

UNCLASSIFIED –cleared for public release



Employ. Deploy. Develop.
***Assured Space Power Focused on Timely
Satisfaction of Joint Force Commanders' Needs***

OPERATIONALLY RESPONSIVE SPACE (ORS)

ORS Program Status 10 May 2012

**Reinventing Space Conference
El Segundo, CA**

Peter.wegner@kirtland.af.mil
505-853-2413

Dr Peter Wegner, Director
Operationally Responsive Space Office

Distribution A: Cleared
for Public Release

UNCLASSIFIED – Cleared for Public Release --- PA Case 2012-0235





ORS-3: The ORS Enabler Mission

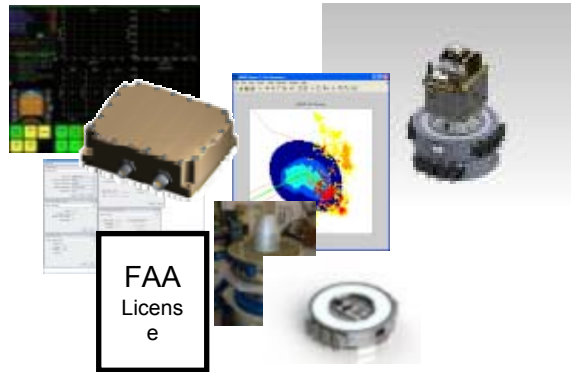
Ushering in Launch and Range Processes of the Future



Assured Space Power Focused on Timely Satisfaction of Joint Force Commanders' Needs

Approach

- Use Automated Launch Vehicle Orbital Targeting Process
- Use Automated Range Safety Planning Process
- Develop Autonomous Flight Safety System – Significant Launch and Range O&M cost reductions
- Use CubeSat Wafers – Allows secondary payload capability taking advantage of excess lift capacity that is benign to primary payload



Results:

- Commercial Like Launch Procurement and Execution
- ~\$24M Fly Away Cost

Specifics:

- Launch: Aug 2013, Wallops, VA
- Using Integrated Payload Stack
- Primary payload (SMC's STPSat-3)
- 27 additional payloads made up of free-flyer Space craft and non-separating experiments





Unclassified – Cleared for Public Release



ORS-3 Manifested CubeSats & Experiments

Assured Space Power Focused on Timely Satisfaction of Joint Force Commanders' Needs

Spacecraft	ORS 3 Mission Sponsor	SV Provider	#U's
ORS 1 ORSES	ORS	ORS	3
ORS 2 ORS Tech 1	ORS	ORS	3
ORS 3 ORS Tech 2	ORS	ORS	3
Prometheus	SOCOM	LANL	1 x 3
Prometheus	SOCOM	LANL	1 x 3
Prometheus	SOCOM	LANL	1 x 3
Prometheus	SOCOM	LANL	1x 3
SENSE	STP	SMC/XR	3
SENSE	STP	SMC/XR	3
Firefly	NRO	NSF	3
Horus	NRO	LLNL	3
Black Knight 1	NASA LSP/STP	US Military Academy	1
TetherSat	NASA LSP/STP	US Naval Academy	3
NPS-SCAT	NASA LSP/STP	Naval Post Grad School	1
CSIP	NASA LSP/STP	AFRL/RV	3
Rampart	NASA LSP/STP	Colorado Satellite Services	2
COPPER	NASA LSP/STP	St Louis University	1
SPA-1 Trailblazer	NASA LSP/STP	Univ of New Mexico	1
Lunar Orbiter/Lander	NASA LSP/STP	Vermont Technical College	1
Swamp Sat	NASA LSP/STP	Univ of Florida	1
CAPE-2	NASA LSP/STP	Univ of Louisiana	1
DragonSat-1	NASA LSP/STP	Drexel University	1
KYSat II	NASA LSP/STP	Kentucky Space	1
PhoneSat	NASA LSP/STP	NASA Ames	1
PrintSat (alt)	NASA LSP/STP	Colorado Satellite Services	1
TJSat (alt)	NASA LSP/STP	Thomas Jefferson HS	1



ORS and CubeStack

Novel Idea for Multi-Mission Launch



Assured Space Power Focused on Timely Satisfaction of Joint Force Commanders' Needs

- ORS partnered with NASA Ames and AFRL to develop & produce the CubeStack
- Multi CubeSat adapter provides “Low Maintenance” tertiary canisterized ride capability
- ORS-3 Mission: Will fly 2 CubeStacks in Summer 2013
 - Largest multi-mission launch using a Minotaur I launch vehicle
 - 26 Free Flyers
 - 2 Experiments

