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Industrial White Paper Briefing: Monterey Bay Regional Spaceport Lowest Priced Technically Acceptable COTS Launch System¹

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Abstract

Proposed DoD Acquisition Study to focus on COTS Space Launch System for government and commercial markets. Level of interest is in the broad cost savings to the government and commercial customers.

Research Issue: The cost to launch vehicles and payloads into orbit and to station them in the upper atmosphere is prohibiting innovation and limiting the total number of systems that can be deployed. There is a need to study the life cycle of current and future COTS Launch Systems and their benefits to government and commercial procurement cycles.

Research Result: Lower costs via Lowest Price Technically Acceptable (LPTA) COTS launch solutions and systems are the desired research result. Smaller payloads and delivery vehicles with more capabilities will increase the amount of work being done while less money is being spent. Overall cost savings to the government activities and the civilian population they serve will be the outcome of the research result as well.

Center of Excellence Model to Protect Intellectual Property

During the compilation of this Acquisition Research Proposal, Intellectual Property Rights created parameters which restricted certain research materials from being published. A University of Florida suggestion is being deployed as a remedy solution. U. of Florida has suggested that a Center of Excellence (CoE) for Commercial Space Transportation (CST) chapter be assigned to Monterey. The CoE model would allow for the sharing and throughput of information as well as enable “unlimited distribution” of materials. The CoE acronym is likely to be CoE CST Monterey.

Proposed Consortium of Acquisition Research Partnerships:

- Academia: UCMBEST UC Santa Cruz, CSUMB, NPS, DLI Army Garrison Facilities
- Prime contractors: As specified in the MBRS Project Site SoCE
- Government: FAA AST CST, DoE ~ LLNL/Sandia Livermore, CA, DoD ~ DARPA

¹ Federal FY 2018 Q3; FY 2018 ~ FY 2038 Range Activity Projection



LPTA COTS Launch Areas of Endeavor:

- Range Work: Flight Field at the Marina, CA, Municipal Airport, OAR (KOAR)
- Sea and Air Launch activities in the Pacific Ocean 60 ~100 mi from OAR

Launch System Components: LTAVs, Legacy G.A. Approved Airframes, ATC UASoS Network, Other Experimental Horizontal Flight Frames, Hybrid Engines, Hybrid Space Vehicles, Energy Tech for Power Train

Proprietary: T.U.E., LLC (MSO) MBRS-MBSDC ~ Range Operations Opportunities

MBRS Project Site Relevant Information

- Worked for the Presidio of Monterey's DFMWR as IT/MIS-GISO, 2005 to 2012
- Became iGATE Client Company as "FOTDDO / T.U.E., LLC," 2012 to 2013
- Launched the MBRS Project Site in 2013 as Trans Universal Energy, LLC (2013 to Present)

Company Interest in Space Commerce Background

- Company Time Line—iGATE Client: March 1, 2012, to October 1, 2013
- MBRS Project Site Sole Focus—October 1, 2013, to the present day

Work with the DoE Incubator called the iGATE in Livermore, CA, from 2012 to 2013: "My long term interest in Astrophysics from the late 1970s was finally able to blossom in 2012. Elements and components for the advanced energy and space launch system were discovered at the iGATE. A clear path to commercialization was illuminated by the DoE and DOD GOTS examples for spin off technologies."

On March 1, 2012, our company signed up as an iGATE client, known as FOTDDO.biz. On January 14, 2013, our company incorporated as Trans Universal Energy, LLC. In March 2013, contact with the FAA AST CST was established which formed the basis of the current and ongoing reporting cycles. The specialized focus on the Flight System Operators license began in August 2013. From October 1, 2013, to the present day, our company has singularly focused on the MBRS Project Site. Guidance from the FAA AST CST continues to provide the milestones for commercial space launch activities, transportation operations, and related services. The Flight System Operators license will establish the required parameters for the MBRS "Spaceport" license. The MBRS Spaceport license is likely to be granted to the municipal airfield now known as OAR (KOAR) in the 2020s.



Acronyms Used in This Industrial White Paper Briefing

ATC	Air Traffic Controller
CoE	Center of Excellence
COTS	Commercial Off the Shelf
CSUMB	California State University Monterey Bay
DARPA	Defense Advanced Research Projects Agency
DFMWR	Directorate of Family Morale Welfare and Recreation
DLI	Defense Language Institute
DoD	Department of Defense
DoE	Department of Energy
FAA AST CST	Federal Aviation Administration Air and Space Transportation Commercial Space Transportation
FOTDDO	Fort Ord Technology Development and Deployment Office
G.A.	General Aviation
GOTS	Government Off The Shelf
LLNL	Lawrence Livermore National Laboratory
LPTA	Lowest Priced Technically Acceptable
LTAV	Lighter Than Air Vehicle
MBRS	Monterey Bay Regional Spaceport
MBSDC	Monterey Bay Spaceport Development Center
MSO	Monterey Spaceport Operations
NPS	Naval Postgraduate School
OAR (KOAR)	Call letters of the Marina Municipal Airport
SoCE	Scope of Contracting Environment
T.U.E., LLC	Trans Universal Energy, LLC
UASoS	Unmanned Aerial System of Systems
UCMBEST	University of California Monterey Bay Education Science and Technology Center





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