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Four Air Force SBIR Contracts

(100% capture ratio on all proposals)

# **“AUTONOMOUS FLIGHT MANAGEMENT SYSTEM TECHNOLOGY FOR LOW-THRUST UPPER STAGES”**

- USAF Space Division sponsorship, Los Angeles, CA, circa '90
- Solar electrically propelled upper stages for orbital transfer
  - Typically photovoltaic power & ion electric thrusters
- Successfully proved feasibility of autonomous flight management systems –
  - Reduces high costs of mission control

# **“MICROCOMPUTER BASED EARTH- TO-ORBIT TRAJECTORY OPTIMIZATION PROGRAM”**

- Aero. Propulsion & Power Directorate, Wright Pat. A.F.B, Dayton, OH.
- Sought fast running earth-to-orbit trajectory optimization tool
  - Air-breathing winged LV emphasis
- Developed advanced energy method - Orders of magnitude faster than current tools:
  - Phase I – Proved concept feasibility
  - Phase II – Developed more “user-friendly” deliverable tool

# COMMERCIALIZATION? – No, but Yes!

- In strictest sense – **no!**
- In more general sense – **yes!**
  - Established working repoire & reputation with government & industry
  - Lead to other related projects
- Reasons for lack of commercialization
  - No business plan, lack of a “shared vision”
  - SBIR team had more diverse objectives
  - Lots of technical talent, but poor managers

# SUGGESTION TO IMPROVE COMMERCIALIZATION

*Current SBIR program is quite good, carefully preserve it,* & extend it to include:

- Extend SBIR to include more commercialization reporting, & more visibility into SBIR companies progress and results (with their approval)
- Enhance teaming & commercialization opportunities via:
  - Improved visibility into current & past Phase II projects
  - Web based data bases for easier searches