



MAINTENANCE 2000

# Company Profile

# About M2K



- ❖ M2K provides **Industrial Asset Maintenance and Reliability Improvement Services** for process industries in the areas of:
  - ✓ Maintenance & Integrity Management
  - ✓ Operational Reliability Improvement Services & Consulting
  - ✓ IT tools for Industrial Asset Integrity and Maintenance Management requirements
  - ✓ Materials, Spares & Inventory Management
  - ✓ Training: Reliability, Maintenance and HSE
  
- ❖ M2Ks vision is to become a globally recognized group in providing technology driven value added industrial asset management services with unswerving commitment to our customers through commitment & professionalism with customer satisfaction as the prime objective
  
- ❖ M2K assist customers worldwide to:
  - ✓ Achieve excellence in Operations and Maintenance performance
  - ✓ Ensure effective delivery and completion of maintenance work for elements that are critical to safety and production

# Focused Industrial Segments



Oil and Gas



Marine

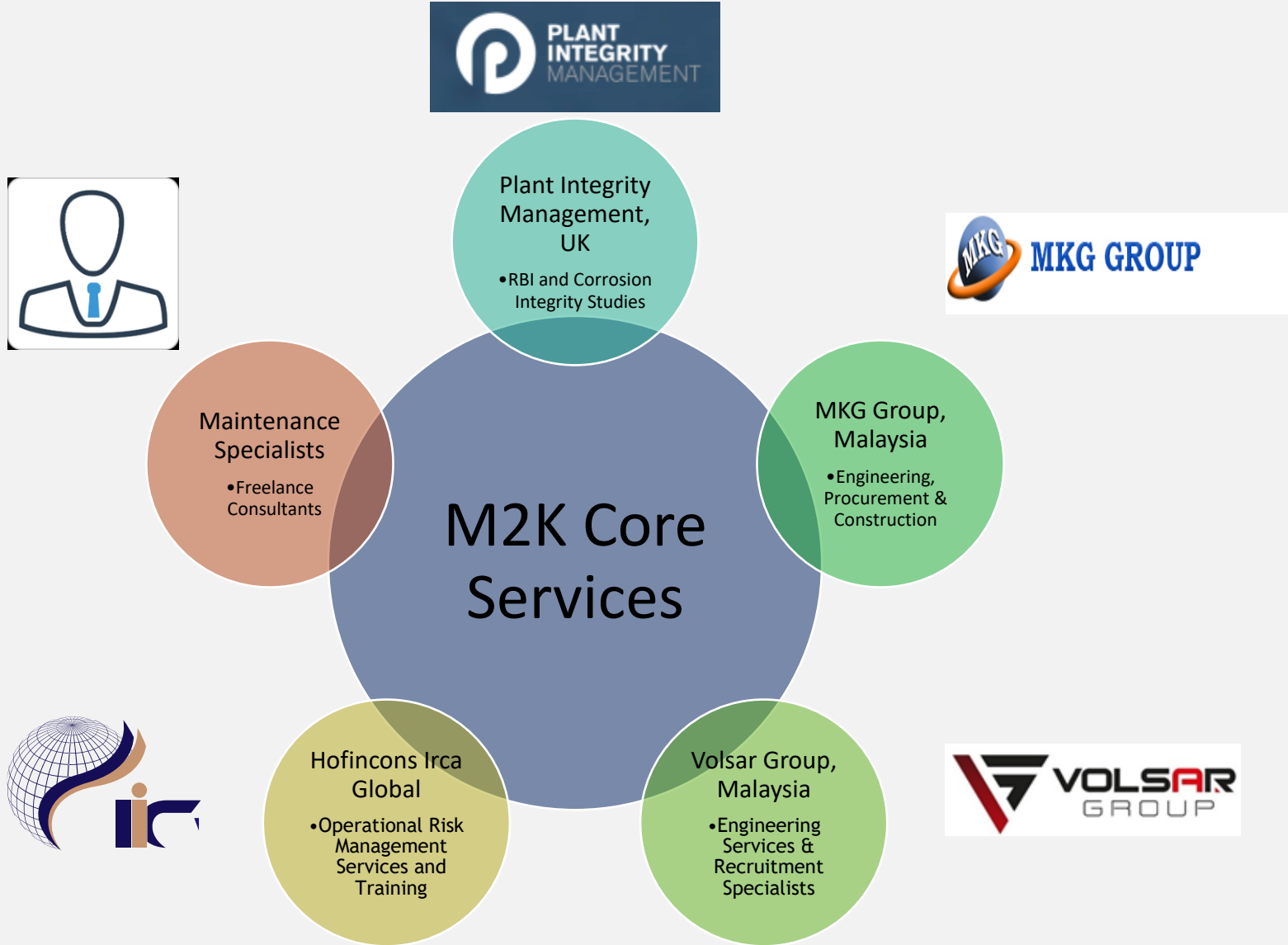


Refinery & Petrochemical



Power Industry

# Worldwide Associates for Complimentary Services



# M2K Services

## Asset Maintenance Data

- Asset Register Build
- Maintenance Plan Build
- Asset Data Cleansing and restructuring
- Maintenance Craft procedure / Work Instruction build

## Asset Management IT Tools

- TIMS - Technical Integrity Management System
- AIMS - Asset Integrity and Maintenance Management System
- MCAMS - Material Cataloguing Management System

## Spares Management

- Risk Spares Analysis
- SPIR Development
- BOM Build
- Spares Preservation Maintenance

## Maintenance Strategy Consulting

- Maintenance Audit and Benchmarking
- Maintenance Strategy and Procedures Development

## Risk & Reliability

- RCM, FMEA, RCA and RBI Studies
- Plant Maintenance Optimization
- Condition Monitoring (AI Soundware)
- Asset and Maintenance Reference Plan Development

## Material Cataloguing

- Material Cataloguing
- Data Cleansing and Enrichment

# Our Services...Continued

## SCEs and Performance Standards

- Identification of SCE's and Assurance Values
- Development and implementation of Performance Standards

## Inventory Analysis

- Inventory Management Procedure
- Spare Parts Strategy Manual for End Client Operations
- Spare Parts Min / Max Calculation Templates

## Asset Gap Analysis

- Identification of Asset and Maintenance Gaps

## Field Verification and As-build drawing Development

- As Built Asset Verification
- Off-Plot As-Build PEFS drawing development

## O&M Contracted Services

- Turnarounds
- Shutdown Maintenance
- Refurbishment
- Inspection

## Training and Symposia

- Maintenance coaching and On-Job Training
- Seminars and Symposia e.g. RCM, RCA, RBI, Lean, Spares Optimization
- HSE Training

# Common Questions by clients...

Do I have optimised BOMs & Spares for maintenance?

Can I visualize & manage Maintenance Integrity on SCEs and Non-SCEs?

How do I optimize spending on maintenance tasks and resources?

Are my maintenance strategies developed and implemented?

Do I have complete maintainable asset register for my new and existing facilities?

My CMMS does not seem to reflect actual site status...do I require physical walk down of the plant and equipment?



M2K provides Best Fit solutions

# Specialist Software Tools...

## In-house developed Software Products / Tools:

AIMS® (Asset Integrity & Maintenance Management Suite)

Suite of modules for Asset Register build, Maintenance Data build, Spares/BOM Build, RSA, RCM, Maintenance Audit, Doc expeditor, etc, with SAP/Maximo/Oracle Integration

TIMS® (Technical Integrity Monitoring System)

Facility Status Management & Reporting, CMMS Integration, SAP Certified

MCAMS® (Material Cataloguing Management System)

Standardisation, Spec Build, SAP Certified, CMMS Integration

Spares Project monitoring and tracking

Integrated to SAP MDM and similar CMMS

- ✓ **Hofincons/M2K data preparation tools provide**
  - ✓ Data input verification
  - ✓ Data repository
  - ✓ Quality checked data & KPI
  - ✓ Seamless data flow into popular CMMS systems especially to SAP

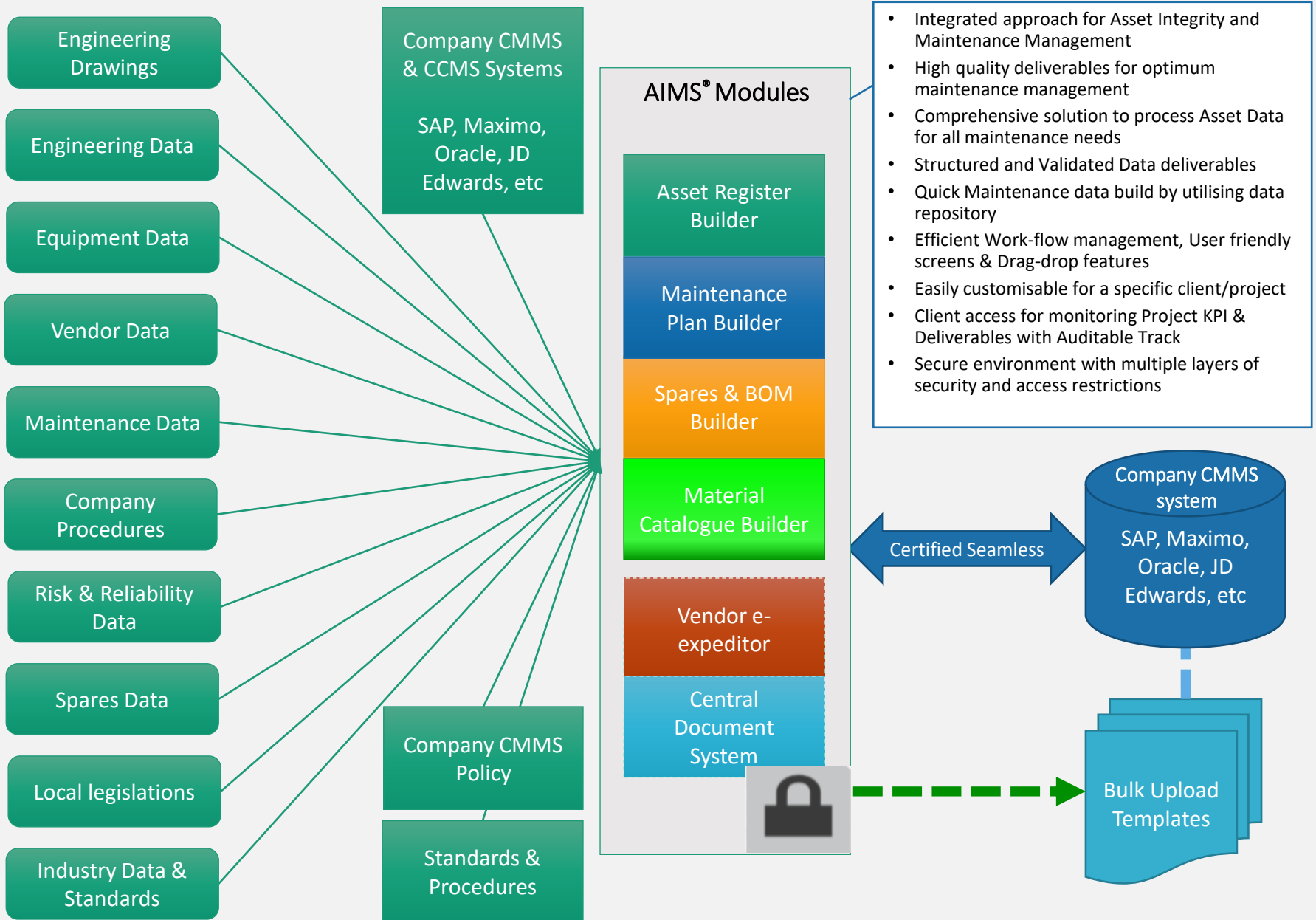
Hofincons/M2K is SAP Software Solution and Technology Partner

Hofincons/M2K tools offered worldwide along with SAP products

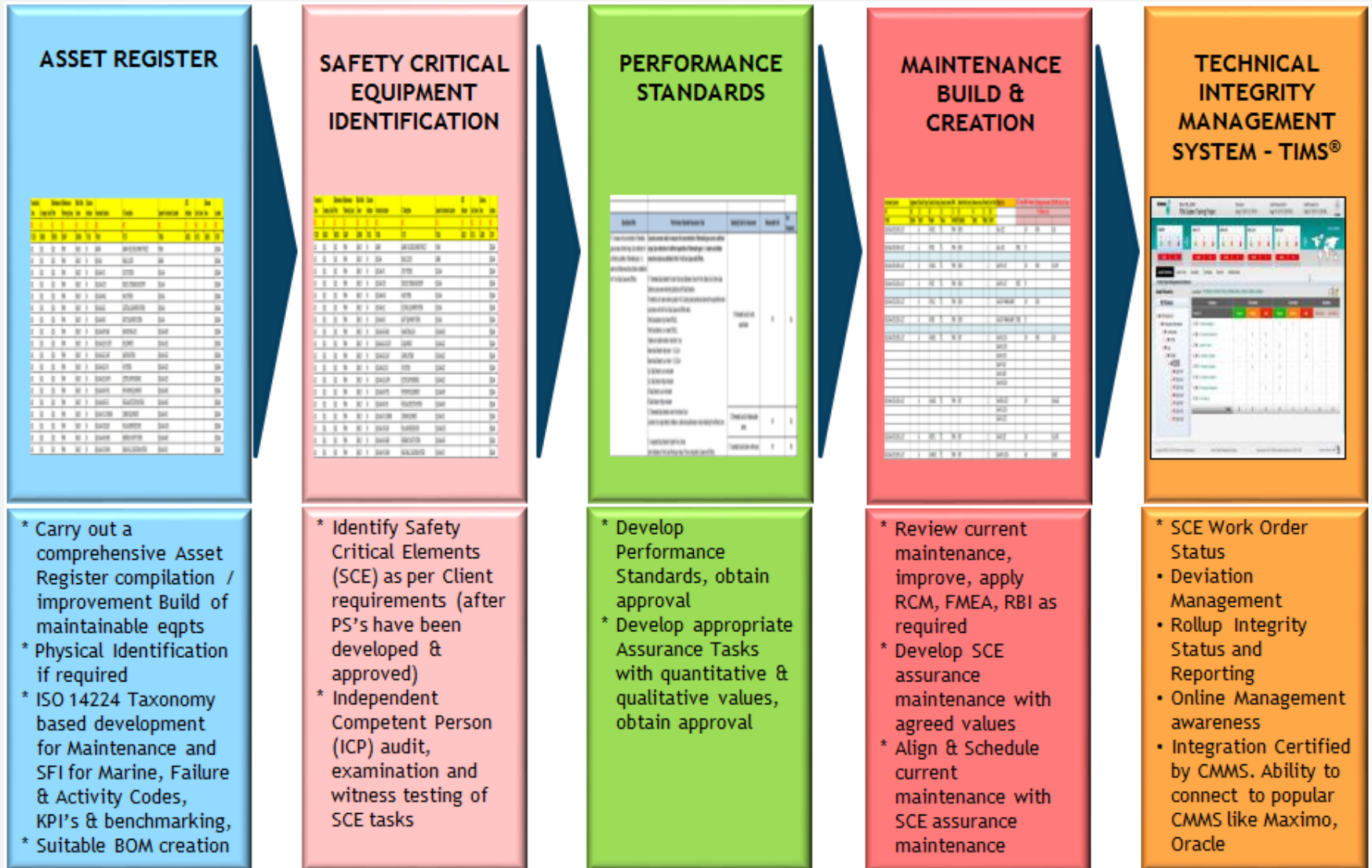




# Asset Integrity & Maintenance Management Suite<sup>®</sup>



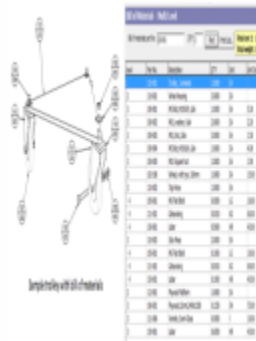
# Maintenance Build and SCE Management



Effective Asset Integrity Management requires a complete asset register, suitable maintenance tasks, clear performance standards with continuous online monitoring

# Material Management

## SPIR/SPIL CREATION



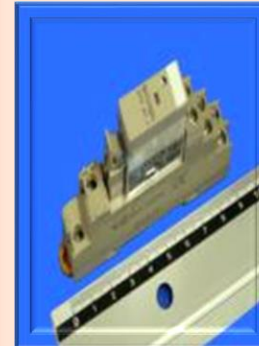
- \* Develop SPIR/SPIL list sheets from various vendor documents
- \* Review spare parts data package including Data Data sheets, GA Drawings, Material listings, etc

## BOM BUILD

The image is a screenshot of a Bill of Materials (BOM) table. It shows a list of materials with columns for 'Qty', 'Unit', 'Part No.', 'Part Name', 'Part Desc', 'Part Unit', 'Part Desc', 'Part Unit', 'Part Desc', 'Part Unit'. The data includes various part numbers and descriptions, such as '100 1000000 100 1 100' and '100 1000000 100 1 100'.

- \* Bills of Materials (BOM) under equipment with assembly and subassembly hierarchy
- \* Develop BOM from SPIR/SPIL sheets and various documents

## MATERIAL CATALOGUING



- \* Catalogue materials with appropriate buying descriptions
- \* Remove duplicate materials
- \* Apply codification methods based on client needs and requirements (UNSPSC, NATO, MESC, PIDX, etc)

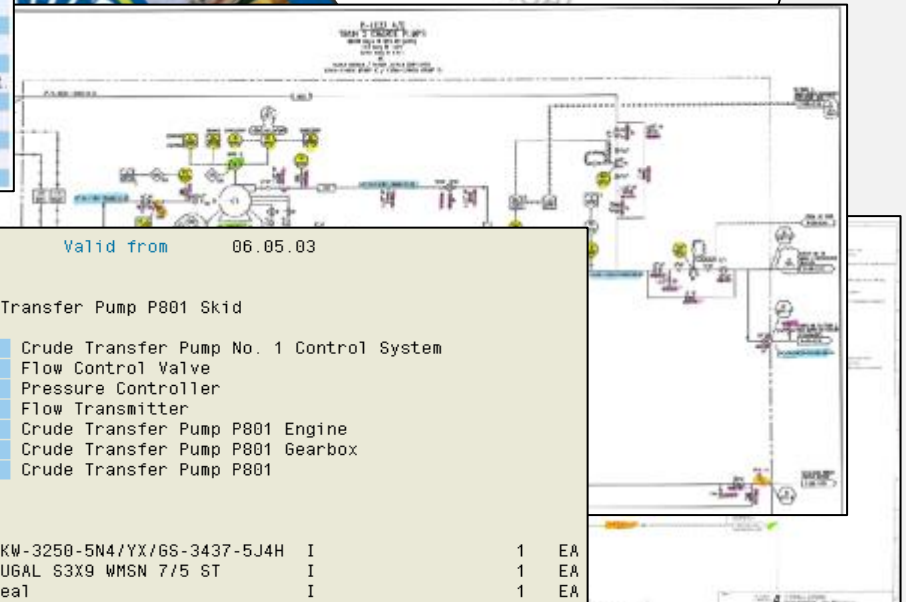
# Asset Register

## ASSET REGISTER

Asset ID	Description	Category	Location	Status	Value	Warranty	Lead Time	Notes
1000000001	Asset 1	Category 1	Location 1	Status 1	Value 1	Warranty 1	Lead Time 1	Notes 1
1000000002	Asset 2	Category 2	Location 2	Status 2	Value 2	Warranty 2	Lead Time 2	Notes 2
1000000003	Asset 3	Category 3	Location 3	Status 3	Value 3	Warranty 3	Lead Time 3	Notes 3
1000000004	Asset 4	Category 4	Location 4	Status 4	Value 4	Warranty 4	Lead Time 4	Notes 4
1000000005	Asset 5	Category 5	Location 5	Status 5	Value 5	Warranty 5	Lead Time 5	Notes 5

- \* Carry out a comprehensive Asset Register compilation / Improvement Build of maintainable eqpts
- \* Physical Identification if required
- \* ISO 14224 Taxonomy based development for Maintenance and SFI for Marine, Failure & Activity Codes, KPI's & benchmarking,
- \* Suitable BOM creation

FuncLocation	MY.F23.PKA
Description	F23 Production Compressor Platform A
Level1	EP Shell EAP Group Companies
Level2	EP.MY Shell Malaysia Exploration & Production
Level3	MY.FNC Shell Malaysia EAP Functional Assets
Level4	MY.F23 F23 Field
Level5	MY.F23.DFA F23 Drilling Platform A
Level5	MY.F23.PKA F23 Production Compressor Platform A
Level6	MY.F23.PKA.GHD SAS HANDLING
Level7	MY.F23.PKA.GHD.K2400 Gas Compressor Skid
Level8	<ul style="list-style-type: none"> <li>MY.F23.PKA.GHD.K2400-CS Gas Compressor Control System</li> <li>MY.F23.PKA.GHD.K2400-GB Gas Compressor - Gearbox</li> <li>MY.F23.PKA.GHD.K2400-GT Gas Compressor - Turbine Driver</li> <li>MY.F23.PKA.GHD.K2400-HSU Gas Compressor - Turbine Hydraulic Syst.</li> <li>MY.F23.PKA.GHD.K2400-K Gas Compressor</li> <li>MY.F23.PKA.GHD.K2400-MLD Gas Compressor - Main Lube Oil System</li> <li>MY.F23.PKA.GHD.K2400-SC Gas Compressor</li> </ul>



FuncLocation	MY.SJO.PPA.OEX.P801	Valid from	06.05.03
Description	Crude Transfer Pump P801 Skid		
<ul style="list-style-type: none"> <li>MY.SJO.PPA.OEX.P801 Crude Transfer Pump P801 Skid <ul style="list-style-type: none"> <li>MY.SJO.PPA.OEX.P801-CS Crude Transfer Pump No. 1 Control System</li> <li>MY.SJO.PPA.OEX.P801-CS-FCV801 Flow Control Valve</li> <li>MY.SJO.PPA.OEX.P801-CS-FIC801 Pressure Controller</li> <li>MY.SJO.PPA.OEX.P801-CS-FT801 Flow Transmitter</li> <li>MY.SJO.PPA.OEX.P801-EN Crude Transfer Pump P801 Engine</li> <li>MY.SJO.PPA.OEX.P801-GB Crude Transfer Pump P801 Gearbox</li> <li>MY.SJO.PPA.OEX.P801-P Crude Transfer Pump P801</li> </ul> </li> <li>31000010659 CENTRIFUGAL PUMP <ul style="list-style-type: none"> <li>1000221977 SEAL, MECH. UKW-3250-5N4/YX/6S-3437-5J4H I 1 EA</li> <li>2510002433 PUMP CENTRIFUGAL S3X9 WMSN 7/5 ST I 1 EA</li> <li>2510002596 Mechanical Seal I 1 EA</li> </ul> </li> </ul>			

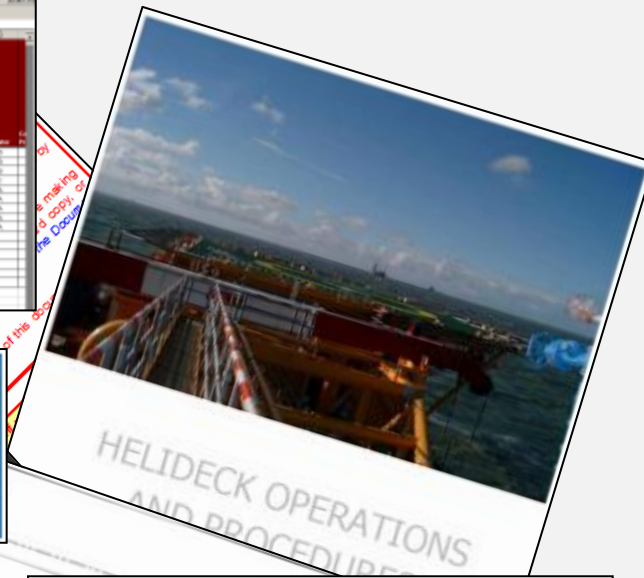
# SCE's (HSE-CES)

## SAFETY CRITICAL EQUIPMENT IDENTIFICATION

Asset ID	Asset Name	Asset Type	Asset Location	Asset Category	Asset Status	Asset Age	Asset Condition	Asset Risk	Asset Criticality
01	01	01	01	01	01	01	01	01	01
02	02	02	02	02	02	02	02	02	02
03	03	03	03	03	03	03	03	03	03
04	04	04	04	04	04	04	04	04	04
05	05	05	05	05	05	05	05	05	05
06	06	06	06	06	06	06	06	06	06
07	07	07	07	07	07	07	07	07	07
08	08	08	08	08	08	08	08	08	08
09	09	09	09	09	09	09	09	09	09
10	10	10	10	10	10	10	10	10	10
11	11	11	11	11	11	11	11	11	11
12	12	12	12	12	12	12	12	12	12
13	13	13	13	13	13	13	13	13	13
14	14	14	14	14	14	14	14	14	14
15	15	15	15	15	15	15	15	15	15
16	16	16	16	16	16	16	16	16	16
17	17	17	17	17	17	17	17	17	17
18	18	18	18	18	18	18	18	18	18
19	19	19	19	19	19	19	19	19	19
20	20	20	20	20	20	20	20	20	20

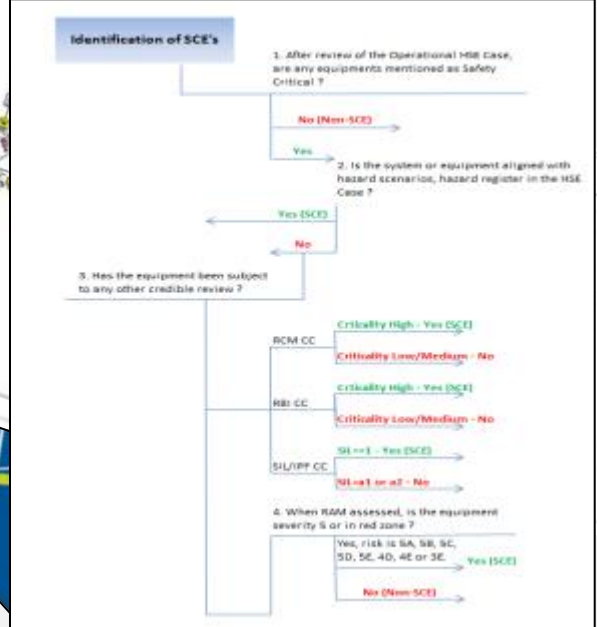
Asset ID	Asset Name	Asset Type	Asset Location	Asset Category	Asset Status	Asset Age	Asset Condition	Asset Risk	Asset Criticality
01	01	01	01	01	01	01	01	01	01
02	02	02	02	02	02	02	02	02	02
03	03	03	03	03	03	03	03	03	03
04	04	04	04	04	04	04	04	04	04
05	05	05	05	05	05	05	05	05	05
06	06	06	06	06	06	06	06	06	06
07	07	07	07	07	07	07	07	07	07
08	08	08	08	08	08	08	08	08	08
09	09	09	09	09	09	09	09	09	09
10	10	10	10	10	10	10	10	10	10
11	11	11	11	11	11	11	11	11	11
12	12	12	12	12	12	12	12	12	12
13	13	13	13	13	13	13	13	13	13
14	14	14	14	14	14	14	14	14	14
15	15	15	15	15	15	15	15	15	15
16	16	16	16	16	16	16	16	16	16
17	17	17	17	17	17	17	17	17	17
18	18	18	18	18	18	18	18	18	18
19	19	19	19	19	19	19	19	19	19
20	20	20	20	20	20	20	20	20	20

Two References	Description	Functional Location (added in next step)	Assurance Measure	Assurance Value	Target Value	Units of Measure
P203A	Forwarder pump A	RK203/P203A	Forwarder flow rate	≥100%	100	wt/hr
P203B	Forwarder pump B	RK203/P203B	Forwarder flow rate	≥100%	100	wt/hr
SDV26001	Pipeline A emergency isolation valves	RK203/SDV26001	ESD Closure time	≤100%	10	s
SDV26002	Pipeline B emergency isolation valves	RK203/SDV26002	ESD Closure time	≤100%	5	s
SDV26003	Pipeline C emergency isolation valves	RK203/SDV26003	ESD Closure time	≤100%	10	s
SDV26004	Pipeline D emergency isolation valves	RK203/SDV26004	ESD Closure time	≤100%	10	s
Q203A	Battery Bank A For UPS	RK203/A-Q203A	Minimum duration	≥100%	3	hrs
Q203B	Battery Bank B For UPS	RK203/B-Q203B	Minimum duration	≥100%	3	hrs



IMPACT	Severity	Significance				
		1 Significant	2 Minor	3 Moderate	4 Major	5 Catastrophic
People	Slight Injury	E1	E2	E3	E4	E5
Asset	Slight Damage	E1	E2	E3	E4	E5
Environment	Slight Impact	E1	E2	E3	E4	E5
Reputation	Slight Impact	E1	E2	E3	E4	E5
LIKELIHOOD	E Almost Certain	H1	H2	H3	H4	H5
	D Likely	D1	D2	D3	D4	D5
	C Possible	C1	C2	C3	C4	C5
	B Unfavourable	B1	B2	B3	B4	B5
	A Remotely Likely to Happen	A1	A2	A3	A4	A5

Figure 1: HSE Risk Matrix



- Identify Safety Critical Elements (SCE) as per Client requirements (after PS's have been developed & approved)
- Independent Competent Person (ICP) audit, examination and witness testing of SCE tasks

Independent Competent Person (ICP) audit, examination and witness testing of SCE tasks



# Maintenance Plan Build

## MAINTENANCE BUILD & CREATION

Asset ID	Asset Name	Asset Type	Asset Location	Asset Status	Asset Value	Asset Age	Asset Condition	Asset Risk	Asset Priority	Asset Action
ASSET001	ASSET001	ASSET001	ASSET001	ASSET001	ASSET001	ASSET001	ASSET001	ASSET001	ASSET001	ASSET001
ASSET002	ASSET002	ASSET002	ASSET002	ASSET002	ASSET002	ASSET002	ASSET002	ASSET002	ASSET002	ASSET002
ASSET003	ASSET003	ASSET003	ASSET003	ASSET003	ASSET003	ASSET003	ASSET003	ASSET003	ASSET003	ASSET003
ASSET004	ASSET004	ASSET004	ASSET004	ASSET004	ASSET004	ASSET004	ASSET004	ASSET004	ASSET004	ASSET004
ASSET005	ASSET005	ASSET005	ASSET005	ASSET005	ASSET005	ASSET005	ASSET005	ASSET005	ASSET005	ASSET005
ASSET006	ASSET006	ASSET006	ASSET006	ASSET006	ASSET006	ASSET006	ASSET006	ASSET006	ASSET006	ASSET006
ASSET007	ASSET007	ASSET007	ASSET007	ASSET007	ASSET007	ASSET007	ASSET007	ASSET007	ASSET007	ASSET007
ASSET008	ASSET008	ASSET008	ASSET008	ASSET008	ASSET008	ASSET008	ASSET008	ASSET008	ASSET008	ASSET008
ASSET009	ASSET009	ASSET009	ASSET009	ASSET009	ASSET009	ASSET009	ASSET009	ASSET009	ASSET009	ASSET009
ASSET010	ASSET010	ASSET010	ASSET010	ASSET010	ASSET010	ASSET010	ASSET010	ASSET010	ASSET010	ASSET010

To ensure all Safety and Non-Safety Maintainable Equipment (Functional Locations) have the appropriate maintenance in-place at the correct frequency as to limit failures but also to mitigate against maintenance induced failures. Assurance Task Values are monitored to eradicate any potential failures in Safety Critical Equipment .....

*doing the right task at the right time !*

**Maintenance Work Order Title: -**  
**Certified Electrical Equipment Inspection**

**Maintenance Work Order Text: -**  
 The purpose of this Work Order is to demonstrate the Ongoing Suitability of a Safety Critical Element. This is to provide assurance that Performance Standard Acceptance Criteria are met. The Acceptance Criteria are shown below.

Read the Acceptance Criteria before you start work and ensure you understand what is to be recorded at the end, and how you determine the PASS, FAILED & FIXED or FAILED status of the Safety Critical Element.

Record the results of the work in the space provided and record your name and date of test.

If the result is FAILED, you MUST report the result to the WORKS SUPERVISOR for follow-on action.

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**PS-IC003 CERTIFIED ELECTRICAL EQUIPMENT**  
 Performance Standard Assurance Task:

**Certified Electrical Equipment**

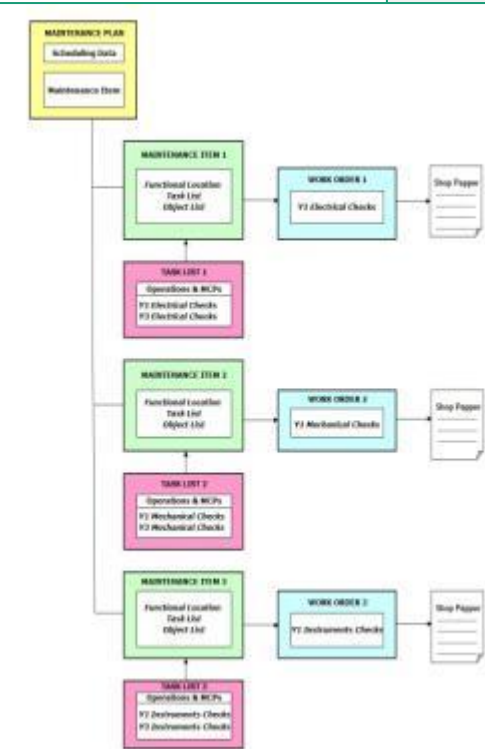
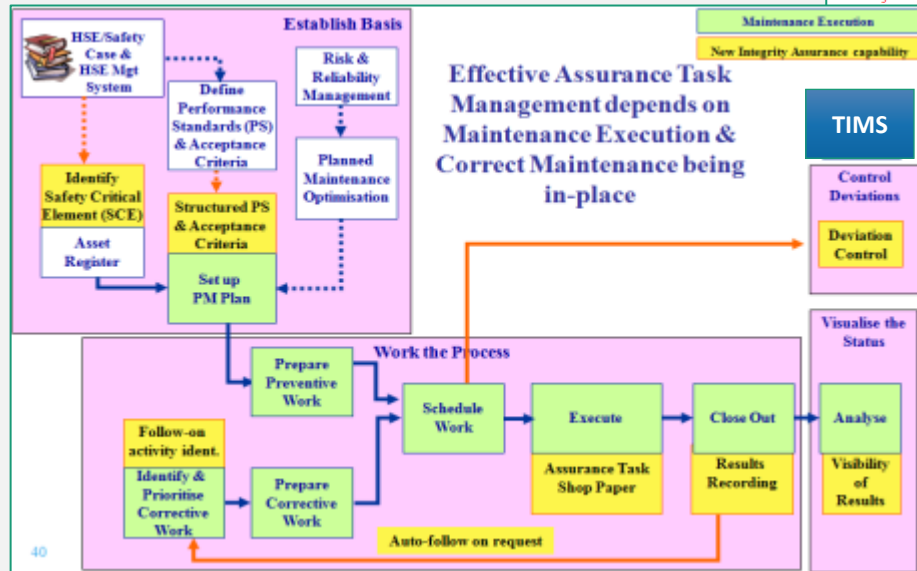
- All certified electrical requirements
- There shall be
- All devices in the performance

**NOTE:** A significant list below and de

**Fault Code**

1	Flame
2	Smoke
3	Noise
4	Earth
5	Unearthed
6	Control
7	Appr Term

- \* Review current maintenance, improve, add, delete if required
- \* Develop SCE assurance maintenance with agreed values
- \* Align & Schedule current maintenance with SCE assurance maintenance









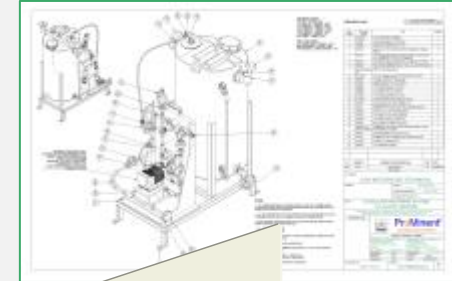
# BOM Build

## BOM BUILD

FuncLocation MY.SJO.PPA.0EX.P801 Valid from 06.05.03  
Description Crude Transfer Pump P801 Skid

Item	Description	UOM	QTY	EA
31000010659	CENTRIFUGAL PUMP		1	EA
1000221977	SEAL, MECH. UKW-3250-5N4/YX/6S-3437-5J4H	I	1	EA
1000222880	MECH. SEAL KIT K4M00568KD	N	1	SET
1000222804	SHAFT, SLEEVE 350899/HQ	N	1	EA
1000222814	DRIVE, SEAL 66099/DB	N	1	EA
1000222824	DRIVE, SEAL 152841/DB	N	1	EA
1000222834	DRIVE, PIN 621552/DB	N	1	EA
1000222845	U-CUP 618555/TZ	N	1	EA
1000222862	GASKET, SEAT 619292/6U	N	1	EA
1000222875	FACE, STATIONARY 189205/SL	N	1	EA
1000222886	FACE, STATIONARY 664297/LM	N	1	EA
1000222901	ROT. FACE ASSY 671350/MQ	N	1	EA
1000222111	SPRING 618556/DB	N	1	EA
1000222131	HOLDER, SPRING 260204/DB	N	1	EA
1000222169	GASKET, SLEEVE 568333/6U	N	1	EA
1000222194	FACE, ROTATING 152427/LT	N	1	EA
1000222205	O-RING 568151/6U	N	1	EA
1000222207	O-RING 568152/6U	N	1	EA
1000222229	SCREW SET CP 4R0439/C1	N	1	EA
1000222269	PIPE, SOC. HD. 4R3093/EP	N	1	EA
1000222274	GASKET, FLANGE 568249/6U	N	1	EA
1000222276	DRIVE, COLLAR 670726/DB	N	1	EA
1000222278	PLATE, SETTING 671934/DB	N	1	EA

- Develop the Bills of Material (BOM) assembly, sub assembly based on FLOC / Tag Spreadsheet, P&ID's, PEF's, Data Sheets, SPIR Forms, BOM GA Drawings, PO's, etc
- Build Equipment BOM for equipment
- Build PM BOM for maintenance tasks



FuncLocation MY.SJO.PPA.0EX.P801 Valid from 06.05.03  
Description Crude Transfer Pump P801 Skid

MY.SJO.PPA.0EX.P801 Crude Transfer Pump P801 Skid

- MY.SJO.PPA.0EX.P801-CS Crude Transfer Pump No. 1 Control System
- MY.SJO.PPA.0EX.P801-CS-FCV801 Flow Control Valve
- MY.SJO.PPA.0EX.P801-CS-FIC801 Pressure Controller
- MY.SJO.PPA.0EX.P801-CS-FT801 Flow Transmitter
- MY.SJO.PPA.0EX.P801-EN Crude Transfer Pump P801 Engine
- MY.SJO.PPA.0EX.P801-GB Crude Transfer Pump P801 Gearbox
- MY.SJO.PPA.0EX.P801-P Crude Transfer Pump P801

31000010659 CENTRIFUGAL PUMP

- 1000221977 SEAL, MECH. UKW-3250-5N4/YX/6S-3437-5J4H I 1 EA
- 2510002433 PUMP CENTRIFUGAL S3X9 WMSN 7/5 ST I 1 EA
- 2510002596 Mechanical Seal I 1 EA

**Functional Location**  
**(xx.xxx.V1101-VE)**  
**Equipment (31000010659)**  
**Assembly (1000221977)**

- \* Bills of Materials (BOM) under equipment with assembly and subassembly hierarchy
- \* Develop BOM from SPIR/SPIR sheets and various documents

**Assembly (1000221977)**  
**Material**

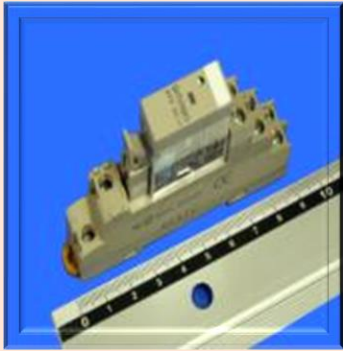
FuncLocation MY.SJO.PPA.0EX.P801 Valid from 06.05.03  
Description Crude Transfer Pump P801 Skid

31000010659 CENTRIFUGAL PUMP

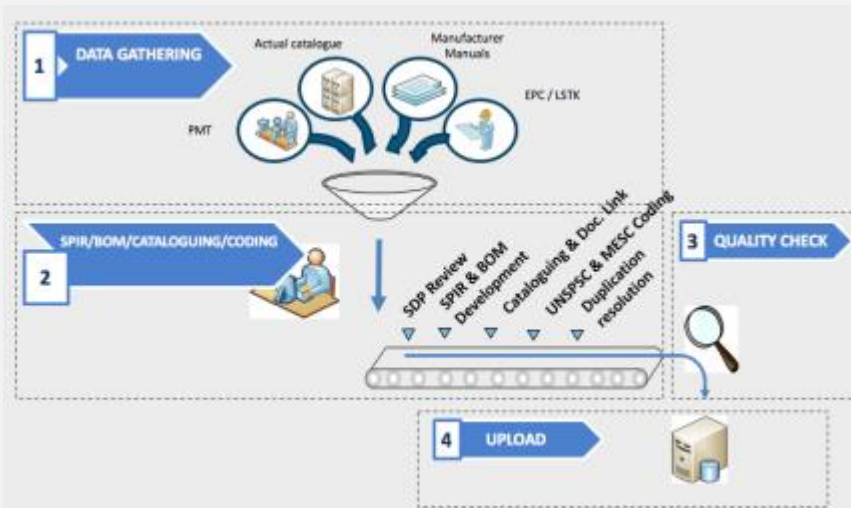
- 1000221977 SEAL, MECH. UKW-3250-5N4/YX/6S-3437-5J4H I 1 EA
- 1000222880 MECH. SEAL KIT K4M00568KD N 1 SET
- 1000222804 SHAFT, SLEEVE 350899/HQ N 1 EA
- 1000222814 DRIVE, SEAL 66099/DB N 1 EA
- 1000222824 DRIVE, SEAL 152841/DB N 1 EA
- 1000222834 DRIVE, PIN 621552/DB N 1 EA
- 1000222845 U-CUP 618555/TZ N 1 EA
- 1000222862 GASKET, SEAT 619292/6U N 1 EA
- 1000222875 FACE, STATIONARY 189205/SL N 1 EA
- 1000222886 FACE, STATIONARY 664297/LM N 1 EA
- 1000222101 ROT. FACE ASSY 671350/MQ N 1 EA
- 1000222111 SPRING 618556/DB N 1 EA
- 1000222131 HOLDER, SPRING 260204/DB N 1 EA
- 1000222169 GASKET, SLEEVE 568333/6U N 1 EA
- 1000222194 FACE, ROTATING 152427/LT N 1 EA
- 1000222205 O-RING 568151/6U N 1 EA
- 1000222207 O-RING 568152/6U N 1 EA
- 1000222229 SCREW SET CP 4R0439/C1 N 1 EA
- 1000222269 PIPE, SOC. HD. 4R3093/EP N 1 EA
- 1000222274 GASKET, FLANGE 568249/6U N 1 EA
- 1000222276 DRIVE, COLLAR 670726/DB N 1 EA
- 1000222278 PLATE, SETTING 671934/DB N 1 EA

# Material Cataloguing

## MATERIAL CATALOGUING



- Develop appropriate buying descriptions from various documents and sources
- Analyze data and remove duplicate materials
- Apply codes from various standards including MESCC, PIDX, UNSPSC, etc



### >Before Cataloguing

RELAY 2 POLE 02R32N

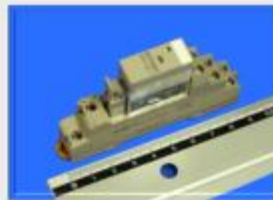
### >Before Cataloguing

2 YEAR SP FOR HP STEAM BOILER SWITCH  
02R32-3N

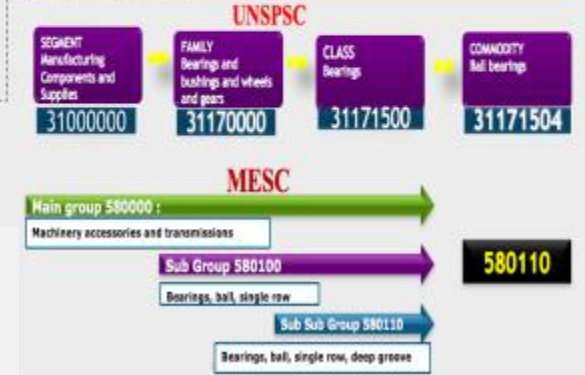
### >After Cataloguing & Duplicate merging (POD)

RELAY, AUXILIARY; TYPE: GENERAL PURPOSE; CTR. VOLTAGE: 120 VAC; CONTACT RATING: 200 VA; ACTION: SPDT; CONTACT ARRANGEMENT: SINGLE TERMINAL; PLUG-IN; MOUNT: SURFACE; STANDARD: UL508CSA22.1/DIN4045; TYPE: NO DP POLE: 2; RATING: 24 VDC; APPLICATION: HP STEAM BOILER; SPARES MFR: OMRON ELECTRONICS LLC; PART NO: 02R32-3N; EQPT MFR: MACEE; PART NO: UNKNOWN; DWG NO: 805-6-440; POB NO: 8; DOC REF: 049813-G-3-YD-MG-B179A; BC-00UREV-02; SPARES SUPPLIER: INPROTEC; PART NO: UNKNOWN; FOR EQPT TAG NO: PK-1718-A-

ATTRIBUTE	VALUE	UNIT
DESC	RELAY	EA
MODIFIER	AUXILIARY	EA
ACTION	SPDT	EA
CTR. VOLTAGE	120	VAC
CONTACT ARRANGEMENT	SINGLE	EA
CONTACT MATERIAL	*****	EA
CONTACT RATING	200 VA	EA
ENCLOSURE	*****	EA
MOUNT	SURFACE	EA
STANDARD	UL508CSA22.1/DIN4045	EA
TERMINAL	PLUG-IN	EA
TYPE	GENERAL PURPOSE	EA



NGIN: BEARING, MODIFIER: BALL  
SHORT DESC: BEARING,BALL,PH:6307;35MM;80MM;21MM;OPEN  
PO TEXT: BEARING, BALL; INSIDE DIAMETER: 35 MM 4; OUTSIDE DIAMETER: 80 MM 4; WIDTH: 21 MM 4; TYPE: DEEP GROOVED G; NUMBER\_OF\_ROWS: SINGLE 6; STYLE: OPEN 4; MANUFACTURER REFERENCES:;; SPARES MANUFACTURER PART NO:6307; EQPT MANUFACTURER: BALDOR; DWG\_DOC: 07LY629-SPARE PART FOR;; MOTOR, ELECTRIC; POWER\_RATING: 10 HP; ELECTRICAL\_RATING: 480V AC 60HZ; PHASE: 3; SPEED: 1740 RPM; FRAME: 21ST; MOUNT: HORIZONTAL; ENCLOSURE: TEFC; CLASSIFICATION: CL 1 DIV 2; INSULATION\_CLASS: F; STANDARD: NEMA; EQUIPMENT\_MANUFACTURER: BALDOR; EQUIPMENT\_MODEL\_NO: ECP837741-4; EQUIPMENT\_TAG\_NO: OCP-1205-H61; EQUIPMENT\_DRAWING\_NO: 07LY629



- \* Catalogue materials with appropriate buying descriptions
- \* Remove duplicate materials
- \* Apply codification methods based on client needs and requirements (UNSPSC, NATO, MESCC, PIDX, etc)

# Worldwide Clients



شركة تنمية نفط عُمان  
Petroleum Development Oman



المتقدمة  
Advanced



BUMIARMADA



AL GHUBRAH POWER  
& DESALINATION  
COMPANY SAOC



شركة المياه الوطنية  
National Water Company



# Track Record... a few projects

## Track Record of over 50 projects globally in 10 years with Quality, Cost Effective and Timely Deliverables

Sl.No	Client and Clients Address	Location	Duration	Name of the Project	Description of scope of work
1	Petroleum Development Oman (PDO)	Oman	2019	HCMCT115036a - Bahja/ Rima Flowline Asset Verification	Building of Asset Register Maintenance planning data developing appropriate Maintenance craft procedures building appropriate PACER data templates Identification of Safety Critical Elements & developing operational performance standards for SCE equipment Implementing PS and Assurance measures to SCEs. Prepare e-SPIR data for uploading as BOM in SAP. The services have been provided to various projects.
2	Petroleum Development Oman (PDO)	Oman	2018	HCMCT114054 - Nimr Flowline Verification Project	Building of Asset Register Maintenance planning data developing appropriate Maintenance craft procedures building appropriate PACER data templates Identification of Safety Critical Elements & developing operational performance standards for SCE equipment Implementing PS and Assurance measures to SCEs. Prepare e-SPIR data for uploading as BOM in SAP. The services have been provided to various projects.
3	Petroleum Development Oman (PDO)	Oman	2018	HCMCT115046 - ASP onplot Asset Verification	Building of Asset Register Maintenance planning data developing appropriate Maintenance craft procedures building appropriate PACER data templates Identification of Safety Critical Elements & developing operational performance standards for SCE equipment Implementing PS and Assurance measures to SCEs. Prepare e-SPIR data for uploading as BOM in SAP. The services have been provided to various projects.
4	Petroleum Development Oman (PDO)	Oman	2017	HCMCT115008 - Nimr MSV AV and As-built	Building of Asset Register Maintenance planning data developing appropriate Maintenance craft procedures building appropriate PACER data templates Identification of Safety Critical Elements & developing operational performance standards for SCE equipment Implementing PS and Assurance measures to SCEs. Prepare e-SPIR data for uploading as BOM in SAP. The services have been provided to various projects.
5	Petroleum Development Oman (PDO)	Oman	10/2016 to 03/2017	Asset Verification for Gas Central Processing Plant Phase 1	Map As built drawings to SAP Asset Register prepare work packs for field verification physical walk through of assets collect relevant agreed data and update SAP system provide correction input to As built team verify and correct/create appropriate maintenance plans identify SCE develop performance standards implement performance standards and assurance measures to SCE's provide PACER templates and provide BOM gap report.
6	Petroleum Development Oman (PDO)	Oman	8 months	HCMCT114054-Nimr Flowline Verifaicaton Project	Building of Asset Register Maintenance planning data developing appropriate Maintenance craft procedures building appropriate PACER data templates Identification of Safety Critical Elements & developing operational performance standards for SCE equipment Implementing PS and Assurance measures to SCEs. Prepare e-SPIR data for uploading as BOM in SAP. The services have been provided to various projects.
7	Petroleum Development Oman (PDO)	Oman	2016	Asset Verification for Gas Central Processing Plant Phase 2	Map As built drawings to SAP Asset Register prepare work packs for field verification physical walk through of assets collect relevant agreed data and update SAP system provide correction input to As built team verify and correct/create appropriate maintenance plans identify SCE develop performance standards implement performance standards and assurance measures to SCE's provide PACER templates and provide BOM gap report.
8	Saudi Aramco	Saudi Arabia	2015	HCDMM113003 - Saudi Aramco Equipment spare parts cataloguing and Equipment BOM linking	Building of Asset Register Maintenance planning data developing appropriate Maintenance craft procedures building appropriate PACER data templates Identification of Safety Critical Elements & developing operational performance standards for SCE equipment Implementing PS and Assurance measures to SCEs. Prepare e-SPIR data for uploading as BOM in SAP. The services have been provided to various projects.
9	Petro Rabigh	Saudi Arabia	2015	HCDMM114001 - Petro Rabigh-Cataloguing Spare Parts, Raw Materials and Capital Services	Building of Asset Register Maintenance planning data developing appropriate Maintenance craft procedures building appropriate PACER data templates Identification of Safety Critical Elements & developing operational performance standards for SCE equipment Implementing PS and Assurance measures to SCEs. Prepare e-SPIR data for uploading as BOM in SAP. The services have been provided to various projects.
10	Petronas	Indonesia	2014	HCSHJ115004 - Petronas Indonesia FSM TIMS Implementation Tender No. 10852R2	Building of Asset Register Maintenance planning data developing appropriate Maintenance craft procedures building appropriate PACER data templates Identification of Safety Critical Elements & developing operational performance standards for SCE equipment Implementing PS and Assurance measures to SCEs. Prepare e-SPIR data for uploading as BOM in SAP. The services have been provided to various projects.
11	Sadara	Saudi Arabia	2013	HCDMM115001 - Sadara Material Cataloguing Services	Building of Asset Register Maintenance planning data developing appropriate Maintenance craft procedures building appropriate PACER data templates Identification of Safety Critical Elements & developing operational performance standards for SCE equipment Implementing PS and Assurance measures to SCEs. Prepare e-SPIR data for uploading as BOM in SAP. The services have been provided to various projects.
12	Saudi Aramco	Saudi Arabia	2012	HCDMM114004 - Northern Area Pipelines Division Asset Walk Through & Bom Linking	Building of Asset Register Maintenance planning data developing appropriate Maintenance craft procedures building appropriate PACER data templates Identification of Safety Critical Elements & developing operational performance standards for SCE equipment Implementing PS and Assurance measures to SCEs. Prepare e-SPIR data for uploading as BOM in SAP. The services have been provided to various projects.

## M2K Key Contacts

Detailed presentations can be arranged. Please contact:

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Thank You!

