

NOVEMBER 2022

Mobility roadmap: Empowering a connected workforce

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AVEVA

Agenda

AVEVA mobile operator roadmap

Insight mobility

The hybrid approach

Digital procedures

Mobile Operator Capabilities



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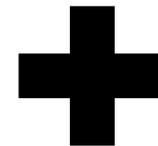
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AVEVA mobile operator

Roadmap

- R2 Release – January/February
 - Azure AD authentication
 - Ping ID authentication
 - OSI-PI Core integration update
- OSI-PI Integration
 - Additional core support of custom integration
 - Tour conversion
- Technology updates
 - Cloud supportable architecture
 - Client thinning

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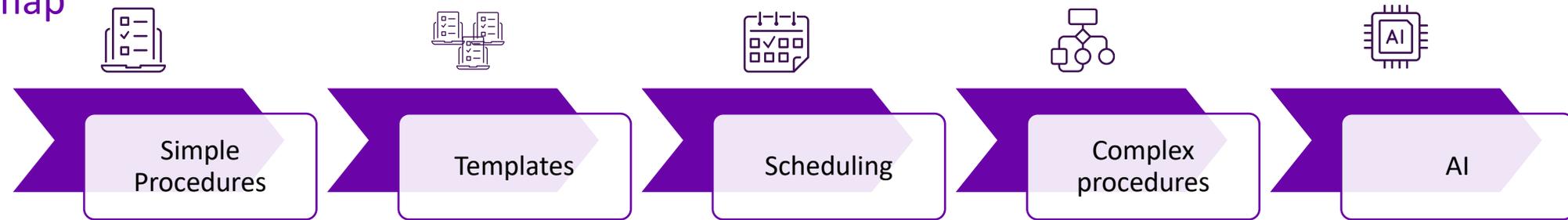


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Insight mobility

Roadmap



- **First Release (est. H2 2023)**
 - Simple procedures
 - Stranded asset data
 - Human observation
 - Compliance rounds

- **Procedure templates**
 - Customer created templates
 - Asset library templates
 - Prescriptive actions

- **Procedure scheduling**
 - Calendar sased Scheduling
 - Shifts
 - Crews
 - Recurrence

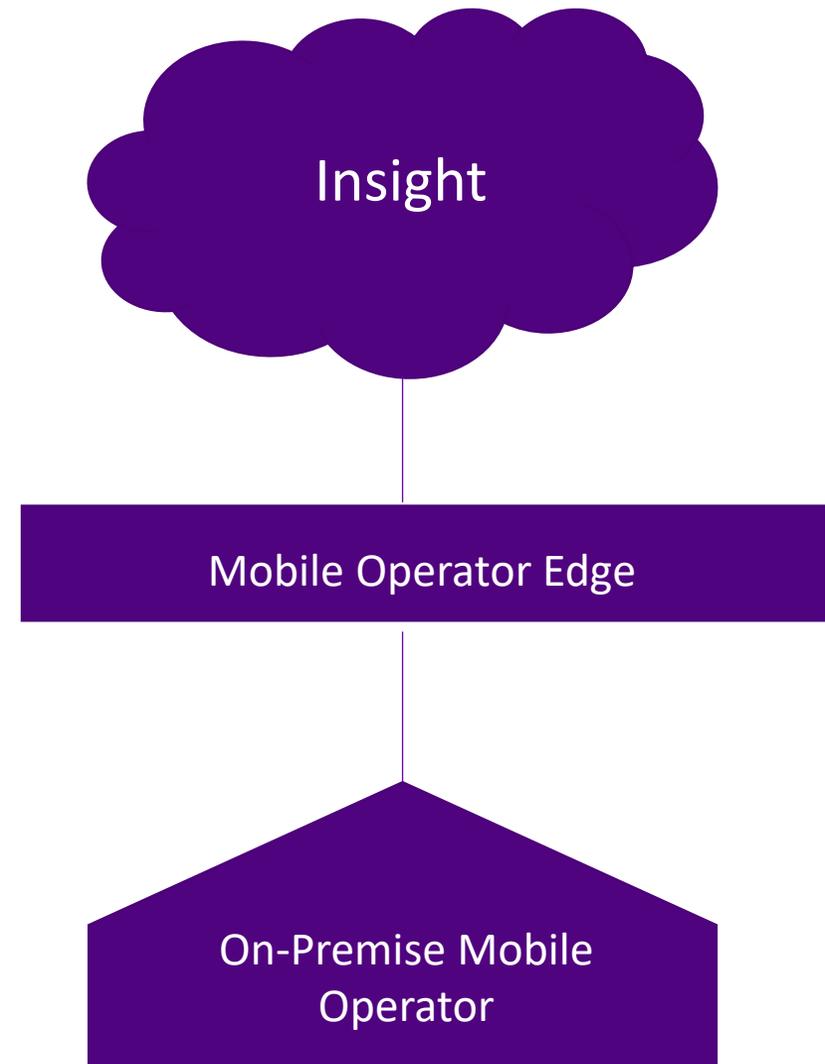
- **Advanced procedure workflows**
 - Conditions/exceptions
 - Decisions
 - Follow up actions
 - Workflow integration

- **AI infusion**
 - Prescriptive action procedures
 - AI schedule optimizations
 - Asset strategy procedures

Insight and mobile operator

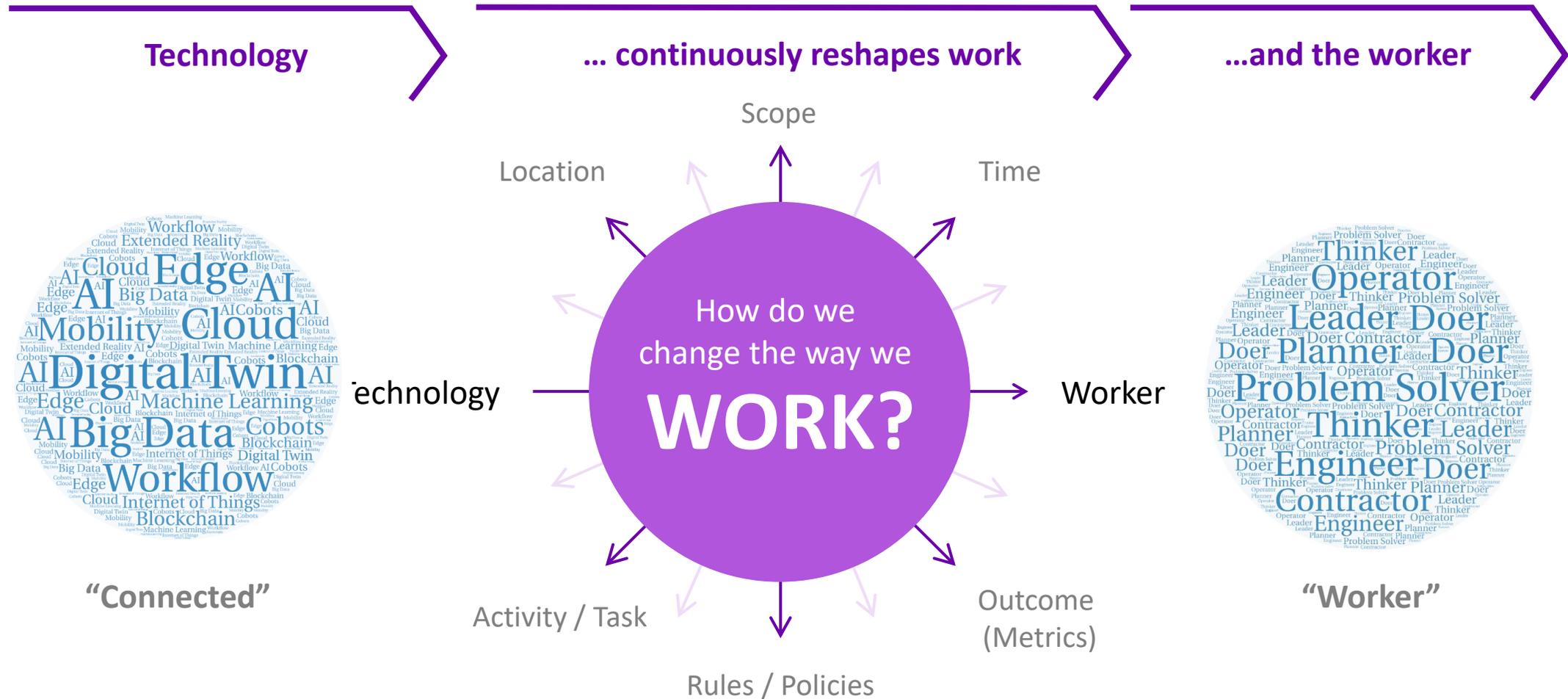
The hybrid approach

- Push Insight templates to on-premise mobile operator
- AI triggered procedure schedules to on-premise mobile operator
- Workflow in the cloud trigger on-premise procedures
- Cloud based procedure auditing



Digital procedures

There is a consistent theme



Addressing different dimensions of the same challenge

“Systems of record” perspective

Enterprise Twin

Source Make Deliver

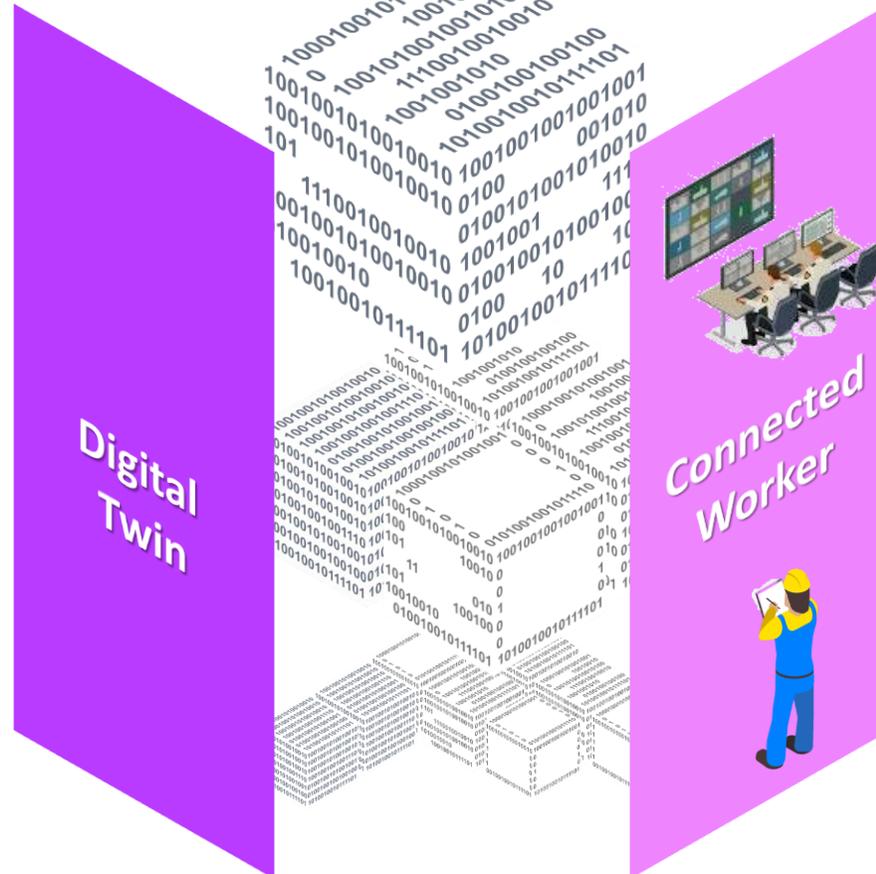
Process Twins

Plant 1 Plant 2 Plant 3

Line 1 Line 2 Line 3

Asset Twins

Filler Labeler Palletizer



“Systems of engagement” perspective

Enabling problem-solving

Am I empowered to act?
- for what outcome?

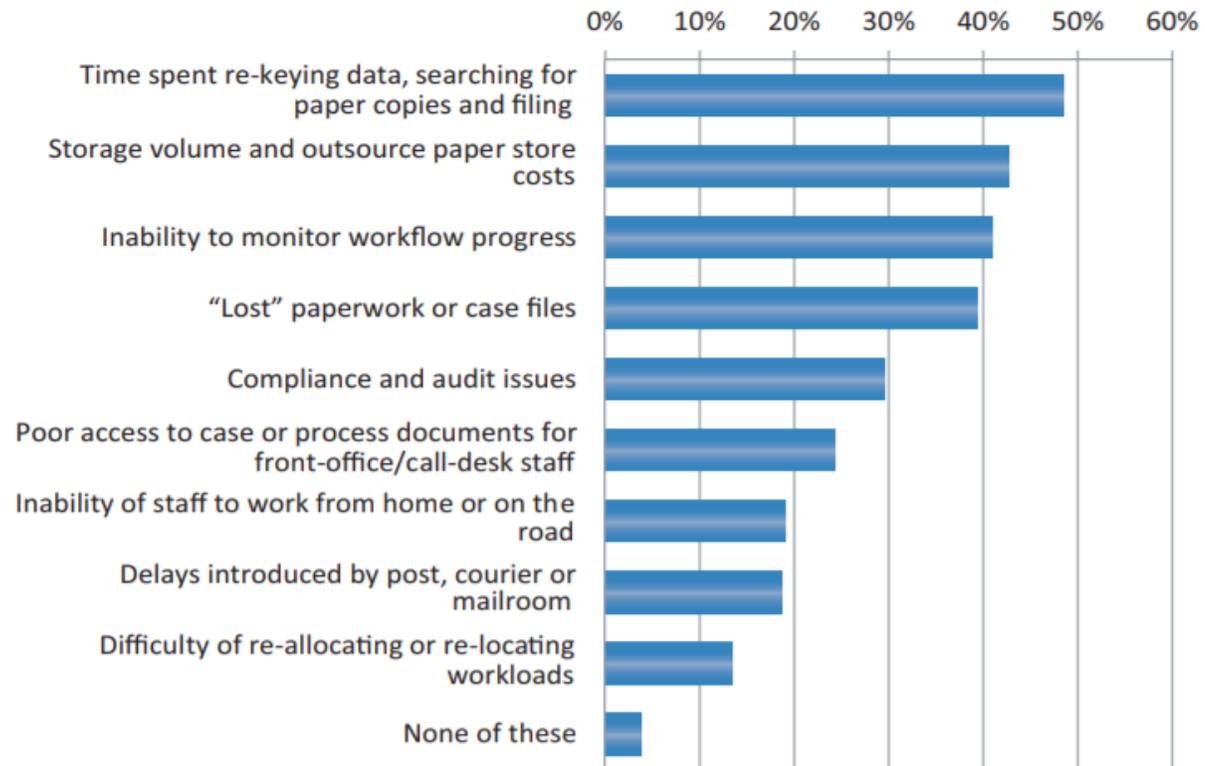
Is the context meaningful?
- to create value?

Is it available to me?
- at the right time?

Is the data in a digital format?
- and trustworthy?

Challenge: addressing issues caused by paper-based processes

What would you say are the biggest issues caused by paper-based processes in your organization?
(Max THREE) (N=449)



Functional Apps: addressing the challenge

Digital Procedures

Key Capabilities

- Procedure Authoring Environment
- Procedure Life Cycle Management
- Procedure Approval
- Initiate Work Tasks for Procedure Execution
- Procedure Archiving & Integration

Mobile Application Capabilities

- Procedure Execution
- Offline Execution
- Search and Browse Procedures
- Ad-hoc Procedure Execution

Digital Logbook

Key Capabilities

- Shift Handover
- Search Log Entries
- Log Entry
- Directives
- Work Instructions

Mobile Application Capabilities

- Log Entry
- Directives Acknowledgement
- Work Instructions

Completions /PSSR

Key Capabilities

- Initiate Review Process
- Selection of Review Team and Review Areas
- Review Management
- Audit Trail

Mobile Application Capabilities

- Perform Review
- Review compliance

Turnaround

Key Capabilities

- Turnaround Scope Planning
- Turnaround Scheduling
- Step & Machinery Config.
- Fit Sheets
- Turnaround Tracking

Mobile Application Capabilities

- Turnaround Execution
- Offline Execution
- Search and Browse

Standard operating procedures

Often authored in Microsoft Word and printed out on paper for execution today

Switch Hydrogen Trailers

Purpose:	To switch hydrogen trailers
When to execute:	When the pressure of the on-line trailer is approximately 1000 psig (indicated on the online trailer gauge) or upon Console request.
Safety and Environmental Precautions:	Hydrogen is received in a high-pressure (2500 psig) trailer and must be handled as safely as possible to avoid any incidents or injuries. Hydrogen is a highly flammable gas.
PPE:	Standard
Equipment:	
References:	Drawing 708-500-0105
Affected Post(s):	<input type="checkbox"/>
Prerequisites:	<input type="checkbox"/>

ID	ACTION	NOTES
PT	1. ENSURE all nine (9) trailer cylinder valves on online trailer are opened and line up is good from online trailer to the hydrogen header	
PT	2. ENSURE all nine (9) trailer cylinder valves are open on the trailer to be switched to.	
PT	3. INFORM the SPU Console Supervisor that you are going to switch hydrogen trailers	
CS	4. CONFIRM when OK to switch trailers	
PT	5. ENSURE the main valve on the trailer being switched to is closed.	

Owner: Revision 0
Printed: Page 1 of 2

Switch Hydrogen Trailers

ID	ACTION	NOTES
PT	6. LINE UP valves downstream of flex hose to the hydrogen header (on trailer being switched to)	
PT	7. SLOWLY CRACK OPEN the main trailer valve until a small flow is heard flowing across valve.	Note: flex hose contains an excessive flow check; if valve is opened too quickly, the check will stop flow.
PT	8. MONITOR downstream pressure increase on local pressure gauge	Note: The pressure will slowly increase and the pressure controller will pinch down.
PT	9. BLOCK valves on the trailer being switched from (the main trailer valve and valve downstream of flex hose.)	
PT	10. INFORM Console Supervisors that procedure is complete	
CS	11. ENSURE proper pressure is being controlled	

End of Procedure

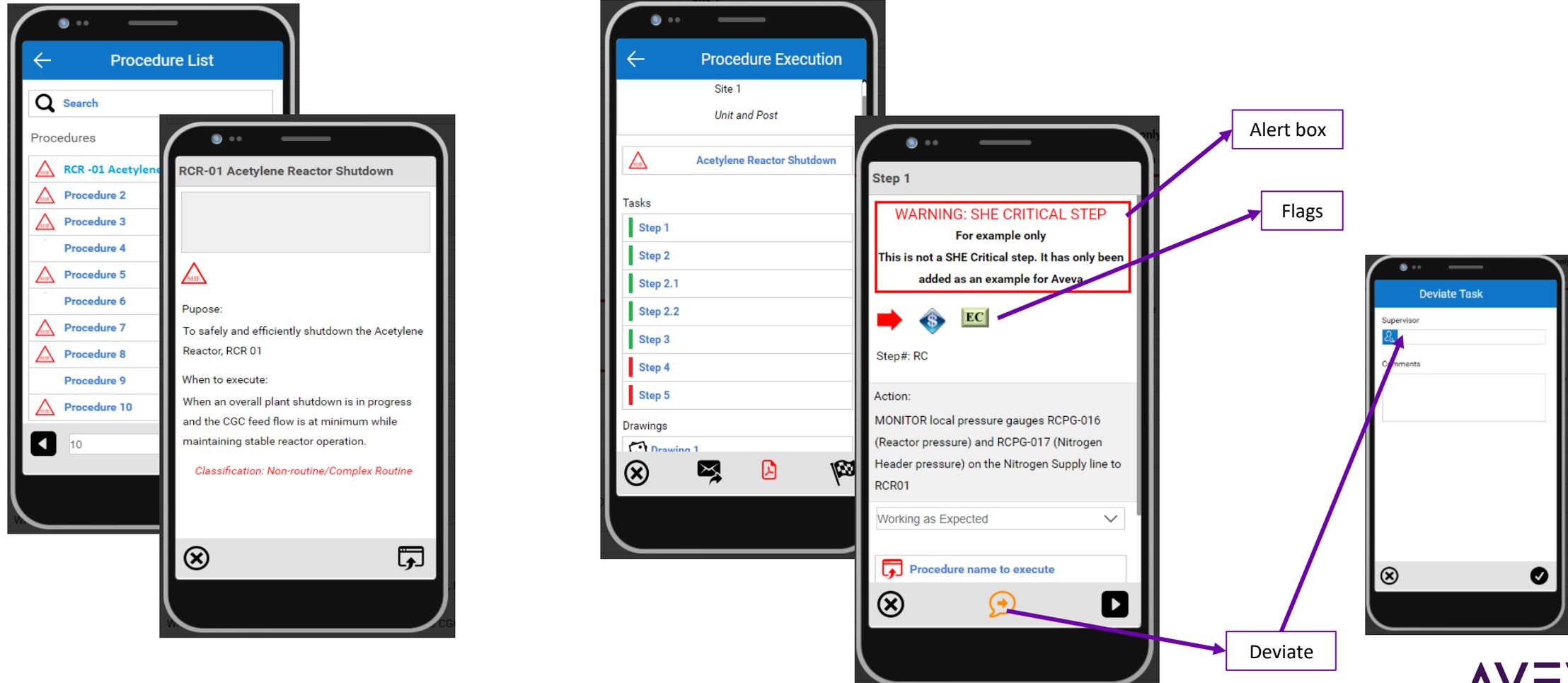
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About procedures:

- Commonplace across all industries
- Vary in complexity, e.g.
 - Safety, environment & health
 - Checklists
 - Startup and shutdown
 - Turnaround
 - Routine work processes

Procedure execution

Digital procedures



Procedure authoring

Digital procedures

The image displays a web-based interface for digital procedure authoring, split into two main sections: a Configuration Wizard and an Authoring Environment.

Configuration Wizard: This section on the left contains various form fields for defining the procedure's metadata. Fields include Site (Site 1), Category (Chemicals), Unit Name & Post (Unit 1), Procedure Number (P00001), Procedure Name (Procedure 1), Revision Number (1), Revision Date (9/1/2019), Owner (SLS), and Last Audited Date (9/1/2019). It also includes several yes/no checkboxes for options like 'Include placeholder for Change Form?', 'Include Master Copy?', 'Include Pre-job Meeting SignOff?', 'Is this procedure trained using a GMT module?', and 'Is this procedure SHE Critical?'. A 'Type of procedure' section has radio buttons for Routine, Non-Routine/Complex Routine (selected), Emergency/Abnormal, and Other. A 'Risk Evaluation' section has radio buttons for High Risk, Medium Risk, and Low Risk.

Authoring Environment: This section on the right is used for editing the procedure content. It features a central text editor with a rich text toolbar. The main content area displays 'Safety Critical' in red, followed by 'P00001 Procedure 1'. Below this, there are three distinct text blocks, each with its own toolbar and a 'Flags' panel on the right. The first block describes the purpose: 'To safely and efficiently shutdown the Acetylene Reactor, RCR 01'. The second block describes when to execute: 'When an overall plant shutdown is in progress and the CGC feed flow is at minimum while maintaining stable reactor operation.' The third block describes safety and environmental precautions: 'Any step with this symbol is a SHE Critical step. All work activities should follow and comply with the Approved Safety Standards and Work Practices as identified under our Safety Standards and Work Practices'. Each text block has a 'Flags' panel with checkboxes for Arrow, Financial, Ops Critical, and Enviorn Critical.

Key interface elements are highlighted with callouts: 'Symbol Palette' points to the top toolbar; 'Alerts' points to warning symbols in the Purpose section; 'Configuration Wizard' points to the left-hand form; and 'Authoring Environment' points to the main editing area.

Procedure authoring

Digital procedures - rules and task completion status

The screenshot displays a digital procedure authoring interface. A main window shows a table for rule configuration with columns for Completion Status Selection, Allow Deviation, Enable Rule?, and Available Options. A 'Set Options' button is located below the table. An 'Add Rule' button is also present. A 'Rule Setup' table below shows a rule configuration: Operator: Equal to, Option: Yes, Action: Jump to step, Step/Procedure: 2.2, Stop Processing: 2c6fc3. A 'Completion Status Selection' dropdown menu is open, showing options: Not required, Enter a value, Select a value, Select multiple value, and Not required (highlighted). A 'Set Options' dialog box is open, showing fields for Operator (Equal to), Available Options (Yes), Action (Jump to step), and Task Serial Number (1). A 'Stop Processing' checkbox is checked. 'Cancel' and 'Finish' buttons are at the bottom. A 'Add/Modify Items' dialog box is open, showing a form for adding items to the options run time. It has an 'Add Record +' button and two input fields: 'Yes' and 'No'. A 'Finish' button is at the bottom.

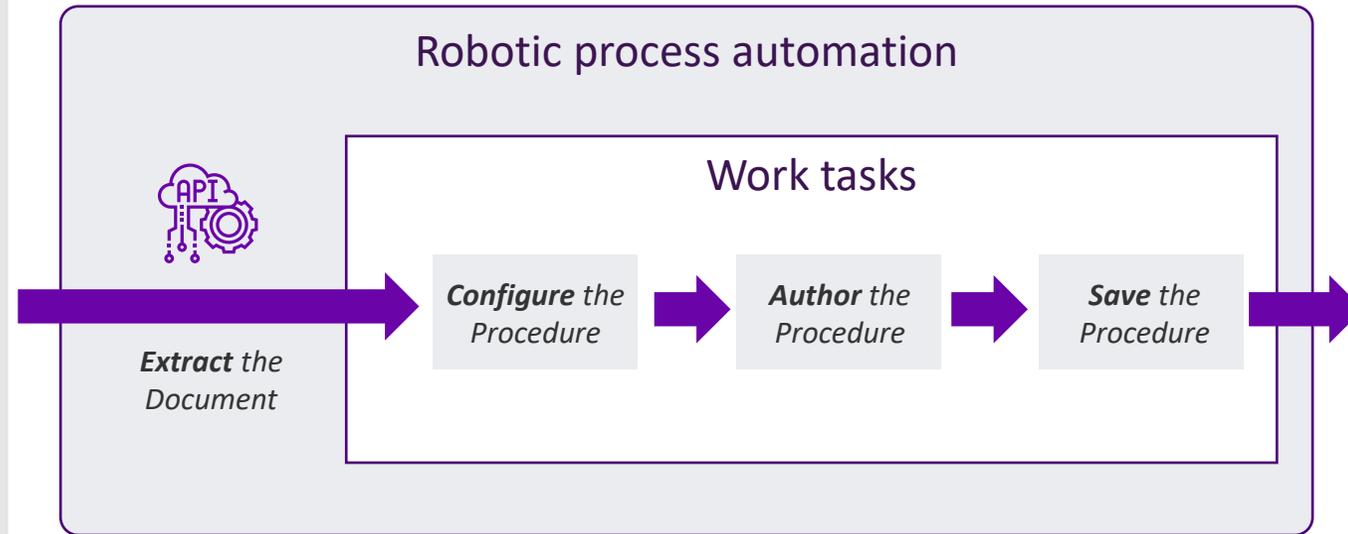
Completion Status Selection	Allow Deviation	Enable Rule?	Available Options
Select a value	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Operator	Option	Action	Step/Procedure	Stop Processing
Equal to	Yes	Jump to step	2.2	2c6fc3

Making procedure “conversion” practical

What you will see

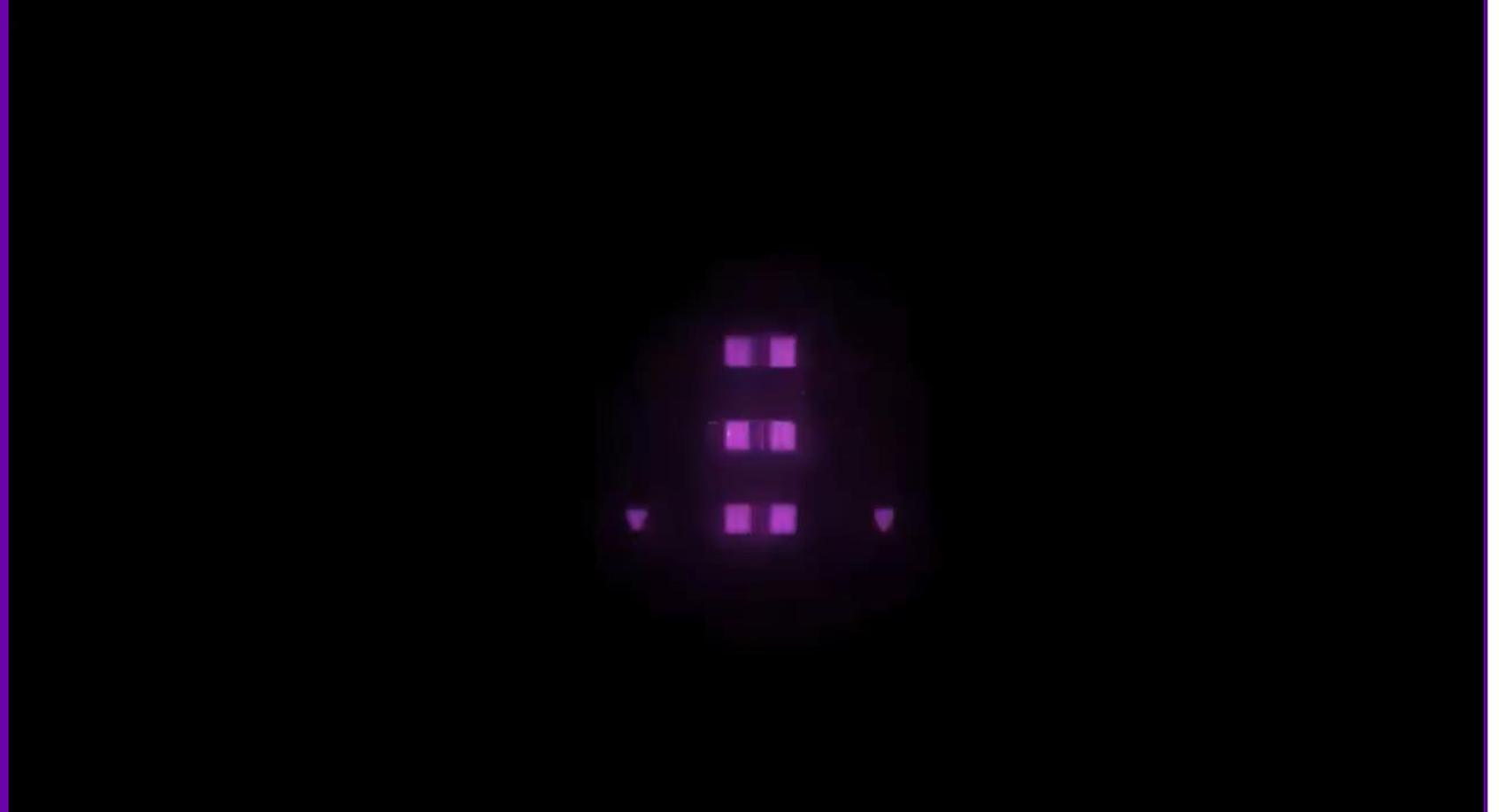
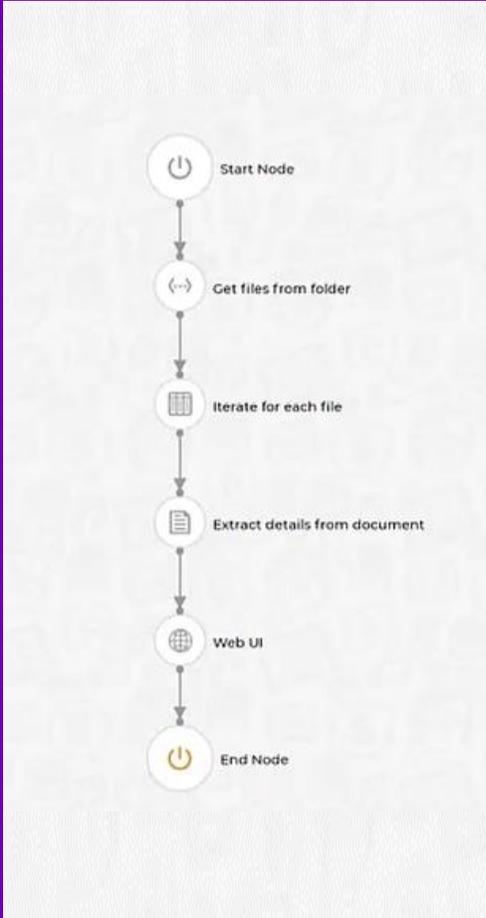
Switch Hydrogen Trailers		
Purpose:	To switch hydrogen trailers	
When to execute:	When the pressure of the on-line trailer is approximately 1000 psig (indicated on the online trailer gauge) or upon Console request.	
Safety and Environmental Precautions:	<ul style="list-style-type: none">Hydrogen is received in a high-pressure (2500 psig) trailer and must be handled as safely as possible to avoid any incidents or injuries. Hydrogen is a highly flammable gas.	
PPE:	<ul style="list-style-type: none">Standard	
Equipment:	<ul style="list-style-type: none">	
References:	<ul style="list-style-type: none">Drawing 708-500-0105	
Affected Part(s):	<input type="checkbox"/>	
Prerequisites:	<input type="checkbox"/>	
Switch Hydrogen Trailers	Complete the following steps to Switch Hydrogen Trailers:	
ID	ACTION	NOTES
PT	1. ENSURE all nine (9) trailer cylinder valves on online trailer are opened and line up is good from online trailer to the hydrogen header	
PT	2. ENSURE all nine (9) trailer cylinder valves are open on the trailer to be switched to.	
PT	3. INFORM the SPU Console Supervisor that you are going to switch hydrogen trailers	
CS	4. CONFIRM when OK to switch trailers	
PT	5. ENSURE the main valve on the trailer being switched to is closed.	



RCR-01 Acetylene Reactor Shutdown	
Purpose	To switch hydrogen trailers
When to Execute	When the pressure of the on-line trailer is approximately 1000 psig indicated on the online trailer gauge or upon Console request.
Safety and Environm	Hydrogen is received in a high-pressure 2500 psig trailer and

Digital procedures – conversion + authoring + execution

Conversion + Authoring + Execution



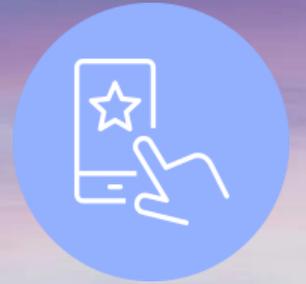
Questions?

Please wait for the microphone
State your name and company



Please remember to...

Navigate to this session in the mobile
app to complete the survey.



Thank you

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