



Exceptional service in the national interest

Implementing COTS in the Time of COVID

Paula Schindele and Graham Bass

NLIT 2022

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Background of Project

In 2018 IT and ES&H leadership Identified a pressing need to consolidate a huge collection of custom applications in order to simplify ongoing M&O, ensure reliability, and maintain availability. It was determined that the best solution in alignment with changing IT priorities and labor availability was to procure a COTS product that could fill a majority of these needs.

The first module was released in early December of 2019, with the intent of continuing to release new modules regularly thereafter.

In March of 2020 the operational landscape changed dramatically, and the role that technology played changed in step with that. Two years later we have a much more mature strategy for coordinating the work of hundreds of people working remotely with onsite teams, offsite employees, contractors, and vendors.





ESShield Integration Plan (FY18 – FY24)



5-Year Roadmap for Integrated IT/ES&H



Event Management (FY18–FY22 Q2)

Permits (FY23 Q1–Q4)

Hazard Analysis/Risk Identification (FY20 Q3–FY24 Q4)

IT Improvements
(FY18–FY20)

And we'll make
it happen face to
face... just like
we always have!

Inspections (FY21 Q1–Q4)

Reporting (FY24 Q1– Q4)

Compliance Management (FY21 Q1–FY22 Q4)

Utility/Productivity
(FY24 Q1–Q4)

Materials/Asset Management (FY21 Q3–FY23 Q4)

Enhance & expand ES&H Data Warehouse to house data from broad spectrum of program applications for predictive analytics (FY20+)

FY20

FY21

FY22

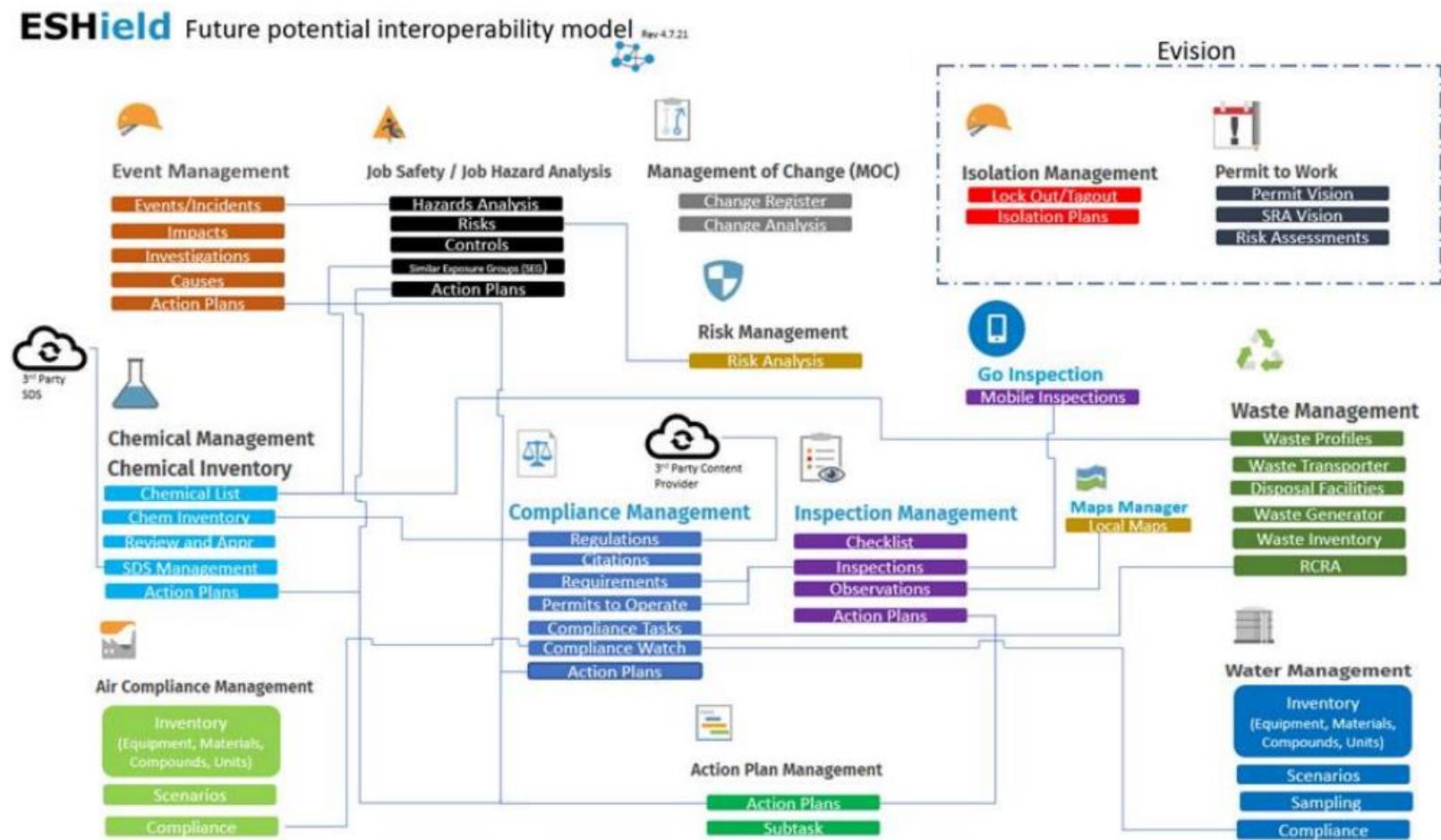
FY23

FY24





Future State - Diverse work areas in a single platform



Problem Statement(s)

How do we organize, manage, and communicate between teams in a virtual environment that keeps them productive, engaged, and informed?

How do we leverage technology solutions to improve delivery times by digitizing existing templates and best practices?

- Transparency
- Productivity
- Engagement

- Standard Work
- Best Practices
- Quality



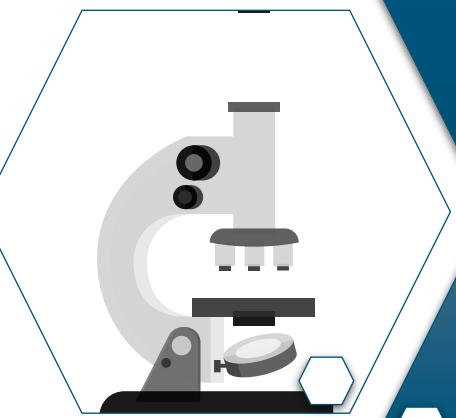


Requirements: What does it take to get work done?

We're going
to science
the
*#\$%#@
out of
this...
iteratively.



Visibility to
management,
stakeholders,
and team



Free flow of
information
within the
organization

Integration
with business
workflow

Single place
for key
activities





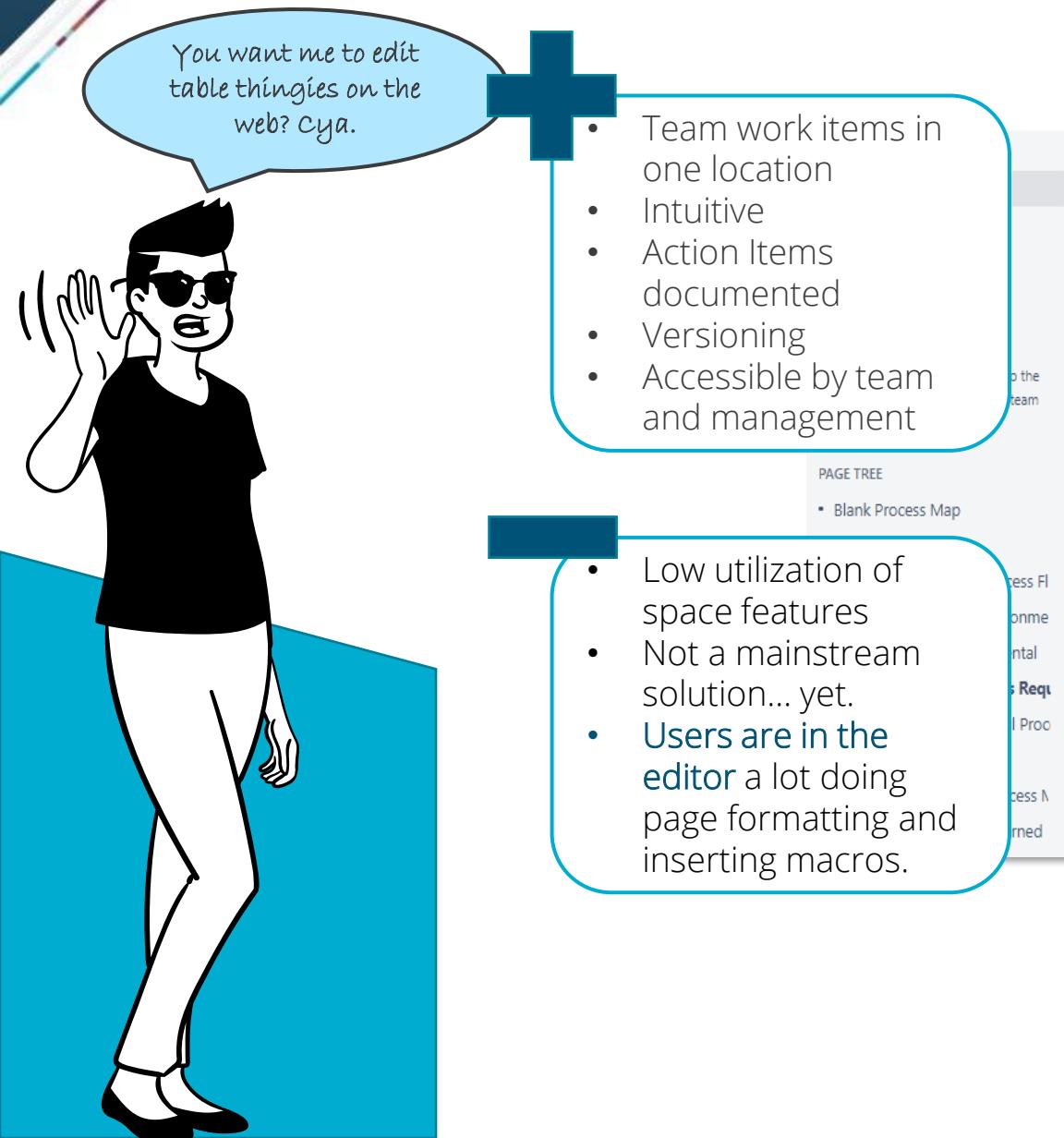
Key Pieces of our Software Stack for Virtual Collaboration

-  Confluence – Main collaboration hub, content hosting
-  MultiExcerpt Macro – Create reusable page snippets
-  draw.io Macro – process flows, prototyping
-  Coniforms Macro – data input/reporting, page creation
-  Jira – task tracking, planning, dependencies
-  Microsoft Teams – meetings, support channels
-  Microsoft OneNote – ad hoc notes, real-time collaboration





Iteration 1: Early use of Confluence for Team Work



Environmental Process Requirements

Created by Paula Marie Schindele, last modified on Feb 03, 2022

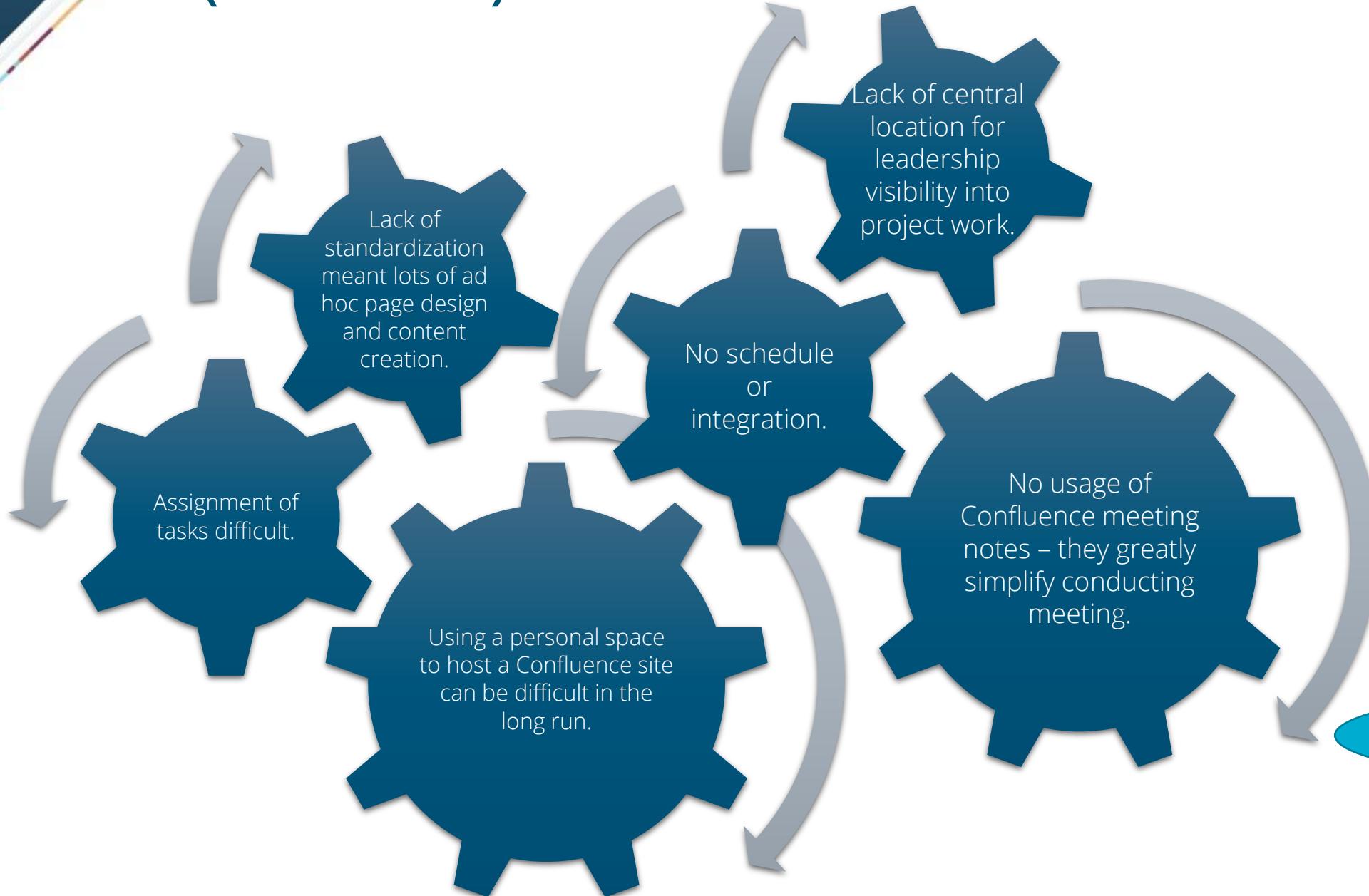
Current Process	Missing Component	Required Output	Possible Solution

Document Attachments/Links

Meeting Notes:

Date	Note	Action
1/17/22	Historian new buildings on list until 50 year review.	Ask Historian for validation/options.
1/17/22	Maximo review and integration into ESHield (Engineered Controls)	Incorporate Robert Thosen's actions for engineered controls
1/17/22	Process Maps to IT for understanding of data entry	Process Analysis may have been completed (Ray Serna)
1/17/22	Robert Process Map (Requirements)	Sent to Andrew and Paula for review
1/17/22	Revise NEPA approval for drop down	Action in Note
1/17/22	Review CA Facilities use and needs	What is specific to CA and what can/should be standardized
1/17/22	Review level of Rigor for Engineered Control	

(Some of the) Lessons Learned from Iteration 1



crawl before you walk.





Iteration 2: Improved Functionality and Data Flow



- Charter info visible
- Page is mostly updated without the editor
- Tabbed workspace
- Items condense team artifacts
- Conforms provides bidirectional flow of information from team to management
- Teams are visible and editable
- Help tab included
- MultiExcerpts make most parts modular and maintainable.

It's just too much!!
Why do they ask this of me?



- Information density is very high
- Training required for effective utilization

Environment, Safety & Health - Subcontractor Environmental Initiative

Purpose	Problem	Goals and Objectives	Scope	Team
Identify and develop an enhanced environmental review process for the Division 4000 Work Order process. The ideal state would produce an engineered controlled process that is utilized by SNL to ensure environmental requirements are met prior to work execution.	The current work order process has failed to identify environmental requirements in the medium to high rigor review resulting in environmental noncompliance.	<ul style="list-style-type: none"> Evaluate Work Order process flow identify areas for engineered controls Review and evaluate Facilities Work Package Quality Assurance (Deb A. Lead) Review benchmarked reports for integration into Environmental Process Evaluate Environmental current Work 	Environmental requirements implementation into the Division 4000 project planning and execution	Champion: Stephanie Salinas Team Lead(s): Andrew Gough Product/Process Owner: Terry W Cooper Team Facilitator: Paula Marie Schindel Team Members: Deborah Umeh Anyaibe, Ya Hendricks, Dee Dee Dicker, Brandyn J Antolak, Amy Joyce Moser, Catherine Noble, Robert J Thoesen

Confluence calendar

Confluence Page Attachments

Jira Kanban Board

Conforms Tables + MultiExcerpt Include

MultiExcerpt Include

Confluence Table

Task Report Macro

Confluence Table

Conforms Table

Calendar Kanban Decision Log Files Links/References Meeting Followup Parking Lot Status Risks Help Needed/Flow Downs Need Help?

Click the tabbed items below to access additional functionality

Help Needed/Flow Downs

This will appear on the Senior Managers' Initiative Workgroup Meeting and the Cat1 Updates

Date	Team	Entered By	What do you need help with?	Response from Management	Responder	Escalation Status
03/16/22	Subcontractor Environmental Initiative	Stephanie Salinas	Resources supplied through Stakeholder.			COMPLETED
Help Needed <small>double click fields to edit</small> +Help Needed						
Date	Team	Message from Management			Responder	Escalation Status
02/02/22	All Initiatives	Teams need to define what reporting needs your process needs to include...is there information/data that has to be reported (regulatory, KPI's, balanced scorecard, line partner wants to see certain data and wants a report for that data, etc).			Stephanie Salinas	INFORMATIONAL
02/02/22	All Initiatives	Communications team will be supporting all initiatives and not just ESHield as originally scoped. Champions to provide more detailed information to team on engaging with the Communications Team.			Stephanie Salinas	INFORMATIONAL



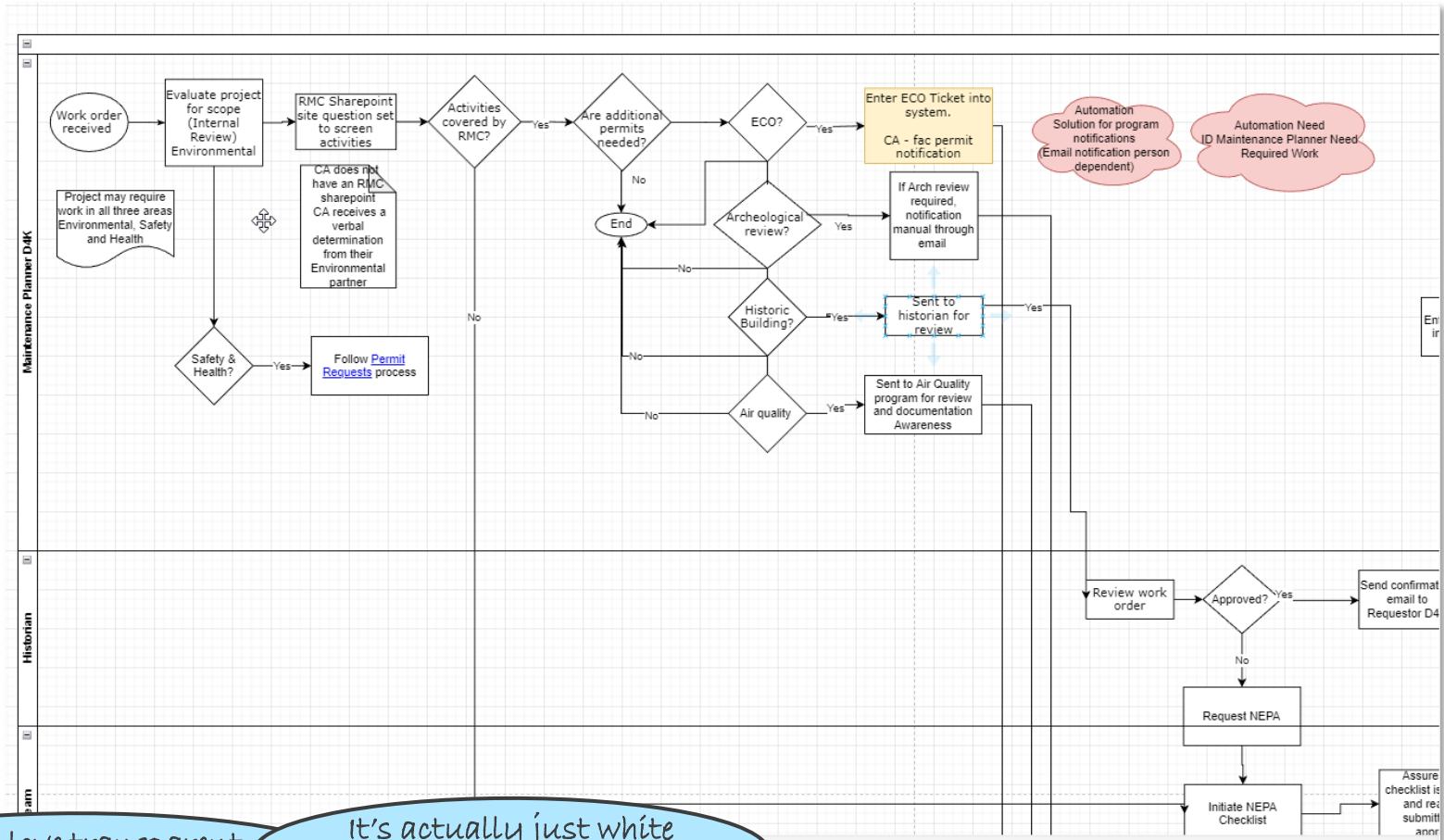
Tools: draw.io Diagram Macro



- No software needed
- Intuitive
- Versioning
- Simultaneous work
- Big icon/shape library
- Accessible by teams and management



- Compatibility can be an obstacle
- Exporting hi-res images to pdf is fiddly
- Copying/Pasting can be tricky



Oh... I love transparent processes!!

It's actually just white on white.

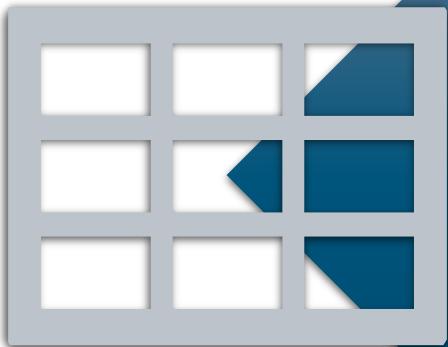




Tools: Conifoms Macro



- Powerful and flexible
- Lots of automation options
- Reference fields and content from other tables
- Intuitive form interface.
- Excellent developer support



Conifoms is a “registration” tool that can be used for so much more.

- Allows **form building** with an extensive library of field types.
- Provide **display options** from tables to custom layouts.
- Storage is done in **data tables** that live on a host page.
- Data is easily viewable and **exportable**.

Octocloud?
Cloudapus?
What even
is this? I do
like
Conifoms
though...



- Significant learning curve for creating advanced functionality from scratch
- Programming/DBA background helpful



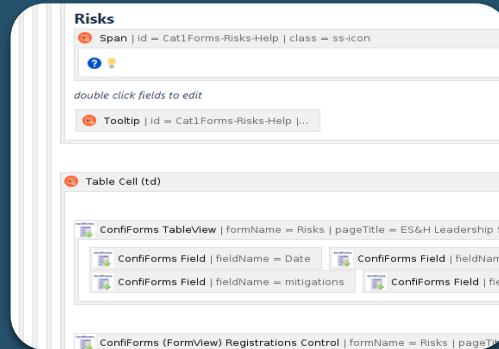
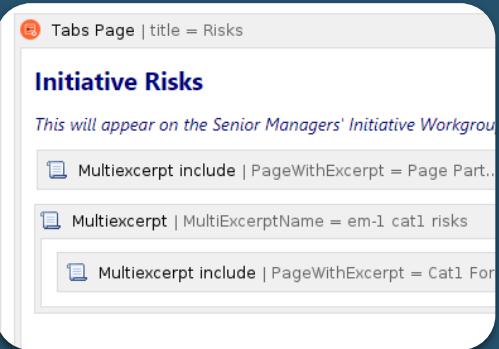
IFTTT integration allows extensive automation triggered by record creation/updates, including:

- Page creation
- Record creation/modification
- Sending **emails**
- **Jira** issue creation
- And more



Tools: Using MultiExcerpt and Conforms Together

How do you make Conforms work on different pages without hardcoding values?



correctly. Use sequential rendering mode instead then
Filter to apply on entries dataset
`team.teamid:[entry._page.pageProp]`
See examples in macro preview window
Apply distinct filter to return only
correctly. Use sequential rendering mode instead then

1. Set up a **Page Properties** Macro and insert a horizontal table. The header value is the reference field. The cell is interpreted as a string

2. On the page that the hosts the content all you see is the **MultiExcerpt Include**. *In the options, make sure to check "Use Page Context"*

3. Apply denser formatting within the include. This keeps a simple view for the end user while still using custom formatting more macros without risk of breakage or cluttering up the editor view.

3. In **Conforms** filter use the filters to access the page property. `[entry._page]` gives access to page ID/object, `.pageProperties("")` returns value from the table.

Tools: Jira and the Confluence Agile Wallboard Gadget



- A Jira board can be displayed in Confluence to help keep people up to speed on active work.
- Theoretically, visibility for teams and management of work in progress, directly in the team space.
- Flexible configuration options in the plugin
- Supports quick filters and other view configurations

Workspace Items
Click the tabbed items below to access additional functionality

Calendar **Kanban** Files Links/References Meeting Followup Risks Escalations/Flowdowns Status

To make changes, view in [Jira Software](#)

TO DO 22	IN PROGRESS 0	PLANNING 0	DONE 0
<p>ESH3-1 CIS/Explosive Materials Management</p> <p>⊕ =</p>			<p>We're only showing recently modified issues.</p> <p>Looking for an older issue?</p>
<p>ESH3-2 Compliance Obligations</p> <p>⊕ =</p>			
<p>ESH3-3 Integrated ES&H Dashboard</p> <p>⊕ =</p>			



- Not interactive, changes still have to be made in Jira
- Doesn't facilitate adoption of either product





Confluence Collaboration Macros

File Storage

File Modified

ESHield Integration Charter - Updated 12-06-21 (4).docx	Dec 20, 2021 by Paula Marie Schindele
Sandia CA Permit Request Form rev 041521 final.pdf	Mar 18, 2022 by Paula Marie Schindele
HA-QRA_FutureState_Swimlane_Working_Feb2022.vsdx	Mar 21, 2022 by Paula Marie Schindele
Integrated Process Flow Maps ESNH.vsdx	Mar 24, 2022 by Paula Marie Schindele
3-24-22 Integrated Process Flow Maps ESNH V2.vsdx	Mar 28, 2022 by Paula Marie Schindele
Business and IT Integrated Process Map.vsdx	May 24, 2022 by Graham Milleret Bass

Labels No labels

Version history

Version 3 (current version)	Modified by Graham Milleret Bass	May 24, 2022
Version 2	Modified by Graham Milleret Bass	May 24, 2022
Version 1	Created by Graham Milleret Bass	May 23, 2022

Preview Properties Edit Delete

Drag and drop to upload or [browse for files](#)

[Download All](#)

Team Calendar

Today < > October 2022

Sun	Mon	Tue	Wed	Thu	Fri	Sat
25	26	27	28	29	30	1
Enabalon Code Freeze						
2	3	4	1:00 PM ESHield Communications Review	CAT1 Report Due (ESHield, CIS, Compliance)	IT Bytes	5
6	7	8	Gaye Lynn Linthicum: Finalize User Guides			
9	10	11	Gaye Lynn Linthicum: Finalize User Guides			
12	13	14	Gaye Lynn Linthicum: Finalize User Guides			
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	1	2	3	4
5	Kellie Jean Campbell: Vacation				6	7

ESHield Training Initi... ESHield Records Man... ESHield Integrations ... ESHield High Side W... ESHield Formality of ...
 Enabalon Events Events Events
 Events Expansion Action... IT Bytes Leave
 IT Bytes Leave Events
 Leave Events

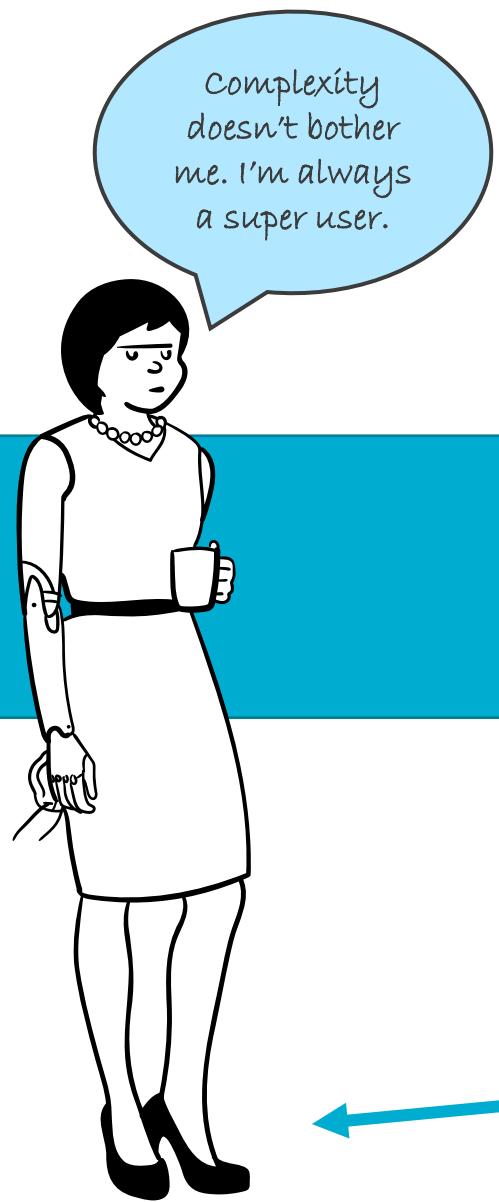
- Nice visual display
- Versioning is easy and allows quick access to old versions
- Easy to upload
- Can be implemented on an existing page (no version support for existing files)
- New helper app reduces number extra versions.

- Confluence helper app required for easiest workflow.
- Doesn't support real-time simultaneous collaboration like SharePoint

- Access calendars from across multiple spaces
- Combine multiple calendars in one as a rollup
- Customizable event types and icons
- Send reminders

- Doesn't sync with Outlook calendar without using 3rd party plugin
- Not the greatest user interface

Complexity isn't bad but...





Lessons Learned from Iteration 2

Lots of capabilities improved users' abilities to do work, but..

Many users didn't understand all the functionality/capability or didn't want to take the time to.

Many improvements weren't used because of lack of training.

Learning curve for Confluence AND Jira at once was overwhelming for most users.

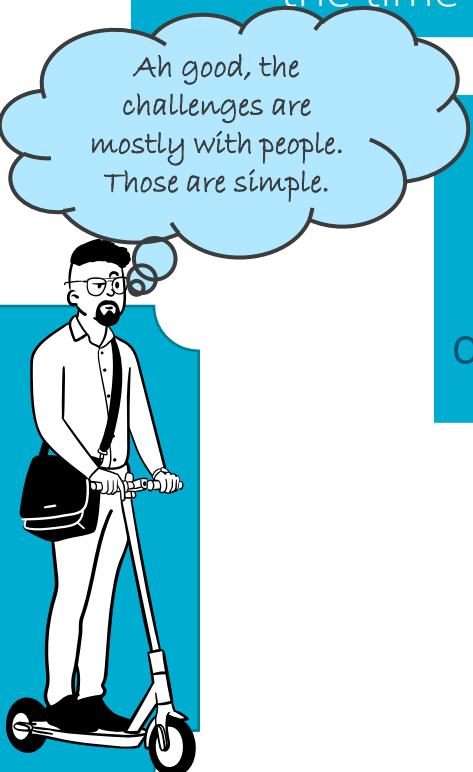
Much content was archival vs. functional, that is *you couldn't DO anything with it.*

Ah good, the challenges are mostly with people. Those are simple.

Leadership spaces needed better requirements development over time.

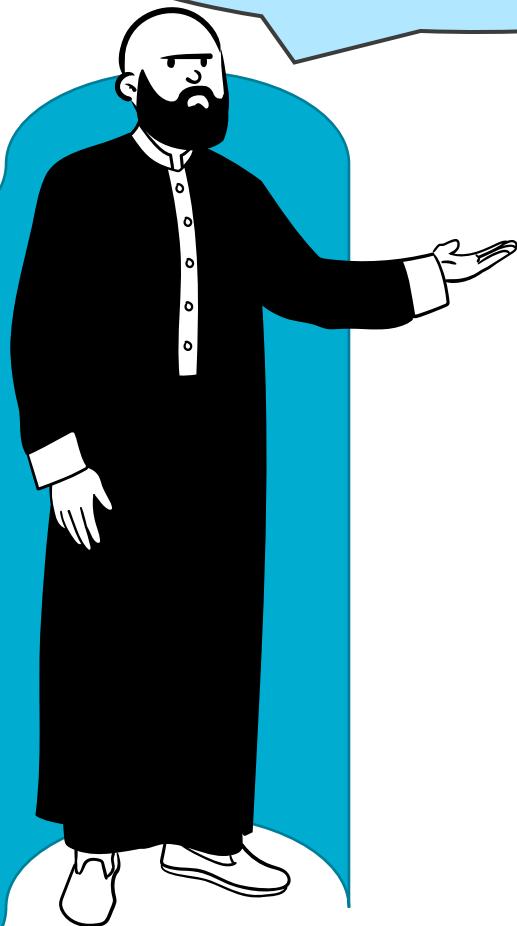
No human centered design concepts – content not tailored to common usages

Users needed prompting to go to the space, but the space didn't provide any prompts.

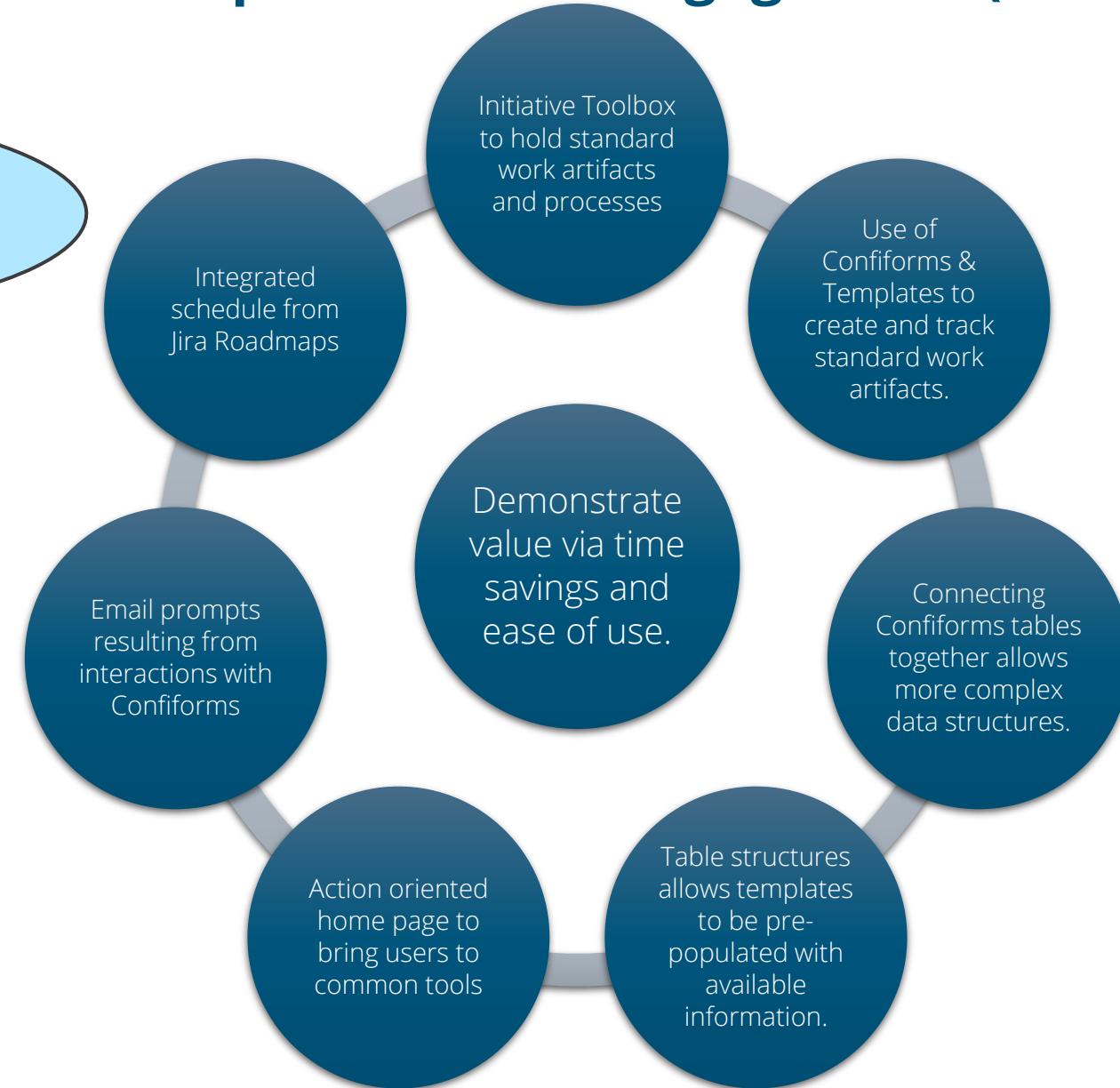




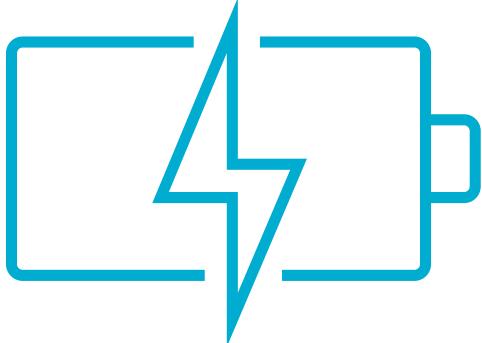
Iteration 3: Better User Experience and Engagement (The Present)



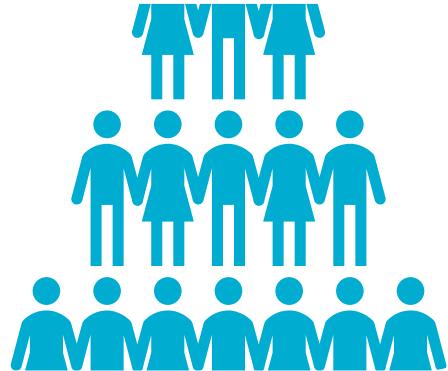
People are still at the core of what we do. If our technology isn't shaped to our people then it will not serve them well.



Creating Business Velocity with ITIL (let's call it IBIL?)



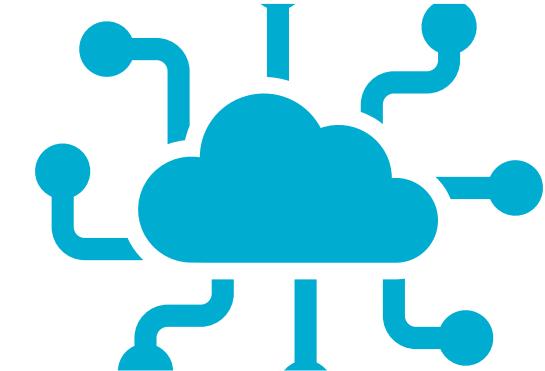
In IT we frequently go to ITIL as the standard for guiding the co-creation of value, but what happens when you have more needs and less time than IT capacity?



Changes in labor availability, dependency on contractors, and bandwidth are rarely in alignment. Having IT hand-hold the business through projects burns valuable resources that could be utilized for delivering value.



If the business can hold its own hand then it can be a more effective partner in the co-creation of value and increase productive IT bandwidth.



Having a single location to house standard phased processes and work artifacts is needed to simplify the experience for users.



Aligning IT and Business Activities

We engaged our IT partners to build a swim-laned Gantt chart that aligns Design for Six Sigma practices (DMADV/DMEDI) with the Sandia's Software Development Lifecycle, built around PDCA.

Toolkit Phase	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN
Champion	Team Struct.	Charter (1-3 division 1 day)	Action Plan (2 weeks)			Kickoff (1 day)																																
Product Owner	Team Struct.	Charter (1-3 division 1 day)	Action Plan (2 weeks)	Gather information	Intake	Kickoff (1 day)	Develop Current State Process Map (1 Month)																															
Initiative Lead	Team Struct.	Charter (1-3 division 1 day)	Action Plan (2 weeks)	Gather information	Intake	Kickoff (1 day)	Develop Current State Process Map (1 Month)																															
Facilitator	Team Struct.	Charter (1-3 division 1 day)	Action Plan (2 weeks)	Gather information	Intake	Kickoff (1 day)	Develop Current State Process Map (1 Month)																															
SME	Team Struct.	Charter (1-3 division 1 day)	Action Plan (2 weeks)	Gather information	Intake	Kickoff (1 day)	Develop Current State Process Map (1 Month)																															
Business PM	Team Struct.					Intake	Kickoff (1 day)																															
ITPM							Kickoff (1 day)	Create SDI, Review Product V, Requirements Management P																														
Requirements Engineer							Kickoff (1 day)	Ensure your work is authorized by management (1 day)																														
Architect																																						
Technical Lead																																						
External Development Lead																																						
UX Lead																																						
API Lead																																						
Configuration Lead																																						
Release Manager																																						
QA Lead																																						
EDW Rep																																						

Identified process gaps in need participation IT, Business, Vendors.

Identified all required participants for activities, ensuring correct stakeholder participation.

Helped identify dependencies, resources constraints, and bottlenecks.

Serves as a model for helping build out a shared integrated schedule between IT and business



Reducing Effort and Ensuring Consistency

Team	Where should this be created?	Page Title	Template Used	Page ID	Page Link	Created At	Activity Owner	Status	Notes
ESHC Field High Side WPIBC Tools Initiative	ESHC - Cart Form	Testing team roles	Toolbox Roles and Responsibilities Template	1055423142	Testing team roles	09/22/2022	Graham Miller Basa	NEW	
a3e473ce-0e97-44b2-832b-69b934e97321	ESHC - Cart Form	Just Another Test Page	Team Home Page	1055131391	Just Another Test Page	09/21/2022	Shawn Honey	NEW	
a3e473ce-0e97-44b2-832b-69b934e97321	ESHC - Cart Form	Little Green Men From Space	Team Home Page	1055131359	Little Green Men From Space	09/21/2022	Shawn Honey	NEW	
5ed931a3-3b64-473a-97a7-2a14d6595532	ESHC - Cart Form	Jumping Javelinas Den	Team Home Page	1055131295	Jumping Javelinas Den	09/21/2022	Paula Marie Schindele	NEW	
a3e473ce-0e97-44b2-832b-69b934e97321	ESHC - Bandit Hideaway Strategic Element	Team Table	Toolbox Roles and Responsibilities Template	1055327198	Team Table	09/20/2022	Benjamin N Huff Stephanie Salinas	BLOCKED	
a3e473ce-0e97-44b2-832b-69b934e97321	ESHC - Business Process Bandit Hideaway Strategic Element	Team Home Page	1055327199	Bandit Hideaway	09/20/2022	Julie V Cordero	NEW		
CGS Explosive Materials Management Initiative	ESHC - Cart Form	Paula's Strategy for Action in FY23	FY Strategic Action Plan Template	1043404746	Paula's Strategy for Action in FY23	09/13/2022	Paula Marie Schindele Shawn Honey	NEW	

- We use Conforms to create and track activities using templates. Links to pages are stored as records with location, template name, leads, and status.

OH! I really dislike typing the same thing over and over.

ConfiForms IFTTT Integration Rules | event = onCreated | action = Create

Multiexcerpt include | PageWithExcerpt = Page Part...

[template.[entry._page.pageProperties(templatepagename)]]

Page properties | hidden = true

Created	[entry.created]
Created By	[entry.createdBy]
Template	[entry.template]

- Confluence templates are kept clean of tracking markup by adding configuration information as part of the page creation process. The header uses a multiExcerpt, but the footer is processed through the template creation process.

Name	Role	Responsibility
Salinas	Product Owner	Responsible as the overall programmatic owner of the overall strategic guidance to ensure objectives, tasks, with program vision/mission and compliance. Provide needed.
	Delegate Owner	Represent the Product/Process Owner when they are delegated decision making authority and represent them.
	Integration Champion	Responsible for leading and implementing the strategy, expected outcomes are achieved and ensuring integration across Center 600 and other SNL stakeholders. Ensure other related objectives and tasks.
	Initiative Lead	

- The Toolbox collects and flows information to progressively elaborate document content through the use of Conforms tables and deploying standard work templates.

Bringing Content and Features to Users

To prevent decision paralysis, the team page starting tab will consolidate key features and uses as the first thing users see.

Productivity Delivery

Using standard work templates minimizes users' brain cycles on activity setup and stakeholder identification.

Using Conforms, content flows to pages when they are created or later as it becomes known and is entered.

Email Notifications inform users of new Risks, Escalations, Activities, and Volunteers.

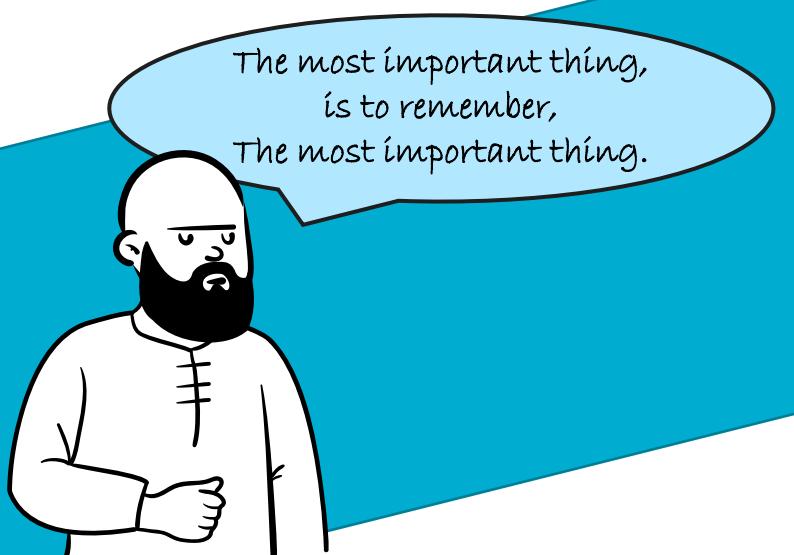




Next Steps: FY23 and Beyond

The business, our customers, and the mission are **people that work to support**. When we build durable and efficient processes we help **deliver capabilities in a timely predictable manner**.

Leveraging enterprise IT software and best practices can be a force multiplier by integrating practice areas in a comprehensive approach to product and process delivery.



The most important thing,
is to remember,
The most important thing.

Improve training content and availability to improve onboarding experience for new team members and leads.

Iterate on combined scheduling tools to improve information availability, delivered to leadership for decision making.

Develop and mature a community of practice around project execution excellence in our center.

Process and tools coaching and mentoring to build and expand skills sets, ensure knowledge transfer to a wider range of staff.

Questions or Comments?





ABOUT THE SANDIA ANGLES TEMPLATES

Create impactful presentations, reports, and visuals with Sandia branded PowerPoint templates.

FEATURES

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- Embedded [Sandia font & colors](#)
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- Access fully editable charts, maps, and icons in the [PowerPoint Graphics Library](#)
- Easy to use placeholders crop photos without distortion
Note: To reduce file sizes, templates do not include Images. UUR photos can be accessed at Sandia's [Flickr](#) page.
- Before submitting to Sandia Review and Approval, ensure only the appropriate markings are applied to content slides and Slide Masters.

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