

Table: Lounge/Dittmar, May 2010: “Original” Notional Phasing of NASA-Owned to Commercially-Procured Earth-to-LEO Transportation Services

Human Transportation to LEO	Phase 0	Phase I	Phase II	Phase III	Phase IV
Model	“Traditional” Model	“Commercial Launch Services” Model	“Rental Car” Model	“Taxi” Model	Full Commercial Model
Development	NASA owns all systems and conducts all operations. Cost-plus development and ops integration support contracts.	NASA procures LV from qualified commercial sources, procures C/CV either from commercial sources or standard cost-plus development contract	Commercial service provider (CSP) provides LV and C/CV under a fixed price contract. NASA operates.	CSP provides total service but may request NASA GFE and GFS (ops, etc.)	CSP provides total service
Contracting	Cost-plus	Cost-plus or SAA	SAA or FFP	FFP with offsets	FFP
System Integration	NASA	NASA	Joint (for Mission Ops)	CSP	CSP
Mission Integration and Operations	NASA	NASA	CSP for launch, NASA for Mission Ops	CSP (NASA may be “subcontractor”)	CSP
Crew	NASA crew	NASA crew	NASA crew	Mixed (gov’t & commercial)	Mixed (gov’t & commercial)
Mission Risk	NASA	NASA with some performance warranty by commercial sources	CSP for systems, CSP & NASA for launch, NASA for mission operations	CSP	CSP

*(Many of the ideas in this Table survived into our next series of discussions. While a paper never emerged, our talks are documented and a second paper is currently in work, the first part of which picks up where the Table left off.)