



# Commercial Crew Program CCDev 2 Milestone Schedule



Commercial Crew Program CCDev 2 Schedule			Legend: ▼ = Completion Date    ▽ = Current Plan Date					
Funding	Milestone	Completion Date	2011			2012		
			Q2'11	Q3'11	Q4'11	Q1'12	Q2'12	Q3'12
<b>Total: \$105.6M</b>	<b>Sierra Nevada Corp. (SNC)</b>							
\$12.5M	1 - SRR	06/02/2011	▼					
\$2.5M	2 - Canted Airfoil Fin Selection	06/16/2011	▼					
\$5M	3 - Cockpit Based Flight Simulator	07/20/2011		▼				
\$10M	4 - Vehicle Avionics Integration Laboratory	09/22/2011			▼			
\$12.5M	5 - System Definition Review (SDR)	10/27/2011				▼		
\$7.5M	6 - Flight Control Integration Laboratory	11/17/2011				▼		
\$12.5M	7 - Engineering Test Article (ETA) Structure Delivery	01/12/2012					▼	
\$2M	10a - ETA Landing Gear Drop Tests						▽	
\$5M	8 - Separation System Test						▽	
\$6M	11 - ETA Captive Carry Flight Test Readiness Review						▽	
\$2.5M	10b - ETA Captive Carry Interface Tests						▽	
\$7.1M	12 - ETA Captive Carry Flight Test						▽	
\$12.5M	9 - Preliminary Design Review (PDR)						▽	
\$8M	13 - ETA Free Flight Test							▽



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			Q2'11	Q3'11	Q4'11	Q1'12	Q2'12	Q3'12
<b>Total: \$112.9M</b>	<b>Boeing</b>							
\$10M	1 - NASA Kickoff	04/20/2011	▼					
\$10M	2 - Delta Systems Definition Review (SDR) Complete	05/19/2011	▼					
\$15M	3 - Phase 0 Safety Review Complete	06/16/2011		▼				
\$10M	7 - Interim Design Review (IDR) - 4	07/14/2011		▼				
\$7.5M	5 - Landing Air Bag Drop Demo #1	08/26/2011			▼			
\$7.5M	10a - Launch Vehicle Emergency Detection System/Avionics System Integration Facility Interface Simulation Test Phase 1	11/17/2011				▼		
\$5M	6 - Phase 1 Wind Tunnel Tests	11/30/2011				▼		
\$7.5M	10b - Launch Vehicle Emergency Detection System/Avionics System Integration Facility Interface Simulation Test Phase 2	02/10/2012					▼	
\$2.5M	11 - Preliminary Design Review (PDR) Complete						▽	
\$10M	4 - Launch Abort Engine (LAE) Fabrication and Hot Fire Test Demo						▽	
\$2.5M	9 - Service Module (SM) Propellant Tank Develop Tests						▽	
\$4.8M	8 - Parachute Drop Test Demonstration						▽	
\$1.2M	14 - Service Module (SM) Propulsion Cold Flow Tests Complete							▽
\$15.2M	12 - Software Preliminary Design Review (PDR)							▽
\$4.2M	13 - Orbital Maneuvering and Abort Control (OMAC) Hot Fire Test Complete							▽



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			Q2'11	Q3'11	Q4'11	Q1'12	Q2'12	Q3'12	
<b>Total: \$75M</b>	<b>Space Exploration Technologies Corp. (SpaceX)</b>								
\$10M	1 - CCDev2 Kickoff	05/05/2011	▼						
\$5M	2 - Launch Abort System (LAS) Propulsion Conceptual Design Review	07/26/2011		▼					
\$15M	3 - Design Status Review (DSR) 1	08/17/2011		▼					
\$10M	4 - LAS Propulsion Components Preliminary Design Review (PDR)	09/20/2011		▼					
\$15M	6 - Design Status Review (DSR) 2	12/13/2011			▼				
SpaceX Funded	5 - Crew Accommodation Concept Prototype and In-Situ Trial 1	01/30/2012				▼			
SpaceX Funded	7 - Crew Accommodation Concept Delta-Prototype and In-Situ Trial 2						▽		
\$5M	8 - LAS Propulsion Component Test Articles Complete						▽		
\$10M	10 - Concept Baseline Review (CBR)						▽		
\$5M	9 - LAS Propulsion Component Initial Test Cycle						▽		



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Commercial Crew Program CCDev 2 Schedule			Legend: <span style="color: yellow;">▼</span> = Completion Date <span style="color: gray;">▽</span> = Current Plan Date					
Funding	Milestone	Completion Date	2011			2012		
			Q2'11	Q3'11	Q4'11	Q1'12	Q2'12	Q3'12
<b>Total: \$22.005M</b>	<b>Blue Origin</b>							
\$ .905M	1 - Space Vehicle (SV) Kickoff Meeting	05/20/2011	▼					
\$2M	2 - Pusher Escape Kickoff Meeting	05/20/2011	▼					
\$3.4M	3 - Reusable Booster System (RBS) Engine Kickoff Meeting	05/20/2011	▼					
\$4M	5 - RBS Engine Thrust Chamber Assembly (TCA) Interface and Test Plan Review	09/22/2011		▼				
\$ .9M	4 - Space Vehicle Mission Concept Review (MCR)	09/30/2011		▼				
\$2M	6 - Pusher Escape Test Vehicle #1 Shipment					▽		
\$3M	7 - Pusher Escape Ground Firing						▽	
\$1.9M	8 - Pusher Escape Pad Escape Test						▽	
\$ .9M	9 - Space Vehicle System Requirements Review (SRR)						▽	
\$3M	10 - RBS Engine Thrust Chamber Assembly (TCA) Test						▽	



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<b>Unfunded</b>	<b>United Launch Alliance (ULA)</b>							
	1 - Launch Vehicle Certification Kickoff	07/18/2011		▼				
	2 - Design Equivalency Review (DER) Summary Review	09/20/2011			▼			
	4 - Tailored System Requirements Review (SRR)	12/08/2011				▼		
	3 - Probabilistic Risk Assessment (PRA) Review	12/13/2011				▼		
	5 - System Requirements Review (SRR)							▽
<b>Unfunded</b>	<b>Alliant Techsystems Inc. (ATK)</b>							
	1 - Launch Service Kickoff Review	09/15/2011			▼			
	2 - Technical Interchange Meeting 1	12/15/2011				▼		
	3 - Launch System Initial System Design (ISD)	1/11/2012					▼	
	4 - Technical Interchange Meeting 2							▽
	5 - Program Status Review (PSR)							▽



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Unfunded	Excalibur Almaz Incorporated (EAI)								
	1 - EAI Development Program Kickoff Review	10/28/2011			▼				
	2 - System Requirements Status Review	01/30/2012				▼			
	3 - Launch Vehicle Compatibility Review						▽		
	4 - Test Status Review							▽	
	5 - Design Status Review							▽	