



“Facing the Security Challenge”
6th Annual Space Traffic Management Conference
 University of Texas at Austin
 Engineering and Education Research Center (EER)
 James J. and Miriam B. Mulva Conference Center (0.904)
 February 19-20, 2020

Final Agenda

Wednesday, February 19

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| 8:15 – 8:45 am | Registration |
| 8:45 – 9:15 am | Opening Ceremony
Jean-Michel Contant, Secretary General of IAA

Welcome
Co-chairs Moriba Jah, Associate Professor of Aerospace Engineering and Engineering Mechanics at UT Austin, and Diane Howard, Chief Counsel for Space Commerce at Department of Commerce |
| 9:15 – 9:45 am | Keynote
Dr. T.S. Kelso, Operations Manager for the Space Data Center |
| 9:45 – 11:15 am | Session 1: Range Management/Airspace to Orbital Integration
Moderator: Ruth Stilwell |
| IAA-UT-STM-01-01 | Devin Dickens “ELVIS has Entered the Airspace: Dynamic 2D Airspace Hazard Areas for Winged Reentry Bodies” |
| IAA-UT-STM-01-02
IAA-UT-STM-01-04 | Sven Kaltenhäuser “NearSpace operations – Barrier between aviation and space or the path to integration?” and “Modeling and Simulation of Suborbital flight profiles and determination of related airspace restriction” |
| IAA-UT-STM-01-03 | Corissa Robinson et al “Addressing ATC Human Factors Issues to Minimize Airspace Disruptions During Space Vehicle Launch and Reentry Operations” |
| 11:15 – 11:30 pm | Break |

11:30 – 12:30 pm

Roundtable Panel: Security
Moderator: Daniel Porras

IAA-UT-STM-01-05 Ulpia Botezatu “Transformational Challenges to Space Sector: Implications for NATO and Non-NATO Countries”

IAA-UT-STM-01-06 Maria Lucas-Rhimbassen “There is an Ocean between Space Forces”

Victoria Samson

12:30 – 1:30 pm

Lunch

1:30 – 3:15 pm

Session 2: Space Environment – Safety and Sustainability
Moderator: T.S. Kelso

IAA-UT-STM-02-01 Miles Lifson et al “Low Earth Orbit Traffic Management through Slotting”

IAA-UT-STM-02-02 Ulpia Botezatu “Risks from Outer Space and ground-based critical infrastructures: A system-of-systems approach”

IAA-UT-STM-02-03 Deva Arul Daniel “Isro’s Activities Towards Sustainable Space Operation: Past, Present and Future”

IAA-UT-STM-02-04 Chuck Dickey “Three Country Trusted Broker: An effective Public-Private Model for Orbital Debris Remediation – Part Two: Country Contracting Phases”

IAA-UT-STM-02-05 Stijn Lemmens “Environment capacity as high-level driver for space traffic management”

IAA-UT-STM-02-06 George Anthony Long “The Duty to Disseminate Space Weather Forecasts”

IAA-UT-STM-02-07 Dan Oltrogge et al “Starlink paper”

IAA-UT-STM-02-08 Mark A. Skinner “Techniques to mitigate initial orbit confusion for massed CubeSat launches”

IAA-UT-STM-02-09 Ruth Stilwell “Who is Right When it Comes to Right of Way in Space?”

3:15 – 3:30 pm

Break

3:30 – 4:45 pm

Roundtable Panel: International Perspectives
Moderator: Victoria Samson

IAA-UT-STM-RP01-01 José Miguel Lozano (Spain) “A Way to Go: From Collision Avoidance Services to Space Traffic Management”

IAA-UT-STM-RP01-02 Paul Liias (Estonia) “Architecture of a Global Space Traffic Management Platform”

- IAA-UT-STM-RP01-03 Malgorzata Polkowska (Poland) “Recent Polish Development in Space Situational Awareness (SSA)”
- IAA-UT-STM-RP01-04 Yu Takeuchi (Japan) “Roles of the Key Actors for Global STM Regime – A Japanese Perspective”
- Deva Arul Daniel (India)
- Ralph Dinsley (UK)
- 4:45 – 5:00 pm Break**
- 5:00 – 6:00 pm Roundtable Panel: Space Sustainability — A Commercial Perspective**
Moderator: Danielle Wood
- Doug Engelhardt (Maxar)
Matt Shoupe (LEOLabs)
Rick Tumlinson (New Worlds)
Charity Weeden (Astroscale)
- 6:00 – 7:45 pm Reception and Dinner in EER’s Atrium**
- Thursday, February 20**
- 9:00 – 9:30 am Keynote**
Kevin O’Connell, Director of Office of Space Commerce at US Department of Commerce
- 9:30 – 11:00 am Roundtable Panel: US Government**
Moderator: George Nield
- Asha Balakrishnan (Hill)
Jeff Braxton (DoD)
Diane Howard (DOC)
J.C. Liou (NASA)
- 11:00 – 11:15 am Break**
- 11:15 – 12:30 pm Session 3: SSA Tech & Decision Making**
Moderator: Michael Reinhold
- IAA-UT-STM-03-01 Jason Stauch et al “Multi-source Resident Space Object State Validation and Fusion”
- IAA-UT-STM-03-02 Han Cai et al “Uncertainty Representation for Space Object Tracking using Outer Probability Measures”
- IAA-UT-STM-03-03 Di Wu et al “Detecting Resident Space Object Maneuvers using Proper Elements”

IAA-UT-STM-03-04	Deva Arul Daniel et al “Assessment of in-house developed re-entry prediction methods”
IAA-UT-STM-03-05	Daniel Jang “Orbital Catalog Toolkit, A Software Suite for Catalog Maintenance”
IAA-UT-STM-03-06	Daniel Kucharski et al “Quanta Photogrammetry (QPM) for Biometrically-Inspired Space Object Recognition (BISOR)”
IAA-UT-STM-03-07	Nathan Reiland et al “Minimum Space Occupancy Orbits for Satellite Mega-Constellation Design”
IAA-UT-STM-03-08	Yue Deng et al “Impact of ionosphere-thermosphere meso-scale structures on space environment specification and forecast”
12:30 – 1:30 pm	Lunch
1:30 – 3:15 pm	Session 4: Cyber/Cloud/AI Moderator: Therese Jones
IAA-UT-STM-04-01	The Honorable John McClellan Marshall “Machine-Machine to Major Tom: Cyberethics”
IAA-UT-STM-04-02	Edward Chan “The Rationale of Applying Cloud-Native Design Philosophy to Space Object Database and Information Services”
IAA-UT-STM-04-03	Loic Chappaz “An AI Cloud Collaborative Framework for Space Traffic Management in LEO and Beyond”
IAA-UT-STM-04-04	Islam Hussein “The Possibilistic Admissible Region (PAR+)”
IAA-UT-STM-04-05	Shiva Iyer et al “Orbit Determination from Recurrent Neural Network Modeling of Simulated Optical Measurements” (or in Cloud AI)
IAA-UT-STM-04-06	George Anthony Long “Artificial Intelligence and Asset Protection in the Space Environment”
3:15 – 3:30 pm	Closing Remarks Moriba Jah