

Misija: Autopiloto operacija

Misijos instruktažas

Pagalvokite apie vairavi nuotoliniu valdomu auto pilotu. Atrodo paprasta kai auto pilotas ra prie aisjus ir greitai reaguoja kiekvien nuotolinio valdiklio siuniamam signalui. Tačiau patstu kuriais veikia VAOA nėra aiškios tiesioginės kontrolės tvarka. Pavėžiui atstu asnuo šie siki Marso toks i elis ka signalas gali užtrukti až auginu i ka pasiekt transporto prieon Mars ir ar apie inu i ka sugr žt e . "eto M nullo ir kit planet pavir iuje ra augak en s lio ir kit kli i . I kuri transporto prieon gali ti suga inta ar strigus i. VAOA inžinieriai nau oja vairias progra in s rangos prieones pa e an ias transporto prieon s savaranki kai t rin ti o tai rei kia ka transporto prieon s ju a savaranki kai.

cavo @ žinieriaus užra uose para kite k žinote apie savaranki k autonom in ro ot ju ji . uai gali ti auto atini transporto prieoni aro jekt pav žiai.

Plačiau anglų k.:

[NASA's Perseverance Drives on Mars' Terrain for First Time](#)

Plačiau lietuvių k.:

[VAOA arsaieigs Perseverance nusilei os k ingai ir jau per uo a pir usvai us](#)





Let's meet a Flight Director from one of the Mars Rover Missions

Diana Trujillo was one of the surface Flight Directors behind the Perseverance Mars Rover Mission. She led the analysis of every single part of the spacecraft to ensure that the rover was okay. Diana made sure that as data came in everyone was looking at it from the right perspective and digging in if anything seemed strange. If something wasn't right, Diana's team was responsible for working with program management and the anomaly response team to solve the problem and recover the spacecraft.

Diana has held many roles on the Perseverance mission. She worked closely on the rover's Robotic Arm while it was in ATLO (Assembly, Test and Launch Operations). After that, she moved into the Flight Director role during critical commissioning activities on Mars. Finally, when critical commissioning completed its responsibilities, she moved to her current role as Tactical Mission Lead.

Your Mission

Now it's time for you to become the Flight Director and take over flight operations for an autonomous vehicle. Design and create a vehicle that could drive on the lunar surface. Think about how you will navigate your vehicle from Earth. What type of sensors will be needed on your vehicle to control it autonomously? What type of motors will be needed to move the vehicle? Think about different ways you can control the movements of your vehicle. Will it use an ultrasonic sensor to keep from running into things? Or use a different type of sensor?

Don't have sensors and motors? No problem, instead create a prototype of the vehicle. Design a model of what the actual vehicle will look like. Brainstorm and sketch out your ideas. Be sure to explain what task you are trying to complete with your tool. Build, test, and reiterate on your model. Don't be afraid to try different ideas. If it doesn't work, that's ok, try something new!

Mission:

STEAM Work is Teamwork

Mission Briefing

Think about a time that you worked with another person to accomplish a task. Did you work together on all parts of the task? Or did you each take a part of the task to complete and then put the parts together to finish it?

NASA often works in specialized teams to complete large tasks. Each team does a piece of the task based on their area of specialty and then all the teams put their pieces together. This takes a lot of planning to ensure that the pieces will work well together in the end.

In your Engineering Design Notebook, think about:

- How does NASA work in specialized teams to create the components of a Space Launch System (SLS)?
- What is important to think about when creating individual parts separately that need to come together to work as one in the end?

Learn More

[Space Launch System \(SLS\) Overview](#)

[Vehicle Assembly Building](#)

[It Took Teamwork to Make It to 20 Years](#)

Career Connection

Meet the LEGO® Space Team Program Manager, Daniel! He leads a whole team of folks from different areas and ensures everything is going smoothly, everyone understands the goals and objectives, and is working together to achieve them on time!

As the program manager Daniel has a deep toolbox of skills to call on. From project planning to managing a space team, he does it all.





Let's meet another NASA Program Manager

John Honeycutt is the program manager for the Space Launch System (SLS). He leads a workforce of more than 4,200 civil servants and contractors, and is responsible for all facets of the program, including planning, procurement, development, testing, evaluation, production and operation of the integrated SLS.

The SLS is built in sections with more than 1,000 companies from across the U.S. and every NASA center supporting the development of the world's most powerful rocket. These sections are then sent to the Vehicle Assembly Building at Kennedy Space Center in Florida to be stacked together. The SLS Program, managed by NASA's Marshall Space Flight Center, works closely with the Orion Program, managed by NASA's Johnson Space Center, and the Exploration Ground Systems, managed at the Kennedy Space Center.

Your Mission

Now it's your turn to work together to assemble a prototype Space Launch System. Work in a team of three people. One person should build stage 1 or the base of the rocket that includes the main engines. The second person will build stage 2 or the middle of the rocket that includes the propellant. The third person will build the launch abort system for the rocket and the Orion Crew Module. The launch abort system is located at the top of the rocket and fits over the Orion Crew Module. The launch abort system protects astronauts if a problem arises during launch by pulling the spacecraft away from a failing rocket. After all three stages are complete, you will work together to stack or assemble the Space Launch System and Orion Crew Capsule.

Remember it will be important to communicate with each other about your individual pieces to ensure they will fit together in the end. Brainstorm and sketch out your ideas. Build, test, and iterate on your models. Don't be afraid to try something new. If it doesn't work, that's ok, try something new.