

A Powerful Combination

j5 Operations Management Software and OSIsoft® Event Frames

What are PI Event Frames?

Events are important processes or business time periods that have an impact on industrial procedures or operations. Those in the process industries often need to analyze the OSIsoft PI System® data in the context of these events, rather than by continuous time periods.

Examples of different types of events include asset downtime, process excursions, equipment start-ups and shut downs, environmental monitoring excursions, product tracking batches or paper grades, operator shifts or any other event type that has start and end times.



The OSIsoft PI System has a feature called PI Event Frames, which captures critical event contexts for users. The PI Event Frames feature allows OSIsoft PI System users to capture a name, start time, end time and a series of related information – such as event attributes – that are useful for analysis within the OSIsoft PI System.

The Powerful Combination of PI Event Frames and j5 Operations Management Software

PI Event Frames and their attributes can be synchronized to j5 Operations Management Software from a PI Asset Framework server and database. Attributes can also be updated in j5 Operations Management Software and written back to the PI Asset Framework. PI Event Frames can be locked and acknowledged from j5 Operations Management Software.

Using the j5 IndustraForm® Designer, PI Event Frames and PI Asset Framework element templates can be converted into j5 IndustraForm Templates automatically. Functionality such as Flags, Notes, Approvals, Conditional Visibility, Email Alerts can be associated with PI Tags to provide a powerful combination of human procedures with real-time data, allowing for better situational awareness across an industrial site.

Category	Item	Value	Time Stamp
Category: Real-time data	Bottom hole pressure	66.15.30393496431 psia	11/8/2017 11:30:00 AM
	Casing pressure	91.2492446899414 psia	11/8/2017 11:30:00 AM
	Casing temperature	70 °F	10/12/2017 4:49:12.208
	Gas Gravity	1.0483901701394423	11/8/2017 11:30:00 AM
	Line Pressure	1366.7967423642 psia	11/8/2017 11:30:00 AM
	Power Consumption	50.1309983701337 kW	11/8/2017 11:30:00 AM
	Production Rate	68.1.728180368363 mwpd	11/8/2017 11:30:00 AM
	Tubing pressure	1105.42759922296 psia	11/8/2017 11:30:00 AM
	Tubing temperature	58.0924671383089 °F	11/8/2017 11:30:00 AM
	Well life	307.458333333333 d	11/8/2017 11:30:00 AM
Category: Specification	Asset Name	Well 29	1/1/1970 12:00:00 AM
	Date of installation	1/1/2016 12:00:00 AM	1/1/1970 12:00:00 AM
	Date of production start	1/5/2017 12:00:00 AM	1/1/1970 12:00:00 AM
	Manufacturer	Bestville	1/1/1970 12:00:00 AM
	Model	4872131	1/1/1970 12:00:00 AM
Category: Target	Production target	5000 mwpd	1/1/1970 12:00:00 AM
Category: Temperature	Casing temperature	70 °F	10/12/2017 4:49:12.208
	Tubing temperature	58.0924671383089 °F	11/8/2017 11:30:00 AM
Category: Time tracking	Avg 30d Downtime	200.85775885264 h	11/8/2017 11:30:00 AM
	Status Message	Running	11/8/2017 11:30:00 AM
Category: Status Message	Open	11/8/2017 11:30:00 AM	
	Clear Down Testing	11/8/2017 11:30:00 AM	
	Running	11/8/2017 11:30:00 AM	
	Production	11/8/2017 11:30:00 AM	
	Offline	11/8/2017 11:30:00 AM	

1. In this example, Well 29 goes offline.

2. PI Event Frame created in PI Asset Framework.

Event Time	Site	Section	Area	Category	Message	Status	Notes
Nov 8, 2017 11:52 AM	Wells	Clear Fork		Production	Well29 Downtime 2017-11-08 11:52:44	Open	
Nov 8, 2017 10:18 AM	Wells	Odessa		Production	Well17 Downtime 2017-11-08 10:18:00	Closed	
Oct 16, 2017 11:51 PM	Power Generation	Generation	Area 50	Maintenance	Changed filter elements on 104 L small benfield filter.	Closed	
Oct 16, 2017 7:48 AM	Power Generation	Transmission		Environment	High Opacity reading on the CEMS This is probably caused by the recalibration taking place at the moment.	Closed	
Oct 16, 2017 7:47 AM	Power Generation	Transmission		Lab	Took DMC S/D sample to the lab	Open	
Oct 16, 2017 6:03 AM	Power Generation	Transmission		Maintenance	Alignment incomplete. Maintenance suspend work due to soft leg or motor.	Open	
Oct 16, 2017 3:51 AM	Power Generation	Transmission		Maintenance	Backwashed BMF #1 backwash did not get a good air scour Going to do another backwash when complete.	Closed	
Oct 16, 2017 3:40 AM	Power Generation	Generation		Maintenance	Locked out BFP 1 for Ron Wilson to inspect seal. Training Test Entry for Power Block Operator.	Open	
Oct 16, 2017 3:28 AM	Wells	Odessa		Lab	Effluent Discharge measurements complete	Open	

3. Entry automatically created in the j5 Operations Logbook.

4. PI Event Frame attributes available in a j5 IndustraForm Template.

j5 Operations Management Software allows users to build procedures and processes on top of the events generated in the PI Asset Framework.

5. In this case, the user reviews the information available and decides that they requires a field operator to do a visual inspection.

6. This brings up the inspection j5 IndustraForm Template for that piece of equipment.

6. Entry automatically created in the j5 Operations Logbook.

7. This can be completed on a mobile device out in the field using j5 Mobility.

Well Inspection

Visual Inspection

Is the location free of oil/gas/saltwater leaks? ☒ Yes ☐ No ☐ N/A

Is the annulus free from escaping gas or fluid? ☒ Yes ☐ No ☐ N/A

Is there any evidence of groundwater contamination? ☐ Yes ☒ No ☐ N/A

Manual Measurements

Casing temperature: 23

Oil outlet temperature: 70

Emulsion inlet temperature: 77

Plant inlet separator pressure: 7

Downstream meter tap pressure: 112

Meter upstream pressure: 114

Additional Observations: Machine turned back on, no issues noted.

9. That information is automatically synced back to the desktop version of the j5 IndustraForm Template, so the operator in the control room can have visibility of the information without the need for radio calls or waiting for the field operator to return.

	Casing temperature	70 °F	10/12/2017 4:49:12.2
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10. Data collected can also be written back to PI Tags or PI Asset Framework attributes.

Corrective Actions

Responsible Person	Action	Due Date	Completed	Comments
Andrew Bateman	Raise work order to do corrective maintenance on Well	Thu 9. 12:01 PM	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
-			<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

Confirm all actions completed and issue is resolved: ☐ Yes ☐ No ☐ N/A

11. The final part of this example workflow is adding corrective actions to resolve the issue. This could be adjusted to fit any process. Different procedures and j5 IndustraForm Templates can be lined up with different PI Event Frames.

About Hexagon

Hexagon is a global leader in sensor, software and autonomous solutions. We are putting data to work to boost efficiency, productivity, and quality across industrial, manufacturing, infrastructure, safety, and mobility applications.

Hexagon's PPM division empowers its clients to transform unstructured information into a smart digital asset to visualize, build and manage structures and facilities of all complexities, ensuring safe and efficient operation throughout the entire lifecycle.

Hexagon (Nasdaq Stockholm: HEXA B) has approximately 21,000 employees in 50 countries and net sales of approximately 3.9bn EUR. Learn more at hexagon.com and follow us @HexagonAB.