

ASSET MANAGEMENT STANDARD

DBSB-ITECX-02

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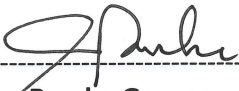

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1.0 POLICY

Neu Dimension Sdn Bhd is committed in managing its assets in order to deliver the jobs safely and efficiently that aligned with clients' expectations. ND will maintain an Asset Management System (AMS) to meet the requirement of the policy.

ND shall provide resources, satisfying the standards, specifications and requirements of clients as well as regulatory bodies to ensure the assets comply and perform as per design.

2.0 OBJECTIVE

This standard:

1. To ensure the optimization and sustainability of assets over their life cycle or over a defined long-term period.
2. To ensure the compliance and control of assets in terms of achieving balance between performances, risk and costs.
3. To improve the performance efficiency and utilization rate of assets over their life cycle.
4. To ensure the importance of asset management system being communicated to all personnel within the organization.

3.0 SCOPE

The scopes of this standard are:

1. Applicable only to assets (surface equipment, pressure control equipment and downhole tools) under Slickline Services, Cased Hole Services and Coiled Tubing Services and excluded to other asset terms such as property.
2. To provide a guideline for asset lifecycle management.
3. To provide a guideline on asset monitoring and utilization KPI.
4. To define the asset category based on its type and criticality.
5. To define the responsibilities of related personnel in managing the asset.

4.0 ROLES AND RESPONSIBILITIES

This section aims to define the basic roles and responsibilities of each division in the company with respect to this standard.

a. Technical Engineer (Asset Management)

- Provide Asset Management Standard to Operation Team as a guideline in managing assets.
- Continuously implement and improve the Asset Management System.
- Coordinate and implement any program or initiative related to Asset Management.
- Monitor the performance of Asset Management ERP (V-Asset).
- Manage the procurement activity for CAPEX purchasing.
- Manage and maintain the Supplier Management System

b. Asset Coordinator

- Continuously monitor and update assets status correctly and precisely.
- Liaise with operation team to get current asset status (active/idle/stacked) or (red/green).
- Monitor and maintain the asset utilization KPI dashboard.
- Participate and implement any program or initiative related to Asset Management.
- Ensure Asset Management ERP (V-Asset) is fully utilized and accurately updated.
- Communicate with Line Management for any assets write-off and refurbishment proposal.
- Ensure all documents related to assets are available and properly recorded.

c. Line Management (OM & FSM)

- Ensure division's compliance and conformance to Asset Management System Standard.
- Communicate any CAPEX request and plan to Asset Management Department.
- Oversee, monitor and govern the financial aspects of assets (purchase cost, maintenance cost, refurbishment cost, write-off cost etc.).
- Ensure the inventory, traceability, health and maintenance records of assets are well managed which include Active and Non-Active assets.
- Ensure Asset Management ERP (V-Asset) is fully utilized and accurately updated.

- Ensure field personnel assigned to operate assets are competent and appropriately trained.
- Communicate any assets failure to Technical Department.
- Identify assets for refurbishment or write-off proposal.
- Perform assessment (risk and financial aspects) and produce proposal for asset write-off or refurbishment.

d. Technical & Sales (Operation Engineer)

- Communicate asset demand needs to line management and asset coordinator.
- Design and sell jobs as per assets' design and limitation.

e. Field Personnel

- Ensure self-competency to operate assets correctly as per design and within its limitation.
- Ensure assets are properly maintained while delivering jobs at wellsite.
- Ensure assets are maintained accordingly as per respective division's maintenance program.
- Continuously update and report the status of assets (location, health, utilization).
- Manage and maintain accurately the assets inventory.
- Assist in identifying assets to write-off or refurbishment candidate.
- Communicate any assets failure to Line Management and Maintenance Team.
- Ensure all documents related to assets are properly recorded and accurately updated.

f. Maintenance Team

- Perform scheduled preventive maintenance and any corrective maintenance as per respective division's maintenance procedure.
- Ensure personnel assigned to every maintenance task is competent and appropriately trained.
- Ensure COC, maintenance, problem and technical investigations records of assets are documented accordingly.
- Monitor and accurately report the cost of maintenance for all assets.
- Ensure assets maintenance schedule record is accurately updated.

- Identify assets for refurbishment or write-off proposal.
- Perform assessment (risk and financial aspects) and produce proposal for asset write-off or refurbishment.

5.0 ABBREVIATION/ DEFINITION

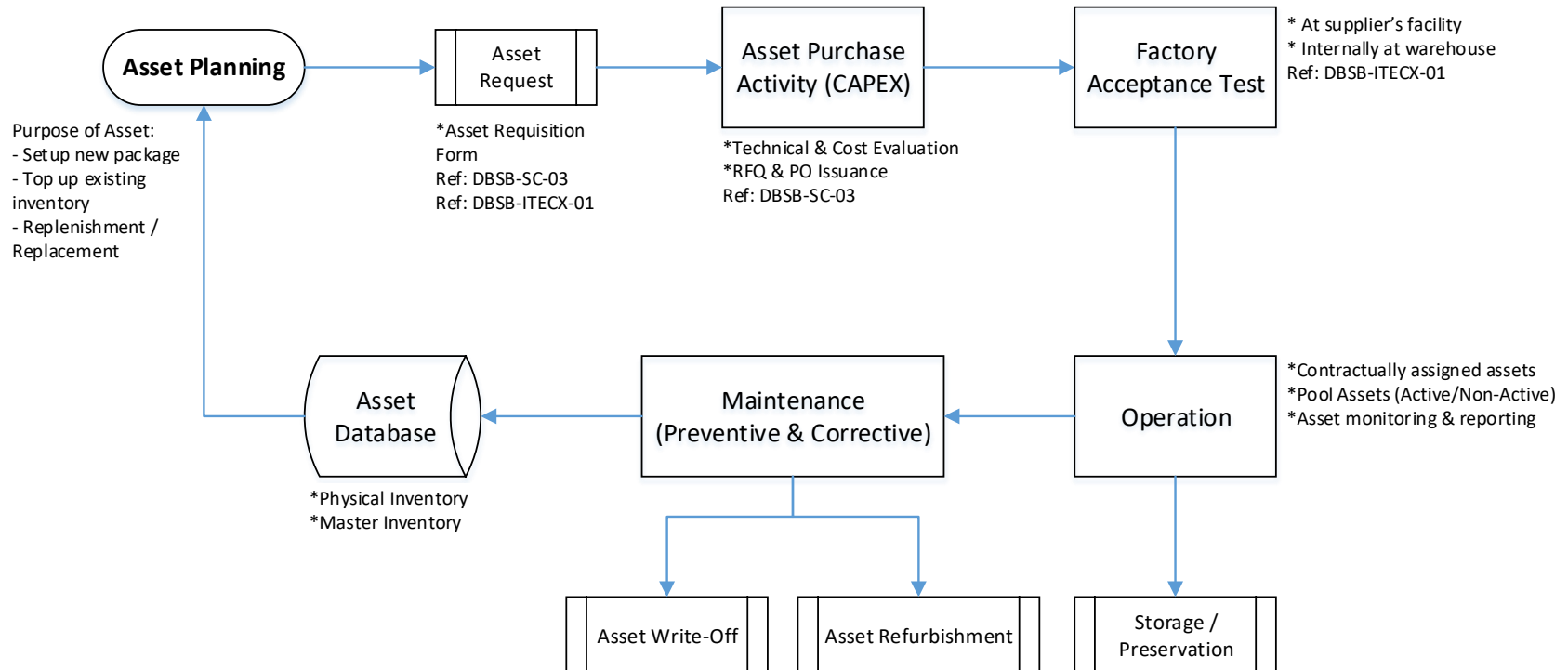
- 5.1 QMS - Quality Management System
- 5.2 AVL – Approved Vendor List
- 5.3 CAPEX – Capital Expenditure
- 5.4 ND – Neu Dimension Sdn Bhd
- 5.5 DO – Delivery Order
- 5.6 EAF – Equipment Acceptance Form
- 5.7 FSM – Field Service Manager
- 5.8 OM – Operation Manager
- 5.9 LOA – Limits of Authority
- 5.10 AR – Asset Requisition
- 5.11 TE – Technical Engineer, Asset Management
- 5.12 PO – Purchase Order
- 5.13 RFQ – Request for Quotation
- 5.14 STAMs – Standards for Technical and Asset Management System
- 5.15 PSL – Product Service Line

6.0 REFERENCE

- 6.1 DBSB-ITECX-01
- 6.2 DBSB-SC-03
- 6.3 ISO 9001:2015, Para 8.4: Control of externally provided processes, products and services

7.0 FLOWCHART AND PROCEDURE

7.1. ASSET LIFECYCLE ACTIVITIES FLOW



7.2. ASSET DEFINITION & CATEGORIES

- a. Asset term that is used in this standard is defined as:
- A surface equipment, lifting equipment or downhole tool that is purchased under Capital Expenditure (CAPEX) from financial perspective.
 - That have a minimum value of RM3,000.00 and;
 - That have a minimum lifecycle of 5 years.
- b. Asset can be categorized as below:

Category	Description
1	Primary Surface Equipment Equipment such as power pack, control cabin, logging unit, injector head, air compressor, genset, wireline mast, fluid pump unit, nitrogen converter, batch mixer, CT reel etc.
2	Major Components/Part Major components that when combined become Category 1 equipment such as engines, triplex pump, transmissions, data acquisition hardwares and all their sub-components.
3	Downhole Tools
4	Well Control Equipment & Treating Equipment Pressure containing equipment such as BOPs, strippers, lubricators, risers, flanges, Quick Test Sub, treating irons, valves, crossovers, chiksans, chokes, high pressure hoses, coflexip hoses.
5	Tanks, Baskets, Containers & Boxes Fluid storage tanks, nitrogen tanks, cargo basket, tool box, tool container, transport box, explosive box, tool house, iron rack.

7.3. PURCHASE OF ASSET

Refer to DBSB-SC-02: **CAPEX Purchasing Activity Procedure** for any purchasing activities involving asset as categorized in item **8.0.b**.

7.4. ASSET IDENTIFICATION

- a. All DB Assets shall have a unique asset ID for all product service line and shall be properly recorded in the V-Asset.
- b. Request for ID Serial No. registration shall be communicated to Asset Management Department.
- c. Below are the guidelines for ID Serial No. registration for all divisions:

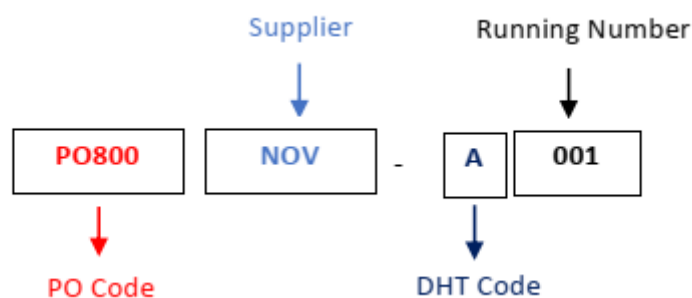
- Divisions code:

Code	Division
SLS	Slickline Services
CHS	Cased Hole Services
CTS	Coiled Tubing Services

- Supplier/Manufacturer details can be obtained from CAPEX Approved Vendor List (AVL). Below are few code samples from the list:

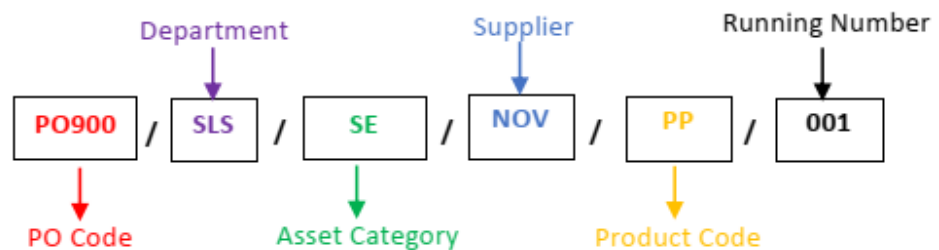
Code	Manufacturer/Supplier Name
HES	Hunting Energy Services
NOV	NOV ASEP ELMAR / NOV CTES
LMR	LiMAR Oil Tools

- For Basic Tools (e.g., **PO800NOV-A001**)



DHT Code	Downhole Tools Description
A	Basic Tools
B	Running/Pulling Tools
C	Fishing Tools
D	Mechanical Tools
E	Electrical Tools
F	Logging Tools
G	Jetting Tools
H	Flow Control Device

- For Surface Equipment, Lifting Equipment & Pressure Control Equipment (e.g., **P0900/SLS/SE/NOV/PP/001**)



Code	Equipment Description
SE	Surface Equipment
PCE	Pressure Control Equipment
LE	Lifting Equipment

Code	PCE Product Type
LUB	Lubricator
PJ	Pup Joint
TC	Tool Catcher
TT	Tool Trap
SB	Stuffing Box
GIH	Grease Injection Head
GIP	Grease Injection Pump
LTV	Low Torque Valve
BOP	Blow Out Preventor
XO	Crossover
QTS	Quick Test Sub

Code	SE Product Type
PP	Power Pack
RSU	Reel Skid Unit
WU	Winch Unit
CC	Control Cabin
CP	Control Panel
AC	Air Compressor
G	Genset
WM	Wireline Mast
PU	Pumping Unit
IH	Injector Head
BMX	Batch Mixer

7.5. ASSET LIFECYCLE MANAGEMENT

7.5.1 Asset Status

Status of an asset can be categorized as following:

- a. Active Asset – An asset that is currently being assigned to package/contract under product service line (SLS/CHS/CTS).
- b. Non-Active Asset – An asset that is not being assigned to any package/contract. Can be considered as pooled asset.

7.5.2 Maintenance

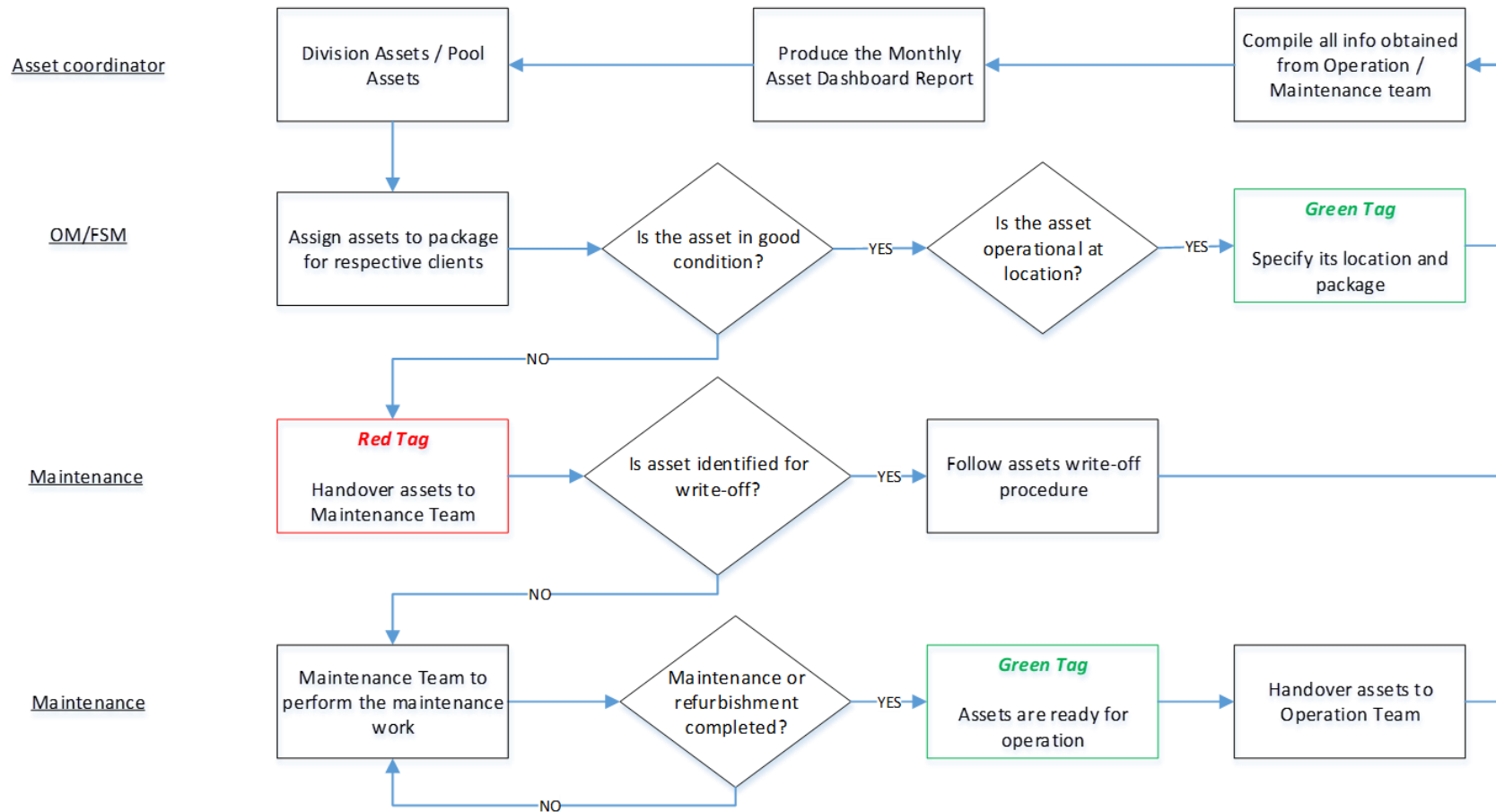
Maintenance of assets (surface equipment, lifting equipment and downhole tools) shall be carried out by Operation and Maintenance Team as per respective PSL’s (SLS, CHS & CTS) Maintenance Program and Procedures.

7.5.3 Health Status Management

- a. Asset Coordinator, Division’s OM and FSM as well as Maintenance Team shall play important role in ensuring health status of each Active Assets is being reported accurately.
- b. Health status of Active Assets can be categorized into Green and Red colour as per following description:

Status Colour	Status Definition
Green	<ul style="list-style-type: none"> • Asset which is in good condition or just completed the maintenance work (including performance and function test) and ready to perform jobs. • Asset which has gone through pre-job checks and functional for the planned operation. • Asset which has returned from field and no maintenance required after assessment.
Red	<ul style="list-style-type: none"> • Assets which are out of service due to breakdown/failure at wellsite. • Assets that are undergoing either preventive or corrective maintenance work (including performance and function test). • Assets which are identified to be refurbished or disposed.

c. Process of status changes shall be done as per following process flow:



7.6. ASSET STORAGE & PRESERVATION

- a. General storage
 - Assets should be stored and preserved (seal installed where applicable) to minimize condensation and exposure to the environment.

- b. Outdoor storage
 - Where assets can't be stored indoors, they must be preserved and covered during the storage period to prevent corrosion on the parts and equipment that may have uncoated surfaces, places susceptible to water ingress and uncoated threaded connections.

 - Covers such as canvas or plastic wrapper could be used for outdoor storage purposes but with proper caution to prevent from creation of high humidity and condensation inside it.

- c. Indoor storage
 - When possible, assets shall be stored indoor (warehouse, tool container etc.)

 - Assets such as Downhole Tools shall be stored inside dedicated toolbox or tool container to prevent corrosion.

- d. Storage at location (offshore/wellsite)
 - Assets must be properly covered during mobilization, demobilization or while standby at location.

 - Covers such as canvas could be used to protect assets from corrosion while at location.

- e. Asset preservation at DB facilities
 - Preservation should be executed before equipment is rigged down and packed for mobilization or demobilization by Operation Team.

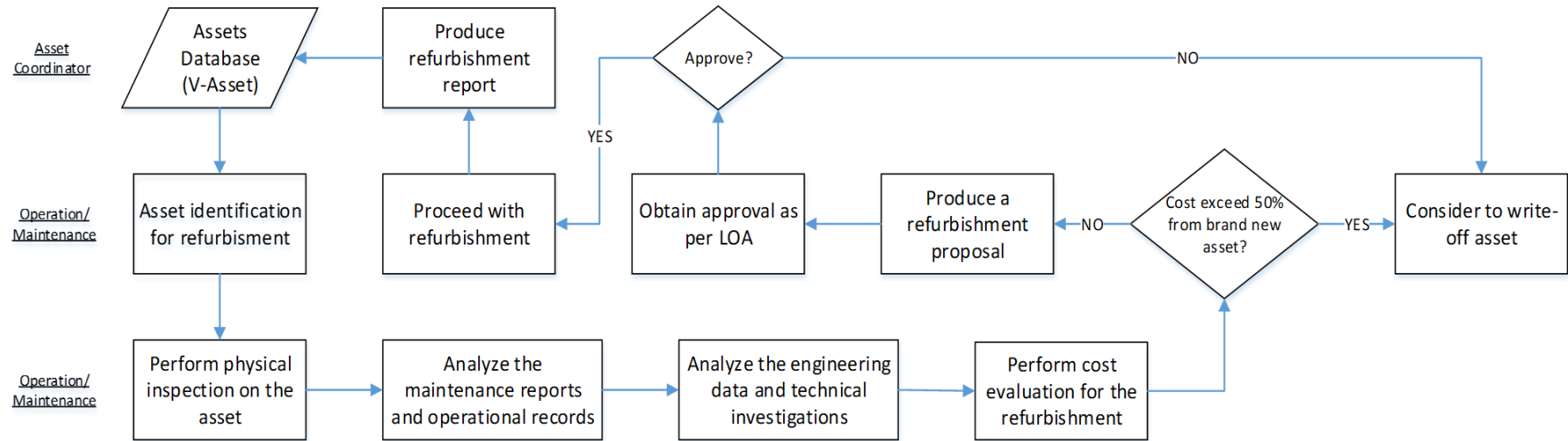
- Simplest form of preservation is paint. Primer shall be applied accordingly prior to DB colour paint code to prevent rust that could eventually leading to decay of the metal.
 - Corrosion inhibitor (to protect from corrosion) shall be used for all external, uncoated steel material. This includes but not limited to fittings, fasteners, shaft surfaces and extensions, plungers, uncoated flange faces, threaded holes, uncoated steel instruments and threaded-end connections.
 - All opening on assets must be properly plugged with either plugs, caps, blind flanges, thread protector or other means deemed acceptable by user.
 - All electrical equipment must be protected which includes but not limited to main control console, motor (terminal boxes), junction boxes, sealed control panels, control panel, actuators with proper corrosion inhibitor.
 - Flush all chemical additive systems (e.g., fluid storage tanks, batch mixer) with fresh water to ensure there is no chemical residue left in the line.
- f. Asset preservation during operation
- Ensure that
 - The unit is clean (washed with fresh water) with correct labelling.
 - Paint on unit is well preserved (DB signal green) – no corroded or partially painted areas on body.
 - Toolboxes and baskets – clean and free of trash.
 - Perform a walk around the unit and check for leaks. If leaks are found, fix them and report to PIC as required.
 - This shall be of routine equipment cleaning during and after every operation.
 - All uncoated surfaces on the unit shall be washed with fresh water then preserved with corrosion inhibitor.

- Paint damage during operation shall be identified and corrective action to be carried out after operation.
- Uncoated stainless-steel components shall be wiped dry from water.
- Any cement slurry spillage on any part of unit shall be washed using high pressure water source and kept dry from water.
- Corrosion seen during operation shall be removed after every operation.

7.7. ASSET REFURBISHMENT

- a. Operation and Maintenance team shall identify an asset for refurbishment by analyzing its existing condition and potential for improvement.
- b. The assessment shall include maintenance reports, operational records, engineering data, technical investigations and any other data deemed important for the refurbishment proposal.
- c. The decision for any refurbishment proposal must be based on business needs after considering all available resources.
- d. Refurbishment shall include improvement and/or betterment of an asset either by addition or replacement with new components to a condition of its original performance specifications.
- e. The refurbishment cost of an asset shall not exceed 30% from current market price for a brand-new asset. Any cost exceeds this value is considered a deviation from standard and exemption must be obtained by MOC approval.
- f. The expenditure for refurbishment should extend the useful life of an existing asset up to 5 years, where it should also meet the refurbishment objectives:
 - Decrease the operating cost to a prudent level.
 - Improve the efficiency from its capitalized existing condition.
 - Improve the reliability and at the same time reduce the possible negative impacts of SQ and HSE.
 - Improve the performance or possibly regain its original OEM specifications and functional.

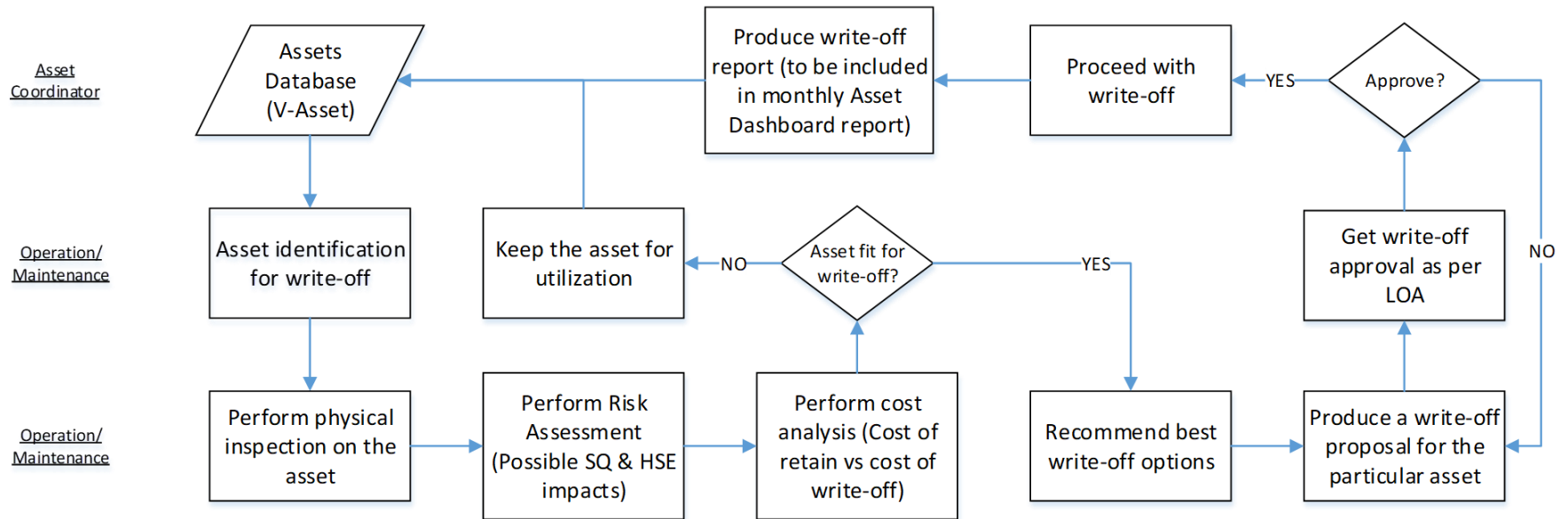
g. The refurbishment of an asset shall be as per following process flow:



7.8. ASSET WRITE-OFF

- a. Operation and Maintenance Team shall identify assets for disposal annually by evaluating the repair cost against the possible negative service quality (SQ) and health, safety and environment (HSE) impact of continuing to use the asset.
- b. Assets which identified to be written-off can be considered due to following reasons:
 - Cost of repair or refurbishment is expected to cause negative impact to Total Cost of Ownership (TCO).
 - After full risk assessment, observe the asset has high potential to cause negative impact to SQ and HSE.
 - No longer complying with industry HSE standards.
 - No longer required due to changed procedures, functions or clients' requirements.
 - Occupying storage space and not being needed in the foreseeable future.
- c. Operation and Maintenance team shall collaborate to perform risk assessment and evaluations for identified assets to be written-off and should include:
 - Thorough physical inspection of the asset.
 - Risk assessment associated to the assets in terms of SQ and HSE.
 - Identification of storage and transport issues associated to the asset.
 - Cost assessment of keeping the asset (expected maintenance cost) vs cost and benefits of disposal.
 - Recommendation on the best disposal options.

d. The write-off of an asset shall be as per following process flow:



7.9 ASSET PERFORMANCE REPORTING

This section aims to provide a guideline in reporting the monthly Asset Performance Dashboard. Line Management (OM or FSM) from respective PSL (SLS, CHS and CTS) shall ensure accurate information is being communicated to the Asset Management Department through the Dashboard which include the following data:

7.9.1 Utilization Rate

Each PSL shall provide the utilization rate data of Active Assets for every package under respective Client. E.g.:

- a. SLS – C#1 (CHOC), R#1 (Repsol)
- b. CHS – Package #1 (Petronas Carigali SKO)
- c. CTS – CTU#1 (Petronas Carigali PMA), PP#1 (Petronas Carigali PMA)

7.9.2 Asset Traceability

Movement of Active Assets shall be monitored closely and to be reported accordingly in the Dashboard as well. The assets can be reported as a package under respective client and individually if transfer occurs between package or PSL.

7.9.3 Health Status

The health status for Active Assets under respective package shall be reported in terms of its health tag (Green and Red tag). Failure or breakdown causes for any red tagged asset shall be stated clearly in the Dashboard as well.

7.9.4 Maintenance Cost

Cost incurred for maintenance of assets under respective PSL shall be reported accordingly in the Dashboard on monthly basis. This shall include any preventive and corrective maintenance work that has been carried out for that particular month.

8.0 QUALITY RECORDS

No.	Title of Records	Person In-Charge	Retention Period (Year)
1.	ITECX-TS-01: Equipment Specification and Technical Review	STAMs Officer	5 years or until equipment write-off wherever there is provision to digitally store
2.	ITECX-FORM-01 until ITECX-FORM-17 and ITECX-FORM-33: Equipment Specification Technical Review		
3.	Delivery Order		
4.	ITECX-FORM-18: Equipment Utilization Certificate		
5.	ITECX-FORM-19 until ITECX-FORM-29 and ITECX-FORM-32: Equipment Acceptance Form		
6.	ITECX-FORM-30: Asset Transfer Form		
7.	ITECX-FORM-31: Equipment Deployment Form		