An Introduction to Wonderware IntelaTrac®

The industry's leading Mobile Workforce and Decision Support System.
Collaboration and Decision Support to Operations Management

The 1990’s

- Operator
- HMI Displays
- PLC’s
- Machines

The 2000’s

- Production Worker Roles
  - Operations
  - Engineering
  - Maintenance
  - Reliability & Safety
  - Plant Mgt & IT
- Information / Collaboration
  - HMI
  - Mobile Devices
- Data Sources
  - PLCs
  - Databases
  - Planning Systems
  - Lab Systems
- Production Assets
  - Rotating and Fixed Equipment
  - Lines
- Web Based Reports
- KPI Dashboards
- Maintenance Applications
IntelaTrac enables companies to manage their “stranded assets”…

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>People</td>
<td>Field Workers and Service Technicians</td>
</tr>
<tr>
<td>Plants</td>
<td>Equipment / Machinery</td>
</tr>
<tr>
<td>Processes</td>
<td>What they Make and Do</td>
</tr>
</tbody>
</table>
Typically 40-60% of assets in a plant are non-instrumented

IntelaTrac solution is a necessity even in newly built, fully instrumented manufacturing plants
Many plants struggle for lack of a clear operating priorities
- business management must define an operating plan
- share the vision
- hold employees accountable to execute the plan

Customers struggle with the human performance elements and cultural change issues
- new ways to work
- new technology deployment
- real-time enterprises
- aging workforces

Other management issues
- non-instrumented equipment monitoring
- plant equipment reliability
- safety and regulatory inspections
- procedure (SOP) management and paperless work management
- task management and workforce scheduling optimization
- plant maintenance turnaround management
Transforming Work Processes

Low Performers

Paper based Work Processes without Historized Data

High Performers

Automated Work Processes with Accountability and Stewardship

Mobility is not about collecting data---it is all about using technology to transform and optimize stranded assets (e.g. non-instrumented equipment, remote workers, and work processes management)
InelaTrac Mobile Applications and Positioning

- Plant Safety
- Operator Driven Reliability
- Condition Monitoring
- Remote Decision Support
- Stranded Asset Management
- Paperless Maintenance
- Workforce Scheduling and Collaboration
- Integrated Business Process and Task Management
- Extends Condition Monitoring Offerings - Mtelligence

Wireless applications will see greater deployment because of the ability to enable new and better ways of operating manufacturing plants

– ARC Advisory Group
Improve Operational Reliability and Asset Availability

Operations

**Improve asset utilization** by operating non-instrumented equipment within safe/design envelopes and abnormal situation management

**Reduce maintenance cost** by detecting pre-cursors to equipment failures, trouble shooting, responding, and reducing secondary equipment damage

Proactively address **health, safety, environmental, and regulatory requirements** by assuring **compliance** with operational stewardship

**Capture Knowledge** and **institutionalize best practices** by standardizing approach to procedure management and equipment strategies
Maximize **maintenance effectiveness** through condition based monitoring and utilization based maintenance

Reduce **maintenance cost** through scheduling optimization and reduction of emergency break-in work

Reduce **paperwork and errors** by automating remote work notifications and paperless work management
Consistent IT Environment with Standard Resources

- **Standard**: Microsoft based platforms and technology
- **User generated**: Content – no programming required
- **SOA**: Web Services and Integrations to existing applications
IntelaTrac manages the *processes and procedures* used to ensure that organizations consistently execute all field tasks required to achieve *reliable* operations.

- IntelaTrac provides a Task Management and Performance Monitoring System providing *stewardship and accountability*.

- IntelaTrac mobile applications provide *contextual information* and *user guidance* to help drive reliability and improve performance.

- IntelaTrac tightly couples enterprise applications with field workers and *actionable tools* to implement and sustain reliable operations.
IntelaTrac Applications and Integrated Workflow Capabilities

System Administration
- User Administration
- Device Management
- System & Data Center Management

Super Users
- Procedures Versioning
- Scheduling

Mobile Workers
- Operator Rounds
- Data Collection
- Work Requests

Management
- Exception Reports
- Process/Performance KPI's
- Email Notifications

Supervisors
- Round/Route Approval
- Performance Monitoring
- Exception Management
- Shift Handover/Logs

Supervisors

Enterprise Integration

Process Historian
- PI, InSQL, etc.
Enabling Intelligent Workflow

Linear Procedures VS IntelaTrac Mobile Workflow Approach

Step 1 Check Pump
- Step 2 Oil Condition Good
- Step 3 Oil Condition Bad
  - Step 4 Temp Good
  - Step 5 Temp Bad

IntelaTrac Mobile Workflow Approach
- Task Specific Decision Tree
- Oil Condition Good OR Bad
  - IF OIL GOOD GO TO NEXT TASK
  - ADD OIL THEN GO TO NEXT PUMP
- CHECK TEMP
  - Good OR Bad
    - SHUTDOWN THE PUMP
IntelaTrac Value Proposition

- Effective asset management
- Data collection, integration, and analysis
- Management of SOP’s and best practices
- Regulatory compliance and environmental monitoring
- Process efficiency
- Quality control and accountability
- Organization effectiveness
- Job performance
- Field force training and on the job training

Customer Enrichment
**Typical Benefits Case**

<table>
<thead>
<tr>
<th>Key Performance Indicators</th>
<th>% Improvement</th>
<th>Key Factors</th>
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</thead>
<tbody>
<tr>
<td>Production Efficiency</td>
<td>0.5-1%</td>
<td>Reduction in production downtime/slowdowns</td>
</tr>
<tr>
<td>Reduced Maintenance costs on select list of assets**</td>
<td>25-30%</td>
<td>Predictive maintenance of rotating equipment and assets in harsh environments</td>
</tr>
<tr>
<td>Increased Workforce Productivity</td>
<td>5-10%</td>
<td>Electronic paperwork, transfer of some PM to Operations</td>
</tr>
<tr>
<td>Training, Knowledge Management, Permitting</td>
<td>5%</td>
<td>Improved training processes, improved best practices, reduced mean time to permit</td>
</tr>
<tr>
<td>Production Arbitrage</td>
<td>TBD</td>
<td>Improved decision support with access to non-instrumented data and instant messaging to field</td>
</tr>
</tbody>
</table>

** 1-2 % on total maintenance budget for all assets in company budget
IntelaTrac helps organizations:

- Set and align global priorities
- Engage mobile workforces
- Assess and manage performance
- Standardize, sustain, and maintain operations
- Improve operating results through higher asset availability, reduced maintenance cost, improved safety, compliance, and operational reliability
Integration and trending with Real-time Systems

- Utilizes “near real-time” data from other decision support systems
- Values updated periodically
- Task actions calculated using manual and the other system data
Enterprise Ready

- Multi Time Zone support
- International Language Support
- Support for Data Centers
- Single Sync Server supporting multiple sites
- Single Integration Server supporting multiple sites
What Will We Track? – How Will We Track It? – Can We Validate It?

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Count</th>
<th>Value</th>
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<tbody>
<tr>
<td>asset_number</td>
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<td>PL02-01-3133-CL-4140B</td>
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<tr>
<td>asset_description</td>
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<td>last_repair_date</td>
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<td>Inspector</td>
<td>15</td>
<td>John Smith</td>
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<tr>
<td>hazard_id</td>
<td>11</td>
<td></td>
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<tr>
<td>Manufacture</td>
<td>14</td>
<td>Chicago Bridge &amp; Iron</td>
</tr>
<tr>
<td>Model_Number</td>
<td>14</td>
<td>CL145-B5</td>
</tr>
</tbody>
</table>

- Task Validation - ensures regulatory compliance (EPA/ISO/CFR) (e.g. cannot be falsified as is the case with barcodes)
- Cost effective - durable passive RFID tags can last up to 10 years (e.g. survives painting, corrosion, sand blasting etc.)
- Can read/write data (up to 1088 bits) to identify EAM/CMMS #, OEM #, location #, warranty/repair status etc.
BlueTooth Support and Integration with Peripheral Devices

- Inferred Temperature Guns
- Pyrometers
- Vibration Probes
- Non-Destructive Test (NDT)
- RFID

Adding:
- GPS
- Acoustical Monitoring
Integration with System Platform
1. Lower Costs
Eliminates separate mobile applications and enables common mobile platform
Build once and leverage Time-to-market

2. New Value Creation
Optimal decision-making at the confluence of disparate, functionally separate systems

3. New Architecture
Capable of business agility and changing business models (without massive IT help)
What Does Success Look Like?

- “Institutionalized” work processes
- Lifts performance of all workers
- Integrated messaging drives instant changes
- Integrated remote data
- Auditable regulatory compliance
- “Model” for progress
Control Engineering (2008)

Engineers Choice Award

Microsoft (2007)
Mobility Partner of the Year Award

START-IT 125 (2007)
Top 125 Technology Companies Serving Manufacturing

Frost & Sullivan (2007)
Global Oil & Gas Product Value Leadership of the Year Award

IntelaTrac cited as “the Most Competent Field Force Automation Solution”
Global 1000 Client Base
Mobile Workforce Management and Decision Support System

- Best Practice Repository
- Mobile Field Applications
- Advanced Scheduling Calendar
- Reporting & Analytics
- Business Analyst - Tools
- Enterprise Ready Framework