

COE CST Sixth Annual Technical Meeting

Task 307: Commercial Satellite Communications Applications for Spacecraft

PI: M. Brian Barnett

Barnett@solstarspace.com

• + 1 505-389-2299



Solstar

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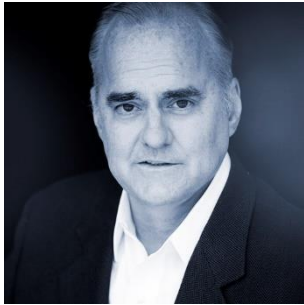


Agenda

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

Team Members

- Principal Investigator
 - M. Brian Barnett, Solstar*



* Solstar is an affiliate member of the COE CST

- Co-Principal Investigator
 - Pat Hynes, NMSU



Task Description

- Investigate how Solstar's commercial satellite networks and payload communicators could be used to communicate to and from spacecraft

Schedule

- Successful Texts to Space mission, November 12, 2013
- Flight test on Virgin Galactic's SpaceShipTwo, 2017-2018
- Flight tests in LEO, est. 2019

Goals-Relevance to Commercial Space Industry

- Solstar's goal is to develop technologies and payload & space communicator products and services that:
 - Provide commercial internet/data communications services to/from spacecraft, astronauts, machines in space.
 - Our services enable earth-based customers 24/7 direct access to experiments, cubesats, machines, and colleagues located in space, via their smart phones, or any other internet connected device.
 - Enable positional and other spacecraft data to be transmitted via commercial networks

Results

- Successful Space test- Nov. 12, 2013
 - Sent first text message to space using entirely commercial satellites, network, payload, rocket.
 - Leveraging Solstar's Space Act Agreement with NASA's Flight Opportunities Program (FOP)
- Mission and test results documented in short film published on YouTube in August 2016



Solstar payload communicator
receiving text message at 67.4 miles (125KM)

<https://www.youtube.com/watch?v=RwQsYKPFYo8>

Conclusions and Future Work

- Initial flight tests have been successful and could lead to commercial space traffic control applications.
- Testing has been delayed because of Virgin Galactic accident.
- Next Steps
 - More flight tests in sub orbit and LEO
 - Solstar is continuing to develop proprietary technologies and payload communicators and services