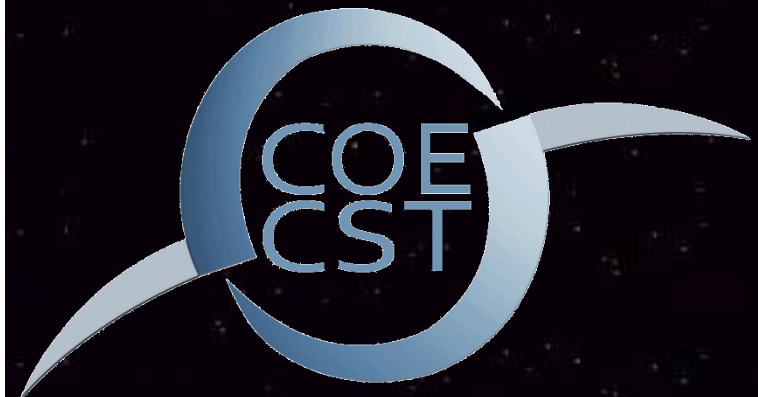


COE CST Fifth Annual Technical Meeting

Insurers as Regulators of Space Safety and Sustainability

**Dr. Ram Jakhu
Andrea Harrington**

**October 27-28, 2015
Arlington, VA**



Center of Excellence for
Commercial Space Transportation



Agenda

- Team Members
- Task Description
- Schedule
- Goals
- Results
- Conclusions and Future Work

Team Members



Dr. Ram Jakhu



Andrea Harrington

Task Description & Context

- Lack of political will for new binding international requirements, national or agency requirements are not necessarily harmonized
- Technology is changing and advancing; Need exists to balance safety and sustainability with commercial viability
- Insurance is the 3rd greatest cost
- Space insurance industry needs to evolve
- Insurers can set requirements to obtain insurance or premium levels for levels of compliance
- Precedent for insurer-led regulation exists

Schedule

- Area of research was proposed by Andrea Harrington for supervision by Ram Jakhu in 2013
 - Since then, presentations have been made at a half dozen conferences with papers produced on the topic, significant progress has been made
- Discussed and accepted as a topic for CoE CST attention in early 2015 following completion of last year's CoE CST research goals

Goals:

- Explore issues inherent in the offering, procurement, and handling of traditional areas of space insurance
- Provide public policy and regulatory explanations and recommendations
- Compare aviation and space insurance in the context of reusable craft
- Analyze the role of informed consent and liability waivers / insurance for spaceflight participants

Goals: Evaluate possibility of insurers:

Setting standards for debris mitigation:

- Limitations on mission-related debris
- End-of-life requirements to meet or exceed other guidelines
- Technical capability evaluation: evasion, graveyarding, shielding

Providing collision avoidance services:

- Purchase situational awareness services, act as point of contact for all insureds
- Provide technical guidance re: possible maneuvers

Results (Presentations with Papers)

- *Spaceflight Participant Liability and Insurance*, DCL Research Series (Montreal) November 2014
- *Risk Management in the Intermediate Frontier*, 3rd Manfred Lachs International Conference on NewSpace Commercialization and the Law (Montreal) March 2015
- *Leveraging Insurance for Commercial Space: Managing Legal and Regulatory Challenges*, 31st Space Symposium (Colorado Springs) April 2015
- *Debris Mitigation as an Insurance Imperative*, IAC (Jerusalem) October 2015
- *Innovations for Insurers in Space Traffic Management and Weather Forecasting*, Space Traffic Management (Daytona Beach, FL) November 2015

Results (Related Publications)

- *Legal Considerations for Commercial Space: An Overview* in *New Space* Volume 3: Issue 2 (2015)
- *State Spaceflight Liability and Immunity Acts in Context in Emerging Space Activities*, Leuven Global Governance Series, Edward Elgar Publishers (accepted and awaiting publication)
- *Legal And Regulatory Challenges To Leveraging Insurance For Commercial Space*, submitted and under review by *Journal of Space Law*

Conclusions and Future Work

- Final Remarks: Important not to underestimate the role of insurance in the development of the commercial space industry
- Next steps: Completion of Andrea's Thesis & Thesis Defense (1st half of 2016), *Risk Management in Space: Insurance and Legal Issues in the Growth of Commercial Space Activities*; publication of comprehensive volume