

	October 21 (Tue)	October 22 (Wed)		October 23 (Thu)				October 24 (Fri)			
		Baekrok hall A	Baekrok hall B	Yeongju A	Yeongju B	Baekrok A	Baekrok B	Yeongju A	Yeongju B	Baekrok A	Baekrok B
08:00-09:00		Registration		Registration				Registration			
09:00-10:00			D1: Indoor/Urban/Personal Navigation	Plenary (Yeongju hall A) New Computing Platform for Internet of Everything (IoE) Tony KIM (Cisco, Korea)				Plenary (Yeongju hall A) MGA Status Akio YASUDA (Tokyo University of Marine Science and Technology, Japan)			
10:00-11:00		Invited Session: New Signal "New Signals from East Asia"	Break	KGS Board Meeting	I1: Next Generation GNSS	I2: Science and Timing Applications	D5: Test and Evaluation	I7: Interference Mitigation	I8: Geodesy, Surveying and RTK	I9: SBAS	I10: Multi-sensor and Integrated Navigation
11:00-12:00			D2: Algorithms and New Methods								
12:00-13:00	Registration	Luncheon (Sorang Cafeteria)		*KGS Meeting (11:20-12:20, Baekrok B) Luncheon (Sorang Cafeteria)				Luncheon (Sorang Cafeteria)			
13:00-14:00		Opening (Baekrok hall A)		Plenary (Yeongju hall A) The Evolution of Galileo Guenter Hein (ESA, EU)				I11: Indoor/Urban/Personal Navigation	I12: Simulation and Testing	I13: GBAS	I14: Air/Marine/Land Applications
14:00-15:00		Invited Session: SBAS "Status and Future of SBAS"	D3: Receiver/Antenna Technology	Invited Session: Beidou Info. Day	I3: Receiver Algorithms	I4: PPP	D6: SBAS/GBAS				
15:00-16:00	Tutorial (Baekrok hall B)		Break					D4: Interference Mitigation	Break		
16:00-17:00		Industrial Session	Domestic GNSS Policy		I5: Multipath Mitigation	I6: Precise Positioning	D7: Geodesy and Precise Positioning				
17:00-18:00											
18:00-19:00		Ice Breaking (Ocean View 5F)	Banquet *14:00-18:00 IGS Meeting (202A)	Domestic Paper Award (Baekrok B)							
19:00-20:00				*13:00-17:00 Poster presentation *17:00-18:00 IPC Meeting (202A)							

Program October 21(Tue)	
BAEKROK HALL B	
13:00-18:00	<b>Tutorial Session</b> <b>Chair: Sanghyun PARK</b> (Korea Research Institute of Ships and Ocean Engineering, Korea)
	<b>Signal Processing Scheme of Modern Digital GNSS Receivers</b> <b>Jong-Hoon WON</b> <sup>*</sup> (Univ. Federal Armed Forces Munich, Germany)

Program October 22(Wed)		
	BAEKROK HALL A	BAEKROK HALL B
09:00-10:20		<b>D1: Indoor/Urban/Personal Navigation</b> <b>Chair: Hyunsoo KIM</b> (Telit Wireless Solutions, Korea)
		<b>09:00-09:20</b> <b>The Design of a Feedback Controller for Time Synchronization of Synchronized Pseudolite Navigation System</b> <b>Seungwoo SEO</b> <sup>*</sup> , Woogeun AHN, Kiwon SONG (Agency for Defense Development, Korea)
		<b>09:20-09:40</b> <b>Utilization Measures of High-altitude Unmanned Aircraft with Pseudolite to Improve the Visibility of the GPS Signal-blocked Area</b> <b>Min-Woo CHOI</b> <sup>1</sup> , O-Jong KIM <sup>1</sup> , Sun-Kyoung YU <sup>1</sup> , Byung-Woon PARK <sup>2</sup> , Hyo-Jeong SEOK <sup>2</sup> , Chang-Don KEE <sup>1*</sup> ( <sup>1</sup> Seoul National University, <sup>2</sup> Sejong University, Korea)
		<b>09:40-10:00</b> <b>3D CNS Implementation Technique for Car Navigation</b> <b>Seungbok DO</b> <sup>*</sup> , Hyunsoo KIM, Hyunyong CHOI (Telit Wireless Solutions, Korea)
		<b>10:00-10:20</b> <b>Annual Prediction of Multi-GNSS Navigation Performance in Urban Canyon</b> <b>Hyojeong SEOK</b> , Cheolsoo LIM, Donghwan YOON, Byungwoon PARK <sup>*</sup> (Sejong University, Korea)
10:20-10:40	Break	
10:40-12:00	<b>10:30-12:00</b> <b>Invited Session: New Signals</b> <b>"New GNSS Signals from East Asia"</b> <b>Chair: Jae-Min AHN</b> (Chungnam National University, Korea)	<b>D2: Algorithms and New Methods</b> <b>Chair: Jae Kang LEE</b> (Korea Cadastral Survey Corp., Korea)
	<b>10:30-11:00</b> <b>Signal Design Progress and Trend for Next Generation Satellite Navigation System</b> <b>Mingquan LU</b> (Tsinghua University, China)	<b>10:40-11:00</b> <b>Multipath Delay Estimation for CBOC Signal based on the Teager-Kaiser Operator</b> <b>Sang-Yun JEON</b> , Seung-Hyun KONG <sup>*</sup> (KAIST, Korea)
	<b>11:00-11:30</b> <b>PPP Service using QZSS</b> <b>Satoshi KOGURE</b> (Japan Aerospace Exploration Agency(JAXA), Japan)	<b>11:00-11:20</b> <b>3-Dimension Positioning Algorithm using Absolute Altitude Determination</b> <b>Jong Joon CHOI</b> <sup>*</sup> , Seung-Bok DO, Hyun Young CHOI, Hyun Soo KIM (Telit Wireless Solutions, Korea)
	<b>11:30-12:00</b> <b>New GNSS Signal Design at NGRC</b> <b>Jae-Min AHN</b> (Chungnam National University)	<b>11:20-11:40</b> <b>A Study on the Indoor Location Determination and Event Processing based on RSSI using BLE Devices and Android Smartphone</b> <b>Ki-Hoon KIM</b> , Ju-Young LEE, Mi-Young JEON, Gu-Min JEONG <sup>*</sup> (Kookmin University, Korea)
12:00-13:00	Luncheon (Sorang Cafeteria)	
13:00-14:00	Opening (Baekrok Hall A) <b>Chair: Kwan-Dong PARK</b> (Inha University, Korea)	

**Program** October 22(Wed)

	BAEKROK HALL A	BAEKROK HALL B
14:00-15:20	<b>Invited Session: SBAS</b> <b>"Status and Future of SBAS"</b> <b>Chair: Gi Wook NAM</b> (Korea Aerospace Research Institute, Korea)	<b>D3: Receiver/Antenna Technology</b> <b>Chair: Sang Jun YUN</b> (Navcours Co.,Ltd, Korea)
	<b>14:00-14:30</b> <b>Space based Augmentation Systems: Present and Future</b> Per ENGE (Stanford University, USA)	<b>14:00-14:20</b> <b>Optimum Diversity Combining for Pseudolite Navigation System</b> Jaegyung JANG <sup>*</sup> , Woo-Geun AHN, Jun-Pyo PARK, Kiwon SONG (Agency for Defense Development, Korea)
	<b>14:30-15:00</b> <b>WAAS History and Status</b> Deane BUNCE (FAA, USA)	<b>14:20-14:40</b> <b>The Design of a Small Interference Suppression Enhanced GNSS Receiver for High Mobility</b> Yong-Hyun PARK <sup>1*</sup> , Seung-Wook MOON <sup>1</sup> , Bong-Gyu SHIN <sup>2</sup> , Jong-Su O <sup>3</sup> ( <sup>1</sup> Navcours, Inc., <sup>2</sup> Hanwha, <sup>3</sup> Agency for Defence Development., Korea)
	<b>15:00-15:30</b> <b>EGNOS System History and Status</b> Didier FLAMENT (EESA, France)	<b>14:40-15:00</b> <b>Design of a Commercial Narrowband Interference Suppressor for GPS Receiver</b> Heung-Su KIM <sup>*</sup> , Byeong-Gyun KIM, Seung-Wook MOON, Se-Hwan KIM (Navcours, Inc., Korea)
15:20-15:40	Break	
15:40-17:00	<b>15:30-16:00</b> <b>GAGAN- GPS Aided Geo Augmented Navigation</b> A.S. GANESHAN (ISRO, India)	<b>D4: Interference Mitigation</b> <b>Chair: Woo-Geun AHN</b> (Agency for Defense Development, Korea)
	<b>16:00-16:30</b> <b>MSAS</b> Take SAKAI (ENRI,Japan)	<b>15:40-16:00</b> <b>Null-Steering Dual-Polarized Antenna Array to Mitigate GPS RHCP Interferences</b> Kwansik PARK <sup>1</sup> , Jiwon SEO <sup>1*</sup> , Dong-Kook LEE <sup>2</sup> ( <sup>1</sup> Yonsei University, <sup>2</sup> Agency for Defense Development, Korea)
	<b>16:30-17:00</b> <b>History and Plan for K-SBAS</b> Gi Wook NAM (Korea Aerospace Research Institute, Korea)	<b>16:00-16:20</b> <b>An Application of Successive Interference Cancellation to Pseudolite Navigation Systems</b> Woo-Geun AHN <sup>1*</sup> , Yohan KO <sup>2</sup> , Ki-Won SONG <sup>1</sup> ( <sup>1</sup> Agency for Defense Development, <sup>2</sup> LIGNex1 Co., Ltd., Korea)
		<b>16:20-16:40</b> <b>Analysis of GPS Receiver Operational Characteristics Against Spoofing Signal Simulated by Multi-RF GPS Simulator</b> Hyoungmin SO <sup>*</sup> , Jaegyung JANG, Kihoon LEE, Kiwon SONG (Agency for Defense Development, Korea)
		<b>16:40-17:00</b> <b>High Dynamic-Range RF Front-End ASIC for GNSS Anti-Jam System</b> Seung-Hwan JUNG <sup>1*</sup> , Byeong-Gyun KIM <sup>2</sup> , Se-Hwan KIM <sup>2</sup> , Sang-Gyun KIM <sup>3</sup> , Myung-Cheol PARK <sup>3</sup> , Ji-Yeon JEON <sup>3</sup> , Yun Seong EO <sup>1,3</sup> ( <sup>1</sup> Silcon R&D, Inc., <sup>2</sup> Navcours, Inc., <sup>3</sup> Kwangwoon University, Korea)
17:00-18:20	<b>Industrial Session</b> <b>Chair: Cheon Sig SIN</b> (Electronics and Telecommunications Research Institute, Korea)	<b>Domestic GNSS Policy</b> <b>Chair: Changdon KEE</b> (Seoul National University, Korea)
	17:00-17:15 Finedigital, Inc.	
	17:15-17:25 Insung International Co., Ltd.	
	17:25-17:35 Hanhwa Corporation Defence R&D Center	
	17:35-17:45 NAVCOURS Co., Ltd.	17:00-17:15 Ministry of Land, Infrastructure and Transport -Air Navigation Facilities Division
	17:45-17:55 SK Telecom Co., Ltd.	17:15-17:30 Ministry of Oceans and Fisheries - Maritime Safety Facility Division
	17:55-18:00 Dongjin Communication System, Inc.	17:30-17:45 National Geographic Information Institute - Geodesy Department
	18:00-18:05 DUSITECH Co., Ltd.	17:45-18:00 Ministry of Science, ICT and Future Planning - Space Technology Division
	18:05-18:10 JY SYSTEM, Inc.	
18:10-18:15 Geosystems, Inc.		
18:15-18:20 Jipyong Space, Inc.		
18:20-21:00	Banquet (Ocean View 5F) <b>Chair: Moon Beom HEO</b> (Korea Aerospace Research Institute, Korea)	

**Program** October 23(Thu)

<p><b>09:00-10:00</b></p>	<p>[Room: YEONGJU HALL A]  <b>Plenary Session [PL01] New Computing Platform for Internet of Everything (IoE)</b>                  Tony KIM (Cisco, Korea)                  Chair: Seung-Hyun KONG (KAIST, Korea)</p>			
	<p><b>YEONGJU HALL A</b></p>	<p><b>YEONGJU HALL B</b></p>	<p><b>BAEKROK HALL A</b></p>	<p><b>BAEKROK HALL B</b></p>
<p><b>10:00-11:20</b></p>	<p><b>KGS Board Meeting</b></p>	<p><b>I1: Next Generation GNSS</b>  <b>Chair: Xingqun ZHAN</b>                  (Shanghai Jiao Tong University, China)  <b>Bo-Seok SEO</b>                  (Chungbuk National University, Korea)</p> <p><b>10:00-10:20</b>  <b>Automatic Modulation Recognition of Digital Modulation Signals Based on Gaussian Mixture Model</b>  <u>Woo-Hyun AHN</u>, Chansik PARK, Bo-Seok SEO* (Chungbuk National University, Korea)</p> <p><b>10:20-10:40</b>  <b>Required Transmit Signal Power Based on Optimum Data Rate and Signal Power Split for C band</b>  <u>Meihong LIU</u>*, Xingqun ZHAN, Maolin CHEN, Lingxiao ZHENG (Shanghai Jiao Tong University, China)</p> <p><b>10:40-11:00</b>  <b>New Navigation Signal Design using Tiered Polyphase Codes</b>  <u>Jewon LEE</u><sup>1</sup>, Jeong-been KIM<sup>1</sup>, Kap-Jin KIM<sup>2</sup>, Ki-won SONG<sup>2</sup>, Jae Min AHN<sup>1*</sup> (<sup>1</sup>Chungnam National University, <sup>2</sup>Agency for Defense Development, Korea)</p> <p><b>11:00-11:20</b>  <b>Performance of Faded Harmonic Subcarrier Modulation and its Application</b>  <u>Wei LIU</u><sup>1*</sup>, Yuan HU<sup>2</sup>, Xingqun ZHAN<sup>3</sup> (<sup>1</sup>Shanghai Maritime University, <sup>2</sup>Shanghai Ocean University, <sup>3</sup>Shanghai Jiao Tong University, China)</p>	<p><b>I2: Science and Timing Applications</b>  <b>Chair: Dmitriy GARMATYUK</b>                  (Miami University, USA)  <b>Donghui Yu</b>                  (Catholic University of Pusan, Korea)</p> <p><b>10:00-10:20</b>  <b>Precise Orbit Determination of LEO Satellites with Less than Four Visible GPS Satellites</b>  <u>Sun Kyoung YU</u>, Ghangho KIM, Changdon KEE* (Seoul National University, Korea)</p> <p><b>10:20-10:40</b>  <b>Analysis on Time Measurement Accuracy of KSLV-II GNSS Receiver</b>  <u>Yong-Sul SHIN</u>*, Byung-Moon KWON, Ji-Hyeon MOON, Byung-Joo MIN, Hyung-Don CHOI (Korea Aerospace Research Institute, Korea)</p> <p><b>10:40-11:00</b>  <b>Performance Analysis of Time Synchronization Schemes for Pseudolite with GPS Signals</b>  <u>Ju Hyun LEE</u><sup>1</sup>, Dong-Hui YU<sup>2</sup>, Soyoung HWANG<sup>2</sup>, Chansik PARK<sup>3</sup>, Sang Jeong LEE<sup>1*</sup> (<sup>1</sup>Chungnam National University, <sup>2</sup>Catholic University of Pusan, <sup>3</sup>Chungbuk National University, Korea)</p>	<p><b>D5: Test and Evaluation</b>  <b>Chair: Sebum CHUN</b>                  (Korea Aerospace Research Institute, Korea)</p> <p><b>10:00-10:20</b>  <b>The Effect of the Number of Transmitters in MOSAIC/DME System: A Single Station Based Positioning System for Alternate PNT</b>  <u>O-Jong KIM</u>, Chongwon KIM, Junesol SONG, Changdon KEE* (Seoul National University, Korea)</p> <p><b>10:20-10:40</b>  <b>The Design of the Platform Analyzing GPS Jamming Signals based on SDR</b>  <u>Seong Han CHO</u>, A Ra CHOI, Seung Il KIM, Il Kyu PARK, Sang Jun YUN* (Navcours Co.,Ltd, Korea)</p> <p><b>10:40-11:00</b>  <b>Test Procedure and List of Navigation System for Air Vehicle</b>  <u>Ji Hee PARK</u><sup>1*</sup>, Jeong Yeol KIM<sup>1</sup>, Byung il SEO<sup>2</sup>, Dong Ho SHIN<sup>2</sup> (<sup>1</sup>LIGNex1 Co. Ltd, <sup>2</sup>Agency for Defense Development, Korea)</p>
<p><b>11:20-13:00</b></p>	<p>*KGS Meeting (11:20-12:20, Baekrok Hall B)                  Luncheon (Sorang Cafeteria)</p>			
<p><b>13:00-14:00</b></p>	<p>[Room: YEONGJU HALL A]  <b>Plenary Session [PL02] The Evolution of Galileo</b>                  Guenter HEIN (ESA, EU)                  Chair: Jun SHEN (BNStart Navigation Technology &amp; System Co., Ltd, China)</p>			

**Program** October 23(Thu)

<p><b>14:00-16:00</b></p>	<p><b>Invited Session: Beidou Info. Day</b></p>	<p><b>I3: Receiver Algorithms</b>  <b>Chair: Dah-Jing JWO</b>                      (National Taiwan Ocean University, Taiwan)  <b>Jiwon SEO</b>                      (Yonsei University, Korea)</p>	<p><b>I4: PPP</b>  <b>Chair: Dagoberto SALAZAR</b>                      (Trimble-Terrasat GmbH., Germany)  <b>Kwan-Dong PARK</b>                      (Inha University, Korea)</p>	<p><b>D6: SBAS/GBAS</b>  <b>Chair: Jeongho CHO</b>                      (Hanseu University, Korea)</p>
		<p><b>14:00-14:20</b>  <b>Performance Comparison of Carrier Tracking Loops in Vibration Environment</b>  <u>Byung-Moon KWON*</u>, Yong-Sul SHIN, Ji-Hyeon MOON, Byeong-Joo MIN, Hyung-Don CHOI (Korea Aerospace Research Institute, Korea)</p>	<p><b>14:00-14:20</b>  <b>Rapid Determination of Tidal Heights Based on GPS Precise Point Positioning</b>  <u>Xiuying PENG*</u>, Shijie FAN (China University of Petroleum, China)</p>	<p><b>14:00-14:20</b>  <b>Development of Pseudolite based WADGNSS Demonstration System</b>  <u>Chongwon KIM</u>, Ho YUN, Deokhwa HAN, Ojong KIM, Junesol SONG, Heekwon NO, Jungbeom KIM, Donguk KIM, Changdon KEE* (Seoul National University, Korea)</p>
		<p><b>14:20-14:40</b>  <b>The Study of Fast Re-tracking using Theoretical Doppler Frequency on GNSS</b>  <u>Shungo SHINOHARA*</u>, Nobuaki KUBO (Tokyo University of Marine Science and Technology, Japan)</p>	<p><b>14:20-14:40</b>  <b>Algebraic Issues of Precise Point Positioning with Ambiguity Resolution in GNSS</b>  <u>Andrey N. PODKORYTOV<sup>1*</sup></u>, Alexander A. POVALYAEV<sup>1,2</sup>                      (<sup>1</sup>Moscow Aviation Institute (National Research University), <sup>2</sup>JSC Russian Space Systems, Russia)</p>	<p><b>14:20-14:40</b>  <b>Short-term Variations of GPS Scintillation in Greenland</b>  <u>Dong-Hyo SOHN*</u>, Kwan-Dong PARK (Inha University, Korea)</p>
		<p><b>14:40-15:00</b>  <b>Implementation of Galileo E1 Signal Acquisition Module using CUDA</b>  <u>Jun-Seok YANG<sup>1</sup></u>, Kwiwoo PARK<sup>1</sup>, Min-Joon LEE<sup>2</sup>, Chansik PARK<sup>1*</sup>                      (<sup>1</sup>Chungbuk National University, <sup>2</sup>Agency for Defense Development, Korea)</p>	<p><b>14:40-15:00</b>  <b>PPP for High Accuracy Positioning, including Galileo and Reliability Bound</b>  <u>María D. LAÍNEZ SAMPER*</u>, Miguel M. ROMAY MERINO, Guillermo TOBÍA GONZÁLEZ, Irma RODRÍGUEZ PÉREZ, J. David CALLE CALLE, Pedro F. NAVARRO MADRID, Daniel RODRÍGUEZ PORCHERÓN (GMV, Spain)</p>	<p><b>14:40-15:00</b>  <b>Ionospheric Spatial Correlation Analysis for SBAS in the Korean Region</b>  <u>Eugene BANG</u>, Jinsil LEE, Jiyun LEE* (Korea Advanced Institute of Science and Technology, Korea)</p>
		<p><b>15:00-15:20</b>  <b>Design of Direct RF Sampling Receiver for GNSS Signals</b>  <u>Yu-Jun WON<sup>1</sup></u>, Woo-Hyun AHN<sup>1</sup>, Min-Jun LEE<sup>2</sup>, Chan-Sik PARK<sup>1</sup> Bo-Seok SEO<sup>1*</sup> (<sup>1</sup>Chungbuk National University, <sup>2</sup>Agency for Defense Development, Korea)</p>	<p><b>15:00-15:20</b>  <b>Efficient Message Coding to Broadcast PPP Corrections through Satellite</b>  <u>Bernard CHARLOT<sup>1*</sup></u>, Hélène DELFOUR<sup>1</sup>, Denis LAURICHESSE<sup>2</sup>, Pierre LESAGE<sup>3</sup> (<sup>1</sup>Thales Alenia Space, <sup>2</sup>CNES, <sup>3</sup>ISAE/ENSEEIH, France)</p>	<p><b>15:00-15:20</b>  <b>Case Studies of Equatorial Ionospheric Effects on GPS-based Navigation Systems during Scintillation Days</b>  <u>Dongwoo KIM</u>, Moonseok YOON, Jiyun LEE* (Korea Advanced Institute of Science and Technology, Korea)</p>
		<p><b>15:20-15:40</b>  <b>Vector Tracking Loop Performance Improvement of a GPS Receiver using the Data Wipe-off Technique</b>  <u>Dah-Jing JWO*</u>, Kun-Chan LEE, Sheng-Feng CHIU (National Taiwan Ocean University, Taiwan)</p>	<p><b>15:20-15:40</b>  <b>Trimble CenterPoint RTX: A Fast-converging, Global, Multi-GNSS, PPP with Ambiguity Resolution Real-time Positioning Service</b>  <u>Dagoberto SALAZAR*</u>, Markus BRANDL, Xiaoming CHEN, Ralf DRESCHER, Markus GLOCKER, Victor GOMEZ, Herbert LANDAU, Andrea NARDO, Markus NITSCHKE, Fabian PASTOR, Carlos RODRIGUEZ-SOLANO, Stephan SEEGER, Ulrich WEINBACH, Feipeng ZHANG (Trimble-Terrasat GmbH., Germany)</p>	<p><b>15:20-15:40</b>  <b>Flight Experiments to Evaluate Navigation Accuracy of UAVs Supported by Local Area Differential GNSS (LADGNSS)</b>  <u>Kiwan KIM</u>, Minchan KIM, Dongkyeong LEE, Jiyun LEE* (Korea Advanced Institute of Science and Technology, Korea)</p>
	<p><b>15:40-16:00</b>  <b>Development and Performance Verification of user Algorithms for PPP-RTK using Various Accuracies of Correction Data</b>  <u>Jihye WON*</u>, Kwan-Dong PARK (Jipyong Space, Korea)</p>	<p><b>15:40-16:00</b>  <b>DGPS Marine Reference Station System Configuration Proposed for Marine Micro DGPS Operations Improvement</b>  <u>Seung-Il KIM<sup>1</sup></u>, Seong-Han CHO<sup>1</sup>, Il-Kyu PARK<sup>1</sup>, Sang-Jun YUN<sup>1</sup>, Yong Kwon CHOI<sup>2</sup>, Seok-Bo SON<sup>1*</sup>                      (<sup>1</sup>Navcours, Inc., <sup>2</sup>DGNSS Central Office, Korea)</p>		

**Program** October 23(Thu)

16:00-16:20	Break			
16:20-18:00	Invited Session: Beidou Info. Day	<p><b>15: Multipath Mitigation</b>  <b>Chair: Yuan HU</b>                      (Shanghai Ocean University, China)  <b>Jong-Hoon WON</b>                      (Univ. Federal Armed Forces Munich, Germany)</p>	<p><b>16: Precise Positioning</b>  <b>Chair: Nobuaki KUBO</b>                      (Tokyo University of Marine Science and Technology, Japan)  <b>Sebum CHUN</b>                      (Korea Aerospace Research Institute, Korea)</p>	<p><b>D7: Geodesy and Precise Positioning</b>  <b>Chair: Byung-Kyu CHOI</b> (KASI, Korea)</p>
		<p><b>16:20-16:40</b>  <b>The GNSS Vulnerability Issue and Its Quantitative Assessment Method</b>                      Lingxiao ZHENG, Xingqun ZHAN*, Meihong LIU, Maolin CHEN (Shanghai Jiao Tong University, China)</p>	<p><b>16:20-16:40</b>  <b>Variance and Covariance Estimation for Errors-in-variables Model</b>                      Miaomiao WANG*, Bofeng LI, Yunzhong SHEN (Tongji University, China)</p>	<p><b>16:20-16:40</b>  <b>Analysis of Ionospheric and Satellite Orbital Error Variation in Korea</b>                      Cheolsoo LIM, Byungwoon PARK* (Sejong University, Korea)</p>
		<p><b>16:40-17:00</b>  <b>Robust GNSS Signal Tracking in Multipath and Interference Environments</b>                      Sangwoo LEE<sup>1</sup>, Chansik PARK<sup>2</sup>, Min Joon LEE<sup>3</sup>, Jaehoon CHOI<sup>1</sup>, Sunwoo KIM<sup>1*</sup> (<sup>1</sup>Hanyang University, <sup>2</sup>Chungbuk National University, <sup>3</sup>Agency for Defense Development, Korea)</p>	<p><b>16:40-17:00</b>  <b>Partial Ambiguity Resolution for Carrier Phase GNSS Positioning by Using Gaussian Sum Filter</b>                      Takumi SAKAI, Masato HOMAN, Masaharu OHASHI, Yukihiko KUBO*, Suelo SUGIMOTO (Ritsumeikan University, Japan)</p>	<p><b>16:40-17:00</b>  <b>Development and Positioning Accuracy Assessment of Precise Point Positioning Algorithms based on GLONASS Code-Pseudorange Measurements</b>                      Mi-So KIM<sup>1</sup>, Kwan-Dong PARK<sup>1*</sup>, Jihye WON<sup>2</sup>, Seung-Woo SEO<sup>3</sup>, Heung-Won PARK<sup>3</sup> (<sup>1</sup>Inha University, <sup>2</sup>Jipyong Space, Inc., <sup>3</sup>Agency for Defence Development, Korea)</p>
		<p><b>17:00-17:20</b>  <b>Reception and Characterization of GPS Reflected Signals</b>                      Sheng-hsiung MA, Ying-Jung WANG*, Jyh-Ching JUANG, I-Fan WANG (National Cheng Kung University, Taiwan)</p>	<p><b>17:00-17:20</b>  <b>Implementation of Real-Time FKP-DGPS Algorithm For L1 Single-Frequency GPS Receiver in Korea</b>                      Jung-Beom KIM<sup>1</sup>, Hee-Kwon NO<sup>1</sup>, June-Sol SONG<sup>1</sup>, Chang-Don KEE<sup>1*</sup>, Man-Bok PARK<sup>2</sup>, Si-Bum JUN<sup>2</sup> (<sup>1</sup>Seoul National University, <sup>2</sup>Mando Corporation, Korea)</p>	<p><b>17:00-17:20</b>  <b>Development the LX-GNSS On-line Data Processing System Based on GIPSY-OASIS</b>                      Hyunho KIM, Jihyun HA*, Dek-Kie CHA (Korea Cadastral Survey Corp., Korea)</p>
		<p><b>17:20-17:40</b>  <b>Study on Rapid Prediction of GNSS-R Specular Reflection Point</b>                      Yuan HU<sup>1*</sup>, Wei LIU<sup>2</sup>, Dongkai YANG<sup>3</sup>, Shiming WANG<sup>1</sup> (<sup>1</sup>Shanghai Ocean University, <sup>2</sup>Shanghai Maritime University, <sup>3</sup>BeiHang University, China)</p>	<p><b>17:20-17:40</b>  <b>RTK Positioning by Correcting Recurrent Biases from GPS Phases Observed in Days before Today</b>                      Joz WU<sup>1*</sup>, Chi-Hisu HSIEH<sup>2</sup> (<sup>1</sup>National Central University, <sup>2</sup>Army Academy ROC, Taiwan)</p>	<p><b>17:20-17:40</b>  <b>Performance Analysis of Low-Order Surface Methods for Compact Network RTK</b>                      Junsol SONG<sup>1</sup>, Byungwoon PARK<sup>2</sup>, Changdon KEE<sup>1*</sup> (<sup>1</sup>Seoul National University, <sup>2</sup>Sejong University, Korea)</p>
		<p><b>17:40-18:00</b>  <b>An Integrated Multipath Mitigation Scheme Based on Strobe Correlator and ACF Slope Difference</b>                      Maolin CHEN<sup>1,2</sup>, Xingqun ZHAN<sup>1,2*</sup>, Meihong LIU<sup>1</sup>, Zhenjun ZHANG<sup>1</sup> (<sup>1</sup>Shanghai Jiaotong University, <sup>2</sup>China-Korea GNSS Joint Research Center, China)</p>		<p><b>17:40-18:00</b>  <b>Performance Estimation of One-way Network RTK in Korea</b>                      Namkyong WANG, Byungwoon PARK* (Sejong University, Korea)</p>
18:30-19:00	Domestic Paper Award (Baekrok Hall B)			

**Program** October 24(Fri)

09:00-10:00	<p>[Room: YEONGJU HALLA]  <b>Plenary Session [PL03] MGA Status</b>                  Akio YASUDA (Tokyo University of Marine Science and Technology, Japan)                  Chair: Young Baek KIM (Hanyang Navicom Ltd, Korea)</p>			
	YEONGJU HALLA	YEONGJU HALL B	BAEKROK HALLA	BAEKROK HALL B
	<p><b>17: Interference Mitigation</b>                  Chair:                  Jean POUMAILLOUX                  (Thales Alenia Space, France)                  Dong-Ho SHIN                  (ADD, Korea)</p>	<p><b>18: Geodesy, Surveying and RTK</b>                  Chair:                  Wu CHEN                  (Hong Kong Polytechnic University, Hong Kong)                  Byungwoon PARK                  (Sejong University, Korea)</p>	<p><b>19: SBAS/GBAS (1)</b>                  Chair:                  Javier OSTOLAZA                  (GMV, Spain)                  Takeyasu SAKAI                  (ENRI, Japan)</p>	<p><b>110: Multi-sensor and Integrated Navigation</b>                  Chair:                  Yuan-xi YANG                  (China National Administration of GNSS and Applications, China)                  Dong-Hwan HWANG                  (Chungnam National University, Korea)</p>
	<p><b>10:00-10:20</b>                  A Feasibility Study of a GNSS Jammer Detection and Localization Architecture using Airborne Sensor Networks                  Youngsun YUN<sup>1</sup>, Moon-Beom HEO                  (Korea Aerospace Research Institute, Korea)</p>	<p><b>10:00-10:20</b>                  Long Baseline GNSS RTK Operation based on a Triple Search Ambiguity Resolution Method                  Wu CHEN<sup>1</sup>, Ying XU, Duojie WENG, Shengyue JI, Cheng YANG (Hong Kong Polytechnic University, Hong Kong)</p>	<p><b>10:00-10:20</b>                  MagicSBAS: A Korean Pre-Operational SBAS System using Real Data                  Javier OSTOLAZA<sup>1</sup>, Davide RIZZO, Daniel PEREZ, Virginia IZQUIERDO, Miguel Angel FERNANDEZ, Julian BARRIOS, Jose CARO (GMV, Spain)</p>	<p><b>10:00-10:20</b>                  Influences of Interoperability of Coordinate Reference Systems among Navigation Satellite Systems                  Yuan-xi YANG<sup>1,2</sup>, Xian-ping QIN<sup>2,3</sup>                  (China National Administration of GNSS and Applications, National Key Laboratory of Geo-Information Engineering, Xi'an Research Institute of Surveying and Mapping, China)</p>
	<p><b>10:20-10:40</b>                  GNSS Signal Authentication Using Cross-correlation of Two Receivers' Correlator Outputs                  Jyh-Ching JUANG<sup>1</sup>, Chiu-Teng TSAI<sup>1</sup>, I-Wen CHU<sup>1</sup>, I-Fan WANG<sup>1*</sup>, Yu-Hsuan CHEN<sup>2</sup>, Chih-Horng LI<sup>3</sup>                  (National Cheng Kung University, Taiwan, Stanford University, USA, Institute for Information Industry, Taiwan)</p>	<p><b>10:20-10:40</b>                  GNSS Ambiguity Resolution with Controllable Failure Rate for Long Baseline Network RTK                  Bofeng LI<sup>1</sup>, Yunzhong SHEN (Tongji University, China)</p>	<p><b>10:20-10:40</b>                  High Integrity System Test Bed (HISTB) The Preliminary Step to EGNOS Dual frequency / Multi-constellation Evolution                  H. DELEFOUR<sup>1*</sup>, J.A. GICQUEL<sup>1</sup>, P. LARHANTEC<sup>1</sup>, D. JOLY<sup>1</sup>, D. LEKAIM<sup>1</sup>, M. JEANNOT<sup>2</sup>                  (Thales Alenia Space, ESA / CNES, France)</p>	<p><b>10:20-10:40</b>                  Motion Recognition based Adaptive Step Length Estimation for a PDR System Only using a Smartphone                  Jung Ho LEE<sup>1</sup>, Beomju SHIN<sup>1</sup>, Seok LEE<sup>1</sup>, Jinwoo PARK<sup>2</sup>, Jaehun KIM<sup>1</sup>, Chulki KIM<sup>1</sup>, Taikjin LEE<sup>1*</sup>                  (Korea Institute of Science and Technology, Korea University, Korea)</p>
10:00-12:00	<p><b>10:40-11:00</b>                  The Place of Standardization for Highly Robust GNSS Solutions                  J. GIRAUD<sup>1*</sup>, M. MONNERAT<sup>1</sup>, E. SCHIELIN<sup>2</sup>, L. PICCIRILLO<sup>3</sup>                  (Thales Alenia Space, France, France Développement Conseil, France, European Commission, Belgium)</p>	<p><b>10:40-11:00</b>                  Implementation of a Semi-dynamic Geodetic Datum for Indonesia: Status, Prospect and Constraint                  Hasanuddin Z. ABIDIN<sup>1*</sup>, SUSILO<sup>2</sup>, Irwan MEILANO<sup>1</sup>, Kosasih PRIJATNA<sup>1</sup>, M. Arief SYAFIT<sup>2</sup>                  (Institute of Technology Bandung (ITB), Geospatial Agency of Indonesia (BIG), Indonesia)</p>	<p><b>10:40-11:00</b>                  Comparison of the Performances of Three Algorithms to Estimate the Ionosphere Electron Content for Future SBAS Messages                  Guillaume BUSCARLET<sup>1</sup>, Sébastien TRILLES<sup>1</sup>, Mathias VAN DEN BOSSCHE<sup>1*</sup>, Jérémie BIGOT<sup>2</sup>                  (Thales Alenia Space, Université Bordeaux Victoire, France)</p>	<p><b>10:40-11:00</b>                  Design of a Vision based Lane Detection Method with an Evaluation Index for Autonomous Vehicles                  Kwiwoo PARK, Jun Gi PARK, Chansik PARK<sup>1</sup>                  (Chungbuk National University, Korea)</p>
	<p><b>11:00-11:20</b>                  A Novel Localization Algorithm using Received Signal Strength Difference                  Deok Won LIM<sup>1*</sup>, Jaemin KANG, Moon Beom HEO (Korea Aerospace Research Institute, Korea)</p>	<p><b>11:00-11:20</b>                  Latency Compensation Performance of Compact RTK in 30s Time Delay Environment                  Donghwan YOON<sup>1</sup>, Byungwoon PARK<sup>1*</sup>, Wan-Sik CHOI<sup>2</sup>, Changdon KEE<sup>3</sup>                  (Sejong University, Electronics and Telecommunications Research Institute, Seoul National University, Korea)</p>	<p><b>11:00-11:20</b>                  The EGNOS 2nd Generation Navigation Land Earth Station                  Damien KUBRAK<sup>1</sup>, Hanaa AL-BITAR (Thales Alenia Space, France)</p>	<p><b>11:00-11:20</b>                  Performance of Single-antenna GPS-based Attitude Integrated with Gyroscope and Magnetometer under GPS Outage                  Heekwon NO<sup>1</sup>, Am CHO<sup>2</sup>, Changdon KEE<sup>3*</sup>                  (Seoul National University, Korea Aerospace Research Institute, Korea)</p>
	<p><b>11:20-11:40</b>                  Design and Performance Comparison of GPS Spoofing Detection Techniques for Various Spoofing Scenarios                  Soon LIM<sup>1</sup>, Deok Won LIM, Moon Beom HEO (Korea Aerospace Research Institute, Korea)</p>	<p><b>11:20-11:40</b>                  Performance Evaluation of Multi-GNSS RTK for Automobile in Urban Areas                  Nobuaki KUBO<sup>1</sup>, Hiroko TOKURA, Taro SUZUKI (Tokyo University of Marine Science and Technology, Japan)</p>	<p><b>11:20-11:40</b>                  Ionospheric Delay Estimation Using Kriging for the Korean SBAS                  Eugene BANG, Jinsil LEE, Jiyun LEE<sup>1</sup>                  (Korea Advanced Institute of Science and Technology, Korea)</p>	<p><b>11:20-11:40</b>                  M&amp;S Software Architecture Design for Performance Evaluation of Integrated Terrestrial Radio Integrated Navigation System                  Moonsuk KOO<sup>1</sup>, Sang Heon OH<sup>2</sup>, Hyoungmin SO<sup>3</sup>, Dong-Hwan HWANG<sup>1*</sup>                  (Chungnam National University, Navcours Co., Ltd, Agency for Defense Development, Korea)</p>
	<p><b>11:40-12:00</b>                  Design of Method for Obtaining FDOA Measurements with High-resolution                  Jae Min KANG<sup>1*</sup>, Deok Won LIM, Sebum CHUN, Moon Beom HEO                  (Korea Aerospace Research Institute, Korea)</p>		<p><b>11:40-12:00</b>                  Introduction of Japanese SBAS Implementation Called MSAS                  Takeyasu SAKAI<sup>1*</sup>                  (Electronic Navigation Research Institute, Japan)</p>	<p><b>11:40-12:00</b>                  Vision-based Indoor Hallway Positioning without using Image Database                  Hyunho LEE<sup>1</sup>, Jaehun KIM, Chulki KIM, Minah SEO, Seok LEE, Soojung HUR, Taikjin LEE                  (Korea Institute of Science and Technology, Korea)</p>

**Program** October 24 (Fri)

12:00-13:00	Luncheon (Sorang Cafeteria)			
13:00-15:00	<b>I11: Indoor/Urban/Personal Navigation</b> <b>Chair:</b> <b>Cheon Sig SIN</b> (ETRI, Korea)	<b>I12: Simulation and Testing</b> <b>Chair:</b> <b>Sang Hyun PARK</b> (Korea Research Institute of Ships and Ocean Engineering, Korea)	<b>I13: SBAS/GBAS (2)</b> <b>Chair:</b> <b>Yongsun YUN</b> (Korea Aerospace Research Institute, Korea)	<b>I14: Air/Marine/Land Applications</b> <b>Chair:</b> <b>Hyung Keun LEE</b> (Korea Aerospace University, Korea)
	<b>13:00-13:20</b> <b>Development of WPAN and DR Integrated System for Indoor Multi Robot Localization</b> Jeong Hun OH, Sang Hoon YOO, Tae Kyung SUNG <sup>1</sup> (Chungnam National University, Korea)	<b>13:00-13:20</b> <b>Urban Vehicle Test for Reliable GPS Stand-alone Positioning in Weak Signal Environment</b> Sul Gee PARK, Se Phil SONG, Deuk Jae CHO <sup>1</sup> (Korea Research Institute of Ships & Ocean Engineering, Korea)	<b>13:00-13:20</b> <b>Integrity Monitoring for GPS/GLONASS Applied by Gaussian Sum Filter</b> Akio OTA <sup>1</sup> , Masaharu OHASHI <sup>1</sup> , Yukihiko KUBO <sup>1</sup> , Sueo SUGIMOTO <sup>1</sup> , Toshiaki TSUJII <sup>2</sup> , Takeshi FUJIWARA <sup>2</sup> , Tetsunari KUBOTA <sup>2</sup> ( <sup>1</sup> Ritsumeikan University, <sup>2</sup> Japan Aerospace Exploration Agency (JAXA), Japan)	<b>13:00-13:20</b> <b>A Performance Analysis of the Position Estimation for the Ground Vehicle Using Velodyne 3D Laser Scanner</b> Jun Hyuck IM, Gyu In JEE <sup>1</sup> (Konkuk University, Korea)
	<b>13:20-13:40</b> <b>Smartphone based 3D PDR System Development and Its Performance Analysis in Various Indoor Environment</b> Beomju SHIN <sup>1</sup> , Seok LEE <sup>2</sup> , Chulki KIM <sup>2</sup> , Jaehun KIM <sup>2</sup> , Changdon KEE <sup>1</sup> , Taikjin LEE <sup>2*</sup> ( <sup>1</sup> Seoul National University, <sup>2</sup> Korea Institute of Science and Technology, Korea)	<b>13:20-13:40</b> <b>Ionospheric Effect on Measurements of QZSS and BeiDou</b> Natsuki KINUGASA <sup>1</sup> , Ryuji KOHNO (Yokohama National University, Japan)	<b>13:20-13:40</b> <b>The Use of SBAS GIVE for Improving CAT-I GBAS Availability in the Korean Region</b> Moonseok YOON, Eugene BANG, Jiyun LEE <sup>1</sup> (Korea Advanced Institute of Science and Technology, Korea)	<b>13:20-13:40</b> <b>Development of Large-scale based TOA Localization System</b> Jeong-Min LIM <sup>1</sup> , Tae-Kyung SUNG <sup>2*</sup> ( <sup>1</sup> Wifive Co. Ltd., <sup>2</sup> Chungnam National University, Korea)
	<b>13:40-14:00</b> <b>Development of Indoor Pedestrian Navigation System using Location-dedicated WiFi AP and Smartphone Sensors</b> Sang-Hoon YOO <sup>1</sup> , Seung-Hun NAM <sup>2</sup> , Sung-Jin KIM <sup>1</sup> , Tae-Kyung SUNG <sup>1*</sup> ( <sup>1</sup> Chungnam National University, <sup>2</sup> Wifive Co. Ltd., <sup>3</sup> Automotive Technology Institute, Korea)	<b>13:40-14:00</b> <b>Multiple GNSS Simulator Test System for CRPA Testing</b> Lisa PERDUE <sup>1</sup> , Paul MYERS (Spectracom, USA)	<b>13:40-14:00</b> <b>An Analysis of the Effect of Multi-constellation GNSS on Maritime Augmentation Service</b> Sang Hyun PARK <sup>1</sup> , Ki Yeol SEO (Korea Research Institute of Ships and Ocean Engineering, Korea)	<b>13:40-14:00</b> <b>Autonomous Vehicle Navigation System using GPS/DR with both In-Vehicle Information and Yaw Rate Gyro</b> Jun Gi PARK, Kwiwoo PARK, Dong Sun LEE, Chansik PARK <sup>1</sup> (Chungbuk National University, Korea)
	<b>14:00-14:20</b> <b>IMU Sensor Calibration using PSO Algorithm</b> ByungSeok LEE <sup>1*</sup> , Joon Hwa LEE <sup>1</sup> , Hiesik KIM <sup>1</sup> , Moon-Beom HEO <sup>2</sup> , Gi-Wook NAM <sup>2</sup> ( <sup>1</sup> University of Seoul, <sup>2</sup> Korea Aerospace Research Institute, Korea)	<b>14:00-14:20</b> <b>GNSS Environment Monitoring Station (GEMS) : A Real Time Software Multi Constellation, Multi Frequency Signal Monitoring System</b> Damien KUBRAK <sup>1</sup> , Guillaume CARRIE, Damien SERANT (Thales Alenia Space, France)	<b>14:00-14:20</b> <b>Positioning Performance Comparison of NIORAIM Applied Single L1 Frequency GPS, GLONASS and Carrier Based Algorithms</b> Caner SAVAS <sup>1</sup> (Roketsan Missiles Industries, Inc., Turkey)	<b>14:00-14:20</b> <b>Robust Positioning Solution for Land Applications</b> Grégoire DUCHATEAU <sup>1</sup> , Michel MONNERAT (Thales Alenia Space, France)
	<b>14:20-14:40</b> <b>Development and Evaluation of Integration Algorithm for Personal Indoor Tracking System without Pre-installed Infrastructure</b> Sebum CHUN <sup>1</sup> , Moon-Beom HEO, Gi-Wook NAM (Korea Aerospace Research Institute, Korea)	<b>14:20-14:40</b> <b>A Development of Software Defined Real-Time Spoofing Device</b> Sung-Hyuck IM <sup>1*</sup> , Gyu-In JEE <sup>2</sup> , Eun-Sung LEE <sup>1</sup> , Mun-Beom HEO <sup>1</sup> ( <sup>1</sup> Korea Aerospace Research Institute, <sup>2</sup> Konkuk University, Korea)	<b>14:20-14:40</b> <b>GNSS Integrity Monitoring System in Malaysia</b> Ooi WH <sup>1*</sup> , Shahrizal I <sup>1</sup> , Noordin A <sup>1</sup> , Mustafa DS <sup>2</sup> , Musa TA <sup>2</sup> , Othman R <sup>2</sup> , Musliman IA <sup>2</sup> ( <sup>1</sup> Space Application and Technology Development Division, <sup>2</sup> GNSS & Geodynamics Research Group, Malaysia)	<b>14:20-14:40</b> <b>The AGNSS Supported by SBAS for a LBS Booming Market</b> Michel MONNERAT <sup>1</sup> (Thales Alenia Space, France)
		<b>14:40-15:00</b> <b>SPEED: As Real as Operational SBAS (A Step ahead SBAS Simulation)</b> M.A. PEN <sup>1</sup> , P. LARHANTEC, M. LARROQUE, J. A. GICQUEL (Thales Alenia Space, France)	<b>14:40-15:00</b> <b>WAAS Availability Before and After Dual Frequency</b> Bob STIMMLER, Tim SCHEMPP <sup>1</sup> (Raytheon Company, USA)	<b>14:40-15:00</b> <b>An Initial Attitude Estimation Method of RLL for Spinning Vehicle</b> Mi Hyun JIN <sup>1</sup> , Heon Ho CHOI <sup>1</sup> , Jo Yeong AHN <sup>2</sup> , Wan Ju KIM <sup>3</sup> , Chansik PARK <sup>4</sup> , Sang Jeong LEE <sup>1*</sup> ( <sup>1</sup> Chungnam National University, <sup>2</sup> HANWHA S&C Co. Ltd., <sup>3</sup> Agency for Defense Development, <sup>4</sup> Chungbuk National University, Korea)



**Program** October 23(Thu)

1F Lobby	
Poster Session	
13:00-17:00	<p><b>IPS01</b> <b>ESSP: A Successful Pan-European Certification Story</b> Philippe PIERRE* (ESSP, France)</p>
	<p><b>IPS02</b> <b>EGNOS Services Provision: A Success Story of SBAS Services Introduction in all Domains</b> Francisco-Javier DE BLAS FERNANDEZ* (ESSP, Spain)</p>
	<p><b>IPS03</b> <b>Design of Remote Monitoring System on Embedded Linux Platform for GPS/Vision Hybrid Positioning</b> Joonhoo LIM, Hee Sung KIM, Je Young LEE, Kwang Ho CHOI, Won Jae YOO, Hyung Keun LEE* (Korea Aerospace University, Korea)</p>
	<p><b>IPS04</b> <b>Vehicle Pose Estimation Using Probabilistic Map and Low-cost GPS Receiver</b> Byung-Hyun LEE<sup>1*</sup>, Jun-Hyuck IM<sup>1</sup>, Sung-Hyuck IM<sup>2</sup>, Moon-Beom HEO<sup>2</sup>, Gyu-In JEE<sup>1</sup> (<sup>1</sup>Konkuk University, <sup>2</sup>Korea Aerospace Research Institute, Korea)</p>
	<p><b>IPS05</b> <b>CAF Map Performance Analysis in COSPAS-SARSAT MEOSAR</b> Jaehyun KIM<sup>1*</sup>, Sanguk LEE<sup>1</sup>, Jaehoon KIM<sup>1</sup>, Woo-Geun AHN<sup>2</sup> (<sup>1</sup>Electronics and Telecommunication Research Institute, <sup>2</sup>Agency for Defense Development, Korea)</p>
	<p><b>IPS06</b> <b>Long Baseline GPS L1/L2 RTK with Estimating Tropospheric Zenith Wet Delays</b> Byung-Kyu CHOI<sup>1*</sup>, Kyoung-Min ROH<sup>1</sup>, Sang-Jeong LEE<sup>2</sup> (<sup>1</sup>KASI, <sup>2</sup>Chungnam National University, Korea)</p>
	<p><b>IPS07</b> <b>A Study on Deflection and Dynamic Characteristics Monitorign Analysis of Cable Stayed Bridge based on GNSS</b> Jae Kang LEE<sup>1*</sup>, Lukasz BONENBERG<sup>2</sup>, Oluropo OGUNDIPE<sup>2</sup>, Young Jin LEE<sup>3</sup> (<sup>1</sup>Korea Cadastral Survey Corp., Korea, <sup>2</sup>University of Nottingham, United Kingdom, <sup>3</sup>Kyung-il university, Korea)</p>
	<p><b>IPS08</b> <b>Integrity Monitoring of Satellite Orbit and Clock Solutions with a Real-Time Time Transfer Methodology</b> Youn-Jeong HEO<sup>1,2*</sup>, Eun-Sung LEE<sup>2</sup>, Moon-Beom HEO<sup>2</sup>, Gyu-In JEE<sup>1</sup> (<sup>1</sup>Konkuk University, <sup>2</sup>Korea Aerospace Research Institute, Korea)</p>
	<p><b>IPS09</b> <b>Using Point, Line or Surface Feature of Sensing Data for Pedestrian Positioning in the GPS Obstructed Area</b> C. C. CHANG*, Z. Y. LEE (Chien Hsin University of Science and Technology, Taiwan)</p>
	<p><b>IPS10</b> <b>Feature Initialization Method using Region of Constant Depth Model for Range-Only Mapping</b> Byungjae PARK, Wan Sik CHOI*, Woo Yong HAN (ETRI, Korea)</p>
	<p><b>IPS11</b> <b>Interoperability of Indoor Spatial Data for Indoor Location Based Services</b> Jae Jun YOO*, So Yeon LEE (ETRI, Korea)</p>
	<p><b>IPS12</b> <b>Multi-modal Interface based Navigation Application for Infotainment</b> Jin Woo KIM*, Wooyong HAN (ETRI, Korea)</p>
	<p><b>IPS13</b> <b>Design of Adaptive Doppler Aided Carrier-Smoothed-Code Filter based on Signal-to-Noise Ratio Observables</b> Hee-Sung KIM, Je-Young LEE, Joon-Hoo LIM, Sung-Jin KANG, Hyung-Keun LEE* (Korea Aerospace University, Korea)</p>
	<p><b>IPS14</b> <b>Multipath Parameter Estimation Using the Unscented Particle Filter Based Code Tracking Loop for Non-Gaussian Noises</b> Dah-Jing JWO*, Chia -Sheng HSU (National Taiwan Ocean University, Taiwan)</p>
	<p><b>IPS15</b> <b>GNSS Spoofing Mitigation Method using Adaptive Fading Factor</b> Sun Young KIM<sup>1</sup>, Chang Ho KANG<sup>1</sup>, Chan Gook PARK<sup>2*</sup>, Ki Hoon LEE<sup>3</sup>, Myeong Jong YU<sup>3</sup> (<sup>1</sup>Seoul National University, <sup>2</sup>Seoul National University, <sup>3</sup>Agency for Defense Development, Korea)</p>
	<p><b>IPS16</b> <b>A Peak Detection Algorithm Based on Histogram</b> Woo-Hyun AHN<sup>1</sup>, Jong-Won CHOI<sup>1</sup>, Dong-Kyu LEE<sup>2</sup>, Ji Hyun ROH<sup>2</sup>, Bo-Seok SEO<sup>1*</sup> (<sup>1</sup>Chungbuk National University, <sup>2</sup>Samsung Thales, Korea)</p>
	<p><b>IPS17</b> <b>Analysis of the Effects of Stochastic Models on Ambiguity Validation Tests</b> Jaeyoung KO, Younghoon HAN, Mi Young SHIN, Deuk Jae CHO* (Korea Research Institute of Ships &amp; Ocean Engineering (KRISO), Korea)</p>
	<p><b>IPS18</b> <b>Null Pattern Analysis of Spatial Filter for Swept CW Jamming Signal</b> Yun Sub CHOI<sup>1</sup>, Heon Ho CHOI<sup>1</sup>, Chansik PARK<sup>2</sup>, Sang Jeong LEE<sup>1*</sup> (<sup>1</sup>Chungnam National University, <sup>2</sup>Chungbuk National University, Korea)</p>

**Program** October 23(Thu)

13:00-17:00	IPS19	<b>Study on Tropospheric Attenuation Effect of Milimeter Wave Signal in Space for Next Generation GNSS</b> Sangkyung SUNG <sup>1*</sup> , Jungkeun PARK <sup>1</sup> , Jun-Pyo PARK <sup>2</sup> , Young Jae LEE <sup>1</sup> ( <sup>1</sup> Konkuk University, <sup>2</sup> Agency for Defense Development, Korea)
	IPS20	<b>Simulation of Co-Pilot in PreScan</b> Samyeul NOH <sup>*</sup> , Jinwoo KIM, Woo-Yong HAN (ETRI, Korea)
	IPS21	<b>Testing and Simulation of Inertial Navigation System (INS) Simulation Software for Verification of INS-aided GNSS Systems</b> Junwoo JUNG <sup>1*</sup> , Sung-Woo JO <sup>1</sup> , Gijung YANG <sup>1</sup> , Sungyeol PARK <sup>1</sup> , Chung-Hyung LEE <sup>1</sup> , Haengik KANG <sup>1</sup> , Kap-Jin KIM <sup>2</sup> ( <sup>1</sup> LIG NEX1, <sup>2</sup> Agency for Defense Development, Korea)
	IPS22	<b>GPS Spoofing Detection Using Tracking Antenna-Movement Effects</b> Myeong-Sook JEONG <sup>*</sup> , Joong-Won BAE, Hyang-Sig JUN (Korea Aerospace Research Institute, Korea)
	IPS23	<b>GPS Spoofing Detection Using GPS Antenna-Movement Effects</b> Chang Ho KANG <sup>1</sup> , Sun Young KIM <sup>1</sup> , Chan Gook PARK <sup>1*</sup> , Jung Min JOO <sup>2</sup> , Moon Beom HEO <sup>2</sup> ( <sup>1</sup> Seoul National University, <sup>2</sup> Korea Aerospace Research Institute, Korea)
	DPS01	<b>Development of 2.4 m L-band Tracking Antenna Automatic Control and Data Evaluation Program</b> Jung-Min JOO <sup>*</sup> , Joo-Kyoung KIM, Moon-Beom HEO (Korea Aerospace Research Institute, Korea)
	DPS02	<b>Using Extrapolation Methods to Extending Ionosphere Map Coverage Area</b> Jeongrae KIM <sup>1*</sup> , Mingyu KIM <sup>1</sup> , Young Jae LEE <sup>2</sup> , Sung Chun BU <sup>3</sup> , Chul Soo LEE <sup>3</sup> ( <sup>1</sup> Korea Aerospace University, <sup>2</sup> Konkuk University, <sup>3</sup> LIG Nex1 Co., Korea)
	DPS03	<b>Sensitivity Analysis of Ephemeris Fault Detection Algorithm based on Baseline Length Estimation Method</b> Jongsun AHN <sup>1</sup> , Hyang-sig JUN <sup>2</sup> , Chan-Hong YEOM <sup>2</sup> , Sangkyung SUNG <sup>1</sup> , Young Jae LEE <sup>1*</sup> ( <sup>1</sup> Konkuk University, <sup>2</sup> Korea Aerospace Research Institute, Korea)
	DPS04	<b>Performance Evaluation for Relative Navigation by Ground Vehicles Experiment</b> Je Young LEE <sup>1</sup> , Hee Sung KIM <sup>1</sup> , Kwang Ho CHOI <sup>1</sup> , Joonhoo LIM <sup>1</sup> , Sebum CHUN <sup>2</sup> , Hyung Keun LEE <sup>1*</sup> ( <sup>1</sup> Korea Aerospace University, <sup>2</sup> Korea Aerospace Research Institute, Korea)
	DPS05	<b>Secured Search and Rescue Signal using Return link Service in COSPAS-SARSAT MEOSAR</b> Jaehyun KIM <sup>1*</sup> , Sanguk LEE <sup>1</sup> , Yoojin BAEK <sup>2</sup> , Taenam CHO <sup>2</sup> , Woo-Geun AHN <sup>3</sup> ( <sup>1</sup> Electronics and Telecommunication Research Institute, <sup>2</sup> Woosuk University, <sup>3</sup> Agency for Defense Development, Korea)
	DPS06	<b>Real Implementation of Construction Field Support System using 3D Positioning and Wireless Communication</b> Hyun-Soo KIM <sup>1*</sup> , Hyun-Young CHOI <sup>1</sup> , Bo-Hyoung LEE <sup>2</sup> , Chang-Yeon YUN <sup>2</sup> ( <sup>1</sup> Telit Wireless Solutions, <sup>2</sup> Doosan Engineering & Construction, Korea)
	DPS07	<b>Establishment and Management of LX GNSS Network for Cadastral Surveying and Spatial Information Acquisition</b> Jihyun HA <sup>*</sup> , Hyun-Ho KIM, Wan-Seok JUNG, Sang-Gu KANG (LX Korea Cadastral Survey Corp., Korea)
	DPS08	<b>Development of the Data Quality Analysis Software For the Korean GNSS Continuously Operating Reference Station</b> Yong Hui PARK <sup>1*</sup> , Jun-Cheol MOON <sup>2</sup> ( <sup>1</sup> Dusitech Co., Ltd., <sup>2</sup> National Radio Research Agency Korean Space Weather Center, Korea)
	DPS09	<b>A Research on Availability Decision for Satellite Navigation Signal in Jamming Environment</b> Ju-Hyun OH <sup>*</sup> , Joon-Sung BAE, Heung-Won PARK (Agency for Defense Development, Korea)
	DPS10	<b>Identification of Available Satellite based on WDOP Sensitivity</b> Chan-Sik KIM <sup>1</sup> , Chul-Soo LEE <sup>2</sup> , Sung-Chun BU <sup>2</sup> , Sang-Kyung SUNG <sup>1</sup> , Young-Jae LEE <sup>1*</sup> ( <sup>1</sup> Konkuk University, <sup>2</sup> LIG Nex1 Company, Korea)
	DPS11	<b>GPS Quality Monitoring Result Analysis using GPS Signal Tracking Antenna Control Program</b> Joo Kyoung KIM <sup>*</sup> , Jung Min JOO, Moon Beom HEO (Korea Aerospace Research Institute, Korea)
	DPS12	<b>Multi-jamming Test Method of Anti-jamming GNSS Receiver</b> Jong-Chul HYUN <sup>1*</sup> , Byoung-Sun AHN <sup>1</sup> , Hyun-Hee WON <sup>1</sup> , Seung-Mok HAN <sup>1</sup> , Jun-Sung BAE <sup>2</sup> , Ju-Hyun O <sup>2</sup> ( <sup>1</sup> LIGNEX1, <sup>2</sup> Agency for Defense Development, Korea)
	DPS13	<b>Development of MATLAB GUI Based Simulation Tool for Generating GPS Measurements</b> Dong-Uk KIM <sup>1</sup> , Ho YUN <sup>1</sup> , Young-Doo KIM <sup>1</sup> , June-Sol SONG <sup>1</sup> , Deok-Hwa HAN <sup>1</sup> , Sun-Koung YU <sup>1</sup> , Chang-Don KEE <sup>1*</sup> , Hyoung-Min SO <sup>2</sup> , Ki-Hoon LEE <sup>2</sup> ( <sup>1</sup> Seoul National University, <sup>2</sup> Agency for Defense Development, Korea)
DPS14	<b>Flight Test Method of Integrated Navigation System for GPS Guided Bombs</b> Kyoung Hwan JO <sup>1*</sup> , Seung Bok KWON <sup>1</sup> , Dong Ho SHIN <sup>2</sup> ( <sup>1</sup> LIGNEX1, <sup>2</sup> ADD, Korea)	
DPS15	<b>Performance Comparison between Space and Nuclear R&amp;D Program using DEA(Data Envelopment Analysis)</b> Seong-Baek KIM <sup>*</sup> , Deok-Hyun LEE, Jeong-Pyo WOO, Young-Eun KANG, Seok-Min CHO, Gye-Seok LEE, In-Ho KIM (National Research Foundation of Korea, Korea)	
DPS16	<b>Control &amp; Display Unit Design for Jamming Wave-front Simulator</b> A-Ra CHOI, Seong-Han CHO, Il-Kyu PARK, Sang-Jun YUN, Seok-Bo SON <sup>*</sup> (Navcours, Inc., Korea)	
DPS17	<b>A Development of Integrated Monitoring and Navigation Satellite Jamming Integrated Monitoring System</b> Jin-Ho JEONG, Jin-Mo PARK <sup>*</sup> , Yong-Hi PARK (Dusitech co. Ltd., Korea)	
DPS18	<b>Study on the Interference Signal Simulation for GNSS Frequency Bands</b> Cheon Sig SIN <sup>*</sup> , Tae Hee KIM, Jae Hoon KIM (Electronics and Telecommunication Research Institutes, Korea)	