Automated Work Packaging with Integrated Materials Management
Safety Moment

Reducing First Aid Incidents for Trips and Falls
Enhance your supply chain, material management and turnover systems. Add SiteSense® RFID and GPS VISIBILITY.
“Over-runs stem from a lack of control and visibility of materials, personnel, and equipment”

Source: CII Publication RT240-1, 2008

Activity Analysis: Total Activity Percentages
CII, Craft Productivity, IR 252-2A (2010)
Cost Savings - Summary

- 80% reduction in lost materials
- 90% reduced locate costs
- 75% reduction in staging delays
- 10% tool time improvement
SiteSense® Products on Demand

SiteSense® Web-Based Applications

SiteSense® Field Mobile Applications

SiteSense® Integration Applications

SiteSense® Visibility Server

Sensor Tags

Handhelds

RFID Readers
SiteSense® Sensor Tags

- **Industrialized and Rugged**
- **Fit for purpose**

Active RFID – Material Movement Automation

GPS Tag - Shipments

Polyester Barcode Labels – Material Identification

Active RFID – Badge Tag – Identification Tag
SiteSense® ROVER

- Autonomous – no operator intervention
- Apply to forklifts, mt’l mgt equipment
- Real-time position updates
- Cellular enabled
SiteSense® Fixed Reader Stations

- Autonomous readings
- 1,000 ft range
- Real-time
- ZONE or GPS Locations
- Harsh environments
- Gate, Zone and Muster
Track and Trace - Search

Showing 1 to 4 of 4 entries

1. **24G10-0016**
   - 2 x 8-40 Flgd Pipe, CL 150, ASME B16.5, Crane® Resistoflex® Thermoflex® PTFE Lined Pipe
   - Manufacturer: JVD Fabrators
   - OVERALL PROGRESS: 44.00%
   - Fabricate: 100%
   - Handle: 40%
   - Install Pipe: 0%

2. **BN0-NC250-B18.5**
   - B-60 Flgd Pipe, NC 250, ASME B18.5, Crane® Resistoflex® Thermoflex® PTFE Lined Pipe
   - OVERALL PROGRESS: 66.00%
   - Fabricate: 100%
   - Handle: 100%
   - Install Pipe: 40%

3. **HN12345-001**
   - Milled Line Pipe HN12345-001 6” Concrete Lined Coated Pipe
   - Section: HN12345
   - OVERALL PROGRESS: 0.0%
   - Fabricate: 0%
   - Failed Bend: 0%

4. **Pipe Load 001**
   - Pipe spool shipment
   - MEMBERS: 0
   - Fabricators:
     - Yard Pipe Fabrication
   - Yard Pipe Fabrication

Total Project Visibility™
Alerts and Notifications

Feed for Location Activity
Subscribe to this feed using: Bloglines Subscribe Now
Always use this reader to subscribe to feeds.

SiteSense Zone Exit Notification for Ford F250 - Rover
Ford F250 - Rover (SCS - Site Vehicles) Serial Number = 901920RA has left Miller Plant Site - Precipitator Rebuild Footprint
Site Materials Management and Control

**Daily Receiving Summary (4-Feb-16)**

Material received in the last 24 hours

<table>
<thead>
<tr>
<th>Project</th>
<th>Purchase Order</th>
<th>Vendor</th>
<th>Resource Name</th>
<th>Line Item</th>
<th>Quantity</th>
<th>MRR</th>
<th>Posted</th>
<th>Received By</th>
<th>Warehouse</th>
<th>Status</th>
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<tbody>
<tr>
<td>DEMO</td>
<td>45083439465682</td>
<td>Valve Supply Inc.</td>
<td>2&quot; 300# Gate</td>
<td>IAS-0047</td>
<td>1</td>
<td>1</td>
<td>MRR-30047</td>
<td>4-Feb-16 8:39 AM</td>
<td>Jerrah</td>
<td>Laid Down 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2&quot; 300# Gate</td>
<td>IAS-0060</td>
<td>2</td>
<td>1</td>
<td>MRR-30047</td>
<td>4-Feb-16 8:39 AM</td>
<td>Jerrah</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>3&quot; 300# Gate</td>
<td>IAS-0080</td>
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<td>MRR-30047</td>
<td>4-Feb-16 8:39 AM</td>
<td>Jerrah</td>
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<td>3&quot; 300# Gate</td>
<td>IAS-0080</td>
<td>4</td>
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<td>4-Feb-16 8:39 AM</td>
<td>Jerrah</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>3&quot; 150# Ball</td>
<td>IAS-0098</td>
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<td>1</td>
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<td>3&quot; 150# Ball</td>
<td>IAS-0098</td>
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<td>Jerrah</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>4&quot; 150# Butterfly</td>
<td>IAS-0098</td>
<td>7</td>
<td>1</td>
<td>MRR-30047</td>
<td>4-Feb-16 8:39 AM</td>
<td>Jerrah</td>
<td>Laid Down 1</td>
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<td></td>
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<td></td>
<td>4&quot; 150# Butterfly</td>
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<td></td>
<td>6&quot; 150# Pipe Spool</td>
<td>IAS-0098</td>
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<td>MRR-30047</td>
<td>4-Feb-16 8:39 AM</td>
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<td>Jerrah</td>
<td>Laid Down 1</td>
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</table>
Track Personnel – Access and Safety

- Real-time “On-site” report
- Faster muster roll call
- Certification tracking
# Track Personnel – Certifications

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Construction Zone</th>
<th>Level</th>
<th>Job Title</th>
<th>Certification</th>
<th>Expiration</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dan Williams</td>
<td></td>
<td></td>
<td></td>
<td>Safety Crew</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>John Doe</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Jordan Kepper</td>
<td></td>
<td></td>
<td></td>
<td>Safety Crew</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Jordan Williams</td>
<td></td>
<td></td>
<td></td>
<td>Safety Crew</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Shanna Golla</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

Showing 1 to 4 of 4 entries

[www.intelliwavetechnologies.com](http://www.intelliwavetechnologies.com)
Real-Time Dashboards

- Material Status
- Workforce Metrics
- Equipment
- Scaffolding
- Role specific
# Work Breakdown Structure

![Work Breakdown Structure Image]

## Workface Planning

<table>
<thead>
<tr>
<th>Name</th>
<th>Planned Start</th>
<th>Progress</th>
<th>Planned End</th>
<th>Priority</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>CWP 24A-01</td>
<td>7/21/2014</td>
<td>60%</td>
<td>12/13/2015</td>
<td>1</td>
<td>Released</td>
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<tr>
<td>CWP 24A-02</td>
<td>9/01/2014</td>
<td>100%</td>
<td>11/05/2015</td>
<td>2</td>
<td>Reserved</td>
</tr>
<tr>
<td>IWP 24A-02.001</td>
<td>9/01/2014</td>
<td>100%</td>
<td>11/05/2015</td>
<td>2.1</td>
<td>125/105 lbs</td>
</tr>
</tbody>
</table>

*Please note: The above image represents a screenshot of the Workface Planning section within the SiteSense Tracking application.*
Build CWPs
## Add IWPs in Sequence

<table>
<thead>
<tr>
<th>SEQUENCE</th>
<th>DESCRIPTION</th>
<th>START</th>
<th>END</th>
<th>MATERIALS</th>
<th>MANPOWER</th>
<th>SCAFFOLDING</th>
<th>EQUIPMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Install spool 24F-100002-01-1</td>
<td>1/2/2013 2:00PM MST</td>
<td>1/3/2013 10:00AM MST</td>
<td>1xPiping Foreman</td>
<td>1xWelder</td>
<td>1xLaborer</td>
<td>1xCrane 1xRigging 1xWelder</td>
</tr>
<tr>
<td>2</td>
<td>Install spool 24F-100002-01-2</td>
<td>1/3/2013 1:00PM MST</td>
<td>1/3/2013 6:00PM MST</td>
<td>1xPiping Foreman</td>
<td>1xWelder</td>
<td>1xLaborer</td>
<td>1xCrane 1xRigging 1xWelder</td>
</tr>
</tbody>
</table>

### Safety:
- Hazard analysis
- Drawings: 24f-1000002, spool 24f-100002-01-1, CWP-24F
- Docs: sign off, as builds

### Install Package [33%]

<table>
<thead>
<tr>
<th>INSTALL PACKAGE</th>
<th>RIG PACKAGE</th>
<th>BOLT PACKAGE</th>
<th>TEST PACKAGE</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

### Piping Install for Line 24F-100002

<table>
<thead>
<tr>
<th>SEQUENCE</th>
<th>DESCRIPTION</th>
<th>START</th>
<th>END</th>
<th>STATUS</th>
<th>MATERIALS</th>
<th>MANPOWER</th>
<th>SCAFFOLDING</th>
<th>EQUIPMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>IWP 24f-100002</td>
<td>1/2/2013 2:00PM MST</td>
<td>1/6/2013 5:00PM MST</td>
<td>Released</td>
<td>100% Orphaned</td>
<td>240 hours</td>
<td>2 Builds</td>
<td>Available</td>
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</tbody>
</table>

### Safety:
- Hazard analysis
- Drawings: 24f-1000002, spool 24f-100002-01-1, CWP Docs: sign off, as builds

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### PROGRESS TRACKS

<table>
<thead>
<tr>
<th>Component</th>
<th>Release Drawings</th>
<th>Technical Docs</th>
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</thead>
<tbody>
<tr>
<td>Engineering</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Manpower</td>
<td>Estimate Manpower</td>
<td>Density Calculations</td>
</tr>
<tr>
<td>Materials</td>
<td>Order</td>
<td>Receive</td>
</tr>
<tr>
<td>Safety</td>
<td>Requirements</td>
<td>Work Plans</td>
</tr>
<tr>
<td>Construction</td>
<td>IWP Development</td>
<td>Erect Scaffolding</td>
</tr>
<tr>
<td>Quality</td>
<td>Test Plans</td>
<td>Weld Procedures</td>
</tr>
<tr>
<td>Commissioning</td>
<td>Turnover Docs</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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CWP Dashboard

www.intelliwavetechnologies.com
**Trial Allocation Plans**

**General**
- **Name**
  - Plan Name
- **Description**
  - Description
- **Prioritization**
  - Prioritization Strategy
  - Schedule > Priority > Sub-Priority
  - Use partial allocation for early phase work
- **Forecasting**
  - Use only on hand materials
  - Forecast Allocation Strategy
    - Forecast Arrival (Shipment) > Contract Delivery Date
  - Fwd forecast (days)
    - # of days
- **Storage**
  - Include materials marshalled offsite
  - Excluded Storage Locations
    - Select Location
  - Excluded Locations
    - LOCATION
      - JobSite > Warehouse01 > Quarantine
- **Status**
  - Override reserve status from open issue tickets
  - Override pick status from pick tickets
  - Ignore OIS conditions
Integrated with Materials Management

- Direct link to expediting
- Dynamic Allocation
- Dynamic Look-aheads
Apps

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Reporting

Total Project Visibility™

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(587) 926-1036