

IFIS 2018

International Flight Inspection Symposium

April 16–20, 2018
Hyatt Regency Monterey
Monterey, California

Sponsored by Hosted by



ONSITE PROGRAM

The International Flight Inspection Symposium exists for the purpose of exchanging technical information, dealing with aviation system operation and its impact on flight. The discussions and presentations concerning flight inspection procedures, techniques, training, equipment, and other relevant topics, have brought a better understanding and focus on this important area of calibrating and maintaining the navigational signals and procedures upon which the aviation system operations are based.

THANK YOU TO OUR SPONSORS

SIGNATURE SPONSOR



PLATINUM SPONSORS



ADDITIONAL SPONSORS

FCS- Flight Calibration Services
Duncan Aviation

Program Committee



General Chair*
Dr. David Powell
Stanford University



Program Chair*
Dr. Michael DiBenedetto
Ohio University



Finance Chair
Dr. Per Enge
Stanford University

*ICASC members: ICASC has an advisory role in selecting papers; information about ICASC and past IFIS events can be found at <http://www.icasc.co>

IFIS SPECIAL EVENTS

Monday, April 16

Networking in Exhibit Hall

8:00 a.m. - 4:00 p.m., Exhibit Hall - Regency Ballroom

Attendee Luncheon*

12:25 p.m.-2:00 p.m., Exhibit Hall - Regency Ballroom

California Dreamin' Reception

5:30 p.m.-7:00 p.m., Exhibit Hall - Regency Ballroom

Join this year's exhibitors for an evening of networking and west-coast cuisine. All exhibit booths will be open. Review new developments in technology, talk shop, get the specifics directly from the vendors, and learn about what has been happening in the aviation marketplace during the past year. *Event is included with all registrations. Cash bar available. Spouses/traveling companions ages 21+ are welcome.*

Tuesday, April 17

Networking in Exhibit Hall

8:00 a.m. - 5:00 p.m., Exhibit Hall - Regency Ballroom

Attendee Luncheon*

12:15 p.m.-1:45 p.m., Exhibit Hall - Regency Ballroom

Wednesday, April 18

Networking in Exhibit Hall

8:00 a.m. - 5:00 p.m., Exhibit Hall - Regency Ballroom

Attendee Luncheon*

12:15 p.m.-1:45 p.m., Exhibit Hall - Regency Ballroom

IFIS Gala at the Monterey Bay Aquarium

6:00 p.m.-10:00 p.m., Monterey Bay Aquarium

Shuttle buses load at conference center at 5:45 p.m., depart at 6:00 p.m.
Brought to you by IFIS Signature Sponsor, Aerodata

IFIS attendees will enjoy a strolling dinner made with local, sustainable ingredients, while wandering among the Monterey Bay Aquarium's world-class exhibits.

This event is included with all full-conference and student registrations. Guest tickets may be purchased at registration desk.



Thursday, April 19

Networking in Exhibit Hall

8:00 a.m. - 5:00 p.m., Exhibit Hall - Regency Ballroom

Attendee Luncheon*

12:10 p.m.-1:35 p.m., Exhibit Hall - Regency Ballroom

Friday, April 20

Networking in Exhibit Hall

8:00 a.m. - 11:00 a.m., Exhibit Hall - Regency Ballroom

** Event is included with all full conference and student registrations. Guest tickets may be purchased separately*

Online Access to Technical Papers and Presentations

Qualified attendees may download copies of conference presentations and papers online for FREE by logging in to the ION website at www.ion.org/ifis. Only presentations and papers provided to the ION by the presenting author will be available. Presentations will only be made available once the full technical paper is submitted. If a desired document is not available, we recommend you contact the author directly. Official conference proceedings will be distributed electronically in May to all eligible conference participants.

Complimentary Internet

Free wireless internet is available to attendees in all session rooms and public areas:

- Network ID: Hyatt-Meeting
- Password: ion2018

Mobile Conference Site

Access the IFIS program, attendee list, exhibitor list, and other conference information from your mobile device at m.ion.org.

Photography Policy

Your presence at IFIS constitutes your agreement to be photographed, filmed, videotaped or otherwise recorded by conference management, or its agents, and your agreement that your image or voice may be distributed in print or electronic communications media without any compensation being paid to you. Video recording by participants is not allowed without permission of ION during any portion of the conference. Speakers may record their own presentation to provide to attendees at their discretion. Photographs of copyrighted presentations are for personal use only and are not to be reproduced or distributed. Do not photograph any images labeled as proprietary. Flash photography, or any form of photography, that disturbs those around you, is prohibited.



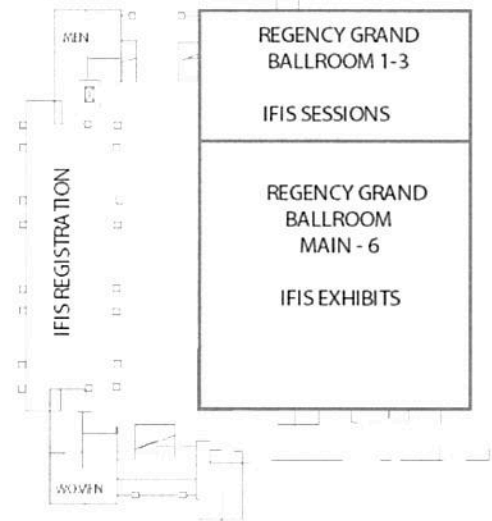
PROGRAM AT-A-GLANCE

All Sessions Take Place in Regency Ballroom A-C

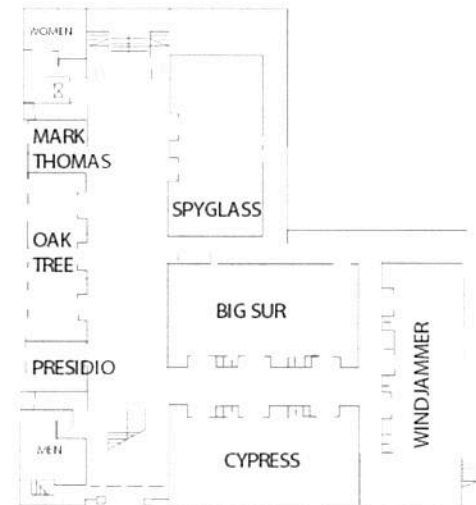
Monday, April 16	
9:30 a.m. - 12:15 p.m.	Opening Ceremonies
12:25 p.m. - 2:00 p.m.	Attendee Luncheon - Exhibit Hall
2:00 p.m. - 3:00 p.m.	Plenary Session
3:45 p.m. - 5:15 p.m.	Standards (Organizational, Operations, Systems)
5:30 p.m. - 7:00 p.m.	California Dreamin' Reception - Exhibit Hall
Tuesday, April 17	
8:30 a.m. - 12:15 p.m.	Flight Inspection Technology (including ADS-B and RFI)
12:15 p.m. - 1:45 p.m.	Attendee Luncheon - Exhibit Hall
1:45 p.m. - 3:15 p.m.	Flight Inspection Technology (including ADS-B and RFI)
4:00 p.m. - 5:00 p.m.	GBAS Inspection, Operational Experience
Wednesday, April 18	
8:30 a.m. - 10:00 a.m.	Operation
10:45 a.m. - 11:15 a.m.	Safety (Including Safety Management System and Crew Resource Management)
11:15 a.m. - 12:15 p.m.	Flight Validation and ARINC Coding (Including Database Issues)
12:15 p.m. - 1:45 p.m.	Attendee Luncheon - Exhibit Hall
1:45 p.m. - 5:00 p.m.	PANEL DISCUSSION: Flight Validation
6:00 p.m. - 10:00 p.m.	IFIS Gala at the Monterey Bay Aquarium (Offsite)
Thursday, April 19	
8:30 a.m. - 12:10 p.m.	UAV Operations and Flight Inspection Applications
12:10 p.m. - 1:35 p.m.	Attendee Luncheon - Exhibit Hall
1:35 p.m. - 2:35 p.m.	UAV Operations and Flight Inspection Applications
2:35 p.m. - 5:15 p.m.	Training and Certification
Friday, April 20	
8:30 a.m. - 11:45 a.m.	Legacy Nav aids
11:45 a.m. - 12:00 p.m.	Closing Remarks

HYATT FLOOR PLAN

Hyatt Conference Center: Main Level



Hyatt Conference Center: Lower Level



Upgrade to Premium Professional Membership!

Receive up to 25 Complimentary Paper Downloads Each Month

The Institute of Navigation's (ION) database has more than 15,000 highly-specialized technical papers, proceedings from Institute of Navigation technical conferences, and peer-reviewed articles related to the art and science and technology of positioning, navigation and timing.

www.ion.org



MONDAY, APRIL 16

Session 1: Opening Ceremonies

9:30 a.m. - 12:25 p.m.



Dr. Michael DiBenedetto
Ohio University

- 9:30 IFIS Chair Welcome: Dr. David Powell, Stanford University
- 9:40 ICASC Chair Welcome: Joe Doubleday, Federal Aviation Administration
- 9:50 ION Welcome: Lisa Beaty, Institute of Navigation
- 10:00 IFIS Signature Sponsor Commercial Presentation, Aerodata: Precision in Special Mission

10:30 a.m. - 11:15 a.m., Break in Exhibit Hall

- 11:15 IFIS Platinum Sponsor Commercial Presentation, Norwegian Special Mission
- 11:35 IFIS Platinum Sponsor Commercial Presentation, SAFRAN
- 11:55 Mr. Erwin Lassoosj, Chief, Programmes Coordination and Implementation (P) Section: Air Navigation Bureau (ANB), International Civil Aviation Organization (ICAO)

12:25 p.m. - 2:00 p.m., Lunch in Exhibit Hall

Session 2: IFIS Plenary Session

2:00 p.m. - 3:00 p.m.



Dr. David Powell
Stanford University

- 2:00 Keynote Presentation: A Brief History of GPS, which led to Unforeseen Applications for Humanity, and Creeping Obligations to Providers: Dr. Bradford Parkinson, Stanford University

3:00 p.m. - 3:45 p.m., Break in Exhibit Hall

Session 3: Standards (Organizational, Operations, Systems)

3:45 p.m. - 5:15 p.m.



Larry Brady
Airfield Technology, Inc.

- 3:45 Quality Assurance during Flight Inspection: Frank Musmann, Aerodata AG, Germany
- 4:15 Update of ICAO DOC 8071 Volume 1: Gerhard Berz, Eurocontrol, Belgium; Jules Hermens, CAA, The Netherlands; Mike DiBenedetto, Ohio University
- 4:45 Importance of Time Synchronization and Signal Filtering in Automated Flight Inspection Systems: Aleksander Hagen, Geir Bergsløkken and Erling Grønbeck, Norwegian Special Mission AS, Norway

TUESDAY, APRIL 17

Session 4: Flight Inspection Technology (Including ADS-B & RFI)

8:30 a.m. - 3:15 p.m.



Michael Spanner
NATS Services, UK

- 8:30 Solution to the Problem of Civil Aviation VHF Band Radio Frequency Interference by Using Flight Inspection Aircraft: Lening Wang, Flight Inspection Center of CAAC, China
- 9:00 Experiences with GNSS Interference in Flight Inspection: Sigurd A. Bjelkarøy, Norwegian Special Mission, Norway
- 9:30 Ground Check of GNSS Antennas on Aircraft: Rolf Seide, Aerodata AG, Germany

10:00 a.m. - 10:45 a.m., Break in Exhibit Hall
Sponsored by Duncan Aviation

- 10:45 The Summary of the Flight Inspection Data Management System: Shunsuke Fujita, Flight Inspection Center, Air Navigation Services Division, Civil Aviation Bureau, Japan
- 11:15 Degradation of AHRs Heading Accuracy During Typical FI Maneuvers: Stefan Jagieniak and Claus-Sebastian Wilkens, Aerodata AG, Germany
- 11:45 Correlation between Ground and Flight Inspection of PAPI System in Mongolia: Tuvshinbayar Gavaa, Mongolian Civil Aviation Authority, Mongolia; Alberto Coletti, Argos Ingegneria, Italy; Gansukh Khurelsukh, Mongolian Civil Aviation Authority, Mongolia

12:15 p.m. - 1:45 p.m., Lunch in Exhibit Hall

- 1:45 ADS-B and Functions for Flight Inspection: Frank Musmann, Aerodata AG, Germany
- 2:15 Flight Inspection of Aviation Data Links: Thomas Michael Pinnell, Norwegian Special Mission, Norway
- 2:45 Secondary Surveillance Radar (SSR) Flight Inspection - Technology and Practices: Maik Ritter, Aerodata AG, Germany Christopher Dean, Aeoppearl, Australia

3:15 p.m. - 4:00 p.m., Break in Exhibit Hall

Session 5: GBAS Inspection, Operational Experience Room: Regency Ballroom

4:00 p.m. - 5:00 p.m.



Frank Musmann
Aerodata AG, Germany

- 4:00 Challenges with GBAS VDB Flight Inspection: Mike Spanner, NATS, United Kingdom
- 4:30 Flight Inspection of GAST-D Approach and Taxi Guidance Systems: Claus-Sebastian Wilkens, Aerodata AG, Germany; Thomas Feuerle, Mirko Stanisak, Technische Universität Braunschweig - Institute of Flight Guidance, Germany; Patrick Thomsen, Aerodata AG, Germany

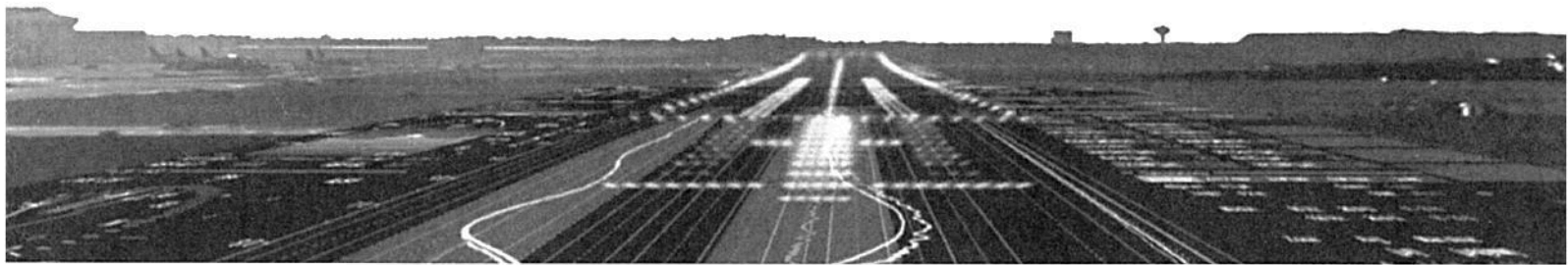
5:30 p.m. - 7:00 p.m.

California Dreamin' Welcome Reception
IFIS Exhibit Hall

This event is included with all registrations.

PAST, PRESENT AND FUTURE...

UNIFIS 3000-G2 with AR



ELECTRONICS & DEFENSE

**CARNAC
COST-EFFECTIVE & INNOVATIVE
FLIGHT INSPECTION SYSTEMS SOLUTIONS**



Tailor-designed for all types of aircraft and helicopters, CARNAC family products provide full flight inspection and flight validation capabilities. Using cutting-edge technologies, they also offer modular and flexible cost saving solutions improving Flight Inspection Services.

carnac@safrangroup.com
safran-electronics-defense.com

Twitter: @SafranElecDef



WEDNESDAY, APRIL 18

Session 6: Operation

8:30 a.m. - 10:00 a.m.



Fabrizio Maracich
Italian Company for Air
Navigation Services, Italy

- 8:30 **Flight Inspection Procedures: Different Cases to Consider Affected by Deterioration:** José Luis Delpón Ramos, Autonomous Advisor, Spain
- 9:00 **Remote Maintainers for Flight Inspection Mission:** Andrei Oliveira da Silva Santos, Sérgio Marcos da Rocha Corrêa, Hélio Vinícius de Almeida Cabral, and Alexandre Gonçalves de Carvalho, Brazilian Air Force, Brazil
- 9:30 **The Challenges of Conducting Flight Inspection/Validation in Remote and Inhospitable Locations:** TBD

10:00 a.m. - 10:45 a.m., Break in Exhibit Hall

Session 7: Safety (Including Safety Management System and Crew Resource Management)

10:45 a.m. - 11:15 a.m.



Capt Tom Wede
TransPolar GmbH, Germany

- 10:45 **Night Operations: A Successful Example of Risk Management in Flight Inspection:** Andrea Gioia, ENAV, S.p.A., Italy

Session 8: Flight Validation and ARINC Coding (Including Database Issues)

11:15 a.m. - 12:15 p.m.



Capt Tom Wede
TransPolar GmbH, Germany

- 11:15 **Total System Error (TSE) Analysis of Helicopter Procedure in an Alpine Environment Flying Advanced RNP Procedures:** Heinz Wipf, Airnav Consulting, Switzerland
- 11:45 **Experiences in Performing Flight Inspection with Rotary Wing Aircraft:** Thorsten Heinke, Aerodata AG, Germany

12:15 p.m. - 1:45 p.m., Lunch in Exhibit Hall

Session 9: PANEL DISCUSSION: Flight Validation

1:45 p.m. - 5:00 p.m.



Capt Tom Wede
TransPolar GmbH, Germany

- Stephen Moody, Jeppesen
- Bob Stuckert, FAA
- Fabrizio Maracich, ENAV
- Cheng-Yi Cheng, Lufthansa Systems

THURSDAY, APRIL 19

Session 10: UAV Operations and Flight Inspection Applications

8:30 a.m. - 2:35 p.m.



Sigurd Bjelkarøy
Norwegian Special
Mission, Norway

- 8:30 **Unmanned Aerial System for RFI Localization and GPS Denied Navigation:** Adrien Perkins, Yu-Hsuan Chen, Sherman Lo and Per Enge, Stanford University
- 9:00 **Application of Unmanned Aircraft Systems as an Instrument in Flight Inspection:** Claus-Sebastian Wilkens, Thorsten Heinke, Rolf Seide, Aerodata AG, Germany
- 9:30 **Implementation of RPAS in Flight Inspection Activities at Brazilian Airspace Control System (SISCEAB):** Leonardo Habefeld, DECEA/GEIV, Brazil

10:00 a.m. - 10:40 a.m., Break in Exhibit Hall

- 10:40 **Using UAV Multicopters as an Extension of ILS Ground Measurements: This Innovative Idea has Already Become Reality in Switzerland!** Hervé Demule, Skyguide, Swiss Air Navigation Services, Switzerland; Klaus Theissen, Rohde & Schwarz
- 11:10 **Drone Support for Flight Inspection:** Mathieu Mahiques and Philippe Labaste, CEV Laboratory, France
- 11:40 **UAV-Based Flight Inspection System:** Yanbo Zhu, National Key CNS/ATM Laboratory, CAAC, China; Shi Xiaofeng, Kang Kai, Beihang University, China

12:10 p.m. - 1:35 p.m., Lunch in Exhibit Hall

- 1:35 **Employing UAS to Perform Low Altitude NavAids Measurements:** Jochen Bredemeyer, FCS Flight Calibration Services GmbH, Braunschweig, Germany; Thorsten Schrader, Physikalisch-Technische Bundesanstalt (PTB), Germany

Session 11: Training and Certification

2:35 p.m. - 5:15 p.m.



Asbjørn Madsen
Normarc Flight Inspection
Systems AS, Norway

- 2:35 **Training Pilots in the Employment of FIAPA:** Gary Bell and Greg Cox, FAA, Flight Inspection Services, Aircraft Configuration Team
- 3:05 p.m. - 3:45 p.m., Break in Exhibit Hall
Sponsored by FCS Flight Calibration Services GmbH
- 3:45 **Simulator Training for Flight Inspection:** Knuth Steffens and Eibe Arfken, Aerodata AG, Germany
- 4:15 **Software Quality Assurance in Development of Flight Inspection Systems:** Jostein Trones, Norwegian Special Mission, Norway
- 4:45 **More Traps and Pitfalls:** Stefan Jagieniak, Aerodata AG, Germany

Wednesday, April 18 • 6:00 p.m. - 10:00 p.m.

IFIS Gala at the Monterey Bay Aquarium, Sponsored by Aerodata

This event is included with all registrations. Guest tickets may be purchased separately.

Shuttle buses leave Hyatt Conference Center at 6:00 p.m.



FRIDAY, APRIL 20

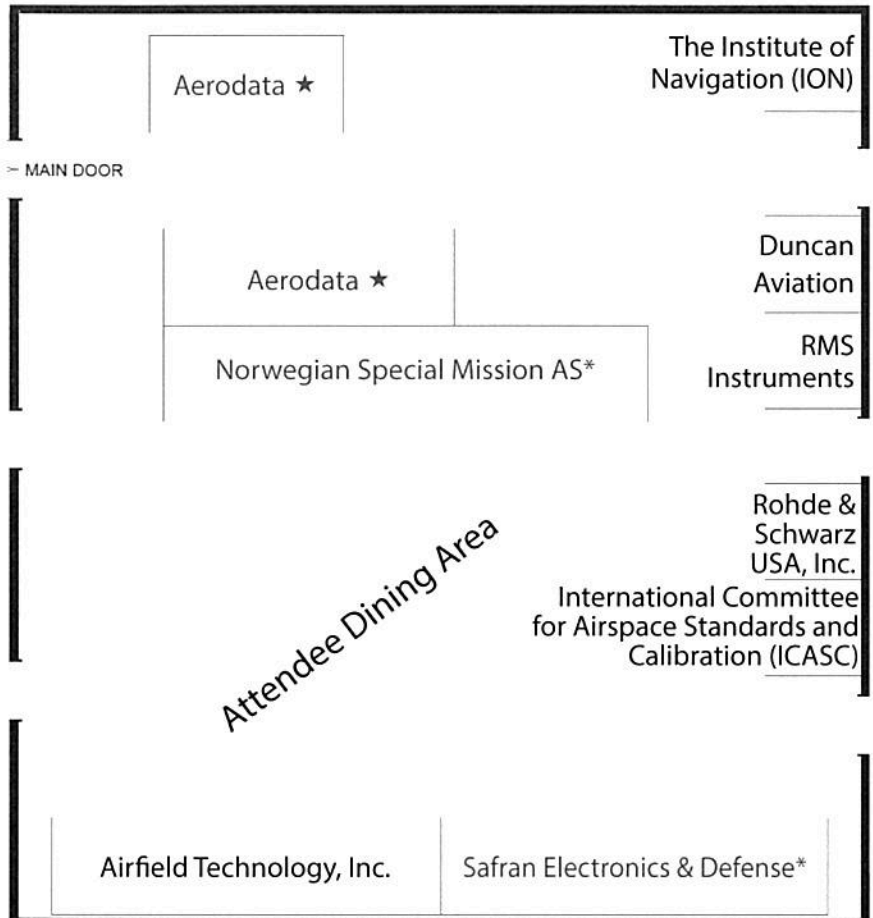
Session 12: Legacy NavAids 8:30 a.m. - 12:00 p.m.



Sileno Godicke
ENAV, Italy

- 8:30 **Alternative PNT: What Comes After DME?:** Gerhard Berz, Valeriu Vitan, Eurocontrol, Belgium; Luca Saini, Thales Air Systems, Italy
- 9:00 **Study on Glide Slope's Clearance Flight Check Criteria:** Shuming Liu, Tong Liu, Huawei Ma, Flight Inspection Center of CAAC, China
- 9:30 **Critical and Sensitive Areas of ILS and its 3rd Height Dimension - Examples, Effects and Proposals:** Gerhard Greving, NAVCOM Consult, Germany; L. Nelson Spohnheimer, Spohnheimer Consulting, USA
- 10:00 a.m. - 10:45 a.m., Break in Exhibit Hall
- 10:45 **Solution to Coverage Issues Created by Large Hangars:** Hervé Lenquette, DSNA/DTI, France; Bertrand Spitz, ENAC, France
- 11:15 **Evolving to 4D Signal Strength Normalization:** Brad Snelling, Greg Cox, Todd Bigham, Federal Aviation Administration; Jim West, Oklahoma State University
- 11:45 Closing Remarks

EXHIBIT HALL FLOOR PLAN AND HOURS



★ Signature Sponsor *Platinum Sponsor

SHOW HOURS:

Monday, April 16

- 8:00 a.m.- 4:00 p.m. and 5:30 p.m.- 7:00 p.m.
- Attendee Luncheon in Hall 12:25 p.m. - 1:55 p.m.
- California Dreamin' Welcome Reception, 5:30 p.m. - 7:00 p.m.

Tuesday, April 17

- 8:00 a.m. - 5:00 p.m.
- Attendee Luncheon in Hall 12:15 p.m. - 1:45 p.m.

Wednesday, April 18

- 8:00 a.m. - 5:00 p.m.
- Attendee Luncheon in Hall 12:15 p.m. - 1:45 p.m.

Thursday, April 19

- 8:00 a.m. - 5:00 p.m.
- Attendee Luncheon in Hall 12:10 p.m. - 1:35 p.m.

Friday, April 20

- 8:00 a.m. - 11:00 a.m.

ION GNSS+ 2018

The 31ST INTERNATIONAL TECHNICAL MEETING of the SATELLITE DIVISION of the INSTITUTE of NAVIGATION

September 24-28, 2018
Tutorials: September 24 and 25
Exhibit Hall: September 26 and 27



HYATT REGENCY MIAMI
MIAMI, FLORIDA

SAVE THE DATE

