



UNITED NATIONS
Office for Outer Space Affairs

**United Nations/Indonesia Workshop on
the Applications of Global Navigation Satellite Systems**

Organized jointly by

**The United Nations Office for Outer Space Affairs and
The National Research and Innovation Agency and
the Universitas Indonesia**

Co-organized and co-sponsored by

The International Committee on Global Navigation Satellite Systems

Hosted by

The National Research and Innovation Agency

Jakarta, Indonesia

17 - 21 November 2025

PROGRAMME

VENUE: BRIN Tower, Auditorium Sumitro Djojohadikusumo <i>Gedung BJ. Habibie, 3rd Floor, Jl. M.H. Thamrin No.8, RT.10/RW.10, Kb. Sirih, Kec. Menteng, Kota Jakarta Pusat, Daerah Khusus</i>	
TIME: Jakarta Local Time (UTC +7 hours)	
Monday, 17 November	
08:00 – 09:00	Registration
09:00	Opening and Welcome Remarks
	- Sharafat GADIMOVA, United Nations Office for Outer Space Affairs - Arif SATRIA, National Research and Innovation Agency, Indonesia
	Coffee Break/Group Photo
10:00	Keynote addresses: Setting the tone
	- Applications of Global Navigation Satellite Systems in the Air Transportation Sector, Odo R.M. MANUHUTU, Coordinating Ministry for Infrastructure and Regional Development, Indonesia - GNSS Applications in Comprehensive Outer Space Activities in Indonesia, Erna SRI ADININGSIH, Indonesian Space Agency Secretariat, Indonesia
10:20	Session 1: Current and planned global navigation satellite systems and satellite-based augmentation systems and Case Studies Chairperson: Chusnul Tri HARJANTO, Indonesia Rapporteur: Anam MUNAWWAR, Pakistan
10:20	GLONASS Status and Plans of Development, Svyatoslav ZHILENKO, Russian Federation
10:40	(virtual) BeiDou Navigation Satellite System and Its Applications in Developing Countries, Jin TIAN, Regional Centre for Space Science and Technology Education in Asia and the Pacific, China
11:00	Integration of BeiDou Satellite Navigation, 5G Communication, and Artificial Intelligence for Autonomous Tractors in Precision Agriculture, Ferdaous CHAABANE, Tunisia
11:20	(virtual) Galileo system update, Dominic HAYES, European Commission
11:40	(virtual) Korea Positioning System (KPS) and Korea Augmentation Satellite System (KASS) updates, Inae JUNG, Republic of Korea
12:00	Case Studies on Real-life Application of NavIC: Potentials and Challenges, Anindya BOSE, India
12:20	(recorded) BeiDou Navigation Satellite System Updates, Xiaochun LU, China
12:40 – 13:40	Lunch Break
13:40	Session 2: GNSS technology and applications Chairperson: Mega MARDITA, Indonesia Rapporteur: Nayla NAJATI, Indonesia

13:40	GNSS on Indonesian Aviation, <i>Syamsu RIZAL, Indonesia</i>
14:00	Mitigating Ionospheric Threats to Emerging GNSS Air Navigation in Indonesia, <i>Slamet SUPRIADI, Indonesia</i>
14:20	Implementation of GNSS in Land regulation, <i>Chriesty Elisabeth LENGKONG, Indonesia</i>
14:40	GeoAI and GNSS: Empowering Developing Nations for Sustainable Urban Futures, <i>Fahmi AMHAR, Indonesia</i>
15:00	Advancing Hydropower Projects/Transmission Line with GNSS and Surveying Techniques in Nepal: A use case and application, <i>Rabi SHRESTHA, Nepal</i>
15:20	GNSS and Remote Sensing Approach for Green Tax Contributor Analysis, <i>Sofi ULFIASARI, Indonesia</i>
15:40 – 16:00	<i>Coffee Break</i>
16:00	Session 3: Use of GNSS for natural hazard preparedness, resilience and response <i>Chairperson: Yenni VETRITA, Indonesia</i> <i>Rapporteur: Karolina SURMENELIAN, Armenia</i>
16:00	(virtual) Enhancing location based disasters early warning through leveraging digital innovations in Asia and the Pacific, <i>Tatiana BONAPACE and Keran WANG, Economic and Social Commission for Asia and the Pacific</i>
16:20	Strengthening Resilience: Advancing Natural Disaster Early Warning Systems and Their Applications for Risk Reduction and Sustainable Development, <i>Anam MUNAWWAR, Pakistan</i>
16:40	Enhancing Resilience against GNSS Jamming and Spoofing in Uzbekistan: Leo-PNT as a complementary and cost-effective solution, <i>Fattokh SADRIDDINOV, Uzbekistan</i>
17:00	Securing the Digital Battlefield: Proactive Auditing of GNSS Vulnerabilities in a Modernizing Air Force, <i>Mutemwa Emmanuel TAFIRA, Zambia</i>
17:20	<i>Adjourn</i>
Tuesday, 18 November	
09:00	Session 4: GNSS Real Time Kinematic and Precise Point Positioning Services <i>Chairperson: Anindya BOSE, India</i> <i>Rapporteur: Rintu ROY, Bangladesh</i>
09:00	(virtual) Global Positioning System update, <i>Harold MARTIN, United States of America (moved from Session 1, Monday, 17 November)</i>
09:20	Integrating GNSS to Strengthen Geohazard Resilience and Support Sustainable Development: A National Collaborative Approach, <i>Moh. Fifik SYAFIUDIN, Indonesia</i>
09:40	Advancing GNSS Utilization in Indonesia: From Positioning to Deformation Monitoring, <i>Irwan GUMILAR, Indonesia</i>
10:00	Advanced GNSS RTK Signal Analysis and Telemetry Correlation in Multi-Platform UAV Systems: A Comprehensive Study of MAVLink Protocol Implementation, <i>Odai Redhwan Mohammed OTHMAN, China</i>

10:20	Insight into Indonesia's existing Positioning Infrastructure to support the Development of Precision Positioning Systems, <i>Dedi ATUNGAL, Indonesia</i>
10:40	TransJakarta Carbon Emission Monitoring by Using Integrated GNSS RTK and Environmental Sensor, <i>Lin YOLA, Indonesia</i>
11:00 – 11:20	<i>Coffee Break</i>
11:20	Session 4: GNSS Real Time Kinematic and Precise Point Positioning Services (continued) <i>Chairperson: Lin YOLA, Indonesia</i> <i>Rapporteur: Ferdaous CHAABANE, Tunisia</i>
11:20	Exploring Precise Point Positioning (PPP) Techniques for Land Surveying Applications, <i>Martin Jan MERCURIO, Philippines</i>
11:40	Development of Low-Cost, High-Accuracy Platform Using MADOCA-PPP for National Travel Time and Delay Data in the Philippines, <i>Mary Joy LEANDA, Philippines</i>
12:00	GNSS Receivers' Positioning Accuracy in Dense Urban Canyon Scenario Jakarta, <i>Garrin Alif NANDITHO, Indonesia</i>
12:20	Demonstration Plan for Tide Level Measurement Using a MADOCA-PPP Ocean Buoy in the Philippines, <i>Tadashi SASAKAWA, Japan</i>
12:40 – 13:40	<i>Lunch Break</i>
13:40	Session 5: Space Weather – Ionospheric Monitoring with GNSS <i>Chairperson: Mary Joy LEANDA, Philippines</i> <i>Rapporteur: Rabi SHRESTHA, Nepal</i>
13:40	Analysis of the Long-term Spatial Universality of GNSS Positioning Degradation Risks Due to Ionospheric Effects, <i>Nenad SIKIRICA, Croatia</i>
14:00	Analysis of Ionospheric Irregularities in Low Attitude During Geomagnetic Storm Using GISTM Network, <i>Dessi MARLIA, Indonesia</i>
14:20	Predictable Regular Daily Ionospheric Scintillation, <i>Ingus MITROFANOV, Latvia</i>
14:40	Space Weather Monitoring over the Indian Region with Low-Cost GNSS and IRNSS/NavIC Observations, <i>Susmita Kuber CHOUGULE, India</i>
15:00 – 15:20	<i>Coffee Break</i>
15:20	Session 5: Space Weather – Ionospheric Monitoring with GNSS (continued) <i>Chairperson: Fattokh SADRIDDINOV, Uzbekistan</i> <i>Rapporteur: Martin Jan MERCURIO, Philippines</i>
15:20	Integrated Ionospheric Monitoring Using GNSS Ionospheric Scintillation TEC Monitoring (GISTM) and Ionosonde for Space Weather and SSA Application, <i>Asnawi HUSIN, Indonesia</i>
15:40	Ground-based GNSS and satellite observations of severe ionospheric irregularities during space weather events during 25 th solar maximum, <i>Iurii CHERNIAK, Poland</i>
16:00	Effects of equatorial plasma bubbles on GNSS-based performance during severe space weather events, <i>Irina ZAKHARENKOVA, Poland</i>

16:20	Enhancing Disaster Response Operations with GNSS applications, <i>Abdurrahman ONAY, Türkiye (moved from Session 3, Monday, 17 November)</i>		
16:40	Development of Smartphone-based National Road Monitoring and Evaluation for Philippine Roads, <i>Cleo Thea L. TIGLAO, Philippines</i>		
17:00	<i>Adjourn</i>		
Wednesday, 19 November			
09:00	Session 6: GNSS Signal Processing <i>Chairperson: Ingus MITROFANOV, Latvia</i> <i>Rapporteur: Vilaychit PHANLATDY, Lao PDR</i>		
09:00	<i>(invited)</i> Securing GNSS and VDES Signals, <i>Dinesh MANANDHAR, Japan</i>		
09:20	Simulator Development for Synthetic Data Generation to Support GNSS-Guided Autonomous Vehicle Navigation, <i>Karolina SURMENELIAN, Armenia</i>		
09:40	Digital and Economic Technology: Data Interoperability in Indonesia, <i>Dini MAGHFIRRA, Indonesia</i>		
10:00	Natural Hazards Triggered Technological Disaster (NATECH) Risk Management in Indonesia, <i>Fatma LESTARI, Indonesia</i>		
10:20 – 11:00	Discussion Session 1: Use and Implementation of GNSS Technologies <i>Moderators: Sharafat GADIMOVA, Office for Outer Space Affairs</i> <i>Rapporteur: Chusnul Tri HARHARJANTO, Indonesia</i>		
	Discuss plans, framework for a mechanism of regional cooperation; follow-up projects and initiatives		
<i>11:00 – 11:30</i>	<i>Coffee Break</i>		
11:30 - 12:30	Processing of Data from GNSS: Demo		
	- <i>Dinesh MANANDHAR, Japan</i>		
<i>12:30 – 13:30</i>	<i>Lunch Break</i>		
13:30 – 15:00	Working Group Discussion Sessions (in parallel)		
<table border="1"> <tr> <td> Working Group 1: Capacity Building and Institutional Strengthening <i>Moderator: Sharafat GADIMOVA, Office for Outer Space Affairs</i> <i>Rapporteurs: Yennie MARINI, Indonesia and Nenad SIKIRICA, Croatia</i> </td><td> Working Group 2: Specific GNSS Applications <i>Moderator: Faruk AFFERO, Indonesia and Anindya BOSE, India</i> <i>Rapporteurs: Oumar BOUREIMA, Mali and Odai Redhwan Mohammed OTHMAN, China</i> </td></tr> </table>		Working Group 1: Capacity Building and Institutional Strengthening <i>Moderator: Sharafat GADIMOVA, Office for Outer Space Affairs</i> <i>Rapporteurs: Yennie MARINI, Indonesia and Nenad SIKIRICA, Croatia</i>	Working Group 2: Specific GNSS Applications <i>Moderator: Faruk AFFERO, Indonesia and Anindya BOSE, India</i> <i>Rapporteurs: Oumar BOUREIMA, Mali and Odai Redhwan Mohammed OTHMAN, China</i>
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- International/Regional collaboration opportunities that could be established in order to promote the use of GNSS technology, and the workshop follow-up projects/initiatives (if any); - Requirements of implementing, mechanisms and resources for developing of partnerships and networks (regional/international); - Type and level of training required for addressing GNSS and their applications;			

○ <i>monitoring, detecting, and mitigating GNSS interference for GNSS applications in various disciplines.</i> ▪ <i>Next steps (proposals for future workshops/training courses).</i>	
15:00 – 15:30	<i>Coffee Break</i>
15:30 – 17:00	Working Group 1 and 2 (Parallel Sessions) ▪ <i>Drafting of the Working Groups discussion sessions reports and preparing presentation slides</i>
17:00	<i>Adjourn</i>
Thursday, 20 November	
09:00	Session 7: Applications of GNSS: National Programmes <i>Chairperson: Iqbal Putut Ash Shidiq, Indonesia</i> <i>Rapporteur: Susmita Kuber CHOUGULE, India</i>
09:00	GNSS signal losses in African airspace, <i>Oumar BOUREIMA, Mali</i>
09:20	Assessing Ground Subsidence Risk in Dhaka City and its Surrounding Areas, Bangladesh: Insights from Multi-Temporal InSAR Methodology, <i>Rintu ROY, Bangladesh</i>
09:40	Leveraging GNSS to Advance Net-Zero Supply Chain Infrastructure, <i>Parisa SHAHMOHAMMADI, Iran</i>
10:00	Development of Lao Satellite, <i>Vilaychit PHANLATDY, Lao PDR</i>
10:20 – 10:45	Q/A
10.45 – 11.00	<i>Coffee Break (and Transportation arrangement to UI)</i>
11:00 – 12:30	<i>Moving to UI Campus in Depok (Lunch boxes to be provided in the bus)</i>
13:00 – 18:00	Technical Visit: GNSS Indonesia Summit & Expo 2025 <i>Venue: Balai Purnomo Hall, Universitas Indonesia, Depok, West Java</i>
18:00 – 19:30	<i>Gala Dinner</i>
	<i>Moving back to the Venue/Hotel</i>
Friday, 21 November	
09:00	Plenary Closing Session: Workshop views and recommendations <i>Moderators: Sharafat GADIMOVA, the Office for Outer Space Affairs and</i> <i>Rapporteur: Chusnul Tri HARJANTO, Indonesia</i>
	▪ <i>Summary reports of presentation sessions</i>

	▪ Summary report of the working groups discussion sessions: presentation of proposals and recommendations consolidated at the working groups discussion sessions
<i>10:30 – 11:00</i>	<i>Coffee Break</i>
11:00 – 12:00	Concluding remarks
	▪ <i>Sharafat GADIMOVA, Office for Outer Space Affairs</i> ▪ <i>Erna SRI ADININGSIH, Indonesian Space Agency Secretariat, Indonesia</i>
<i>12:00</i>	<i>Adjourn</i>