be multiple users under operator role. But each user under this role may not get similar privileges. For example: Mr. Imran Hasan is an operator and his privileges may be different to other operator's privileges. Under this scenario system will able to show default privileges of the operator and user (basically admin user) can discard some privileges or can add some additional privileges for that user.

- **Role based user authentication:** Under this conditions system will provide two types of privileges and these two types are mentioned below:

  i)   Menu or page based privileges

  ii)   Menu or page and functionalities based privileges

  - **Menu or page based privileges:** System will provide menu or page/screen based security. This means that when a user gets the privileges of the menu/page, user can perform all functionalities (add, edit, delete, view) under that menu/page. For example: Mr. Imran Hasan is a user (say operator) of the system and employee information is a page of the system. Under this condition Mr. Imran Hasan will be able to perform add, edit, delete and view employee data.

  - **Menu or page and functionalities based privileges:** System will provide menu or page/screen and functionality based security. This means that when a user gets the privileges of the menu or page/screen, user can perform selected functionalities (add, edit, delete, view) of that menu or page. System will provide to set menu and functionality based privileges according to user. For example: Mr. Imran Hasan is a user (say operator) of the system and employee information is a page of the system. Under this condition Mr. Imran Hasan will be able to add data into the system and as well as he can view employee data. But he cannot delete and edit data of employee page because he was given the privileges of add & view functionalities only for this page.

2.   Password of the System

System will be more secured and password protected. So that unauthorized users cannot access into the system. For better access control of the system password will follow the following rules:

- Length of password will be minimum 8 characters and maximum 14 characters.
- Passwords will be stored into the system with encryption.

- System will allow user to change his/her own password.
- Password field should not allow copy paste (This is an standard practice)

4.3   Performance

Any Interface between a user and software shall have reasonable response time based on Intranet connection.

4.4   Data Specification

Not Applicable

4.5   Error Message

#	Item	Message
1.	**Successful Add Update**	Information has been saved successfully.
2.	**Unsuccessful Add Update**	Cannot save the information. Please try again.
3.	**Successful Delete**	Information has been deleted successfully.
4.	**Unsuccessful Delete**	Information can not be deleted due to dependency.
5.	**Blank Mandatory Field**	Please provide the following information
6.	**Server Error**	Cannot perform the operation.

5   USERS

This document will be used by following users of the system

SL No.	Users	Purpose of Users
1	System Designer	This document will help the system designer to design the system.
2	QC Engineer	This document will help QC engineer to prepare test plan, test case and also help to validate the system.
3	Developer	As the system will be developed based on this document and the developer will play an important to write pseudo code, therefore she/he

		is one of user's of this document.
4	Stake Holders	Client

APPENDIX I – GLOSSARY

Definition, Acronyms and Terminology

SL No.	Abbreviation	Description /Expansion
COA	Chart of Accounts	
ED	Executive Director	
DED	Deputy Executive Director	
PO	Purchase Order	
DD	Direct Draft	
TT	Telephony Transfer	
IV	Invoice Voucher	
RV	Receive Voucher	
PV	Payment Voucher	
JV	Journal Voucher	
AD	Advance Voucher	