

November 2025



LET'S TALK DATA

Create a Culture for Asset Management

Cohesive





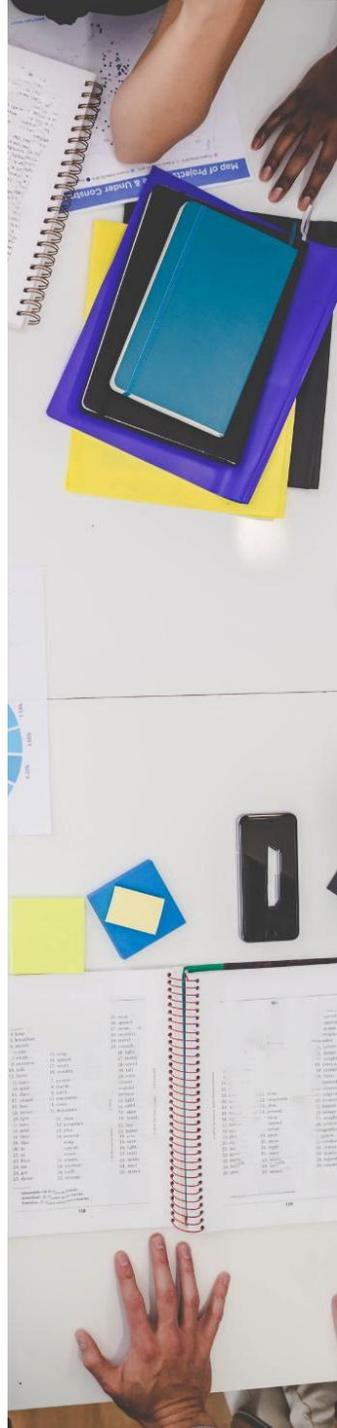
Flippie Coetzee

Manager, Services • Asset Performance Services - Cohesive

Flippie Coetzee is a Manager in Asset Performance Services at Cohesive, bringing 23 years of expertise in asset management consulting. With extensive experience in leadership and project management roles across various asset management organizations, he excels in contextualizing the broader asset management system within companies, leading teams to achieve significant enhancements in physical asset portfolios.

With over 78 implementations across various industries, he has developed a deep understanding of what drives successful asset management system implementations.

Accredited by the Institute of Asset Management (IAM), Flippie has conducted various GAP analyses and ISO 55000 Surveillance Audits. Known for his results-oriented approach, he focuses on actions that enhance overall business performance. He emphasizes the importance of planning and adopts a structured, logical approach to improvement initiatives.



How IAM Anatomy v4, ISO 55013, ISO 8000 and ISO 55000 Complement Each Other with Master Data management

How They Complement Each Other

ISO 55000

- Sets the WHY and WHAT – the principles and context for data's role.

ISO 55013

- Explains the HOW – lifecycle management of asset data.

ISO 8000

- Defines HOW GOOD – establishes measurable data quality standards.

IAM
Anatomy v4

- Shows WHO and WHERE – integrates information management into AM capabilities.

Mapping to the IAM 10-Box Model



Information Management

ISO 55013 (data lifecycle), ISO 8000 (data quality).



Decision-Making

ISO 55013 (decision-grade data), ISO 55000 (value & alignment).



Planning

Use ISO 8000 to ensure consistent master data for maintenance and renewal forecasts.



Asset Strategy & Lifecycle Delivery

IAM Anatomy v4 links data flow from projects → operations → renewal.



Review & Improvement

ISO 55013 + ISO 8000 provide KPIs for continuous improvement.

Data Lifecycle – ISO 55013 in Action

1. Identify Information Requirements

What data is needed to make asset decisions?

2. Design & Model

Define standards, formats, and naming conventions.

3. Acquire & Verify

Collect from sensors, projects, OEMs with verification gates.

4. Store & Secure

Data repositories, cybersecurity, access control.

5. Use & Maintain

Ensure decision-grade data is available to users.

6. Improve & Retire

Monitor data quality and retire obsolete data.



Understanding ISO 8000

ISO 8000 is an international standard focused on data quality management. It provides frameworks and guidelines for organizations to ensure the integrity, accuracy, and usability of data across various processes.

Key Aspects of ISO 8000



Master Data

Creating a Culture of Quality Asset Management Data



Why Data Matters in Asset Management



Accurate and trustworthy data drives decisions on cost, risk, and performance.



Across the asset lifecycle (design → operate → maintain → renew), data consistency is key.

Static Data vs Dynamic Data

Type	Static Data	Dynamic Data
Definition	Data that remains unchanged over time or changes infrequently.	Data that changes frequently or in real-time.
Examples	Asset IDs, equipment specifications, location, manufacturer details.	Sensor readings, maintenance logs, performance metrics, failure events.
Usage	Reference, classification, planning, and historical analysis.	Monitoring, decision-making, predictive analytics, operational control.

Static Data vs Dynamic Data

Standard

Static Data Examples

ISO 8000

Product specs, supplier IDs, master data

ISO 55013

Asset register, hierarchy, installation details

ISO 14224

Equipment taxonomy, failure modes, asset attributes

IAM

Asset definitions, lifecycle plans

Dynamic Data Examples

Inventory levels, order statuses

Condition monitoring, usage data, maintenance logs

Failure records, downtime, maintenance actions

Predictive maintenance, sensor data, operational KPIs

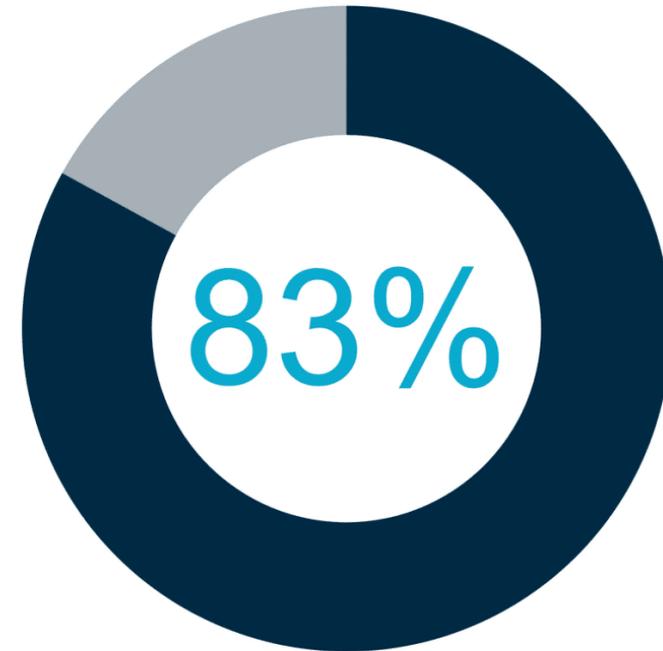
Implementing Change with Static DATA



It doesn't matter how well you project manage the technical aspects of a change because, without the understanding, acceptance, and support from the people that are being directly affected, you will not accomplish the change transition.

83% of CEOs listed "substantial change" as their biggest challenge.

- IBM Global CEO Study, 2006



Implement Best Practice standards



Asset Identification and Verification Standard

Set the standard for the building of the LBS structure



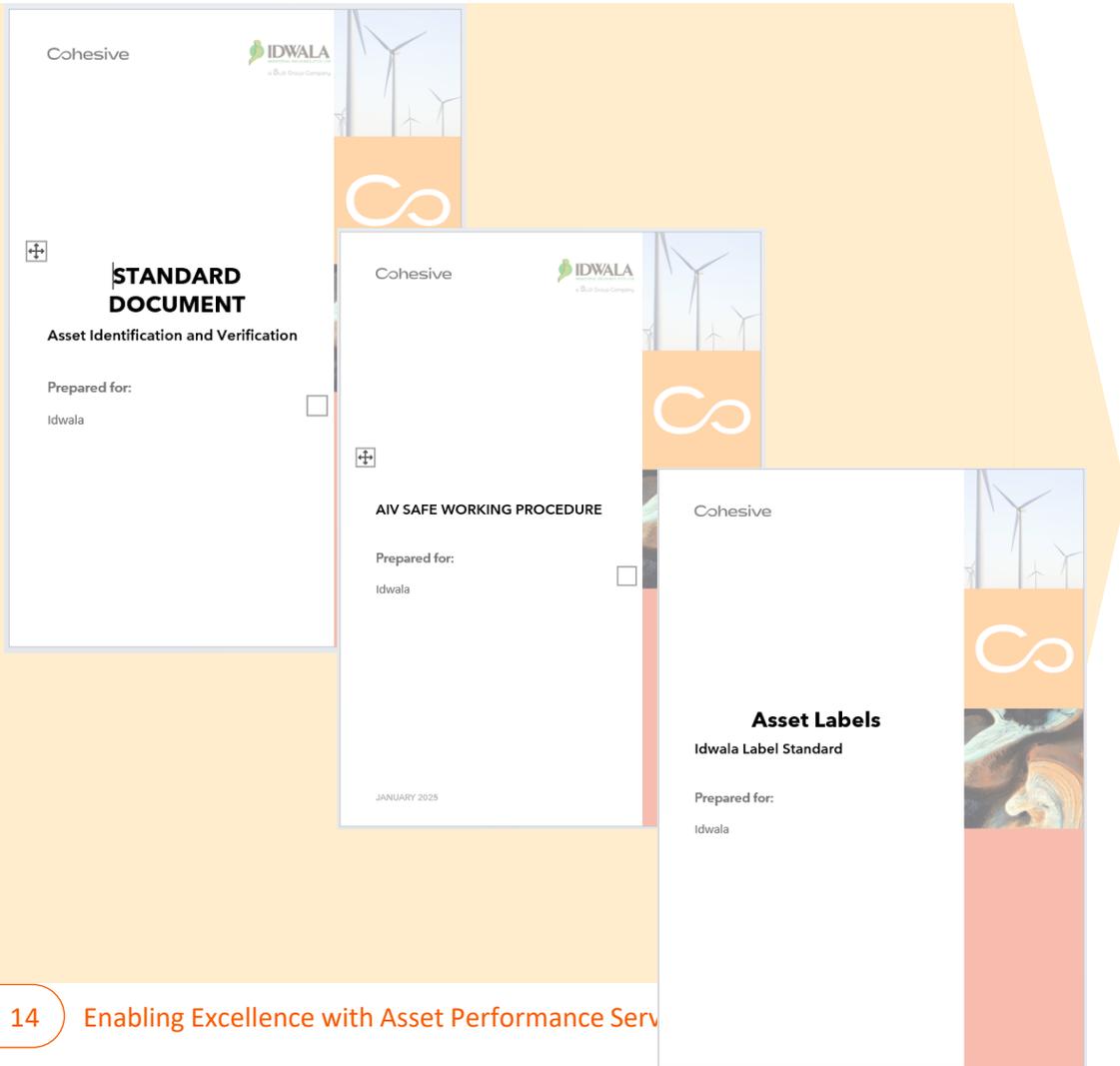
AIV Work Procedure

Set the standard how the plant will be walked down and what safety aspects needs to be considered

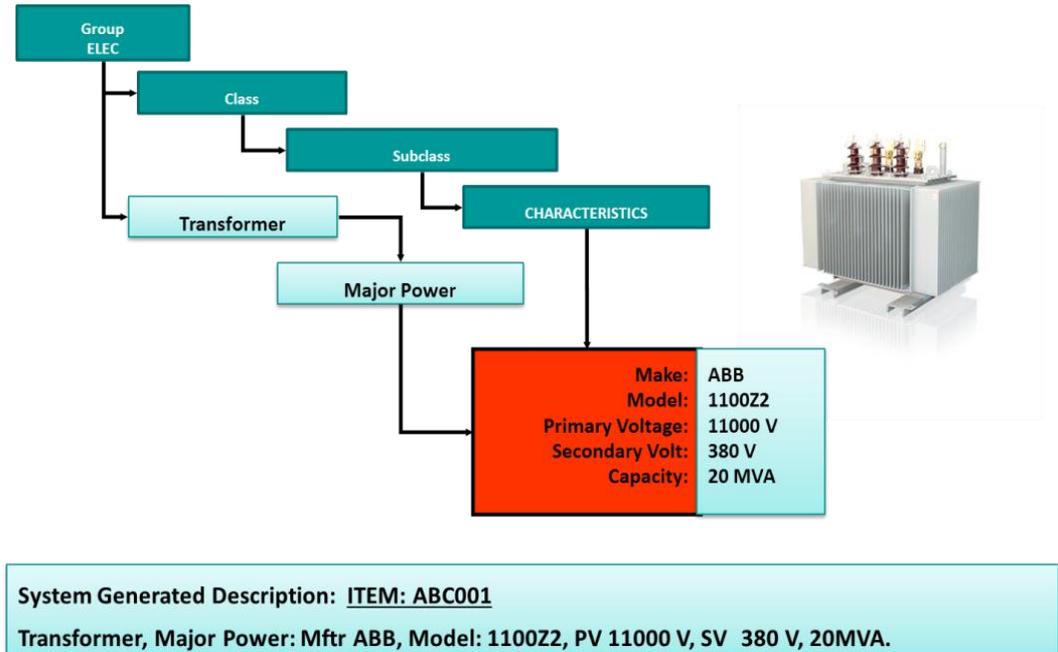
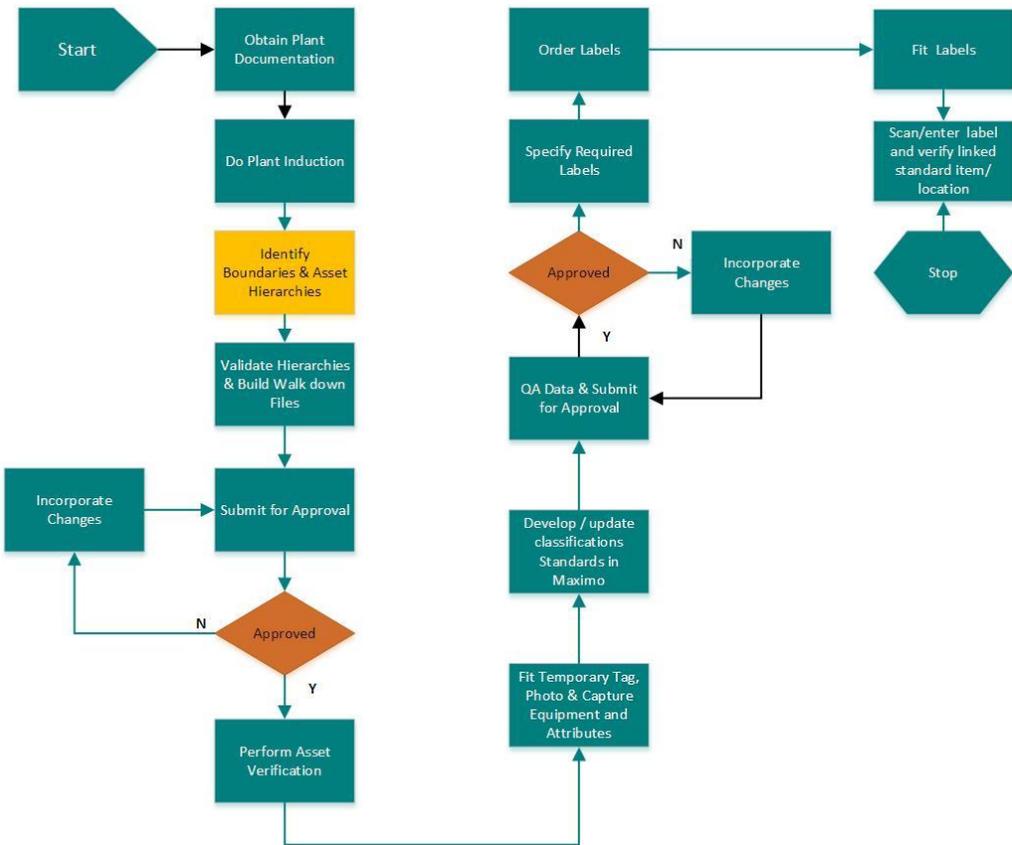


Labelling Standard

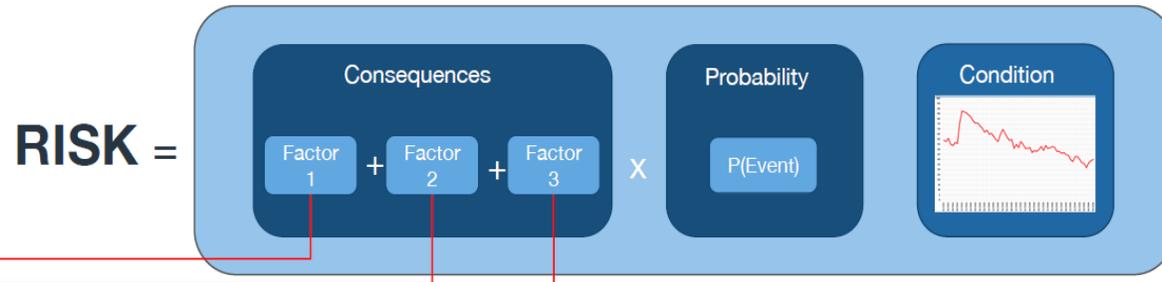
Set the standard for what type of Labels will be used and what information needs to be reflected on the labels



ISO 14224 Asset verification and Classification



Asset Risk Assessment



Consequences Add consequence Export criteria

Maintenance, Repair & Replace Cost	Linear	Weight: 30%
Income Loss	Linear	Weight: 25%
Health & Safety Impact	Exponential Increasing	Weight: 25%
Environment Threat	Linear	Weight: 15%
Reputation	Exponential Increasing	Weight: 5%

Update order

Maintenance, repair and replacement cost

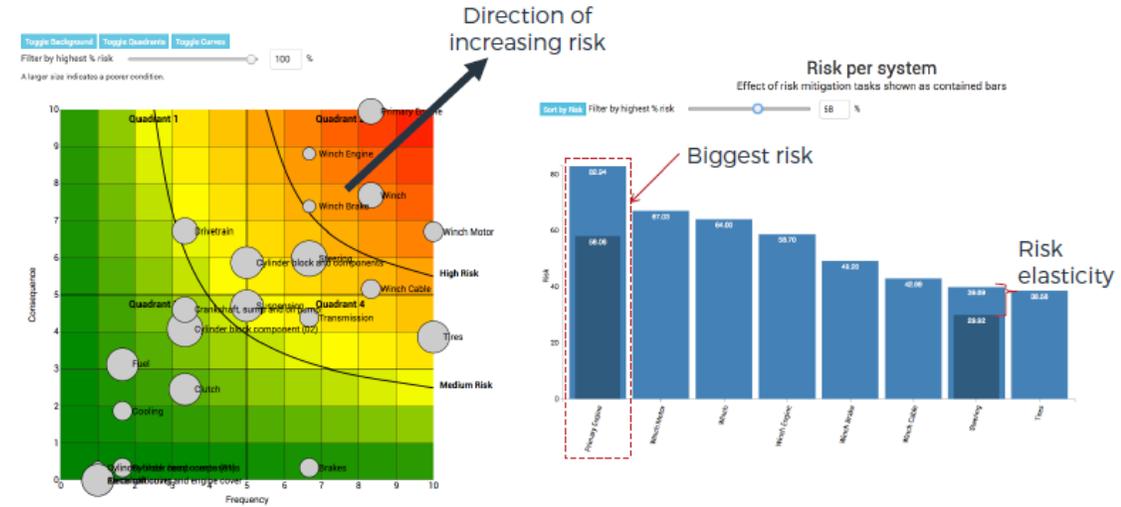
Maintenance, Repair & Replace Cost Linear Weight: 30%

ACTIONS	NAME	ORDER	VALUE
	>\$100 000 maintenance cost OR >14 day mean time to repair	5	10.00
	>\$50 000 maintenance cost OR >7 day mean time to repair	4	7.50
	>\$10 000 maintenance cost OR >5 day mean time to repair	3	5.00
	>\$5 000 maintenance cost OR >3 day mean time to repair	2	2.50
	>\$1 000 maintenance cost OR >1 day mean time to repair	1	0.00

Add Consequence Criterion

ID: 19 Export Import

ASSET RISK PROFILER (RESULTS)



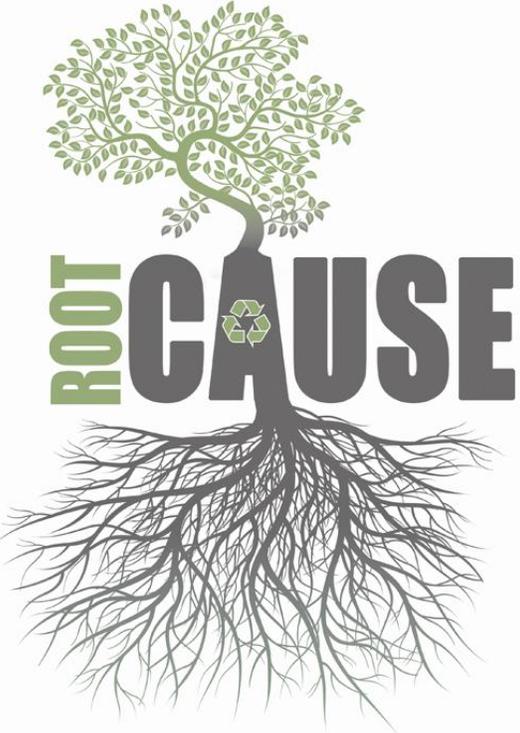
A good definition of risk management is:

“the identification, assessment, and prioritization of risks followed by coordinated and economical application of resources to monitor and control the **probability** and/or **impact** of unforeseen events.”

Cohesive

Failure Data

ISO 14224



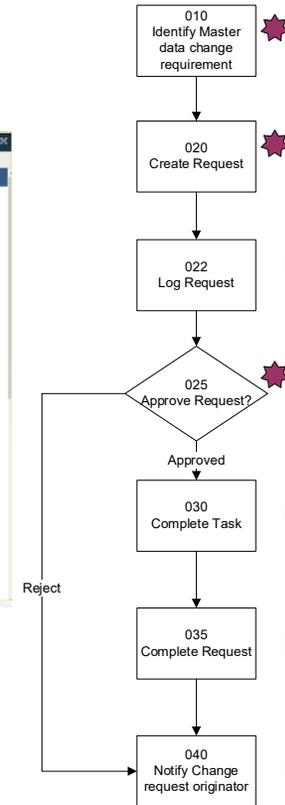
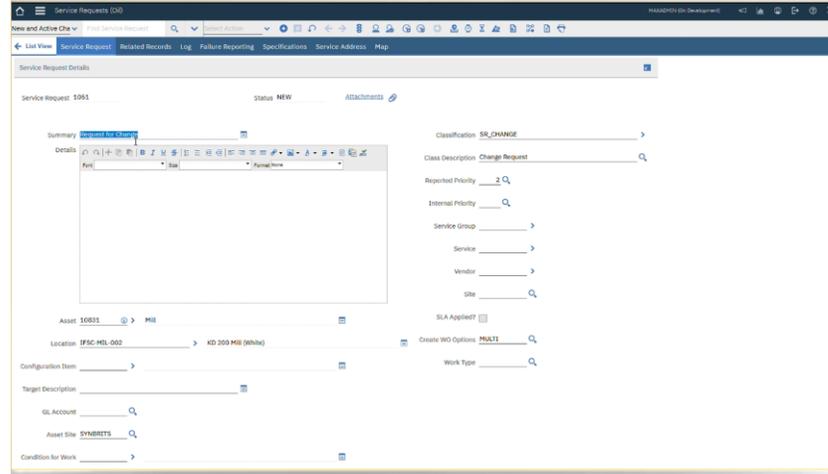
Failure Class

Failure Class	Failure Class Description	Problem Code	Problem Code Description	Cause Code	Cause Code Description
PMPS	Pumps	LEAK	Leak	GASKET	Gasket
PMPS	Pumps	LEAK	Leak	SEAL	Seal
PMPS	Pumps	LEAK	Leak	GLAND	Gland
PMPS	Pumps	LEAK	Leak	FLANGE	Flange
PMPS	Pumps	LEAK	Leak	BURSTPIPE	Burst Pipe
PMPS	Pumps	LEAK	Leak	STRCTFLR	Structural Failure
PMPS	Pumps	LWFLW	Low Flow	BLOCKED	Blockage
PMPS	Pumps	LWFLW	Low Flow	PMPWEAR	Pump Wear
PMPS	Pumps	LWFLW	Low Flow	LOWRESLEV	Low Reservoir Level
PMPS	Pumps	LWFLW	Low Flow	BURSTPIPE	Burst Pipe
PMPS	Pumps	LWFLW	Low Flow	CONTRSYSFAIL	Control System Failure
PMPS	Pumps	LWFLW	Low Flow	OPRTERR	Operator Error
PMPS	Pumps	LWFLW	Low Flow	CLOSEDVLV	Closed Valve
PMPS	Pumps	LWFLW	Low Flow	DISTRINFL	Distribution Influences
PMPS	Pumps	LWFLW	Low Flow	MECHFAIL	Mechanical Failure
PMPS	Pumps	LWFLW	Low Flow	CAVITATION	Cavitation

Change Management ISO 8000

Change Request Form Tactical Tasks			
ASSET MANAGEMENT CHANGE PROCESS REQUEST FORM			
CHANGE REQUESTED BY:	_____		
DATE OF REQUEST:	_____		
ASSET CODE:	_____		
ASSET DESCRIPTION:	_____		
FREQUENCY:	_____		
NB: ALL SIMILAR ASSET TYPES IN DATABASE TO BE UPDATED?	YES	NO	
REQUIRED TO CHANGE (TICK THE APPLICABLE BOX):			
<input type="checkbox"/> TASK INSTRUCTIONS	<input type="checkbox"/> DUE DATE		
<input type="checkbox"/> TASK FREQUENCY	<input type="checkbox"/> ESTIMATED TASK DURATION		
<input type="checkbox"/> ENABLE/ DISABLE TASK	<input type="checkbox"/> LOCATION		
<input type="checkbox"/> ENABLE/ DISABLE ASSET (SOLD, SCRAPPED, STORED)	<input type="checkbox"/> TASK NAME		
<input type="checkbox"/> TYPE OF WORK (PMS, SAFE, CM)	<input type="checkbox"/> OTHER: _____		
DESCRIBE THE CHANGE REQUIRED:			

REQUESTOR:	FULL NAME	SIGNATURE	DATE
AUTHORISED BY:	_____	_____	_____
PRAGMA REPRESENTATIVE:	_____	_____	_____
REASON FOR REQUEST DENIED:			



Master Data Change

010 - Identify Master Data Requirement
Identify the master data that needs to be created or changed.

020 - Create Request
A Request is created to register the request for master data change / creation. Use specified form (Annex A)

025 - Approve Master Data Request
Requests need to be approved by the Engineer (copy to Planner) The Request will be routed to the Engineer using e-mail communication as workflow is not yet available.

022 Log request
The request is logged and tracked by the Planner

030 - Complete Task
Tasks are actioned by the responsible person and completed

035 Complete request
Request is made complete only when all tasks are completed

040 - Notify Originator
Once the Request has either been completed (as done) or completed (as rejected) feedback is given to the originator of the request. This is done via e-mail and will hold the Request number and any associated detail.

Type of Change	Who Initiates	Approval	Update	Executes
New Asset	CI Manager	Financial Manager, Works Engineering Manager	EAMS	AMS
Scrap Asset	CI Manager	Financial Manager, Works Engineering Manager	EAMS	AMS & Finance
Move Rotable	Foreman	Foreman	EAMS	AMS
Amend Maintenance Plan	Foreman	Works Engineering Manager	EAMS	AMS
Financial Master Data	Finance	Financial Manager	EAMS & Financial system	Finance
Staff	Foreman	Foreman, Works Eng Manager	EAMS & HR	HR, AMS
Trades and rates	Foreman	Works Engineering Manager	EAMS	Finance & AMS
Configuration data	CI Manager	Steercom	EAMS	AMS
Reports and KPIs	Steercom	Steercom	EAMS	AMS
Stock Items	Storeman or Foreman	Works Engineering Manager	EAMS	AMS
Preferred Suppliers	Storeman or Foreman	Logistics	EAMS & Procurement system	Logistics

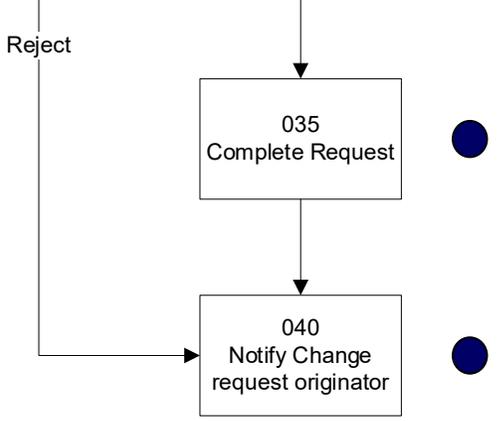
Responsibilities

● Planner
★ See Table

Applicable Meetings

Meeting Steercom meeting	Frequency Monthly
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Change Management ISO 8000



completed

040 - Notify Originator
Once the Request has either been approved (as requested) or completed (as requested) the originator of the request will be notified and will hold the Request detail.

Type of Change	Who Initiates	Approval	Update	Executes	
New Asset	CI Manager	Financial Manager, Works Engineering Manager	EAMS	AMS	
Scrap Asset	CI Manager	Financial Manager, Works Engineering Manager	EAMS	AMS & Finance	
Move Rotable	Foreman	Foreman	EAMS	AMS	Respon
Amend Maintenance Plan	Foreman	Works Engineering Manager	EAMS	AMS	
Financial Master Data	Finance	Financial Manager	EAMS & Financial system	Finance	● Planner
Staff	Foreman	Foreman, Works Eng Manager	EAMS & HR	HR, AMS	★ See Table
Trades and rates	Foreman	Works Engineering Manager	EAMS	Finance & AMS	
Configuration data	CI Manager	Steercom	EAMS	AMS	
Reports and KPIs	Steercom	Steercom	EAMS	AMS	
Stock Items	Storeman or Foreman	Works Engineering Manager	EAMS	AMS	Applicabl
Preferred Suppliers	Storeman or Foreman	Logistics	EAMS & Procurement system	Logistics	<u>Meeting</u> Steercom meeting

Why does Static Data matter?



- Location Breakdown Structure
- Asset Classification standard
- Risk and Criticality standard
- Root Cause analysis standard
- Change management

Implementing Change to Dynamic Data



Why Data Matters in Asset Management



Accurate and trustworthy data drives decisions on cost, risk, and performance.



Across the asset lifecycle (design → operate → maintain → renew), data consistency is key.

Work Performed

Done

Failure Analysis

Component: Toilet seat

Failure: Broken

Root Cause: Person not sitting still

Work Performed

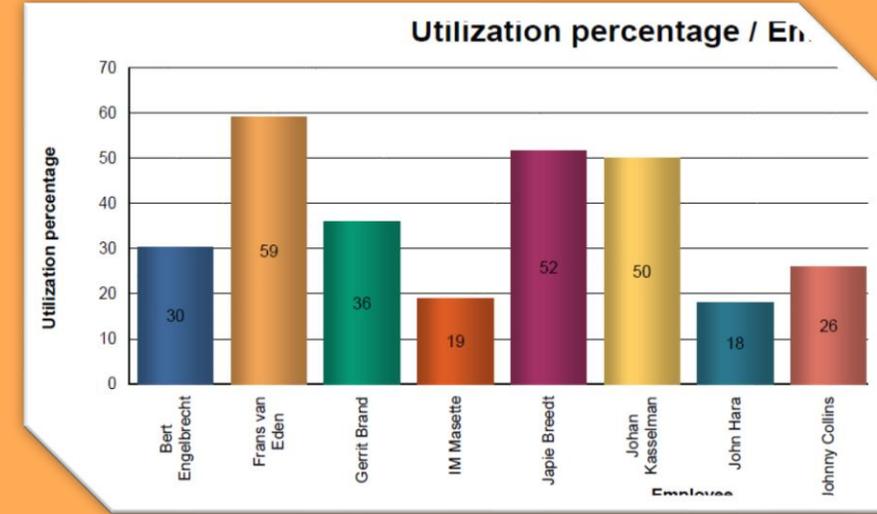
Duplicate Job Card

Labour Used

Clock No	Date	Hrs
105	15/02/2020	2
215	19/02/2020	8

Production sign off

Name	Date	Hrs
Johan	15/02/2020	2



DATA

Failure Analysis

Component: Gearbox - General

Failure: Electrical

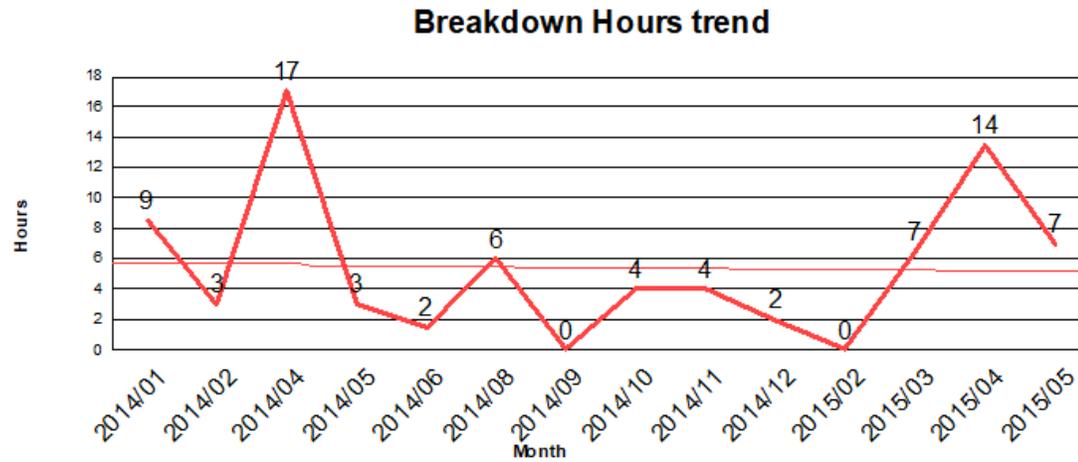
Root Cause: Electrical winding fault

Work Performed

Repair Machine

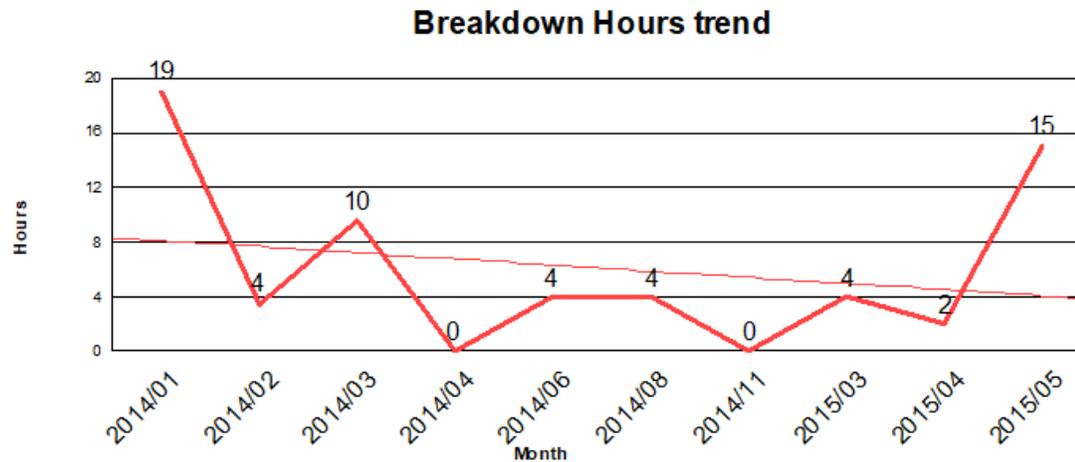
73330		MODIFY EXTRACTION FANS.
5002321	IMPREGNATION POT 14	SEALS NEED TO BE CHECKED, LEAKINGS OIL
5002380	BOLDRINI ROLLING MACHINE	LIMIT COVER IS BROKEN
72756		REMOVE TURN TABLE FOR REPAIRS
7629	CNC OXY.ACE PROFILE CUTTER	FIX PROBLEM ON MACHINE, TENTION BUILD UP

Assembly Large

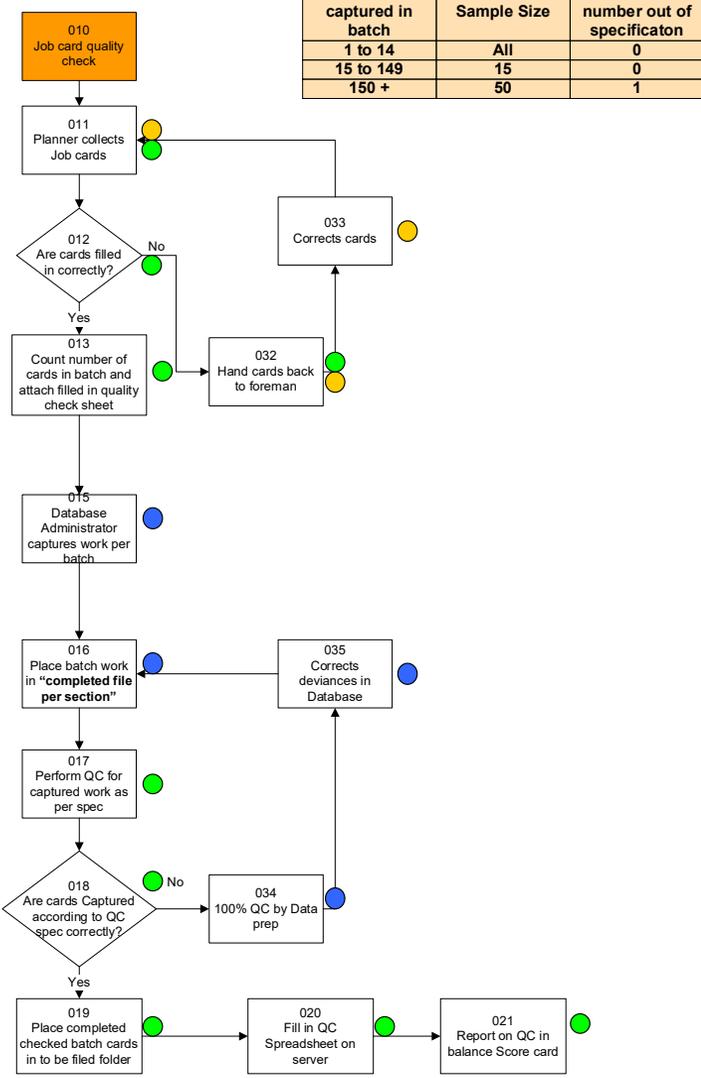


No RCA done

Painting



No RCA done



Number of cards captured in batch	Sample Size	Maximum number out of specification
1 to 14	All	0
15 to 149	15	0
150 +	50	1

Job card Quality checking

Critical Success Factors:

1) All work collected must be checked for quality

Step Detail:

011 Foreman collects Job cards
Job cards are collected on a daily basis before attending the morning production meeting

012 Are cards filled in correctly?
This is the first quality check to be performed by the Foreman. Any incorrectly filled in cards must be handed back to the Artisan.

032 & 033 Hand cards back to Artisans
If any cards were found to be incorrect, these will be handed back to the Artisan to correct. If the foreman has time to correct them, it can be handed back to the planner. Alternatively the corrected cards will be collected before the following morning meeting

013 Count number of cards in batch and attach filled in quality check sheet
The Dataprep must count the number of cards in the batch and fill this total onto the quality spreadsheet form. This form should be attached to the batch of cards to be captured

015 Data Prep Captures work per batch
The Dataprep will capture work per batch in order for the Planner to verify work quality per batch.

016 Place batch work in "completed file per section"
Once the Dataprep has completed the capturing per batch, she will place the batch in the completed file for that section. This will indicate to the planner when work has been completed so that he/ she can do the QC check.

017 Perform QC for captured work as per spec
The planner will do the quality check by taking a sample in accordance to the spec sheet listed above.

018 & 034 Are cards captured according to QC spec correctly?
This is the second quality level check. If captured cards fail according to sample from spec sheet, 100% of cards must be handed back to the Dataprep to check all work.

019 Place completed checked batch cards in "To be filed" file

The planner will place the checked cards that passed the QC inspection into the "To be filed" file. This will indicate to the Dataprep that she can now file this work in the cabinet according to the filing procedure.

020 Fill in QC Spreadsheet on server
The planner will then fill in the QC Spreadsheet on the server. This spreadsheet indicates the total number of cards collected for the month with the % accuracy per section.

021 Report on QC in balance score card
The AC Planner will then use the QC Spreadsheet on the server to report on the % accuracy in the balance score card

Responsibilities

- Foreman
- Planner
- Database administrator
-

Applicable Meetings

- M1 Daily Planning Meeting (Engineering, Operations & ACC)
- Schedule communication and coordination of jobs between workshops and operation (30 mins max)

Quality Control

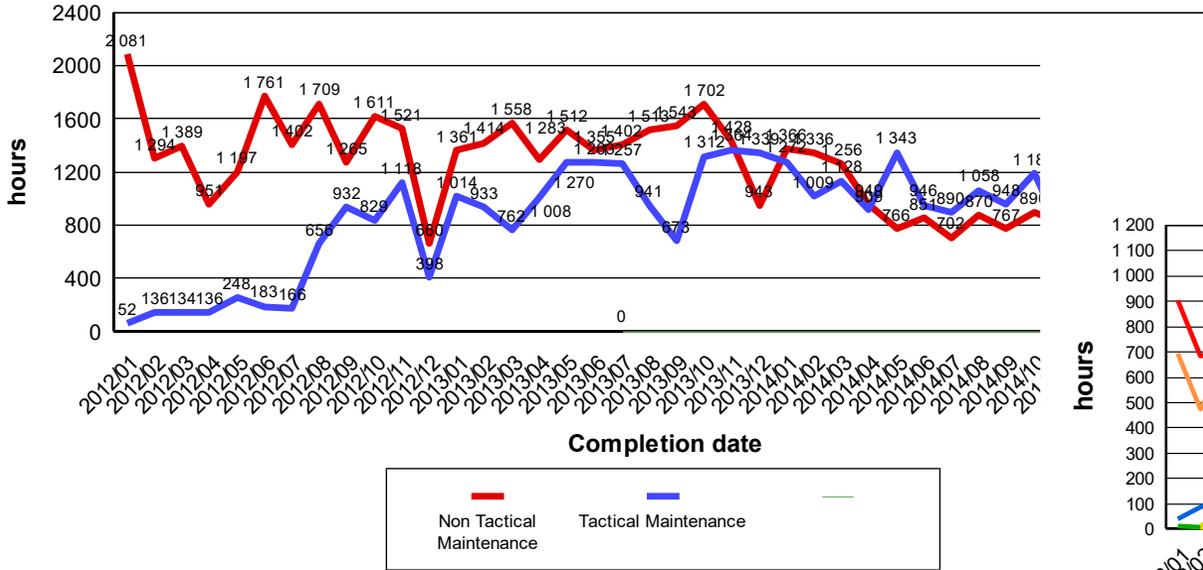
Document Title	Job Card Quality Checking
Governing Procedure	
Last revision date	23/05/2008

What do we do with great quality Dynamic Data?

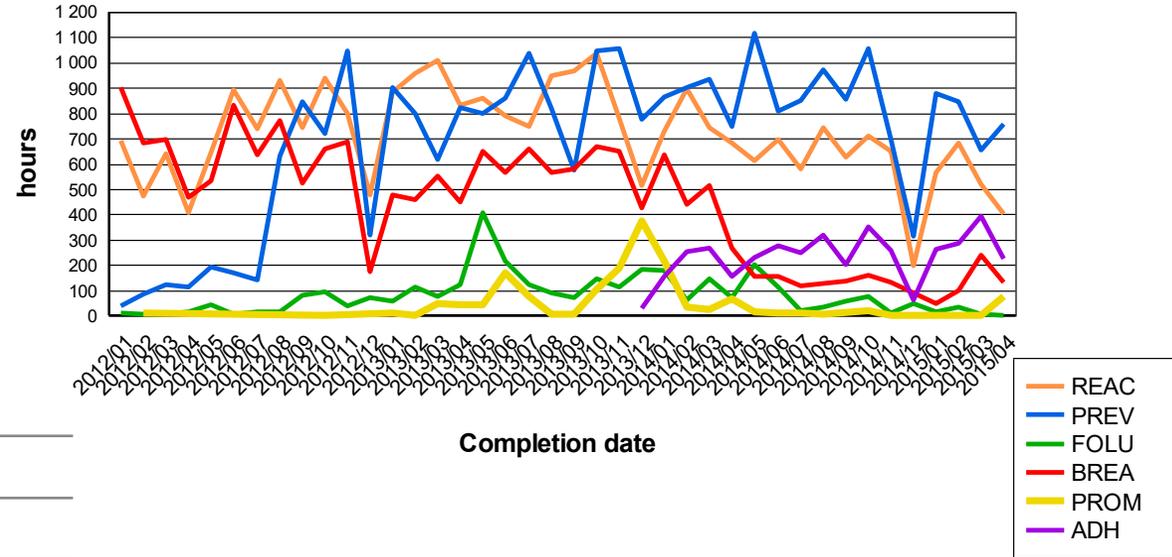


Quality data to analyse

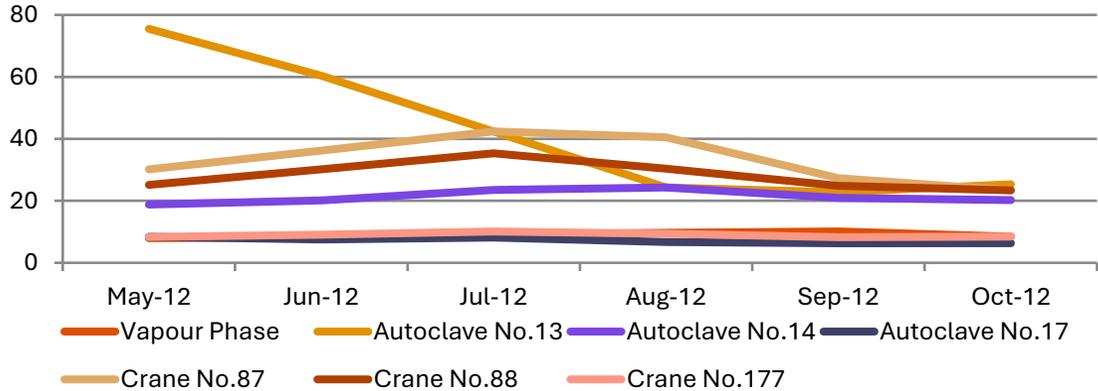
Tactical vs Non Tactical Work



Type of work trend

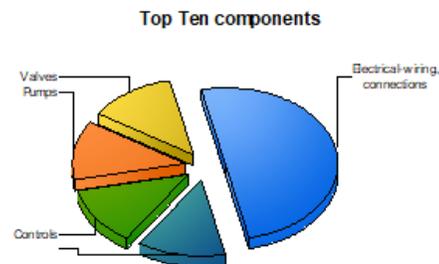
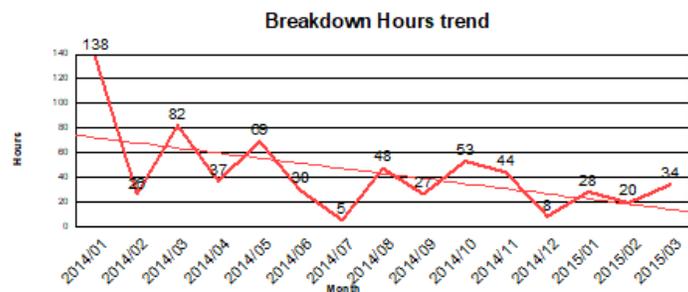


MTBF

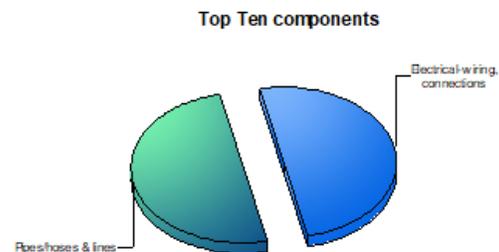
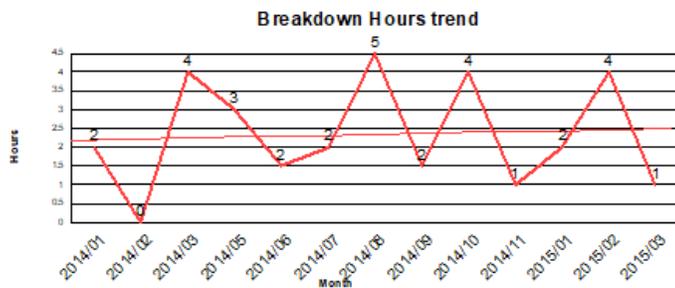


Level 1 RCA

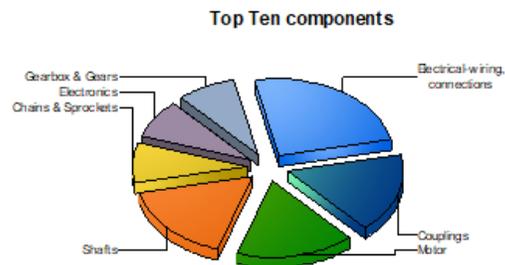
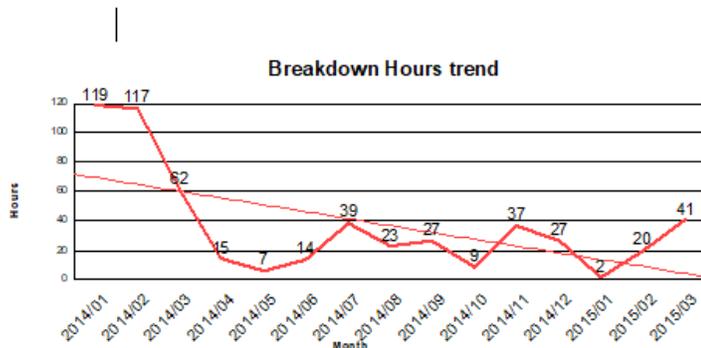
Plant 1



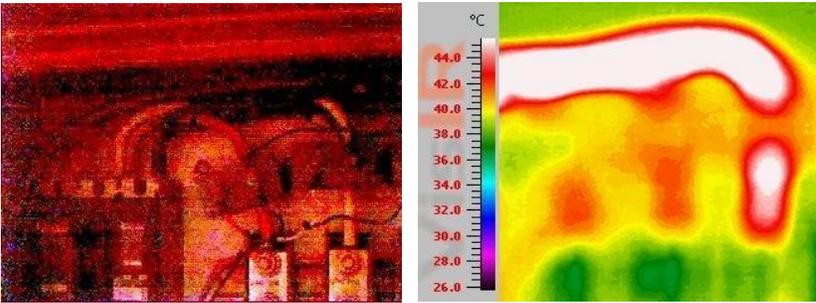
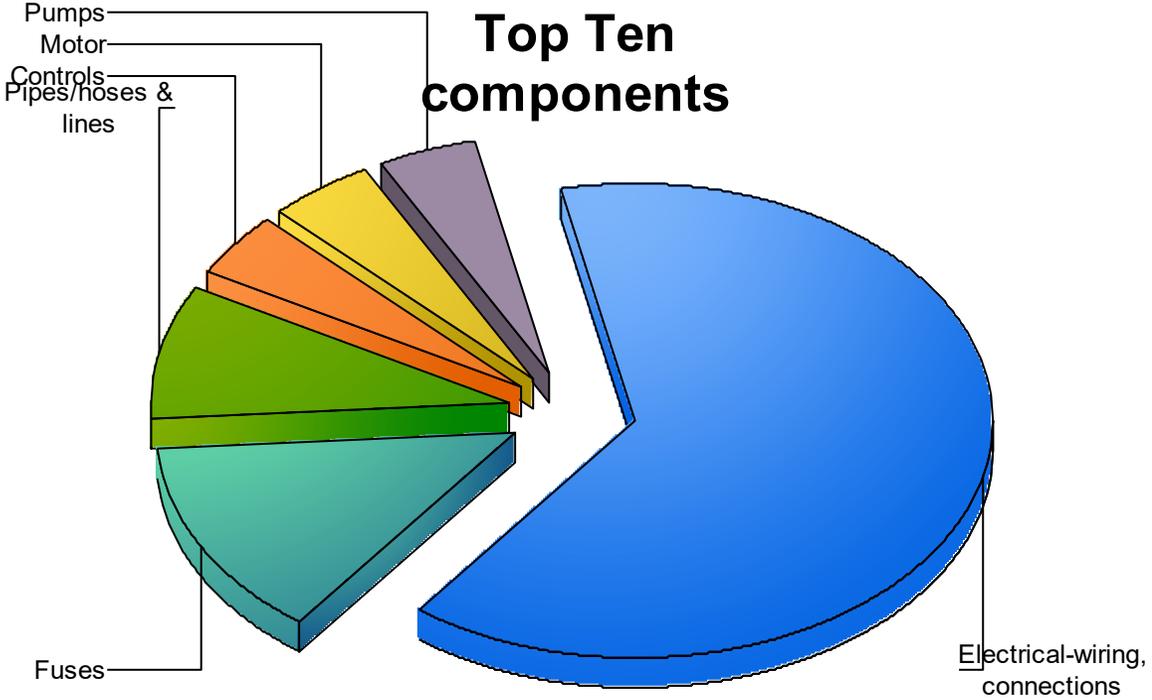
Plant 2



Plant 3



Quality data to analyse



Focused Improvement A3 Project Report

Project Name	Copper Extruder pressure failure	Date	
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Sponsor	Flippie Coetzee	Team Members	Hannes Husselmann	Flippie Coetzee
			Theo Olivier	Bertie Fouche
			Plyno Landman(Hyflow)	
Team Leader	Hannes Husselmann			

Background

During the extrusion process on the 15th of January, the hydraulic system experienced a loss of pressure. Due to no inhouse Hydraulic system experience, a contractor was called in to assist with the breakdown. During the fault finding process the intensifier and safety relieve valves were suspected. Once the intensifier was stripped, a gate release could not be issued. The contractor could therefore only return on the monday to continue with the work. Findings were that the intensifier seals were metric on one side and Imperial on the other side. This meant that standard off the shelf seals could not be fitted. To resolve this, the piston was machined to fit standard metric seals. Once the intensifier seals were replaced, the equipment was tested and settings on the equipment had to be changed. During this process the pressure relieve valve was picked up to be faulty and the orivis was found to be faulty. Production started on 21st of January at 12:00

1. Define

Problem Definition	
Who	Insulations department
What	Loss of Hydraulic pressure
Where	At the Copper Extruder
When	On 15th of January until 21st January
Why	Vacuum pumps used to be serviced and repaired internally
How	Loss of Hydraulic pressure during extruding process
Safety impact / Risk	
Environment impact / Risk	None
Cost plus lost revenue	50 Tons production loss = R50000 + R140 000(R28000/day) = R5 517 000
Frequency	Once
Project Definition	
Improvement target	Reduce hydraulic breakdowns
Due date	

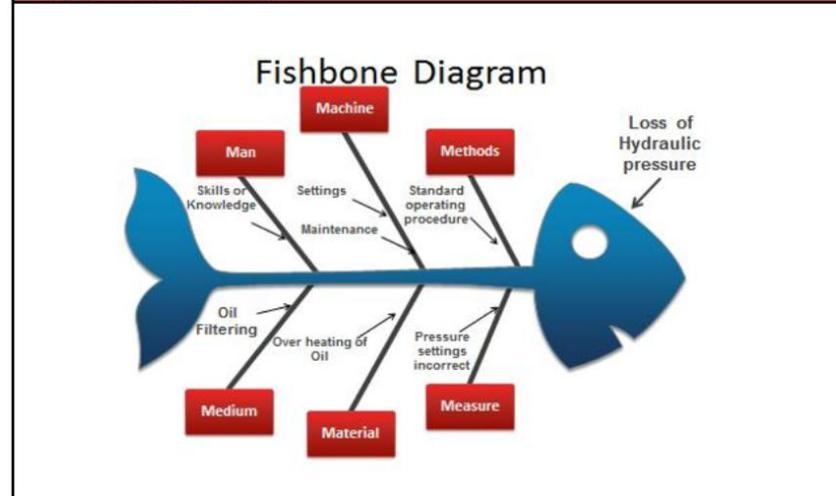
2. Measure - break down the problem



High oil temperature is due to the system being supplied by a pressure compensator pump. When in operation a small amount of oil is filtered or cooled. Seals were found to be broken and some foreign particles in valve bank.

Intensifier seals were not standard with one side being imperial and the other side metric. Intensifier was machined to standardise all seals

3. Analyse - root cause analysis



4. Improve

Action	Owner	Due	Status
Standard Operating procedure to be developed	Theo	Mar	Complete
Arrange Hydraulic system training for Artisans	Hannes	Mar	Complete
Spare Vickers valve to be kept in stock	Deon	Mar	Complete
Spare seals for intensifier to be kept in stock	Deon	Mar	Complete
Oil sample to be sent out to evaluate oil condition	Hannes	Mar	Complete
Relieve valve that had a loose orifice that was unable to make setting changes to be changed out with an off the shelf over centre valve	Hannes	Mar	Complete
Separate filtering "kidney" system to be installed that will not only filter the oil, but also circulate the oil through the heat exchanger while reducing oil temp	Hannes	Mar	Complete
Inspection schedule on 6 monthly oil filter replacement to be put in place	Flippie	Mar	Complete
Change from limit switch control on intensifier to proximity control	Hannes	Mar	Complete

5. Control

Reduce equipment related risk
Ensure Maintenance Skills is maintained

Key Takeaways



Include your most valuable asset(your people) in the design phase of your system



Use industry best practices



Good Quality data doesn't just happen. It is a constant process to check and verify data

Thank You

Cohesive