



**NESDIS/Office of
Systems Architecture & Engineering (SAE)**



Annual Report **2024**



Dear SAE colleagues,

SAE is enacting several measures based on what you as our staff told us as part of our Change Management discussions over the last several years. One of those measures is launching an SAE Annual Report, with a goal of enhancing our internal communication and building a stronger sense of our SAE community.

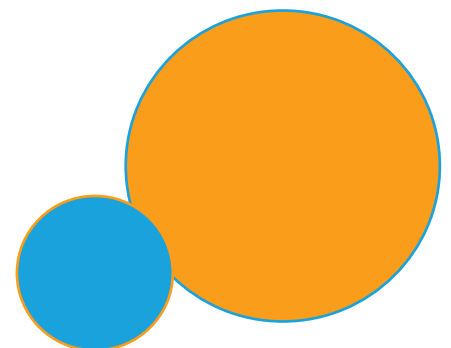
This report captures highlights of our previous calendar year's accomplishments and milestones. Our next annual report will be tied to the current Fiscal Year.

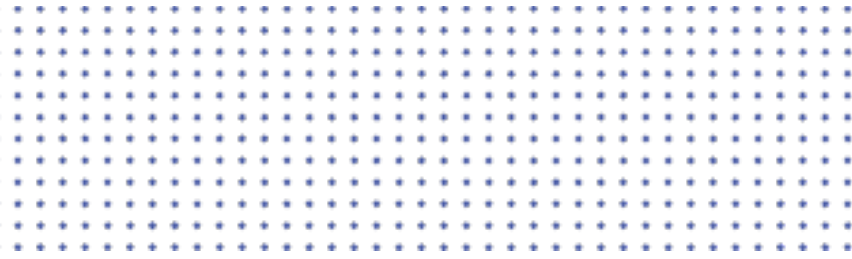
It is my hope that you will see your work in this SAE Annual Report, and learn what other people at SAE are doing – and why what we do, both individually and together, is important to NESDIS, to NOAA, and to our nation. We wrote this report for you, to recognize the great work you do, and make sure you know how much your efforts are appreciated. I read it and am extremely proud of our team.

I also encourage you to think of this SAE FY24 Annual Report as a prototype. We can always improve our work and our work products. Drop a line and tell me what you think we could do differently or what you would look for in the next edition. We'll be publishing the SAE FY25 Annual Report closer to the conclusion of the fiscal year so that planning is already underway. What work are you doing today that we can highlight in the next report?

Thank you for your contributions and good reading.

Sincerely,
Ed Grigsby





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Products and Services Governance

NESDIS Five-Year Product Plan for FY24-28

Early in 2024, Dr. Volz signed the [NESDIS Five-Year Product Plan \(Version 3.0\)](#) as an official governance document for FY24-28. Now accessible through NESDOCS, the 5YPP serves as the outlook for operational products and helps NESDIS offices and programs plan and implement product strategies.

NESDIS Product Requirements Change Process

Dr. Volz approved the NESDIS Product Requirements Change Process in November 2023, centralizing a process for handling requests to change requirements for NESDIS L2+ products. This consolidated approach allows modifications to meet user needs.

NESDIS Integrated Products List (IPL) Version 3.0

SAE's Products Team released Version 3.0 of the IPL on Nov. 1, 2024. The IPL is a vetted, living catalog that captures data and products that NESDIS generates and delivers to users. The IPL serves as a one-stop living reference for NESDIS products and plays an important role in enterprise product management.



User Engagement

Customer Relationship Management (CRM)

Lacking a common means to manage user engagement and develop customer insights at a NESDIS level, SAE's User Engagement team is developing an acquisition plan for a CRM technology to transform our disjointed, often manual system into a secure system that improves user data documentation and analysis, and automates user communications and other tasks.

NESDIS User Engagement Workload Assessment

SAE prepared a robust research study of the work, perspectives, and challenges of user engagement practitioners across NESDIS, with recommendations for how managers can better manage this work. The NESDIS User Engagement Workload Assessment is in the final drafting stages and will be published in early 2025.

Research and Testing for Usability

SAE acquired the powerful UserZoom user research platform, which uses a simple web link to test the usability of product prototypes. This platform—free to staff across NESDIS and supported by SAE’s UE team with training and demonstrations—can provide critical insights to product developers for any adjustments or changes before a product becomes operational.



User Engagement (from left to right): Morgan Stahl, Jennifer Cox, Jessica Wieman, Amber Hill, Renata Lana, Vanessa Escobar, Thanh Vo Dinh

CDP team at a site visit to the National Center for Weather and Prediction (NCWCP). From left to right: Natalia Laudier, Gerard Peltzer, Bonnie Chu, Lin Lin, and Christina Ritchie.





Commercial Data Program

Phase 1 of RO AoA Study

In an Analysis of Alternatives study, SAE's Commercial Data Program examined the capability of potential mission concepts to meet NOAA Radio Occultation (RO) requirements as the COSMIC-2 constellation degrades. The study assessed hybrid future RO architectures, which include potential US government-owned, international partners, and commercial satellites.



The CDP team is at a site visit to Boulder, Colorado. From left to right: Chris Barsoum, Marc Gasbarro, Natalie Laudier, W. Billy Gullotta, Gerard Peltzer.

RO Data Purchase

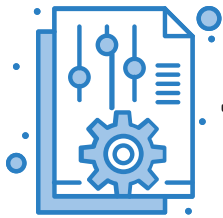
We awarded the continuation of NOAA/NESDIS's operational RO data purchase, Delivery Order 4, to both PlanetiQ and Spire for a total of 3,000 RO soundings per day for a period of 12 months – an award worth \$10,376,950, including a \$3 million contribution from the U.S. Air Force. Benefits of this RO purchase range from improved forecasts of severe weather, to high-precision atmospheric profiling and reduced bias in weather models – among others.

Microwave Sounder Data Pilots

On Sept. 17, 2024, NOAA awarded two Commercial Weather Data Pilot (CWDP) contracts for Microwave Sounders: about \$2.26 million for Tomorrow.io, and \$2 million for Orbital Micro Systems. NOAA will assess the quality, characteristics, and impacts of these commercial MWS observations collected from Low Earth Orbit (LEO), for potential benefits of commercial capabilities over the current federal LEO backbone.



Jerome Fisher, Natalie Laudier and Steve Marley discuss how NCWCP monitors volcanic eruptions.



Joint Venture Program

New Studies to Detect and Mitigate Corrupting Emissions

Joint Venture Partnerships program awarded two Broad Agency Announcement (BAA) contracts – to Boulder Environmental Sciences and Technology and NASA Jet Propulsion Laboratory – in FY24 to explore how to detect, identify, and mitigate anthropogenic radio frequency (RF) emissions that corrupt NOAA’s remote passive sensors. NOAA seeks to remove observational data contaminated by RF interference in the increasingly congested orbital environment.

Working with Industry: Open Knowledge Mesh and Natural Language Processing

To further meet the diverse needs of NOAA users, the SAE Joint Venture Partnerships program awarded BAA contracts to four companies to demonstrate working models of an enterprise information processing system backed by knowledge mesh and natural language processing. This knowledge mesh capability could help answer highly contextual queries. The companies awarded are Booz Allen Hamilton, Element 84 Inc., Noblis Inc., and Orion Space Solutions.

Studies and Demonstrations of New Ground Processing Technology

Following a BAA solicitation, the Joint Venture Partnerships program awarded contracts to Axta Space Corp., Cognitive Space, Kongsberg Satellite Services (KSAT), and Booz Allen Hamilton to study and demonstrate new technologies and novel concepts that reimagine NESDIS’ future ground operations. The goal is to ensure NOAA can support the increasing number of operational satellites and other observation data streams in the 2030+ timeframe. The BAA demonstrations – in Constellation Mission Operation, Next-Gen Ground Infrastructure, and Data Processing and Dissemination – will assess technologies that could lead to an efficient, cost-effective ground processing enterprise.





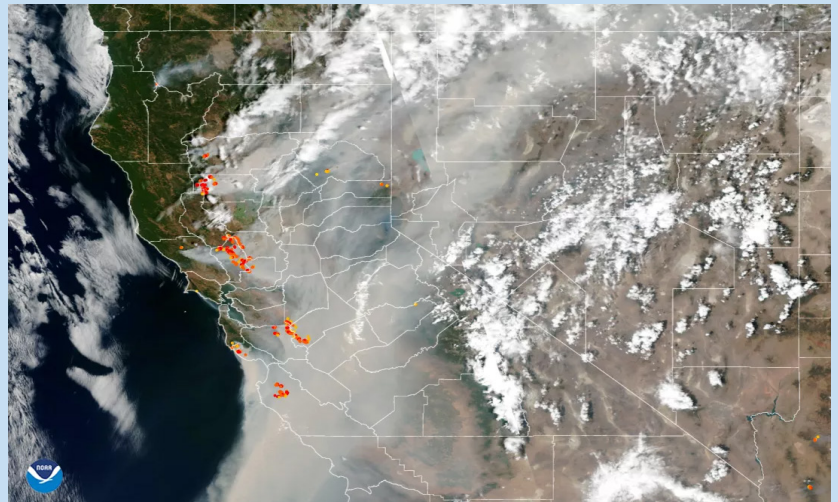
TPIO

NOSIE Tool: A New Way to Assess and Evaluate Observing Systems

TPIO developed the NOAA Observing System Integrated Explorer (NOSIE) tool to evaluate the impact of observing systems on meeting NOAA missions by visualizing the relationships between products and services, and the inputs required to make those products and services. NOSIE shows the cross-line office dependencies on observing programs, supports arguments for budget sustainment or increases, uncovers enterprise-level benefits of LO investment in observing systems, and provides observing systems owners with user information.

Refreshing Requirements for Weather-Ready Nation (WRN) Missions

TPIO is supporting the refresh of user observation requirements for five Weather-Ready Nation mission service areas (MSAs): Space Weather, Severe Weather, Winter Weather, Aviation Weather, and Integrated Water, Prediction, and Information. Dr. Volz requested Space Weather requirements to support the Space Weather Next Milestone 2.



NOAA's GOES-West satellite captured this image of the July 2024 hot spot and smoke from Park Fire in Butte and Tehama Counties, CA.

The Office of Inspector General required updated requirements documentation for the Space Weather Prediction Center. The remaining four MSAs were refreshed in support of the NWS's Next Gen Radar program.

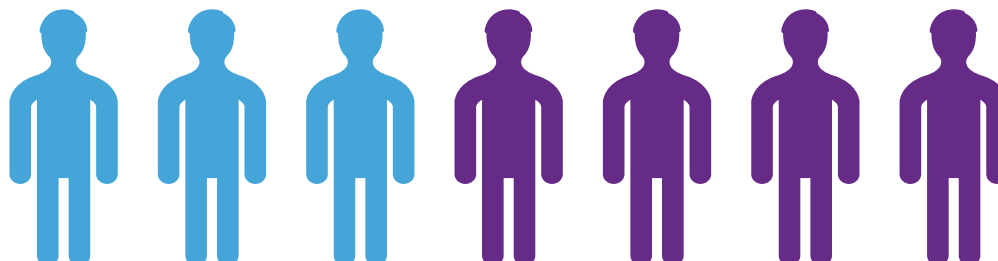
A New Way to Generate Authoritative Fly-Out Charts

TPIO rolled out a new authoritative capability to generate all NESDIS flyout charts, including 20-year, 5-year, and Coordination Group for Meteorological Satellites (CGMS) versions. The new capability allows SAE or others within NESDIS to generate flyout charts at will, using authoritative data maintained in the Earth Observation and Requirements Evaluation System (EORES) database. No need to manually build and maintain flyout charts from spreadsheets!

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SAE Onboarding

11
Federal
Positions



14
Contractor
Positions

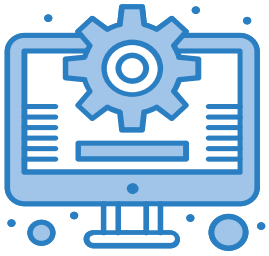
New Faces at SAE

Last year brought many new talented colleagues to SAE. In 2024, we welcomed 25 civil servants and contractors, including:

■
Brian Chell
Kevin Fryar
Jordan Gerth
Andre Henry
Rodney Jackson
Natalie Laudier
Christina Ritchie
Kelli Seaberry
Matthew Seybold
Xiaofang “Bonnie” Zhu

■
Deepthi Achutahvarier
Jennifer Adams
Alison Agather
David Artman
Kevin Bartlett
Ryan Bodanyi
Jennifer Cox
Justin Dennison
Sophia Groot
Ariana Johnson
Angela Luong
Diana Morales
Ian Wahagheghe
Jana Warshawsky
Chunhui “Sherry” Pan

■
If you see one of our new folks, take a moment to say hi and ask how they are doing. SAE is a community, and every person matters.



Systems Engineering & Architecture

Advancing Ground Systems

The Systems Engineering and Architecture team participated in the Ground System Architectures Workshop last February, with presentations and panels showcasing SAE's solutions and methodologies for future ground services. The team emphasized advancements in data processing, model-based engineering, satellite communication, and environmental monitoring.



Awards

Silver Sherman Award

Trish Weir (center) receives the 2024 Silver Sherman Award for her work on the Commercial Data Program with Ed Grigsby (left) and Dr. Volz (right). The Silver Sherman Award recognizes NOAA employees who perform work above their normal requirements to help fulfill NOAA's mission, achieve a milestone that contributes significantly or critically toward a particular program goal, or demonstrate leadership toward process improvement of a significant magnitude. It is awarded on an ad hoc basis by each member of the NOAA Senior Executive Service once a year.



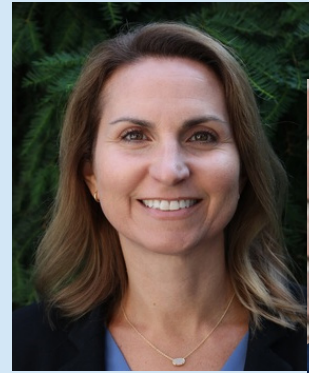
Awards

NESDIS Team Awards

Length of Service Awards

25 Years - Natalie Laudier

30 Years - Kevin Fryar



NESDIS Collaboration Award

Raad Saleh

NESDIS Outstanding Support and Policy Team Member Award

Jessica Wieman

NESDIS AWARDS NESDIS You Got Caught Award - Principle 2: Team Work

Harshesh Petel, Joshua Askins, Sarah Morison, & Thanh Vo Dinh

NESDIS AWARDS NESDIS You Got Caught Award - Principle 4: Urgency

Mordechai Cohen

NESDIS AWARDS NESDIS You Got Caught Award - Principle 5: Embrace Innovation

Ann Marie Gnall

