

## **Annexure (A): Status of Cluster at a Glance**

**Name of SPV/DPG** : IamSME of India, Faridabad

**Name of Cluster** : Faridabad Engineering Cluster No.1 (FEC- 1)

**Name of LMC** : LBE Consulting Group, New Delhi

**Brief Description** :

Faridabad Engineering Cluster No.1 (FEC- 1) comprises of following 9 clusters units:

1. ACME Auto Pvt. Ltd.
2. Adroid
3. Allied Auto Industries
4. Allied Engineering Co.
- 5. Apex Plastics - Model Unit**
- 6. KP Tools Pvt. Ltd. - Model Unit**
7. MYO Metals
8. Samrat Enterprises
9. Technomech Industries

The customers of the most of the units are the automobile manufactures, Tier-I & Tier-II, but some of the cluster units also supplies to the white goods manufacturer & home appliances manufacturers as well. The product line of the cluster units consists of the Plastic Molded automobile parts & white goods parts, Sheet Metals parts, Fabricated Parts, High precision machined parts, Nuts, Bolts, Fasteners, & Fans parts.

Out of the 9 cluster units, 2 units namely Apex Plastics & KP Tools Pvt. Ltd. Benefitted the most from the amongst the cluster units & developed themselves as the Role Model cluster unit for the Lean Manufacturing Practices

MBR-4<sup>th</sup> of the cluster has been just completed, Phase-4 audit is in process & the activities of the Phase-5 has been started by the LMC.



## Success Story with Photographs:



- Quantum of benefits (monetary and non-monetary) accrued so far

S.No.	Project details (in brief)	Status at start of Project	Current Status	Benefits Accrued (whichever applicable)			Remarks (If Any)
				Monetary	Qualitative	Quantitative	
1	5S	16% As per NPC audit sheet, i.e. No 1S/2S/3S activity in place, no 5S Red Tag Area, 5S zones does not exits	70% i.e. 1S/2S/3S carried out in massive way. Red Tag Area created, 5S Zones identified & display, 5S Score RADAR charts display,	Area Generated: 2370 Sq. Ft. Scrap Sold & Red Tags items by 5S Activity: 11,600 Kgs. In Rupees: 12,45,454/-	Improved Shop Floor Area, Cleaner work environment. Reduced retrieval time of items.	N/A	
2	Health, Environment & Safety (HES)	Level-2, i.e. No/ Less awareness of safety, no/less use of PPEs	Level-8, i.e. Near Miss identified & Rectified ,Use of PPEs started, no unsafe conditions	N/A	Reduced number of accidents & safe environment	N/A	
3	Work Place Cooperation (WPC)	Level-2, i.e. Informal communication, No meetings in place , low morale	Level-8, i.e. Daily/ Weekly review meetings started, attendance awards, skill matrix & suggestion schemes launched	Savings by implemented suggestion s & reduced man-hours: Rs. 84.097/-	Improved Moral & Motivation and employees involvement	Reduced absenteeism by 5 %	
4	Visual Management (VM)	Level-2, i.e. At Some Places Identification exits	Level-6, i.e. Identification done, Kaizen Board, At A Glance Board, PQCD SME Board, 5S Boards & Visual Boards Displayed, Gangways Marked.	N/A	Visually improved shop floor, Speaking factory.	N/A	


S.No.	Project details (in brief)	Status at start of Project	Current Status	Benefits Accrued (whichever applicable)			Remarks (If Any)
				Monetary	Qualitative	Quantitative	
5	Productivity Improvement	0 % Base Line	20 % Improvement in Top 5 Products Labour Productivity	Rs. 5,02, 285/-	Reduced Labour Cost for the product	20 %	
6	Quality Improvement	0 % Base Line	20 % Reduction in Top 5 Defects	Rs. 2,97,006/-	Reduced Customer Complaints , Improved FTR & CSI	20 %	
7.	Energy Conservation	0 % Base Line	5 % Reduction in Energy Cost	Rs. 8,05,400/-	Reduced Energy Cost	5 %	Like PF Panel Installation, LEDs & Natural Lighting
8.	TPM (Total Productive Maintenance)	Level-0	Level-6, Model machine Selection, Fugoi Concept & Implementation of activities, Visual CLITO Implementation & Declared ownerships for all machines	Under Observations	Reduced Breakdowns & More Availability of machines for production	N/A	
<b>TOTAL</b>				<b>Rs. 29,34,242/-</b>			

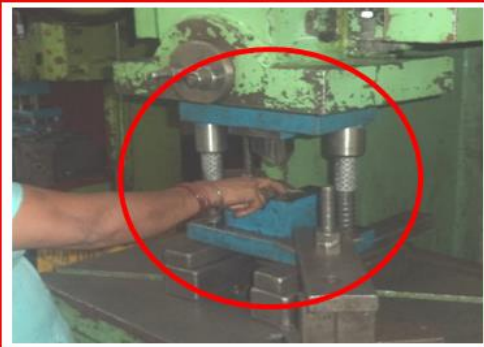
Photographs of the some of the improvements has been shown below:

Kaizen (Continual Improvements)				Date
Location	SHOP FLOOR AREA			14/06/2015
<b>Before (Original)</b>		<b>After (improvement)</b>		
Problem contents	<b>Improper Layout</b>			
Photo / Sketch				
Bad effect	<b>Dirty Floor &amp; No Defined Gangways</b>			
c/m contents	<b>Plant layout changed and define a place for each material.</b>			
Photo / Sketch				
effectiveness	<b>Gangways Defined &amp; Easy man &amp; material movement</b>			
5S <input checked="" type="checkbox"/> Safety <input type="checkbox"/> Quality <input type="checkbox"/> Cost <input type="checkbox"/>		Mistake proof <input type="checkbox"/> 3R <input type="checkbox"/> Productivity <input type="checkbox"/>		
<div style="background-color: #000080; width: 10px; height: 10px; display: inline-block;"></div> -- Implementation category				

Kaizen (Continual Improvements)				Date
Location	SHOP FLOOR AREA			8/07/2015
<b>Before (Original)</b>		<b>After (improvement)</b>		
Problem contents	<b>No place to Keep finished material after final inspection.</b>			
Photo / Sketch				
Bad effect	<b>Area not looking good &amp; Occupy space.</b>			
c/m contents	<b>Unwanted material removed &amp; Floor Mezzanine created to store all finish Items / tools.</b>			
Photo / Sketch				
effectiveness	<b>Space generated (132 sq ft) for tools &amp; finished parts . Overall space look Improved.</b>			
5S <input checked="" type="checkbox"/> Safety <input type="checkbox"/> Quality <input type="checkbox"/> Cost <input type="checkbox"/>		Mistake proof <input type="checkbox"/> 3R <input type="checkbox"/> Productivity <input type="checkbox"/>		
<div style="background-color: #000080; width: 10px; height: 10px; display: inline-block;"></div> -- Implementation category				





Kaizen (Continual Improvements)		Date
Location	Shop Floor	12.8.15
<b>Before (Original)</b>		<b>After (improvement)</b>
Problem contents	D- Rings lying on the floor in the gallery	c/m contents
Photo / Sketch		Photo / Sketch
Bad effect	Damage to the material & lots of searching time	effectiveness
		Searching Time Reduced
<div style="display: flex; justify-content: space-between;"> <div> <b>5S</b> <span style="background-color: #008000; width: 10px; height: 10px; display: inline-block;"></span> <b>Safety</b> <span style="background-color: #cccccc; width: 10px; height: 10px; display: inline-block;"></span> <b>Quality</b> <span style="background-color: #cccccc; width: 10px; height: 10px; display: inline-block;"></span> <b>Cost</b> <span style="background-color: #cccccc; width: 10px; height: 10px; display: inline-block;"></span> </div> <div> <b>Mistake proof</b> <span style="background-color: #cccccc; width: 10px; height: 10px; display: inline-block;"></span> <b>3R</b> <span style="background-color: #cccccc; width: 10px; height: 10px; display: inline-block;"></span> <b>Productivity</b> <span style="background-color: #cccccc; width: 10px; height: 10px; display: inline-block;"></span> </div> </div> <p>-- Implementation category</p>		

Kaizen (Continual Improvements)		Date
Location	Press Shop	06/04/2015
<b>Before (Original)</b>		<b>After (improvement)</b>
Problem contents	Put / Removal of Material in dies with open hand	c/m contents
Photo / Sketch		Photo / Sketch
Bad effect	Chances of accident/ Injury to Hand	effectiveness
		Zero chance of accident/ Injury
<div style="display: flex; justify-content: space-between;"> <div> <b>5S</b> <span style="background-color: #cccccc; width: 10px; height: 10px; display: inline-block;"></span> <b>Safety</b> <span style="background-color: #008000; width: 10px; height: 10px; display: inline-block;"></span> <b>Quality</b> <span style="background-color: #cccccc; width: 10px; height: 10px; display: inline-block;"></span> <b>Cost</b> <span style="background-color: #cccccc; width: 10px; height: 10px; display: inline-block;"></span> </div> <div> <b>Mistake proof</b> <span style="background-color: #cccccc; width: 10px; height: 10px; display: inline-block;"></span> <b>3R</b> <span style="background-color: #cccccc; width: 10px; height: 10px; display: inline-block;"></span> <b>Productivity</b> <span style="background-color: #cccccc; width: 10px; height: 10px; display: inline-block;"></span> </div> </div> <p>-- Implementation category</p>		

Location		Kaizen (Continual Improvements)		Date	
Mold Shop				30.7.2015	

Before (Original)		After (improvement)	
Problem contents	Tools Not Kept Properly	c/m contents	Shadow Board Created for Tools
Photo / Sketch		Photo / Sketch	
Bad effect	Not Easily approachable & Can not track the tool	effectiveness	Easily approachable & Can track the tool easily.

5S	<input checked="" type="checkbox"/> Safety	<input type="checkbox"/> Quality	<input type="checkbox"/> Cost	<input type="checkbox"/> Mistake proof	<input type="checkbox"/> 3R	<input type="checkbox"/> Productivity
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-- Implementation category



## SAFETY POINTS- NEAR MISS IDENTIFICATION





<b>Kaizen (Continual Improvements)</b>		Date <b>23.7.2015</b>
Location	RM STORE	

Before (Original)		After (improvement)	
Problem contents	Unwanted , disarranged & without identification material	c/m contents	Unwanted material removed, Arranged properly & identification of material done
Photo / Sketch		Photo / Sketch	
Bad effect	Improper utilization of space & Not as per 5S norms	effectiveness	Proper utilization of space & as per 5S norms

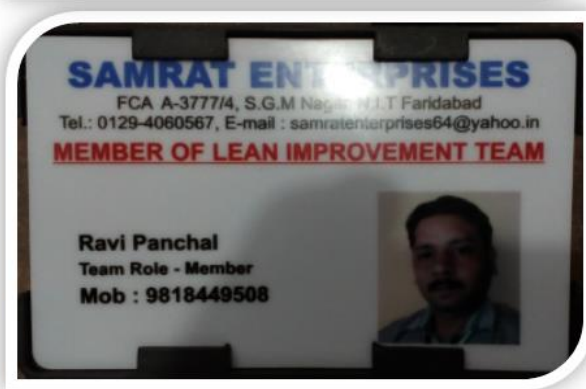
5S		Safety		Quality		Cost		Mistake proof		3R		Productivity	
<div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: green; margin-right: 5px;"></div>             -- Implementation category           </div>													

## SUGGESTION SCHEME

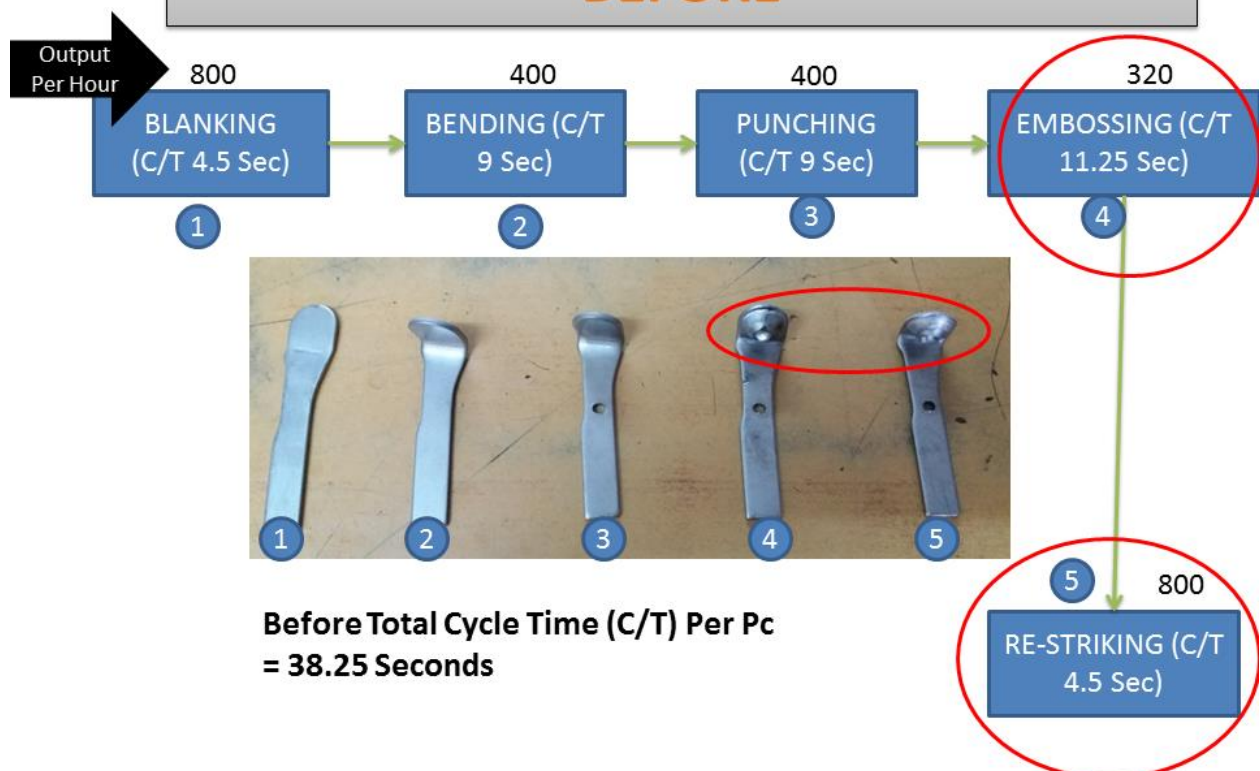


ADROID Plastic At It's Best Rewards Scheme (पुरस्कार योजना)								
POINTS	ITEM NAME	ITEM PHOTO	POINTS	ITEMS	ITEM PHOTO	POINTS	ITEM NAME	ITEM PHOTO
250 (Points)	AASHIRWAD ATTA (10 KGS)		800 (Points)	SINGLE BED BLANKET (Branded)		1500 (Points)	EMERGENCY LIGHT (Branded)	
300 (Points)	10 KG RICE (India Gate Mini Mogra)		800 (Points)	10 KG ATTA + 10 KG SUGAR + 1 LTR REFINED		1800 (Points)	10 KG ATTA + 10 KG SUGAR + 1 LTR REFINED + 1 MOBILE	
450 (Points)	3 CFL Lights (15Watt)		1000 (Points)	MOBILE PHONE		2500 (Points)	MIXY (Branded)	
600 (Points)	5 LITRE FORTUNE REFINED		1200 (Points)	CEILING FAN (Branded)		3000 (Points)	CYCLE (Branded)	
700 (Points)	LADIES WATCH (Branded)		1300 (Points)	24 PIECES DINNER SET (Branded)		3000 (Points)	INDUCTION COOK TOP (Branded)	

## 5S POCKET CARDS, LEAN DIARY & IDENTITY CARD



## PFD – BRACKET YL7 BEFORE





## ACTION TAKEN

### BEFORE

There are two separate tools for:

1. Embossing &
2. Re-Striking (For Degree Maintaining)



### AFTER

Tools for the two operations has been combined, now there is only a single tool for:

1. Embossing & Re-Striking (For Degree Maintaining)



## BENEFITS

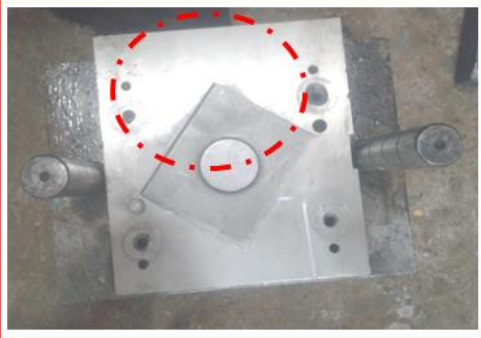
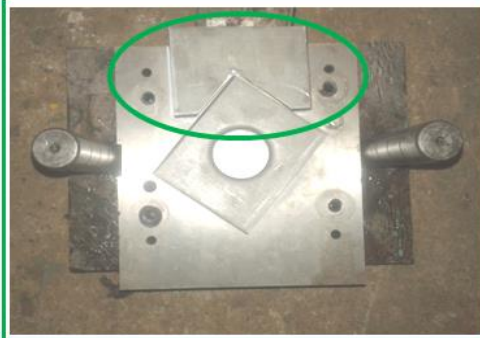
These are the following benefits:

1. Eliminated 1 Process
2. Saved 1 Manpower & 1 Machine for some other work

3. Before Total Cycle Time (C/T) Per Pc  
= 38.25 Seconds      After C/T=33.75  
Seconds **Improvement %= 11.76**  
**%**



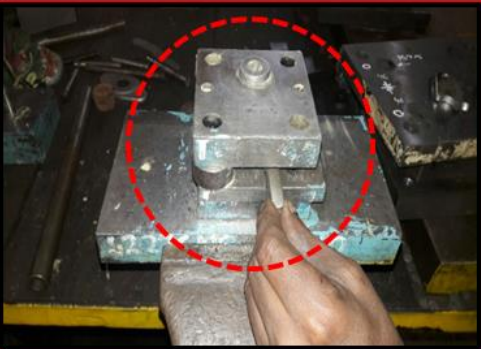
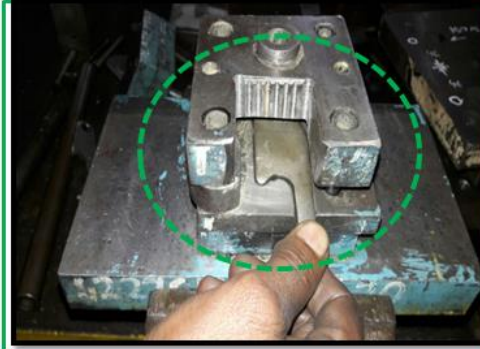
Location		PRESS SHOP		Kaizen (Continual Improvements)		Date	
						15/11/2015	

Before (Original)		After (improvement)	
Problem contents	In trimming operation part location was not fixed	c/m contents	Now in trimming tool part location is fixed by providing locating gauge plate
Photo / Sketch		Photo / Sketch	
Bad effect	Short blank part produced due to out positioning of part	effectiveness	No Blank out produced due to out Positioning of part

5S	Safety	Quality	Cost	Mistake proof	3R	Productivity

-- Implementation category

Location		Press Shop		Kaizen (Continual Improvements)		Date	
						13/12/15	

Before (Original)		After (improvement)	
Problem contents	Part is under cover , the part positioning is un visible so chances of mistake in part out part positioning is much more	c/m contents	Un needed material removed from tool part positioning is visible and no chances of mistake in part positioning
Photo / Sketch		Photo / Sketch	
Bad effect	Punch out produced due to out Positioning of part	effectiveness	No Punch out produced due to out Positioning of part

5S	Safety	Quality	Cost	Mistake proof	3R	Productivity

-- Implementation category

## MY HOME MY MACHINE CONCEPT

**Responsibilities of the machine operators**

मैं अपनी मशीन की प्रतिदिन सफाई व जाँच करूँगा।

मशीन के आस पास गन्दगी नहीं फैलने देंगा।

मशीन में कोई भी खराबी आने पर तुरंत सुपरवाइजर को सूचित करूँगा।

**Machine Owner & Operators Name**

M/C OWNER  
BALRAM

M/C OPERATORS

OM KAR

NITIN

GULAM NABI

AMIT

DEV RAJ

**Machine general information**

MACHINE NAME/ NO. INJECTION MOULDING- 01

MAKE & YEAR TOSHIBA, 2014

YEAR OF INSTALLATION 2015

MACHINE CAPACITY 80 TON

CLAMP, STUDD & BOLTS SPECIFICATION 16 MM SET

HEATER SIZE & CAPACITY HEATER BAND 220V COIL MODIFIED-1 NOS. HEATER BAND TP35-2700W-2 NOS. HEATER BAND TP35-2700W-1 NOS. HEATER BAND TP35-3650W-1 NOS

NOZZLE SIZE EXT NOZZLE BODY M30X1.5-55MM NOZZLE TIP-3/10-M30X15 HEATER EXT45MM-330V

HYDRAULIC TANK CAPACITY & OIL GRADE 180 LTR, GRADE 46

MTC OIL TANK CAPACITY & OIL GRADE 5 LTR, GRADE 46

**PREVENTIVE MAINTENANCE PLAN (YEAR:2016)**

MONTHS	JAN	FEB	MAR	APR	MAY	JUNE
PLANNED						
ACTUAL						
MONTHS	JUL	AUG	SEP	OCT	NOV	DEC
PLANNED						
ACTUAL						

PLANNED ☐ ACTUAL ☒ RE-PLANNED ☐

My Home My Machine format contains all the data related to machines which is required at the time of the maintenance



## VISUAL CLITO SHEET

We have converted our daily preventive check-sheet into the Visual CLITO Check-Sheet for CNC Machines as shown

ACME AUTO PVT. LTD., FARIDABAD

MACHINE CLITO DAILY CHECK SHEET

मशीन पर कार्य शुरू करने से पहले इनहे चेक करें। ठीक मिलने पर ✓ करें और ठीक न मिलने पर ✗ करें।

LOCATIONS

LOCATIONS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1 C CLEAN (सफाई)																														
2 L LUBRICATE/ LEAKAGE (तेल/रिसाव)																														
3 I INSPECT (जाँच)																														
4 T TIGHTEN (कसना)																														

सुरक्षात्मक कार्य निर्देश

1) ढील कपड़े पहन कर मशीन ना चलाए।  
2) बिना सुरक्षा उपकरणों के मशीन ना चलाये।

ACME AUTO PVT. LTD., FARIDABAD

MACHINE CLITO DAILY CHECK SHEET

मशीन पर कार्य शुरू करने से पहले इनहे चेक करें। ठीक मिलने पर ✓ करें और ठीक न मिलने पर ✗ करें।

LOCATIONS & CHECKPOINTS

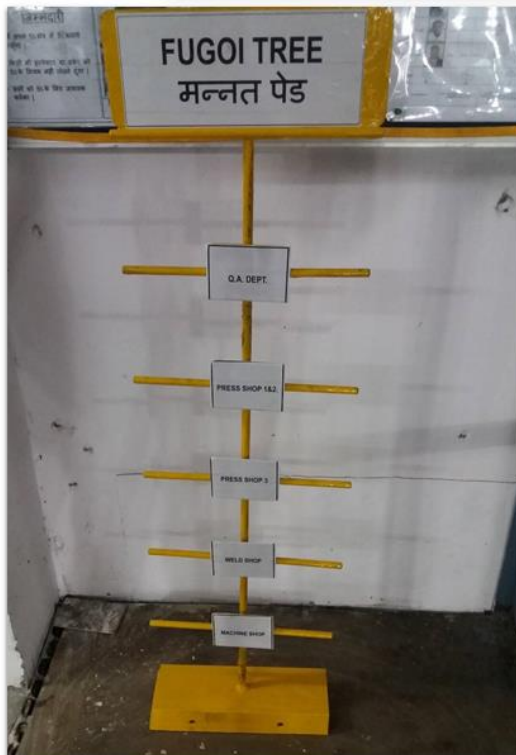
LOCATIONS & CHECKPOINTS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1 C CLEAN (सफाई)																														
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सुरक्षात्मक कार्य निर्देश

1) ढील कपड़े पहन कर मशीन ना चलाए।  
2) बिना सुरक्षा उपकरणों के मशीन ना चलाये।



# FUGOI TREE & TAGS



We have made a FUGOI tree , department wise and displayed it near the reception area, all the problems related to the maintenance displayed on the FUGOI Tree in the form of the Red & White Tags.

White tags for operators

<p><b>Equipment Name</b> .....</p> <p><b>Control No.</b>.....</p> <p><b>Date of detection</b>.....</p> <p><b>Detected by</b>.....</p> <p><b>Description of Minor defects</b> ..... ..... .....</p>
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Red Tags to be attended by Maint.

<p><b>Equipment Name</b> .....</p> <p><b>Control No.</b>.....</p> <p><b>Date of detection</b>.....</p> <p><b>Detected by</b>.....</p> <p><b>Description of Minor defects</b> ..... ..... .....</p>
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## Way Forward

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The MBR-4 Report has been submitted to the NPC & the activities related to the Phase-5 has been started in the cluster units. Although the Phase-5 topics has been chosen by the cluster units but the project topics for the phase-5 in most of the units are PPC, Stores management and Advanced SOP as these things are required for all companies for the sustenance.

Final Phase will be the very beneficiary for all the cluster units as it will give the sustenance to all activities of the Lean Manufacturing & it will be challenging to implement the PPC & Stores management in SMEs units.

## Problems if any

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No