# DRAFT NASA IT Strategic Framework FY 2022-2026

**NASA IT Vision:** To discover and expand knowledge for the benefit of humanity.

**NASA IT Mission:** We empower NASA's people and partners to achieve mission success through secure, evolving information technology and accessible data.

| Benefits to NASA | | | | | |
|---|---|---|---|---|---|
| **Share NASA's data and results** through open, appropriate access | **Increase quality and effectiveness** through data and technology | **Accelerate results** through increased productivity | **Increase safety and resilience** through proactive and adaptable cybersecurity | **Increase cost-effectiveness** by driving efficiency and reinvesting the difference | **Innovate and enable discoveries** as a strategic partner on capabilities like data science |

| Strategic Goals | | | | | |
|---|---|---|---|---|---|
| **Deliver Great Customer Experiences** | **Achieve Consistent Operational Excellence** | **Transform NASA with Information and Technology** | **Ensure Proactive, Resilient Cybersecurity** | **Develop an Exceptional OCIO Team** |

| Strategic Objectives | | | | | |
|---|---|---|---|---|
| 1.1 Create and evolve a shared understanding of customer requirements. | 2.1 Increase the reliability, effectiveness, and efficiency of NASA's IT operations. | 3.1 Transform how NASA operates using digital capabilities. | 4.1 Simplify, strengthen, and scale NASA's cybersecurity. | 5.1 Attract, hire, and retain a diverse and strategically-aligned OCIO team. |
| 1.2 Improve customer satisfaction with OCIO's services. | 2.2 Increase the effectiveness of IT planning, execution, and communications. | 3.2 Enable insights from NASA's data and information. | 4.2 Reinforce operational resilience through strategic cybersecurity risk management. | 5.2 Enhance employee experience by ensuring OCIO team members feel included, engaged, and valued. |
| 1.3 Provide customers with a complete and intuitive catalog of OCIO's services. | 2.3 Excel at IT program and project management to deliver results. | 3.3 Enable flexible work options and environments to achieve mission success. | 4.3 Integrate risk-based cybersecurity into mission development and operations as a shared responsibility. | 5.3 Develop team members' talents and support career development. |

The scale and scope of the OCIO and its impact on NASA's mission is significant.

~750 Civil Servants ← → 1700+ Contractors

Three Divisions ← → Ten Centers

Five Agency-Level Offices (ALOs) ← → Six Service Lines (SLs)

## Outcomes



**More directly enable NASA to achieve mission success**

**Improve and set high standards for the customer experience**

**Optimize available resources (funding, time, and people)**

**Deliver services that are consistently excellent**

**Provide transparency through clear, relevant, and data-driven metrics**

**Unify Center & Agency IT strategy and service delivery**

**Ensure that OCIO is an organization where our people grow, learn, and thrive**
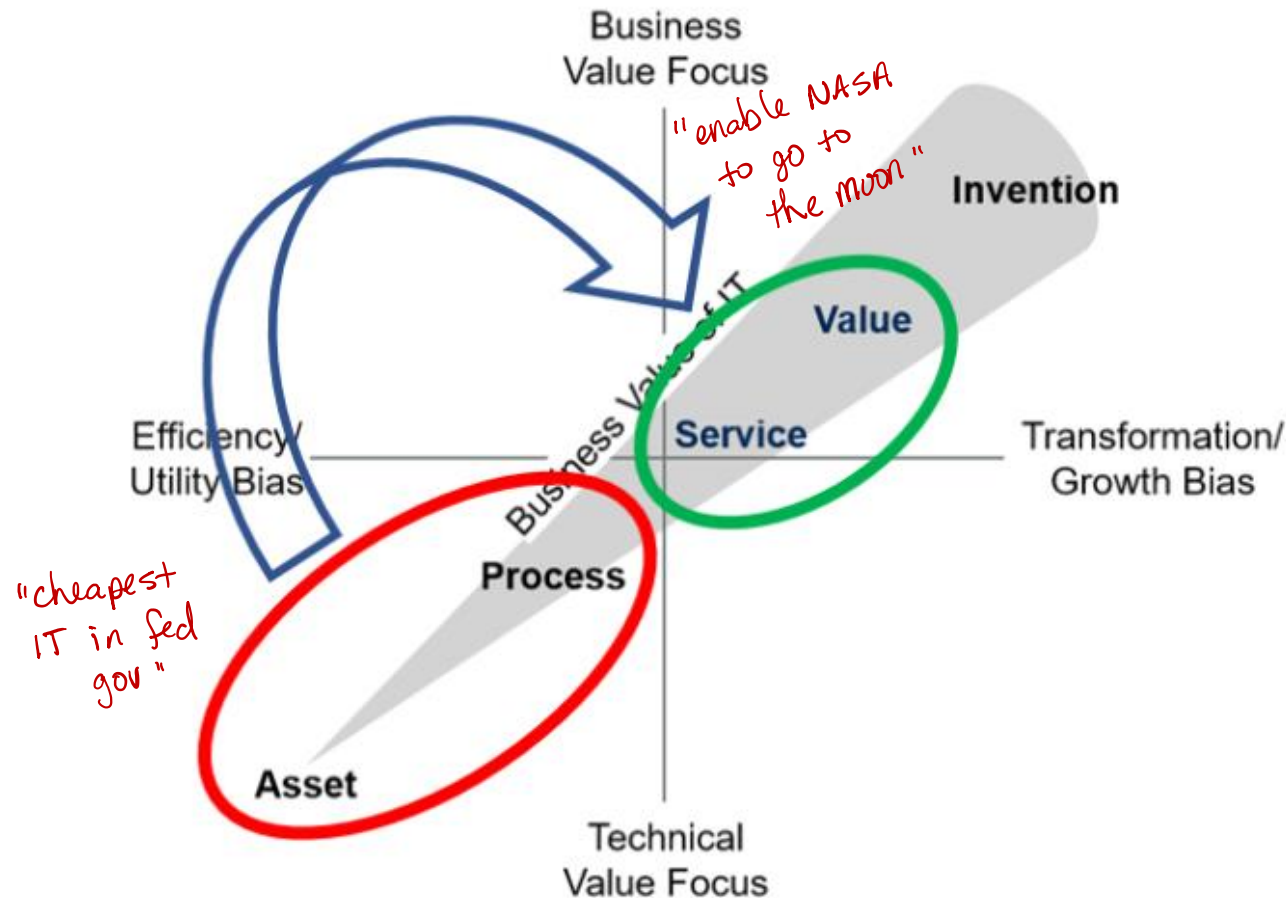
OCIO Transformation Will:

## How

The OCIO Transformation is a **redesign of the Agency's IT Operating Model** in order to more directly enable NASA to achieve mission success and ensure that the OCIO is an organization where our people grow, learn, and thrive. Notable changes to the IT Operating Model include, but are not limited to, the OCIO's organizational structure, governance boards and processes, the IT acquisition strategy and contract management, optimizations to resource and budget management, and new approaches to improving customer experiences.

I&T Operating Models

The OCIO Transformation is repositioning NASA's IT organizations to better enable NASA's mission and create an organization in which our employees grow, learn, and thrive.

Budget pressures, workforce constraints, increasing demands for digital capabilities, rapidly evolving industry technologies and cybersecurity threats have created an environment in which our historical models can no longer sustain and modernize IT services at NASA.

The changes enacted through this transformation position the OCIO to meet NASA mission expectations not to be "the cheapest IT in the federal government" but rather but rather the IT needed and expected by the NASA workforce to enable mission success

# Key Aspects of the OCIO Transformation

## Customer Experience
- A focus on creating and enabling easy-to-use, 'effortless' experiences for all audiences internal and external
- Deploying a new "Front Door" to IT services for NASA
- Establishing defined relationship management roles and community to improve integration with and responsiveness to our Mission customers

## Service Delivery
- Adoption of new organizing principles (Service Lines) integrating and aligning current disparate and duplicative organizations and communications
- Implementing new methods (ITIL4, Agile, and DevOps) to drive business outcomes and enable IT as a strategic partner
- Shift from a focus on systems to platforms and agile, cost-effective methodologies leveraging automation and the cloud

## Organizational Change & Workforce Development
- Reorganizing the OCIO organizations and workforce to One OCIO from 10 different, independent IT organizations
- Establishing consistent roles and communities of practice to foster collaboration, integration, and reduce friction
- Intentionally developing workforce management practice inclusive of succession planning, "Complete IT Professional" career path, and more

## Run IT Like a Business
- Centralizing budgets for IT services provided as base capabilities to NASA
- Distributing budgets for consumption-driven IT services to the organizations with requirements
- Streamlined financial and budgeting process to accelerate decision making and reduce barriers to service
- Improving business alignment through strategic planning and enterprise architecture
- Transitioning from multiple, geographically distributed IT contracts to flexible, centralized Agency IT contracts
- Simplified and centralized procurement of Commercial IT products and services
- Implementing revised and new Risk Management, Performance Management, and Governance frameworks
- Reducing bureaucracy and constraints through a reduction of disparate policies
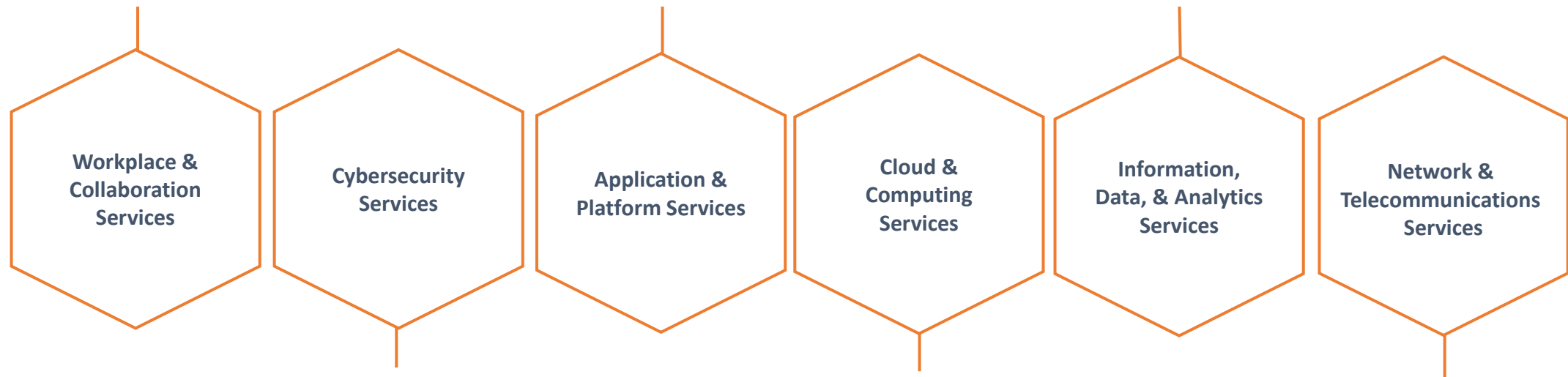
# Service Lines Provide Full-Spectrum, Local and Enterprise Service Delivery

▶ All the tools necessary for NASA staff to be productive.
▶ End-user computing and mobile devices, Email, IM, and other collaboration tools.

▶ Develop and provide solutions to optimize NASA business capabilities, including application development, integration, platform management, and support.

▶ Higher-quality insights and faster, more accurate decision-making through enterprise data platform development, data asset management, and analytics.
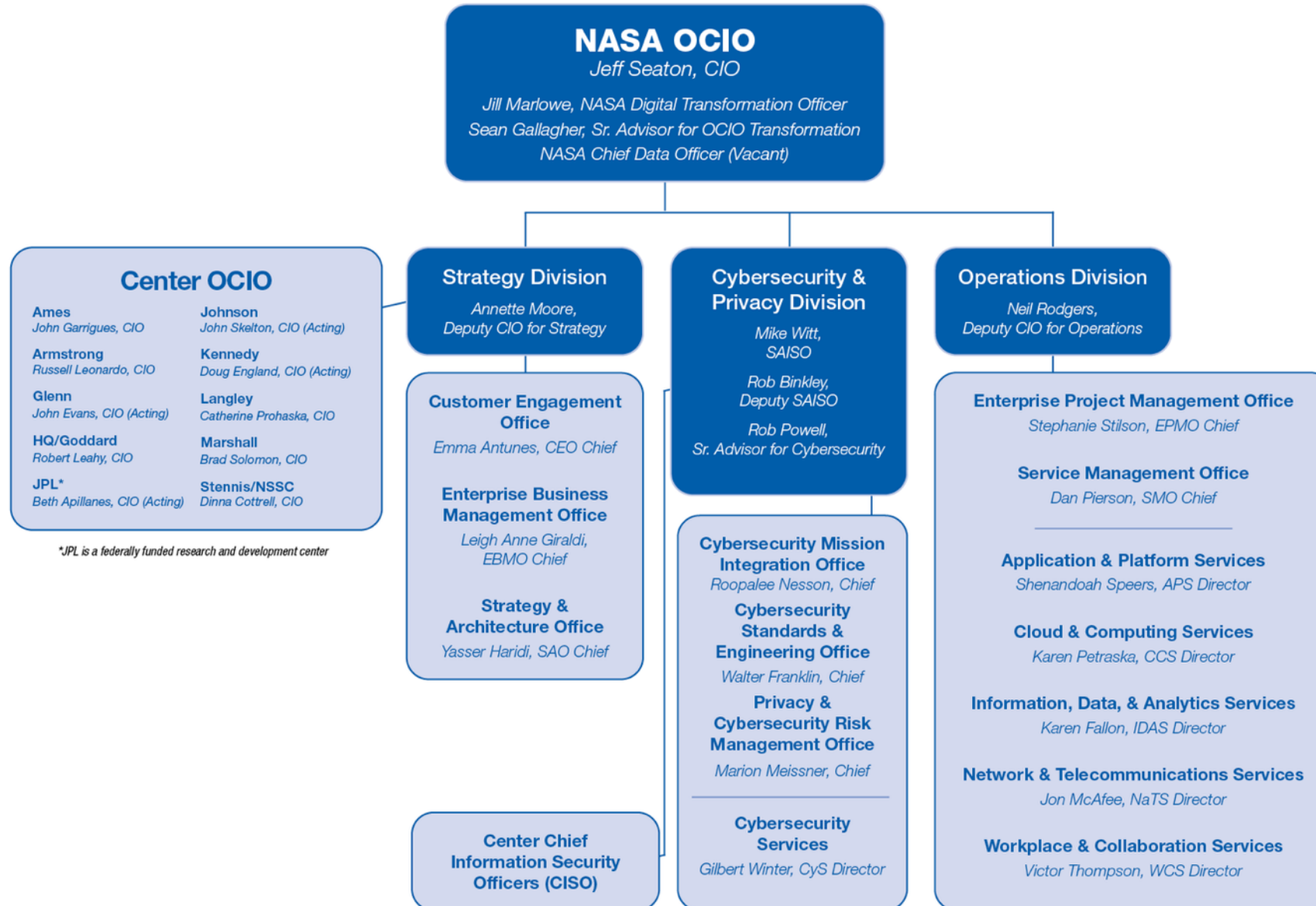
**Workplace & Collaboration Services**

**Cybersecurity Services**

**Application & Platform Services**

**Cloud & Computing Services**

**Information, Data, & Analytics Services**

**Network & Telecommunications Services**

▶ Comprehensive Security services to support needs for risk identification, cyber asset protection, threat detection, and incident response.

▶ Hosting and cloud brokering services.
▶ Optimizes contracts for the greatest value to the company overall.

▶ Secure, architected Network and Transport services with lifecycle management.
▶ Includes physical infrastructure, cabling, WAN, LAN.

**NASA OCIO**
Jeff Seaton, CIO

Jill Marlowe, NASA Digital Transformation Officer
Sean Gallagher, Sr. Advisor for OCIO Transformation
NASA Chief Data Officer (Vacant)

## Center OCIO

**Ames**
John Garrigues, CIO

**Johnson**
John Skelton, CIO (Acting)

**Armstrong**
Russell Leonardo, CIO

**Kennedy**
Doug England, CIO (Acting)

**Glenn**
John Evans, CIO (Acting)

**Langley**
Catherine Prohaska, CIO

**HQ/Goddard**
Robert Leahy, CIO

**Marshall**
Brad Solomon, CIO

**JPL***
Beth Apillanes, CIO (Acting)

**Stennis/NSSC**
Dinna Cottrell, CIO

*JPL is a federally funded research and development center*

### Strategy Division
Annette Moore,
Deputy CIO for Strategy

**Customer Engagement Office**
Emma Antunes, CEO Chief

**Enterprise Business Management Office**
Leigh Anne Giraldi, EBMO Chief

**Strategy & Architecture Office**
Yasser Haridi, SAO Chief

**Center Chief Information Security Officers (CISO)**

### Cybersecurity & Privacy Division

Mike Witt,
SAISO

Rob Binkley,
Deputy SAISO

Rob Powell,
Sr. Advisor for Cybersecurity

**Cybersecurity Mission Integration Office**
Roopalee Nesson, Chief

**Cybersecurity Standards & Engineering Office**
Walter Franklin, Chief

**Privacy & Cybersecurity Risk Management Office**
Marion Meissner, Chief

**Cybersecurity Services**
Gilbert Winter, CyS Director

### Operations Division
Neil Rodgers,
Deputy CIO for Operations

**Enterprise Project Management Office**
Stephanie Stilson, EPMO Chief

**Service Management Office**
Dan Pierson, SMO Chief

**Application & Platform Services**
Shenandoah Speers, APS Director

**Cloud & Computing Services**
Karen Petraska, CCS Director

**Information, Data, & Analytics Services**
Karen Fallon, IDAS Director

**Network & Telecommunications Services**
Jon McAfee, NaTS Director

**Workplace & Collaboration Services**
Victor Thompson, WCS Director

- Completed restructuring and reorganization of the OCIO - ~750 federal employees, ~1700 contractors, 10+ geographic locations, and multiple labor unions all aligned under the Agency OCIO

- Aligned all IT Mission Support budgets under the OCIO for improved insights and investments aligned with strategy.

- Invested in the underpinnings for sustainable strategic management of NASA's IT with new Strategy & Architecture, IT Service Management, and Customer Engagement Offices

- Established business-led Technology Roadmaps driving strategic investments and divestments

- Established 3 of 6 enterprise acquisition contracts while ending 4 of 17 regional IT contracts planned for discontinuation

- Released a Centralized IT Purchasing process offloading the administrative burdens of purchasing IT from Missions and Centers

across NASA's 10 locations

- Integrated OCIO-wide Hiring & Staffing process increased available candidate pools for critical positions and enabled OCIO leadership to strategically address labor constraints and evolving skills needs

- Integrated Outage and Incident reporting across all operational services; increasing transparency and providing near real-time insights to OCIO leaders at all locations

- Integrating Corporate and Mission telecommunication teams to improve access to talent and continuity operations in response to increased mission launch tempos

- Implementing common configurations and tools to address hybrid collaboration and conference room requirements across all NASA centers

[**dij**-i-tl  trans-fer-**mey**-shuhn] *noun:*

Employing digital technologies to change a process, product, or capability so dramatically that it's unrecognizable compared to its traditional form.

**DT ≠ IT**
**DT = transformation focused**
**IT = technology focused**

**TRADITIONAL**

**DIGITIZED**

**TRANSFORMED**

**From Maps to Apps…**
Digital Transformation
has already changed our world

- Increasingly bold & complex missions
- Increasingly partnered
- Increasingly fast
- Increasingly affordable
- Increasingly transparent
- Increasingly inclusive

*NASA must transform*

# WHY Digitally Transform NASA?
## *3 Future State Goals*

# NASA must transform...

## Expanding Partnership Landscape

**the way we WORK**

## Evolving Employee Expectations

**the experience of our WORKFORCE**

## Increasing Budget Constraints

**the agility of our WORKPLACE**

Sondra's digital assistant alerts her to a newly published partner data set related to her science research. She kicks off a bot to transfer & clean the data and integrate it into her model. Using analytics to rapidly cross-check the results, she discovers a potential breakthrough

Caryn is excited to have joined a 1-day collaboration jam session where she connected with new teammates from across NASA to quickly learn and apply AI/ML tools on an elusive space suit challenge. She loved helping the mission and can't wait to share her new ideas with her financial peers.

George pauses digital manufacturing of an urgent job after a critical IoT sensor alert. He imports the data history into the lab digital twin model and rapidly forecasts the job can safely continue, avoiding delays.

WHERE Must We Focus?
*4 Transformation Targets*

**Enable agile multi-center/partner engineering teams to solve frontier problems**

*Executive Sponsor Orgs:
MDs, OCE, OSMA, Centers*

**Multiply science & technology breakthroughs by leveraging diverse global minds/advances**

*Executive Sponsor Orgs:
OCS, OCT, MDs, Centers*

**Optimize & synchronize our work environment to increase efficiencies & effectiveness between mission & mission support**

*Executive Sponsor Orgs:
MSD, MSEOs, Centers*

**Accelerate risk-informed, evidence-based, self-consistent decision making**

*Executive Sponsor Orgs:
Chief of Staff/OES, CPMO, TAs
Evidence Officer, MDs, Centers*

Transform Engineering

Transform Discovery

Transform Operations

Transform Decision Making

**TxTarget framework leverages benchmarking of OGA digital strategies**

**For any/each Transformation Target…**

Delivers

Integrates

Feeds

Produces

Leverages
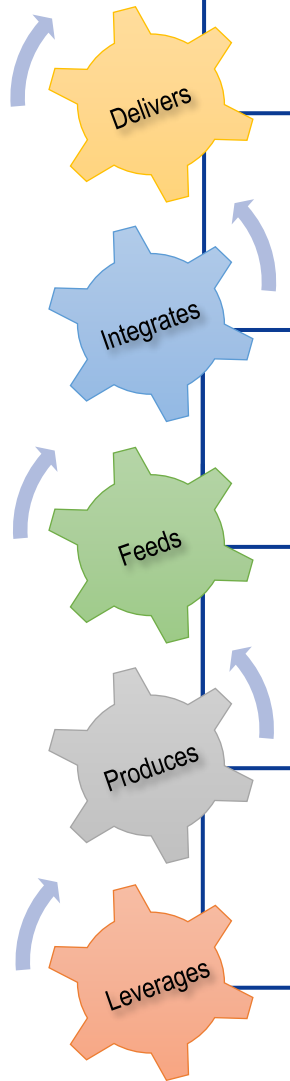
## Establish Interoperable *Architectures*

*Define value streams & associated organizational conops within the domain:*
- Update **policies, standards & guidelines** that define domain digital processes & governance
- Define framework for **interoperable platforms/systems** to integrate domains and processes

## Transform Critical *Processes*

*Streamline critical workstreams within the domain:*
- **Eliminate, Optimize, Automate workflows** to address process bottlenecks & redundancies
- Evolve from paper-centric to **integrated data/model-centric approaches**
- Maximize **shared services & role-based access** to enable geographically agnostic Future of Work

## Maximize the Impact of our *Data*

*Expand data search, access, interoperability, re-use and analysis:*
- Baseline **data inventory/repositories** & name **data stewards** → integrate into **data architecture**
- Establish **data governance**, including data classifications/sensitivities & role-based access
- Enable **data fusion** as well as **data analytics & AI/ML** capabilities to mine insights

## Adopt Common *Tools*

*Reduce domain tool sprawl / chaos by driving to shared capabilities by tier:*
- Tier 1 – **agency-wide common tools** (w/ deviation by exception)
- Tier 2 – functional interoperable **community core shared tools**
- Tier 3 – **local unique one-off** and/or home-grown tools (with justification)

## Strengthen Inclusive[3] *Teaming*

*Eliminate barriers to strengthen inclusive teaming:*
- Digitally-Inclusive: Establish threshold level of **digital understanding, literacy & skills**
- Geographically-Inclusive: Enable **immersive collaboration for on- and off-site** team members
- Organizationally-Inclusive: Provide **seamless data access across multi-center/partner** teams

**…** we can accelerate change by systematically facilitating & coordinating organizational plans to **harness Digital Levers**

# What Does a Digitally Transformed NASA Look Like?
## 7+ Mission Outcomes

Continuously improve technical, programmatic and operational hindsight, insight and foresight to enable complex decision making and increase reliability and consistency.

Optimize investments, readiness, access and utilization of best-in-class capabilities (facilities and tools) at the right time

Harmonize NASA work products & processes with our partners' diverse and continually changing processes, expectations and business models

**Bolder, More Complex Missions**

**Affordable Sustainable Operations**

**Seamless Partner Teaming**

**Faster, More Agile Processes**

**Inspired & Engaged Citizens**

**Attract & Retain Workforce**

**Modern Future of Work**

**One Future NASA**

Work at the modern "speed of business" by maximizing productivity and minimizing error/ rework.

Rapidly, repeatedly create customized inspirational engagements based on stakeholder individual needs and interests.

Continuously enhance NASA's ability to recruit, retain and motivate top talent in a competitive, dynamic marketplace... accelerating their growth, agility and productivity to enable all of our people to thrive in the digital age

Enable geographically & organizationally agnostic teams to work efficiently and effectively anytime, anywhere.

# NASA's DT Strategic Framework

**3** FUTURE STATE GOALS

**4** TRANSFORMATION TARGETS

**5** DIGITAL LEVERS

**6** TECHNOLOGY FOUNDATIONS

**7+** MISSION OUTCOMES

## 3 Future State Goals

- Transform the way we **Work**
- Transform the experience of our **Workforce**
- Transform the agility of our **Workplace**

## 4 Transformation Targets

- Transform Discovery
- Transform Engineering
- Transform Decision Making
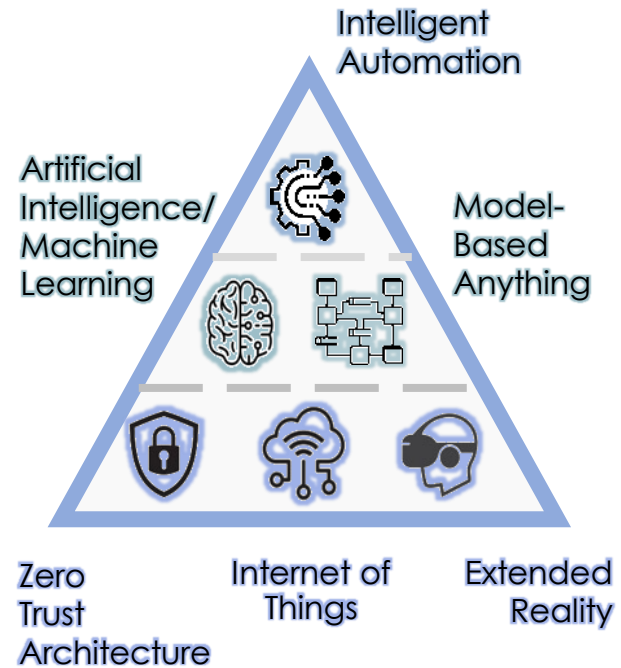- Transform Operations

## 5 Digital Levers

- Establish Interoperable *Architectures*
- Transform Critical *Processes*
- Maximize the Impact of our *Data*
- Adopt Common *Tools*
- Strengthen Inclusive[3] *Teaming*

## 6 Technology Foundations

- Intelligent Automation
- Artificial Intelligence/Machine Learning
- Model-Based Anything
- Zero Trust Architecture
- Internet of Things
- Extended Reality
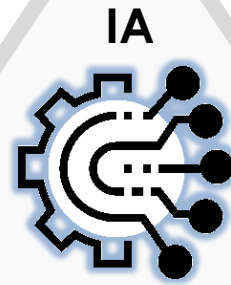
## 7+ Mission Outcomes

- Seamless Partner Teaming
- Bolder, More Complex Missions
- Faster, More Agile Processes
- Inspire & Engage Citizens
- Affordable Sustainable Operations
- Attract & Retain Workforce
- Modern Future of Work

**One Future NASA**

## Ignite Transformation

Facilitate **Tx Target Community-owned Roadmaps** & priority actions to align DT goals/interests

## Connect Plans

Coordinate & align **Organizational DT Plans** that respond to the DT Strategic Framework to synchronize DT intents

## Integrate Solutions

Assess **DT Forecast** of proposed Org DT Plans vs. Roadmaps / priorities to identify gaps & opportunities and inform PPBE decisions on DT investments
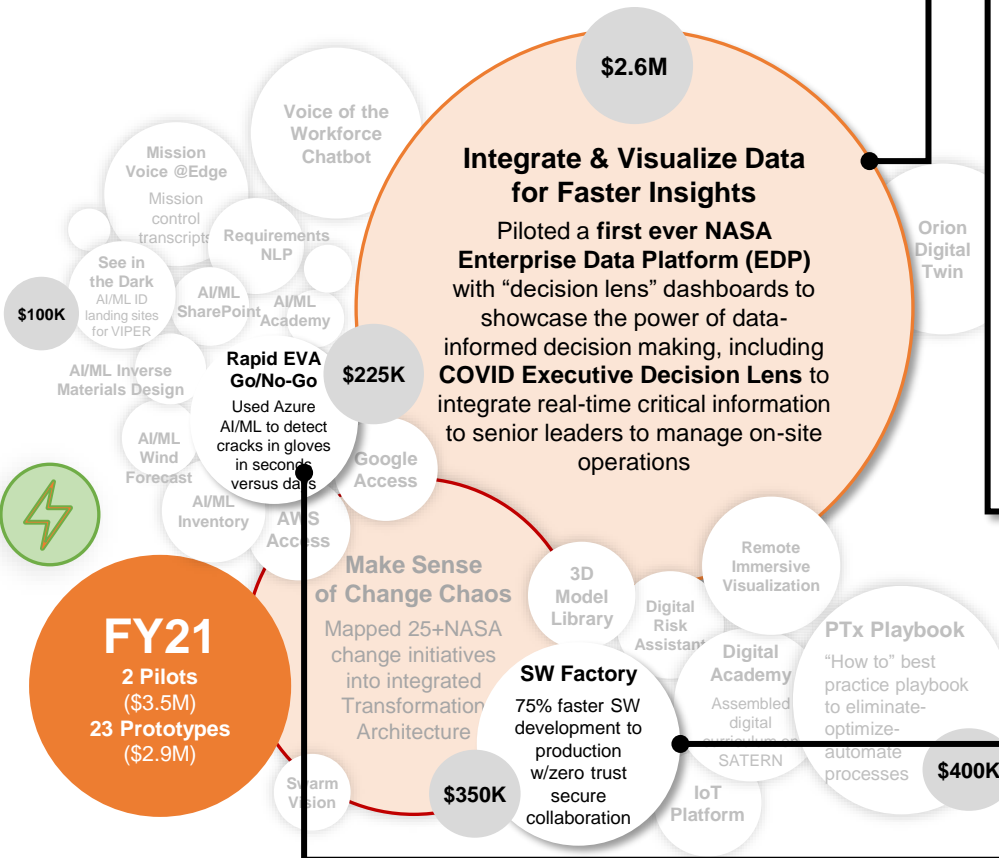
## Facilitate Adoption

Measure **DT Progress** on Org DT Plans vs. Roadmaps; celebrate & share wins and elevate & address cross-cutting barriers via **DT Catalyst Projects**
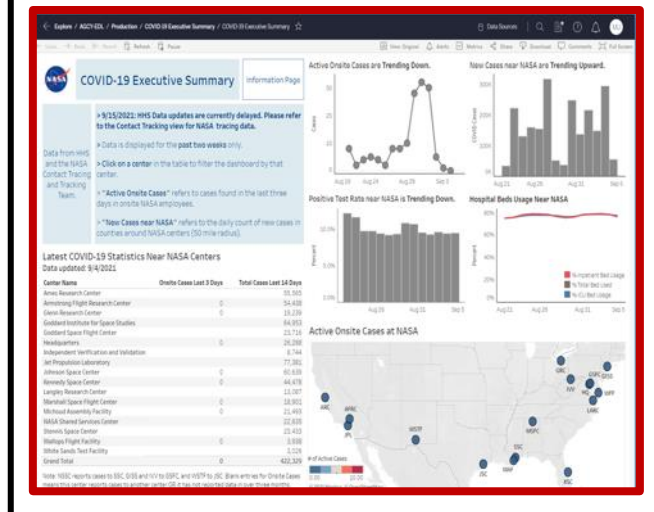
# Enterprise DT Portfolio – FY21
*Mostly bottoms-up "early win" demos within single organizations*

DT's role has evolved from **Igniter** to Connecter, and now to Integrator and Facilitator to enable NASA's Transformation Journey.

**(Dec. 2020)** Using pilot **Enterprise Data Platform (EDP)**, created **COVID Executive Decision Lens dashboard** to dynamically integrate & visualize real-time national & regional HHS COVID case rate and hospitalization data coupled with NASA Center case rates to improve insights and speed decisions for on-site operations /protocols across Centers

**$2.6M**

## Integrate & Visualize Data for Faster Insights
Piloted a **first ever NASA Enterprise Data Platform (EDP)** with "decision lens" dashboards to showcase the power of data-informed decision making, including **COVID Executive Decision Lens** to integrate real-time critical information to senior leaders to manage on-site operations

**(June 2022)** Utilizing the advanced capabilities of **APPDAT cloud computing platform** coupled with **Zero Trust** approach, enabled Partnership with Google, cloud AI models and the JSC Mission Control Center, developed a machine learning model that predicts the loss of KU Band signal on the ISS with a 4 orbit lead time, providing rapid ops insights

Voice of the Workforce Chatbot

Mission Voice @Edge

Mission control transcripts

Requirements NLP

See in the Dark
AI/ML ID landing sites for VIPER

AI/ML SharePoint

AI/ML Academy

Orion Digital Twin

**$100K**

**Rapid EVA Go/No-Go**
Used Azure AI/ML to detect cracks in gloves in seconds versus days

**$225K**

AI/ML Inverse Materials Design

AI/ML Wind Forecast

AI/ML Inventory

Google Access

AWS Access

## Make Sense of Change Chaos
Mapped 25+NASA change initiatives into integrated Transformation Architecture

3D Model Library

Digital Risk Assistant

Digital Academy
Assembled digital curriculum

SATERN

Remote Immersive Visualization

PTx Playbook
"How to" best practice playbook to eliminate-optimize-automate processes

**$400K**

**SW Factory**
75% faster SW development to production w/zero trust secure collaboration

Swarm Vision

**$350K**

IoT Platform

## FY21
2 Pilots ($3.5M)
23 Prototypes ($2.9M)

### GETTING STARTED

**Where We Seeded Early Wins and Sparked Change**

**(Dec. 2021)** ISS demo of an **AI/ML prototype Astronaut glove inspection model** that performed diagnostics & generated a GO/NO-GO recommendation in 45 seconds on the glove condition, a process that normally is performed by a group of people taking multiple days.

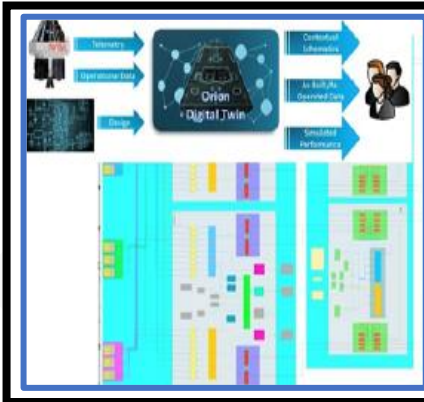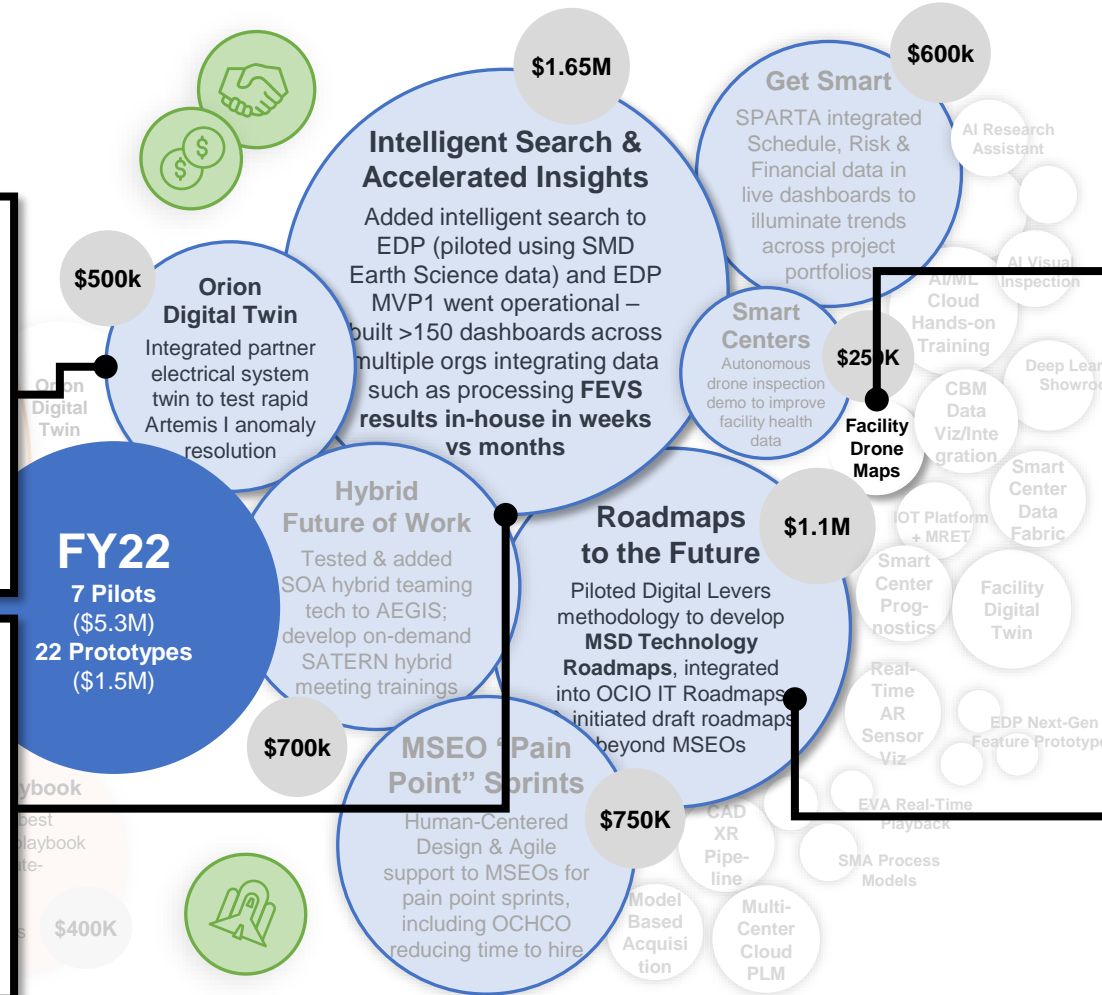DT's role has evolved from Igniter to **Connecter**, and now to Integrator and Facilitator to enable NASA's Transformation Journey.



*(Dec. 2022)* Created **Orion Electrical Power system Digital Twin** that integrated NASA/partner models from requirements to as-deployed design, enabling faster than real-time prognostics with ability to ingest Artemis I telemetry flight data for validation & anomaly resolution.



*(Aug. 2022)* Delivered **Federal Employee Viewpoint Survey graphical reports & trend analyses** using EDP in 2 weeks vs. several months analytics, providing better, more accurate insights and intuitive tools to explore results and improve org action plans.

**FY22**
**7 Pilots**
**($5.3M)**
**22 Prototypes**
**($1.5M)**

$500k

$1.65M

$600k

$250K

$1.1M

$700k

$750K

$400K

**Orion Digital Twin**
Integrated partner electrical system twin to test rapid Artemis I anomaly resolution

**Intelligent Search & Accelerated Insights**
Added intelligent search to EDP (piloted using SMD Earth Science data) and EDP MVP1 went operational – built >150 dashboards across multiple orgs integrating data such as processing **FEVS results in-house in weeks vs months**

**Get Smart**
SPARTA integrated Schedule, Risk & Financial data in live dashboards to illuminate trends across project portfolios

**Smart Centers**
Autonomous drone inspection demo to improve facility health data

**Hybrid Future of Work**
Tested & added SOA hybrid teaming tech to AEGIS; develop on-demand SATERN hybrid meeting trainings

**Roadmaps to the Future**
Piloted Digital Levers methodology to develop **MSD Technology Roadmaps**, integrated into OCIO IT Roadmaps; initiated draft roadmaps beyond MSEOs

**MSEO "Pain Point" Sprints**
Human-Centered Design & Agile support to MSEOs for pain point sprints, including OCHCO reducing time to hire

AI Research Assistant

AI Visual Inspection

AI/ML Cloud Hands-on Training

Deep Learning Showroom

CBM Data Viz/Integration

Smart Center Data Fabric

Facility Drone Maps

IOT Platform + MRET

Smart Center Prognostics

Facility Digital Twin

Real-Time AR Sensor Viz

EDP Next-Gen Feature Prototypes

EVA Real-Time Playback

CAD XR Pipeline

SMA Process Models

Model Based Acquisition

Multi-Center Cloud PLM



*(Oct. 2022)* Demonstrated multiple **autonomous drone facility inspections** that would have been difficult, dangerous & expensive with people; IR/ image data integrated into Smart Center data fabric for IoT sensor fusion.



*(Nov. 2022)* Advised on **MSD Technology Plans** using Digital Levers methodology; provided Agile support to rapidly synthesize MSEO needs to inform OCIO Technology Roadmaps for service lines.

**GETTING STARTED**

**JOINING FORCES**

**Where We Seeded Early Wins and Sparked Change**

**Where We Built Coalitions to Attack Select Challenges**

# Enterprise DT Portfolio – FY23

*Fewer top-down strategic investments focused on immediate benefits*

**FY23**

DT's role has evolved from Igniter to Connecter, and now to **Integrator** and **Facilitator** to enable NASA's Transformation Journey.



*(Nov. 2023)* Build out data literacy offerings on **SATERN Digital Academy** by leveraging existing digital literacy curricula from other Agencies to provide in-depth trainings to develop job-based digital competences as well as common enterprise-wide digital literacy practices.



*(March 2023)* Assemble a cross-functional **Digital Solutions "SWAT Team"** to pilot Agile and Human-Centered Design approaches to rapidly dissect key pain points across NASA organizations, focus on and "attack" identify critical user/customer experience challenges, then integrate expertise and services from across the OCIO and partner organizations to accelerate prototyping and scaling operational digital solutions



*(Feb. 2023)* Demonstrate a scalable **SPARTA multi-center portfolio management analytics dashboard** that integrates real-time mission profile, schedule, risk and financial data using GSFC and LaRC science projects to assess potential for increased speed, better insights and earlier risk detection from real-time evidence-based decision making using common data structures across projects.

**GETTING STARTED**

**Where We Seeded Early Wins and Sparked Change**

**JOINING FORCES**

**Where We Built Coalitions to Attack Select Challenges**

**BUILDING MOMENTUM**

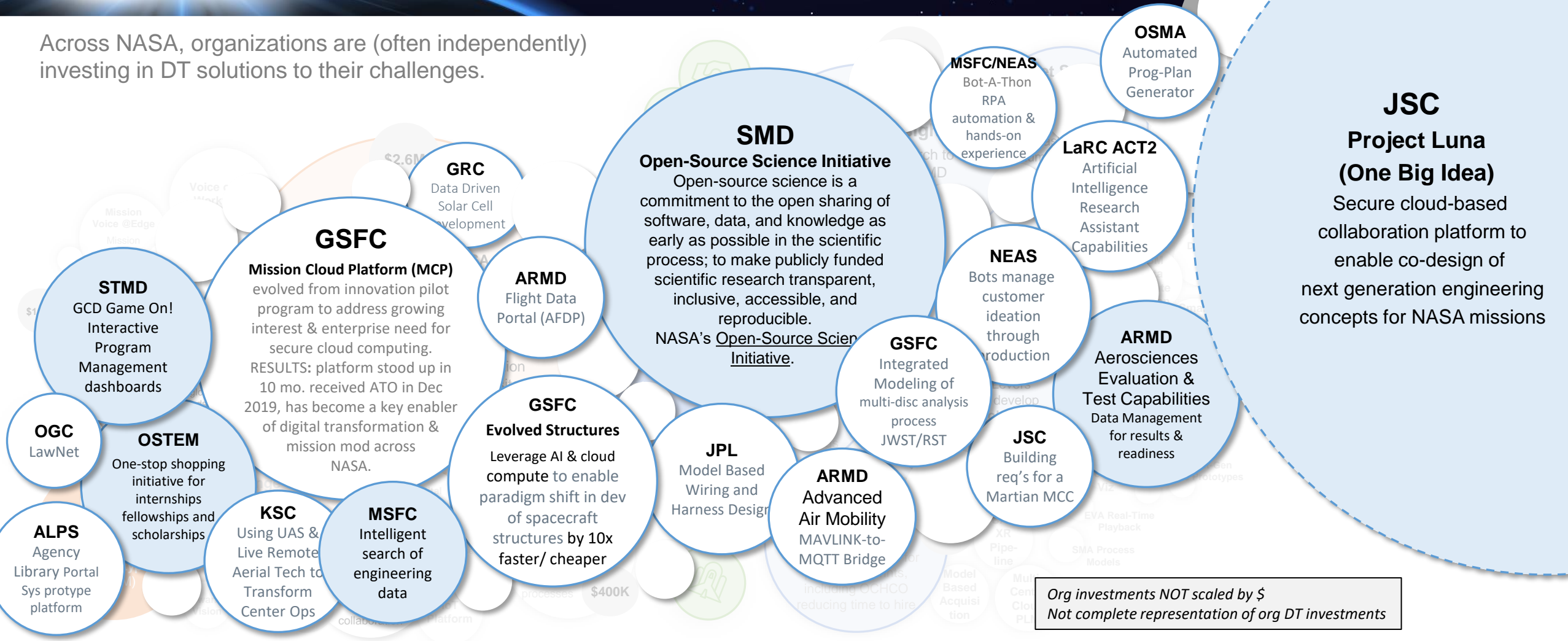**Where We Must Focus for Key Results**

# But Wait, There's More... Org DT Investments
*Unknown # of additional discrete transformation & modernization activities*

TBD

Across NASA, organizations are (often independently) investing in DT solutions to their challenges.

**OSMA**
Automated Prog-Plan Generator

**MSFC/NEAS**
Bot-A-Thon RPA automation & hands-on experience

**JSC**
**Project Luna (One Big Idea)**
Secure cloud-based collaboration platform to enable co-design of next generation engineering concepts for NASA missions

**GRC**
Data Driven Solar Cell Development

**SMD**
**Open-Source Science Initiative**
Open-source science is a commitment to the open sharing of software, data, and knowledge as early as possible in the scientific process; to make publicly funded scientific research transparent, inclusive, accessible, and reproducible.
NASA's Open-Source Science Initiative.

**LaRC ACT2**
Artificial Intelligence Research Assistant Capabilities

**GSFC**
**Mission Cloud Platform (MCP)**
evolved from innovation pilot program to address growing interest & enterprise need for secure cloud computing. RESULTS: platform stood up in 10 mo. received ATO in Dec 2019, has become a key enabler of digital transformation & mission mod across NASA.

**ARMD**
Flight Data Portal (AFDP)

**NEAS**
Bots manage customer ideation through production

**STMD**
GCD Game On! Interactive Program Management dashboards

**GSFC**
Integrated Modeling of multi-disc analysis process JWST/RST

**ARMD**
**Aerosciences Evaluation & Test Capabilities**
Data Management for results & readiness

**OGC**
LawNet

**OSTEM**
One-stop shopping initiative for internships fellowships and scholarships

**GSFC**
**Evolved Structures**
Leverage AI & cloud compute to enable paradigm shift in dev of spacecraft structures by 10x faster/ cheaper

**JPL**
Model Based Wiring and Harness Design

**JSC**
Building req's for a Martian MCC

**ALPS**
Agency Library Portal Sys protype platform

**KSC**
Using UAS & Live Remote Aerial Tech to Transform Center Ops

**MSFC**
Intelligent search of engineering data

**ARMD**
**Advanced Air Mobility**
MAVLINK-to-MQTT Bridge

*Org investments NOT scaled by $*
*Not complete representation of org DT investments*

**GETTING STARTED**  →  **JOINING FORCES**  →  **BUILDING MOMENTUM** →

| Where We Seeded Early Wins and Sparked Change | Where We Built Coalitions to Attack Select Challenges | Where We Must Focus for Key Results |

## "Executive Order on Improving the Nation's Cybersecurity"

- Signed May 12, 2021

## Purpose:

- Remove Barriers to Threat Information Sharing Between Government and the Private Sector.
- Modernize and Implement Stronger Cybersecurity Standards in the Federal Government.
- Improve Software Supply Chain Security.
- Establish a Cybersecurity Safety Review Board.
- Create a Standard Playbook for Responding to Cyber Incidents.
- Improve Detection of Cybersecurity Incidents on Federal Government Networks.
- Improve Investigative and Remediation Capabilities.

The Executive Order includes direct tasking to NASA and all other Agencies.

- The tasks are scoped to include all of NASA, including NASA Missions and JPL.
- The Executive Order requires a single Agency POC to provide status and deliverables.
- Deadlines are specified at varying intervals, from 30 to 360 days after signing.

The Executive Order includes actions to other Federal Agencies that will likely result in follow-on actions issued to NASA by those Agencies.

The Executive Order calls for periodic unified progress reporting.

Executive Order directs a fundamental shift in Federal priority and strategy for cybersecurity and will require multi-year changes in the way **NASA** conducts its missions

| | | |
|---|---|---|
| **Cyber Hygiene** | 1 | Protect our data, our intellectual property, and our digital identities |
| **Zero Trust Architecture** | 2 | Consolidate and transform our IT architectures with a data-centric **"zero trust"** cybersecurity model |
| **Software Supply Chain Security** | 3 | Secure the critical software in our infrastructure and supply chain |
| **Event Logging** | 4 | Enhance real-time cybersecurity event data and threat detection |
| **Contracts** | 5 | Standardize cybersecurity requirements in agency contracts |