ESA Explains Moonlight Initiative in New Video

The European Space Agency (ESA) has released a new video describing the Moonlight Initiative, part of NASA's Artemis program.

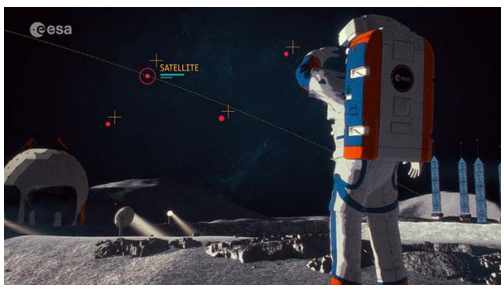
ESA is a key partner in Artemis, which aims to return people to the Moon by the end of decade. Dozens of other international public and private missions are setting their sights on the lunar surface in the coming years.

However, to achieve a permanent and sustainable presence on the Moon, reliable and autonomous lunar communications and navigation services are required. ESA is working with industrial partners on the Moonlight Initiative, to become the first off-planet commercial telecoms and satellite navigation provider.

After launch, three or four satellites will be carried into lunar orbit by a space tug, and deployed one by one to form a constellation of lunar satellites. The number and specification of these satellites are being defined.

Read more in *GPS World* article. https://www.gpsworld.com/esa-explains-moonlight-initiative-in-new-video/?utm_source=Navigate%21+Weekly+GNSS+News&utm_medium=Newsletter&utm_campaign=NCMCD221116003&oly_enc_id=1784A2382467C6V

2022-11-17



It's Time-out for Leap Seconds: An Expert Explains Why the Tiny Clock Adjustments Will Be Paused From 2035

Meeting in Versailles, France, on Friday 18 November, the Bureau International des Poids et Mesures (BIPM) has called time-out on "leap seconds" – the little jumps occasionally added to clocks running on Coordinated Universal Time (UTC), to keep them in sync with Earth's rotation.

From 2035, leap seconds will be abandoned for 100 years or so and will probably never return. It's time to work out exactly what to do with a problem that has become increasingly urgent, and severe, with the rise of the digital world.

Roll back to 1972, when the arrival of highly accurate atomic clocks laid bare the fact that days are not exactly 86,400 standard seconds long (that being 24 hours, with each hour comprising 3,600 seconds).

The difference is only in milliseconds, but accumulates inexorably. Ultimately, the Sun would appear overhead at "midnight" – an indignity metrologists (people who study the science of measurement) were determined to prevent. Complicating matters further, Earth's rotation, and thus the length of a day, actually varies erratically and can't be predicted far in advance.

Read more in *article*…

https://theconversation.com/its-time-out-for-leap-seconds-an-expert-explains-why-the-tiny-clock-adjustments-will-be-paused-from-2035-194922?utm_medium=email&utm_campaign=Latest%20from%20The%20Conversation%20for%20November%2022%202022%20-%202471024743&utm_content=Latest%20from%20The%20Conversation%20for%20November%2022%202022%20-%202471024743+CID_172caaf98141abd515b0bead0a4c703f&utm_source=campaign_monitor&utm_term=Its%20time-out%20for%20leap%20seconds%20an%20expert%20explains%20why%20the%20tiny%20clock%20adjustments%20will%20be%20paused%20from%202035

2022-11-21

ESTEC says Goodbye to Galileo 1st Generation Satellites

ESTEC Test Centre, Europe's largest satellite testing facility, said goodbye on Nov. 14 to the final satellite in the Galileo First Generation series, as it departed to OHB in Germany. There, it will rest in storage until ready to be sent for launch.

In a new European Space Agency (ESA) video, the people responsible for readying the satellites for space have gathered to reflect on the end of an era.

The work on Galileo began two decades ago with two test Galileo In-Orbit Validation (GIOVE) satellites, followed by a series of operational launches. The two GIOVE satellites and all 34 Galileo Full Operational Capability satellites were tested at ESTEC.

Read more in *GPS World* article. https://www.gpsworld.com/estec-says-goodbye-to-galileo-1st-generation-satellites/?utm_source=Navigate%21+Weekly+GNSS+News&utm_medium=Newsletter&utm_campaign=NCMCD221109002&oly_enc_id=1784A2382467C6V

2022-11-15

EUSPA's 2nd Horizon Call Seeks Projects For GNSS, Earth Observation

Europe's 2nd Horizon Europe call has been launched for European GNSS, Galileo and Earth observation projects, offering total funding of €48.1 million.

The Horizon program is managed by the European Union Agency for the Space Programme (EUSPA). It funds research and innovation by small and mid-size enterprises, academia, public actors and others that will stimulate development of space applications and solutions using EUSPA data and services.

The 2nd call aims to to strengthen downstream capabilities and modernize the EU public sector by offering cutting-edge solutions based on Galileo, Copernicus, EGNOS and GOVSATCOM.

Funding is being offered for projects that make use of Galileo and EGNOS in smart mobility applications. Other projects fuse Copernicus data with artificial intelligence

to boost the European economy and help modernize the public sector. For the first time, the call seeks to deliver satellite communication use cases based on the forthcoming GOVSATCOM system.

Read more in *GPS World* article. https://www.gpsworld.com/euspas-2nd-horizon-call-seeks-projects-for-gnss-earth-observation/?utm_source=Navigate%21+Weekly+GNSS+News&utm_medium=Newsletter&utm_campaign=NCMCD221109002&oly_enc_id=1784A2382467C6V

2022-11-14

UK PNT: Royal Institute Encourages Government, Parliament Slams It

On Nov. 1, the RIN convened a UK PNT Leadership Seminar with “the UK’s leaders in government, industry, academia and key user communities.” Its goals were to not only highlight the economic benefits of resilient PNT leadership for the UK, but also to “develop a view of approaches, priorities and next steps.”

Attendees expressed a wide variety of concerns. These ranged from difficulties growing and retaining talent in the field, to a lack of understanding among the public and government about the essentiality of PNT to virtually every aspect of modern life.

There was general agreement that establishing a coherent and resilient PNT program in Britain would have dual benefits.

First, it would help protect the nation’s economy and national security. Malicious and natural threats to space-based PNT mean that complementary systems are needed to mitigate outages. A government sponsored study in 2017 estimated losses exceeding £5B during a five-day outage. The study’s authors conceded at the event that longer outages would realise much larger per day losses as infrastructure and systems increasingly suffered.

Read more in *GPS World* article. https://www.gpsworld.com/uk-pnt-royal-institute-encourages-government-parliament-slams-

it/?utm_source=Defense+PNT&utm_medium=Newsletter&utm_campaign=NCMCD221103003&oly_enc_id=1784A2382467C6V

2022-11-08

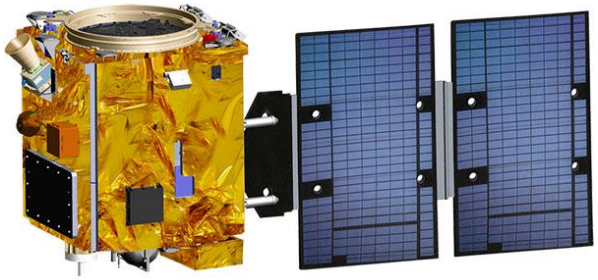
Taiwan to Launch GNSS-R Weather Satellite for Typhoon Prediction

Taiwan will launch its first indigenously developed meteorological satellite in March 2023, reports *Taiwan News*. The Triton satellite was designed and made by the National Space Organization (NSPO) over eight years. The satellite has completed testing and is undergoing review.

The 250-kg Triton carries GNSS-reflectometry equipment (GNSS-R) — independently developed by NSPO — to collect GNSS signals reflected by the Earth's surface. Its mission is to research air-sea interaction to help predict typhoons.

Read more in *GPS World* article. https://www.gpsworld.com/taiwan-to-launch-gnss-r-weather-satellite-for-typhoon-prediction/?utm_source=Navigate%21+Weekly+GNSS+News&utm_medium=Newsletter&utm_campaign=NCMCD221102004&oly_enc_id=1784A2382467C6V

2022-11-07



Fugro Opens New Space Control Centre in Perth

The new facility — Fugro's largest remote operations centre to date — is a joint venture between the Australian Space Agency, the Western Australia Government and Fugro. The aim of SpAARC is to manage robotics and other harsh-environment remote operations in Australia, around the world and in space.

According to Fugro, SpAARC will enhance Australian space missions by "creating a scalable and accessible industry operating standard," as well as facilitating "complex missions for Australian industries and researchers".

The federal government contributed funding to SpAARC through its Space Infrastructure Fund. The venture also received funding from the WA Government and forms part of the Perth City Deal Program.

"Space is a critical component of Australia's growing ecosystem of cross-cutting technologies such as robotics, advanced manufacturing, and artificial intelligence," said the head of the Australian Space Agency, Enrico Palermo.

Read more in *Spatial Source* article. https://www.spatialsource.com.au/fugro-opens-new-space-control-centre-in-perth/?utm_campaign=SS%20-%20Overall%20Publication%20-%20Master&utm_medium=email&_hsmi=233111661&_hsenc=p2ANqtz-9ydDkJ-YkwgqQPc6GTBRIeSNL24oUaMFdfvlODBg87Gmgds2oBf2nY173rK7Go9RR-AK_UxlE4cDPo1YmGHiOmzZ_xTA&utm_content=233111661&utm_source=hs_email
2022-11-07

Next-gen Space-based Positioning Tech Planned

China plans to establish a next-generation space-based navigation and positioning system by 2035, said a government official overseeing the sector. Ran Chengqi, director of the China Satellite Navigation Office, said at a news conference held by the State Council Information Office in Beijing that the next-generation system, which has yet to be named, will be accessible to users anywhere, anytime on Earth.

"The new system will be 'omnipresent, smarter and more integrated'. We plan to complete the system by 2035 and upon its completion, there will be BeiDou service not only on land and sea, but also in the sky, outer space and deep within the oceans," Ran said.

Read more in *GPS Daily* article.
https://www.gpsdaily.com/reports/Next_gen_space_based_positioning_tech_planned_999.html

2022-11-07