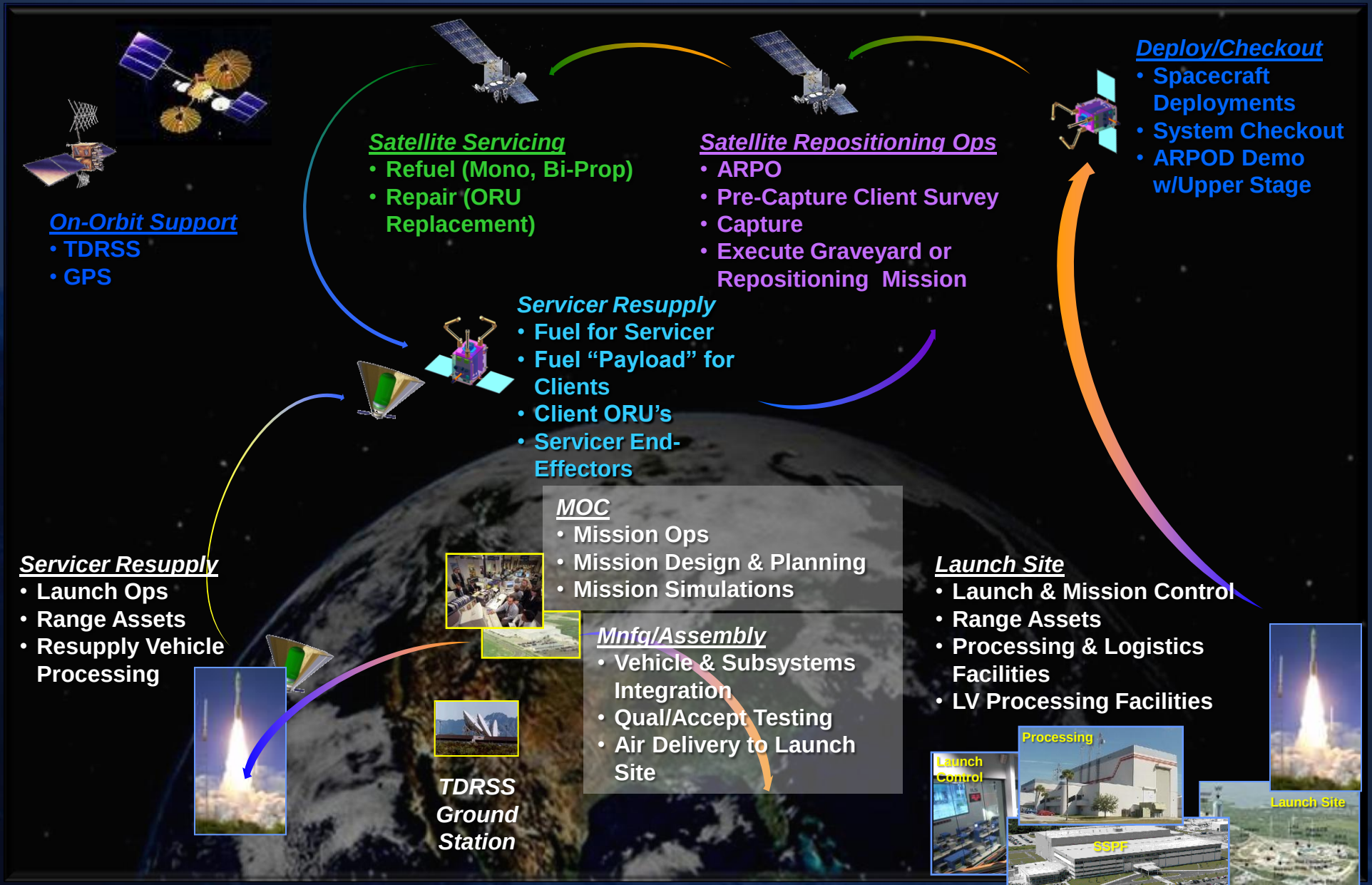
On-Orbit Satellite Servicing (OOSS)

Overview of Lockheed Martin Satellite Servicing Capabilities and Products

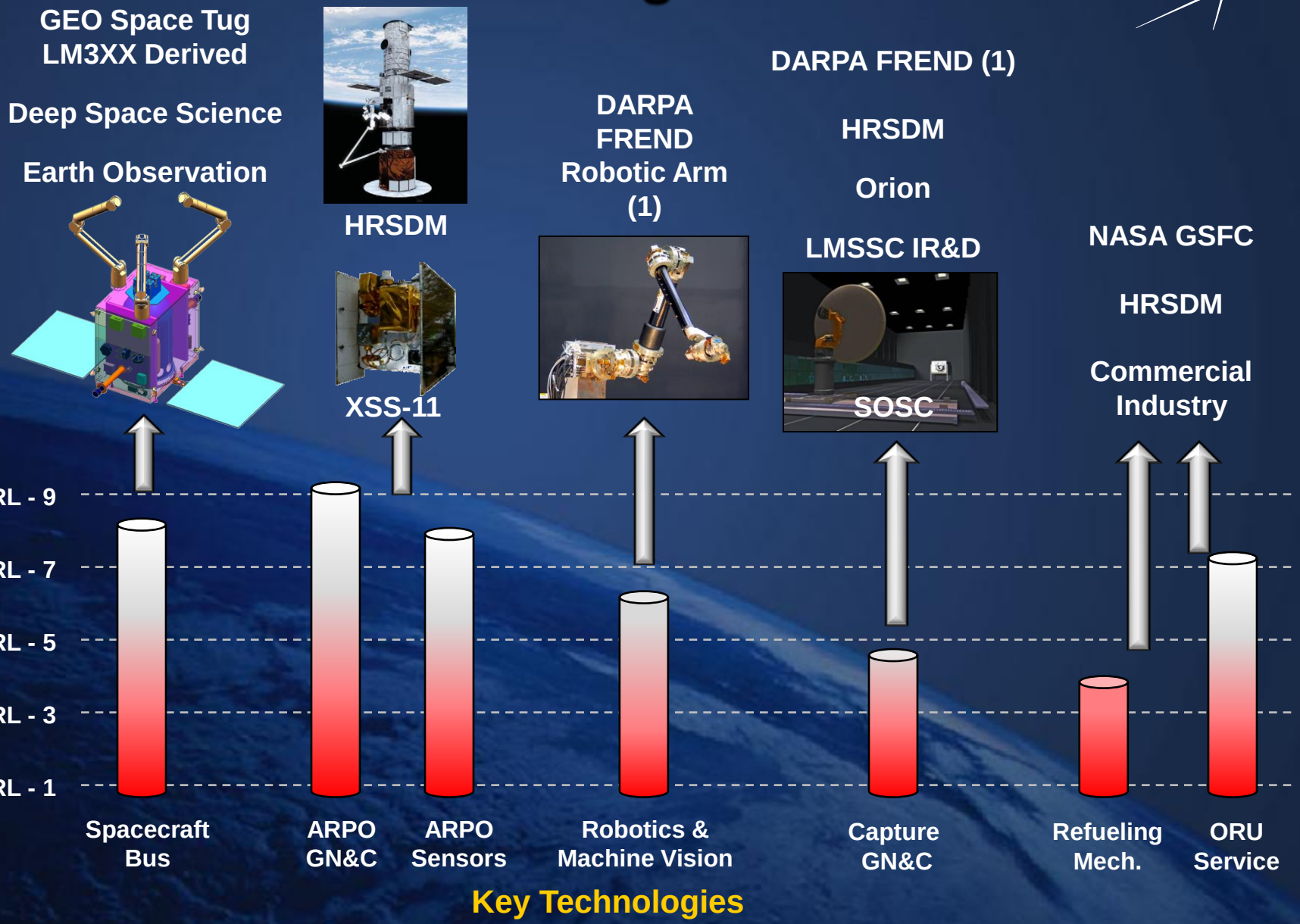
LOCKHEED MARTIN

Barry Miller
(303) 977-3255
barry.1.miller@lmco.com

Servicing Concept Overview



On-Orbit Satellite Servicing Readiness



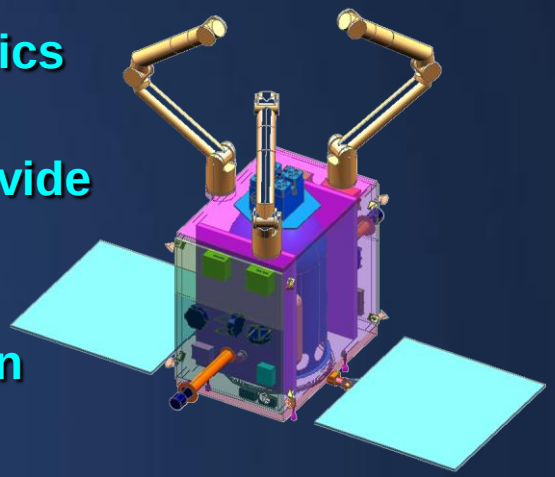
1 - "*An Architecture for Autonomous Control of a Robotic Satellite Grappling Mission*", Lennon and Henshaw, August 2008, AIAA 2008-7259

LMSSC Space Operations Simulation Center (SOSC)

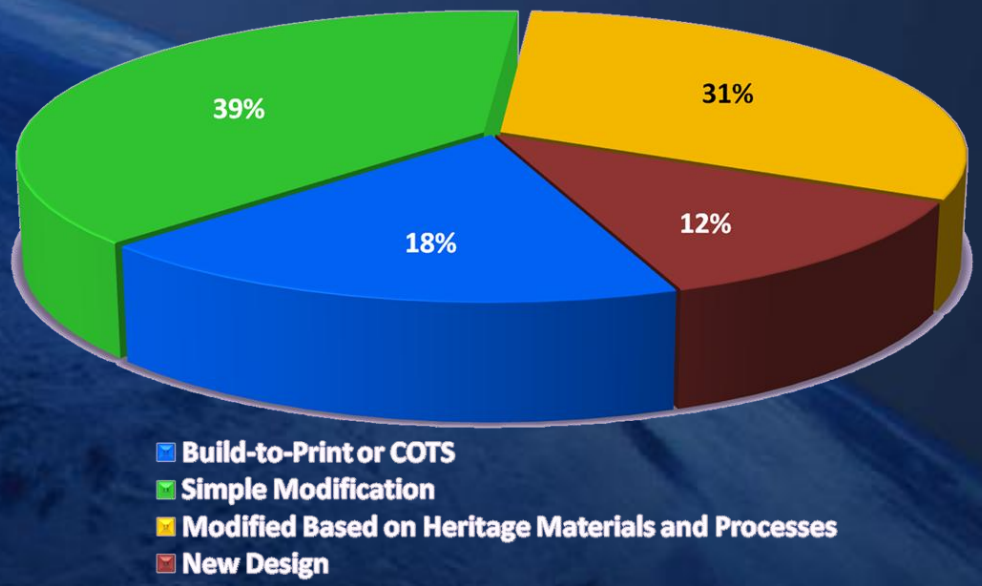
Flight System Addresses Mission Segments

- GEO Graveyard Missions (DRM)
  - Satellite cannot self-graveyard
  - Uncontrolled
  - Poses debris hazard to entire GEO belt
- Key Business Case Drivers
  - Ideal Flight Demonstration Opportunity
  - Significant Residual Delta-V Capability for Follow-On Missions Offsets Development Costs
  - Low Development Costs/Risks
  - Responsive
  - Do no harm

- Heritage S/C & Avionics Derived from XSS-11
- FREND Robotics Provide Servicing Flexibility
- 2100 m/s Delta-V Enables Multi-Mission Capability



Spacecraft Dry Mass Breakout by Heritage



Summary

- On-Orbit Satellite Servicing technically feasible
- Technology maturation required for the “Last Meter”
- Lockheed Martin is confident that On Orbit Satellite Servicing, based on its high heritage spacecraft, can meet near-term servicing needs
- Lockheed Martin has a highly experienced team derived from decades of deep space science, earth observation, HST on-orbit servicing, and USG and commercial satellite communications missions

Thank You