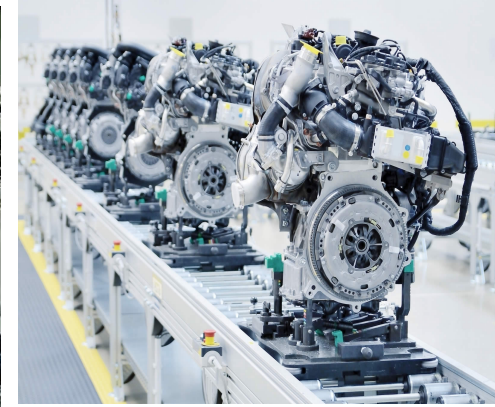




# Industrial Network Systems

RECENT APPLICATION  
EXAMPLES





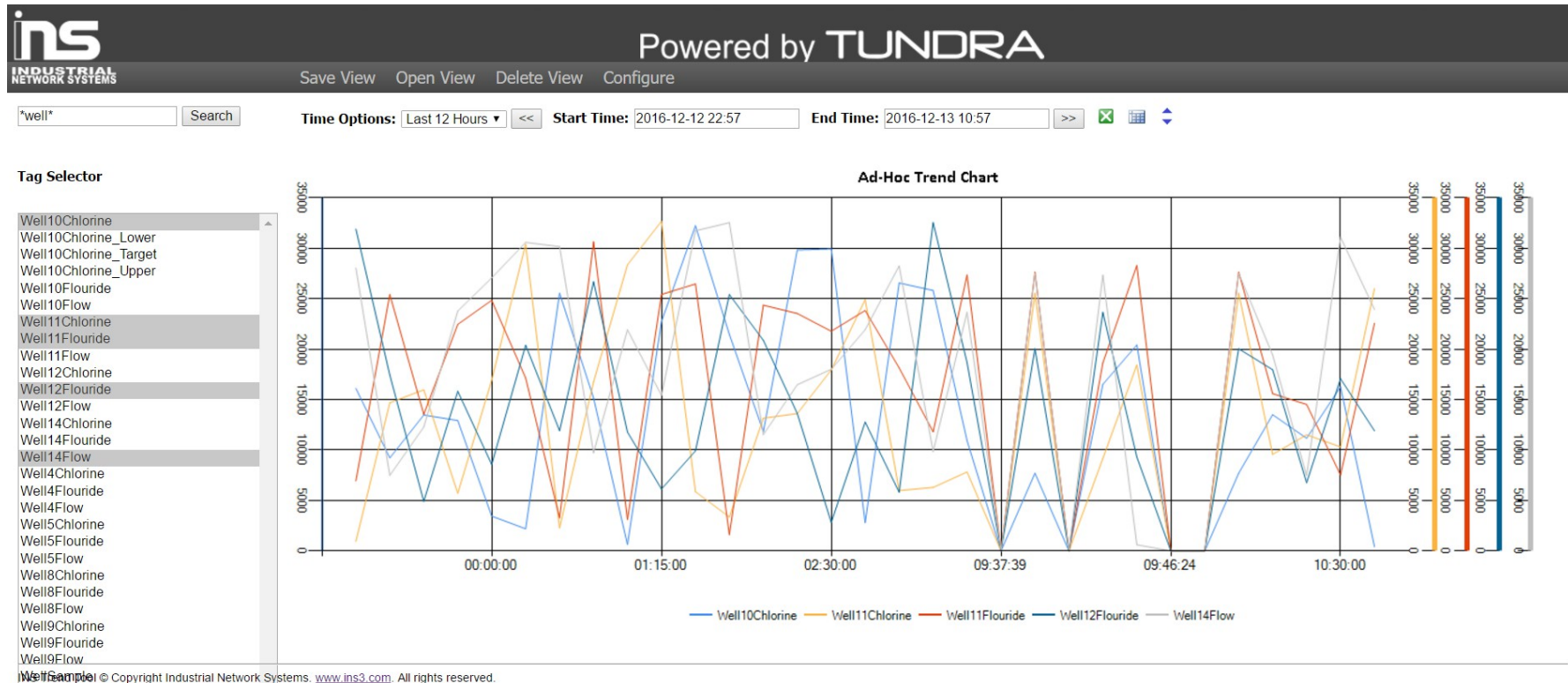
# THE DIFFERENCE

- **Engineering & Manufacturing IT Consulting Group:** Experience in industry and manufacturing – Industrial software and technology experts
- **Industrial Software Technology Specialists:** Partner with leading technology companies
- **Rapid Deployment Packaged Solutions:** Our own IP, Reducing project duration and delivering quicker time-to-value (Plant Information Portal, RPM/ICE)
- **Change Management and Training Team:** Assure user acceptance to achieve ROI
- **Proven Processes:** With more than 25 years experience, our proven processes, like Pathfinder save companies money.

# INS<sub>3</sub> RAPID DEVELOPMENT SOFTWARE

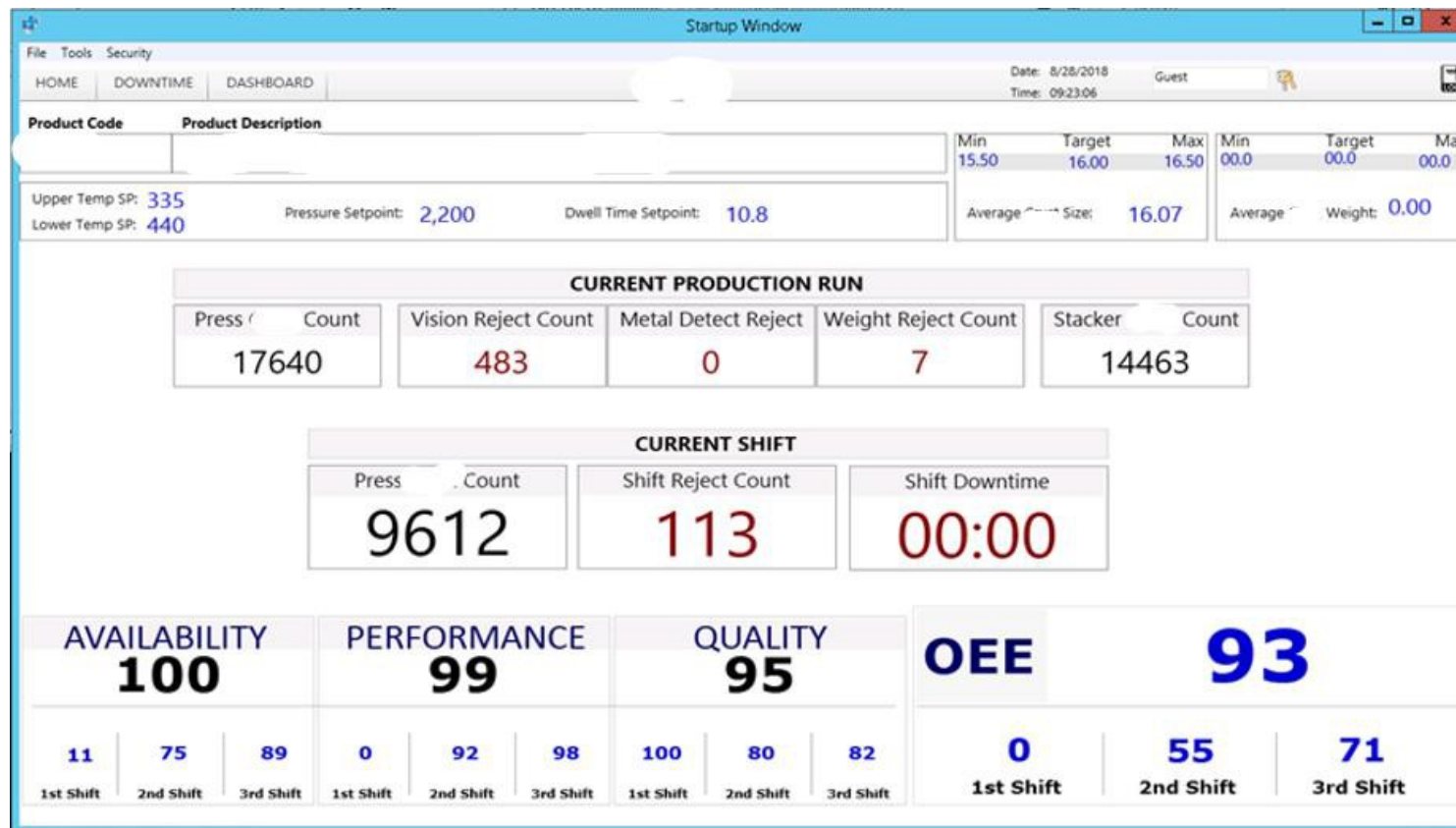
## PLANT IOT TREND

**Light weight web based:** providing analytics and a means to access historical data, plant-wide unlimited licensing



# SMARTCLIENT - MAIN OVERVIEW / OEE – DOWNTIME AND OTHER KPIS

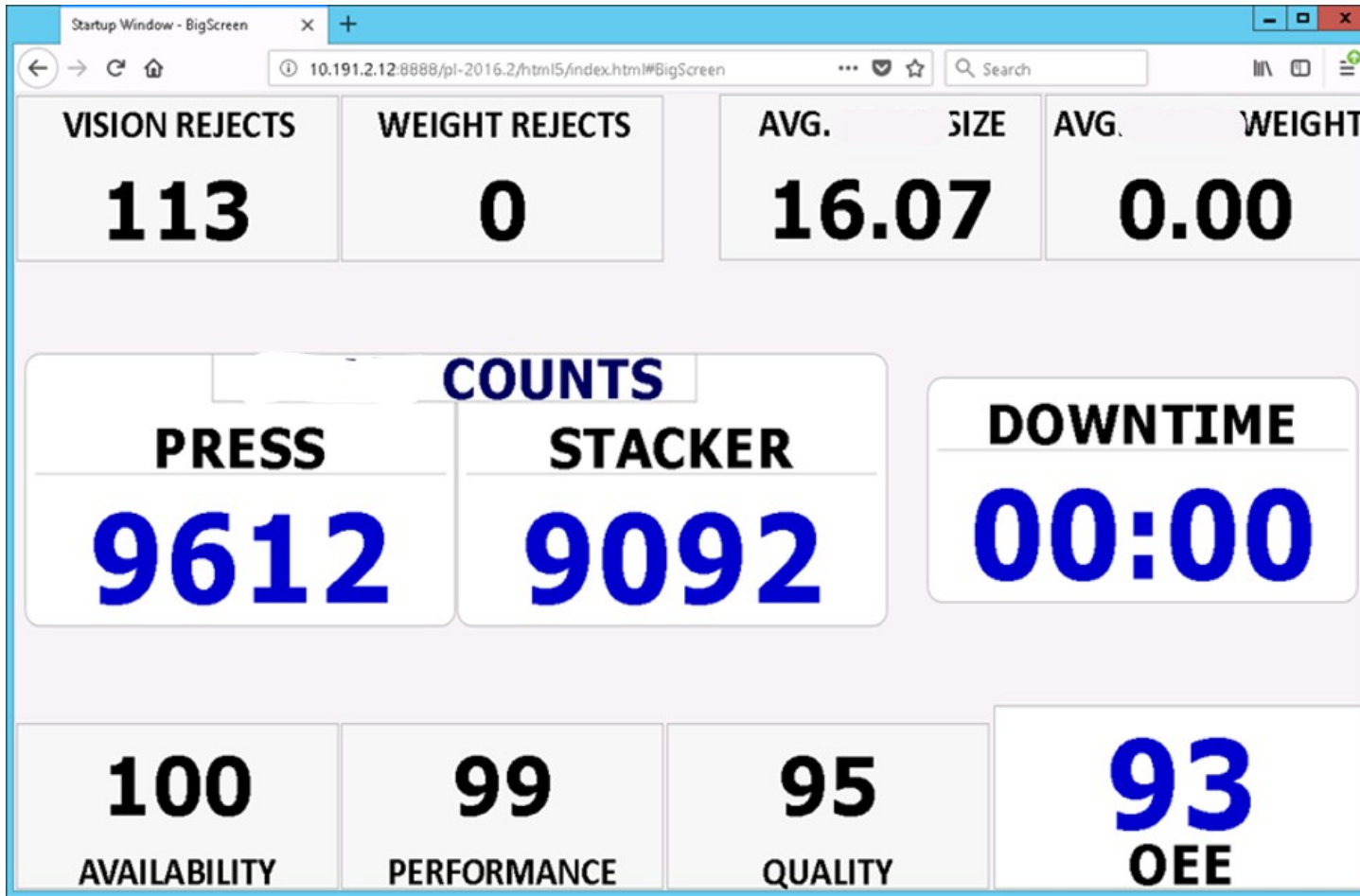
The main overview display is what the operators look at the majority of the time. This allows them to view current information on product (top section), current production run (middle-top), Current Shift (middle-bottom), and Last 3 Shift OEE Metrics (bottom)





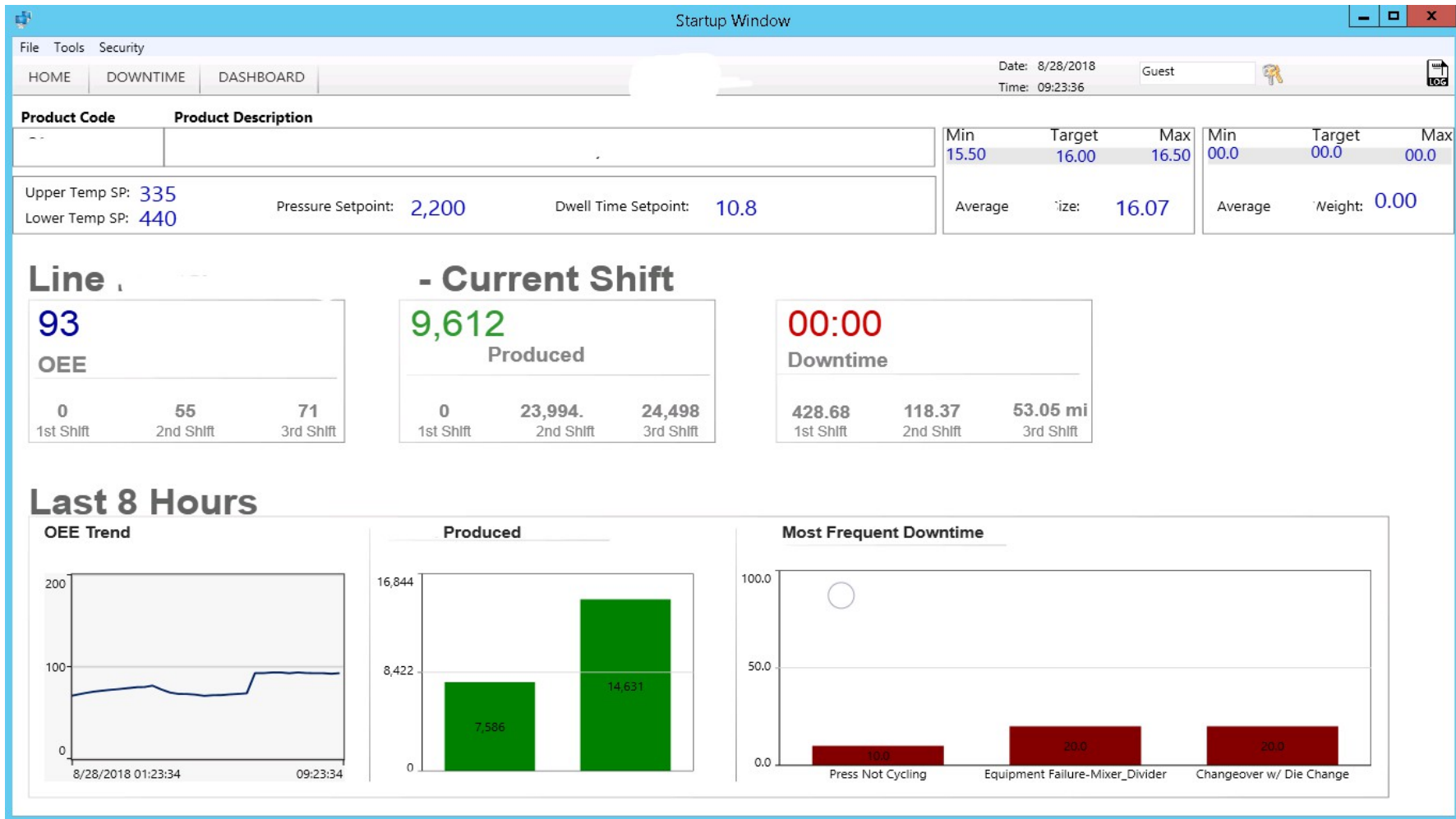
# HTML5 – BIG SCREEN

This is a dashboard on a big screen on each line – fully configurable by the user



# SMARTCLIENT - DASHBOARD

The dashboard gives some information on the current shift and last 8 hours. It allows the operator to see what has happened recently and correct issues.



# SMARTCLIENT - DOWNTIME

The downtime display allows the operator to view recent downtime, query downtime, and edit downtime reasons.

The screenshot displays the 'Startup Window' of the SMARTCLIENT software. The interface includes a menu bar (File, Tools, Security) and a navigation bar with 'HOME', 'DOWNTIME', and 'DASHBOARD' tabs. The 'DOWNTIME' tab is active. The top right shows the date '8/28/2018', time '09:24:07', and user 'Guest'. Below this, there are sections for 'Product Code' (836T) and 'Product Description'. A central area displays various setpoints: 'Upper Temp SP: 335', 'Lower Temp SP: 440', 'Pressure Setpoint: 2,200', and 'Dwell Time Setpoint: 10.8'. To the right, there are summary statistics for 'Min', 'Target', 'Max', 'Average', and 'Size'. A 'Search Downtime' section includes a 'Custom Filter' (SQL) and a 'Clear' button. Below this is a 'Time Selection' dropdown set to 'Last 12 Hours' and a date range from '8/27/2018 9:24:05.000 PM' to '8/28/2018 9:24:05.000 AM'. The main data area is a table with columns for 'StartTime', 'EndTime', 'Category', 'Reason1\_Desc', 'Reason2\_Desc', 'Reason3\_Desc', 'Reason4\_Desc', and 'Comment'. The table contains several rows of downtime events, including 'Unplanned' and 'Planned' categories with reasons like 'Press Not Cycling', 'Equipment Failure', and 'Divider Clean'.

StartTime	EndTime	Category	Reason1_Desc	Reason2_Desc	Reason3_Desc	Reason4_Desc	Comment
8/28/2018 4:31:39 AM	8/28/2018 4:39:55 AM	Unplanned	Press Not Cycling				
8/28/2018 4:19:40 AM	8/28/2018 4:21:28 AM	Unplanned	Press Not Cycling				
8/28/2018 3:39:02 AM	8/28/2018 3:59:15 AM	Unplanned	Equipment Failure	Mixer_Divider			
8/28/2018 3:18:14 AM	8/28/2018 3:38:18 AM	Unplanned	Changeover w/ Die Change				
8/27/2018 11:14:43 PM	8/27/2018 11:17:25 PM	Unplanned	Equipment Failure	Mixer_Divider			
8/27/2018 10:02:01 PM	8/27/2018 10:25:35 PM	Planned	Divider Clean				
8/27/2018 9:49:49 PM	8/27/2018 10:01:12 PM	Planned	Divider Clean				

# SPECIALTY PLASTICS

Main page after login. Shows plant production performance by last three shifts and last 7 days. Site navigation on the left.

The screenshot displays the CoreM web application interface. On the left is a dark blue sidebar with the 'CoreM' logo and a 'Welcome, INS' message. Below this is a 'HOME' section with a list of navigation items: Administration, Issue Log, Reporting, SQM Production Targets, Extrusion, Extraction, Finishing, and System, each with a dropdown arrow. The main content area has a header with a hamburger menu icon and the date range 'Aug 27, 2018 00:00 - Aug 28, 2018 00:00'. Below the header is a 'Performance Summary' section containing a table with 7 columns: PeriodName, SQM Goal, SQL Actual, SQM %, Yield %, Down, and OEE%. The table lists data for Shift 2, Shift 1, and Shift 3. Below this is an 'Owensboro Last 7 Days Summary' section, also with a table having the same 7 columns, listing data for each day of the week from Sunday to Monday.

PeriodName	SQM Goal	SQL Actual	SQM %	Yield %	Down	OEE%
Shift 2	183,114	0	0	0	0	0
Shift 1	183,114	127,780	72	70	3	50
Shift 3	183,114	84,299	52	46	17	23

PeriodName	SQM Goal	SQL Actual	SQM %	Yield %	Down	OEE%
Sunday	549,352	287,388	55	52	56	27
Saturday	549,352	326,593	63	59	46	36
Friday	549,352	451,966	84	82	4	69
Thursday	549,352	402,255	78	73	20	56
Wednesday	549,352	378,730	73	69	16	50
Tuesday	549,352	344,841	68	63	18	42
Monday	566,519	410,994	79	73	5	58



# ERROR LOG

System Issue Log with issue comments below. Issue editing available in far right column.

CoreM

Welcome, INS

HOME

Administration

Issue Log

View Issue Log

Reporting

SQM Production Targets

Extrusion

Extraction

Finishing

System

Issue Log

Trend User Guide FOS User Guide Welcome INS! [ Log Out ]

Plant Area Line Equipment Issue Type Priority Status

Select All Open New

Issue	Description	Location	Assigned To	Type	Status	Priority	
1003704	Alert: Upper Calendar Roll Temp 1m Max 685 > 55	WP3	INS	Alert	Open	High	
1003705	Alert: Upper Calendar Roll Temp 1m Min 112.800003051758 < 145	WP5	INS	Alert	Open	High	
1003706	Alert: Lower Calendar Roll Temp 1m Min 141 < 145	WP5	INS	Alert	Open	High	
1003707	Alert: Winder Tension 1m Min 37 < 48	WP5	INS	Alert	Open	High	
1003708	Alert: Line Speed 1m Min 0.00 < 365.00	WP6	INS	Alert	Open	High	
1003709	Alert: Hexane Feed Rate Comp #4 1m Max 154.074074058341 > 31	E4	INS	Alert	Open	High	
1003710	Alert: Hexane Feed Rate Comp #2 1m Max 20.2999992370005 > 11	E3	INS	Alert	Open	High	
1003711	Alert: Hexane Feed Rate Comp #5 1m Max 778 > 52	E2	INS	Alert	Open	High	
1003712	Alert: Oil Feed Rate Comp #5 1m Max 247.902500000000 > 25	E2	INS	Alert	Open	High	
1003713	Alert: Tension Taper 1m Max 101.5 > 47	E2	INS	Alert	Open	High	

Page Size 10 << Page 1 >> Page 1 of 121

Issue Comments

Comment 170 posted by System on 2018-05-01 11:12 Editing not allowed  
This issue was automatically generated from AlertId = 9209 which began at 2018-05-10 17:54:00

# DATA ENTRY

Manual Data entry for Issues, Downtime Reasons, Quality Issues, etc

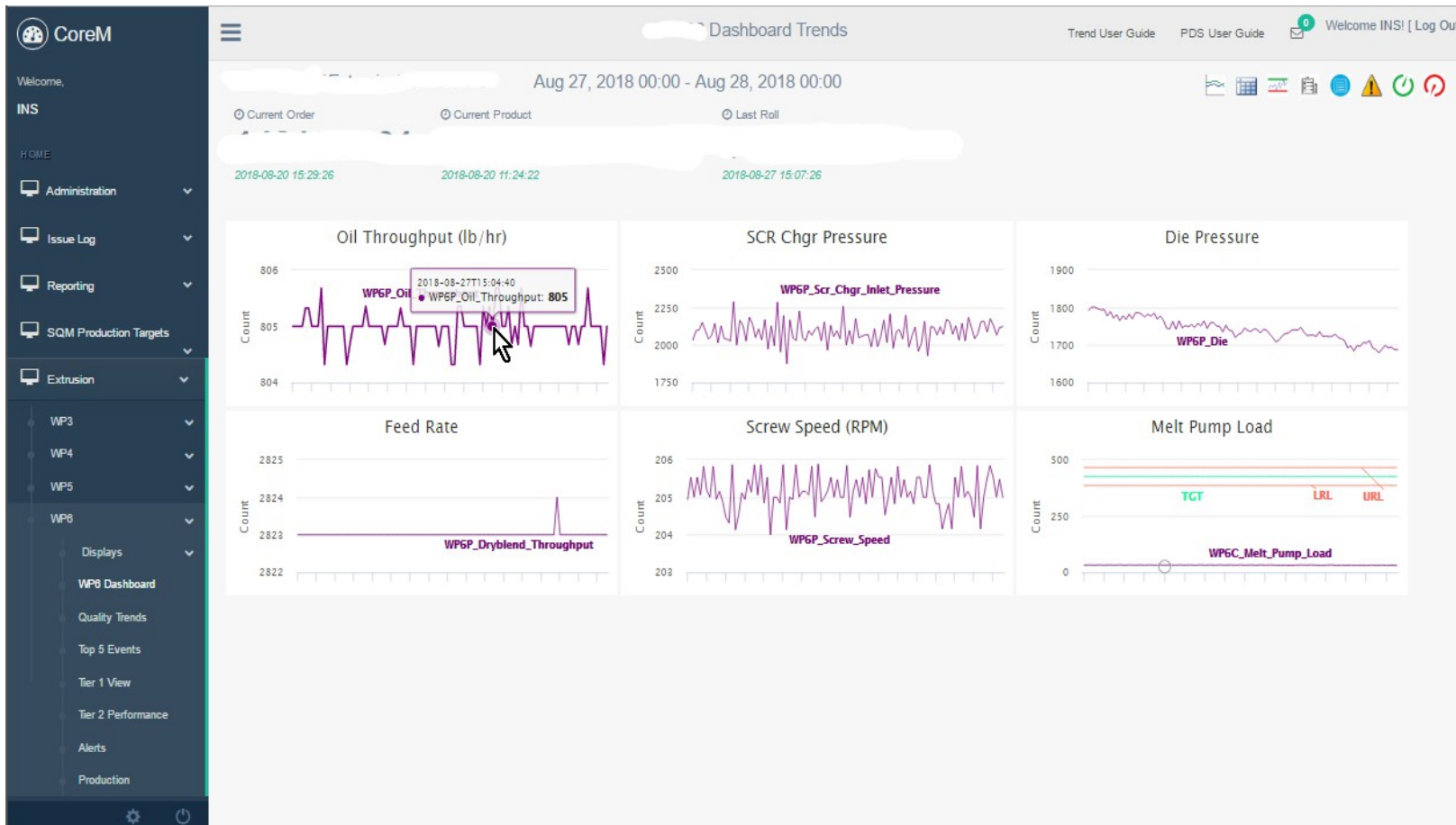
The screenshot displays the CoreM web client interface. On the left is a dark sidebar with navigation links: Administration, Issue Log (selected), Reporting, SQM Production Targets, Extrusion, Extraction, Finishing, and System. The main content area is titled 'Issue Log' and features a table of issues. A modal window titled 'Edit Issue' is open in the center, allowing for manual data entry. The modal includes fields for Description, Status, Priority, Type, Assigned To, Location, Area, Line, Equipment, and a Comment box. The background table lists various issues with columns for Location, Assigned To, Type, Status, and Priority.

Issue	Description
1003704	Alert: Upper Calendar Roll Temp
1003705	Alert: Upper Calendar Roll Temp
1003706	Alert: Lower Calendar Roll Temp
1003707	Alert: Winder Tension 1m Min 30
1003708	Alert: Line Speed 1m Min 0.00
1003709	Alert: Hexane Feed Rate Comp
1003710	Alert: Hexane Feed Rate Comp
1003711	Alert: Hexane Feed Rate Comp
1003712	Alert: Oil Feed Rate Comp #5
1003713	Alert: Tension Taper 1m Max 10

Location	Assigned To	Type	Status	Priority
WP3	INS	Alert	Open	High
WP5	INS	Alert	Open	High
WP5	INS	Alert	Open	High
WP6	INS	Alert	Open	High
E4	INS	Alert	Open	High
E3	INS	Alert	Open	High
E2	INS	Alert	Open	High
E2	INS	Alert	Open	High
E2	INS	Alert	Open	High

# MACHINE MAIN DASHBOARD

This page shows the current running order, product, and the identity of the last production event. Also customer KPI's are displayed as trends with upper and lower targets. Quick dashboard navigation in the upper right corner along with links to the system documentation and messages.



# DRILL INTO THUMBNAIL TRENDS



# DASHBOARD "TOP 5" PAGE

Last 5 Production Events, Last 5 Downtime Events, Last 5 Alert out of Tolerance events.

Welcome,

INS

HOME

Administration

Issue Log

Reporting

SQM Production Targets

Extrusion

WP3

WP4

WP5

WP6

Displays

WP6 Dashboard

Quality Trends

Top 5 Events

Tier 1 View

Tier 2 Performance

Alerts

Production

Dashboard Events

Trend User GuidePDS User GuideWelcome INS! [ Log Out ]

Aug 27, 2018 00:00 - Aug 28, 2018 00:00

Current Order

148

2018-08-20 15:29:26

Current Product

2018-08-20 11:24:22

Last Roll

2018-08-27 15:07:26

Last 5 Rolls

Event Name	Status Name	Equipment Desc	StartTime	EndTime	Duration	Comments
?OL-88-0940	Complete	WP6	8/27/2018 3:07:28 PM	8/27/2018 3:37:50 PM	00:30	
?OL-88-0939	Complete	WP6	8/27/2018 2:37:09 PM	8/27/2018 3:07:28 PM	00:30	
?OL-88-0938	Complete	WP6	8/27/2018 2:06:54 PM	8/27/2018 2:37:09 PM	00:30	
?OL-88-0937	Complete	WP6	8/27/2018 1:36:43 PM	8/27/2018 2:06:54 PM	00:30	
?OL-88-0936	Complete	WP6	8/27/2018 1:06:32 PM	8/27/2018 1:36:43 PM	00:30	

Last 5 Downtime Events

Equipment Desc	StartTime	EndTime	Duration	Reason1	Reason2	Reason3	Reason4	Comments
WP6	8/27/2018 2:08:48 AM	8/27/2018 3:07:42 AM	00:58	Machine Not Running				
WP6	8/27/2018 2:08:28 AM	8/27/2018 2:08:45 AM	00:00	Machine Not Running				
WP6	8/26/2018 9:22:24 PM	8/27/2018 2:08:25 AM	04:46	Machine Not Running				
WP6	8/26/2018 2:59:49 AM	8/26/2018 9:22:23 PM	18:22	Machine Not Running				
WP6	8/26/2018 2:40:49 AM	8/26/2018 2:59:48 AM	00:18	Machine Not Running				

Last 5 Out of Tolerance Events

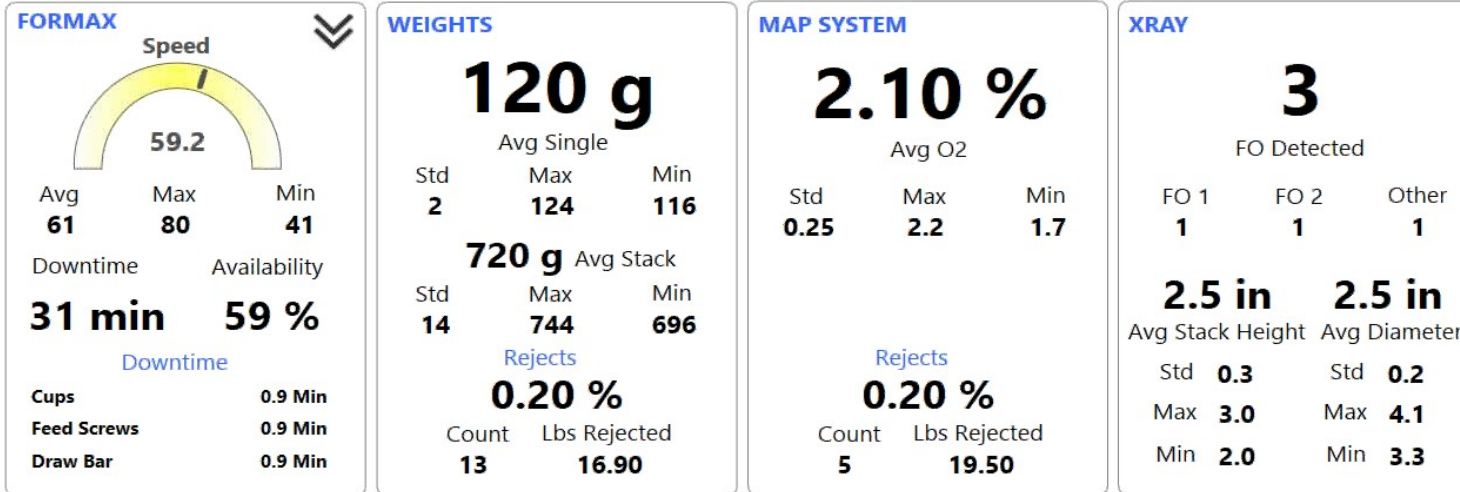
Equipment Desc	Variable Desc	Alert Desc	Trigger Value	Trigger Limit	AlertRule Name	StartTime	EndTime	Duration	Reason1	Reason2	Reason3	Reason4	Comments
WP6	Upper Calendar Roll Temp Inlet 1m Max	58.00 > 55	58.00	55	Upper Reject	8/27/2018 2:11:53 PM	8/27/2018 2:23:37 PM	00:11					
WP6	Upper Calendar Roll Temp Inlet 1m Max	58.00 > 55	58.00	55	Upper Reject	8/27/2018 1:48:39 PM	8/27/2018 1:48:46 PM	00:00					
WP6	Upper Calendar Roll Temp Inlet 1m Max	58.00 > 55	58.00	55	Upper Reject	8/27/2018 1:31:37 PM	8/27/2018 1:44:12 PM	00:12					
WP6	Upper Calendar Roll Temp Inlet 1m Max	58.00 > 55	58.00	55	Upper Reject	8/27/2018 1:18:08 PM	8/27/2018 1:30:39 PM	00:12					
WP6	Lower Calendar Roll Temp 1m Max	58.00 > 55	58.00	55	Upper Reject	8/27/2018 1:15:54 PM	8/27/2018 3:19:42 PM	02:03					



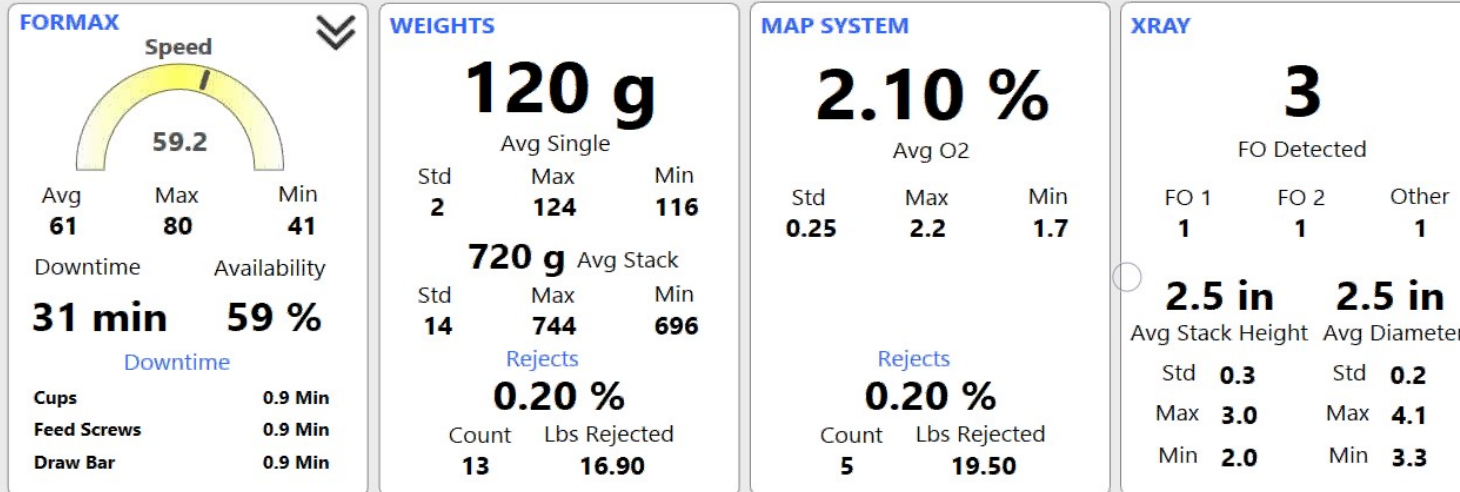
# FOOD PROCESSING – KPI DASHBOARD

◀ ▶ FORMAX PICK & PLACE DASHBOARD TRENDING 12/8/2017 16:45:44

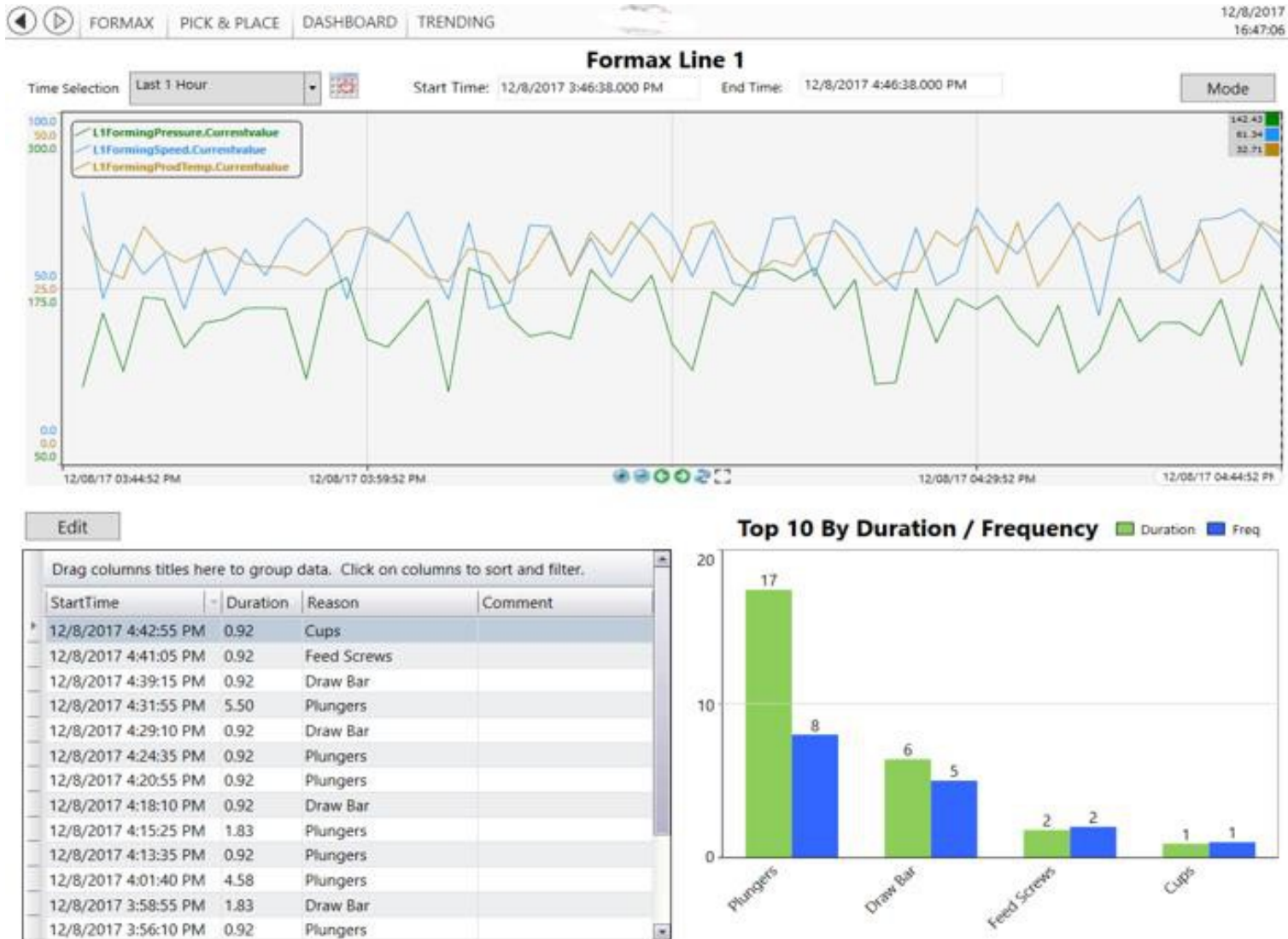
## Line 1



## Line 2



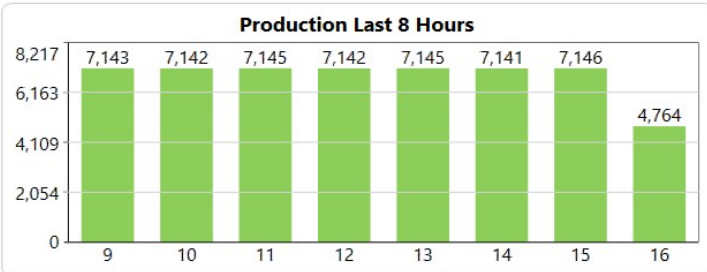
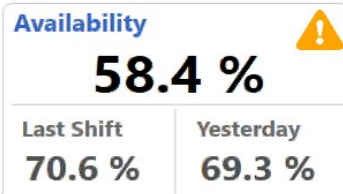
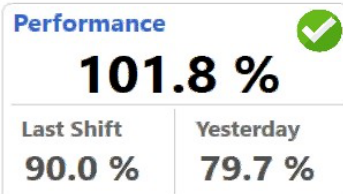
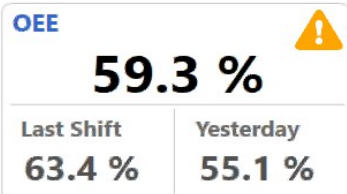
# KPI DASHBOARDS – FULLY CONFIGURABLE



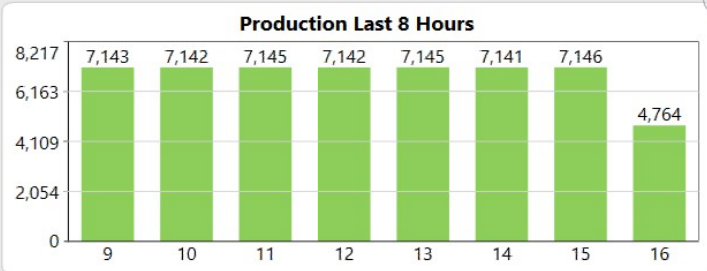
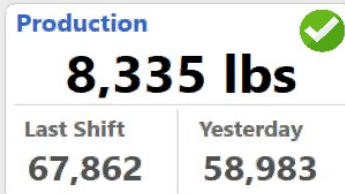
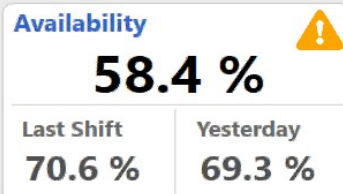
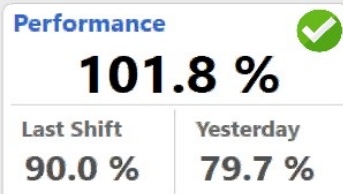
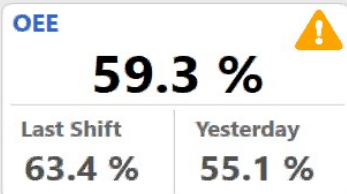
# KPI DASHBOARDS – FULLY CONFIGURABLE

◀ ▶ PICK & PLACE DASHBOARD TRENDING 12/8/2017 16:45:14

## Line 1



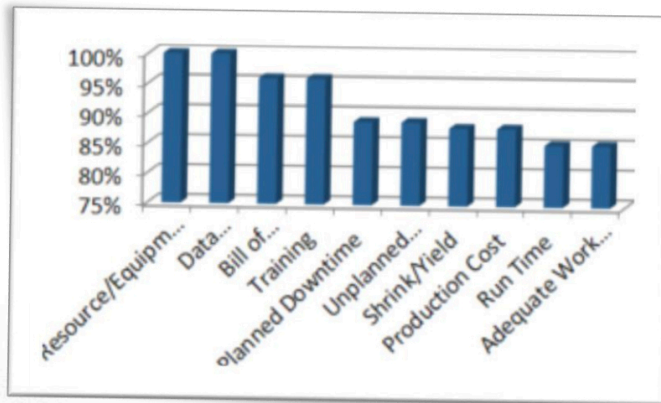
## Line 2



# DIFFERENCE

## PROVEN SUCCESSES LIKE PATHFINDER

### Makes recommendations

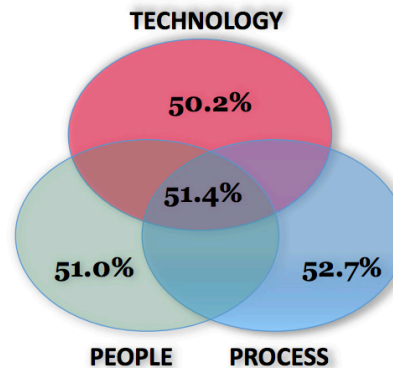


### Provides cost estimates and projected ROI

	Software	Labor	Hardware*		+/-
Phase 1 – Plant 1 first line	43,180	142,600	10,000	195,780	15%
Phase 2 – Plant 1 Remainder	69,410	171,810	15,000	256,220	35%
Phase 3 – Plant 2 All Lines	102,410	195,960	25,000	323,370	35%

### Addresses all affected areas

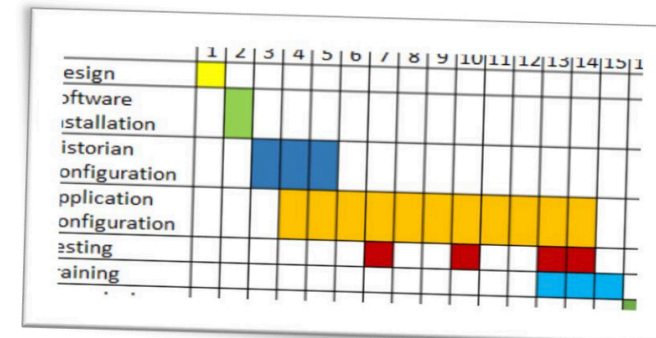
Soft Benefits	
@85%	98,823,530
@90%	93,333,333
Less processing	5,490,197
Avoided Costs	\$5,490,197



### Hard benefits from pilot

Overtime	\$78,000
Downtime	\$90,000
Scrap	\$1,155,385
Total	\$1,323,385

### Outlines project scheduling





# NEXT STEPS

## Mutual Discovery Meeting with Key Stakeholders

Plant Walk Through

Working Session

*Project has possible  
people and process  
challenges?*

**PATHFINDER  
PROCESS**

*Well defined project  
goals, scope and  
requirements?*

**ROM QUOTE**

*Need a quick win to  
show value or prove  
out a concept?*

**RAPID DEPLOYMENT  
PACKAGED  
SOLUTIONS**





# Industrial Network Systems

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