



International Committee on
Global Navigation Satellite Systems

AGENDA

Seventeenth Meeting of the International Committee on Global Navigation Satellite Systems

Madrid, Spain

15 – 20 October 2023

Sunday, 15 October 2023	
<i>Venue: Hotel Meliá Avenida América (C. de Juan Ignacio Luca de Tena, 36, 28027 Madrid)</i>	
<i>Time: Madrid (Spain) Local Time (UTC+2 hours)</i>	
12:00 – 18:00	On-site Registration
13:00 – 14:00	Ad-hoc Working Group meeting: ICG Terms of Reference
28th Meeting of the Providers' Forum	
14:00 – 18:00	First meeting of the Providers' Forum (<i>see Agenda of the Providers' Forum Meeting</i>)
<i>16:00 -16:20</i>	<i>Coffee Break</i>
16:20 – 17:20	Meeting with the Working Groups Co-Chairs
17:20	Providers' Forum Meeting (<i>to be continued</i>)
18:00	Adjourn
16 – 20 October 2023 ICG PLENARY SESSIONS	
Monday, 16 October 2023	
08:00 – 18:00	On-site Registration
10:00	Opening Session <ul style="list-style-type: none"> - Timo PESONEN, <i>Director General of Defence Industry and Space, European Commission</i> - Carmen Librero PINTADO, <i>Special Commissioner for Transport, Mobility and the Urban Agenda, Spain</i> - Sharafat GADIMOVA, <i>United Nations Office for Outer Space Affairs</i>
	First Plenary Session of ICG <i>Chairperson: Jolanda Van EIJNDTHOVEN, DG Defence Industry and Space, European Commission</i>
	<i>Attended by all. The primary purpose is for the GNSS system and augmentation providers to present the status and future plans for their systems, and an opportunity for the ICG members, associate members, observers and invited observers to provide updates on recent developments in their organizations and associations with regard to GNSS services and applications. All presenters will identify issues for discussion in the ICG plenary sessions and/or the ICG working groups meetings.</i>
	Adoption of Agenda
10:15	Providers System and Service Updates
10:15	Galileo: Programme Status, System Performance and Evolution, <i>Juan Pablo BOYERO, European Commission</i>
<i>10:40 – 11:05</i>	<i>Group Photo/Coffee Break</i>
11:05	Providers System and Service Updates (continued)
11:05	Global Positioning System (GPS) Program and Policy Update, <i>Robert WRAY, United States of America</i>

11:25	BeiDou Navigation Satellite System Construction and Development, <i>Xiaochun LU, China</i>
11:45	(virtual) Global Navigation Satellite System (GLONASS) Status, <i>Ivan REVNIVYKH, Russian Federation</i>
12:05	Navigation with Indian Constellation (NavIC) and GAGAN Status, <i>Kartik ANBALAGAN, India</i>
12:25	Status Update on the Quasi-Zenith Satellite System (QZSS), <i>Kenji NUMARA, Japan</i>
12:45 – 13:45	<i>Lunch Break</i>
13:45	Presentations by Members, Associate Members, Observers and Invited Observers on Matters of Interest to ICG
13:45	Korean Positioning System (KPS) and Korean Augmentation Satellite System (KASS) Status Update, <i>Taegy KIM, Republic of Korea</i>
14:00	Southern Positioning Augmentation Network (SouthPAN), <i>Vincent ROOKE, Australia and Matt AMOS, New Zealand</i>
14:15	Italy's perspective on GNSS, <i>Alberto TUOZZI and Mauro CARDONE, Italy</i>
14:30	ENAIRES in EGNSS, <i>José Luis RODRIGUEZ, Spain</i>
14:45	(virtual) ISRO's Pseudolite System for Reusable Launchers and Lunar Navigation, <i>Ashish SHUKLA, India</i>
14:50	(virtual) India's Microsat mission for GNSS-Reflectometry (GNSS-R) Applications, <i>Ananya RAY, India</i>
14:55	Lunar PNT Overview, <i>Joel PARKER, Working Group B SUSG WP4</i>
15:05	(virtual) Lunar Spectrum Considerations, <i>Cathy SHAM, Working Group B SUSG WP4</i>
15:15	Lunar and Martian in-situ PNT frequency bands, and guard bands, <i>Jean-Luc ISSLER, France</i>
15:30	ESA Lunar Navigation Activities: Moonlight and Lunar Pathfinder Programmes, <i>Javier VENTURA-TRAVESET, European Space Agency</i>
15:40	LANS Interoperability Demonstration Mission Under Planning, <i>Masaya MURATA (Japan Aerospace Exploration Agency, JAXA), Javier VENTURA-TRAVESET, Pietro GIORDANO, Richard Dennis SWINDEN (European Space Agency, ESA) and Cheryl GRAMLING (National Aeronautics and Space Administration, NASA)</i>
15:55 – 16:15	<i>Coffee Break</i>
16:15	ESA LEO-PNT: FutureNAV In-Orbit Demonstrator - a first step towards a European LEO-PNT component, <i>Joerg HAHN, European Space Agency</i>
16:20	ESA's GENESIS – At the foundation of Navigation, <i>Werner ENDERLE, European Space Agency</i>
16:35	(virtual) Galileo HAS and OS-NMA, <i>Ignacio FERNANDEZ HERNANDEZ, European Commission and Daniel BLONSKI, European Space Agency</i>
16:40	GPS High Accuracy Service (GPS HAS) Based on GDGPS, <i>Attila KOMJÁTHY, United States</i>
16:50	Near-Real-Time Anomaly Detection in Total Electron Content for the GUARDIAN Ionospheric Monitor, <i>Léo MARTIRE, S. Krishnamoorthy, F. Luhrmann, J. Park, Attila Komjáthy, B. Szilágyi, L. Romans, P. Vergados, United States</i>

17:00	Statement, <i>Qi YU, Asia-Pacific Space Cooperation Organization (APSCO)</i>
17:05	IAIN World Congress 2024, <i>Mario CAPORALE, International Association of Institutes of Navigation (IAIN)</i>
17:10	COSPAR's Contribution to the Scientific Applications of GNSS, <i>Heike PETER, Committee on Space Research (COSPAR)</i>
17:20	(virtual) WRC-23, <i>Hon Fai NG, International Telecommunication Union (ITU)</i>
17:30	(virtual) International Maritime Organization: The latest developments, <i>Cafer Ozkan ISTANBULLU, International Maritime Organization (IMO)</i>
17:40	(virtual) GNSS activities in Nigeria, <i>Joseph DODO, National Space Research and Development Agency (NASDRA), Nigeria</i>
17:50	How GNSS Contributes to CO2 Reduction, <i>Giovanni LUCCHI, European Union Agency for the Space Programme (EUSPA)</i>
18:00	(virtual) Keynote: History of the Global Positioning System (GPS) on the occasion of the 50 th anniversary of gaining initial approval in 1973 <i>Dr. Bradford PARKINSON, Edward Wells Professor, Emeritus, Aeronautics and Astronautics (Recalled), Co-Director, Center for Position, Navigation and Time, Stanford University, United States</i>
18:40	Adjourn
19:00 – 23:30	Reception
Tuesday, 17 October 2023	
08:00 – 18:00	On-site Registration
09:00	Working Groups Meetings (Parallel Sessions)
	WG S – Systems, Signals and Services <i>Co-chairs: Jeffrey AUERBACH, United States and Sergey REVNIVYKH, Russian Federation</i>
	Working Group B - Enhancement of GNSS Performance, New Services and Capabilities <i>Co-chairs: Nilesh M. DESAI, Xingqun ZHAN, China and Daniel BLONSKI, European Space Agency</i>
	WG C – Information dissemination and capacity building <i>Co-chairs: Sharafat GADIMOVA, Office for Outer Space Affairs and Pieter DE SMET, European Commission</i>
	WG D – Reference Frames, Timing and Applications <i>Co-chairs: Zuheir ALTAMIMI, IAG/IERS and Mr. Léo MARTIRE, IGS</i>
<i>11:00 – 11:20</i>	<i>Coffee Break</i>
	Working Groups Meetings – Parallel Sessions (continued)
<i>13:00 – 14:00</i>	<i>Lunch Break</i>
14:00 – 16:00	Working Groups Meetings – Parallel Sessions (continued)
<i>16:00 – 16:20</i>	<i>Coffee Break</i>
16:20 – 18:20	Working Groups Joint Meeting: Lunar PNT

16:20	Lunar PNT: Overview of Current Plans and Interoperability Relationships with GNSS, <i>Joel PARKER, Working Group B SUSG WP4</i>
16:40	Lunar Spectrum Considerations, <i>Cathy SHAM, United States</i>
17:05	LunaNet Interoperability Specification, Reference Frames, and Timing, <i>Cheryl GRAMLING, United States</i>
17:30	Recommendation for Multilateral Cislunar PNT Workshop and International Organization Activities, <i>Masaya MURATA, Japan</i>
17:50	Conclusions and discussion
18:00	Space Service Volume (SSV) - Galileo Reference Antenna Pattern, <i>F. MENZIONE, European Commission/JRC</i>
18:20	Adjourn
Wednesday, 18 October 2023	
08:00 – 13:00	On-site Registration
09:00 – 11:00	Working Groups Joint Meeting
09:00 – 09:30	Disaster Risk Reduction <ul style="list-style-type: none"> - Report from the “Applications of GNSS for Disaster Risk Reduction” Task Force, <i>Leo MARTIRE (IGS), Jun SHEN (China) and Naofumi TAKAMATSU (Japan)</i>
09:30 – 10:30	Precise Point Positioning (PPP) Interoperability <ul style="list-style-type: none"> - Galileo HAS status, <i>Ignacio FERNANDEZ HERNANDEZ, European Union</i> - QZSS PPP/PPP-RTK status, <i>Yoko SAKAI, Japan</i> - BDS PPP status update, <i>Nie XIN, China</i> - Interoperability Analysis of Open PPP/PPP-RTK Services, <i>Rui HIROKAWA, Japan</i> - U.S. High Accuracy Service Update, <i>Attila KOMJATHY, United States</i> - BDS PPP service status update, <i>Nie XIN, China</i> - Open-Source Real-Time PPP-AR Software, <i>Jianghui GENG, IGS</i> ▪ Update from the PPP Task Force (WG-S), <i>Rui HIROKAWA, Japan, Simon REYNOLDS, Australia and Ignacio FERNANDEZ-HERNANDEZ, European Union</i> ▪ Update Task Force distribution list ▪ Review Actions and next steps
10:30 – 11:00	Open Service Information Sharing and Service Performance Monitoring (International GNSS Monitoring and Assessment) <ul style="list-style-type: none"> - Report of the IGMA Task Force (WG-S), <i>Satoshi KOGURE, Shuli SONG, Erik SCHONEMANN</i> - Update Task Force distribution list - Review actions, recommendations, and next steps
<i>11:00 – 11:20</i>	<i>Coffee Break</i>
11:20 – 13:00	Working Groups Meetings – Parallel Sessions (continued)
	WG S – Systems, Signals and Services

	Working Group B - Enhancement of GNSS Performance, New Services and Capabilities
	WG C – Information dissemination and capacity building
	WG D – Reference Frames, Timing and Applications
<i>13:00 – 14:00</i>	<i>Lunch Break</i>
14:00	Technical Tour: Thales Alenia Space, GMV and Aerospacial Sener City Tour
Thursday, 19 October 2023	
09:00 – 11:00	Working Groups Meetings – Parallel Sessions (continued)
<i>11:00 – 11:30</i>	<i>Coffee Break</i>
11:30	Second Plenary Session of ICG (Presentations by Working Groups) <i>Chairperson: Pieter DE SMET, European Commission</i>
11:30 – 12:15	- Presentation by WG B and Discussions
12:15 – 13:00	- Presentation by WG C and Discussions
<i>13:00 – 14:00</i>	<i>Lunch Break</i>
14:00 – 14:45	- Presentation by WG D and Discussions
14:45 – 15:30	- Presentation by WG S and Discussions
<i>15:30 – 16:00</i>	<i>Coffee Break</i>
16:00	Second meeting of the Providers’ Forum ((see Agenda of the Providers’ Forum Meeting) (in parallel) Meeting of Associate Members, Observers and invited observers (as needed)
18:00	Adjourn
Friday, 20 October 2023	
09:00	Third Plenary Session of ICG <i>Chairperson: Pieter DE SMET, European Commission</i>
09:00 – 09:30	Report of the chair of the 28th meeting of the Providers’ Forum
09:30 -10:30	Change of Member Status in ICG
	<ul style="list-style-type: none"> - Republic of Korea – application for change of Member Status in ICG as “Current and future space-based regional and or augmentation system providers” (7 February 2023) - Australia – application for change of Member Status in ICG as “Current and future space-based regional or augmentation system providers” (10 August 2023) - New Zealand - application for change of Member Status in ICG as “Current and future space-based regional or augmentation system providers” (11 August 2023)
10:30 – 11:00	Membership of ICG
	<ul style="list-style-type: none"> - Pakistan - application for Member Status in ICG (4 January 2021) and Aide Memoire (Note Verbale, 24 May 2023)

	<ul style="list-style-type: none"> - Türkiye - application for Member Status in ICG (13 February 2023) - Algeria – letter of interest for Member Status in ICG (31 May 2023)
<i>11:00 – 11:30</i>	<i>Coffee Break</i>
11:30	Membership of ICG (<i>continued</i>): Presentations
11:30 – 11:45	<i>(virtual) Evaluation of the Algerian Satellite-based Augmentation System from 2021 to 2023, Lahouaria TABTI, Algerian Space Agency (ASAL), Algeria</i>
11:45 – 12:00	<i>(virtual) Pakistan Satellite Based Augmentation System Update, Amer Sarfraz AHMAD, Space and Upper Atmosphere Research Commission (SUPARCO), Pakistan</i>
12:00 – 12:15	<i>(virtual) Turkish Satellite Based Navigation Program, Emre ICEN, Turkish Space Agency (TUA), Türkiye</i>
12:15 – 12:45	Review and approval of the ICG-17 meeting conclusions: <i>Joint Statement</i>
12:45 – 13:30	<p>Other matters and Closing Statements</p> <ul style="list-style-type: none"> - New Zealand/Australia: <i>Announcement for the 18th Meeting of ICG in 2024</i> - Expression of Interest to host the 19th meeting of ICG in 2025 (Republic of Korea) and the 20th meeting of ICG in 2026
13:30	Adjourn