



THE INNOVATION CATALYST

STRATEGIC PARTNERSHIPS OFFICE
NEWSLETTER
MAY 2020

RELEASE THE SOFTWARE! HOW TO HELP YOUR SOFTWARE PRODUCT MEET ITS FULL POTENTIAL

Goddard has a celebrated record of software development – one of the most noteworthy examples is NASTRAN (NASA Structural Analysis), a software application used to design more efficient space vehicles. In 1971, NASA released NASTRAN to the public, and it took off in the commercial sector, where private companies used it to design cars, bridges, skyscrapers and aircraft.

A more recent example is the core Flight System (cFS), a reusable flight software framework created to shorten the amount of time spent on flight software development. The cFS has spent the past decade spreading to other NASA centers and even organizations outside of NASA. The cFS will fly on a mission called Lunar IceCube as well as Goddard's Plankton, Aerosol, Cloud, ocean Ecosystem (PACE) mission, joining a long list of spaceflight missions powered by this collaborative code.

Software comprises more than 30 percent of all reported NASA innovations, and through the software release process, your software can help support projects across the United States. This is a complex process, to be sure, one that requires multiple levels of review, including export control and commercialization assessment. By congressional mandate, these steps represent necessary and important actions that help NASA software meet all legal requirements and engineering standards.

Software release ends with you being able to share your software product and further NASA's impact. NASA adds your software package to the [NASA Software Catalog](#), where users can search for and download software you develop.

SPO is here to help you navigate the process and clear any hurdles to releasing your software package. This guide outlines the key steps you'll need to take, but please keep in mind that every software has unique attributes. You are always welcome to contact Staci Steward, SPO's software concierge, with any questions specific to your case. We've also included contacts for each step in the process at the end of this article.

STEP 1: FILE YOUR [NEW TECHNOLOGY REPORT](#)

Much like hardware, software is intellectual property that requires legal protection. As you develop your software product, document your progress with notebooks to prove your role as inventor. These come in handy when you file your New Technology Report (NTR), which is the first step of technology transfer. You must have an NTR in place to begin the software release process. If you have updated or added features to your software product, make sure to submit another NTR accounting for the changes.

STEP 2: CHOOSE YOUR SOFTWARE RELEASE CATEGORY

You can pick from five distinct levels when releasing your software. The categories include the following:

1. U.S. Government Only – pick this release category if your software package will stay internal to NASA or go to another U.S. government entity.
2. General Purpose U.S. Release Only – this category permits release of your software package within the United States.
3. General Purpose U.S. and Foreign Nationals – if you want to release your software package more broadly for licensing purposes or because it has special benefits, such as health, safety, or economics, choose this category.

4. General Public Release – this level is most appropriate for releases such as smartphone applications intended for widespread use.

5. Open Source Release – this type of release involves a NASA Open Source Agreement (NOSA) and is the broadest type of release with source code.

STEP 3: ACCESS THE [SOFTWARE RELEASE SYSTEM](#)

The Software Release System (SRS) is your portal to all things software release. Log in and begin your request by clicking the blue “Submit New Release Request” button. The system will prompt you to select your software from a list of NTRs. Once you’ve made your selection, you can start filling out the Software Release Request Application (SRRA).

The SRRA asks for a wide range of input, including contact information, software package details, software classification, and third-party licenses, if applicable. You’ll be asked to identify a Technical Point of Contact (POC), a NASA POC, and a Project/Program POC. Guidance provided in the SRRA will help you determine which individuals should fill these roles. Keep in mind that the NASA and Project/Program POCs must be NASA civil servants, and all three POC will need to approve the package before it can move forward.

After completing this section, the SRS will prompt you to fill out the NASA Procedural Requirements 7150.2B Compliance Form. This form ensures that your software package is compliant with NASA’s Software Engineering Requirements for software acquisition, development, maintenance, retirement, operations, and management.

Last, the SRS queries you about Section 508 Compliance. If your software package has a human interface, the SRS will guide you through a list of 12 questions that address all accessibility concerns.

Now, you can submit the entire package for review. Double check that all sections are complete. Once submitted, your software package automatically routes to all reviewers – you don’t need to notify them separately.

STEP 4: GET TO KNOW THE PARTIES INVOLVED

Once you’ve submitted your SRRA, the application travels through a number of channels. Here, we’ve listed the parties and explained their roles. Each party must review and approve the SRRA to clear your software product for release. However, the SRRA gets sent to all reviewers at the same time, meaning the approvals can unfold in parallel.

Software Release Authority (SRA): Each NASA center has a designated SRA to address software release concerns and questions. The SRA screens software release requests and helps coordinate approvals. Goddard’s SRA is Darryl Mitchell with assistance from SRA Concierge Staci Steward.

Strategic Partnerships Office: SPO performs a commercial assessment of your software package to determine its potential for commercialization.

Export Control Office: This step ensures that your software product is safe to share with external entities and is compliant with Export Administration Regulations (EAR).

IT Security Office: Before release, your software must be compliant with International Traffic in Arms Regulations (ITAR).

Office of Patent Counsel: OPC examines your software product for intellectual property ownership, copyrights, software provenance, and legal reviews of any third-party code licenses.

STEP 5: CHECK THE STATUS OF YOUR REQUEST

Through the SRRA, you can track the progress of your release. From the home page, navigate to the Developer Dashboard, where you can view your release’s status and keep track of approvals. The SRRA will email you when the entire release review reaches completion.

STEP 6: REACH OUT FOR HELP

Software release involves many people in offices all across Goddard. They all must coordinate to review and approve your valued work. It typically doesn’t happen in a single day, but you as a software developer are best positioned to assure the safe and fully authorized release of your product. Your involvement is crucial to this process.

If you have questions, it saves time to connect directly with the office you need. Here are point of contacts for each step of the software release process:

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Featured Goddard Technology: Aeropods

Riding aloft in a tethered hot air balloon floating over Paris, French photographer Gaspard-Félix Tournachon must have rejoiced when he first saw the towering Notre Dame Cathedral and glittering Seine River from above. In 1858, he snapped the first aerial photograph ever taken, according to a 2014 article in *The New Yorker*.

Brave souls such as Tournachon had to drag their clunky photography equipment into a hot air balloon basket and stage carefully orchestrated photoshoots from thousands of feet in the air. As camera technology improved, these early forays into remote sensing evolved to rely on kites, allowing photographers to stay safely on the ground. In 1912, French inventor Pierre Picavet designed the Picavet suspension method, which employed pulleys and two bars in the shape of a cross to hang a camera from a flying kite.

Nearly 100 years later, NASA engineers Geoff Bland and Ted Miles decided Picavet's design was ready for an update. They invented the Aeropod, a lightweight, inexpensive structure that stabilizes science instruments. Aeropods easily attach to kites, making the whole operation low-cost and relatively simple to execute. Patented in 2012, Aeropods have been used in a number of scientific studies, with research topics spanning diverse fields such as volcanology and air pollution. On top of that, Aeropods are part of a robust education program that makes remote sensing and in-situ measurements accessible to students.

Step aside, satellites and drones – with the right modifications, kites can be valuable tools for science.

*For more of this story, see the Spring 2020 edition of *The Spark*, previously known as *Tech Transfer* magazine.*

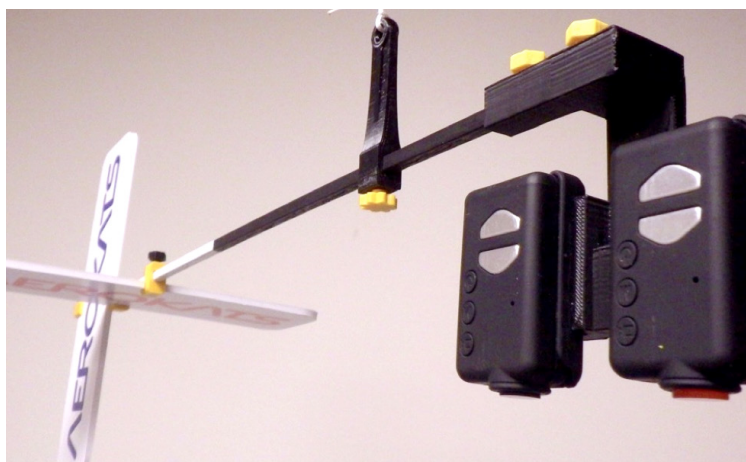
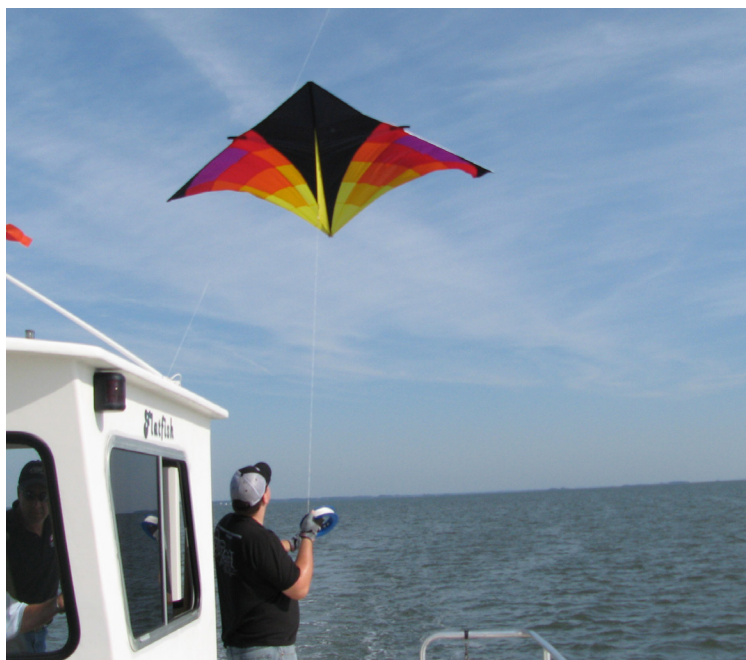


Photo Above: Ocean winds pushed this Aeropod aloft at the 2019 American Kitefliers Association Annual Convention in Seaside, Oregon. Photo credit: NASA/Geoff Bland

Photo Top Right: An Aeropod takes flight over Chincoteague Bay. Photo Credit: Geoff Bland

Photo Bottom Right: With modifications, an Aeropod can carry two cameras for data collection. Photo credit: Andy Henry

Recent SPO Activities

THE COFFEE BREAK – SPO ANSWERS YOUR QUESTIONS

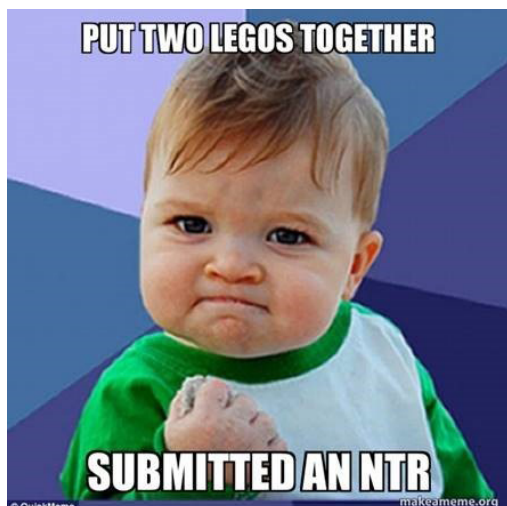
On April 23, SPO launched a new virtual event series titled “The Coffee Break.” The event invited innovators from all Goddard codes to attend a Microsoft Teams meeting for a short technology transfer presentation by SPO leadership. Following the presentation, innovators asked questions about submitting New Technology Reports (NTRs), the NTR evaluation process, and any other issues related to technology transfer and commercialization. SPO answered many questions about the software release process, and due to the level of engagement, SPO plans to hold another Coffee Break on June 11, with a focus on software release. Please keep an eye on Dateline for the date and time of the next event, as well as a link to the meeting.

NTR HARVESTING - MEME CAMPAIGN

Last month, our office launched the all-virtual “SPO Meme Challenge,” in which we asked the Goddard community to create NTR (New Technology Report) and technology transfer memes. A meme is a funny picture, taken from popular films or videos from the internet, with superimposed text. The purpose of the challenge was to generate much-needed smiles in this unprecedented time we are all living through while also highlighting the importance of technology transfer.

Our office had created a few of our own NTR memes to inspire the creativity of Goddard innovators, and the innovators did not disappoint! In choosing a winner, our staff looked at a few criteria. We made sure that the submission fit the theme, made us laugh, and made sense. After much deliberation, we chose a winner!

Thank you to everyone who participated in our meme challenge!



First place, Glenn M. Wolfe.



Second place, Enidia Santiago-Arce.



Third place, Susie McManus.

Recent SPO Activities

MAY THE FOURTH BE WITH YOU...ALWAYS

On the fourth of May in the 20th year of the 21st Earthian century, the Strategic Partnerships Office (SPO) transmitted a message to Goddard innovators from a galaxy far, far away. SPO aims to further NASA's mission to bring space technology back to Earth, and we need the help of Innovators to complete this mission! Click the link or image below to view SPO's special "May the Fourth" greeting.

<https://partnerships.gsfc.nasa.gov/help-us-goddard-innovators-youre-our-only-hope/>



[Complete transcript](#) available here.

Guess The Patent Drawing!

- 1 This invention was patented in 2017.
- 2 It was invented by NASA innovators Mark Stephen, Molly Fahey, and Michael Krainak.
- 3 The invention divides wavelengths into separate channels, which means the signals can be differentiated from each other. According to co-inventor Mark Stephen, the invention increases spectral resolution while providing signal differentiation.

Can you guess the invention? [Click here](#) for the answer.

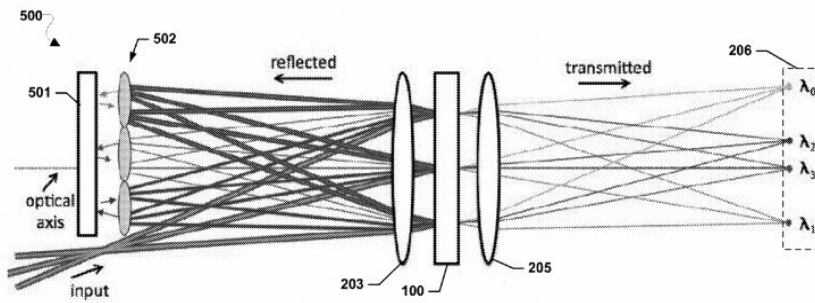


FIG. 5

Tech Transfer Trivia: Software Release Edition

- 1 What is the name of the individual at each NASA center who is designated to address software release concerns and questions?
A. Administrator of Software Release (ASR) B. Representative for Releasing Software (RRS)
C. Official Representative for Software (ORS) D. Software Release Authority (SRA)
- 2 What does "SRRA" stand for?
A. Software Reconciling and Redistribution Award B. Software Responsibility Request Advocate
C. Software Release Request Application D. Software Repository and Release Administration
- 3 True or false: You don't need to file a New Technology Report (NTR) before starting the software release process.
A. True B. False

[Link To Answers](#)

Goddard Tech 12

Each month the Strategic Partnerships Office tells the story of successful spinoffs at NASA's Goddard Space Flight Center and shows how these technological breakthroughs are brought from the labs to our lives. To see the full series, [click here](#). Photo Credit: NASA Technology Transfer Program

Gear Bearings

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Gear bearing technology is a mechanical engineering innovation that, true to its name, combines the function of gears and bearings into one unit that improves gear drive for electrical, internal combustion, and turbine motors. This single unit reduces the weight, number of parts, size, and cost, while also increasing load capacity and performance.

Existing gear systems have drawbacks, including weak structures, large size, poor reliability, and high costs. Gear bearings have solved these problems with their simpler construction, fewer parts, and superior strength.

Bahari Energy is focused on cost effective and sustainable solutions to increasing worldwide energy demands.

Bahari seeks to harness wind energy from urban areas and turn it into electricity. Densely populated areas aren't yet a viable source for wind energy because of inconsistent wind direction, large blade requirements, and low kilowatt production. Bahari's proposed solution, the Wind Tower, captures wind from any direction then shoots the wind into the structure's base, where a drum turbine is spinning to turn that wind into electricity.

To improve the Wind Tower's performance, Bahari licensed NASA Goddard's gear bearing technology. Gear bearing technology will improve the performance of the structure's drum turbine while also lowering the relative costs associated with production.

Habib Bahari, founder and CEO of Bahari Energy, estimates an electrical output increase of 40% by using gear bearings. This licensing agreement between NASA and Bahari will help make capturing urban winds a scalable solution for increasing energy demands.

Photo Credit: NASA/Goddard Space Flight Center



Upcoming Events

NTR ROADSHOWS

SPO is coming to a Microsoft Teams meeting near you! SPO's technology managers will share technology transfer tips and answer your questions at code-specific meetings throughout the month of May. You can find currently scheduled meetings below, but please reach out to Samantha Kilgore (samantha.kilgore@nasa.gov) for updates and for meeting links.

Roadshows Hosted by Dennis Small:

Code 300

Thursday, May 21, 1-1:30 p.m.

Code 700

Friday, May 15, 11 a.m. to noon

Roadshows Hosted by Eric McGill:

Code 540

Tuesday, May 19, 1:30-2:30 p.m.

THE COFFEE BREAK

June 11, 2020

Microsoft Teams

1-2 pm

Please join the Strategic Partnerships Office (SPO) for a new virtual event series called "The Coffee Break." This installment will focus on the software release process, but we welcome any questions you may have about NASA's Technology Transfer Program, partnerships, and SBIR/STTR. For more information on the software release process, please visit <https://softwarerelease.ndc.nasa.gov/>. The Teams meeting link can be accessed [here](#).