NASA Announcement of Opportunity, NNH07ZDA003O
"Explorer Program: Small Explorers (SMEX) and Missions of Opportunity."

Questions From / Answers To Potential Proposing Community

Most Current Update as of Tuesday, December 11, 2007

Question Number	Date Received	Date Posted	Question	Answer
1	Wed, 28 Nov 2007	Tue, 11 Dec 2007	Prior to the release of Amendment2 ... Words from AO regarding phases ... For the purposes of this AO, the NASA mission management processes are divided as follows. Formulation is divided into: **Phase A** - Concept and Technology Development; and **Phase B** - Preliminary Design and Technology Completion. Approval is the process for transitioning into Implementation, which for Explorer missions is the step leading to a **Confirmation Review** with the Associate Administrator for SMD. Implementation is divided into: **Phase C** - Final Design and Fabrication; **Phase D** - System Assembly, Integration and Test, and Launch (extending through in-orbit checkout, usually launch plus 30 days); **Phase E** - Operations and Sustainment;	The development timeline from the original AO was a generic template focused on Explorer missions; the SMEX addendum for ISS payloads redefines the development schedule according to ISS milestones...so, for all practical purposes...it appears to us that: NASA's mission management process Phase B would match up to ISS Opportunity's PDR, NASA's mission management process Phase C would match up to ISS Opportunity's CDR, NASA's mission management process Phase D would match up to ISS Opportunity's certification and integration.

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			and **Phase F** - Closeout. Phase E is to include analysis and publication of data in the peer reviewed scientific literature and delivery of the data to an appropriate NASA data archive. Since the ISS Opportunity specifically states ... Payloads would be required to complete ...PDR approximately 36 months before launch, CDR approximately 24 months before launch, and be delivered for certification and integration approximately 9 months before launch. This contradicts the combined PDR/CDR in the original AO. And as a result, will affect the phases, and the timeline for reviews (SRR, CR, PER, PSR, etc). Can you please provide a new lifecycle timeline including phase definition, phase duration, and reviews?	
2a	Fri, 30 Nov 2007	Tue, 11 Dec 2007	What is the largest payload that could be launched on HTV?	HTV has constraints as do the platforms. Please refer to the *Payload Allowable Up-Mass & Volume Summary Table* on the last page of this Q&A document. For further reference, data are documented in D683-97497-01 Rev A and D684-11532-01 Rev B. Please note, however, these documents are ITAR-controlled and available to eligible parties via specific request emailed (with "SMEX AO" in Subject field) to: pdl.helpdesk@msfc.nasa.gov.

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2b	Fri, 30 Nov 2007	Tue, 11 Dec 2007	Can we have more information on interfaces to HTV for a FRAM-based payload, and what are the load capabilities?	Please refer to the *Payload Allowable Up-Mass & Volume Summary Table* on the last page of this Q&A document. FRAM-based payloads still need to meet requirements (e.g., interface, data, power, etc.) as presented. For further reference, data are documented in D683-97497-01 Rev A and D684-11532- 01 Rev B. Please note, however, these documents are ITAR-controlled and available to eligible parties via specific request emailed (with "SMEX AO" in Subject field) to: pdl.helpdesk@msfc.nasa.gov.
2c	Fri, 30 Nov 2007	Tue, 11 Dec 2007	From the HTV Cargo Standard Interface Requirements Document, Unpressurized Cargo for Multi-purpose Type (NASDA-ESPC-2857 Rev. B, Part 2, Volume 3), p. 15. If it is assumed that *[payload]* is limited to load capabilities of the Active FRAM and that the HTV pallet will accommodate this interface, will the payload developer have to analyze the system loads (payload plus Active FRAM) to the HTV or will that be done by the HTV organization?	The payload developer will be given a launch environment and is responsible for performing analysis to assure that the payload and adapter assembly can withstand the launch environment. The payload developer is then obligated to provide this model so that the integrated analysis can be performed by JAXA.
2d	Fri, 30 Nov 2007	Tue, 11 Dec 2007	NASDA-ESPC-2857, Rev. B states that "the cargo provider shall provide the HTV with the cargo structural mathematical model that is verified in accordance with TBD". This means that *the [payload]* will need a loads model(s) of the Active FRAM. Who will provide the Active FRAM model to *[payload]*? On the other hand, note that the ELC representative stated that the ELC will conduct the loads analyses of the complement of payloads provided on Active FRAMs.	The FRAM structural models will be provided by the ISS program. The integrated analysis of the ELC will be performed by the ISS program.
2e	Fri, 30 Nov 2007	Tue, 11 Dec 2007	What is the specific static and dynamic envelope for any particular payload on the HTV and the reference document specifying	*JAXA/HTV-relevant response information in process.*

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			the constraints?	
2f	Fri, 30 Nov 2007	Tue, 11 Dec 2007	*[One reference]* stated that there may be up to a 5 inch differentiation between the HTV and ELC height allowances. Can this be confirmed, and if so, what documents should be used for reference?	*JAXA/HTV-relevant response information in process.*
2g	Fri, 30 Nov 2007	Tue, 11 Dec 2007	Will simulators be provided to the payload developer to test payload-to-pallet form/fit/function for the HTV and ELC?	ELC: Each payload developer will be issued a portable simulator for initial payload development and testing. After the payload is delivered to KSC, it will be tested with a simulator that provides the same mechanical and electrical/ data interfaces as the ELC. A final test will be performed after the payload is integrated onto the ELC. This final test will be preformed with the ELC connected to a simulator that simulates the truss interfaces that the ELC will use. JEM-EF: *Response information in process.*
2h	Fri, 30 Nov 2007	Tue, 11 Dec 2007	Where will the simulators be located?	ELC: The simulators will be located at KSC with the exception of the portable simulator which will be provided to the payload developer to use at his home facility JEM-EF: *Response information in process.*
2i	Fri, 30 Nov 2007	Tue, 11 Dec 2007	What are the generic on-dock dates for training, simulations, and flight integration?	*Response information in process.*
2j	Fri, 30 Nov 2007	Tue, 11 Dec 2007	What flight and simulation hardware, if any, will be provided as GFE to the payload developer?	ELC: The payload developer will be provided an Express Pallet Adapter and a portable simulator. The schedule dates that the simulator is made available to the payload developer will be coordinated with other users.
2k	Fri, 30 Nov 2007	Tue, 11 Dec 2007	If *[payload]* is displayed outside of stowed configuration and outside normal payload envelope of ELC payload, but not within main EVA translation path, then besides sharp-edge control, is it required to have any other EVA features such as an EVA override for	If a payload is deployed outside the nominal envelop, an exception will have to be processed. The necessity to be re-stowed within the original envelop will be analyzed on a case by case basis.

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			returning it to a stowed configuration?	
2l	Fri, 30 Nov 2007	Tue, 11 Dec 2007	The most current manifest for ELCs implies that we will be exchanged with other payloads resident on ELC locations desirable by *[payload]*. What are the implications with respect to placing *[payload]* on the ELC as well as any payload that is to replace *[payload]* after its mission is complete (see next question)?	Payloads will be mounted on the ELC in locations that meet the individual payload requirements. Payloads will only be exchanged with other payloads if there is a manifest constraint that cannot be avoided. NASA plans to fly additional external payloads after the end of the Shuttle program and currently there is no capability to return ELC payloads after the Shuttle program ends. If there is a need to replace a payload after its mission is complete, it will either be jettisoned or stored at a location that frees the ELC science site for use by the replacement payload.
2m	Fri, 30 Nov 2007	Tue, 11 Dec 2007	Currently, the ELC position on the P3 truss is shown on the lower side of the truss; will it be considered for the upper side instead?	We are requesting an equal number of Zenith and Nadir sites on the ELC for payload operations.
2n	Fri, 30 Nov 2007	Tue, 11 Dec 2007	The *[payload]* mission has duration of at least 1.5 years. It is not required that the payload be returned to Earth. We assume that when our term is completed, there may be another payload(s) that will be manifested in our place. By what means will that exchange take place and how should we prepare for our disposal (e.g. exchange to an HTV for demise or removal and release from the ELC as an independent entity)?	The exchange of the payload will be via EVA or EVR transfer. There is an extensive approval process that has to be completed to jettison a payload, however, there are currently no requirements levied on a payload to support jettison of the payload.
2o	Fri, 30 Nov 2007	Tue, 11 Dec 2007	Regarding handling assumptions, are the following facts true? (1) *[payload]* is a FRAM-based payload, (2) EVR is the default method for exchange of *[payload]* from the HTV to the ELC.	Payloads going to the ELC and Columbus will use FRAM-based adapters that will be supplied by NASA to the payload developer. The method used to transfer payloads between the HTV and the ELC can be either EVR or EVA, and provisions for both methods are built into the EXPRESS pallet adapter. EVR is supposed to be prime method of payload deployment; however, we will be using both methods to transfer payloads.
3	Tue, 4 Dec 2007	Tue, 11 Dec 2007	I need to access SSP 30425 for the purpose of determining requirements for a candidate ISS experiment design for response to the	These documents are ITAR-controlled and available to eligible parties via specific request emailed (with “SMEX AO” in Subject field) to:

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			NASA Small Explorer (SMEX) and Missions of Opportunity Solicitation: NNH07ZDA003O. In searching the NASA website, I found the document listed as: http://www1ep.jsc.nasa.gov/esdprojects/X38/documents/ssp30425RevB.pdf However this address is not accessible to me. Is there an alternate place where I may obtain it?	pdl.helpdesk@msfc.nasa.gov
4a	Tue, 4 Dec 2007	Tue, 11 Dec 2007	A recent Amendment to the 2007 Small Explorer and Mission of Opportunity AO has identified opportunities for ISS payloads to be funded through the NASA/Science Mission Directorate. The Japanese HTV is identified as the "access to space" with NASA controlling the manifest. Who pays for the launch cost? Is the proposal to SMD supposed to account for this cost or is it covered by the Science Operations Mission Directorate?	HTV launch cost is covered by the JEM launch offset agreement with JAXA, and thus, these costs are not passed to the payload developer.
4b	Tue, 4 Dec 2007	Tue, 11 Dec 2007	For a payload/experiment attached to the JEM-EF, can an EVA be used to put the experiment in final configuration?	Yes.
4c	Tue, 4 Dec 2007	Tue, 11 Dec 2007	If yes to the EVA question above, who pays for the cost of EVA planning and execution?	EVA costs are a standard service provided by NASA and are not passed on to the payload developer. Developers are responsible for providing the data to NASA that are required to plan and implement the EVA, and should be aware that there are additional integration and safety requirements associated with EVA placements and retrievals
5	Tue, 4 Dec 2007	Tue, 11 Dec 2007	Can scientists or engineers in the ISS Payloads office be included as collaborators in a SMEX/MO proposal?	ISS Payloads personnel cannot be included as investigators or collaborators or provide letters of support for any SMEX proposals as this would constitute a conflict of interest.

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6	Wed, 5 Dec 2007	Tue, 11 Dec 2007	Do you have any new information as to when the TIM will take place?	The Briefing in Support of Small Explorer Missions of Opportunity AO will take place on Wednesday, December 19, 2007. The teleconference will begin at 9:00 AM. Central Time and end at 12:00 PM noon for the briefing portion. A question and answer period is scheduled from 1:00 PM to 4:00 PM Central time for those who are interested in further discussion. Pre-registration is required and due by Tuesday, December 18, at 1:00 PM Central time. For more specific information and details, including registration instructions, please see http://www1.fbo.gov/spg/NASA/HQ/OPHQDC/NNH07ZDA003O/Modification%2003.html

Payload Allowable Up-Mass & Volume Summary Table

Attach Payload Location	Allowable Payload Weight (including Flight Support Equipment)	Accommodation Weight (including adapter plate)	Total Weight	Payload Volume (W x H x L)
HTV Exposed Pallet (JEM EF Payload)	979 Lb (445 Kg)	121 Lb (55 Kg)	1100 Lb (500 Kg)	31.5” x 39.4” x 72.8” (800mm x 1000mm x 1850 mm)
HTV Exposed Pallet (ExPA, CEPA Payload)	See ExPA & CEPA payload specification for ELC & CEF	See ExPA & CEPA payload specification for ELC & CEF	*See ExPA & CEPA payload specification for ELC & CEF	*See ExPA & CEPA payload specification for ELC & CEF
ELC (ExPA)	490 Lb (222 Kg)	250 Lb (114 Kg)	740 Lb (336 Kg)	34” x 49” X 46” (863mm x 1244mm x 1168 mm)
Columbus (CEPA)	388 Lb (176Kg)	250 Lb (114 Kg)	638 Lb (290 Kg)	34” x 49” X 46” (863mm x 1244mm x 1168 mm)
JEM-EF	979 Lb (445 Kg)	121 Lb (55 Kg)	1100 Lb (500 Kg)	31.5” x 39.4” x 72.8” (800mm x 1000mm x 1850 mm)

**** : Location constraint applies in HTV Exposed Pallet***