

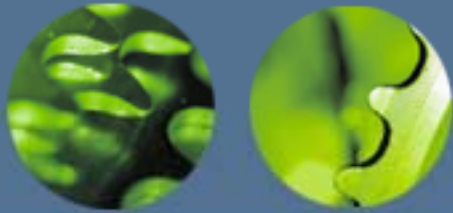


# TrakSYS™

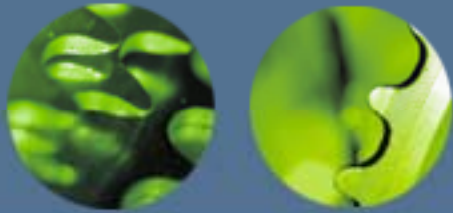
## Training Course I

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# Introduction & Overview



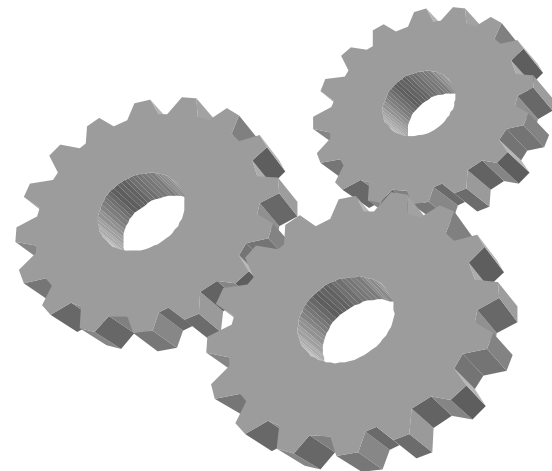
# Course Outline

## Day One

- Overview
- Licensing
- Tags
- Logic Manager
- Tag Simulator
- Configuration Manager
- Areas
- Systems
- Event Definitions
- webTrak
- Event Reports
- Scheduling
- Capture Schemes

## Day Two

- Configuration Manager Applications
- Event Monitor
- OEE
- OEE Calculations
- KPI Reports
- Report Design
- Tag Import





# Labs

Lab 01: License Manager

Lab 02: Configuration Manager – OPC Tags

Lab 03: Configuration Manager – Areas, Systems and Event Definitions

Lab 04: webTrak – Event Reports

Lab 05: Tags (Continued), Event Definitions and Event Reports

Lab 06: Configuration Manager – Scheduling and Reports

Lab 07: Configuration Manager – Capture Schemes and Reports

Lab 08: Event Monitor

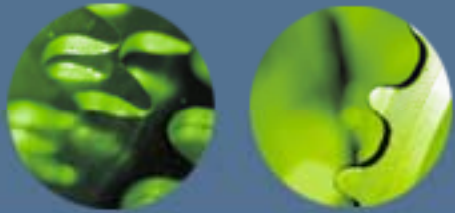
Lab 09: Configuration Manager – Virtual Tags and more Event Definitions

Lab 10: Configuration Manager – OEE Calculation and OEE Counters

Lab 11: webTrak – KPI Reports

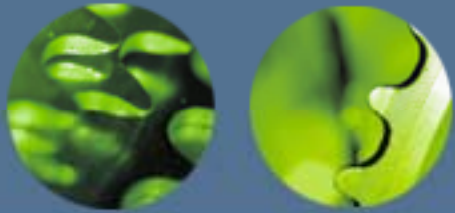
Lab 12: webTrak – Report Design

Lab 13: Tag Import



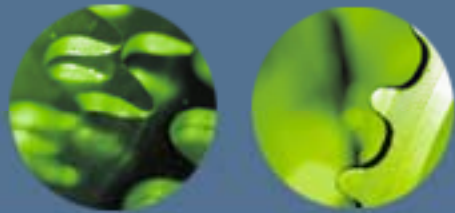
## Prerequisites

- Required computer skills
  - Microsoft Windows XP
  - Microsoft Office (Excel)
  - Internet Explorer Web Browser
- Familiarity with basic OEE and Efficiency concepts
- Familiarity with PLCs and OPC I/O servers



## What is TrakSYS™ ?

- **TrakSYS™ is the leading real-time performance management (RPM) software suite.**
- **Proven to measurably increase manufacturing efficiencies and asset utilization in a short time without disrupting operations.**



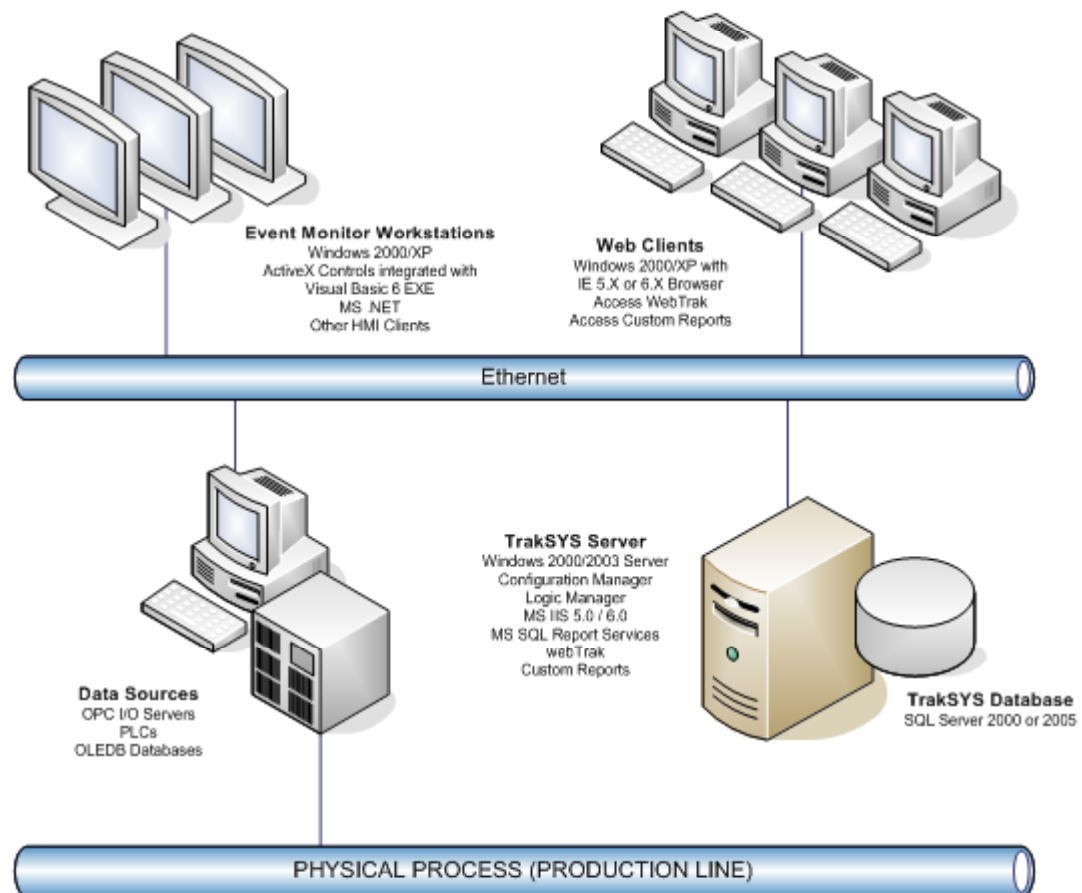
# Architecture

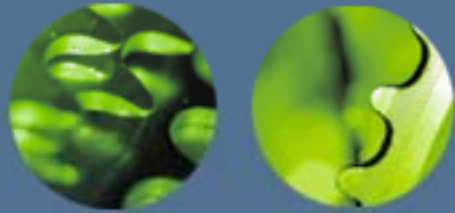
## TrakSYS™ Components

- EDB Database
- Configuration Manager
- Logic Manager (Service)
- Logic Manager (Client)
- webTrak (Reports)
- Event Monitor

## Platform Technologies

- Windows Server 2003
- MS SQL Server 2000/2005
- Internet Information Services
- OLE for Process Control (OPC)
- Microsoft .NET
- Microsoft ActiveX / COM

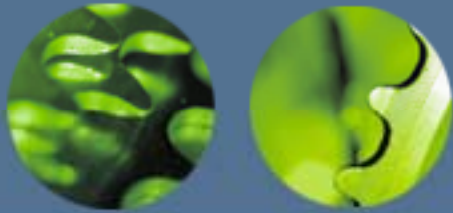




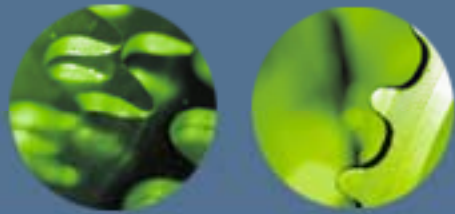
## Orange County Soda

- Sample Soda Line 01 configuration included in the TrakSYS™ installation.
- Used for the Training Course labs.
- Fills Cans and packages into Cases.
- Main Systems (equipment) include:
  - Filler
  - Labeler
  - Casepacker





# Licensing

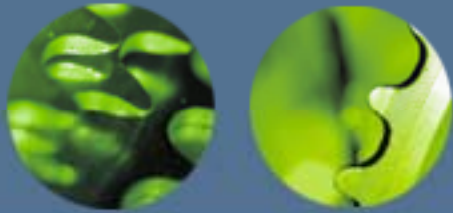


# TrakSYS™ License Manager

- Allows installation of Feature Lines
- Displays installed Feature Lines
- Allows activation of the Feature Lines that require activation
- Allows deletion of expired or unwanted Feature Lines

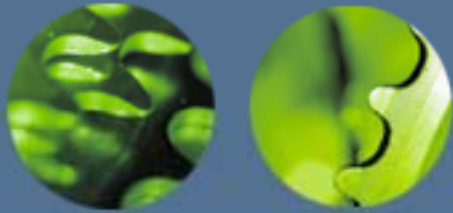
Feature	Version	Expiration Date	Expiration Days	Host	Data	State
TrakSYS Configuration Manager	4.0	2006-12-31	60	golnaz	1	VALID
TrakSYS Logic Manager	4.0	2006-12-31	60	golnaz	1	VALID
TrakSYS webTrak KM Portal	4.0	2006-12-31	60	golnaz	1	VALID
TrakSYS Tag Advanced	4.0	2006-12-31	60	N/A	*	VALID
TrakSYS Event Definitions	4.0	2006-12-31	60	N/A	400	VALID
TrakSYS OEE Calculations	4.0	2006-12-31	60	N/A	20	VALID
TrakSYS Product Manager	4.0	2006-12-31	60	N/A	*	VALID
TrakSYS External Database Connector	4.0	2006-12-31	60	N/A	*	VALID
TrakSYS Analytical Data Capture Fields	4.0	2006-12-31	60	N/A	10	VALID
TrakSYS Selectable Category Levels	4.0	2006-12-31	60	N/A	10	VALID
TrakSYS Event Monitors	4.0	2006-12-31	60	N/A	+20	VALID

EDB\_TS\_1 on PARSECDEV



## Feature Attributes

- Feature
- Version
- Expiration Date
- Expiration Days
- Host
- Data
- State (VALID/INVALID/NOT ACTIVATED)



# Feature Line Details

Additional detailed information for each Feature Line

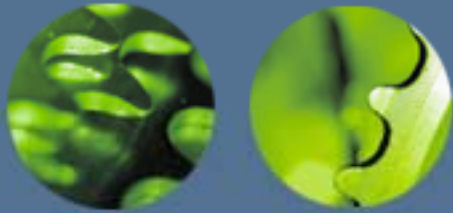
- General
- Numbers
- Customer
- Expiration
- Activation

**Feature Details**

General Numbers Customer Expiration Activation

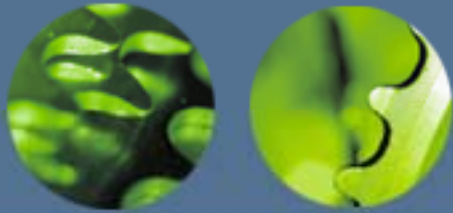
Name	TrakSYS Configuration Manager
Version	4.0
Key	RACXWK8THCBB8CCP27YHUQXFE
Notes	PARSEC USE ONLY
Data	*
Host	

OK Cancel



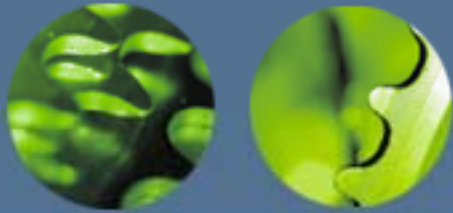
## License Activation

- Validates your license with the software vendor for security reasons.
- Locks the installation to the Database Server.
- Requires Host name for the Logic Manager, Configuration Manager and webTrak Features (Demonstration and CIP Licenses do not require Host name specification).
- Two activation approaches:
  - Automatic Online Activation
  - Manual Offline Activation

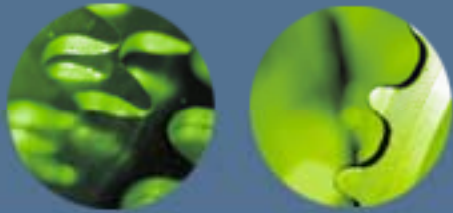


## Demonstration

- Open License Manager
- Import training class License File
- Show Features List View
- Show Feature Details
- Demonstrate Activation (online and offline)
- Show Usage Tab



# Lab 01: License Manager

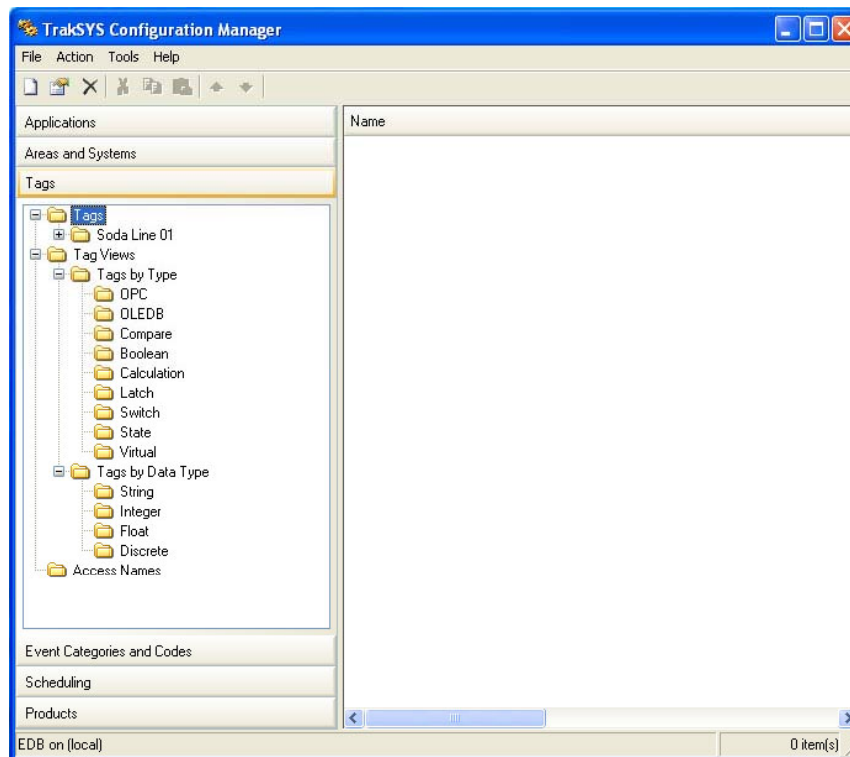


# Tags

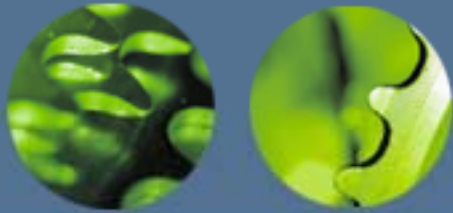




# Tags



- Provide real-time data from the production line
- Tags can be organized into Tag Groups
- Referred to as I/O Tags, Virtual Tags, Logic Tags, or State Tags
- Tag Names must be unique



# Tag Types

## ○ Tags by Data Type

- String
- Integer
- Float
- Discrete

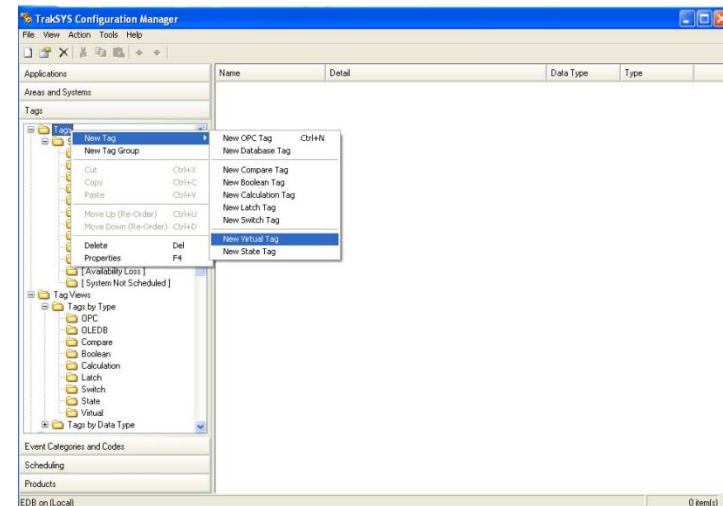
## ○ Tags by Type

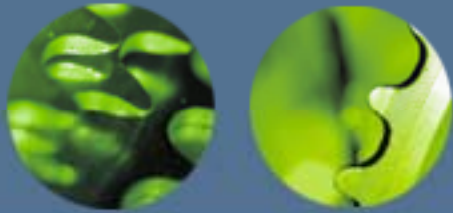
### – OPC Tags

- Retrieve data from OPC Servers
- The Item Name is a unique, fully qualified address of an item (Tag) on the OPC Server
- Access Name
  - Defines an OPC data source
  - Should be created separately before creating the OPC Tags

### – Virtual Tags

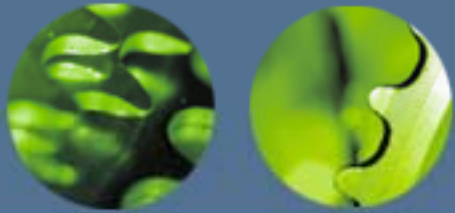
- Used to hold data values (e.g. active Product or Job) that are not available from external sources
- Values are modified manually via Event Monitor





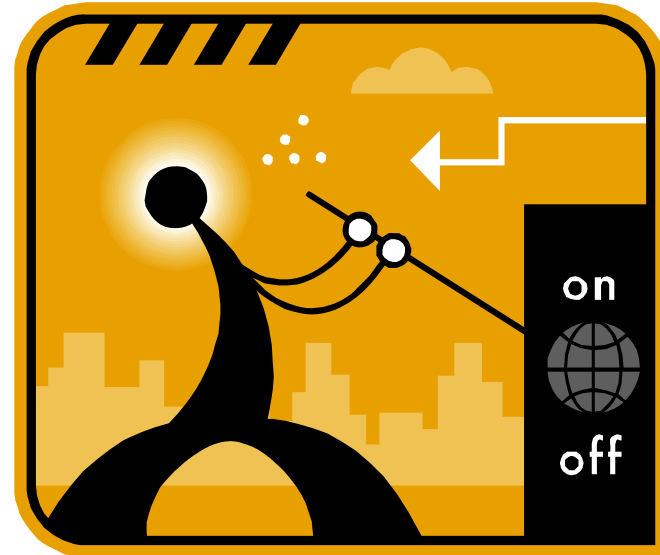
## Demonstration

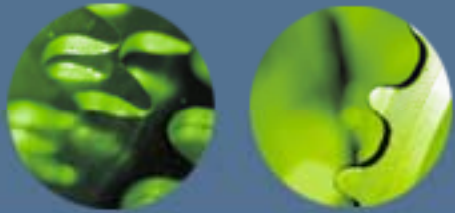
- Open the Configuration Manager
- Discuss the different kinds of Tags (discussed in slides)
- Clarify that OPC Tags are acquiring their values from external sources
- Define what is going to be referred to as Tree View and List View throughout the rest of the course
- Create:
  - Access Name **Soda Line 02 PLC**
  - Tag Group **Soda Line 02**
  - OPC Tag **SL2.FILLER.NO\_SODA**
  - Item Name **N7:11/2**



# Tag Simulator

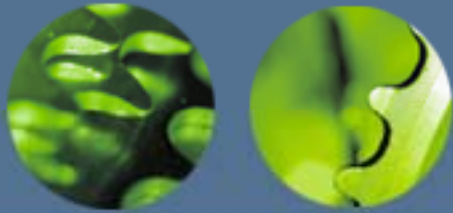
- Not a TrakSYS™ component
- For training purposes
- Allows Tag values to be changed for triggering events



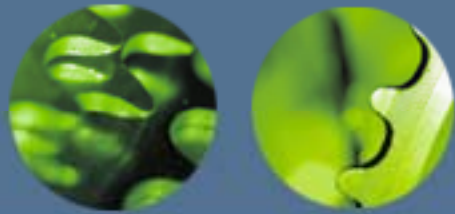


## Demonstration

- Run the Tag Simulator
- Demonstrate changing Tag values

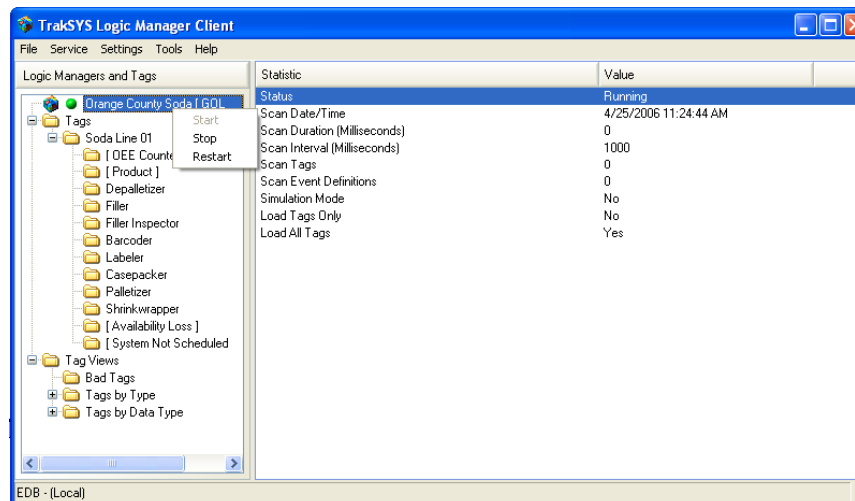


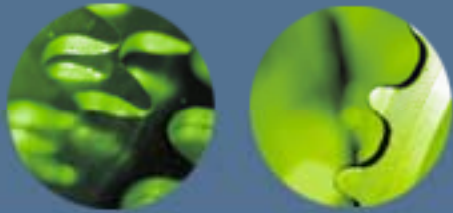
# Lab 02: Configuration Manager – OPC Tags



# Logic Manager

- Logic Manager Service functionality:
  - Data collection engine of TrakSYS™
  - Communicates with I/O servers to acquire input Tag data
- Starting and stopping the Logic Manager Service using the Logic Manager Client
  - Service must be running for data to be recorded
  - Any changes to the configuration require Logic Manager Service restart or reload to take effect
- View Tag value changes in Logic Manager Client

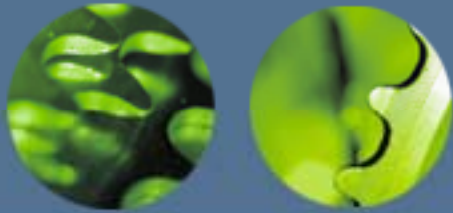




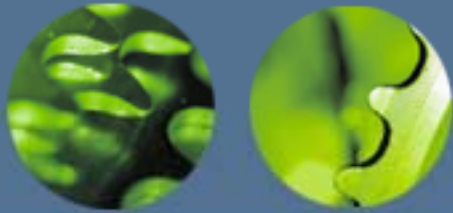
## Demonstration

- Open the Logic Manager
- Show how to start, restart, and stop it.
- In the Logic Manager Tree View, under the **Tags** folder, click on the **OEE Counters** Tag Group to show the OPC Tag value changing.



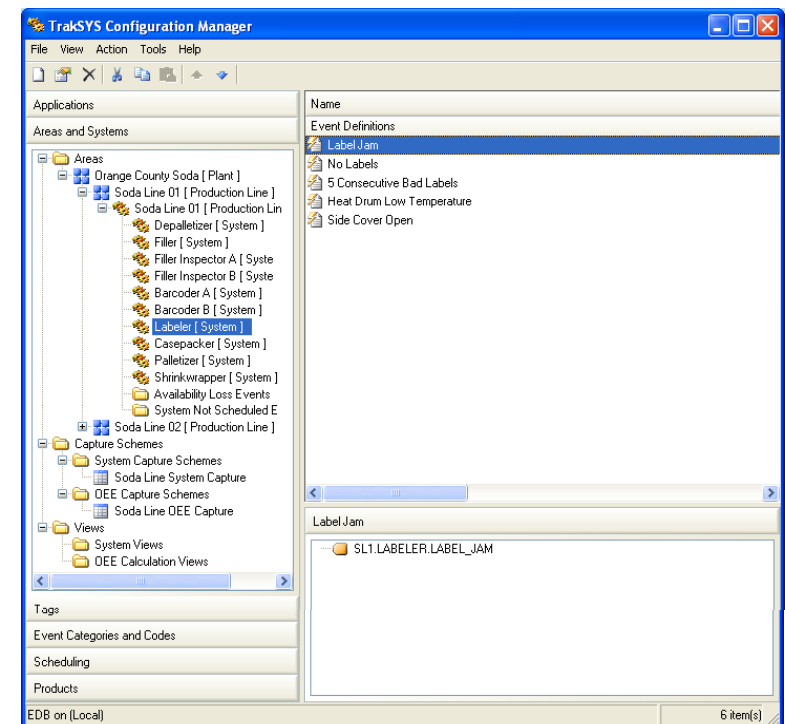


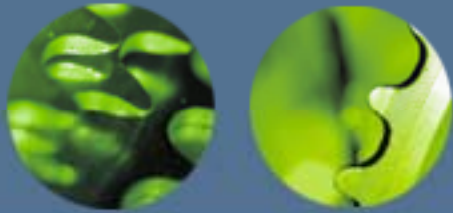
# Configuration Manager



# Configuration Manager

- Configuration Manager:
  - Central configuration tool for TrakSYS™
  - Application for defining the manufacturing environment to be monitored
- User Interface
  - Tree View and List View
- Important Configuration Entities
  - Tags
  - Areas
  - Systems
  - Event Definitions
  - Logic Managers
  - System Capture Schemes
  - Teams, Shifts, and Schedules
  - Event Monitors





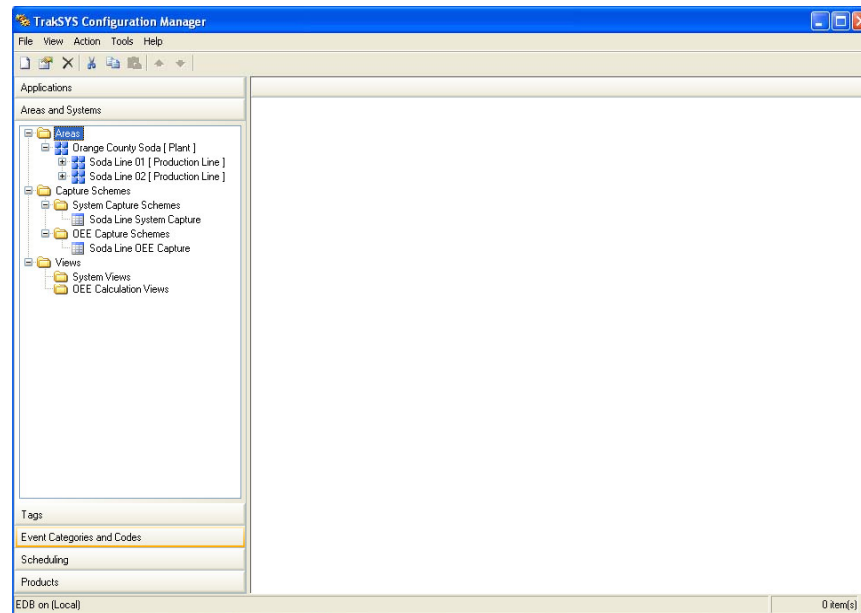
## Demonstration

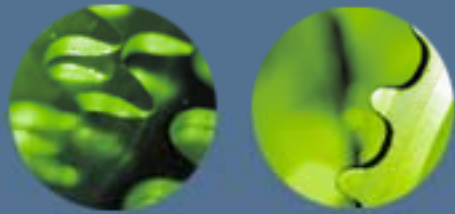
- Switch to the Configuration Manager
- Demonstrate the basic Configuration Entities
  - Tags
  - Areas
  - Systems
  - Event Definitions
  - System Capture Schemes
  - Teams, Shifts, and Schedules



# Areas

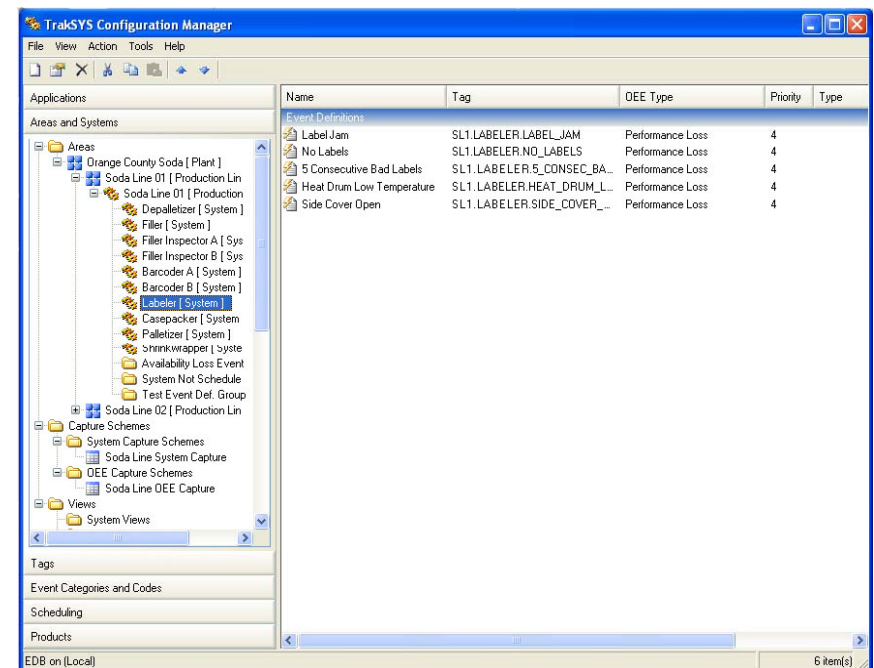
- Represent a subset of the production environment (e.g. a plant, a manufacturing line, or a piece of equipment)
- May contain other Areas
- Provide a grouping mechanism for Systems

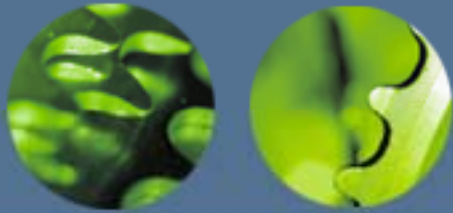




# Systems

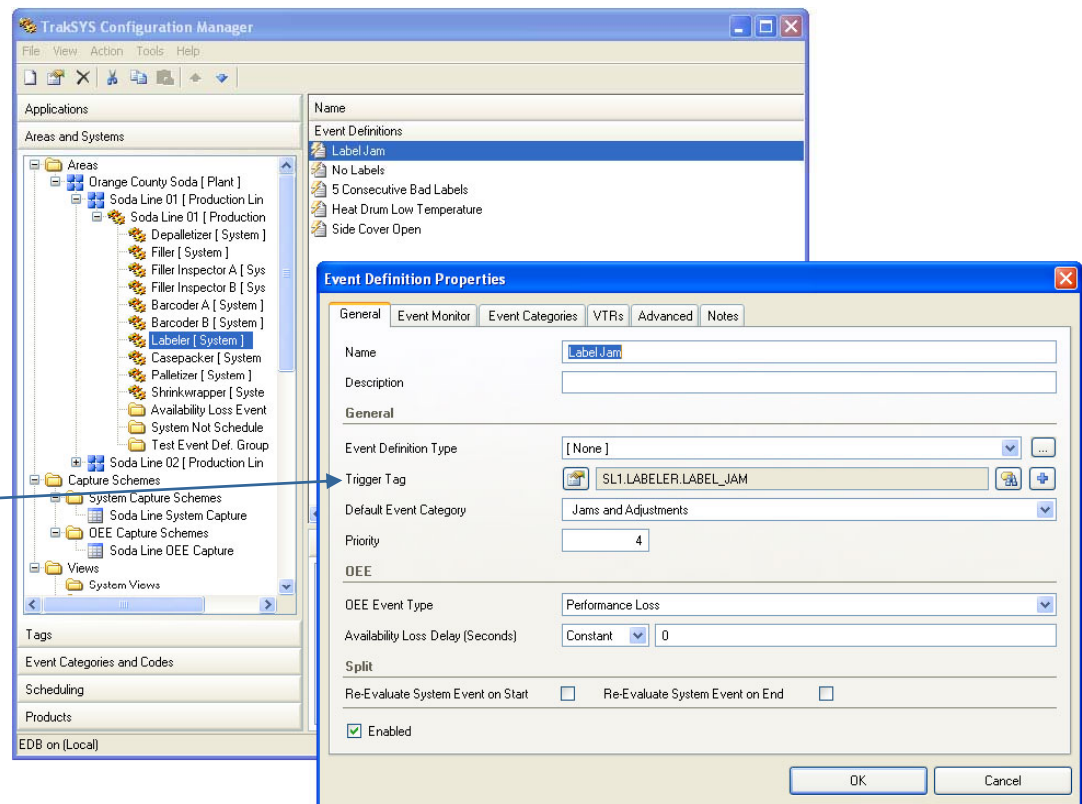
- May represent a production line or part of a production line (e.g. Packaging Line, Labeler, or Filler)
- May include Sub-Systems to organize the Event Definitions into groups based on smaller components within the main System

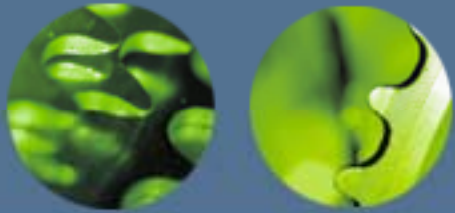




# Event Definitions

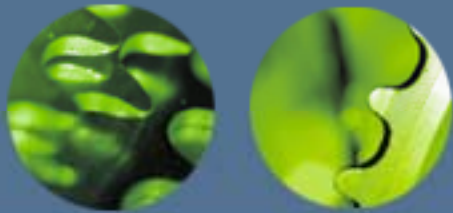
- Event Definitions
  - Determine which Events to track for the parent System
  - Belong to Systems, which may contain one or more Event Definitions
  - Translate into the Events Logic Manager records to the database when active
- Trigger Tag
  - Indicates when to start and stop Events according to a Discrete Tag



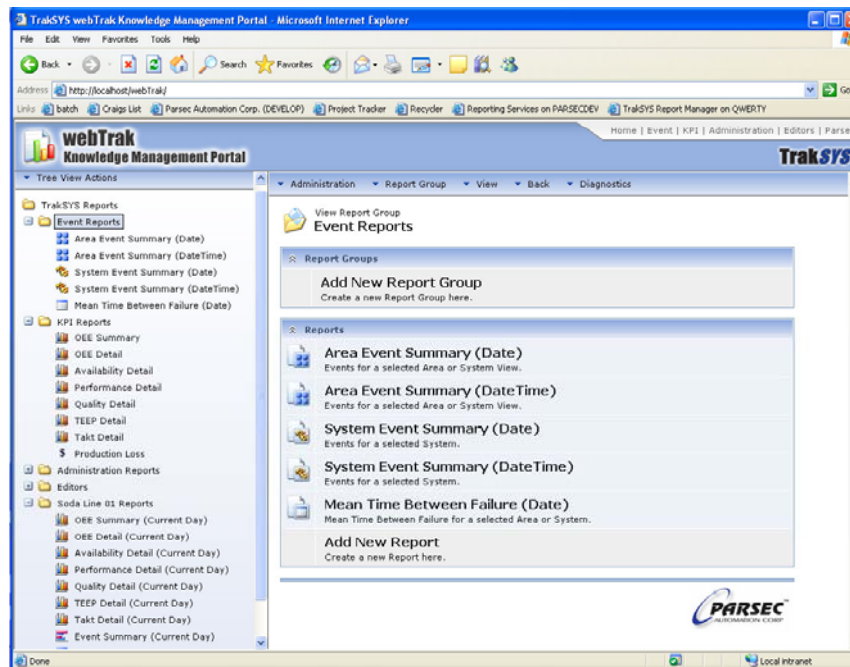


## Demonstration

- Create **Soda Line 02** Area
- Create **Soda Line 02** System and **Filler** Sub-System
- Create **No Soda** Event Definition
- Describe that Trigger Tag = 1 means the Event Definition is active and 0 means inactive
- Run the Logic Manager and Tag Simulator to trigger an Event (SL2.FILLER.NO\_SODA = 1 and then 0)

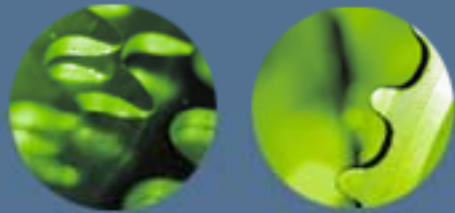


# webTrak

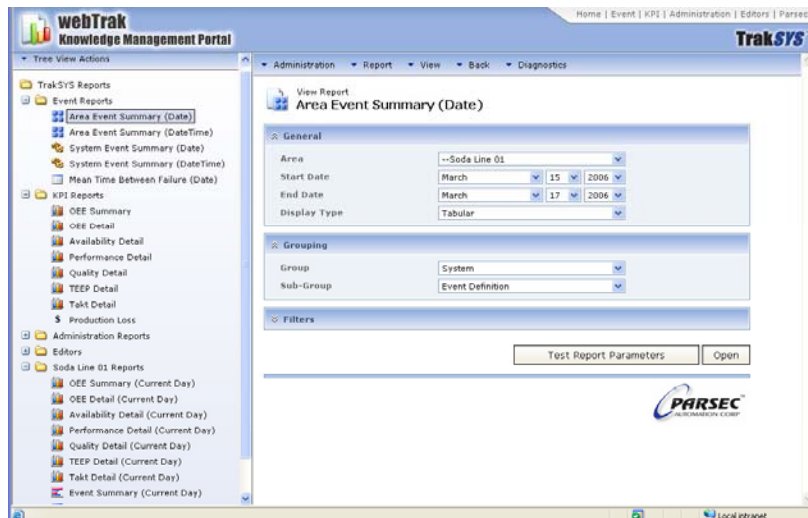


- Reporting portal for analysis of TrakSYS™ data
- Standard and pre-designed reports vs. customized reports for specific user needs
- Portal to view production events, calculated OEE, and other KPIs, as well as application error logs





# Event Reports



Event Summary (DateTime) - Microsoft Internet Explorer

of 1 > P1 100%

Find | Next

Select a format

Export

System Event Summary (DateTime) (Soda Line 01)

TrakSYS

Group System | Sub-Group Event Definition

3/27/2006 12:00:00 AM - 3/29/2006 11:59:59 PM

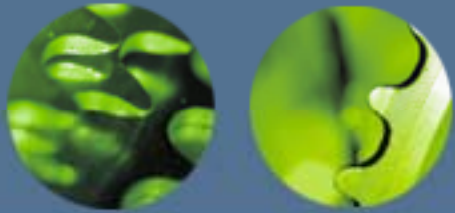
System by Event Definition

	Start Date/Time	End Date/Time	Shift	OEE Type	Count	Average	Duration
Soda Line 01					16	01:09:00	18:24:07
Lunch					4	02:39:56	10:39:46
System Not Scheduled					4	01:00:00	04:00:00
Tipped Can					3	00:07:55	00:23:45
Side Cover Open					1	00:03:05	00:03:05
Clutch Overload					3	01:05:47	03:17:21
3/27/2006 10:33:09 AM	3/27/2006 10:38:06 AM	Day Shift	Performance Loss	1	00:04:57	00:04:57	
3/27/2006 10:55:09 AM	3/27/2006 11:29:17 AM	Day Shift	Performance Loss	1	00:34:08	00:34:08	
3/27/2006 2:20:32 PM	3/27/2006 4:50:40 PM	Day Shift	Performance Loss	1	02:30:16	02:30:16	
Test Event 1					1	00:00:10	00:00:10
3/27/2006 2:20:20 PM	3/27/2006 2:20:30 PM	Day Shift	Performance Loss	1	00:00:10	00:00:10	
					16	01:09:00	18:24:07

Report Generated 3/29/2006 10:31:43 AM

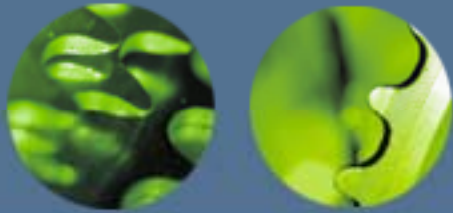
1

- Display Event data recorded by Logic Manager
- Help identify problematic or malfunctioning equipment

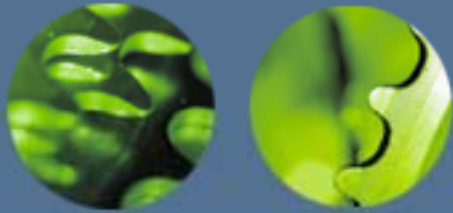


## Demonstration

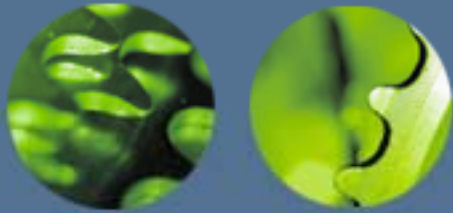
- Open the webTrak Knowledge Management Portal
- Discuss pop-up reports and the need for disabling pop-up blockers
- Show the **No Soda** event that occurred in Soda Line 02
- Open the webTrak Sample Data web and open a System Event Summary Report for May 15, 2006 to May 19, 2006



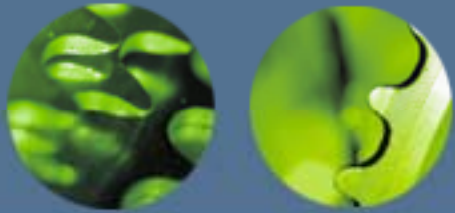
Break (15 Minutes)



# Lab 03: Configuration Manager – Areas, Systems, and Event Definitions

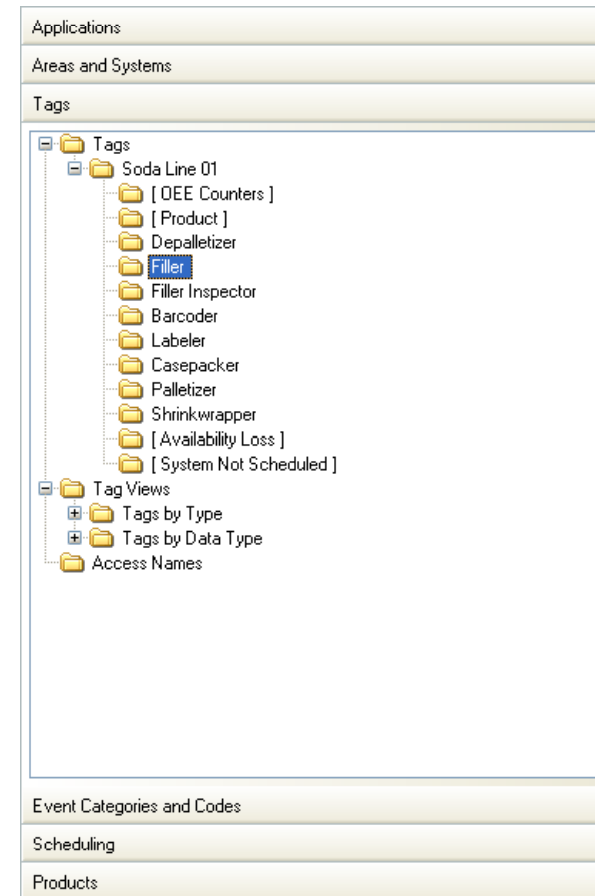


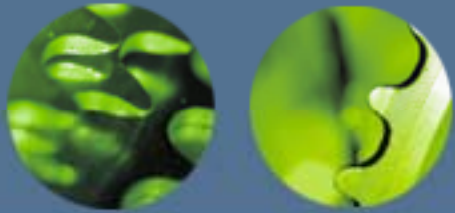
# Tags (Continued)



# Tag Groups

- Organize Tags (e.g. based on Systems)
- Can be multi-level (hierarchical)
- Available in any Tag Properties page when editing a Tag





## Tag Types

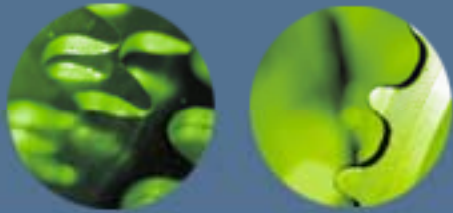
### Logic Tags

- Boolean Tags

- Allow the combination of two or more Discrete Tags using Boolean logic operators (AND, OR, XOR, etc...)

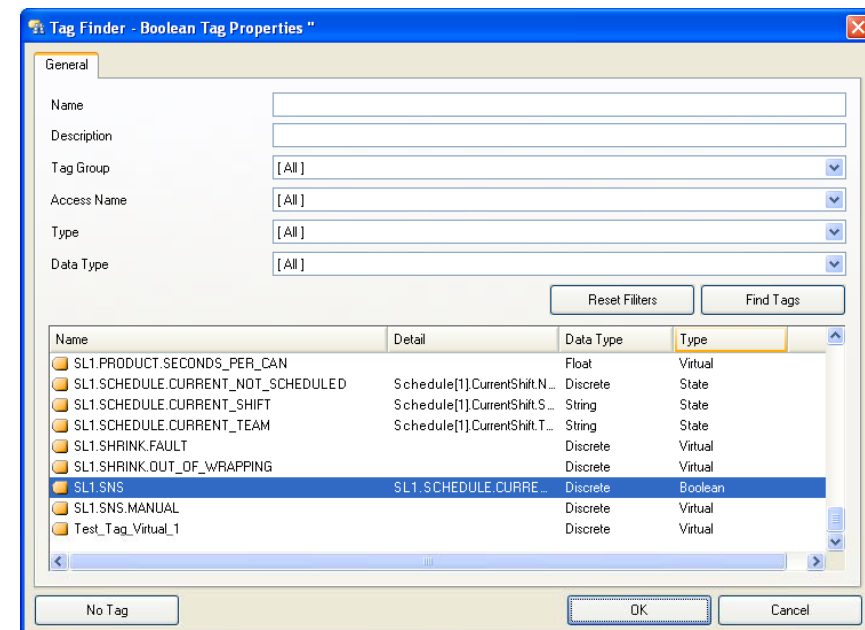
- Compare Tags

- Compare two values (Tags or constants) using comparison operators (=, <>, >, >=, <, <=)

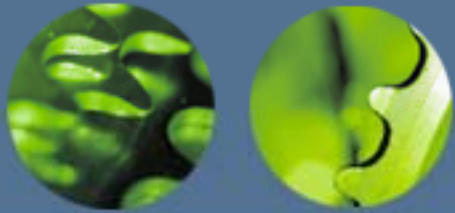


# Tag Finder

- Searches for and selects Tags for any entity property that requires a Tag
- Can filter by Tag Name, Type, Data Type, Access Name, and etc...
- Retains the last search results for successive Tag selection

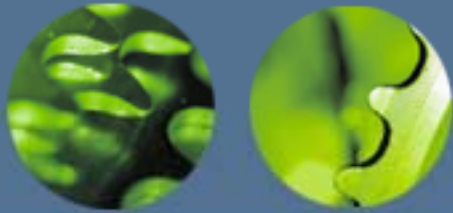




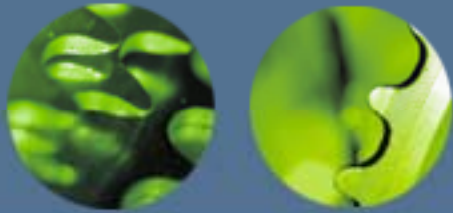


## Demonstration

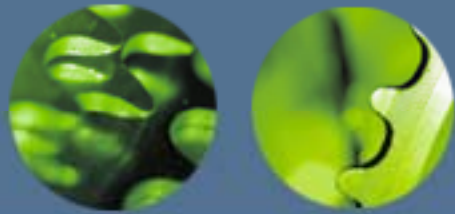
- Explain/Demonstrate some common Tag Group uses
- Create sample Boolean and Compare Tags (they do not need to be saved)
- Show examples of filtering using the Tag Finder



Lunch (1 Hour)

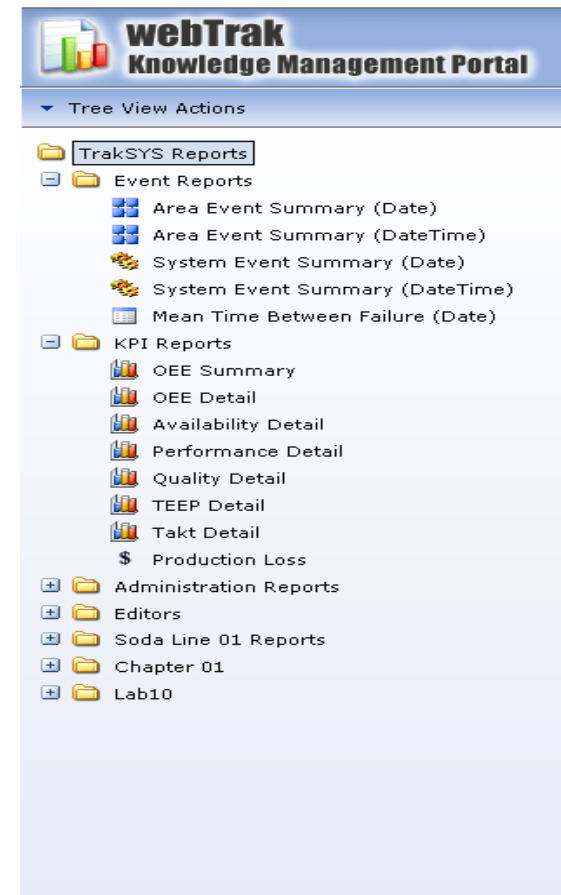


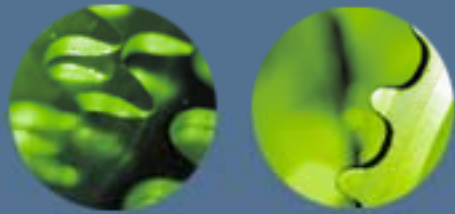
# Event Reports



# webTrak

- Reports
  - Contain data for a specified Area, System, or OEE Calculation
- Report Groups
  - Organize Reports into logical groups
- webTrak Tree View
  - Displays a hierarchical view of Report Groups and Reports

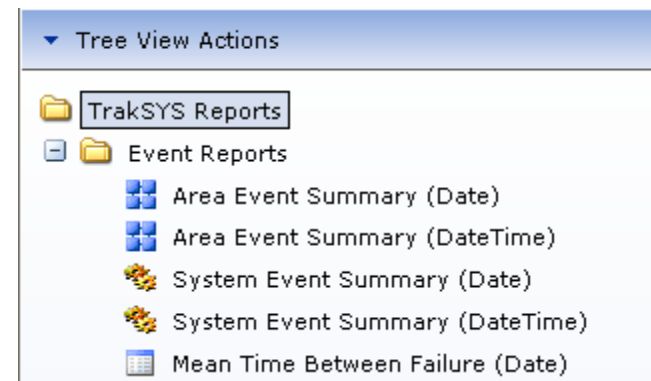


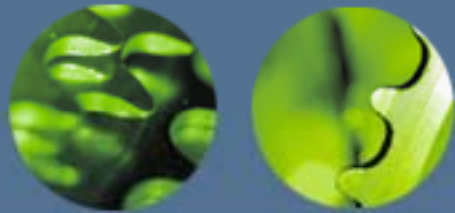


# Event Reports

## Standard Event Reports

- Area Reports
  - Area Event Summary (Date)
  - Area Event Summary (DateTime)
- System Reports
  - System Event Summary (Date)
  - System Event Summary (DateTime)
- Mean Time Between Failure





# Event Report Display Types

## Area Event Summary (Date) (Soda Line 01)

Group System | Sub-Group Event Definition

3/15/2006 12:00:00 AM - 3/17/2006 11:59:59 PM

### System by Event Definition

	Start Date/Time	End Date/Time	Shift	OEE Type	Count	Average	Duration
<b>Soda Line 01</b>							
System Not Scheduled							
General Fault							
	3/15/2006 4:01:39 PM	3/15/2006 4:08:03 PM	C				
Tipped Can							
	3/15/2006 4:29:22 PM	3/15/2006 4:30:32 PM	C				
Label Jam							
No Labels							
5 Consecutive Bad Labels							
Side Cover Open							
Product Out of Position							

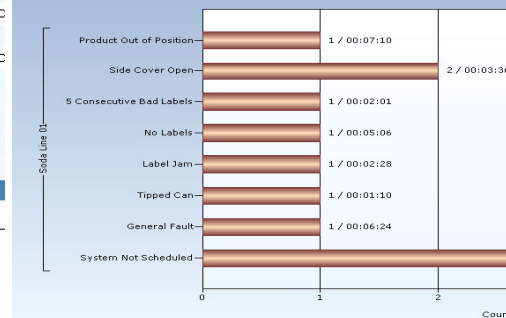
Report Generated 3/17/2006 9:22:28 AM

## Area Event Summary (Date) (Soda Line 01)

Group System | Sub-Group Event Definition

3/15/2006 12:00:00 AM - 3/17/2006 11:59:59 PM

### Bar Chart by Count [ System by Event Definition ]



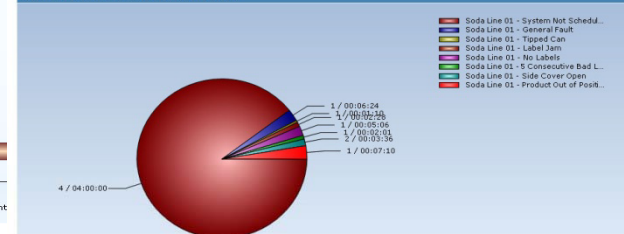
Report Generated 3/17/2006 10:11:00 AM

## Area Event Summary (Date) (Soda Line 01)

Group System | Sub-Group Event Definition

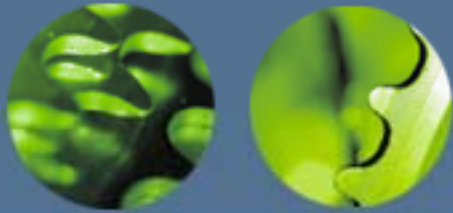
3/15/2006 12:00:00 AM - 3/17/2006 11:59:59 PM

### Pie Chart by Hours [ System by Event Definition ]



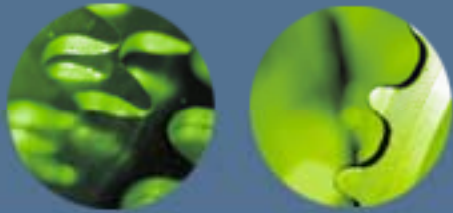
Report Generated 3/17/2006 10:06:00 AM

Various display formats are available for Event Reports (e.g. Tabular, Bar Chart, Pareto Chart, and etc...)



## Demonstration

- Explain/Demonstrate the difference between “Date” and “DateTime” Report Types
- Demonstrate different Event Report display types



# Event Report Grouping and Filtering

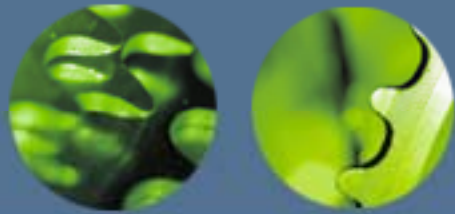
- Grouping
  - Specify up to two levels of data grouping from nearly any available Event data field
- Filtering
  - Limit the Report results to specific criteria (e.g. Shift, Team, Product, and etc...)

⌵ Grouping	
Group	System
Sub-Group	Event Definition

⌵ Filters	
Shift	[ Show All ]
Team	[ Show All ]
Product	[ Show All ]
OEE Type	[ Show All ]





# Event Report Table Columns

- Sub-groupings can be expanded to expose more detail for a single Event
- Event details in the table include Event Start Date/Time, End Date/Time, Shift, OEE Type, Count, Average, and Duration
- A detail view for each Event is available by clicking on detail icon in Tabular format



## Area Event Summary (Date) (Soda Line 01)

TrakSYS™

Group System | Sub-Group Event Definition

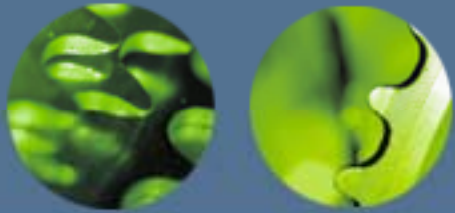
3/15/2006 12:00:00 AM - 3/17/2006 11:59:59 PM

### System by Event Definition

	Start Date/Time	End Date/Time	Shift	OEE Type	Count	Average	Duration
<input checked="" type="checkbox"/> Soda Line 01					12	00:22:20	04:27:55
<input type="checkbox"/> System Not Scheduled					4	01:00:00	04:00:00
<input type="checkbox"/> General Fault					1	00:06:24	00:06:24
 3/15/2006 4:01:39 PM	3/15/2006 4:01:39 PM	3/15/2006 4:08:03 PM	Day Shift	Performance Loss	1	00:06:24	00:06:24
<input type="checkbox"/> Tipped Can					1	00:01:10	00:01:10
 3/15/2006 4:29:22 PM	3/15/2006 4:29:22 PM	3/15/2006 4:30:32 PM	Day Shift	Performance Loss	1	00:01:10	00:01:10
<input type="checkbox"/> Label Jam					1	00:02:28	00:02:28
<input type="checkbox"/> No Labels					1	00:05:06	00:05:06
<input type="checkbox"/> 5 Consecutive Bad Labels					1	00:02:01	00:02:01
<input type="checkbox"/> Side Cover Open					2	00:01:48	00:03:36
<input type="checkbox"/> Product Out of Position					1	00:07:10	00:07:10
					12	00:22:20	04:27:55

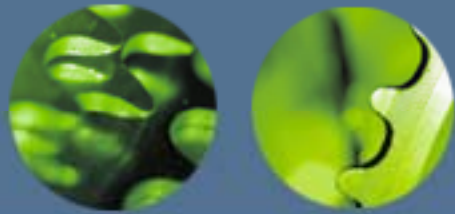
Report Generated 3/17/2006 9:22:28 AM

1



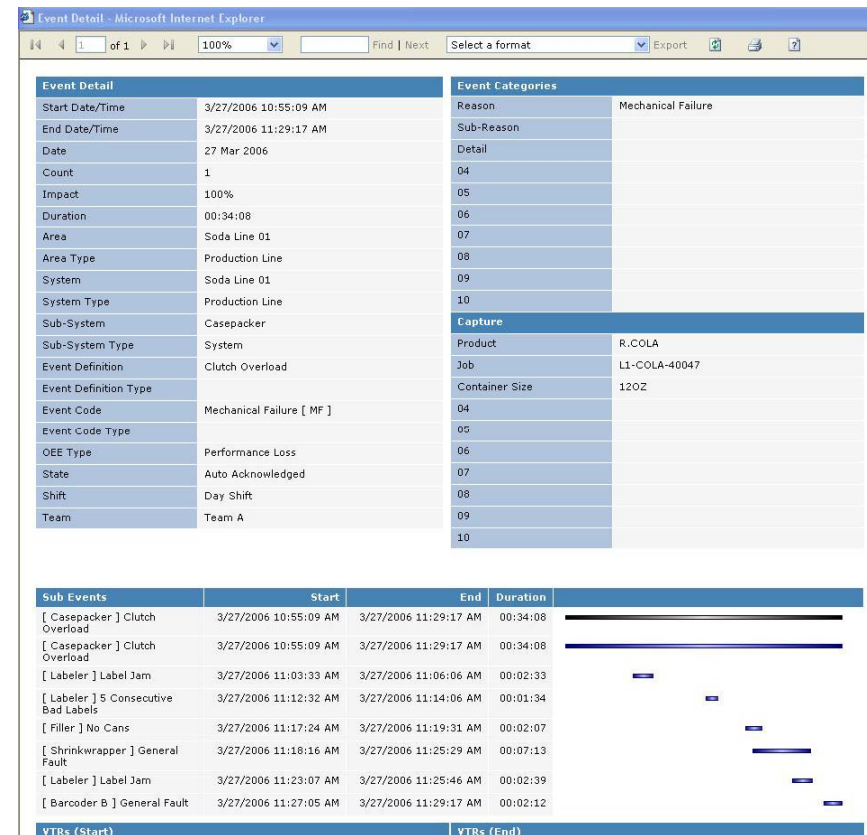
## Demonstration

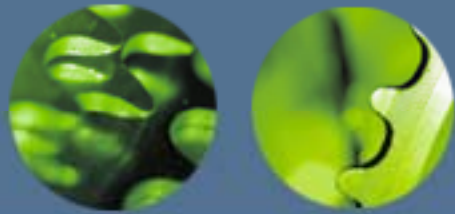
- Report Grouping
- Report Filters



# Event Detail Reports

- Display all recorded data related to a single Event
- Display operator assigned Event Categories
- Display Capture Tag values
- Diagram the Sub Events in a Gantt View

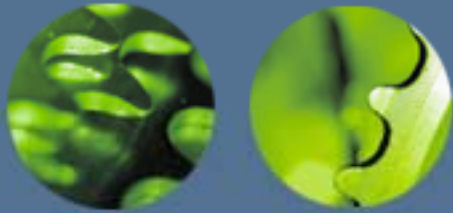




## Event Report Sub-Events

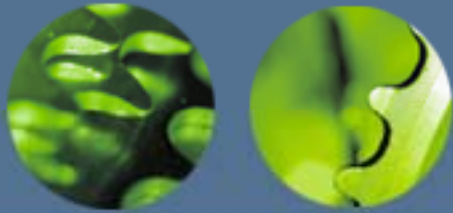
- Include secondary events not directly responsible for the System stoppage
- Note that Event reports do not double count time for overlapping Sub-Events

Sub Events	Start	End	Duration	
[ Depalletizer ] General Fault	3/15/2006 4:01:39 PM	3/15/2006 4:08:03 PM	00:06:24	
[ Depalletizer ] General Fault	3/15/2006 4:01:39 PM	3/15/2006 4:06:18 PM	00:04:39	
[ Filler ] Tipped Can	3/15/2006 4:04:15 PM	3/15/2006 4:04:33 PM	00:00:18	
[ Labeler ] Label Jam	3/15/2006 4:05:10 PM	3/15/2006 4:08:03 PM	00:02:53	



## Demonstration

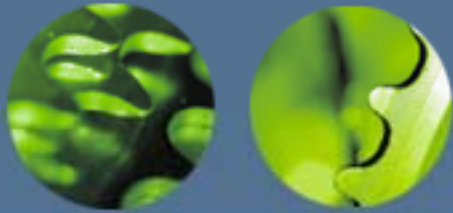
- Open an Event Detail Report and discuss the different attributes that are recorded
- Describe the difference between the Events (black) and Sub-Events (blue) in the Sub-Event section



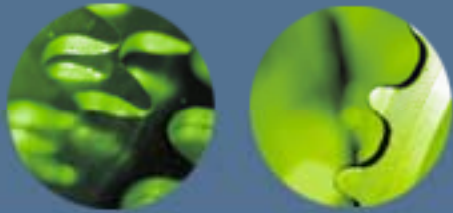
Lab 04: webTrak – Event Reports

Lab 05: Tags (Continued), Event  
Definitions and Event Reports

Break (10 Minutes)

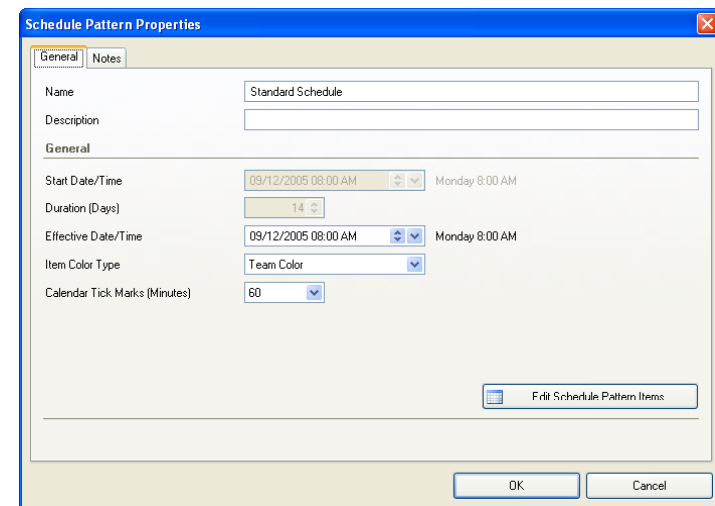
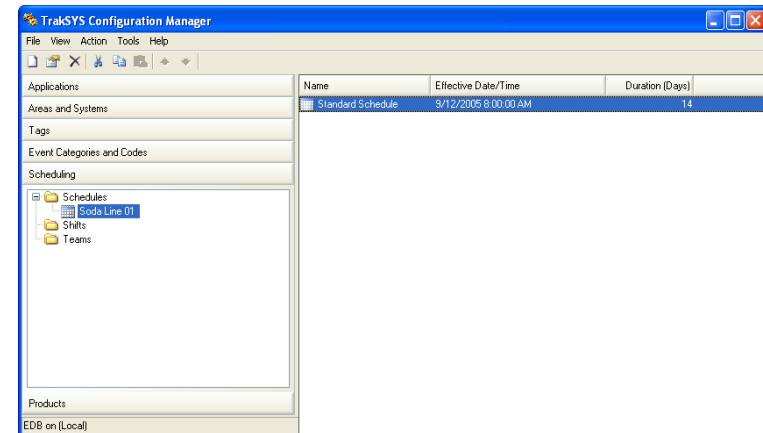


# Scheduling

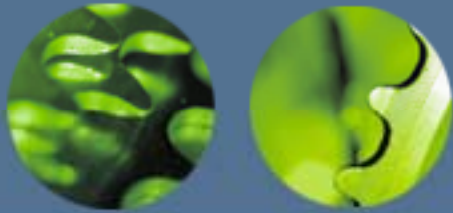


# Scheduling

- Teams
  - Represent groups of operators
- Shifts
  - Name work time periods for operators / Teams
- Schedules
  - Instruct Logic Manager which Shifts and Teams are active for which Systems
- Schedule Patterns
  - Represent repeating sequences of Shifts and Teams (Schedule Pattern Items)
  - Belong to a parent Schedule, which may contain multiple Patterns
  - Include a Start Date/Time and duration
  - Allow only one to be active at a time







# Schedule Patterns

**Schedule Pattern Item Properties**

**General**

Start Date/Time: 04/17/2006 07:00 PM Monday 7:00 PM

End Date/Time: 04/18/2006 06:00 AM Tuesday 6:00 AM

Shift Date: Based on Start Date

Shift: Night Shift

Team: Team A

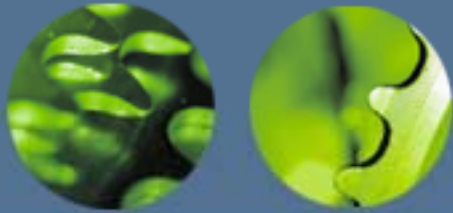
Scheduled: ☒

**Edit Schedule Pattern Items**

	Mon 10	Tue 11	Wed 12	Thu 13	Fri 14	Sat 15	Sun 16	Mon 17	Tue 18	Wed 19	Thu 20	Fri 21	Sat 22	Sun 23	Mon 24
12 am	Night Shift Team B	Night Shift Team D	Night Shift Team B	Night Shift Team D	Night Shift Team B			Night Shift Team A	Night Shift Team C	Night Shift Team A	Night Shift Team C	Night Shift Team A	Night Shift Team C		
1:00	19:00 (11.00 H)	19:00 (11.00 H)	19:00 (11.00 H)	19:00 (11.00 H)	19:00 (11.00 H)			19:00 (11.00 H)	19:00 (11.00 H)	19:00 (11.00 H)	19:00 (11.00 H)	19:00 (11.00 H)	19:00 (11.00 H)		
2:00															
3:00															
4:00															
5:00															
6:00															
7:00															
8:00	Day Shift Team A	Day Shift Team C	Day Shift Team A	Day Shift Team C	Day Shift Team A	Weekend Shift Team C	Weekend Shift Team C	Day Shift Team B	Day Shift Team D	Day Shift Team B	Day Shift Team D	Day Shift Team B	Day Shift Team D	Weekend Shift Team B	Weekend Shift Team B
9:00	08:00 (11.00 H)	08:00 (11.00 H)	08:00 (11.00 H)	08:00 (11.00 H)	08:00 (11.00 H)	08:00 (11.00 H)	08:00 (11.00 H)	08:00 (11.00 H)	08:00 (11.00 H)	08:00 (11.00 H)	08:00 (11.00 H)	08:00 (11.00 H)	08:00 (11.00 H)	08:00 (11.00 H)	08:00 (11.00 H)
10:00															
11:00															
12 pm															
1:00															
2:00															
3:00															
4:00															
5:00															
6:00															
7:00	Night Shift Team B	Night Shift Team D	Night Shift Team B	Night Shift Team D	Night Shift Team B			Night Shift Team A	Night Shift Team C	Night Shift Team A	Night Shift Team C	Night Shift Team A	Night Shift Team C		
8:00	19:00 (11.00 H)	19:00 (11.00 H)	19:00 (11.00 H)	19:00 (11.00 H)	19:00 (11.00 H)			19:00 (11.00 H)	19:00 (11.00 H)	19:00 (11.00 H)	19:00 (11.00 H)	19:00 (11.00 H)	19:00 (11.00 H)		
9:00															
10:00															
11:00															

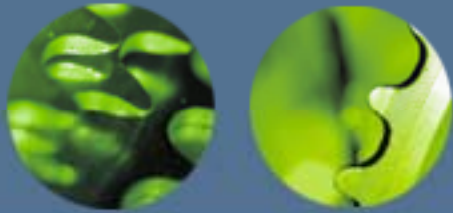
OK Cancel

- Schedule Patterns
  - Represent a timetable specifying rotating Shifts and Teams
- Logic Manager uses the Schedule Pattern with the most recent Effective Date/Time

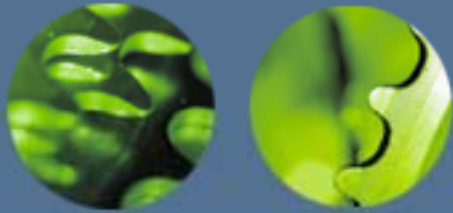


## Demonstration

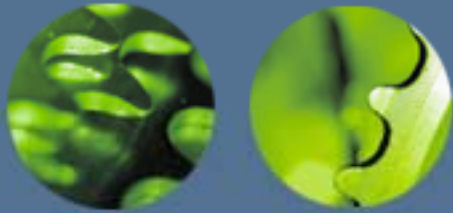
- Open Configuration Manager
- Show Team and Shift Colors
- Discuss Schedule Properties
- Demonstrate Schedule and Schedule Patterns
- Discuss the Schedule Pattern Properties
- Show Schedule Pattern Items
- Activate an event in Line 01 and show the shift gets captured in the reports



## Lab 06: Configuration Manager – Scheduling and Reports

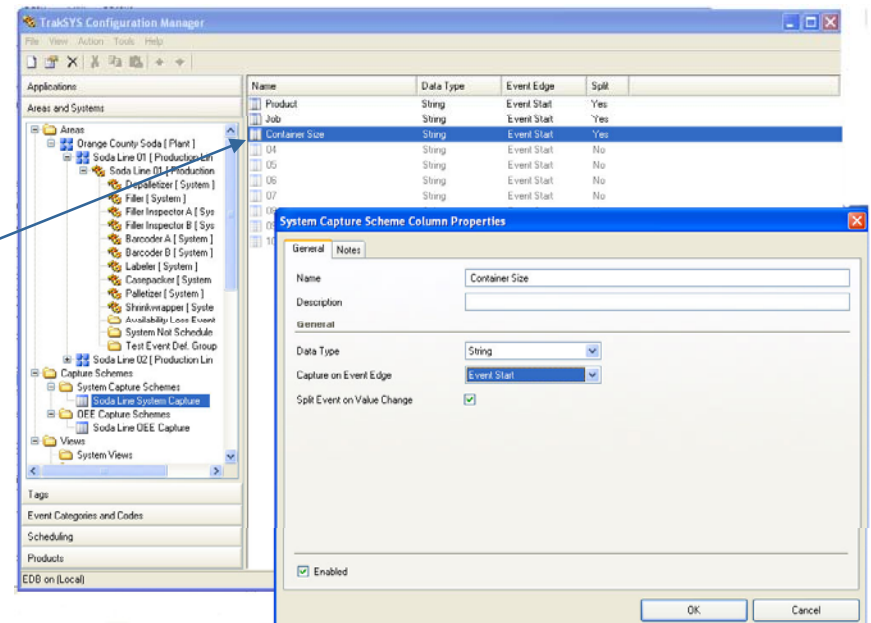


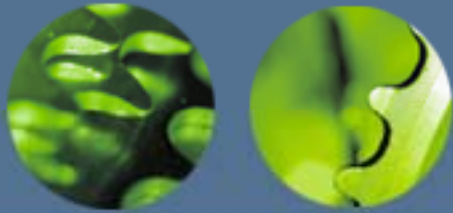
# Capture Schemes



# Capture Schemes

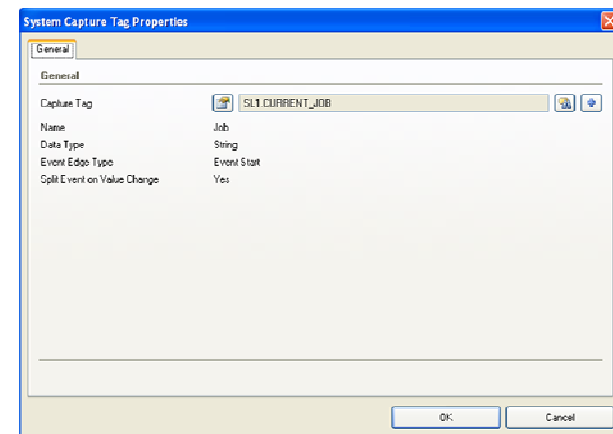
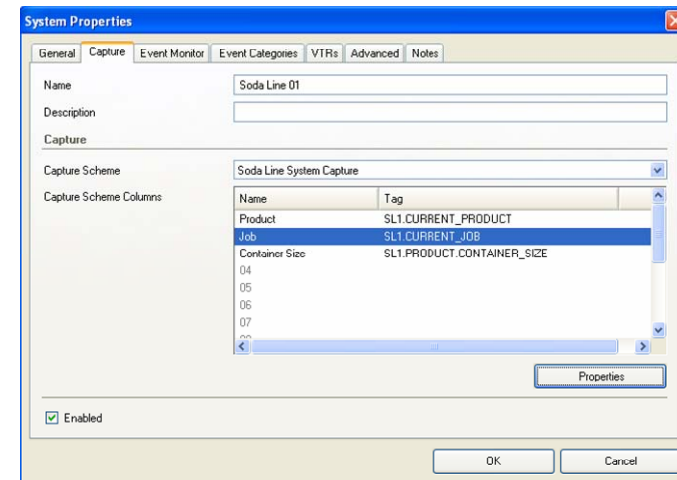
- System Capture Schemes
  - Define a set of Capture Scheme Columns
- System Capture Scheme Columns
  - Define the names and Data Types of values Logic Manager will capture when System Events occur
  - Can capture values on Event Start or End
  - Examples include Job, Container Size, Batch, Lot Number

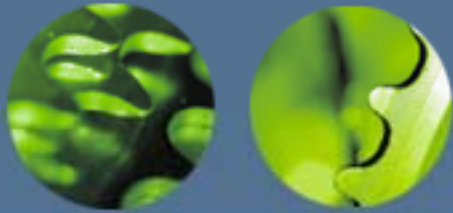




# System Capture Tags

- Logic Manager records the values of specific Tags assigned to System Capture Scheme columns
- Different Systems can capture different Tags for the same System Capture Scheme





# Event Reports and Capture Scheme Columns

1 of 1

100%

Find | Next

Select a format

Export

System Event Summary (DateTime) (Soda Line 01)

TrakSYS

Group Job | Sub-Group Event Definition

2/18/2006 12:00:00 AM - 3/18/2006 11:59:59 PM

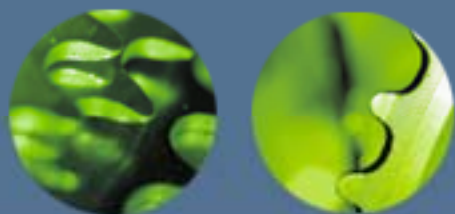
Job by Event Definition

	Start Date/Time	End Date/Time	Shift	OEE Type	Count	Average	Duration
<input checked="" type="checkbox"/> L1-ORNG-40015					15	00:57:52	14:27:53
<input checked="" type="checkbox"/> System Not Scheduled					7	02:00:00	13:59:58
<input checked="" type="checkbox"/> General Fault					1	00:06:24	00:06:24
<input checked="" type="checkbox"/> Tipped Can					1	00:01:10	00:01:10
<input checked="" type="checkbox"/> Label Jam					1	00:02:28	00:02:28
<input checked="" type="checkbox"/> No Labels					1	00:05:06	00:05:06
<input checked="" type="checkbox"/> 5 Consecutive Bad Labels					1	00:02:01	00:02:01
<input checked="" type="checkbox"/> Side Cover Open					2	00:01:48	00:03:36
<input checked="" type="checkbox"/> Product Out of Position					1	00:07:10	00:07:10
					15	00:57:52	14:27:53

Report Generated 4/18/2006 9:49:48 AM

1

Event Reports can be grouped by  
Capture Scheme Columns



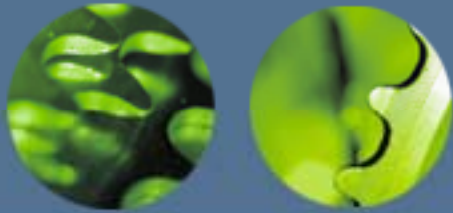
# System Capture Tag Values in Event Reports

Event Detail		Event Categories	
Start Date/Time	4/5/2006 3:19:45 AM	Reason	Jams and Adjustments
End Date/Time	4/5/2006 3:22:24 AM	Sub-Reason	
Date	04 Apr 2006	Detail	
Count	1	04	
Impact	100%	05	
Duration	00:02:39	06	
Area	Soda Line 01	07	
Area Type	Production Line	08	
System	Soda Line 01	09	
System Type	Production Line	10	
Sub-System	Labeler	Capture	
Sub-System Type	System	Product	D.COLA
Event Definition	Label Jam	Job	L1-DCLA-40033
Event Definition Type		Container Size	12OZ
Event Code	Jams and Adjustments [ JA ]	04	
Event Code Type		05	
OEE Type	Performance Loss	06	
State	Sent	07	
Shift	Night Shift	08	
Team	Team C	09	
		10	

Sub Events	Start	End	Duration	
[ Labeler ] Label Jam	4/5/2006 3:19:45 AM	4/5/2006 3:22:24 AM	00:02:39	<div></div>
[ Labeler ] Label Jam	4/5/2006 3:19:45 AM	4/5/2006 3:22:24 AM	00:02:39	<div></div>
VTRs (Start)		VTRs (End)		
Tag Name	Tag Value	Tag Name	Tag Value	

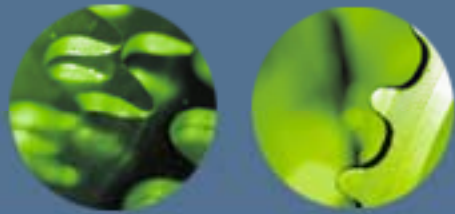
Capture Tag values are displayed in the Event Detail Report





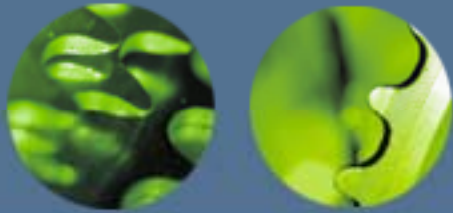
## Demonstration

- Show the pre-designed Capture Scheme
- Open System Properties and demonstrate assigning System Capture Tags
- Demonstrate Event Reports grouped by different Capture Scheme Columns



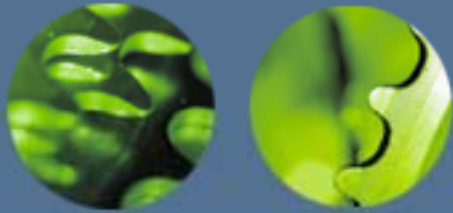
# Lab 07: Configuration Manager – Capture Schemes and Reports

## End of Day 1



# **Configuration Manager**

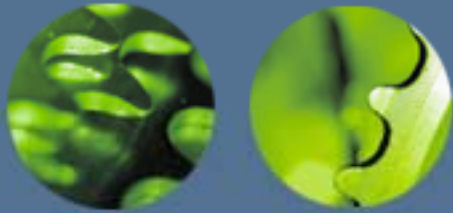
## **(Applications Section)**



# Configuration Manager - Applications

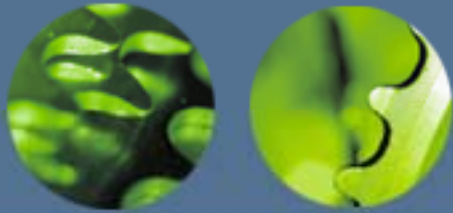


- Logic Manager
  - Monitors changing Tag values
  - Records configured events
  - Records configured KPIs (OEE)
  - Manages messaging to Event Monitors
- Event Monitor
  - Provides an interface to alert operators of recent and ongoing Events
  - Represents an instance of the Event Monitor on different clients (computers / IP addresses)

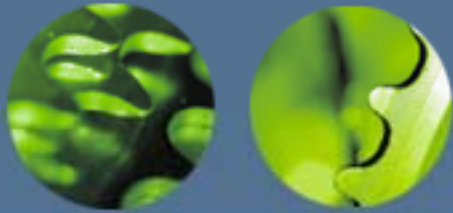


## Demonstration

- Create a new Logic Manager
- Create a new Event Monitor



# Event Monitor



# Event Monitor

- Displays equipment Events
- Allows activation of manual Events
- Event List
- Event Properties
  - Categorize
  - Annotate
  - Acknowledge

**Event Monitor Sample - [ GOLNAZ ]**

Equipment Events	Event List	Manual Events												
<input type="checkbox"/> Filler <input type="checkbox"/> Filler Inspector A <input type="checkbox"/> Barcode A <input type="checkbox"/> Labeler <input checked="" type="checkbox"/> Casepacker <input type="checkbox"/> Palletizer <input type="checkbox"/> Strinkwrapper	<table border="1"> <thead> <tr> <th>Event</th> <th>Start</th> <th>Duration</th> <th>Time To Ack</th> </tr> </thead> <tbody> <tr> <td>[ Casepacker ] Clutch Overload</td> <td>10:55:09 AM</td> <td>0:00:18</td> <td>0:00:00</td> </tr> <tr> <td>[ Filler ] Tipped Can</td> <td>10:47:40 AM</td> <td>0:00:13</td> <td>0:02:26</td> </tr> </tbody> </table>	Event	Start	Duration	Time To Ack	[ Casepacker ] Clutch Overload	10:55:09 AM	0:00:18	0:00:00	[ Filler ] Tipped Can	10:47:40 AM	0:00:13	0:02:26	<input type="checkbox"/> Break <input type="checkbox"/> Lunch <input type="checkbox"/> Meeting <input type="checkbox"/> Changeover <input type="checkbox"/> Sanitation <input type="checkbox"/> Maintenance <input type="checkbox"/> Not Scheduled
Event	Start	Duration	Time To Ack											
[ Casepacker ] Clutch Overload	10:55:09 AM	0:00:18	0:00:00											
[ Filler ] Tipped Can	10:47:40 AM	0:00:13	0:02:26											

Product: R.COLA Job: L1-COLA-40047

Current Shift OEE [ Day Shift ]

OEE	Availability	Performance	Quality
26.8%	58.6%	44.5%	88.8%

Total Time: 00:18:32 Availability Loss Time: 00:07:40 Production Time: 00:10:52 Good Cases: 64 Bad Cases: 8

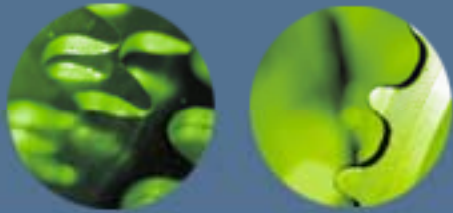
**TrakSYS** Close

**Event Properties**

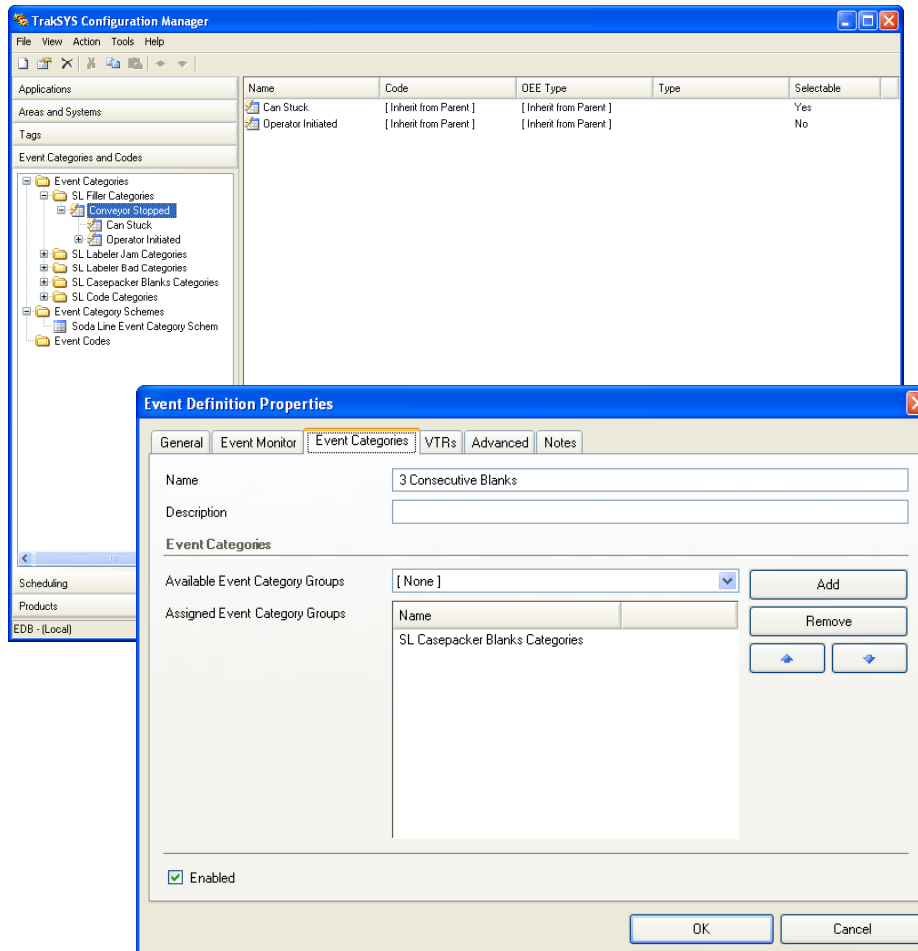
Event Properties

Area	Soda Line 01
System	Soda Line 01
Event Definition	Tipped Can
Start	3/27/2006 2:20:08 PM
End	3/27/2006 2:20:15 PM
Duration	00:00:07
Event Category	Jams and Adjustments
Notes	

Split Save Acknowledge Cancel

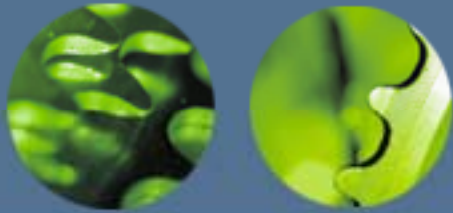


# Event Categories



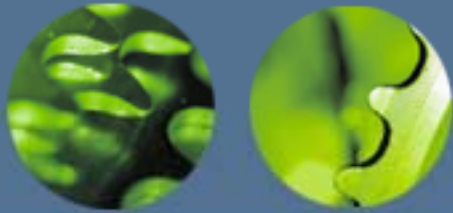
- Selected by operators to categorize Events in Event Monitor
- Assigned to Systems or Event Definitions by Event Category Group



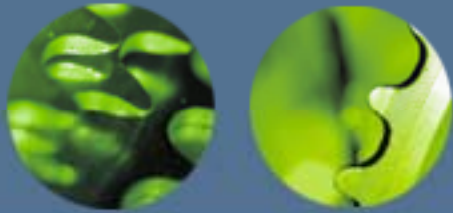


## Demonstration

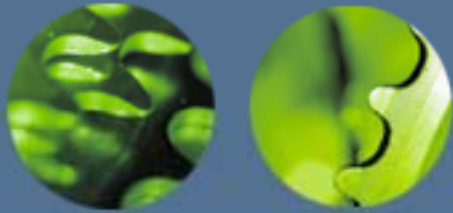
- Show Event Categories and Event Category Groups
- Assign an Event Category to System
- Open the Event Monitor
- Explain Equipment Events vs. Manual Events
- Activate an Event
- Open Event Properties
- Demonstrate Event Categorization and Acknowledgement



# Lab 08: Event Monitor

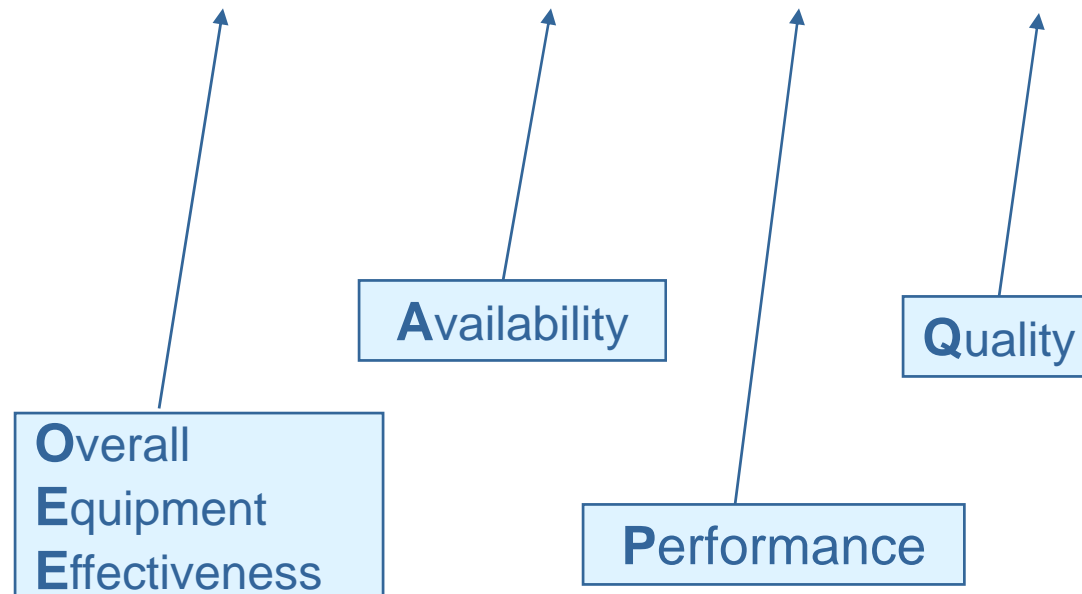


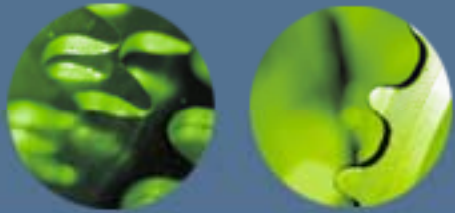
# OEE Measurement



## OEE Defined

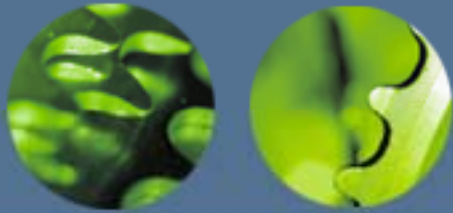
- OEE → Overall Equipment Effectiveness
- $OEE\% = A\% * P\% * Q\%$





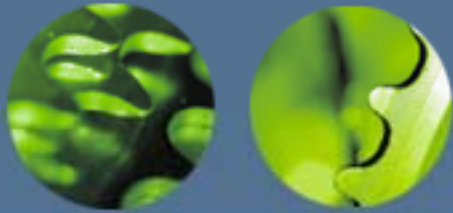
## Calculating OEE

- System Not Scheduled (SNS)
- Availability Loss (AL)
- $\text{Production Time} = \text{Total Time} - \text{SNS} - \text{AL}$
- $\text{Net Operation Time} = \text{Total Time} - \text{SNS}$
- $\text{Total Units} = \text{Good Units} + \text{Bad Units}$
- Theoretical Rate



## Demonstration

- Discuss SNS and AL in more detail with examples
- Discuss using the Schedule for automatically determining System Not Scheduled time



## Calculating OEE

$$\text{Availability} = \frac{\text{Production Time}}{\text{Net Op. Time}}$$

$$\text{Performance} = \frac{\text{Total Units}}{\text{Th. Rate} * \text{Prod. Time}}$$

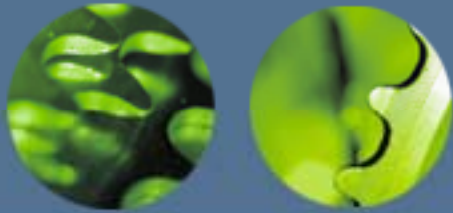
$$\text{Quality} = \frac{\text{Good Units}}{\text{Total Units}}$$



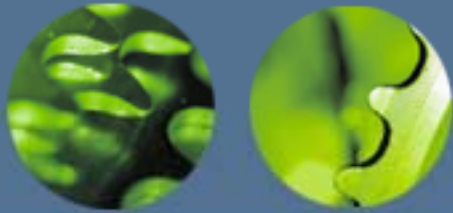
## OEE

- Availability represents the percentage of time the process is available for production.
- Performance represents the ratio of the total units produced vs. the theoretical units that could be produced.
- Quality is the ratio of good vs. total units.





Break (15 Minutes)



# OEE and Event Definitions

- Event Definitions Properties Page
  - OEE Event Type
  - Default option is N/A
  - If tracking OEE for the parent System, one of these options should be selected:
    - Performance Loss
    - Availability Loss
    - System Not Scheduled

**Event Definition Properties**

General | Event Monitor | Event Categories | VTRs | Advanced | Notes

Name: Break

Description:

General

Event Definition Type: [ None ]

Trigger Tag: SL1.AL.BREAK [ SL1.AL.BREAK.DAY OR SL1.AL.BREAK.NIGHT ]

Default Event Category: [ None ]

Priority: 2

OEE

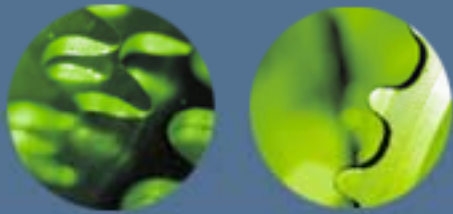
OEE Event Type: Availability Loss

Split: Availability Loss, System Not Scheduled

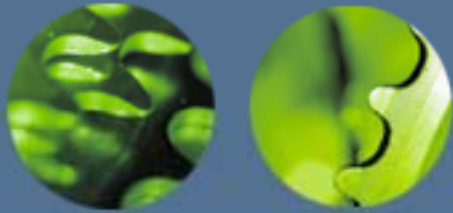
Re-Evaluate System Event on Start: ☒ Re-Evaluate System Event on End: ☒

☒ Enabled

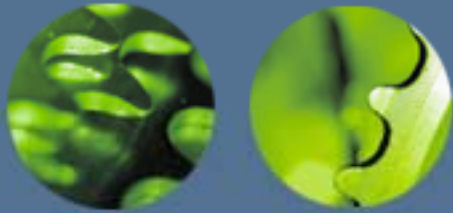
OK Cancel



# Lab 09: Configuration Manager – Virtual Tags, and AL & SNS Event Definitions

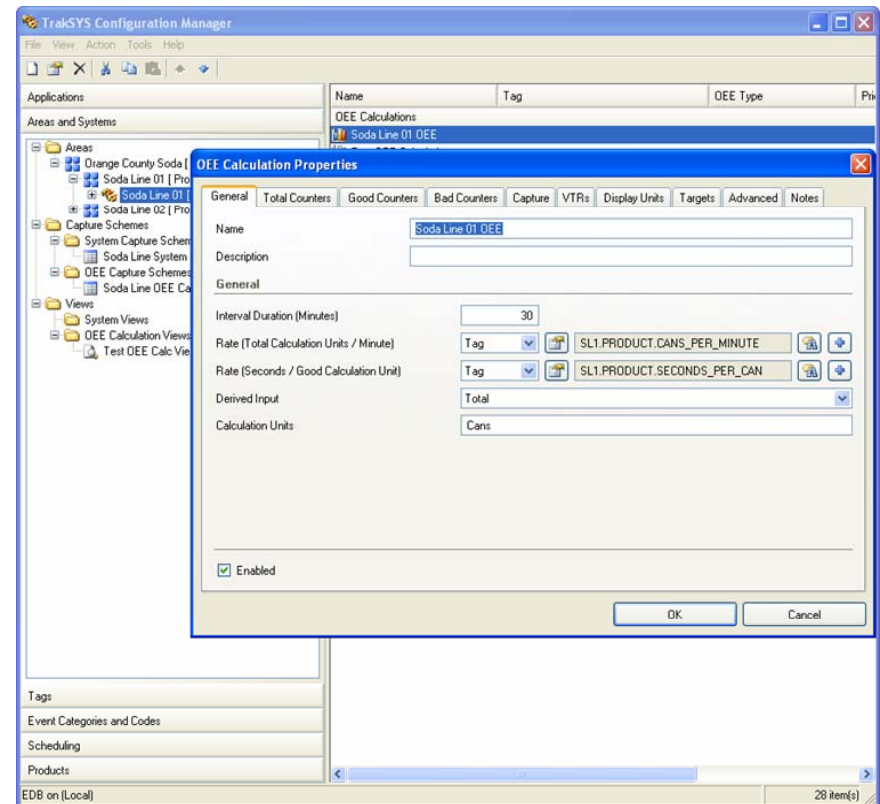


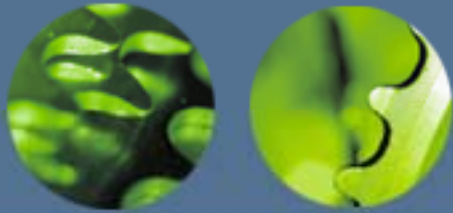
# OEE Calculations



# OEE Calculations

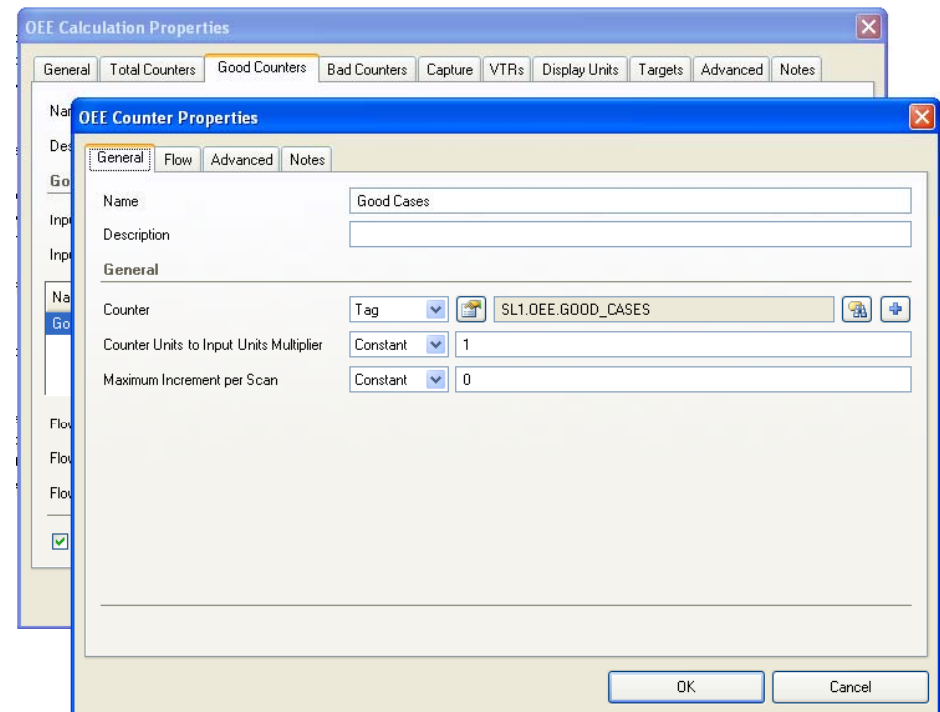
- OEE Calculations define how Logic Manager computes and records the OEE information
- Key OEE Properties
  - Rate (Total Calculation Units per Minute): The theoretical number of units that can be produced in one minute
  - Derived Input: Indicates which counter is going to be calculated by the Logic Manager based on the other two (Total, Good, or Bad)
  - Calculation Units
  - Interval Duration (usually between 30 and 60 minutes)

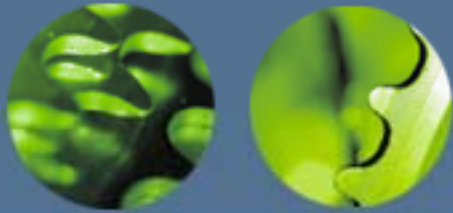




# OEE Counters

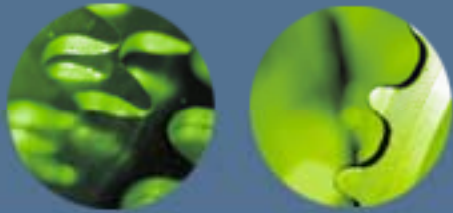
- OEE counters track Total, Good, and Bad production units:
  - Logic Manager monitors the change in the Counter Tags' values rather than their actual values
  - Units Multiplier
  - Maximum Increment per Scan





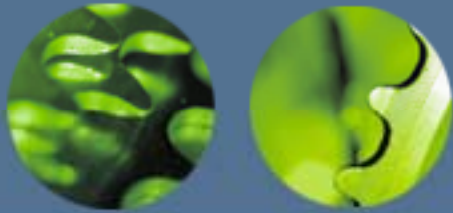
## Demonstration

- Discuss OEE Record Interval times (typically between 30 and 60 minutes)
- Show/Discuss different Units and Multipliers

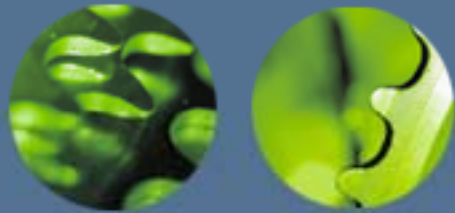


# Lab 10: Configuration Manager – OEE Calculations and OEE Counters

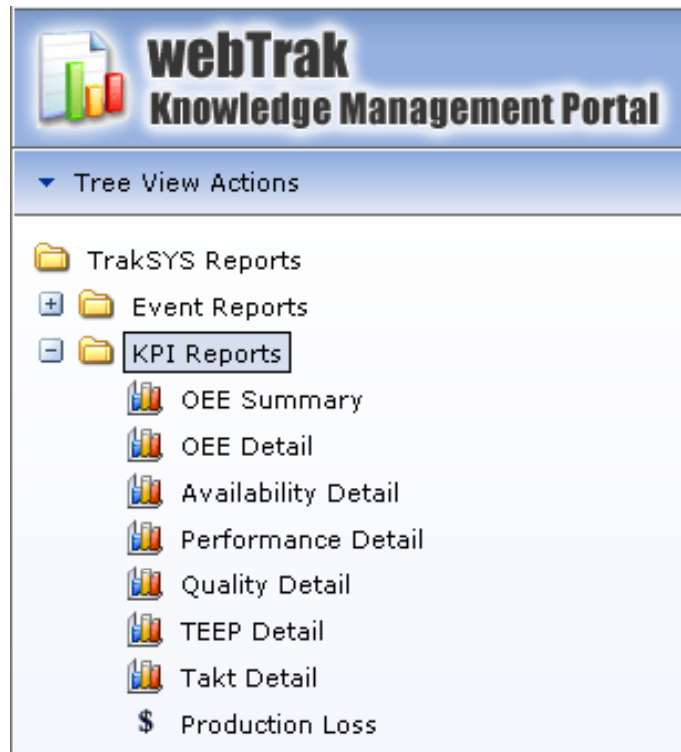




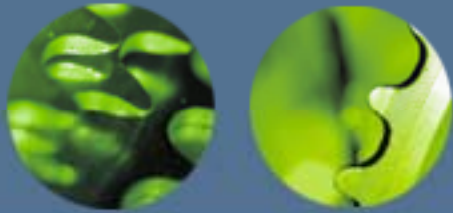
# KPI Reports



# KPI Reports



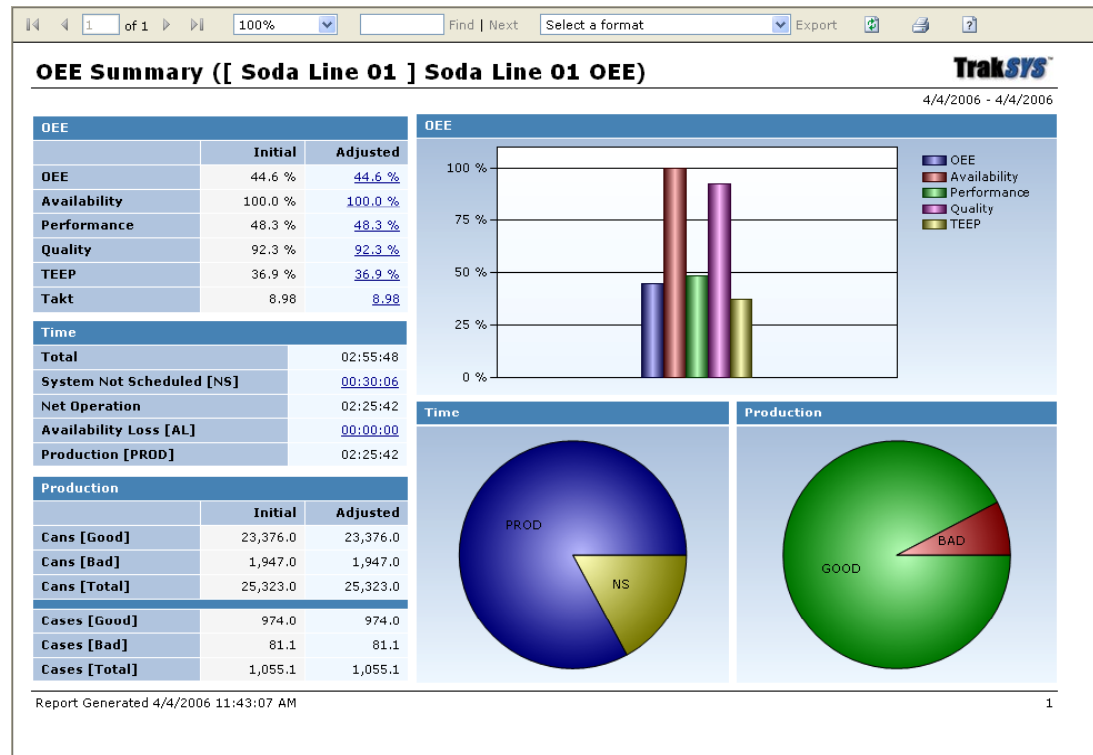
- Display standard productivity KPIs such as OEE, TEEP, and Takt Time
- OEE Reports
  - OEE Detail
  - OEE Summary
  - Availability Detail
  - Performance Detail
  - Quality Detail

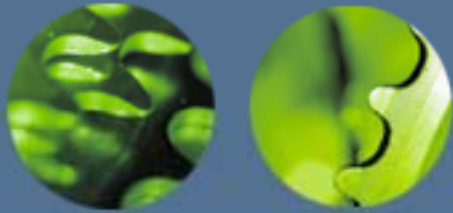


# OEE Reports

## OEE Summary Report

- Displays OEE and related KPI data for the selected date range based on the selected OEE Calculation
- Allows filtering by other parameters such as Shift, Team, Product, and etc...

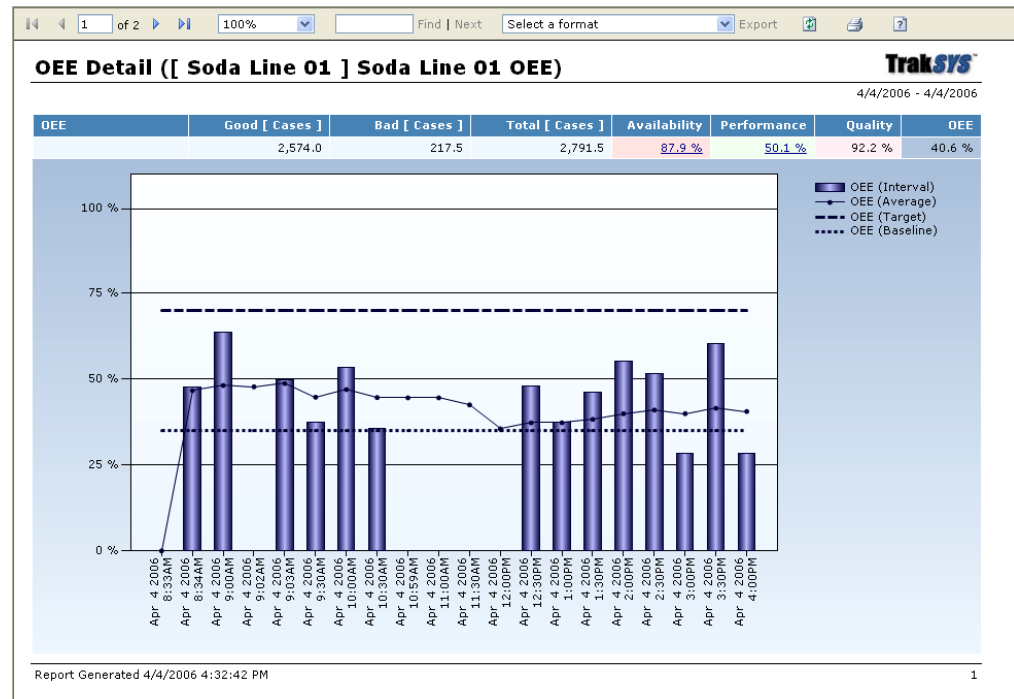


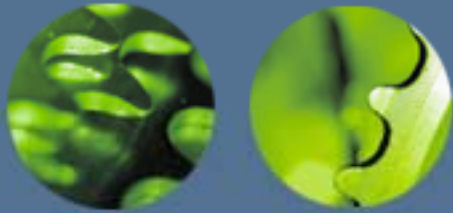


# OEE Reports

## OEE Detail Report

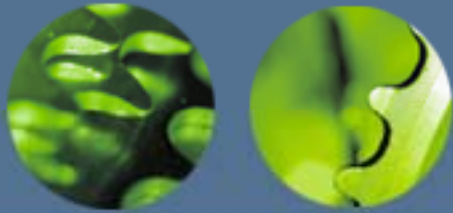
- Displays grouped OEE data for the selected date range based on the selected OEE Calculation
- Allows filtering by other parameters such as Shift, Team, Product, and etc...
- Contains two sections:
  - A graph showing the calculated KPI for the selected period and other data based on selected OEE Calculation
  - A tabular representation of the specified KPI data





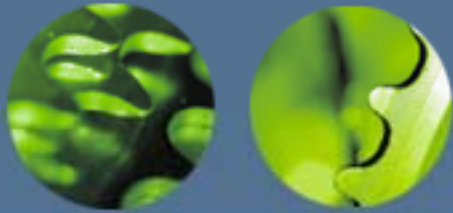
## OEE Component Reports

- These KPI reports, along with Event Reports, are useful in investigating the root causes of productivity losses
  - Availability Detail Report
  - Performance Detail Report
  - Quality Detail Report



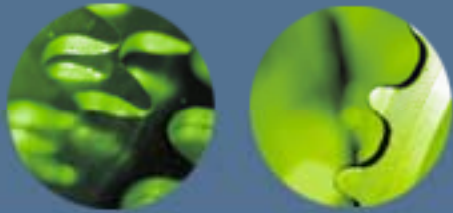
## Demonstration

- Open and discuss the different KPI Reports



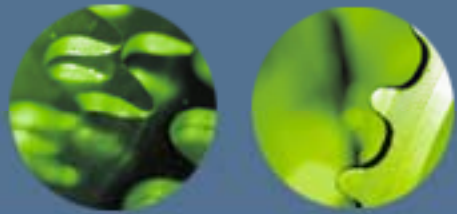
Lunch (1 Hour)

## Lab 11: webTrak – KPI Reports



# Report Design



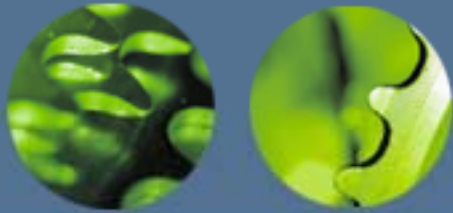


# Report Design

- Report Designer
  - Is accessible to Administrators or Report Users with Publisher rights
  - Allows changing parameter **values** and their **visibility** to report end users
  - Displays and edits report properties
- Parameters
  - The values passed to the report for data retrieval and display
  - Default values can be preset in Design Mode
  - Visibilities can be set in Design mode

The screenshot displays the 'Report Design' window with a 'New' report titled 'Area Event Summary (DateTime)'. The configuration panel includes fields for Name, Description, Auto Open, and Icon. Below this is an 'Advanced' section with 'Save' and 'Cancel' buttons. The interface also shows a 'Database' section and a 'Reporting Services' section. The 'General' tab is active, showing parameters for Area, System View, Start Date, End Date, Default Time, First Day of Week, and Format.

Parameter	Value
Name	Area Event Summary (DateTime)
Description	Events for a selected Area or System View.
Auto Open	<input type="checkbox"/>
Icon	[Icon]
Area	[ Show All ]
System View	[ Show All ]
Start Date	April 3 2006 12:00:00 AM
End Date	Today + 0
Default Time	12:00:00 AM
First Day of Week	Sunday
Format	G



## Report Date/Time Picker

- Allows selection of an exact or relative date /time for a report parameter
- Examples include:
  - Exact date range (e.g. 1/12/2006 through 1/26/2006)
  - Current Date, Week, Month, and etc...
  - Last N Days, Hours, Minutes, and etc...

General

Area [ Show All ]

System View [ Show All ]

Start Date April 25 2006 Today + 0

First Day of Week Sunday

Format G

End Date April 25 2006 Today + 0

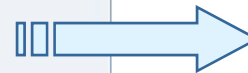
First Day of Week Sunday

Format G

Display Type Tabular

Show Chart Data Labels Yes

Show Totals Yes



April 25 2006

12:00:00 AM

Today + 0

User Defined

Current Time

Current Minute

Current Hour

Today

Week Start

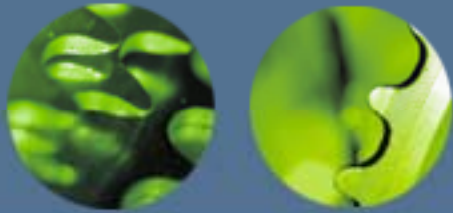
Week End

Month Start

Month End

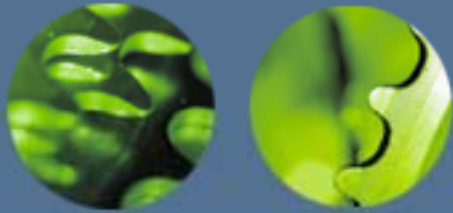
Year Start

Year End



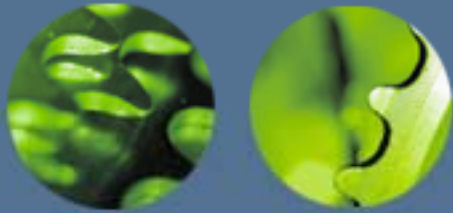
## Demonstration

- Create a New Report
- Elaborate more on Date and Time picker parameters
- Give some examples for exact and relative Date & Time selection

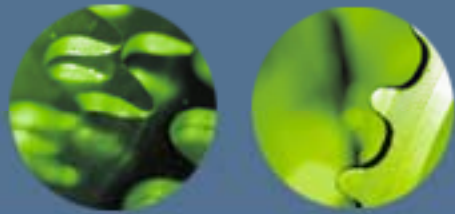


# Lab 12: webTrak – Report Design

Break (10 Minutes)



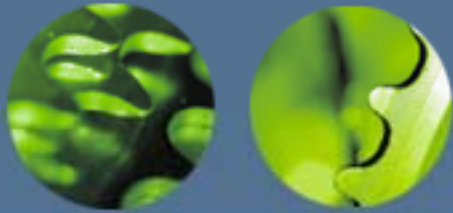
# Tag Import



# Tag Import

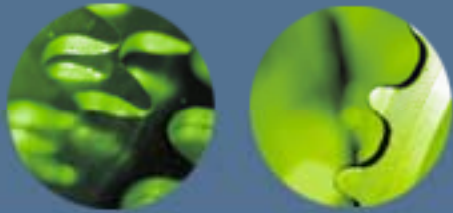
The screenshot shows the 'TrakSYS Tag Import' window. It has a blue title bar with the text 'TrakSYS Tag Import' and standard window controls. The main area is divided into sections. The 'Tag Source' section at the top has a note: 'The Tag Source file must be in valid Tag import format (refer to the documentation or the sample 'TagImport.xml' file)'. Below this is a 'Tag Source File' field containing 'C:\Program Files\Parsec\TrakSYS' and a 'Browse' button. The 'Advanced Settings' section is below, with a tab icon. It contains several settings: 'Log File' (empty text box), 'Delimiter' (comma), 'Quote' (double quote), 'Has Headers' (Yes), 'OverwriteTags' (Prompt), 'Comment' (hash), 'Escape' (double quote), and 'Trim Fields' (Yes). At the bottom are four buttons: '< Back', 'Next >', 'Finish >>', and 'Cancel'.

- A stand-alone application for batch importing Tags into the EDB database
- Input CSV files must adhere to a particular format
- Advanced Settings provide more control over processing and importing CSV files



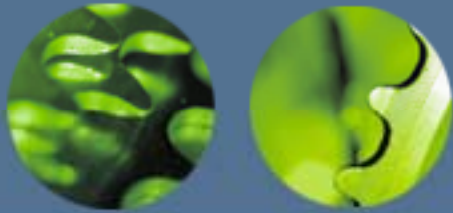
## Demonstration

- Open the Tag Import Template
- Enter sample Tags for import
- Point out the embedded comments for the columns
- Save Template as CSV
- Run Tag Import and import the Tag Import CSV
- Briefly show Advanced Settings



# Lab 13: Tag Import





<http://www.parsec-corp.com>

<http://traksys.parsec-corp.com>

[support@parsec-corp.com](mailto:support@parsec-corp.com)

