Information Technology
& Data Analytics

DevSecOps & Automation – EP&S

Monthly Report Out - October 2023

CONTENTS

VISION

Implement Lean practices through DSO maturity coverage and IT Automation.

Increased operating speed and flexibility, release-on-demand, and first-time quality of secure-by-design applications.

Reduced hours and improved efficiency through automation

2023 DEVSECOPS PROGRESS

DEVSECOPS 2023

OKR

- Implement Lean practices through DSO maturity coverage for **70% of High ROI products**

Target

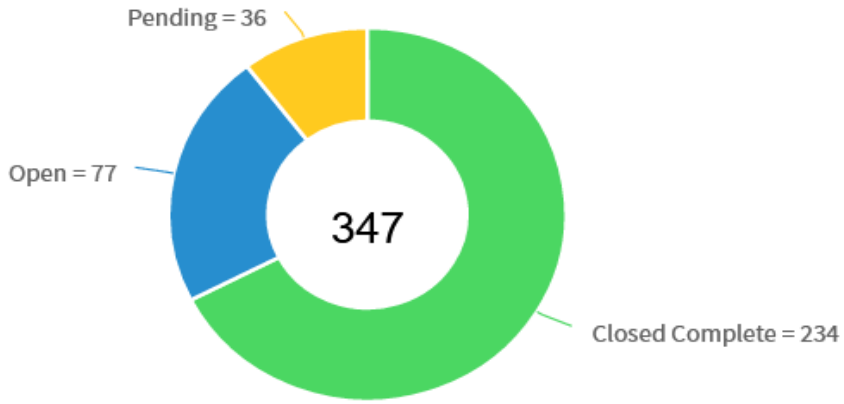
- Complete DSO Assessments for new applications **120 Apps**
  [Overall – 280 apps (~30%)]
- Re-Assessments - **40 apps**
- Implementation roadmap for 40% Applications - **120 apps**
  [Overall – 200 (~20%)]
- Improved overall maturity to **3.0** from **2.8.** Focus on High ROI and business critical Applications.
- ROI Calculation - 50 Apps

PROGRESS

On Track
Watch Item
Off Track

2023 OKR Targets	Q1		Q2		Q3		Q4	
	Target	Completed	Target	Completed	Target	Completed	Target	Completed
Complete DSO Assessments for new applications **120 Apps**	30	34	30	25 + 60 AMaaS	30	8	30	9
Implementation roadmap for Applications that have completed assessments- **90 Apps**	30	28	30	21 + 57 AMaaS	30	4	30	9
Roadmap implementation , Re-Assessment & ROI calculation for 15% Apps with roadmap created: - **40 apps**	10	0 *DSO Improvements pending	10	4	10	13	20	3 **Q4- QBR Focus**
Maturity improvement and maintain Score **3.0+**	Maturity Score 3		Maturity Score 3		Maturity Score 3.0 (Non-AMaaS) Overall Score with AMaaS 2.82		Maturity Score 3.0 (Non-AMaaS) Overall Score with AMaaS 2.82	

ASSESSMENT PROGRESS



Overall Average scores- Baseline

	DevSecOps (SAFe+Security) Level					
Maintaining Org	Level 1	Level 2	Level 3	Level 4	Level 5	Average
Analytics and Information Management Services	1.65	2.67	3.36	4.36	0	3.35
Boeing Enterprise Security	0	2.41	0	0	0	2.41
Corporate Systems	1.52	2.68	3.29	0	0	2.65
Digital Commerce and Analytics	0	0	0	0	5.1	5.1
Engineering Systems	1.56	2.58	3.38	4.3	5.7	2.59
Enterprise Architecture, Standards and Delivery	0	2.66	3.38	4.66	0	3.2
Factory Automation Systems	1.7	0	0	0	0	1.7
Finance Systems	1.6	2.52	3.36	4.26	0	2.88
HR Systems	1.6	2.53	3.44	4.08	0	3.12
Infrastructure and Operations	0	2.64	3.48	4.5	0	3.41
IT Global	0	2.07	0	0	0	2.07
Manufacturing & Quality Systems	1.88	2.48	3.36	4.24	0	2.8
Non-IT Boeing Global Services	0	0	3.4	0	0	3.4
Non-IT Engineering	0	2.87	3.3	0	0	3.09
Product Support Systems	1.55	2.65	3.43	4.35	0	3.17
Program Management Systems	1.75	2.52	0	0	0	2.31
Sales, Marketing & Business Development	0	2.9	3.49	0	0	3.32
Strategy and Operations	0	2.77	0	0	0	2.77
Supply Chain, EHS & FAM Systems	1.67	2.43	3.95	0	0	2.05
Average	1.62	2.56	3.39	4.37	5.4	2.77

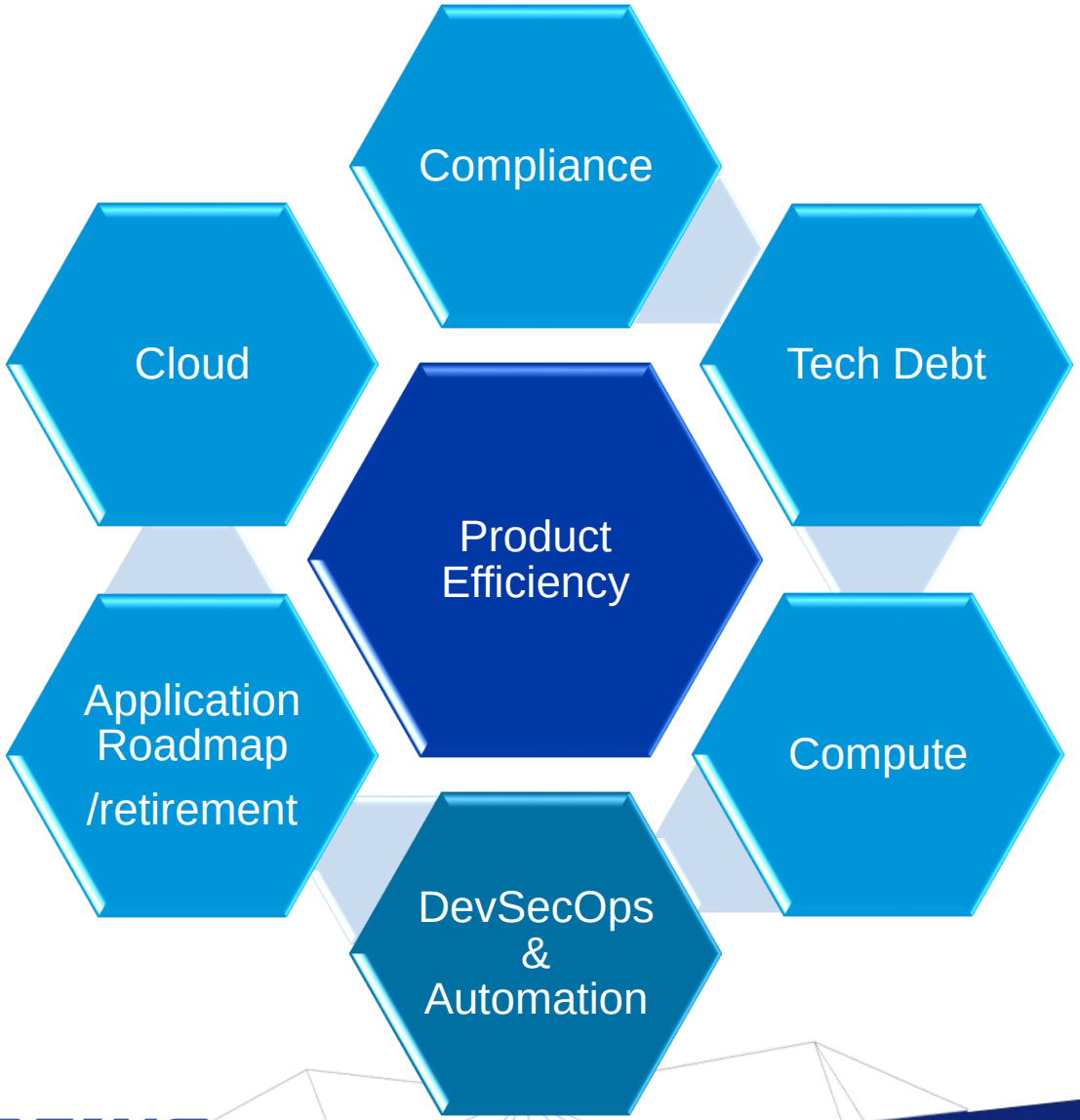
Overall Average scores- Reassessment

Precise Value	DevSecOps (SAFe+Security) Level				
Maintaining Org	Level 1	Level 2	Level 3	Level 4	Average
Corporate Systems	0	2.7	3.2	4.05	2.96
Engineering Systems		2.66	3.43		2.98
Enterprise Architecture, Standards and Delivery		2.66	3.42	4.59	3.38
Finance Systems	1.5	2.53	3.2		2.56
HR Systems		2.64	3.3		2.77
Infrastructure and Operations			3.35	4.35	3.68
Manufacturing & Quality Systems			3.63	4.18	3.88
Product Support Systems		2.6	3.35	4.2	3.51
Program Management Systems		2.73			2.73
Supply Chain, EHS & FAM Systems	0	2.65	3.55	4.65	3.42
Average	1.5	2.64	3.44	4.4	3.27

LOOK AHEAD

- Prioritize the application list for 2024 and initiate assessment for all the applications.
- Working on strategy and best practices of DevSecOps for supporting Tech Debt and Compliance.
- Focus on re-assessment for improved DevSecOps maturity and automations savings.
- Bringing success stories, case study and training for application teams.
- Tableau dashboard rollout with integrated view from Infocenter and GSEP.
- Continued lunch and learn sessions

LOOK AHEAD STRATEGY



Key Objectives

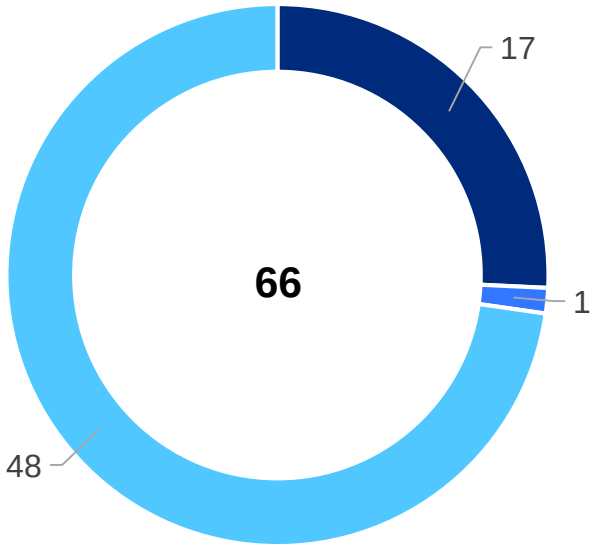
- Look product at holistically and bring maturity and efficiency
- Identify problem statement in product capabilities
- Leverage DevSecOps and Automation best practices for solving problem

DSO STATUS PER DIRECTOR(TILL OCT 2023)

ENGINEERING PRODUCTS(JENNIFER)

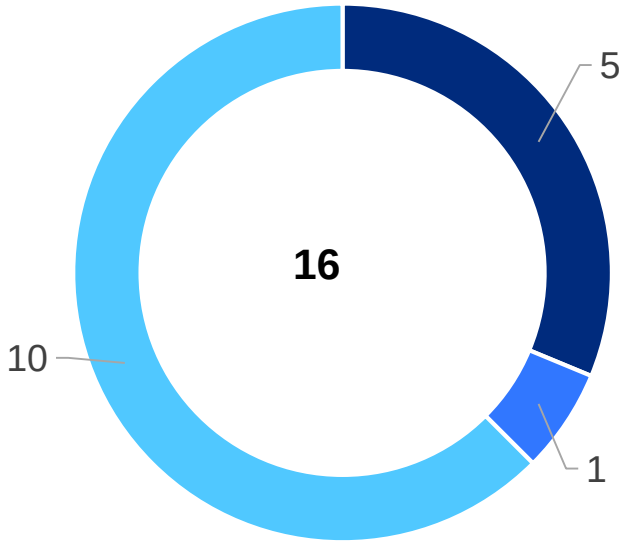
On Track
Watch Item
Off Track

Assessment Status

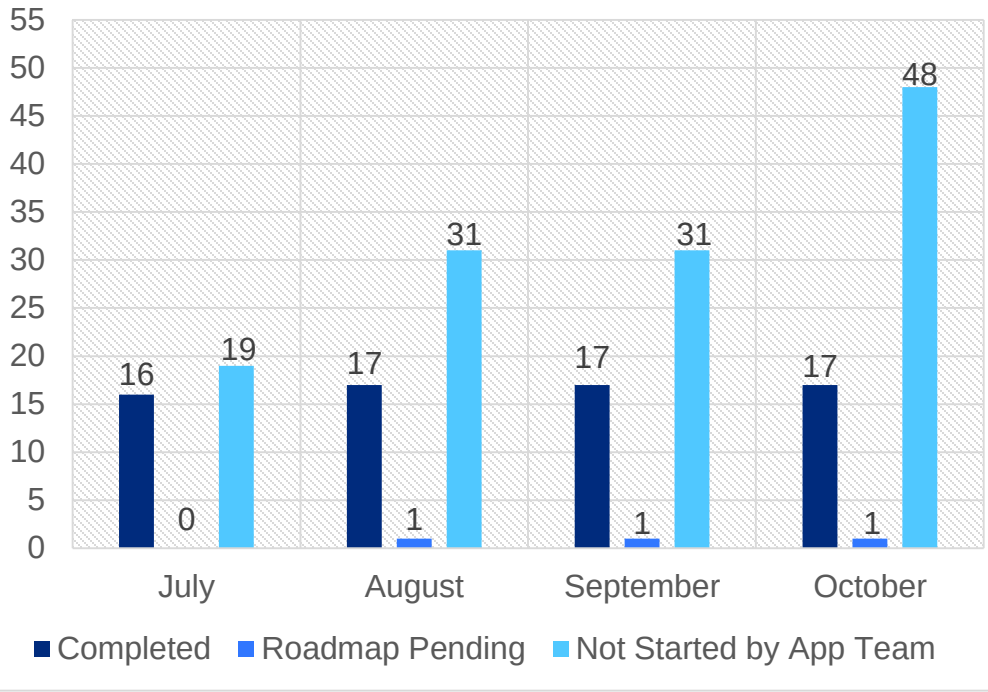


Completed
Roadmap Pending
Not Started By Application Team

Re-assessment Status



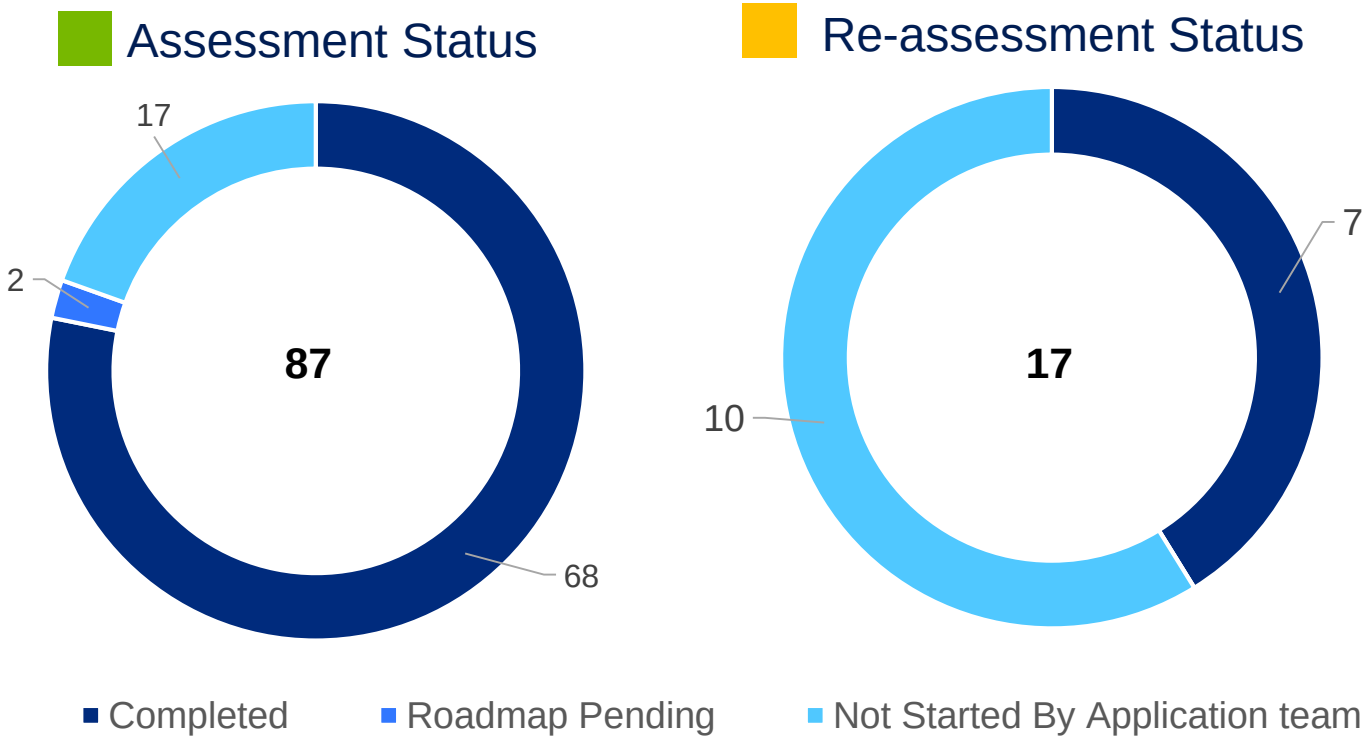
Cumulative Assessment Status

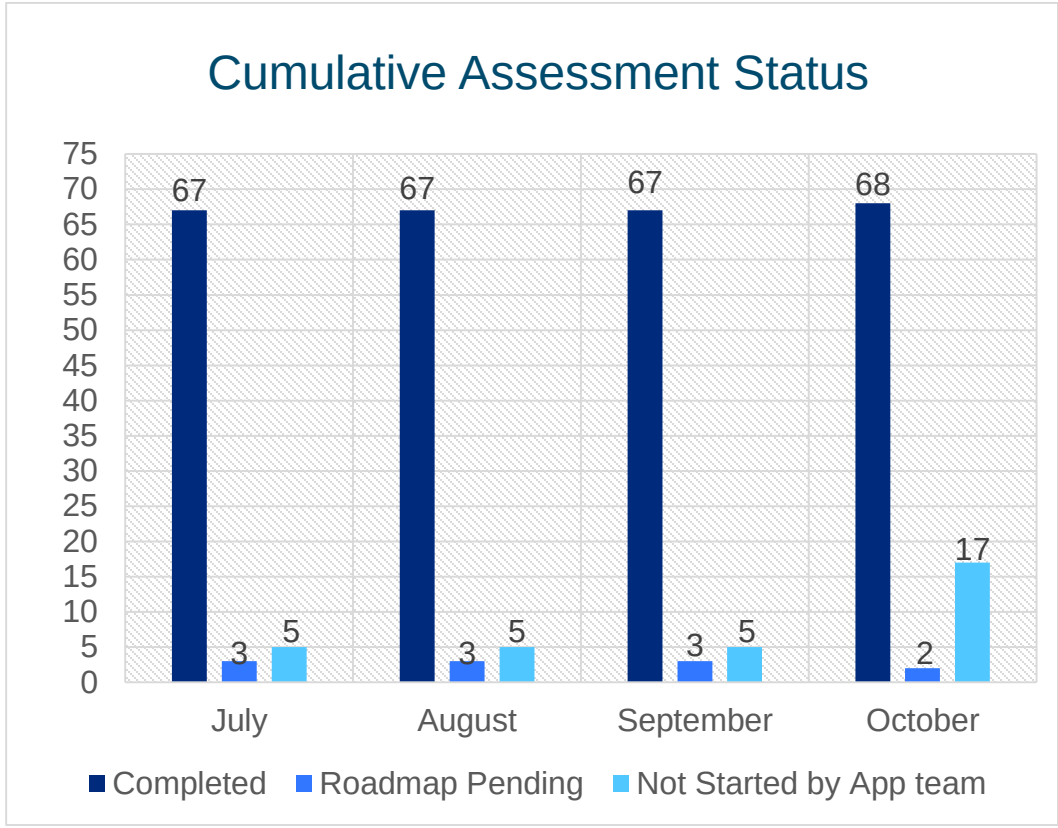


** Reassessment target for 2023 – **10**

ENGINEERING PRODUCTS (TATUM)

On Track
Watch Item
Off Track

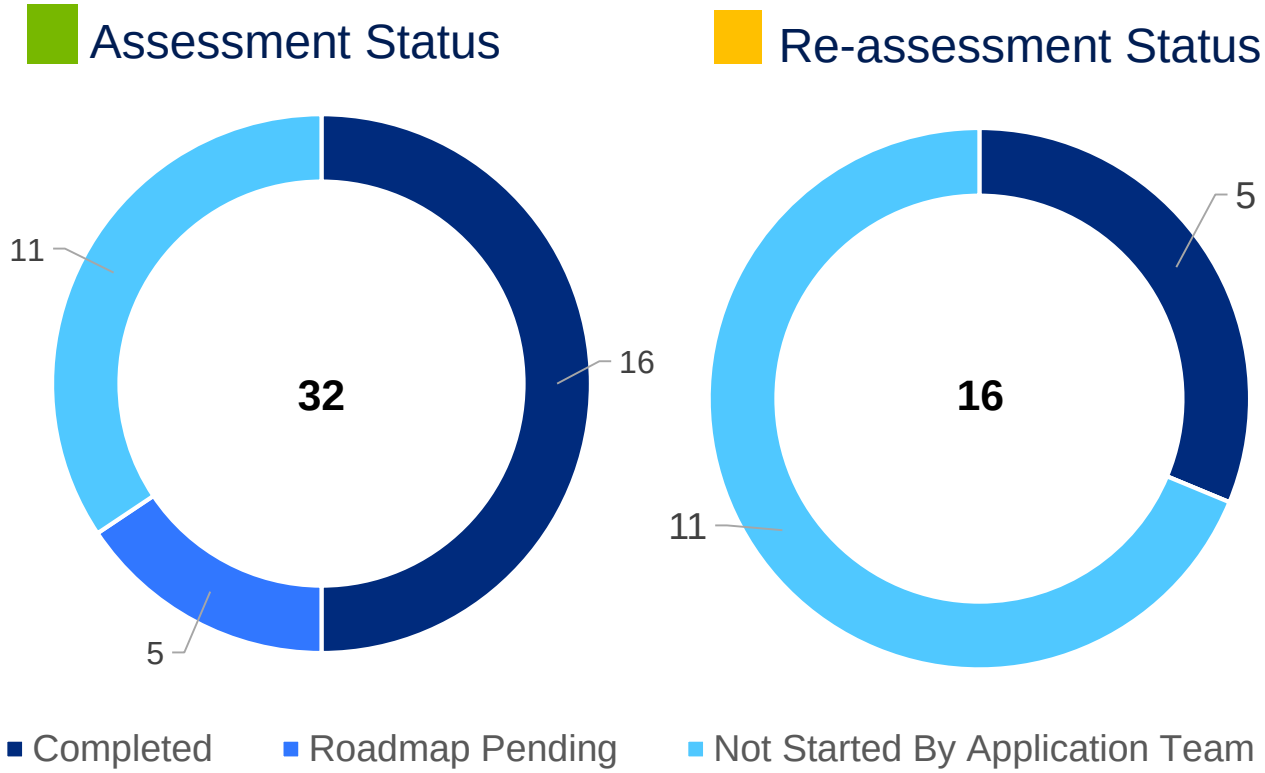


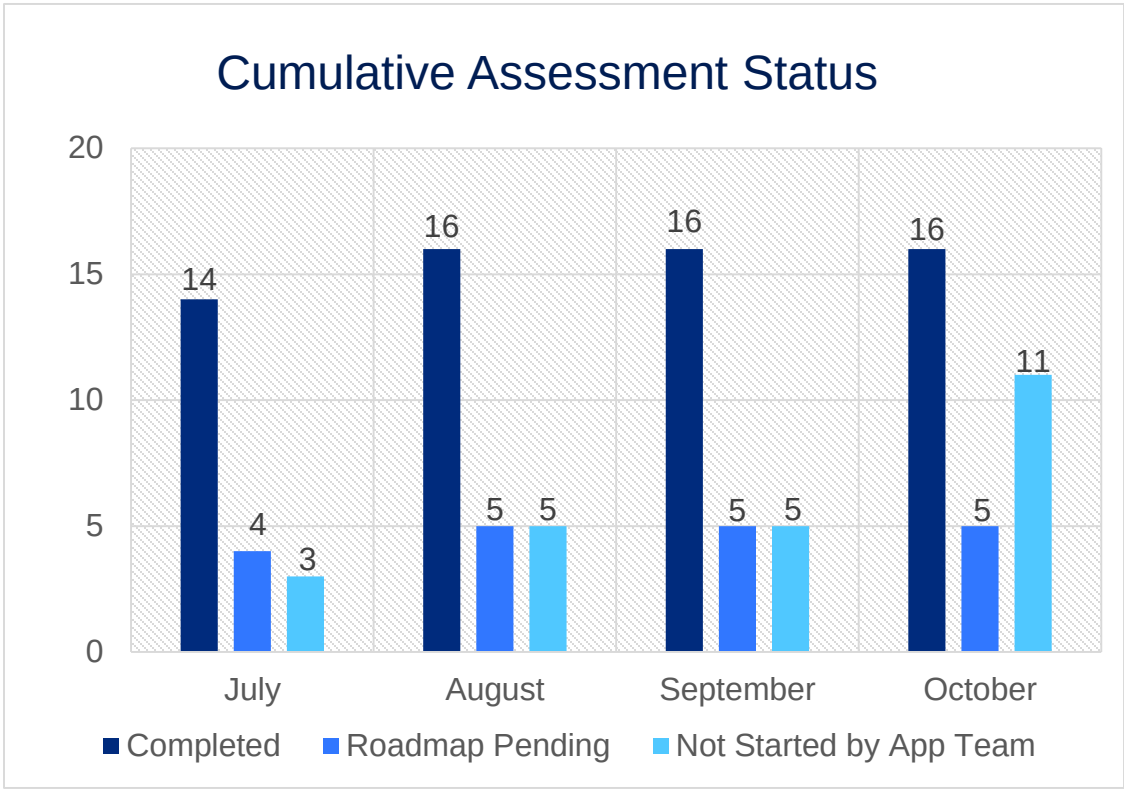


Reassessment target for 2023 – **10

ENGINEERING PRODUCTS (BUBA)

On Track
Watch Item
Off Track



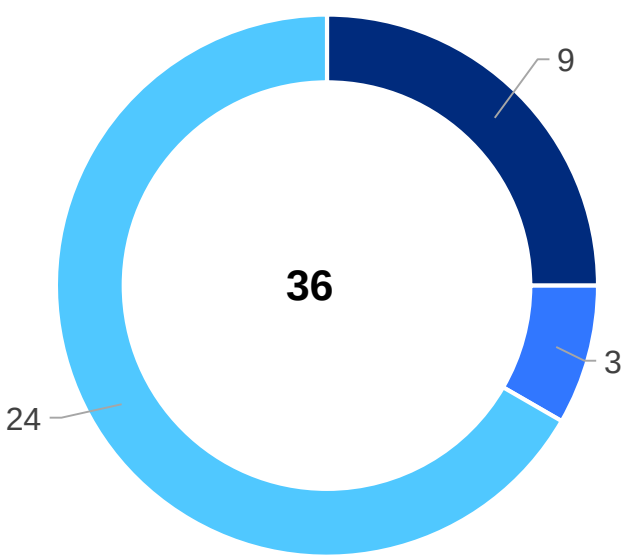


Reassessment target for 2023 – **10

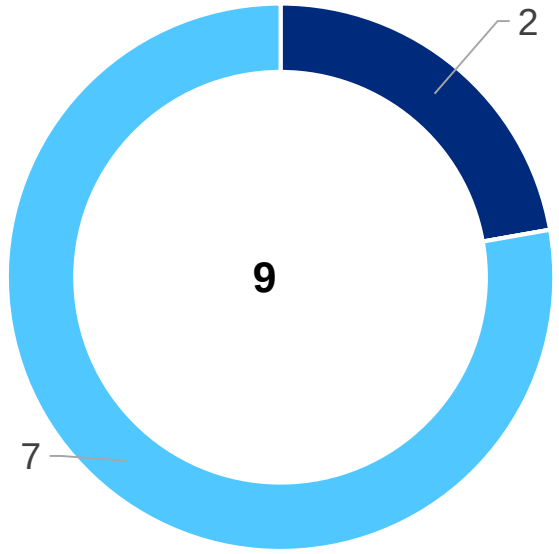
ENGINEERING PRODUCTS (JEFF)

On Track
Watch Item
Off Track

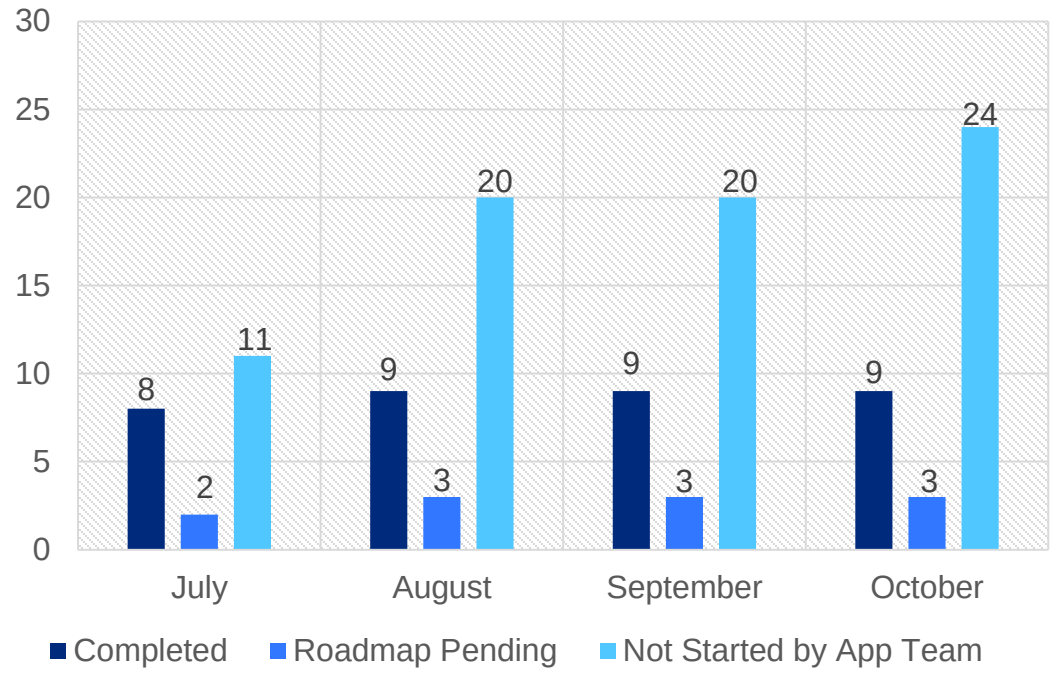
Assessment Status



Re-assessment Status



Cumulative Assessment Status



Reassessment target for 2023 – **10

HELP REQUIRED

- **** Completion of the reassessments as per QBR 2023 targets.**

- Completing the pending assessment and roadmap. Many applications are not started assessments completed over 3 months duration.

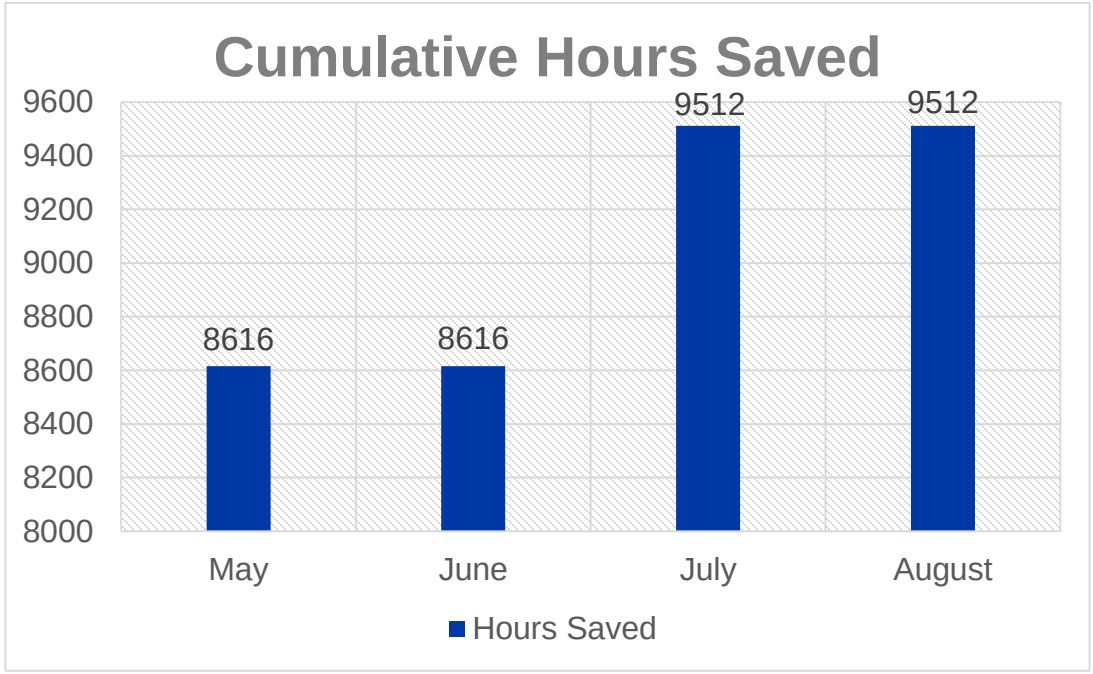
Refer attached excel for pending reassessments and assessments.

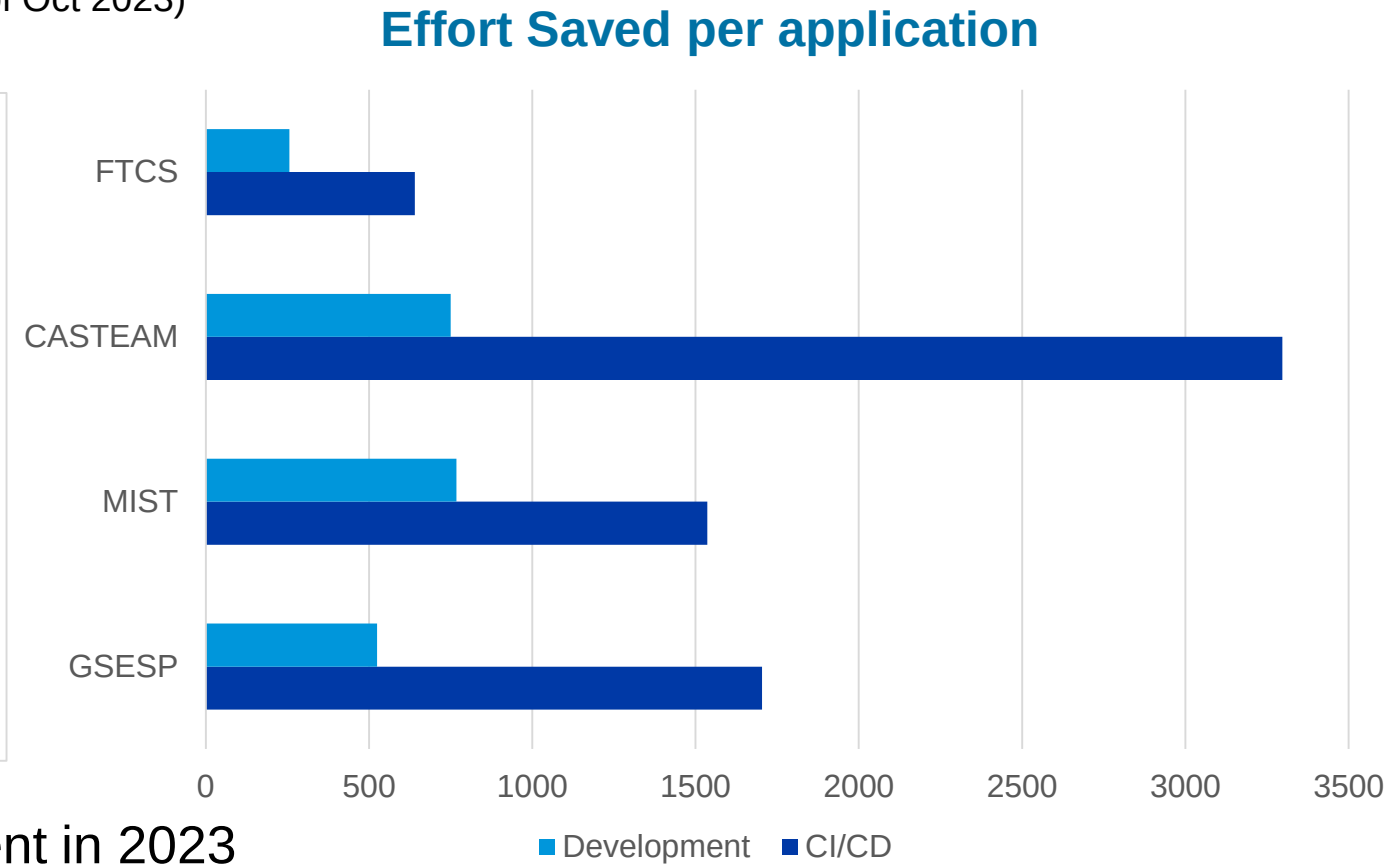
Microsoft Excel Worksheet

CASE STUDY FOR SUCCESS STORY

SAVINGS IDENTIFIED AFTER REASSESSMENT 2023

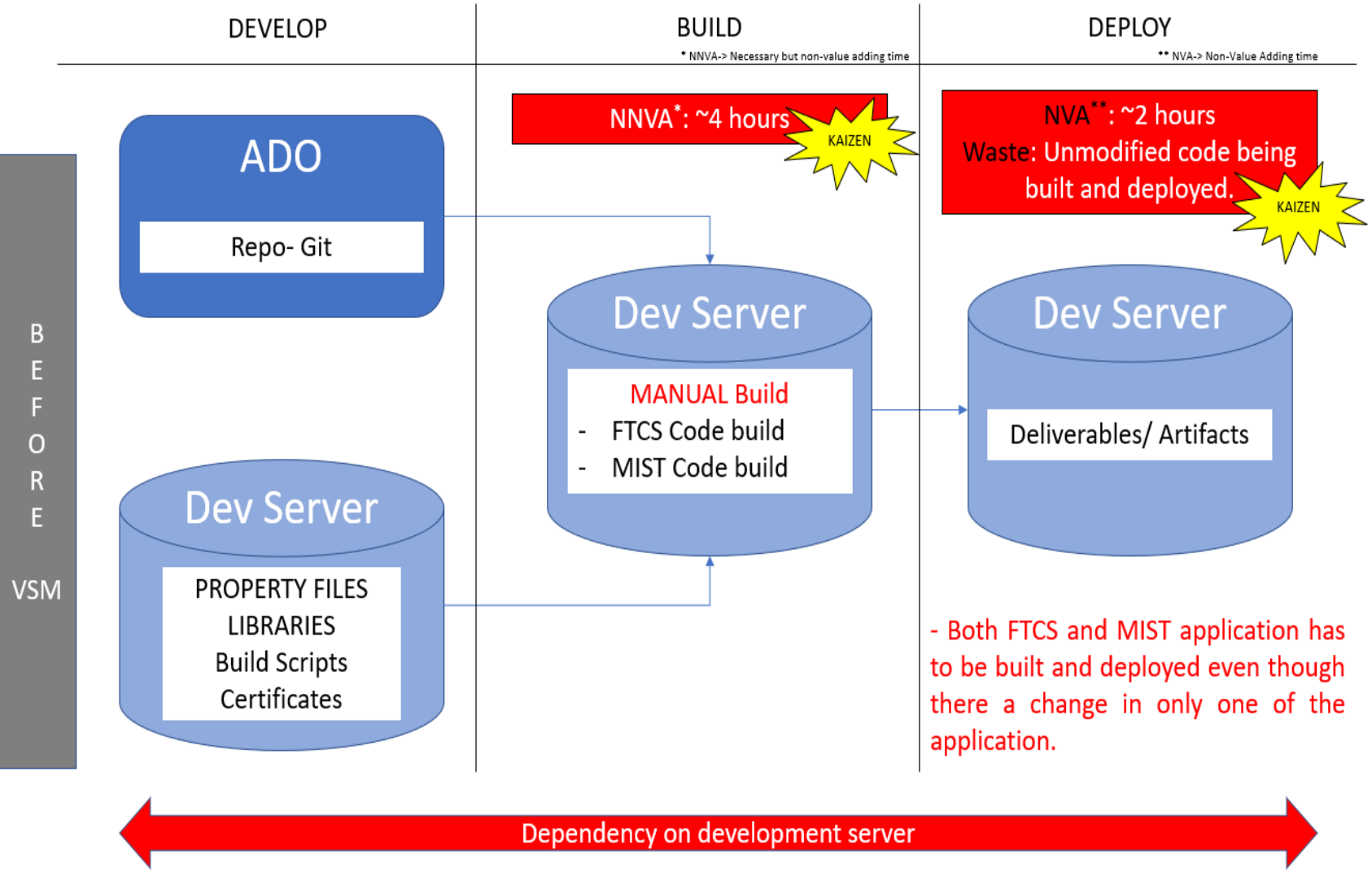
9512 Hrs. (As of Oct 2023)





27 Applications in pipeline for reassessment in 2023

DSO IMPROVEMENT CASE STUDY USING VSM (VALUE STREAM MAPPING)

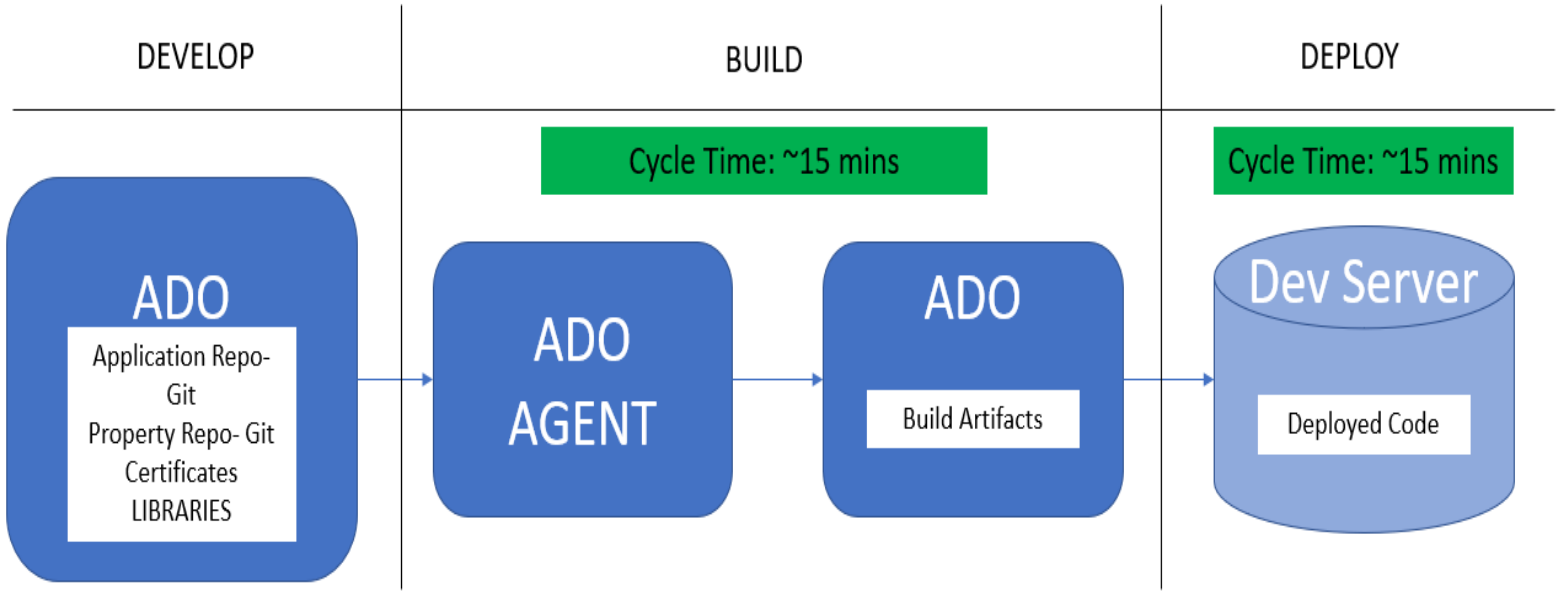


Challenges in Legacy apps (FTCS/MIST)

- App code was in ADO and other dependencies were maintained in dev server. Challenge in tracking version for these dependencies.
- As the apps are legacy the builds were manual & tightly coupled.
- Small change in any files required complete shutdown of entire app for 4 hours.
- Redundancy – Some Configuration files were available in different/duplicate locations. Overhead in maintaining.
- Too much idle time and Waste - Unmodified code being built and deployed.

DSO IMPROVEMENT CASE STUDY USING VSM (VALUE STREAM MAPPING)

AFTER VSM



Eliminated the dependency of dev server
Individual projects can be built and delivered

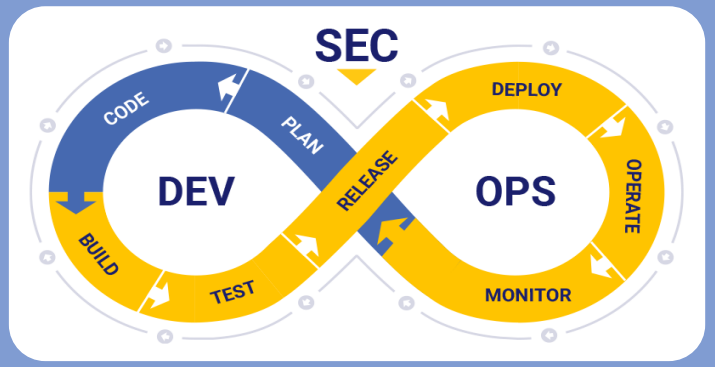
Mitigating challenges in legacy apps

- Migrating app code and other dependencies at to one place in ADO. Eliminated the dependency of DEV server during build.
- Maintaining and versioning of config files are now easy with GIT support. Redundancy and overhead is reduced.
- Build process was automated using ADO build agents, reducing the waste and downtime of the applications. Need to rebuild unmodified apps is eliminated by reuse of artifacts from previous build.
- Configuration changes (like DB credentials, WSSO config changes etc) are implemented by server restarts than build and deploy.
- "*Build Once; Deploy Anywhere*" strategy adopted with the help of CI-CD implementation.

FTCS – (FLIGHT TEST CONFIGURATION SYSTEM)

SUCCESS STORIES L2 (34% TO 46%)

TOTAL SAVINGS IN A YEAR **896** HOURS = (640 CI/CD + 256 DEVELOPMENT)



coverity®

CI/CD

- 4 Non-Production Deployment
- Manual Effort = 2 hr/build
- Automated = 0.75 hr/build
- Savings Per Sprint = 4env * 8build *1.25hrs = 40 hrs
- Sprints/year= 16
- Savings/year= 640 hrs

Development

- SAST tool in pipeline helps to ensure no new security vulnerabilities go to Production and quality defects early in the software development.
- Coverity Pipeline Savings: 2 (coverity scans) X 8 hrs = 16 hrs/sprint

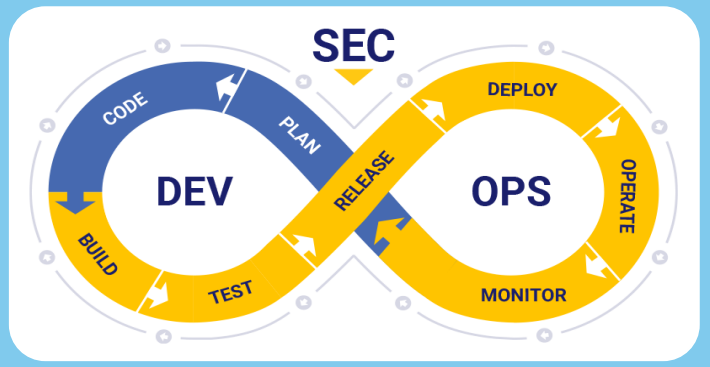
Configuration Management Practice followed which increases agility, both on the part of individual developers and the application as a whole.

Features:

- ❖ Externalized
- ❖ Environment Specific
- ❖ Consistent
- ❖ Version History
- ❖ Jar Signing

MIST – (MODULAR INSTRUMENTATION SETUP TOOL) SUCCESS STORIES (L1 TO L3)

TOTAL SAVINGS IN A YEAR **2304** HOURS = (1536 CI/CD + 768 DEVELOPMENT)



coverity®

CI/CD

4 Non-Production Deployment Configuration Management Practice followed.
Manual Effort = 5 hr
Automated = 1.5 hr
Per Sprint(4env*4hr*8build=128 hr)

Development

SAST tool in pipeline helps to ensure no new security vulnerabilities go to Production.
Address security and quality defects early in the software development.
8 Story Point Task X 8 hrs = 64 hrs

Configuration Management Practice followed which increases agility, both on the part of individual developers and the application as a whole.

Features:

- Externalized
- Environment Specific
- Consistent
- Version History

AUTOMATION PROGRESS

AUTOMATION 2023

OKR

Implement automation capabilities through out the applications and achieve 80000 automation hours

Objective

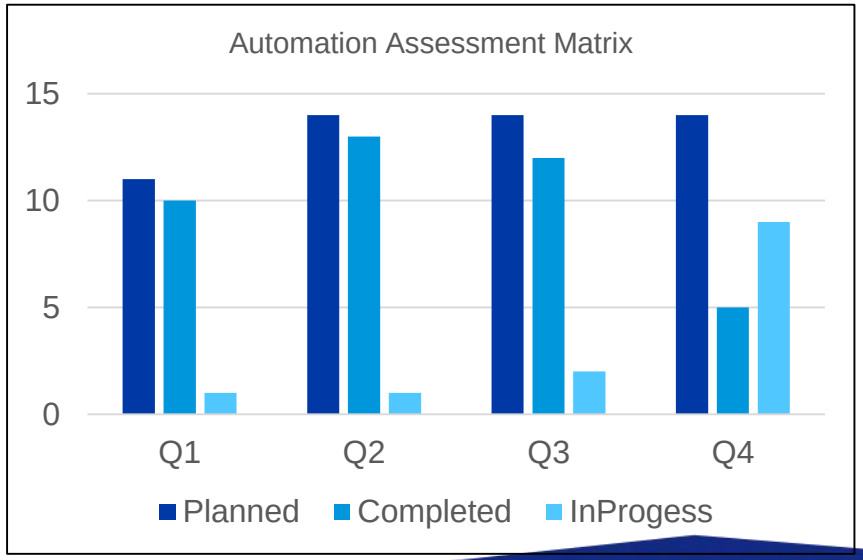
Automate repetitive processes

Capture automation to Return On Investment.

Knowledge sharing and bring culture of Automation

Accomplishments:

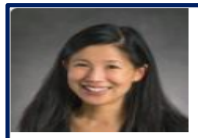
Automation hours of 167350 has been accounted in the CoP.



AUTOMATION STATUS - 2023

Target: 80k hrs

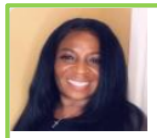
Current status: 167k hrs



Lucia Chung

Engineering and Product Support

Total : 167,350 hours



Buba Turner

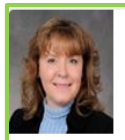
Engineering and Product Support

Status	Saved	Efficiency	Avoided
Complete	-	28,898	13,016
In-Work	-	19,869	-
Backlog	-	-	-
Totals	-	48,767	13,016
		61,783	

Jeffrey Stein

Engineering and Product Support

Status	Saved	Efficiency	Avoided
Complete	-	12,110	-
In-Work	50	600	-
Backlog	-	-	-
Totals	50	12,710	-
		12,760	



Jennifer Davis

Engineering and Product Support

Status	Saved	Efficiency	Avoided
Complete	-	31,043	28,800
In-Work	-	4,804	5,000
Backlog	-	-	-
Totals	-	35,847	33,800
		69,647	

Tatum Shannon

Engineering and Product Support

Status	Saved	Efficiency	Avoided
Complete	-	22,364	796
In-Work	-	-	-
Backlog	-	-	-
Totals	-	22,364	796
		23,160	

TRAINING AND REFERENCES

TRAINING AND SUPPORT

Automation COP
https://devsecops.web.boeing.com/index.html [**DevSecOps Enterprise Website**]

Training:

https://devsecops.web.boeing.com/trainings.html
https://insite.web.boeing.com/culture/viewMedia.do?mediaId=428840
Insite: DevSecOps related video series
Degreed: https://degreed.com/pathway/mpl66o5r9d/pathway
Oreilly: https://learning.oreilly.com/library/view/the-devops-handbook/9781457191381/

Enterprise Support

In case of any queries interested teams can register themselves through EMC (check for the session with the name “DevSecOps Office Hours (India)”).
For Product Teams in US, Click Here to block your slot
For Product Teams in India, Click Here to block your slot

DSO Support Systems	Description	URL
ATOMS	Platform to onboard to some of the commonly used tools like Coverity, Netsparker, SonarQube	https://atoms.web.boeing.com/home
ATOMS-CI	Saves your team time by generating an automated continuous integration pipeline and integrating different tools	https://atoms-ci.web.boeing.com/ci
DevSecOps	Official DevSecOps website	https://devsecops.web.boeing.com/index.html
AppDynamics	Monitoring tool documentation	https://itms.pages.boeing.com/wiki/appdynamics/
Enablement kit	Architecture Checklist to improve maturity	https://devsecops.web.boeing.com/assessment/enablementKit.html
DSO Mattermost channel	Join this channel for any questions/updates	https://mattermost.web.boeing.com/dso/channels/town-square
DSO Consultation	Connect with the experts	DL DSO Consulting
DSO COE InSite Group	Join this group for any questions/updates	https://insite.web.boeing.com/culture/viewGroup.do?groupId=168061
DevSecOps Video Library	Videos on different implementation	https://insite.web.boeing.com/culture/displayGroupMedia.do?groupId=168061

ASSESSMENT PROCESS

DevSecOps Assessment Process Flow (Swimlane)

Please refer to the attached PDF.

GSEP Process for Dashboard Access

Please use the link to get access to the assessment dashboard. This is an auto approval process. Please select the first option for Business Stakeholder group.

Try to access this Dashboard Link after few minutes.

Info center Dashboard Link

CONTACT US

	DRI	Project Management	Core Team Focal	Enterprise collaboration
DevSecOps	**Abhishek Singh** **Kenneth C Shew**	**Pramithi R Karimpanakkal**	1. **Singh, Abhishek K** 2. **Valiyarayil, Siby** 3. **Pattanaik, Anup K** 4. Ammata, Sudhakar 5. Bakhedi, Bharati Bahubali 6. Balraj, Bharath K 7. Ghosh, Saikat 8. Ghosh, Subhabrata 9. Gundupalli, Rajesh Reddy 10. H D, Sarika 11. K L, Bharath 12. Karri, Ram Sai 13. K-R, Rahul 14. Kuriakose, Tintu M 15. Kurian, Abhijith 16. Kuruba Chandra Kumar 17. Mistry, Ashok 18. Nagaraju, Ganesh 19. Nagziriya, Anshika 20. Nair, Aathira Manikandan 21. Padmanaban Shunmugam, Nihila 22. Abhishek Kumar 23. Prabhat, Kumar 24. Radhakrishnan, Chinjumol 25. Reddy, V Sanjeev 26. Rompicherla, Rakesh 27. Sawant, Swapnil Ravindra 28. Varghese, Jessy 29. Vinukonda, Basha 30. Jayanta Mondal **DL Product Systems - DevSecOps Core Team**	1. Karthik Tirukkoylur Sekhar 2. Dolly Bhaskara 3. Arun Prakash Jeyaprakash 4. Anandapadmanabhan Gopalakrishnan 5. Sushil Mishra 6. Donald R Wellington DL DSO DRIs
Automation	**Kenneth C Shew** **Naga Harsha Kaggallu**	**Priyanka Dhanpal Chougule**		

THANK YOU