VT 3000 SYSTEM

VERSACALL

Wireless Innovations Improving Productivity

CORRECT ISSUES
Immediate Communications

DISPLAY ISSUES
Visual Display Software

VT3000
Innovative Wireless System For the Production Floor

ANALYZE ISSUES
Graphs and Reports

PREVENT ISSUES
Corrective Action

Improved Productivity
Additional Production Output

VT 3000 SYSTEM

VERSACALL
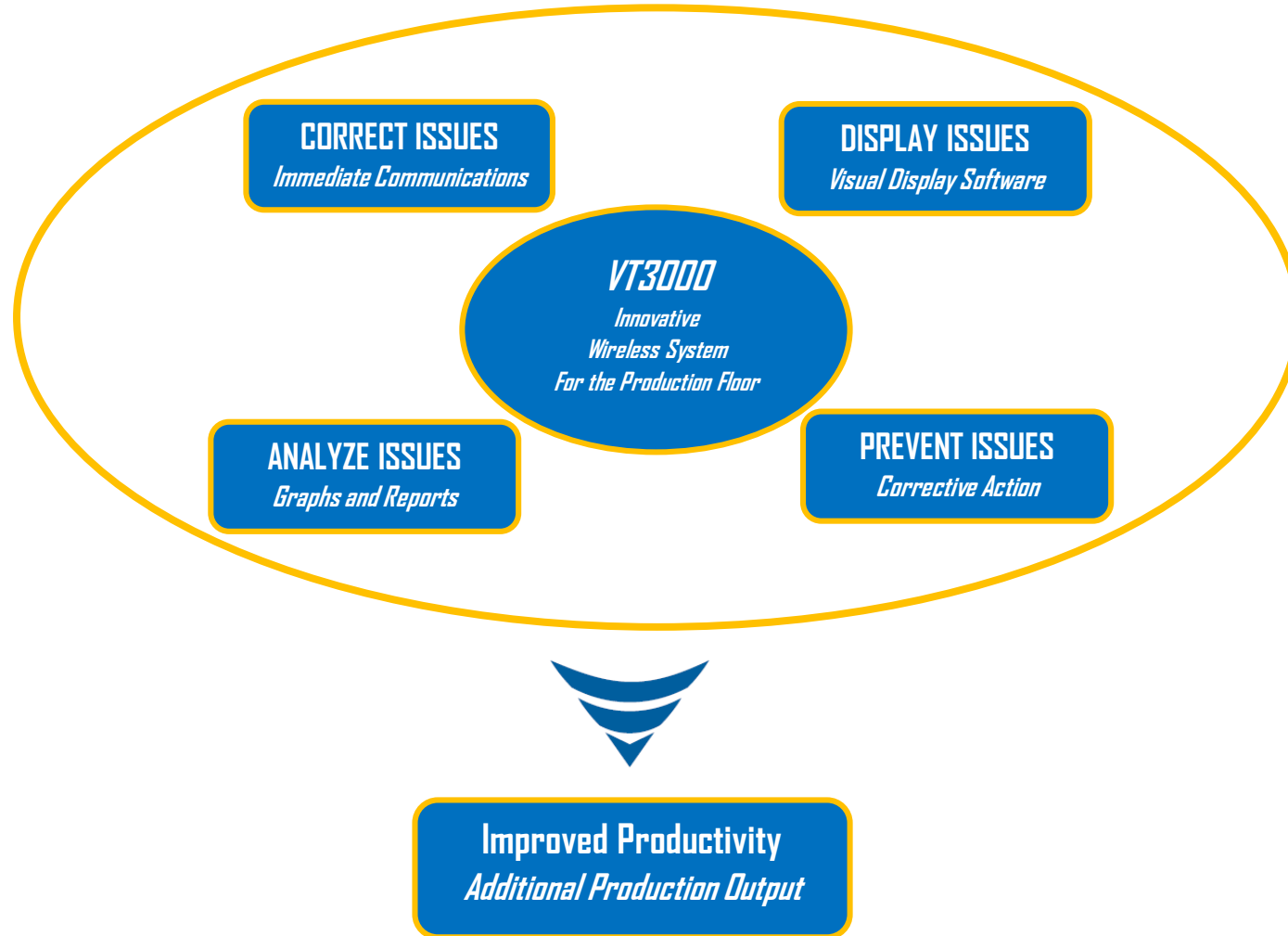
Immediate Communications

Visual Management

Automatic Data Collection

Visual & Audio Andons

Real Time Performance Visibility

Factory Floor Communication • Andons • Real Time Performance Screens • Visual Factory • Automated Data Capture • OEE

Recover Lost Production Time

- Minimizing Production Disruptions – Reduce Downtime
- Identifying & Immediately Correcting Production Abnormalities
- Immediate Communications of Production Issues
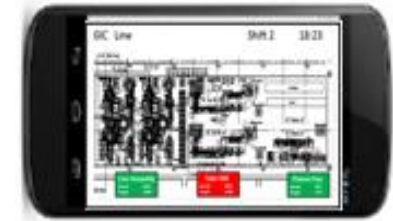
Visual Management

- Performance Feedback to Line Operators
- View Equipment or Production Station Status
- View Line Status & Plant Status
- Enterprise Status

Station	Actual	Target	%	Comments
Cell 1	32	55	58.2	LINE DOWN FOR MAINTENANCE
Cell 2	45	51	88.2	ON GOAL FOR THE DAY
Cell 3	22	30	73.3	MORNING INSPECTION COMPLETED
Cell 4	21	30	70.0	ASSEMBLY STATION 1 IS DOWN
Cell 5	39	20	195.0	ABOVE GOAL GREAT WORK

Easily Identify Process Bottlenecks/ Areas for Improvement / Track Week to Week Improvements

Automatically Capture Performance Data

Significantly Improving the Accuracy /Timeliness/Consistency/Completeness of the Data

Machine Centers

Moving Assembly Lines & Stationary Assembly Operations

Packaging Line

Cell Manufacturing

Process Flow Lines

Production Lines

VT 3000 SYSTEM

VersaCall Success Stories

Honeywell

Turning Lost Downtime Into Productive Time

8 Hours of Downtime Turned Into Productive Time – 1st Month

Hamilton Sundstrand
A United Technologies Company

Qualifying Root Cause of Issues for Process Improvement

250 Calls 1st Week - 70% Related to Material Issues

CATERPILLAR®

Visual Management - One Screen Complete Line Visibility

Individual Assembly Line Status
- **Line Output**
- **Takt Time Performance Actual vs. Target**
- **Lost Production Time**
- **Individual Work Zone Status**

SECO

Efficient and Timely OEE Reports Improves Output

Eliminated All Manual Data Collection – Immediate OEE Reports

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VT 3000 SYSTEM

Financial Return – Payback 2 to 6 Months

VERSACALL

Financial Paybacks Are Realized From:

Reducing Downtime – Immediate Communications of Issues

Reducing Set-Up Time

Automated Data Collection

Real Time Monitoring of Production Status – Identifying Abnormalities

Complete System Start at $7,500

Customer Example – System & Payback

VT3000 System - $10,100

- Control Unit [Server] with Receiver
- 10 Input Modules – Call Stations
- 1 Repeater
- Large Screen Display Software
- 2 Way Radio Transceiver

Financial Payback – 3.2 Months (Annual Return $37,500)

- 30 Incidents [10 Per Shift] – Total Plant – All Shifts - 4 Minute Savings Per Incident
- 3 Employees Affected Per Incident

Templates at Available For Calculating ROI

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VT 3000 SYSTEM

Innovations in Visual Management

New Andon Technology

LED Light is completely Programmable

Un- Paraleled Performance Visibility

Maintenance Needed at Tank Level 3
Material Needed at Line 4
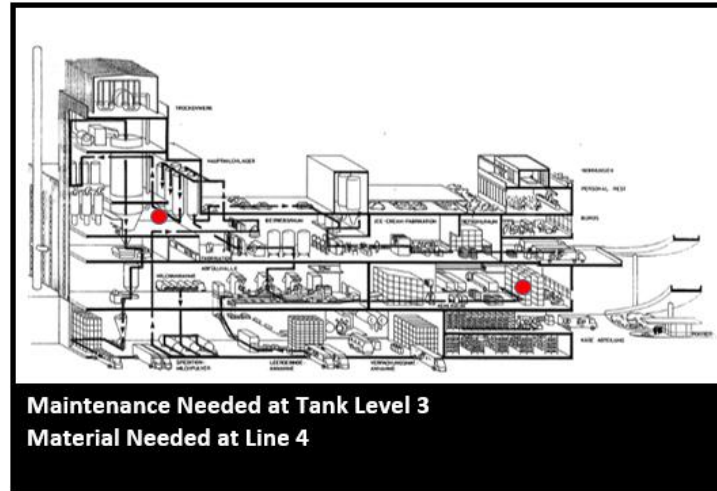
Performance		Productivity		Line Utilization	
Target Cycle Time	20.2	Target	1000	Target	90%
Average Cycle Time	0.0	Expected	929	Actual	100%
Variance	20.2	Actual	0	Variance	10%
Last Week		Variance	-929	Downtime	
1st	0	Time		Equipment	0:00:00
2nd	1	3:26 PM		Quality	0:00:00
3rd	0	13M Accord		Materials	0:00:00

	TP-3	TP-4	TP-5
Work Order	2701319	2691128	2701619
Part Number	981157	967120	978757-1
Status	0:59:17	0:55:20	0:00:09
Parts/Hour	96.0	0.0	36.0
Target	110.00	50.00	0.00
Productivity % 5 min	87.3	0.0	0.0
Support - Org			

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VT 3000 SYSTEM

System Overview

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Input Modules

System Repeater
Wireless Powered

System Receive

VT 3000 Std Control Unit / Server

SYSTEM INPUTS

OPERATOR INITIATED
- WIRELESS CALL STATION
- BSC MODULE
- TOUCH INPUT MODULE
- PRODUCTION STATUS MODULE

MACHINE INITIATED
- SOFTWARE SWITCHES
- PLC'S
- SWITCH CONTACTS

Downtime Detail Report

REAL-TIME SCREENS
SMART PHONES, TABLETS
& REPORTS

SYSTEM OUTPUTS
- EMAIL
- PAGERS
- 2 WAY RADIOS
- OVERHEAD PA
- PHONES
- LIGHTS & HORNS

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Call Station - Battery or Powered

Captures Response Time to Issues

❖ ***Introduces a Whole New Concept of Support Accountability***

  Also Escalates and Routes Messages Until Acknowledgement

❖ ***Every Request for Support is Logged in Database [Time and Date Stamped]***

❖ ***Provides Visibility of Support Personnel Response Performance to the Production Floor***

❖ ***Innovative Zigbee Wireless "Mesh" Technology***

❖ ***NEMA 4-sealed housing / Membrane Switch Buttons***

❖ ***Contains 4 Switch Contacts***

❖ ***Up to 1,500 Units per System – 6000 Monitoring Points in Control Unit [Server]***

❖ ***Communication Path for Each Individual Button is Programmable***
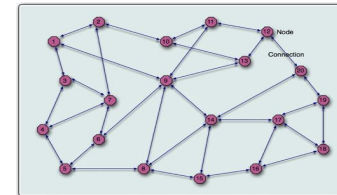
*DigiMesh Technology Forms
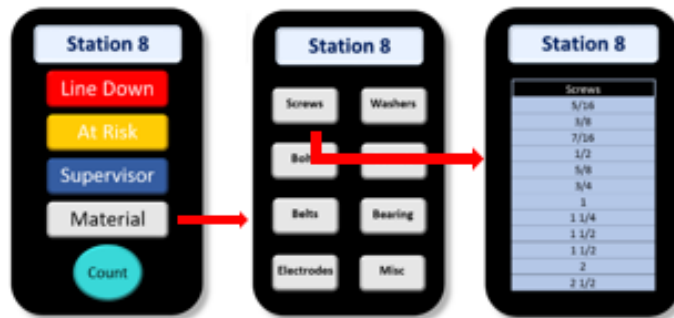It's Own Network*

BSC Module – Programmable Buttons

Touch Screen

I/O Module

- **Choose Button Type, Color, Size & Quantity**
- **Flexible Layouts**
- **Programmable**
- **Link Multiple Screens**
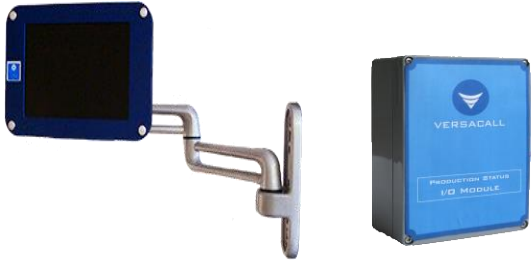- **Immediate Communications**
- **Simple & Flexible**

Flexible and Completely Programmable by Button and Level

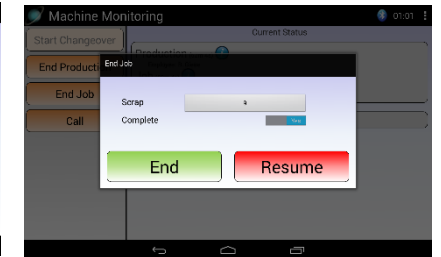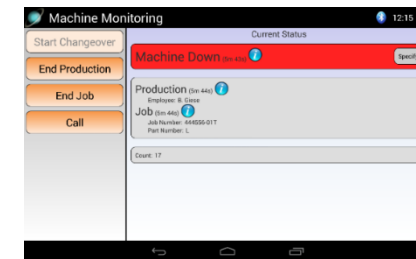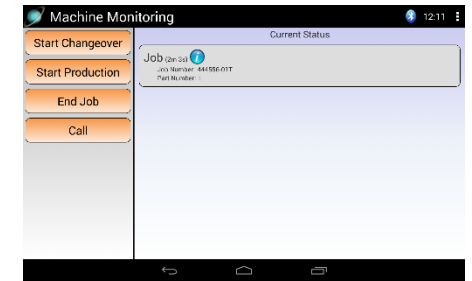**Multiple Layout Options**

Touch Input Module – 7" Screens

❖ *Programmable & Configurable Touch Screen Displays*

❖ *Number of Individuals to Call – Programmable 20+*

❖ *Immediate Communications -Response Time & Escalations*

❖ *Captures Counts & Downtime With Reasons*

❖ *Full Touch Screen Keyboard & Key Pad*

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Completely Configurable Screens

Module Features

- *Configurable Touch Screen Display*

- *Captures the Responding Individual w/ NFC Technology*

- *Module Retrieves Data for Look Up List*

- *Wireless Configuration Set-Up & Changes*

- *Supports Wireless Bar Code Scanners*

- *Clear Alarms/Actions from Different Modules*

- *Full Communication Capabilities*

- *Full Touch Screen Keyboard & Key Pad*

VESA Mounting Patterns Supports
Multiple Stand Options

Equipment Mounts

Articulating Arms

Bench Stands

Floor Stands

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# Touch Screen Applications

Verification of Certified Operator or Trained Operator

Verifies that the operator has been trained on the equipment . Can Set-Up so Operator Must Perform Function Before Starting Equipment. Can have immediate communications to floor supervisor when there is an issue.

Check List

Can Set-Up so Operator Must Perform Function Before Starting Equipment.

Can be a Dynamic List –Change by Location or Station or Part Number
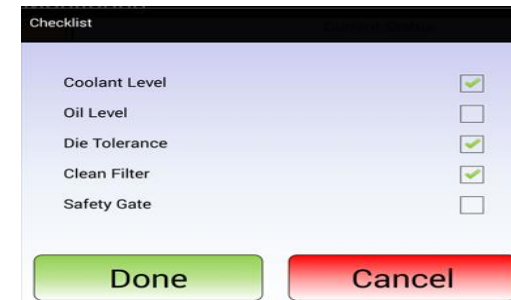
Request Material Including Quantities

Operator Pushes "Material Button" – List appears & operator select the material required. Material List is can be a

"Dynamic List" - it can be different by locations or Part Number being produced.   Options to request the quantities required.

Run Jobs or Production Runs In Sequence

Production runs or job numbers that are to be run are loaded into the system by line management. Job sequence is shown on the touch screen.

Touch Screen Programmable Indicator Status

8 Programmable Indicator Status On the Screen - Each Screen Can Have It's Own Indicators – Colors Change to Reflect Status

Wireless Switch Contact Module – Input Module

Wireless
- Simple Inputs
- Normally Open/Closed
- Fully Programmable

Wireless Controls Module

Wireless Activation
- Lights
- Horns
- Speakers

Inputs Can Control Outputs

Program remotely

Computer Screen Modules
PC Modules
For LAN Connected PC's
Touch Screen or Mouse

PC Call Station
Add'l Buttons Can Be Added

PC Input Module
Flexible –Layout Completely Configurable

Moving Assembly Module

Wireless
- Full Communications
- Simple to Use – One Button to Signify Work Complete
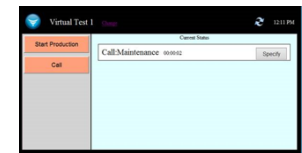- Captures Assembly Performance within Assembly Line
- Automatically Resets

Repeater

I / O Module

Wireless
- Machine Interface
- 4 Inputs
- 7 Outputs
- Inputs Can Control Outputs

VT 3000 SYSTEM
Primary Applications

Andons & Communications

- *Audio & Visual Andons*
- *Immediate Communications of Issues*
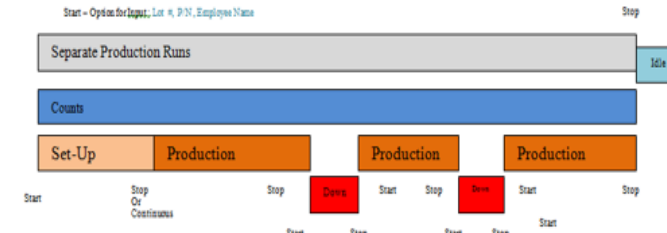- *Wired & Wirelessly Activated Modules*

Machine Monitoring Applications

- *Captures Lot Number or Production Run Performance Information*
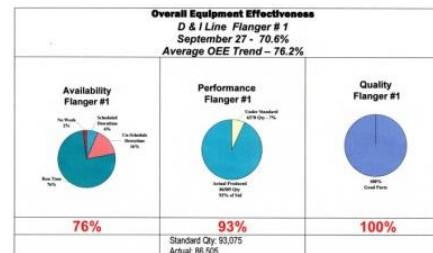- *Captures Scrap by Reason Code / Downtime by Reason Code*

Moving Assembly Line

- *Simple – Operator Input*
- *Measures Each Segments Performance*
- *Identifies Pacing Segment*

Stationary Assembly Operations

- *Measures Assembly Activity Against Standards*
- *Visibility Status of Assembly Activity*
- *Immediate Communications of Issues*

OEE

- *Complete System – Data Capture to Reporting*
- *Eliminates Manual Data Collection*
- *Critical Visibility for Addressing Issues*

Innovative Software that Expands The System Capabilities

Software Tools That Allows Customers to Easily Modify & Reconfigure Their System's Operation

VT3000 Advanced Monitoring Software – AMS

What It Provides

The AM Software provides the capability to monitor for a status or a condition. When this status or condition occurs specific pre-defined actions are initiated.

AMS - Powerful Tool for Easily Developing Custom System Solution

VT3000 Advanced Scheduling Software

What It Provides

The AS Software provide the capability to schedule predefined specific actions. These actions can be for set times or linked to shifts.

Measure Performance Status by Measuring Accomplishment

Applies to Manufacturing That Does Not Have Standard Performance Measurement

One of a Kind Production – Custom – Large Unit Assembly

Allows You to Measure What You Have Not Been Able to Measure in the Past

- *Immediate Visibility of Unit Completion Status*

- *Customizable & Adaptable to Any Type of Unit or Version of the Unit*

- *Simple – Measure Accomplishment or Task Completion*

- *Line Personnel Simply Checks a Box When Individual Task is Completed or Accomplished*

- *Flexible – Can Be Utilized for End Units or Sub-Assemblies Units*

- *Instant Communication of Issues*

Unit Module Fabrication				10:17	
Position	1	2	3	4	5
Part Type	A	C	C	D	D
Serial #					
Remaining Takt Hrs/Min	65:14	14:17	45:27	35:21	53:43
% Complete	35%	77%	55%	48%	35%
Status					

E-Mail

Audio Andons - Wireless Horns

MP3 Player - Up to 105 dB
Any Sound / Tune / Music

Andon Lights

Sizes Up to 100MM
Poles up to 10' +

2 Way Radios & Transceiver

Supports Up to 8 Channels

Vehicle Mounted Display
Forklifts, Tuggers, Lift Truck**s**
Wireless

Desktop & Cell Phones

On- Site Paging Transmitter
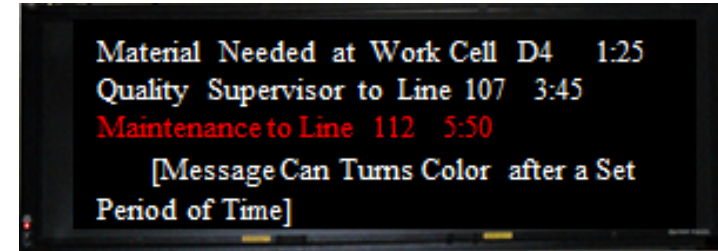**On-Site Pagers**

2 Lines - Easy to Read

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VT 3000 SYSTEM

Completely Integrated Visual Andon Systems

A New Dimension in Visual Communications for the Production Floor - **VP IV** *Virtual Panel IV Display Software*

VERSACALL

Fully Integrated Andon Systems

From Input Modules to Displays

Input Modules

Communications Support Request

Material Needed at Work Cell D4   1:25
Quality Supervisor to Line 107   3:45
Maintenance to Line 112   5:50
[Message Can Turns Color after a Set Period of Time]

Production Activity Status

TARGET	8	13:51:58	
PLAN	5	INDEX	36
ACTUAL	4	LOST	-23

C1 C2 C3 C4 C5 C6 C7 C8

VP IV

Virtual Panel IV Software
New Panel Software

- Systematic Panel Generation Process
- Wizard Guides Panel Development
- Significant Reduction in Panel Creation Time
- Improved Options in Panel Development Choices
- Easy Correction Feature

Production Schedule

CB 4000 Assembly Line				Monday 3-4	
	Serial Number	Part Number	Customer	Color	Controls
1	11676	45600	Dom	Green	Basic
2	25458	42600	EU	Green	Basic
3	11674	45600	Dom	Green	Basic
4	11702	45600	Dom	Green	Basic
5	11704	45700	Dom	Yellow	Basic
6	25769	42650	EU	Green	Adv
7	25762	42600	EU	Green	Basic
8	11708	45600	Dom	Green	Basic

VP IV Software Right Sizes to Device – Same Screen on a Smart Phone as Large Screen Display

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Linking Communications With Visual & Audio Andon Notification

Un-Paralleled Performance Visibility

Line Performance – Stack Lights
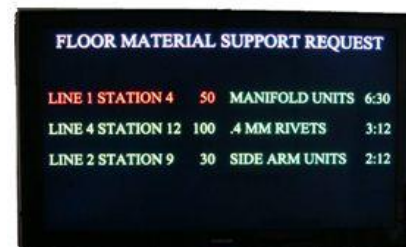

Operator / Cell / Equipment Performance

OUTPUT vs TARGET — 113%
SCRAP vs TARGET — 14%
SETUP TIME vs TARGET — 89%
RUN RATE vs TARGET — 104%
CYCLE TIME vs TARGET — 121%

Android & iPad Tablets

Production Floor - White Boards

Station	Actual	Target	%	Comments
Cell 1	32	55	58.2	Line down for maintenance
Cell 2	45	51	88.2	On goal for the day
Cell 3	22	30	73.3	Morning Inspection Completed
Cell 4	21	30	70.0	Assembly Station 1 is down
Cell 5	39	20	195.0	Above Goal Great Work

Material Support

FLOOR MATERIAL SUPPORT REQUEST

LINE 1 STATION 4 — 50 — MANIFOLD UNITS — 6:30
LINE 4 STATION 12 — 100 — .4 MM RIVETS — 3:12
LINE 2 STATION 9 — 30 — SIDE ARM UNITS — 2:12

Smart Phone KPI's

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VT 3000 SYSTEM
Visual Management

VERSACALL

Unique Visual Management Solutions

Updating Graphs & Real Time Performance Information

LT MACHINING

Line Efficiencies

Line	Efficiency
Line 1	87%
Line 2	78%
Line 3	92%
Line 4	83%

Line Output Trend

VTEC Production Company

Performance to Target

Unit	Performance
Unit 1	103%
Unit 2	72%
Unit 3	114%
Unit 4	83%

Hour by Hour Output Performance

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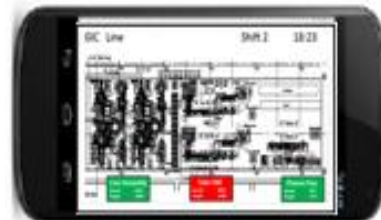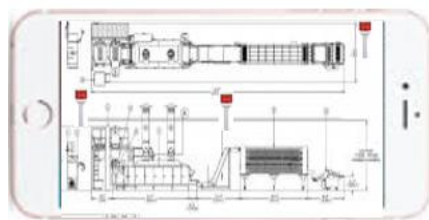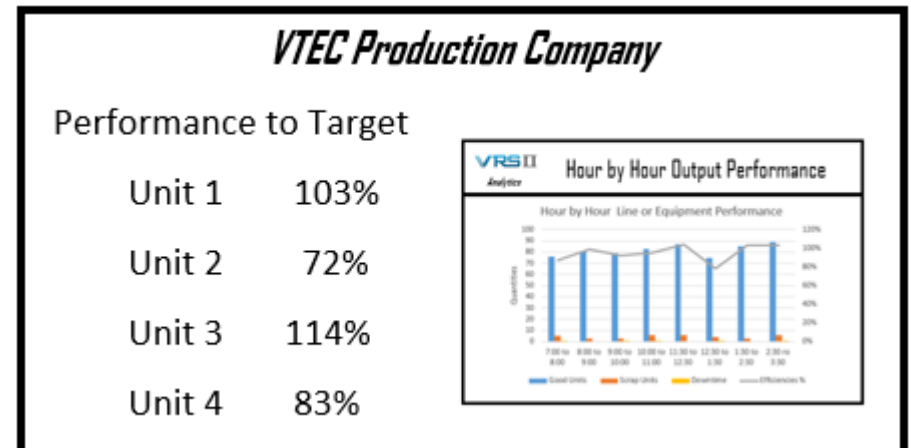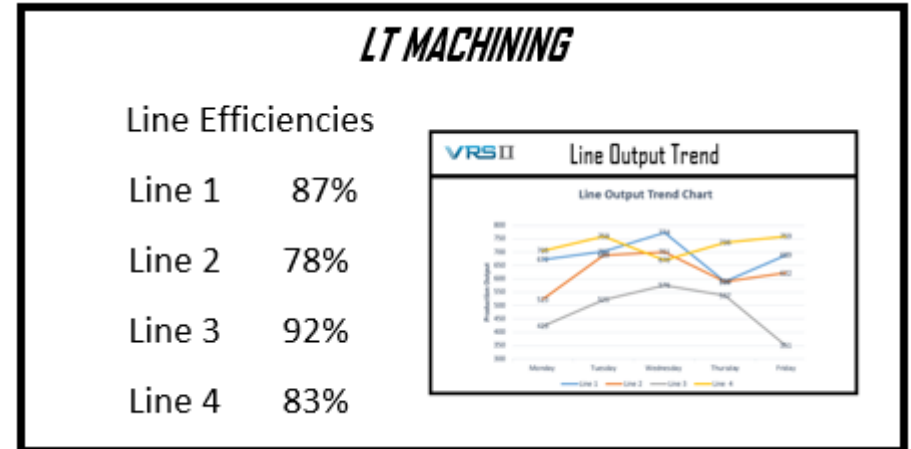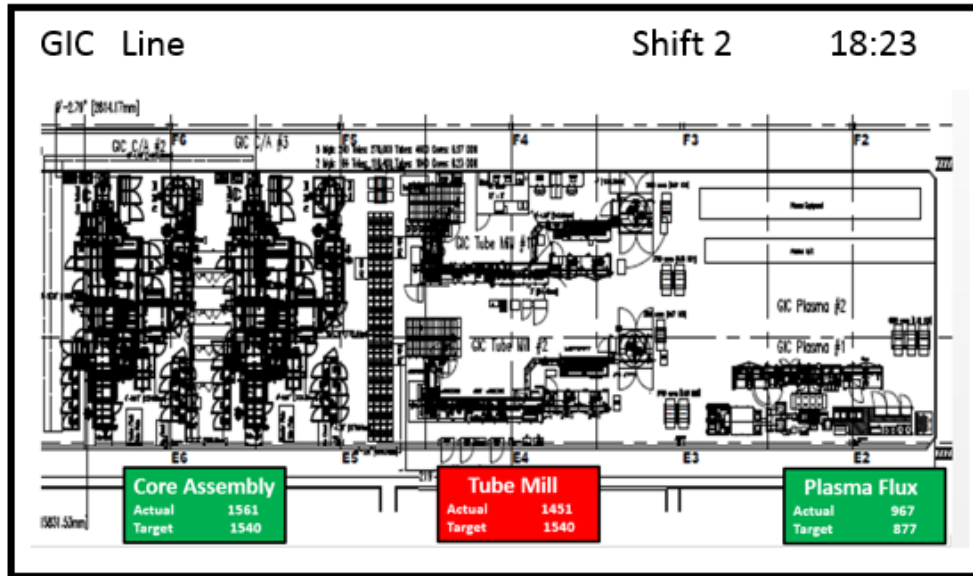
VP IV Software

Multiple Layout Options / Flexibility

- **Type of Information Displayed**
  - **Plant Wide Information Messages**
  - **Factory Floor/ Line Performance Status**
  - **Real Time Performance Status**

- **What is Displayed**
  - Text, Images, Scrolling Messages, Counts, Duration
  - Calculations, Conditional Messages, States, Formulas

- **How Information is Displayed**
  - Choose Font Size, Font Types, Font Color, Flashing
  - Panel or Flashing Letters, Real Time Update Rates

- **Where / Sequence of Information**
  - Target Specific Areas
  - Entire Plant

- **User Friendly Tools –On Line**

Andons

Messaging

Informational

Performance

Combo

Interactive On-Line Session

Design Your Own Screen Layouts

- **Start With Example Templates**

  Andons / Messaging / Informational / Performance **/ Combo**

- *Using Step by Step Wizards*

  Develop Screen Layouts

  Process Takes 20 Minutes

  Final Layout that Fits Your Needs

- *Alternative -* **Developing Custom Screens Layout Solutions**

Plant Layouts

VT 3000 SYSTEM

VersaCall Reporting Software II VRS II
Software That Produces Trend and Comparison Graphs & Reports That Are Easy to Create and Change
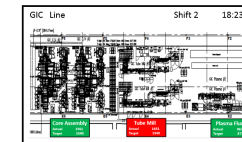
VRS II *Template Approach Provides Rapid Report Generation*

Other Features

- **Automatic Report Generation Feature**

  Reports Automatically Created for Shift , Day , Week - Sent Directly to Your E-mail

- **Clear /Concise Graphs & Report Formats**

  Immediately Spot Issues & Root Causes – Simple Red/ Yellow / Green Designations

- **Financial Performance Impacts Feature**

  Reports that Profile the Cost of Downtime & the Cost of Scrap

- **Configure Custom Reports & Graphs**

  Adding In Your Own Title & Logo

- **Apply Standards & Target References**

  Pull Reference Standards for Existing Databases or Look Up Tables Using Data Look Up Manager

- **Step by Report Generation Using Wizards & Choosing Templates**

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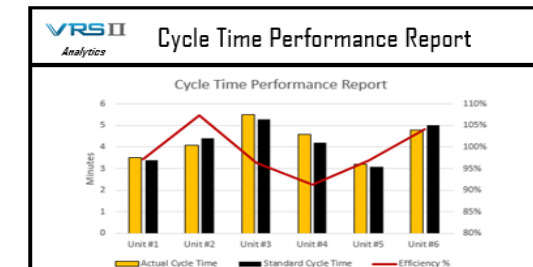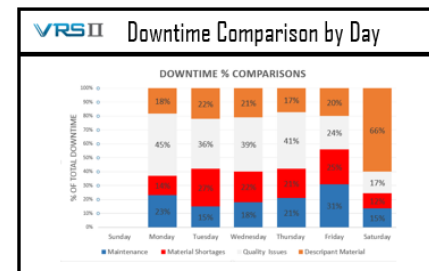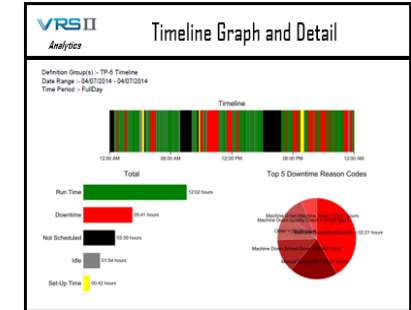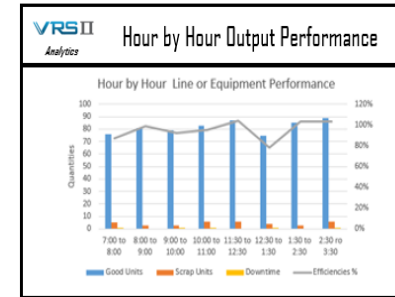
Verification of Certified or Trained Operators On Machines – *immediate communication to floor supervision when there is a issue.*

Lock Out – *Reason Code must be selected before the equipment can be re-started*

Secondary Communications – *After a defined period has lapsed, then a secondary communication path is initiated for an incident*

Integration with Existing Software System – *Non Invasive – Site is in complete control*

Look Up Tables – *Flexibility to set up varying shifts , Breaks , Lunch Period*

Advance Monitoring Software – *Predefine a set of parameter triggers & actions – system monitors for the parameters*

Advanced Scheduling Software – *Predefined trigger based upon a date, time or a count, System monitors for the date, time or count*

Preventative Maintenance Packaging is in Development

System Monitoring Software - *Software That Insures Your VT3000 System is Operational*

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Step 1 - Start Small - Identify One or Two Critical Problem Areas

Step 2 - Clearly Identify the Results You Want To Achieve - Define Your System Solution – Metric Visibility

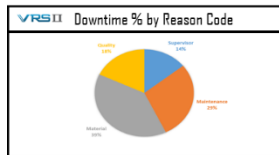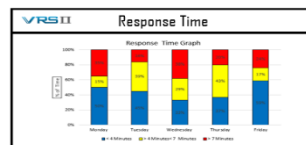*Visual Performance Visibility*
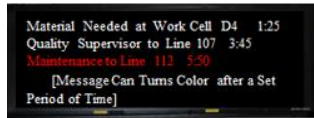
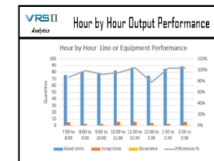| Messaging | Performance | Information | Andons | Design You Own Layout |

Trend & Analysis Reports and Graphs - Performance Information That Makes a Difference

| Downtime | Communications | Performance | Trends | Download to Excel |
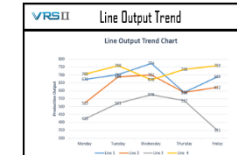
Step 3 - Work with VersaCall to Develop an Application Profile

Lay Out a Solution for Addressing the Problem Areas - Including the Modules & Financial Justification

Also Installation & Configuration Packages Available

For Developing a System Solution – *We want to start where you want to end.*

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