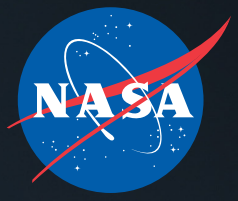
National Aeronautics and Space Administration



IT Talk

Apr - Jun 2024 Volume 14 • Issue 2

Intelligent Automation

at NASA

IT Talk

Apr - Jun 2024 Volume 14 • Issue 2

Office of the CIO
NASA Headquarters
Mary W. Jackson Building
300 E Street SW
Washington, D.C. 20546

Chief Information Officer
Jeff Seaton

Editor & Publication Manager
Eldora Valentine

Graphic & Web Designer
Michael Porterfield

Copy Editor
Meredith Isaacs
Michelle Kim

IT Talk is an official publication of the Office of the Chief Information Officer of the National Aeronautics and Space Administration, Headquarters, Washington, D.C. It is published by the OCIO office for all NASA employees and external audiences.

For distribution questions or to suggest a story idea, email:
eldora.valentine-1@nasa.gov

To read *IT Talk* online visit:
www.nasa.gov/it-talk

For more info on the OCIO:
- *www.nasa.gov/ocio*
- *nasa.sharepoint.com/sites/cio/*
  (Internal NASA network only)

www.facebook.com/NASAcio

In this Issue

Message from the NASA CIO

NASA is at the forefront of intelligent automation (IA) in the Federal Government. In this issue, we will look at how the NASA workforce is finding opportunities to insert IA solutions that make day-to-day work smarter, faster, and more rewarding for employees.

NASA's Digital Transformation (DT) is connecting, integrating, and facilitating solutions to accelerate the transformation of NASA's work, workforce, and workplace. We'll explore how Goddard's Digital Transformation vision is accelerating science discovery and enabling mission success at the agency.

Adding resilience to our systems increases the flexibility and longevity of our investments. We'll examine how the Network and Telecommunication Services Software-Defined Architecture (SDA) project is significantly increasing the security posture of NASA's network.

It has been a few years since many of us started working remotely. We all have adjusted to our new at-home/in-office hybrid work posture. Having secure and reliable IT tools help us all get work done more efficiently. We'll look at how hybrid collaboration at NASA is soaring to new heights.

We have a terrific lineup of stories for you in this issue. I hope you enjoy reading our articles!

With gratitude,

Jeff Seaton

NASA Chief Information Officer

Workplace and Collaboration Services (WCS) News and Updates

Check out the latest news from WCS (all links are internal to NASA):

- *Migrations to Intune for Mobile Device Management Coming Soon*
- *Stay Up to Date on the Rollout of Follow Me Print*
- *Windows 11 Availability*
- *macOS Sonoma (14) Availability*
- *New iOS Update Warning on Your Mobile Device to Remind You to Update*
- *New Personal Android MDM Enrollments No Longer Allowed*
- *New Microsoft Power Platform Licenses Now Available to Order*
- *Enterprise Service Desk Call Handling Process Change*
- *New Teams is Now Available*
- *Understanding Druva vs. OneDrive*
- *Teams Enhancements: OneDrive App is Replacing Files App; New Search Experience; People App; Add Channel Meetings to Personal Calendars; Forward Messages in Teams Chats; and More*
- *See What's New with ICAM*

The Pandemic as a Technology Accelerator

By Michelle Kim, Communications Strategist, NASA Headquarters, in collaboration with Jules Casuga, Chris Hines, Jeffrey Hale, Patrick O'Neill, Robert Allen, and Jonathan Norori, Workplace & Collaboration Services

With the looming possibility of widespread return-to-office (RTO) policies being enforced for most Federal agencies, Federal employees are left pondering the fate of their remote and hybrid work arrangements. Will the resurgence of in-person work environments diminish the prevalence and flexibility of hybrid models that have become integral to their work routines during the pandemic? Hardly.

This was the resounding response from Jules Casuga, Workplace and Collaboration Services' (WCS's) Collaboration Chief, countering the prevailing uncertainty: "For all hybrid technologies, it is the new norm nowadays. We've seen it where the Google folks, the Microsoft folks, are being forced to come back. But from a NASA standpoint, we are going to continue to provide that capability to work remotely."

Hybrid collaboration has long been an enticing prospect for NASA. Even before the COVID-19 pandemic, virtual conferencing and collaboration services were receiving significant attention and investment. However, the pandemic abruptly reshaped the landscape, opening a realm of dynamic possibilities that were once confined to specialized conferencing events.

Bob Allen, telecommunications specialist from WCS, elucidates, "The agency's interest and investment in hybrid solutions has been high from the get-go. We just weren't sure what they were initially. We were struggling to define exactly what hybrid meant. The pandemic kind of forced us to jump in all the way."

With a decisive push from the pandemic, the Modern and Inclusive Collaboration Spaces (MICS) team was established in April 2021 to assess and try various tools, assembling a core toolkit of hybrid collaboration solutions. Through partnership with the WCS Collaboration team, MICS procured and deployed a suite of efficient hybrid collaboration tools still available to employees today, including the following:

E-mail and instant-messaging forms of communication:

- **Outlook** is an e-mail management software that allows businesses to organize e-mails, calendar items, and contacts in one place.
- **Teams** allows hybrid conferencing and collaborative activities through chat or a voice or video call.
- **Slack** is a team collaboration platform with text messaging, file-sharing, video calling, and group messaging.

Software-based tools that enable NASA employees to virtually collaborate:

(continued on page 5)

- **Office 365** is a comprehensive suite of cloud-based collaboration tools that provides enhanced team communication and productivity.
- **Box** delivers file-sharing for collaboration with external partners.
- **Google Workspace** is a cloud-based solution for connecting and sharing non-sensitive data with NASA employees and external partners.
- **Mural Whiteboard** supplies digital whiteboard capabilities for visual collaborative activities within NASA.

And lastly, hybrid videoconferencing solutions and accessories:

- **Zoom Webinar** is a webinar solution for non-ITAR/EAR/CUI public-facing events.
- **Communique** is NASA's virtual event conferencing program.
- **Webex** is a conferencing solution that accommodates large events of up to 1,000–3,000 attendees.

Jonathan M. Norori, IT specialist at WCS, emphasizes the importance of meeting evolving customer needs, noting, "I think one of the biggest differences from when we started, is that we definitely have a deeper dive and understanding on how to modify our offerings." Notable recent additions to the hybrid conferencing catalog include the following:

- **Crestron Flex Videoconference System:** A tabletop conferencing system with features such as a 7-inch HD display, a collaboration camera, HDMI over CATx Receiver, cables, and power supply.
- **Cisco Room Bar:** A compact device that employs crisp stereo sound, dual-screen support with full HD/4K quality, and seamless USB-C connection.
- **Owl 3 Camera:** A fully immersive webcam with a panoramic 360-degree camera with 1080p quality. Equipped with eight omnidirectional Smart Mics and three built-in speakers for 360-degree sound coverage.
- **Surface Hub:** An all-in-one collaborative meeting platform with whiteboard capabilities. Enables flexible conferencing with full-range, front-facing, three-way stereo speakers; up to 2x full-band eight-element microphone array; Microsoft Surface Hub Smart Camera; 4K; and USB-C connection.

NASA's commitment to exploring and advancing new technologies for its employees and customers remains unwavering. "We're not going to revert back—[our technologies] are only going to mature," assures Casuga, hinting at attending an Apple device presentation for extended reality (XR) devices. He underscores the new goal of integrating XR into hybrid collaboration technology and exploring the possibilities this integration offers.

NaTS Completes Installation of Starlink on NASA Barge Pegasus

By Sylvester Placid, AEGIS Communications Team Lead, Marshall Space Flight Center

Network and Telecommunications Services (NaTS) supported by the Advanced Enterprise Global IT Solutions (AEGIS) team completed installation of Starlink satellite data services on NASA's historic barge, Pegasus, enabling improved mobile data communications on board.

Pegasus ferries the core stage of the Space Launch System (SLS) rocket used for Artemis missions from the Michoud Assembly Facility (MAF), where SLS is assembled, to other NASA centers for testing and launch. Pegasus has been in use since 1999, when it was designed and built to ferry the external tank for the space shuttle from MAF to Kennedy Space Center, a 900-mile journey across open ocean and inland waterways. Pegasus replaced NASA barges Poseidon and Orion, which were used for Saturn rocket stages during the Apollo missions.

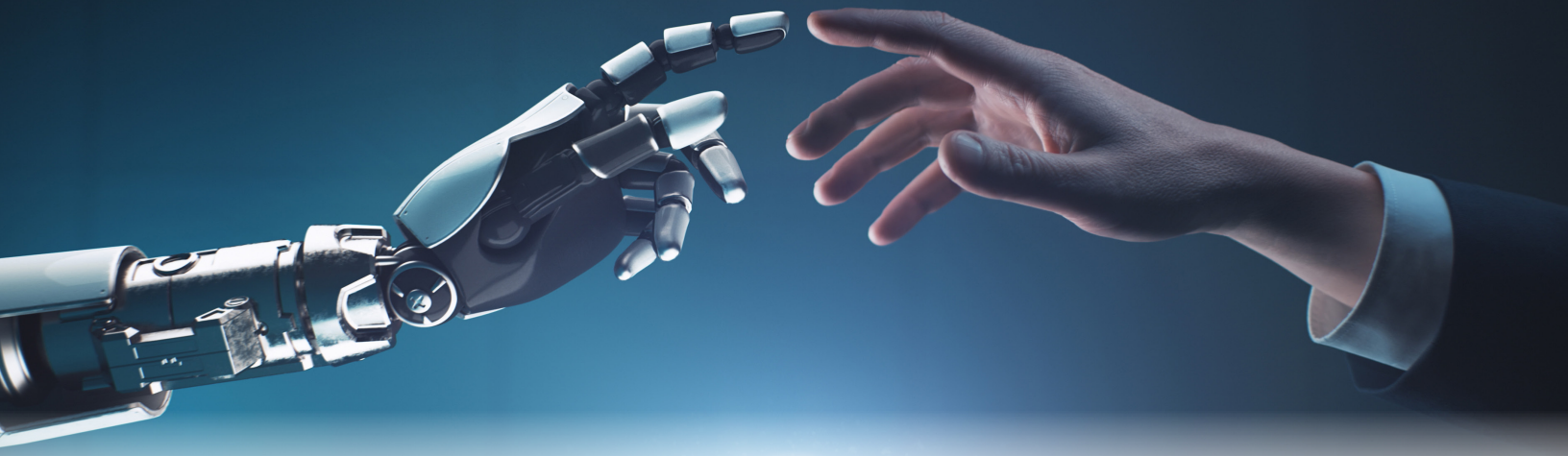
In addition to the innovative implementation of Starlink on board Pegasus for use at sea, the team also installed AT&T 5G Firstnet services for failover capability and use while Pegasus is located closer to the coast.

Barge Pegasus docked in harbor at NASA's Michoud Assembly Facility
Credit: (NASA/Steven Seipel)

At NASA, We Lead:

An Update on Intelligent Automation!

By Christine Gex, Intelligent Automation Services Manager, NASA Shared Services Center



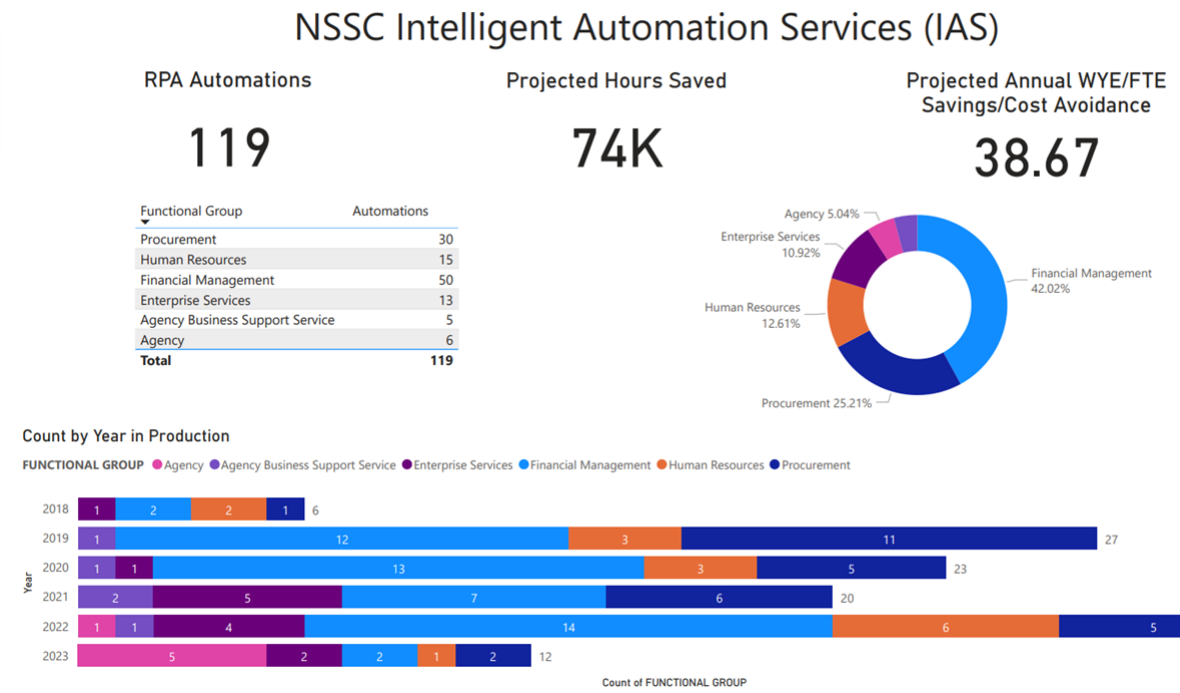
Approximately seven years ago, there was no Intelligent Automation (IA) in the Federal Government. Then, the NASA Shared Services Center (NSSC) introduced our first bot, using Robotics Process Automation (RPA) technology, into the NSSC workforce as a pilot. As a direct result, the Department of Defense (Army) started a pilot, as did the General Services Administration (GSA) and the United States Postal Services (USPS). As the NSSC pilot blossomed into the NSSC Intelligent Automation Services (IAS) Program, so did all other Government IA programs from agencies such as the National Science Foundation (NSF), the U.S. Department of Agriculture (USDA), the U.S. Department of State (DOS), the Internal Revenue Service (IRS), etc.

At NASA, we lead, and we are recognized as being the leader, in IA development as a Qualified Service Provider for the NASA Enterprise Automation Services (NEAS). As for the NSSC, the NSSC IAS team has developed approximately 95 percent of the NEAS portfolio. Let us take a look at the current trajectory of the RPA program.

If you are not familiar with RPA, it is a type of software that can augment work you do. Think of it as a personal digital intern that works directly for you. It supports you by performing a predefined and repeatable computer processing action or set of actions. Although IA is on the lower end of the Artificial Intelligence (AI) spectrum, the landscape and terminology have matured over the years, and you will often hear bots referred to as digital workers. Bots can be created and configured to perform many different types of role-based functions, including, but not limited to, transactional processing, data manipulation, and reporting. Intelligent Automation (IA) is the sweet spot between AI and RPA.

The NSSC has developed and deployed bots for internal NSSC operations and for several NASA Mission Enterprise Support Offices (MESOs). Why did we incorporate bots? When deployed to support operations, bots can decrease backlog, accelerate onboarding new services within the current staffing, enforce compliance for equity of service, and allow users to focus on higher-value work. One of our most recent notable automations was for the NSSC's Accounts Payable Team in Financial Management to assist with records destruction. This automation now retrieves data elements from NASA's core financial system, SAP, based on contract closeout dates and a contract number to generate a complete destruction eRecord report. Over one million documents have been identified and prioritized for destruction. Without this bot automation, approximately 20 additional work-year equivalents would be needed to perform this work. Overall, the NSSC has approximately 119 automations interacting with over 45 applications within NASA and other Government agencies.

Even though the NSSC has been successful with our automations over the years, there are still several lessons that were learned throughout our innovation journey that are relevant today. Listed below are lessons learned that may be helpful to speed up adoption in your organization or to keep in mind when exploring innovation or digital transformation:



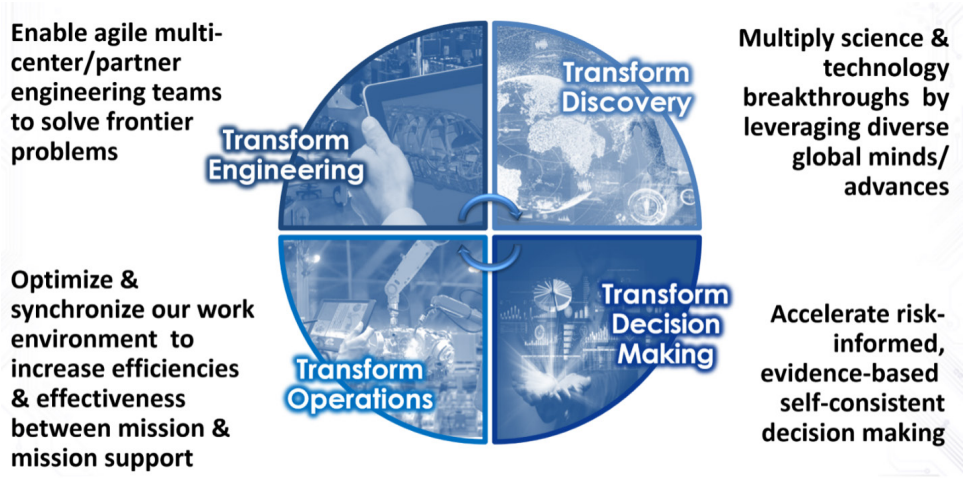
- Be ready for and accepting of change; service offerings, best practices, and terminology are constantly evolving.
- Encourage "out of the box" thinking. Question the status quo/"we've always done it this way" mindset.
- Ensure that automation controls are in place and sufficient. The bot should validate "authority to execute" each time the process runs.
- Seek customers who desire to be on the cutting edge and who will be good technology ambassadors.
- Establish a process for handling system changes/enhancements early in the program.
- Win over crowds with bot demonstrations; these are far more effective than relying only on a PowerPoint presentation.
- Start with some quick wins: Intelligent Automation adoption is a marathon, not a sprint.
- Take advantage of trends: While Federal Government Digital Transformation is at the forefront, Federal agencies still struggle with fully integrating and adopting emerging technologies into their operations. However, there is a big push for AI and availability of AI into our current applications. Use this "push" to leverage AI to your benefit.

NSSC is a thought leader of shared services, both with private industry and within the Government. Our IAS team is constantly working across the NASA workforce to find opportunities to insert IA solutions where they will make day-to-day work smarter, faster, and more rewarding. We are looking for ways to leverage the universe of IA solutions that exists seven years after we started our RPA mission. Small but important tasks can be used to leverage a Microsoft Enterprise solution; interactive Conversational Agents (smart chatbots) may also be used to reduce calls to the help desk; and tools for process mining and document understanding will soon bring secure, equitable, and enhanced processing to travel, procurement, finance, human resources, and information technology. IAS will continue to enable mission success, and we look forward to the future.

Goddard's Digital Transformation

By Matt Dosberg, Digital Transformation Lead, Goddard Space Flight Center

Goddard Space Flight Center's (GSFC's) Digital Transformation (DT) vision is to accelerate science discovery and enable mission success through the power of data and digital technologies. The Goddard DT vision is focused on delivering value by achieving outcomes such as the following: (1) timely decision-making across the enterprise; (2) the enabling of an increasingly connected, decentralized workforce, both internally and externally; (3) the use of modern advancements, processes, and technologies; and (4) the freeing-up of NASA's skilled workforce to focus on skill-driven tasking and the improvement of efficiency and workforce happiness. The Goddard DT strategy aligns with the NASA Digital Transformation Framework with a focus on the transformational targets shown in the diagram below.



At Goddard, the Headquarters/GSFC Office of the Chief Information Officer (OCIO) is leading the transformation by establishing, facilitating, and growing communities of technology disruptors and change agents across the center. Examples include the Goddard DT Working Group, the Goddard Cross-Directorate Data Strategy Group, and the Goddard Artificial Intelligence (AI) Lead Community. All are helping with identifying center needs, building support and advocacy across organizations, and organizing around solutions that leverage OCIO enterprise services and platforms. The success of the Goddard DT effort is demonstrated through the various accomplishments.

Delivered the GSFC Digital Transformation Plan	Established, led, and coordinated strategic pilots	Established and facilitated Innovation Showcases	Co-Led GSFC Artificial Intelligence (AI) Strategy
Drafted the *GSFC Digital Transformation Plan* in coordination with the GSFC Chief Digital Engineer, the GSFC DT Working Group, and other stakeholders from across the center. The plan reflects DT goals, objectives, priorities, and activities.	Led the formulation and implementation of strategic pilots that serve as pathfinders and catalysts of GSFC DT, to include activities in the target areas of Transform Engineering, Transform Discovery, Transform Decision Making, and Transform Operations. Examples include the Smart Projects and Reviews with Transformative Analytics (SPARTA), Goddard Facilities Digital Twin, and the Goddard Digital Thread.	Planned, coordinated, and hosted the Information Science & Technology (IS&T) Colloquium Series, where concepts such as ChatGPT, DNA Data Storage, and the Metaverse, among others, were discussed. Established the Innovation Connection (ICon Hub) Technology Showcase Series with events that focused on emerging technologies, such as extended reality, innovative mindsets, systems engineering innovation, quantum, and generative AI.	Co-led the formulation and implementation of the *GSFC AI Strategy*, which included coauthoring the GSFC AI Strategy, organizing the GSFC AI Lead Community, sourcing use cases and projects, onboarding capabilities, benchmarking, and amplifying the *GSFC AI Center of Excellence (CoE) website*.

(All links internal to NASA)

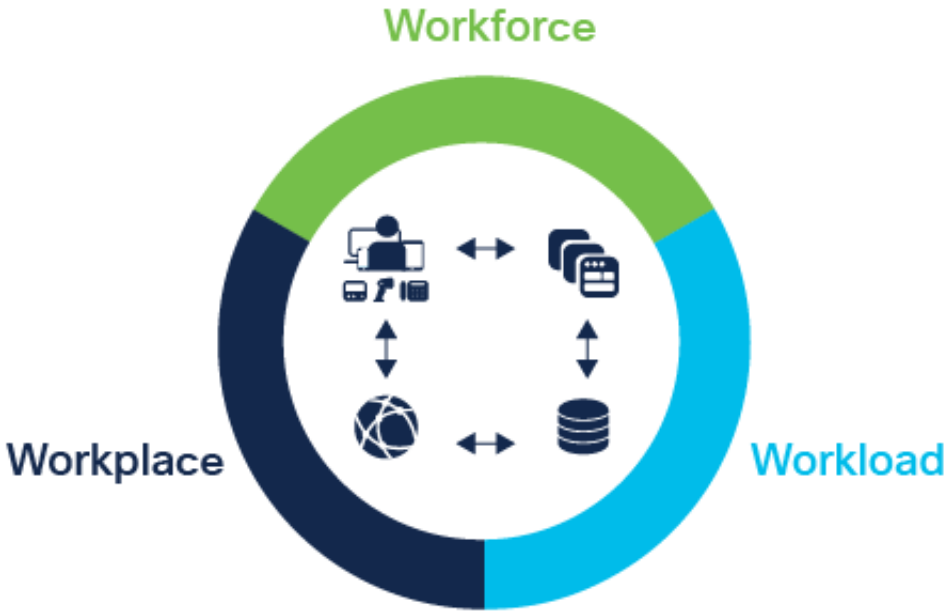
SDA: Software Defined Access

By Jason Sumner, IT Project Manager, Marshall Space Flight Center

The Software Defined Access (SDA) project running under Network and Telecommunications Services (NaTS) is an effort to modernize and standardize NASA's local area network (LAN) through the implementation of Cisco's software-defined networking. SDA was initiated under the Communications Program and has existed through the evolutions from center-managed networks, to a communications project-managed service under the Centralized Network Operations Center, and finally to an OCIO–NaTS-managed enterprise network under the NASA Integrated Operations Center (NIOC).

The LAN will be defined and maintained through Cisco software in what is known as the "fabric," consisting of an underlay and overlay fabric. Think of the underlay fabric as the robust traditional network with the complexity of redundancy and resiliency. The overlay fabric is a virtual extrapolation of the NaTS Enterprise Network that runs on top of the underlay fabric, comprising four different planes that enable the control, data, security policy, and management of the SDA fabric, which simplifies, secures, and automates the management of the NaTS Enterprise LAN.

Changes are now performed in a management web application that orchestrates changes and maintenance with process improvements like golden image software and configuration deployment, pre-/post-testing and validation, software inventory management, and dynamic reconfiguration of the LAN based on where user devices authenticate. This practice bolsters security through network segmentation and device authentication while enabling the customers to have more autonomy as they can add or remove their devices in the Network Access Control (NAC) Enrollment Gateway without network change requests for preexisting network zones.



In March 2023, the SDA project was at 10.6 percent completion (with 356 switches migrated), experiencing budget and scheduling issues, and only actively performing migrations at Headquarters (HQ), Langley Research Center (LaRC), Michoud Assembly Facility (MAF), Marshall Space Flight Center (MSFC), and Wallops Flight Facility (WFF). By May 2023, after significant effort, the OCIO Network Segmentation Governance Document had been updated, and it awarded NaTS-delegated approval authority to new network segments as owners of the NaTS Enterprise Network.

The SDA project at the time of the new delegation was 13.7 percent completed (with 467 switches migrated) and active at Glenn Research Center (GRC), HQ, the Independent Verification and Validation (IV&V) Facility, LaRC, MAF, MSFC, Stennis Space Center (SSC), and WFF.

Since then, the SDA project has continued to accelerate and is at 28.73 percent complete agencywide (954/3,321 switches migrated), complete at IV&V and MAF, and actively migrating at Armstrong Flight Research Center (AFRC), Ames Research Center (ARC), GRC, HQ, Johnson Space Center (JSC), Kennedy Space Center (KSC), LaRC, MSFC, SSC, and WFF, with HQ, LaRC, and MSFC being over 80 percent complete.

Additionally, the SDA project has been the driving force to replace/upgrade end-of-life devices or non-compatible hardware, update network switch software, complete the closure of open/unauthenticated ports agency-wide, and provide funding for several infrastructure upgrades, to include but not limited to cable plant projects at ARC and SSC. These successes are a culmination of the work of SDA staff; Network, Transport, and Data Distribution staff; service liaisons, and AEGIS NIOC and center staff.

The SDA project, seven months into its acceleration efforts, finished 2023 strong. The team is working to acquire funding through the Technology Modernization Fund, support the consolidation of the NASA Shared Services Center and SSC, and began the new year with the intention of maintaining intensity throughout 2024.

ITSM Tool Transition Project: The Importance of Collaboration

By Lydia M. Ferguson, ITSM Project Manager, OCIO Enterprise Program/Project Management Office, NASA Headquarters

Cross-cutting Business Solutions' (CBS) IT Service Management (ITSM) Tool Transition Project is working to implement an enterprise ITSM solution in a single ServiceNow instance and standardize core ITSM processes across the enterprise. While desperately needed, achieving this enterprise solution is a Herculean task, requiring enormous interaction and collaboration to standardize processes that currently are varied across the agency.

The ITSM Tool Transition project therefore leverages representation from across the agency. The project's Core and Extended teams are composed of approximately 98 members, including IT service providers from across the agency serving in a part-time capacity, providing representation from all six services lines and five agency level offices. All center CIO offices are providing requirements except the Jet Propulsion Laboratory (JPL). Additionally, five enterprise contracts are contributing to the project.

Core and Extended team members submitted requirements related to their functions and organizations, which were reviewed and categorized by the OCIO process owners and the ServiceNow Implementation team. Now, to facilitate and encourage collaboration, the project is bringing the Core and Extended teams together with the OCIO process owners and the ServiceNow implementation team for Requirements Workshops. The Requirements Workshops provide a forum so that every Core and Extended team member can contribute and understand how their submitted requirements will be dispositioned, as well as how the various service management processes will be implemented in the tool. The workshops also provide visibility into other team members' requirements and how the requirements align or potentially do not align with the standardized processes. These workshops are helping to establish and foster a "one team" approach, which is essential to the success of the tool.

The goal of the workshops and the collaboration of Core and Extended team members from across the agency is to establish a common baseline understanding of the processes and the implementation of the processes in the tool, which will aid the subsequent rollout of the enterprise ITSM solution. Ultimately, this enterprise solution will streamline IT service management across NASA and improve OCIO's IT customer service.

If you have questions about the ITSM Tool Transition project, submit them to our internal site here: *ITSM Tool Transition Project FAQs*.

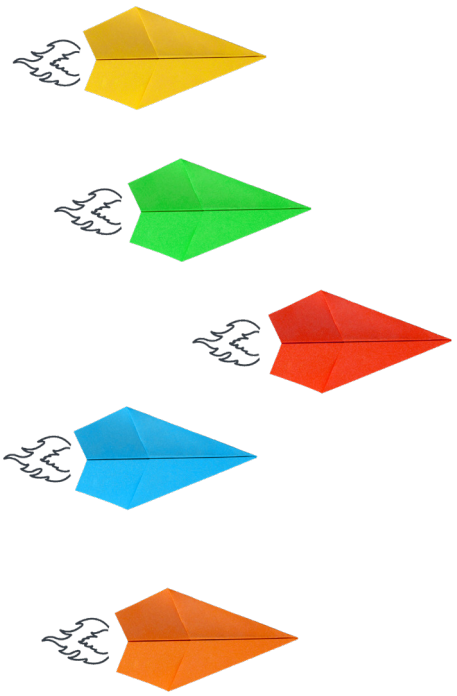
Looking Forward to Change—Collaboration Is Essential

By Penny Hubbard, Bonnie May, Jacke James, and John Sprague, OCIO Service Management Office (SMO)

The key to success for the OCIO IT Service Management (ITSM) Tool Transition project is to ensure that workflows, support, knowledge, and governance are in place for this multi-year effort. The Service Management Office (SMO) is collaborating with project teams to ensure that each stage is seamless and successful for each of the processes released during transition. OCIO teams are making good progress in establishing requirements for OCIO IT Incident Management and Major Incident Management (ITIM/MIM) and determining how, once in production, IT incidents will be managed via the new OCIO ITSM Tool.

SMO is also working on processes, such as IT Change Management, to be released in future project stages. Accomplishing this requires engaged and focused collaboration and will not be achieved without the pivotal input from our agency, center, and service line colleagues. They provide the depth of detail about their requirements, their pain points, and any customer value improvements they want to achieve with the new tool. SMO takes these details and, working with both the Enterprise Project Management Office (EPMO) Cross-cutting Business Solutions (CBS) team and Applications and Platform Services (APS) architects, brings us closer to rolling out the new OCIO IT Service Management tool. Team collaboration throughout the project is essential to its success!

Stop by the internal *SMO site* to see the latest news, processes, FAQs, training sessions, and more details on how SMO is collaborating for OCIO's success.



Introducing NASA's IT Strategic Plan

By Jon Walsh, IT Strategist, Strategy and Architecture Office, and Meredith Isaacs, Communications Strategist, NASA Headquarters

On January 24, the Office of the Chief Information Officer published *NASA's IT Strategic Plan, effective through Fiscal Year 2026*. This plan outlines NASA's vision for the strategic use of information and technology with a focus on achieving mission outcomes—the impacts and change NASA's missions need to be successful.

The plan communicates five strategic goals, each supported by strategic objectives and performance objectives to drive success:

1. Satisfaction—Deliver great customer experiences.
2. Excellence—Achieve consistent operational excellence.
3. Transformation—Transform NASA with information and technology.
4. Cybersecurity—Ensure proactive, resilient cybersecurity.
5. People—Develop an exceptional OCIO team.

NASA's IT Strategic Plan impacts all of us, whether you rely on IT services to perform your work; you are engaging with customers of IT services; you are planning and managing IT efforts; or you are delivering, operating, and securing IT services.

IT personnel are contributing to NASA's missions every day through the planning and execution of roadmaps, investments, projects, and service delivery. To understand how your work provides value to missions, partners, and the public, you can familiarize yourself with the *plan* and visit our *internal website* for resources, including explainers, presentations, and more.

Progress toward the plan is guided and regularly evaluated via Objectives and Key Results (OKRs), Key Performance Indicators (KPIs), Balanced Scorecard, and an annual strategic review. These evaluations inform NASA's annual Strategic Review, which, in turn, communicates progress toward *NASA's Strategic Plan*.

Throughout the year, we will highlight parts of our strategic plan, provide additional resources, and celebrate our successes. We are excited to share NASA's path for delivering exceptional value through IT to our mission and business partners!

Congratulations to Dalton Leech for being selected as a 2024 Modern-Day Technology Leader by the *US Black Engineer and Information Technology* Magazine and the Council of Engineering Deans of the Historically Black Colleges and Universities. Dalton is the cable plant lead at Armstrong Flight Research Center. He works for Leidos under the AEGIS contract.

Dalton Leech

Dalton (in the middle) at the award ceremony with Steve Hull, Leidos Executive Vice President, Sector President, Digital Modernization (on left) and Will Johnson, Jr., Leidos Senior Vice President, Federal Civil IT (FED CIV IT) Business Area Leader (on right).

National Aeronautics and Space Administration

Office of the Chief Information Officer
Mary W. Jackson Headquarters
300 E Street SW
Washington, DC 20546

www.nasa.gov