



International Committee on
Global Navigation Satellite Systems

AGENDA

Fifteenth Meeting of the International Committee on Global Navigation Satellite Systems

(HYBRID FORMAT)

Vienna, Austria

27 September – 1 October 2021

Venue : Vienna International Centre (VIC)

Monday, 27 September 2021	
<i>Venue : Vienna International Centre (VIC), Wagramer Strasse 5, 1220 Vienna</i>	
<i>Time: Vienna (Austria) Local Time (UTC+2 hours)</i>	
8:00 – 16:00	Grounds Pass/Badge: Pass Office at Gate 1 <i>Individual grounds passes/badges will be issued at the United Nations Security and Safety Section Pass Office at Gate 1, as appropriate. Participants should provide an appropriate form of identification document (such as a passport) at the entrance.</i>
09:00 – 12:30	Working Groups Meetings (Parallel Sessions)
<i>Conference Room: CR-3 (Building C, floor 7)</i>	
	WG S Subgroup - Interoperability and Service Provision
<i>Conference Room: CR-6 (Building C, floor 7)</i>	
	WG S Subgroup - Compatibility and Spectrum
<i>Conference Room: CR-4 (Building C, floor 7)</i>	
	Working Group B - Enhancement of GNSS Performance, New Services and Capabilities <i>Co-chairs: Nilesh M. DESAI, India, Xingqun ZHAN, China and Daniel BLONSKI, European Space Agency</i>
<i>Conference Room: CR-2 (Building C, floor 2)</i>	
	WG D – Reference Frames, Timing and Applications <i>Co-chairs: Zuheir ALTAMIMI, International Association of Geodesy (IAG), Allison CRADDOCK, International GNSS Service (IGS) and Suelynn CHOY, International Federation of Surveyors (FIG)</i>
<i>11:00 – 11:20</i>	<i>Coffee Break¹</i>
11:20 – 12:30	Working Groups Meetings – Parallel Sessions (continued)
<i>12:30 – 13:30</i>	<i>Lunch Break</i>
Twenty-fourth Meeting of the Providers' Forum	
<i>Conference Room: CR-4 (Building C, floor 7)</i>	
13:30 – 15:30	First meeting of the Providers' Forum <i>Co-Chairs: Pieter De SMET, European Commission (online) and Manish SAXENA, India (online)</i>
	<i>Attended by only the Providers. The primary purpose is: (i) to discuss the agenda and meeting procedures for ICG-15 and the 24th Meeting of Providers' Forum; (ii) to develop response or suggest amendments to the Working Groups draft recommendations; (iii) to address any other matters; (iv) to compose a temporary drafting group on the preparation of the Providers' Forum report</i>
<i>15:30 – 15:50</i>	<i>Coffee Break</i>
15:50 – 16:50	Meeting with the Working Groups Co-Chairs

	<i>Attended by only the Providers and the co-chairs of the Working Groups. The primary purpose is: (i) to identify issues for discussion in the working groups; and (ii) to consider their reports on the status of the implementation of the agreed recommendations from the previous ICG meetings.</i>
16:50 – 17:30	Providers' Forum Meeting (to be continued as needed)
17:30	Adjourn
28 September – 1 October 2021 ICG PLENARY SESSIONS	
Tuesday, 28 September 2021	
8:00 – 16:00	Grounds Pass/Badge: Pass Office at Gate 1 <i>Individual grounds passes/badges will be issued at the United Nations Security and Safety Section Pass Office at Gate 1, as appropriate. Participants should provide an appropriate form of identification document (such as a passport) at the entrance.</i>
Conference Room: CR-3 (Building C, floor 7)	
10:00 – 18:00	First Plenary Session of ICG <i>Chair: Simonetta DI PIPPO, United Nations Office for Outer Space Affairs</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 and 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 its working groups meetings.</i>
	Adoption of Agenda <i>The agenda will be adopted immediately after the opening of the session.</i>
	Statement by the Chair <i>Following the adoption of the agenda by ICG, the Chair will make a statement reviewing developments of relevance to the work of ICG and the Office for Outer Space Affairs</i>
10:10 – 12:30	Providers System and Service Updates
10:10	Global Navigation Satellite System (GLONASS) Status, <i>Ivan REVNIVYKH, Roscosmos, State Space Corporation, Russian Federation (online)</i>
10:30	Status Update on the European Satellite Navigation System (GALILEO), <i>Hillar TORK, European Commission (online)</i>
10:50	Update on the BeiDou Satellite Navigation System, <i>Gucang CHEN, China Satellite Navigation Office (CSNO), China (online)</i>
11:10	Navigation with Indian Constellation (NavIC) and GAGAN Status, <i>P.S. SURA, SNR/URSC, Indian Space Research Organization (ISRO), India (online)</i>
11:30 – 11:50	<i>Coffee Break</i>

11:50	Status Update on the Quasi-Zenith Satellite System (QZSS), <i>HONGO Nobuo, QZSS Strategy Office, Japan</i>
12:10	Global Positioning System (GPS) Program and Policy Update, <i>Harold MARTIN, National Coordination Office for Space Based PNT (NCO), United States of America (online)</i>
12:30 – 13:30	<i>Lunch Break</i>
13:30 – 15:30	Presentations by Members, Associate Members, Observers and Invited Observers on Matters of Interest to ICG
13:30	Status update of the Working Group B Space Users Subgroup activities, <i>Werner ENDERLE, European Space Agency and James MILLER, National Aeronautics and Space Administration</i>
13:35	Precise Orbit Determination for Sentinel 6 A, based on Galileo and GPS measurements, <i>Werner ENDERLE, European Space Agency</i>
13:45	Malaysia's GNSS Initiatives, <i>Azlikamil NAPIAH, Malaysian Space Agency, Malaysia (online)</i>
14:00	Satellite navigation in Italy, <i>Alberto TUOZZI, Italian Space Agency, Italy (online)</i>
14:15	Update on Nigeria' s effort with partners for a satellite-based augmentation system in Africa, <i>Lasisi LAWAL Nigerian Communications Satellite Ltd., Nigeria (online)</i>
14:30	Statement by <i>H.E. Aftab Ahmad KHOKHER, Extraordinary and Plenipotentiary Ambassador, Pakistan</i>
14:35	Statement by <i>H.E. Yeonjean YOON, Deputy Permanent Representative, Permanent Mission to the United Nations (Vienna), Republic of Korea</i>
14:40	WRC-23: The Road Ahead, <i>Hon Fai NG, International Telecommunication Union (online)</i>
14:55	APSCO's role in global navigation satellite systems (GNSS), <i>Yu QI, Asia-Pacific Space Cooperation Organization (APSCO) (pre-recorded statement)</i>
15:00	The current and planned state of activities on Space Debris Mitigation for MEO orbital regions, <i>Manuel METZ, Inter-Agency Space Debris Coordination Committee (online)</i>
15:15	EUPOS® - a GNSS-based real-time high accuracy positioning infrastructure in Central and Eastern Europe: current state and outlook, <i>Branislav DROSCAK, European Position Determination System (EUPOS)</i>
15:30 – 15:45	<i>Coffee Break</i>
15:45 – 16:25	Presentations by Members, Associate Members, Observers and Invited Observers on Matters of Interest to ICG
15:45	Use and future development of UTC and impact on GNSS, <i>Patricia TAVELLA, Bureau International des Poids et Mesures (BIPM) (online)</i>
16:00	The International Terrestrial Reference Frame (ITRF): An update, <i>Zuheir ALTAMIMI, International Association of Geodesy (IAG) (online)</i>

16:15	ESA's GNSS Activities on Moon, <i>Javier VENTURA-TRAVESET, European Space Agency (ESA)</i>
16: 25– 18:00	Applications and Experts Seminar: Space Weather Effects on GNSS <i>Chair: Sharafat GADIMOVA, United Nations Office for Outer Space Affairs</i>
	Attended by all. <i>The primary purpose is for GNSS experts to offer their views on GNSS today and vision for the future. The audience will have an opportunity to ask the panel members questions.</i>
16:25	Recent progress in capacity building in Space Weather in Nepal and Pakistan, <i>Christine AMORY, France</i>
16:35	The NeQuick ionospheric electron density model: Developments and applications, <i>Bruno NAVA, International Centre for Theoretical Physics (ICTP) and R. ORUS-PEREZ, European Space Agency/European Space Research and Technology Centre</i>
16:50	Monitoring Space Weather with Space-based GNSS Receivers, <i>Keith GROVES, Boston College, United States of America</i>
17:05	Solar origin of severe space weather, <i>Natchimuthuk GOPALSWAMY, National Aeronautics and Space Administration (NASA), United States of America (online)</i>
17:20	GNSS System applied in space weather research, <i>Bin WANG, China Satellite Navigation Project Center, China (online)</i>
17:30	GNSS radio occultation and reflectometry on FY-3: Current status and future perspective, <i>Peng ZHANG, National Satellite Meteorological Center of China, China (online)</i>
17:40	Degradation of Tomographic Estimations of Ionosphere during Geomagnetic Storm, <i>Rajat ACHARYA, SAC/Indian Space Research Organization (ISRO), India (online)</i>
17:50	Overview of the Space Weather studies using GNSS/NavIC, <i>Nirvikar DASHORA, NARL/DOS, India (online)</i>
18:00	Adjourn
Wednesday, 29 September 2021	
Working Groups Meetings (Parallel Sessions)	
Conference Room: CR-3 (Building C, floor 7)	
09:30 – 15:00	WG S – Systems, Signals and Services <i>Co-chairs: Sergey REVNIVYKH, Russian Federation (online) and David TURNER, United States of America</i>
Conference Room: CR-4 (Building C, floor 7)	
09:30 – 15:00	Working Group B - Enhancement of GNSS Performance, New Services and Capabilities <i>Co-chairs: Nilesh M. DESAI, India (online), Xingqun ZHAN, China (online) and Daniel BLONSKI, European Space Agency (ESA) (online)</i>

Conference Room: CR-6 (Building C, floor 7)	
09:30 – 15:00	WG C – Information dissemination and capacity building <i>Chair: Sharafat GADIMOVA, United Nations Office for Outer Space Affairs (UNOOSA)</i>
Conference Room: CR-2 (Building C, floor 2)	
09:30 – 15:00	WG D – Reference Frames, Timing and Applications <i>Co-chairs: Zuheir ALTAMIMI, International Association of Geodesy (IAG) (online), Allison CRADDOCK, International GNSS Service (IGS) (online) and Suelynn CHOY, International Federation of Surveyors (FIG) (online)</i>
<i>11:00 – 11:20</i>	<i>Coffee Break</i>
<i>12:30 – 13:30</i>	<i>Lunch Break</i>
13:30 – 15:00	Working Groups Meetings – Parallel Sessions (continued)
<i>15:00 – 15:20</i>	<i>Coffee Break</i>
Conference Room: CR-3 (Building C, floor 7)	
15:20 – 18:00	Working Groups Joint Meeting
18:00	Adjourn
Thursday, 30 September 2021	
<i>Conference Room: CR-3 - Working Group S</i>	
<i>Conference Room: CR-4 - Working Group B</i>	
<i>Conference Room: CR-6 - Working Group C</i>	
<i>Conference Room: CR-2 - Working Group D</i>	
09:00 – 12:30	Working Groups Meetings (Parallel Sessions) <i>Working groups to prepare conclusions and recommendations for ICG's consideration.</i>
<i>11:00 – 11:20</i>	<i>Coffee Break</i>
<i>12:30 – 13:30</i>	<i>Lunch Break</i>
Conference Room: CR-3 (Building C, floor 7)	
13:30 – 17:30	Second Plenary Session of ICG (Presentations by Working Groups) <i>Chair: Luc ST-PIERRE, United Nations Office for Outer Space Affairs</i>
	<i>Attended by all. The primary purpose is for the Working Groups to present results of their meetings or any inter-sessional meetings held since the 14th Meeting of ICG. Presentations will include any draft recommendations to ICG.</i>
13:30 – 14:15	Presentation by WG S and Discussions
14:15 – 15:00	Presentation by WG B and Discussions
<i>15:00 – 15:20</i>	<i>Coffee Break</i>
15:20 – 16:05	Presentation by WG C and Discussions
16:05 – 16:50	Presentation by WG D and Discussions

17:30	Adjourn
Friday, 1 October 2021	
Conference Room: CR-4 (Building C, floor 7)	
10:00 – 12:30	Second meeting of the Providers' Forum <i>Co-Chairs: Pieter De SMET, European Commission and Manish SAXENA, India</i>
	<i>Attended by only the Providers. The primary purpose is to discuss any draft recommendations to ICG from the working groups and to develop response or suggest amendments to the draft recommendations.</i>
Conference Room: CR-2 (Building C, floor 2)	
	(in parallel) Meeting of Associate Members, Observers and invited observers (as needed) <i>The purpose is to discuss issues of common concern that have emerged during earlier sessions.</i>
<i>11:00 – 11:20</i>	<i>Coffee Break</i>
<i>12:30 – 13:30</i>	<i>Lunch Break</i>
Conference Room: CR-3 (Building C, floor 7)	
13:30 – 16:00	Third Plenary Session of ICG <i>Chair: Simonetta DI PIPPO, United Nations Office for Outer Space Affairs</i>
	<i>Attended by all. The primary purpose is to consider final recommendations as considered by the Providers' Forum. This session will also consider other ICG-related issues.</i>
13:30	The RTCM SC-134 Special Committee "Integrity for GNSS-based High Accuracy Applications", <i>Roberto CAPUA, Radio Technical Commission for Maritime Services (online)</i>
13:50	GNSS related activities in Pakistan, <i>Amer Sarfraz AHMAD, Pakistan</i>
14:10	Korean Positioning System (KPS) and Korean Augmentation Satellite System (KASS) Update, <i>Taegy KIM, Ministry of Science and ICT, Republic of Korea</i>
14:30 – 14:45	Report of the co-chairs of the 24th meeting of the Providers' Forum <i>Consideration of proposed ICG recommendations (as needed)</i>
14:45 – 15:00	Membership of ICG: The request for member status of Pakistan and Republic of Korea
<i>15:00 – 15:20</i>	<i>Coffee Break</i>
15:20– 15:50	Review and approval of meeting conclusions - Joint Statement
15:50–16:20	Other matters - United Arab Emirates: Announcement for the 16 th Meeting of ICG in 2022

	- Expression of Interest to host the ICG meetings in 2023 (European Commission) and in 2024 (New Zealand/Australia)
16:20 – 16:30	Closing Statements
16:30	Adjourn

ⁱ VIC Catering Services: Cafeteria: 7.30 a.m.–3 p.m., C07 Coffee Corner: 8 a.m. – 4 p.m. for takeaway. The cafeteria is located in building F, entrance level. The coffee corner is located on the seventh floor of the C building.