Call for Abstracts
Abstracts due March 10, 2016
ABSTRACT SUBMISSION REQUIREMENTS

We recommend that you apply for a visa at least three months in advance. Travelers from All technical sessions will be held at the Oregon Convention Center. Remember, make your hotel reservations by August 12 to get the discounted ION GNSS+ rates, and a map. Click the "reserve now" button and follow the directions. You will receive an immediate online confirmation.

APPLICATIONS AND ADVANCES TRACKS

Content: Abstracts should describe objectives, anticipated or actual results, conclusions, any key innovative steps and the significance of your work.

Acceptance: Acceptance to the ION GNSS+ conference is competitive. Speakers will be notified of acceptance after May 5 and will be provided with an electronic presentation kit with presentation and publication guidelines. All authors attending are required to pay registration fees.

Proceedings Publication: Presentations submitted through AMP by September 23 will be included in the proceedings. A full technical paper is optional and may be published on a voluntary basis. Presentations not representative of the original abstract submitted will NOT be included in the conference proceedings, regardless of whether or not they were presented at the conference, and may affect the acceptance of future abstracts. Presentations and/or papers submitted in these tracks are not eligible for peer-review.

RESEARCH AND INNOVATIONS TRACKS

Content: Extended abstracts (500-2500 words) are required. Abstracts should describe objectives, anticipated or actual results, conclusions, key innovative steps and the significance of your work. Abstracts not meeting the 500 word minimum shall not be forwarded to the program committee for review.

Peer Review Option: Authors whose abstracts are accepted in these sessions (either as a primary or an alternate presenter) will have the option to have their paper peer reviewed. Peer reviews will be accomplished by two independent reviewers and supervised by an independent committee. To be eligible for peer review: 1) this option must be selected at the time of abstract submission; 2) completed manuscript must be uploaded to AMP by June 30; 3) manuscript must pass initial peer review (note that there will be no secondary reviews, but minor corrections may be recommended or required by the reviewers); 4) one of the authors must be present at the conference and prepared to present the paper when called upon to do so; and 5) one of the authors must volunteer to conduct reviews of a small number of other papers submitted to this conference (as one of the two independent reviewers).

Acceptance: Acceptance to the ION GNSS+ conference is competitive. Speakers will be notified of acceptance after May 5 and will be provided with an electronic presentation kit with presentation and publication guidelines. All authors attending are required to pay registration fees.

Proceedings Publication: Papers meeting all the peer review requirements will be designated as "peer reviewed" in the conference proceedings. Papers not meeting the peer review requirements will still be published in the proceedings but without the peer reviewed designation. Manuscripts not representative of the original abstract submitted will NOT be presented or included in the conference proceedings. While final manuscripts are required, authors may be recommended or required by the reviewers; 4) one of the authors must be present at the conference and prepared to present the paper when called upon to do so; and 5) one of the authors must volunteer to conduct reviews of a small number of other papers submitted to this conference (as one of the two independent reviewers).

PROCEEDINGS PUBLICATION

Outstanding technical papers will be reviewed for possible publication in the ION's archival journal navigation indexed for Thomson Reuters. See http://mc.manuscriptcentral.com/navigation for more information.

For updated conference information, see www.ion.org
**TRACK A: MASS MARKET AND COMMERCIAL APPLICATIONS**

**Track Chair:** Dr. Brent Ledvina, Virginia Tech

**Current Advances in Indoor Location (with demonstrations)**
Over the past few years, substantial improvements in indoor positioning have occurred ushering in commercial indoor positioning services. This session focuses on enhancements beyond the current state-of-the-art, including sensing using magnetic fields, visual light communication, ultrasonics, video, etc. Demonstrations of working solutions are integral.

*Co-Chairs:* Dr. Lauri Wirola, HERE, Finland and Will Morrison, Qualcomm

**Next-generation Sensors in Phones, Tablets and Wearables**
Sensors in today’s mobile devices continue to improve in terms of precision and cost; thereby providing improvements in positioning, navigation, and proximity. This session focuses on the individual sensors themselves with improvements in existing sensors and new sensors that do not currently reside in today’s phones, tablets or wearables.

*Co-Chairs:* Dr. Anthony Rowe, Carnegie Mellon University and Steve Malkos, Google

**Location and Proximity Authentication in Mobile Consumer Applications**
Focusing on when GNSS signals are overly relied upon, with specific interest in proximity authentication, but have known weaknesses. Forthcoming consumer autonomous vehicle applications will require location or proximity authentication. The focus of this session is on existing and new applications, with specific interest in practical solutions to defense and improved security models.

*Chair:* Dr. Cécile Mongrédien, u-Blox, Germany

**Autonomous Systems – Non-GNSS and Sensor Positioning**
Focuses on when GNSS signals are overly relied upon, with specific interest in improvements in non-GNSS radio and sensor positioning technologies and techniques for autonomous systems.

*Co-Chairs:* Dr. Kyle O’Keefe, University of Calgary, Canada and Dr. Bernard Schnauffer, Rockwell Collins

**Mobile Device Antennas**
Focuses on improved antenna designs, better antenna sharing, mitigation of interference, and signal processing techniques to remedy non-ideal antenna performance.

*Chair:* Dr. Todd Humphreys, University of Texas at Austin

**Panel: Urban Navigation**
Mobile positioning in urban environments continues to be a frustrating experience for users where position errors can be as large as a couple city blocks in deep urban canyons. This panel will present and debate candidate practical strategies to overcome these large errors.

*Organizers:* Fergus Noble, Swift Navigation and Steve Mole, Broadcom

**TRACK B: HIGH PERFORMANCE AND SAFETY CRITICAL APPLICATIONS**

**Innovative solutions and projects within a wide range of applications that demand high accuracy, high integrity, or that must operate in demanding environments.**

**Track Chair:** Dr. Alex Stratton, Rockwell Collins

**Aerospace Applications**
Current and future applications of GNSS and related technologies in aviation and space. Technologies to enhance safety and improve efficiency of air operations and space missions. Aircraft integration of GNSS technologies for civil aviation, such as performance-based navigation, air traffic management, approach, landing and airport surface navigation. GNSS applications in the space domain to include orbit and attitude determination, orbital maneuvering, rendezvous and docking, and formation flight. Airborne GNSS and sensor integrations for current and novel applications including remote sensing, radio occultation, and aerial photogrammetry.

*Co-Chairs:* Jim Miller, NASA and Dr. Sanjeev Gunawardena, Air Force Institute of Technology

**Marine Applications**
The use of GNSS and related technologies in marine applications. Concepts, innovation and progress in marine navigation (more accurate speed and heading, in particular when the vessel departs and arrives in port), autonomous vessels, managing vessel traffic, Safety of Life at Sea, buoy placement, underwater surveying, navigational hazard location and mapping and other marine activities such as fishing, oceanography and oil and gas exploration. GNSS augmentations, marine standards and integration with other vessel sensors.

*Chair:* Dr. Alan Grant, General Lighthouse Authorities, U.K.

**Land-Based Applications**
Technological and end user developments that enable robust, high performance positioning capability for land-based applications. Technologies to address safety aspects of land-based vehicle navigation. Sensor fusion, new algorithms, GNSS augmentation and multi-GNSS system use to improve performance in accuracy, availability, reliability. Example applications include precision farming, land mobile mapping, vehicle guidance, advanced driver assistance and collision avoidance, vehicle to vehicle (V2V) communication, road tolling, construction and machine control.

*Co-Chairs:* Dr. Di Qiu, Polaris Wireless and Dr. Kyle Snow, TOPCON Positioning Systems

**Precise Point Positioning (PPP) and L-band Services**
PPP techniques based on corrections generated using data from global reference networks. Provision of new products and services enhancing PPP performance, including network-based techniques, integer ambiguity resolution methods, spectral efficient communication methods, and multi-GNSS/frequency solutions. Applications and performance characterization of navigation services (IGS, Omnistar, Trimble, Veripos, etc.). Use cases and applications highlighting the benefits and challenges of PPP solutions from a user perspective.

*Co-Chairs:* Dr. Altti Jokinen, NovAtel, Canada and Bobby Johnson, Veripos, U.K.

**Military Applications**
High performance or safety-critical positioning, navigation, timing or geolocation application in a military context. Military applications of GNSS and related technologies in air, marine, land and space environments. Multi-constellation GNSS integration considerations for military systems. Considerations for using military technology in civil environments. Considerations for challenging, degraded, and GNSS-denied environments (e.g., RF interference). Note: Abstract and all presentation material must be approved for public release and submitted through ION’s Abstract Management Portal.

*Co-Chairs:* John Nielson, Rockwell Collins and Tom Löffler, Diehl, Germany

**GNSS + Augmentations for High Performance and Safety Critical Applications**
High-performance and safety-critical applications using Space-Based and Ground-Based Augmentation Systems (SBAS and GBAS), Advanced Receiver Autonomous Integrity Monitoring (ARAIM) and integration with other systems such as inertial and other radio navigation aids. Advancements that enhance user performance, efficiency and safety. Application of these technologies to UAS and operations of UAS in civil airspace.

*Co-Chairs:* Dr. Gary McGraw, Rockwell Collins and Boubeker Belabbas, German Aerospace Center (DLR), Germany

**Panel: Unmanned Safety Certification**
Certification and operational approval of high-performance unmanned aerial systems (UAS). Progress on technical standards and policies for certifying and approving UAS, technology advancements that address operational hazards, security and privacy issues; technology gaps and vulnerability issues associated with UAS in civil airspace; roadmaps and plans for UAS certification.

*Organizers:* Mitch Narins, U.S. Federal Aviation Administration and Brandon Suarez, General Atomics
**Other Sensors in Today’s Marketplace**

### TRACK C: SYSTEM UPDATES, PLANS AND POLICIES

**Track Chair:** Dr. Kurt Zimmerman, Trimble

**Complementary PNT (CPNT)**
Novel methods to obtain position and timing information in impaired environments. Alternative and hybrid location methods suitable for consumer products are to be covered including: positioning using Wi-Fi, cellular tower ranging, RFID, Bluetooth, Near Field Communication (NFC), Digital Audio Broadcast (DAB), Digital TV etc.; orientation and motion estimation from image/LiDAR/LaDAR sequences; and map/terrain/landmark matching techniques. Collaborative positioning methods are of interest as are combinations of the above methods with inertial sensor measurements. Other topics may include DME, LORAN, LDACS and other forms of CPNT.

**Co-chairs:** Dr. Paul McBurney, GopherHush and Nicolas Schneckenburger, German Aerospace Center (DLR), Germany

**Interference and Spectrum Protection**
Protection of GNSS RF (RNSSS) bands through national and international policy and regulations. Effects of interference on the GNSS RF bands and risks to raising the noise floor. Effect of interference on safety critical applications. Distinguishing fundamental differences between RF communication and RF navigation. Interference detection, characterization, geolocation, and mitigation techniques. Effects of interference on GNSS receivers, receiver design trade-offs, acquisition and tracking performance and navigation integrity performance. Civilian anti-jam and anti-spoof technology, spoof rejection.

**Co-chairs:** Scott Burgett, Garmin and Dr. David Choi, The MITRE Corporation

**Modernization of GNSS**
New civil, military and governmental user capabilities and performance, including availability and accuracy improvement concepts. GNSS services including open and authorized services, search and rescue services, and commercial services; optimization of GNSS signal structure, codes and data message; radio-frequency compatibility and interoperability among different systems; concepts for interchangeability of GNSS constellations; analysis of system performance, mutual interference, impact on noise floor; tools for assessment of RF compatibility and GNSS signal symbols. Other topics may include frequency coordination and protection issues; spectrum management and policy; modernized constellations characteristics and programmatic aspects, ground control and monitoring segments; performance analysis of new satellites; user equipment architecture and design; integration with regional augmentation systems and use of those new systems to support future applications.

**Chair:** Dr. Stuart Riley, Trimble

**GNSS Augmentation Systems and Integrity**
Novel integrity concept development for multi-constellation GNSS users and receivers. Implications of GNSS integrity for automated navigation, including aviation, automotive, rail, maritime and other transportation applications. Integrity impact of external threats (spoofing) and GNSS faults (satellite and constellation failure modes). Monitoring, fault exclusion, and protection level algorithms and requirements for RAIM and ARAIM. Dissemination of integrity support information via high and low capacity data channels from SBAS and GBAS. Impact of RF interference on GNSS integrity.

**Co-chairs:** Dr. John Betz, The MITRE Corporation and Dr. José Ángel Ávila Rodríguez, ESA, The Netherlands

**PNL: Status of GPS, GLONASS, Galileo, BeiDou, IRNSS and QZSS**
System overviews, summarize current or planned characteristics and performance, reports recent programmatic events, updated scheduled and plans, and summarized ongoing interactions with other service providers.

**Organizers:** Dr. John Betz, The MITRE Corporation and Dr. José Ángel Ávila Rodríguez, ESA, The Netherlands

**PNL: PNT Privacy and Security**
An update about current and planned location based services with a focus on the trade-off of utility and privacy. Methods of privacy protection shall be addressed.

**Organizer:** Oscar Pozzobon, QASCOM S.R.L., Italy

**PNL: Navigation 2026**
What will navigation systems look like in 10 years’ time? What will the dependence or co-dependence of GNSS and augmentation technologies look like? How will today’s spectrum policy decisions impact the realizable potential of PNT and investments made in GNSS satellites? Which will be the dominant technologies? What performance can we expect? What will the new applications be?

### TRACK D: MULTISENSOR NAVIGATION

**Track Chair:** Dr. Michael Veth, Veth Research Associates

**Multisensor Navigation in Challenging Environments**
Multisensor applications in precision agriculture, guidance and control of vehicles, deformation monitoring, directional drilling, indoor positioning for first responders, portals and navigation systems, rapid mobile mapping, crowd-sourced mapping and integration and other novel applications. Algorithms and methods for high-performance applications with lower cost sensors, different online and high efficiency calibration techniques, usage of constraints and updates for overall improvement of the results, gravity models, and partial and redundant IMUs for enhanced navigation, guidance or control algorithms.

**Co-Chairs:** Dr. Patrick Roberson, Google and Dr. Gert Trommer, Karlsruhe Institute of Technology, Germany

**Advanced Inertial Sensing and Algorithms**
The latest developments in inertial system technologies that are enabling higher performance and reliability in lower size, weight, power and cost (SWAP-C) form factors. Novel system architectures and emerging inertial instrument and augmentation sensors and systems that furnish superior performance and accuracy via multi-sensor integration. Advances in optical, MEMS solid state and cold atomic inertial instruments. Novel fabrication and manufacturing processes relevant to system miniaturization, reliability improvements and integration.

**Co-chairs:** Ralph Hopkins, C.S. Draper Laboratory and Wayne Soehren, Honeywell

**Remote Sensing, Timing, and Clock Technology**
GNSS and other techniques for remote sensing. Precision timing and clock technology. GNSS Earth observation techniques; radio occultation measurements of the troposphere and ionosphere; reflectometry for environmental remote sensing of land, ocean and ice, and detection of natural hazards such as earthquakes, tsunamis, and volcanic eruptions. Technical advances of both COTS and specialized systems for space applications; constellation navigation and attitude determination; GNSS metrology and its applications; advances in precision timing; multi-GNSS or other multi-sensor approaches for timing and time transfer applications; reliability and sustainability of timing solutions secure communications and computer networking.

**Co-chairs:** Edward Powers, U.S. Naval Observatory and Dr. John Raquet, Air Force Institute of Technology

**Navigation Using Environmental Features**
New navigation techniques using natural and man-made features of the surrounding environment: visual features, terrain height signatures, magnetic and gravitational fields, celestial objects, sferics, magnetic and gravitational fields, stars, microclimate, acoustic features, odors and particulates, shadow, occlusions, and more. Environmental features may be used for position fixing, dead reckoning, or both. Session will focus on new feature classes, new sensors, and/or new algorithms including new signal processing techniques for environmental features; feature classification and recognition; cooperative data distribution and 3-D mapping; managing ambiguity; new positioning algorithms using proximity, pattern matching, ranging, and/or angular positioning; and navigation using multiple classes of environmental feature and context detection.

**Co-chairs:** Dr. Paul D. Groves, University College London, U.K. and Donald Venable, Air Force Research Laboratory, Sensors Directorate

**Cooperative and Collaborative Navigation**
Techniques for exploiting network connectivity to assist and improve navigation and navigation-related solutions. Efforts for supplying accurate up-to-date information to navigation processors, sharing of data for relative navigation solutions within a defined group, multi-node collaborative signal processing, and providing pertinent navigation-related information for activities such as search and rescue, autonomous cooperative systems, and other applications requiring complex coordination. Efforts and technologies that support the ability for navigation systems to share information among a number of other devices, synergistically improving overall performance. The use of network-connected devices for applications such as smartphones, navigation apps, GNSS-based personal navigation systems with online maps, robotic networks, etc. Papers that validate navigation mechanizations with experimental results are strongly encouraged.

**Co-chairs:** Dr. Kevin Brink, Air Force Research Laboratory, Munitions Directorate and Dr. Andrey Soloviev, QuNav

**PNL: Assured PNT**
Experts from government and industry will address current issues and cutting-edge solutions for providing assured PNT in a range of environments and scenarios.

**Organizers:** Dr. Christoph Günther, German Aerospace Center (DLR), Germany and Logan Scott, LS Consulting

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**2016 • Show Dates: September 14—15, 2016 • Tutorials: September 12—13, 2016 •**
Innovative algorithms and methods that improve GNSS position, navigation and time (PNT) performance now and into the next era of multi-GNSS multi-frequency capabilities.

Track Chair: Dr. Heidi Kuusniemi, Finnish Geospatial Research Institute, Finland

**Advances in GNSS Software-defined Receivers**
Recent advances in software-defined GNSS receivers and associated processing methods. Multi-constellation, multi-frequency receivers, tracking new and/or modernized GNSS, advanced estimators and filters, vector-based implementations, assisted processing, low C/N0 signal acquisition and tracking, real-time processing, direct sampling front-end architectures, processing efficiency and computational load, autonomy and reliability. Novel GNSS front-end technologies, open source projects, and the use of software radio standards and tools.

Co-chairs: Dr. Thomas Pany, IFEN GmbH, Germany and Dr. Pau Closas, Centre Tecnològic de Telecomunicacions de Catalunya, Spain

**GNSS Receiver Processing and Navigation Algorithms**
GNSS receiver processing methods and navigation algorithms developed around the use of multi-constellation and multi-frequencies. Developments that improve the performance and efficiency of GNSS receiver technology. Multi-constellation and multi-frequency implementation and studies, methods of exploiting multiple GNSS signals for positioning, multipath mitigation techniques exploiting multiple frequencies and/or constellations, estimation techniques and algorithms, integrity and reliability enhancements from multi-GNSS and/or multiconstellation and/or other sensors and signals.

Co-chairs: Dr. Laura Ruotsalainen, Finnish Geospatial Research Institute, Finland and Dr. Aiden Morrison, SINTEF, Norway

**Next Generation RF and Digital Signal Processing Receiver Techniques**
Developments in the design and practical implementation of GNSS receivers using the latest RF and digital signal processing technologies that improve the performance and efficiency of GNSS receiver technology for typical suburban, urban or indoor reception conditions. Front-end architectures and design considerations, bandwidth and filter selections, improved methods and algorithms for acquisition, tracking and data demodulation (high-sensitivity, robustness to multipath, robustness to NLOS, use of assistance, robust carrier phase tracking) adapted to current or new signals, multi-constellation receiver algorithms, multi-frequency algorithms.

Co-chairs: Dr. Fabio Dovis, Politecnico di Torino, Italy and Dr. Gonzalo Seco-Granados, Universitat Autònoma de Barcelona, Spain

**Methods for Authentication and Anti-spoofing**
Methods for authentication of geospatial data, including approaches such as GNSS signal design, receiver based anti-spoofing techniques, and use of external infrastructure. Detection, characterization, localization and mitigation of jammers and spoofers, and methods for authenticating map and database information.

Co-chairs: Dr. Daniele Borio, European Commission, Joint Research Centre, Italy and Dr. Andriy Konovaltsev, German Aerospace Center (DLR), Germany

**Signal Processing for Degraded Environments**
Signal processing developments that improve the performance of GNSS receivers and navigation under degraded signal conditions caused by severe multipath, NLOS, interference, scintillation, high dynamic conditions and other effects such as near-far effects from pseudolites. Signal processing algorithms and methods, receiver designs, potentially using multi-frequency multi-GNSS capability or sensor aiding, with an emphasis on the improvement of reliability, availability and/or accuracy of the PVT solution. Experimental tests in real environments as well as models of disturbance effects on GNSS measurements are of interest.

Co-chairs: Dr. Olivier Julien, ENAC, France and Dr. Ali Broumandan, University of Calgary, Canada

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**Track F: Advanced GNSS Technologies**

**Track Chair: Dr. Jiyun Lee, KAIST, South Korea**

**GNSS Augmentation Systems and Integrity**
Novel integrity monitoring concept operable in the multi-constellation GNSS environment using multi- or a single frequency receiver. Augmentation of GNSS positioning in the aviation, maritime, rail, automotive and other transportation applications (with additional ground infrastructure or self-confident). Robustness of the receiver algorithms to the local interferences (ionospheric scintillations, multipath, spoofing and etc.). Fault mode definition, monitoring process and exclusion techniques (e.g. RAIM, ARAIM), integrity monitoring design and its critical elements. Evaluation of continuity and availability for the targeted service area. Dissemination of integrity support information via high and low capacity data channels from SBAS and GBAS. Broadcast of data formats through other available data.

Co-chairs: Jolana Dvorska, Honeywell and Victoria Kropp, University FAF Munich, Germany

**GNSS Resilience Technologies**
Algorithms and techniques for improving the resilience of GNSS PNT against intentional and unintentional sources of radio interference. Detection, characterization, localization and mitigation of interference, jammers or spoofers, as well as impact analysis, trials and test results across a range of application domains.

Co-chairs: Dr. Grace Gao, University of Illinois at Urbana-Champaign and Dr. Andriy Konovaltsev, German Aerospace Center (DLR), Germany

**UAV Navigation**
New navigation or positioning techniques applicable to UAV applications. Requirements for position, velocity and attitude information feeding both control systems and payload systems. Absolute and relative positioning/navigation requirements and performance achieved by GNSS (positioning and attitude with a multi antenna system), GNSS/INS, combinations of other aiding sources, such as feature based navigation. Specific UAV applications, their requirements, and particular challenges or constraints. Map building for UAV operations. Sense and obstacle collision avoidance.

Co-chairs: Dr. Demoz Gebre-Egziabher, University of Minnesota and Adrien Perkins, Stanford University

**Atmospheric Science and Space Applications**
Tropospheric and ionospheric modeling, measurements, and algorithms to compensate for atmospheric errors. Novel methods for data collection, processing and analysis. Characterization of propagation environments. Ionospheric scintillation studies and impacts on GNSS services and applications. Space weather and terrestrial weather applications. New ground-based and space-based GNSS networks and experiments. GNSS data assimilation methods for scientific investigations of the atmosphere and modeling the effects of wave propagation. Technical advances of both COTS and specialized systems for space applications; topics in constellation navigation and attitude determination; GNSS metrology and its applications.

Co-chairs: Dr. Gray Bust, The Johns Hopkins University Applied Physics Laboratory and Dr. Susumu Saito, ENRI, Japan

**High Precision GNSS Positioning**
New algorithms and methods in support of high precision GNSS positioning for any kind of application. Cycle slip detection, rapid ambiguity resolution over long baselines, multi-GNSS and multi-frequency network RTK; algorithms and methods for improving the convergence and accuracy of PPP techniques, PPP ambiguity resolution for GLONASS, Galileo, BDS; performance evaluation of positioning and navigation systems; PPP-RTK in wide areas, integration of network RTK and PPP-RTK; methods for precise prediction of satellite orbits and clocks; estimation and assessment of inter-system, inter-frequency and other relevant biases for multi-frequency GNSS; functional models and novel numerical approaches, attitude determination using multiple antennas, carrier phase multipath mitigation, algorithms for remote sensing using GNSS signals, and algorithms for precise positioning in urban environment.

Co-chairs: Dr. Jianghui Geng, Wuhan University, China and Dr. Byungwoon Park, Sejong University, South Korea

**UAV Navigation**
Safety and performance related aspects of navigating unmanned aerial systems (UAS) in civil airspace. Questions addressed may include: What progress is being made and what specific issues are being addressed in the development of minimum operations performance standards for UAS? How are we dealing with the various operational hazards and liability aspects of UAS operations? What additional infrastructure will be required to support UAS navigation? How do we plan to disseminate navigation services to UAS in civil airspace? What are the requirements development and how? What commercial UAS platforms can we expect to start operating in the near future and does that include unmanned cargo aircraft? What additional performance and safety requirements will be needed when navigating UAS at lower altitudes near populated areas?

Organizer: Dr. Per Enge, Stanford University

**Panel: Security and Robustness for Autonomous and Assisted Vehicle Navigation**
Explores the security and robustness of satellite-based navigation and other technologies for autonomous and assisted navigation of air and ground vehicles. Panel will address relevant navigation technologies and their maturity, how the security and robustness of navigation technologies are assessed, and potential approaches to enhance security and robustness. Views on standards and certification will be explored.

Organizer: Dr. John Betz, The MITRE Corporation
ABSTRACT SUBMISSION REQUIREMENTS

The 29th International Technical Meeting of the Satellite Division of The Institute of Navigation

ION GNSS+ 2016

GNSS + Other Sensors in Today’s Marketplace

September 12—16, 2016
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Oregon Convention Center, Portland, Oregon