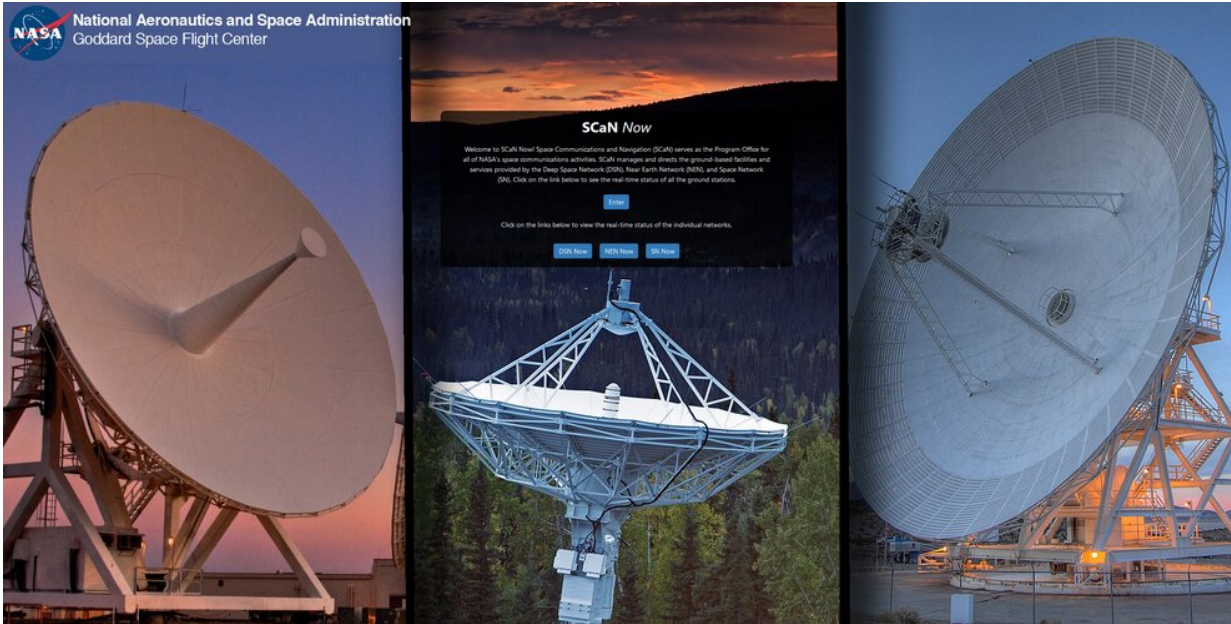


SN Now: The final installment of SCaN Now

December 9 2019, by Katherine Schauer



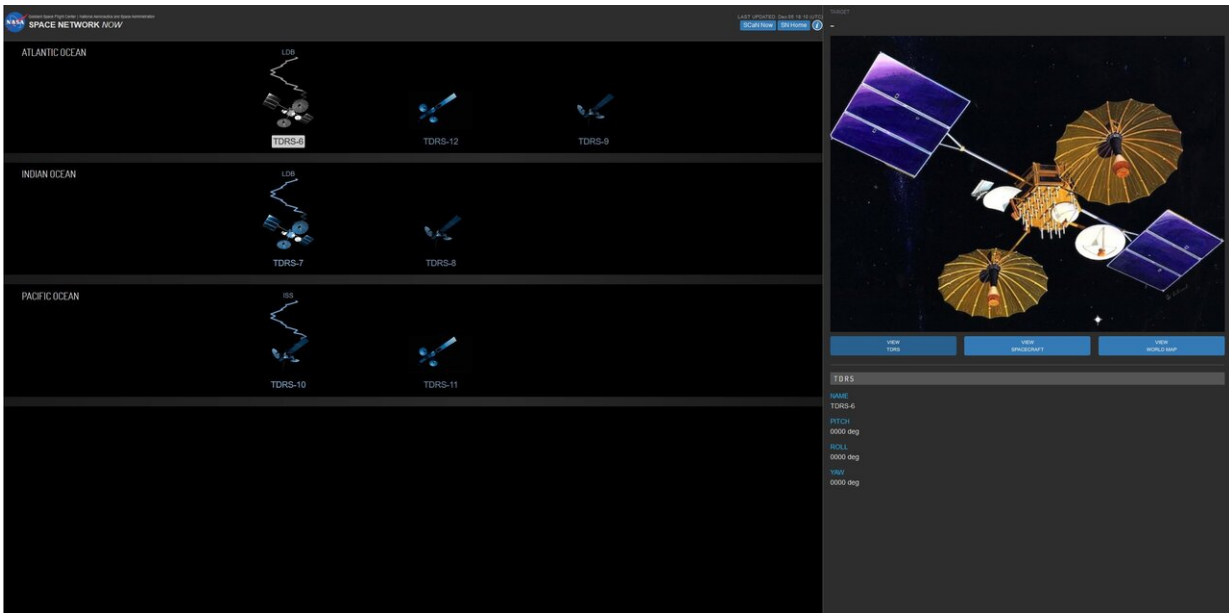
The "SCaN Now" landing page. Credit: NASA

NASA satellites, no matter the destination, have to communicate their data to mission control and scientists on Earth. These missions capture extraordinary data that make communications an essential part of each mission: pictures of galaxies, critical information on solar flares and much more. An interactive online tool now shows live data transmissions from each of NASA's three space communications networks and the missions supported by those data.

NASA's three [space](#) communications networks—the Deep Space Network (DSN), the Near Earth Network (NEN) and the Space Network (SN)—provide radio frequency communications for all NASA missions, including the upcoming 2024 Artemis missions to the Moon, as well as missions for other [government agencies](#) and commercial partners.

To showcase real-time data flowing through these networks, the Space Communications and Navigation (SCaN) program office created SCaN Now, an interactive online platform where visitors can learn about NASA's space communications infrastructure, data transmission and [network](#)-supported missions. On Dec. 5, the [SCaN Now website](#) debuted SN Now as an addition to the initial offerings of DSN Now and NEN Now, which allowed visitors to browse NEN and DSN supported satellites and witness live data transmissions to and from [ground stations](#) around the globe.

The SN Now platform presents differences from the previous products. Both the DSN and NEN provide direct-to-Earth communications for satellites, meaning when a satellite enters an antenna's line of sight, it transmits data. To show this in the online product, the active antenna lights up and displays which [mission](#) is currently communicating. While these platforms highlight direct-to-Earth communications, SN Now highlights NASA's space-to-space relay system.



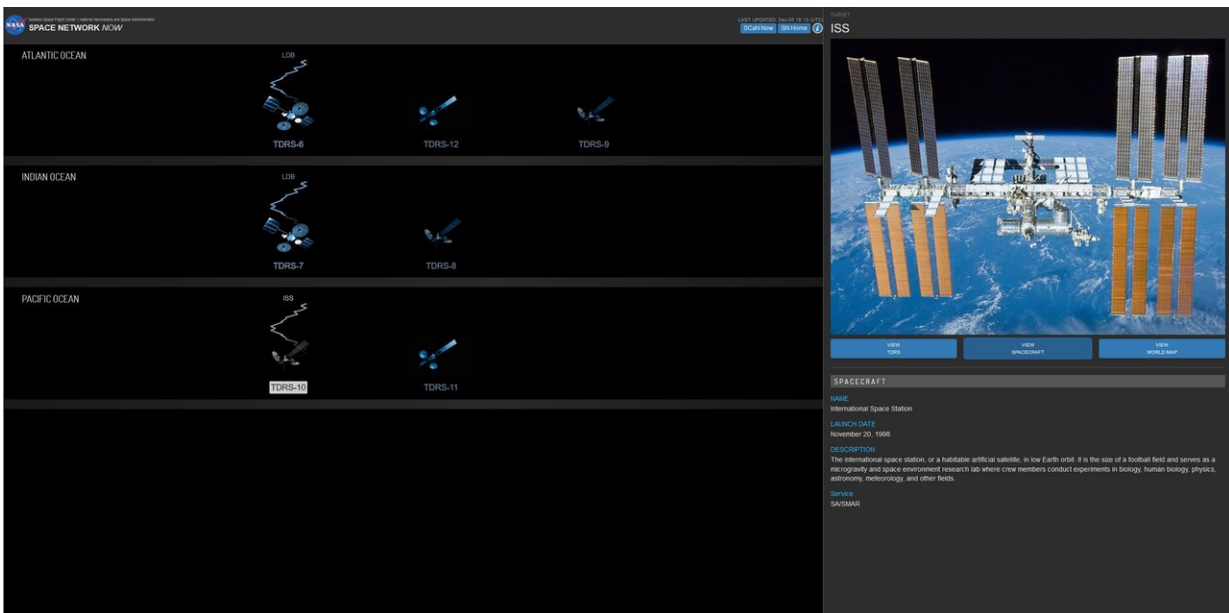
SN Now showing TDRS communications to a variety of NASA missions. Credit: NASA

Spacecraft supported by the SN, including the International Space Station, do not need to have line of sight with a ground station. Instead, they contact one of the SN's 10 Tracking and Data Relay Satellites (TDRS), which relays the data to Earth. This relay system provides missions with reliable, near continuous coverage, and allows astronauts to have constant communications with both [mission control](#) and their families.

With the new SN Now platform, visitors can witness live data transmissions from a mission to a TDRS and learn about that mission. For example, visitors can see data flowing from the space station to a TDRS. Often, SN Now visitors will see two TDRS lit up and receiving data from the station. This enables continuous data coverage with no gaps. With station missions, NASA must ensure that all data is

communicated to mission control on Earth.

"When we developed NEN Now, we built it around a flexible, expandable architecture because we're always thinking about the future," said Ryan Turner, SCA^N Now project manager. "That approach made it possible for us to spin off SCA^N Now relatively quickly. Now we're able to release SN Now to add to SCA^N's outreach portfolio and complete the real-time status displays of SCA^N's networks."



SN Now showing real-time data flow from the International Space Station.
Credit: NASA

While SCA^N Now has all three networks integrated into one cohesive product, innovation does not stop here. Updates to the entire SCA^N Now platform will continue as new missions are added and new website capabilities are developed.

This tool is a unique way to teach students and the public about radio frequency space communications. As the agency's Artemis program goes forward to the Moon, students will be able to see real-time communications from the Moon to Earth through one of the SCaN Now networks.

The SCaN program office oversees all of NASA's space communications activities, including the ground-based facilities and services provided by the DSN, NEN, SN and TDRS.

Provided by NASA's Goddard Space Flight Center

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