Question	Answer
Governance	
Question 1: With all the governance that is discussed, who has ultimate authority for the project? PM? TA? Center Director?	**Answer:** The responsibilities of the program or project manager are not diminished by the implementation of Technical Authority. The program or project manager is still ultimately responsible for the success of the program or project. Communication is very important between responsible parties. Everyone at NASA has a responsibility to ensure the success of the mission. (See Section 5.1 of the PM Handbook for more information on governance.)
Question 2: Much of what you have shared seems to contradict the 'center director' requirements levied through the NPRs. What do you understand to be the center's responsibilities with respect to implementation of NPR 7120.5/NPR 7123.1 versus HQ's responsibilities?	**Answer:** The PM Handbook is consistent with NPR 7120.5E requirements for HQ and Center Director roles and responsibilities, with one exception described in Question 3 and its associated answer. (See the following in the PM Handbook for additional information: • Sections 3.2.2.2 and 4.2.2.2 for more information on the roles and responsibilities of the Center Director. • Section 5.1 for more information on the programmatic authority and institutional authority for the Mission Directorate AA and the Center Director. • Appendix D for more information on the roles and responsibilities of the Office of the Administrator, Administrator's Staff and Mission Support Offices, the Mission Directorate AA and the Center Director for programs and projects.)
Question 3: The NPR 7120.5E quote in the PM Handbook on the Center Director role and responsibility is different from the language that is actually in the NPR. Why?	**Answer:** The Agency and the Aerospace Safety Advisory Panel (ASAP) wanted to be sure that the Center Director's role was consistent with maintaining a proper balance between programmatic and institutional authority. The Agency made a decision to clarify the Center Director's role by modifying the language in NPD 1000.0, NASA Governance and Strategic Management, and modifying the language in NPR 7120.5E. A revision to NPD 1000.0 is in process. The update to NPR 7120.5E is pending. However, the importance of this modification is sufficient to incorporate the new language in the PM Handbook now, prior to the next update to NPR 7120.5 which will reflect the updated language in the revision to NPD 1000.0 and the PM Handbook. The new language in the PM Handbook is: "Center Directors are responsible and accountable for all activities assigned to their center. They are responsible for the institutional activities and to ensure the proper planning and assure the proper execution of programs and projects assigned to the Center."
Question 4: Can the Center Director tell the Program or Project Manager what to do?	**Answer:** The Center Director, as the Institutional Authority for work performed at his or her center (including technical authority), has the responsibility to ensure that the program or project is performing that work in accordance with all the approved plans, requirements, processes, procedures, regulations, laws, etc. When a program or project deviates from these, the Center Director may direct the program or project to properly follow them. The Center Director also has a role to assure proper execution of the programs and projects assigned to their Center, but cannot direct a PM in their programmatic responsibilities. An update is planned to the language in NPR 7120.5E on the Center Director's (CD) role and responsibilities (see

Question	Answer

	Question 3): "Center Directors are responsible and accountable for all activities assigned to their Center. They are responsible for the institutional activities and to ensure the proper planning and assure the proper execution of programs and projects assigned to the Center."
	• The CD is responsible for ensuring programs and projects develop plans that are executable within guidelines from the Mission Directorate and for assuring programs and projects are executed within the approved plans.
	• The CD may provide direction (within constraints) to the program or project manager to correct deficiencies with respect to:
	  • Center engineering, SMA, health and medical, and management best practices (e.g., program/resource management, procurement, institutional);
	  • Whether Center resources support program or project requirements;
	  • Whether the program or project is meeting approved plans successfully
	• Constraints on CD direction to program or project manager: With respect to programmatic requirements, budgets, and schedules, the CD does not provide direction, but only recommendations to the program or project manager, Mission Directorate, or Agency leadership.
	(See Sections 3.2.2.2, 4.2.2.2, and 5.1 of the PM Handbook for more information on the roles and responsibilities of the Center Director.)

Dissenting Opinion Process	
Question 5: If the Program/Project Manager has ultimate authority -- and there is a situation where the Center Director or Center Staff is vitiating P/PM direction -- what is the best appeal route for the P/PM?	**Answer:** If the concern cannot be resolved between the program or project manager and the Center Director, the program or project manager may use the dissenting opinion process to address the concern. This process is described in detail in Section 5.3 of the PM Handbook, including a discussion of a potential appeal path for resolution of a dissenting opinion between the Programmatic Authority (e.g., program or project manager) and the Technical Authority (e.g. Center Director).
Question 6: Slide 22 identifies that Chapter 5 of the handbook describes the Dissenting Opinion Process. What is your opinion of the overall safety culture of the organization as to whether an individual may be encouraged or discouraged to go	**Answer:** The dissenting opinion process is an important part of NASA governance, is incorporated as policy in NPD 1000.0, NASA Governance and Strategic Management, and flows down throughout NASA procedural requirements including NPR 7120.5E. Since the Columbia accident, after the Columbia Accident Investigation Board (CAIB) Report was released, we have seen senior management ask if there are any dissenting opinions at reviews, including Flight Readiness Reviews and Key Decision Points, for both human space flight and robotic space flight programs and projects. This discipline and culture change was instilled during early Shuttle "Return to Flight" reviews, when many dissenting opinions were brought up and discussed. Agency senior management actively promoted discussion of dissenting opinions and listened carefully before making their final decisions.

Question	Answer
forward with a dissenting opinion, understanding the time associated to review and process the opinion may impact the project schedule along with possibly impacting the dissenter's career.	The Agency leadership strongly encourages dissenting opinions. If an individual feels a concern about any important aspect of any kind (technical, legal, financial, contractual, etc.) he or she is asked, encouraged and expected to voice those concerns. The dissenting opinion process was designed to support and enable this. Chapter 5 of the PM Handbook includes a case study on the STS-121 "Return to Flight" Flight Readiness Review. The Agency Chief Engineer and Chief S&MA officer both non-concurred on proceeding to launch. The NASA Administrator's response is included in the case study. This example may alleviate any concerns people may have about raising a dissenting opinion. In our opinion, the Agency is following the dissenting opinion process very well without impact to a dissenter's career. The Agency's senior managers recognize and respect differing opinions and their importance in enabling senior management to make sound decisions. Individuals raising a dissenting opinion can expect to be asked for their rationale, and to document their dissenting opinion, and they can also expect to be heard and respected, and for their opinion to be carefully considered by senior management. There have been a couple of significant instances of the use of the dissenting opinion process in the last 2 to 3 years. In some cases these dissenting opinions have been elevated all the way to the APMC. The dissenting opinion process does include provisions for expediting resolution of a dissenting opinion in cases of urgency in order to mitigate any potential delays to the program or project schedule. (See Section 5.3 in the PM Handbook for detailed information on the dissenting opinion process.)
Tailoring	
Question 7: Why do I have to apply NPR 7120.5E to my small project and figure out which requirements don't apply?	**Answer:** Tailoring is both an expected and accepted part of establishing the proper requirements for a program or project. Programs and projects are expected to tailor the requirements of *NPR 7120.5* to meet their specific needs. The Agency's requirements and handbooks have been developed to assist program and project managers in achieving mission success by establishing requirements and best practices. It is not possible to generate the proper requirements and guidelines for every possible scenario. Project managers and their teams need to use good common sense when developing their plans, processes, and tools so that they can be effective, efficient, and successful with acceptable risk. Several Centers have developed tailoring approaches. This information may be helpful in providing further guidance on how to tailor 7120.5 project requirements. Additional information can be found on the NASA Engineering Network (NEN) Program/Project Management Community of Practice (PM CoP) under "Tailoring Methods" at the following link: https://nen.nasa.gov/web/pm/tailoring-methods.
Question 8: If tailoring is expected, why do I need to get approval to do it?	**Answer:** • The organization that establishes a requirement (or formally delegated designee) is in the best position to know why the requirement was established and to assess a request for relief and its associated

Question	Answer
	justification. In addition, the interaction between the user of a requirement and the party responsible for establishing a requirement provides important feedback to the organization responsible for the requirement that can be used to determine whether the requirement needs reassessment. • Several organizations may have played a significant role in establishing a requirement or may be affected by tailoring the requirement. Consultation with these organizations is essential to avoid adverse unintended consequences as these organizations may have background and/or insights that may not be readily apparent. • Involved management at the next higher level is informed in a timely manner of the request to tailor a prescribed requirement. The next higher level may be counting on the original requirement in a manner that is not known to the lower level (e.g., the requirement may have been used in a higher level analysis of which the lower level is not aware.) • Timely interaction among management levels supports a philosophy that contributes to mission success…specifically, the goal of "no surprises." • Much of the tailoring authority has been delegated to the Center level, so the Center gets the opportunity to approve much of the tailoring that's required. (See Sections 4.1.5 and 5.4 of the PM Handbook for more information on tailoring.)
Question 9: I was hoping you would get into the actual NPR more and having information on tailoring. Do you plan to have a session on this? Thanks!	**Answer:** OCE is considering a future VPMC on tailoring, and plans to discuss the appropriate methods for disseminating information on tailoring at a future PPMC. (Section 4.1.5 discusses project tailoring and provides an example of tailoring for a small project. Section 5.4 "Tailoring Requirements", provides detailed information on tailoring, including delegation of tailoring approval authority, tailoring NPR 7120.5 requirements, tailoring derived requirements, tailoring technical authority requirements, non-applicable prescribed requirements, and requesting a permanent change. In addition, management tools to guide program and project managers in tailoring the requirements can be found on the NASA Engineering Network (NEN) Program/Project Management Community of Practice (PM CoP) under "Tailoring Methods" at the following link: https://nen.nasa.gov/web/pm/tailoring-methods).
Question 10: Does tailoring of 7120.5E requirements always require a formal waiver or deviation be approved? Can one tailor using "common sense" for the size or classification/category of project without having a formal waiver	**Answer:** The short answer is "No". Documenting tailoring in the Program or Project Plan does not constitute approval. The Compliance Matrix (CM) has been developed as a streamlined approach for identifying and obtaining approval for tailored requirements and serves as a streamlined approach to deviations and waivers. (See NPR 7120.5E, Section 3.5 and Appendix C for details on the CM, including the CM template and instructions for completing the CM.) The CM template in NPR 7120.5E clearly states the owner of each requirement and whether the tailoring authority is at the HQ level or may have been delegated to the centers. (Note that requirements are owned by multiple HQ organizations.) The CM is completed early during the formulation phase of the program or

Question	Answer
or deviation approved, as long as that is documented in project plan? Thank you.	project and identifies the requirements to be tailored, along with the justification for tailoring. The project or program needs to obtain approval from the tailoring authority for each requirement to be tailored. The completed CM, including signatures from applicable tailoring authorities, is appended to the Formulation Agreement (for programs or projects that develop Formulation Agreements), or the Program or Project Plan. Formal waivers may be generated by the program or project for tailoring not documented in the CM (e.g. this may occur if the waiver is determined later in the life cycle). (See Question 7 (above), and Sections 4.1.5 and 5.4 in the PM Handbook for additional information and for an example of a CM for tailoring for a small project.)
Question 11: Following up on the useful discussion I just heard, on page 300 of the PM Handbook, it indicates that the tailoring should be approved by all stakeholders. This goes against the spirit of the NPR 7120.5 Appendix C that authorizes the center managements for most of the requirements. It will be too time consuming and expensive, particularly for small projects to track down and get agreements from all stakeholders on all those waivers. That is why most will opt out and simply try to comply, which can unduly drive the cost of the missions.	**Answer:** Section 5.4.1 of the PM Handbook provides information on the delegation of tailoring approval authority, including examples of how delegation of approval authority has been formally implemented for HQ-originated requirements by OCE, S&MA and OCHMO. Most tailoring approval authority for OCE requirements has been delegated to the Center level. Program and project managers can work with the Center representative of the responsible organization (e.g., the NASA Headquarters Office of Safety and Mission Assurance (OSMA)) to determine if tailoring authority has been delegated to a Center person and, if so, who the delegated authority is. Note: Page 300 of the PM Handbook (Section 5.4.2) states that <u>the organization approving the tailoring disposition</u> (not the organization requesting the tailoring) consults with other organizations: "The organization at the level that established the requirement approves the request for tailoring that requirement unless this authority has been formally delegated elsewhere. The organization approving the tailoring disposition consults with the other organizations that were involved in the establishment of the specific requirement and obtains the concurrence of those organizations having a substantive interest."
Questions 12 and 13: • **How can we get access to the 7120.5 LaRC tailoring tool?** • **Is the LaRC tool a software tool?**	**Answer:** Several Centers have developed tailoring approaches. Some Center's approaches are based on the LaRC tool, other Center's approaches are not. The LaRC tool is a software tool based on Microsoft Excel. There is a "Tailoring Methods" page on the NASA Engineering Network (NEN) PM Community of Practice (CoP) website. Briefings and information from the various Centers that have developed tailoring approaches, including ARC, JPL, GRC, GSFC, LaRC, MSFC, OCT and STDM, can be found on this website. (The

Question	Answer
	"Tailoring Methods" page can be accessed via the radial buttons at the bottom of the PM CoP website under the area titled "Community Links". The direct link is https://nen.nasa.gov/web/pm/tailoring-methods.) Tailoring Points of Contact for Center approaches: ARC - Tina Panontin GRC - Lowell Wolfe GSFC - Colleen Hartman JPL - Chris Jones LaRC - Jim Price MSFC - Renee Cox OCT – Sandra Cauffman STMD - Randy Lillard
Question 14: Do you know if all have to go to the center director to tailor smaller IT projects?	**Answer:** NPR 7120.5 applies to highly specialized Information Technology (IT) acquired as a part of space flight programs and projects. Non-highly specialized IT projects are subject to NPR 7120.7. If an IT project is subject to NPR 7120.5, the guidance provided in the PM Handbook for tailoring is applicable. (See Question 11 for additional information on delegation of tailoring approval authority.)
Life-Cycle Cost Estimate	
Question 15: Why are Pre-phase A costs not included as part of the LCCE?	**Answer:** • The LCCE is the total estimated cost of a program or project over its planned life cycle from Formulation (excluding Pre–Phase A) through Implementation (excluding extended operations). – The LCCE includes all costs, including all unallocated future expenses and funded schedule margins. • Costs incurred during Pre-Phase A are not included in a program or project's LCCE because the program or project does not exist during Pre-Phase A. (Pre-Phase A is focused on studies that are conducted to determine the feasibility of the potential program or project.) The program or project is not established until KDP A, which occurs at the end of Pre-Phase A. (See Section 5.5 of the PM Handbook for more information on the LCCE.)
Agency Baseline Commitment (ABC)	

Question 16: Please explain the ABC in more detail. For example, when is it developed and which programs and projects have to have an ABC?	**Answer:**
	• The Agency Baseline Commitment (ABC) is an integrated set of program or project requirements, cost, schedule, technical content, and when applicable, JCL.
	• The ABC is established at the transition to Implementation (KDP I/KDP C).
	• The ABC cost is equal to the LCC approved by the Agency at KDP I/KDP C.
	  ○ It includes actual Formulation costs (Phases A and B) and estimated costs for Implementation (Phases C, D, E and F).
	  ○ It does not include actual costs for Pre-Phase A or Extended Operations.
	• The ABC is required for all projects, tightly coupled programs and single-project programs. It is not required for loosely coupled and uncoupled

Question	Answer
	programs. • The ABC is the only official baseline for a program or project. • The ABC for projects with LCC > $250 million, and for tightly coupled and single-project programs (regardless of LCC) forms the basis for the Agency's external commitment to OMB and Congress, and serves as the basis by which external stakeholders measure NASA's performance. • Changes to the ABC are controlled through a formal approval process. (See Section 5.5 of the PM Handbook for more information on the ABC.)
Question 17: I was told by HQ's that the $250M dollar figure has been officially changed to $150M. Is this correct?	**Answer:** The official requirement is $250M. The Cost Analysis Division within the Office of Evaluation is working together with the Mission Directorates to evaluate and implement an appropriate process and approach for applying JCL analysis to missions costing between $150M and $250M.
Management Agreement and Formulation Agreement	

Question 18: Would you please explain what is included in the Management Agreement in formulation?	**Answer:**
	• The Management Agreement (MA) is contained within the Decision Memorandum (DM). A DM and associated MA are established at every KDP and approved by the Decision Authority and are in effect throughout the life-cycle phase which follows the KDP. For example, the DM and MA documented at KDP A are in effect throughout Phase A.
	  – The DM and MA may be changed between KDPs as the program or project matures, with approval from Decision Authority. Changes require renegotiation and acceptance, and an amendment to the DM.
	• The Management Agreement defines parameters and authorities over which the program or project manager has management control and authority to implement the approved technical content
	  – The MA includes the schedule and cost (by year) at which the Agency agrees that funding will be made available to the program or project and at which the program or project manager and the Center agree to deliver the content defined in the Program or Project Plan.
	  – The MA includes the UFE and schedule margin controlled by the program or project manager. It does not include UFE and schedule margin held outside the program or project (by the Program or Mission Directorate).
	  – During Formulation (life-cycle Phases A and B), the MA includes the authorized Formulation cost and any authorized UFE.
	• The Management Agreement is typically viewed as a contract between the Agency and program or project manager.
	• Both the Agency and the program or project manager are accountable for compliance with terms of the agreement.
	(See Sections 5.5.3 and 5.5.6 of the PM Handbook for more information on the Management Agreement.)

Question 19: What's the difference between	**Answer:** See Question 18 for information on the Management Agreement. The Formulation Agreement is the project's or single-project program's plan

Question	Answer
the Formulation Agreement and the Management Agreement?	for the formulation phase and serves as a tool for communicating and negotiating a program or project's schedule and funding requirements during Phase A and Phase B with the Mission Directorate. It identifies and prioritizes technical and acquisition activities necessary to accurately characterize the program or project's complexity and scope; increase understanding of requirements; identify and mitigate safety, technical, cost, and schedule risks, and develop high quality cost and schedule estimates. • The Formulation Agreement is required for projects and single-project programs. • The Formulation Agreement is approved at KDP A (baselined for Phase A and preliminary for Phase B), and updated and approved at KDP B (baselined for Phase B). • For projects with LCC > $250 million and single-project programs, the Formulation Agreement enables: – Development of high-fidelity cost and schedule range estimates and associated confidence levels at KDP B – Development of high-fidelity cost and schedule commitments and associated JCL at KDP C – The program or project, and the Agency, to commit to a successful plan for Implementation at KDP C. (See Sections 3.3.2.1 and 4.3.2.1 of the PM Handbook for more information on the Formulation Agreement.)
Joint Cost and Schedule Confidence Level (JCL)	
Question 20: What is a JCL and why do we have to develop it?	**Answer:** The Joint Cost and Schedule Confidence Level (JCL) is the product of a probabilistic analysis of coupled cost and schedule to measure the likelihood of a program or project completing all remaining work at or below the budgeted levels and on or before the planned completion of the development phase. • The JCL is required for all tightly coupled and single-project programs, and for all projects with LCC > $250 million. • The JCL is established at the transition to Implementation (KDP I/KDP C). – The JCL calculation includes the period from approval for Implementation through handover to operations (Phases C and D). – The JCL calculation includes consideration of risk associated with all elements, regardless of whether or not they are funded from appropriations or managed outside of program or project. • Per NPR 7120.5, Mission Directorates plan and budget tightly coupled and single-project programs, and projects with LCC > $250 million based on 70% JCL or as approved by the Decision Authority. Mission Directorates ensure funding is consistent with the Management Agreement and in no case less than 50% JCL. The JCL has enabled NASA to improve its cost estimating for programs and projects. It provides a forcing function for getting cost and scheduling communities together and synthesizing the data into a bigger picture, taking

Question	Answer
	into account the program or project's cost and schedule risks and probabilities tied to cost. NASA has been reprimanded for cost growth, particularly by GAO in 2002, in a report that recommended NASA establish a standard framework for developing life-cycle cost that included identifying uncertainty in the estimate. NASA's response evolved over a period of years, resulting in the JCL solution for tightly coupled and single-project programs, regardless of life-cycle cost, and for projects with an estimated LCC > $250 million. NASA's approach to developing the ABC, JCL, and Unallocated Future Expenses (UFE) has gained acceptance with our external stakeholders, including Congress, and has increased the credibility of NASA's cost estimates with those entities. The JCL now provides a tool for communicating with Congress how changes in the budget affect the cost, schedule and the program or project's chances of success. In NASA's negotiations with Congress, it is understood that any reduction in UFE reduces the probability of achieving program or project cost and schedule targets in a manner that can be explicitly quantified. (See Section 5.7 of the PM Handbook for more information on the JCL. See also the VPM Challenge session on JCL, recorded in 2013. See Question 21 for information on UFE.)
Unallocated Future Expenses (UFE)	

Question 21: What is UFE? How does a program or project manager access UFE?	**Answer:**
	• Unallocated Future Expenses (UFE) are the portion of estimated cost required to meet a specified confidence level that cannot yet be allocated to specific WBS sub-elements because estimate includes probabilistic risks and specific needs not known until risks are realized.
	• UFE may be held at the project, program and/or Mission Directorate level. UFE is documented in the Decision Memorandum and Management Agreement
	  ○ For projects, UFE held at the project level is documented in the project's Management Agreement and for programs, UFE held at the program level is documented in the program's Management Agreement
	  ○ For projects, UFE held at the program level is documented in the Decision Memorandum
	  ○ For projects and programs, UFE held at the Mission Directorate level is documented in the Decision Memorandum
	• The program or project manager may access and distribute UFE in their Management Agreement to specific WBS sub-elements without seeking approval.
	• Approval and amendment to the Decision Memorandum is required for:
	  ○ The project manager to access and distribute UFE held at the program or Mission Directorate level
	  ○ The program manager to access and distribute UFE held at the Mission Directorate level.
	• When UFE is a product of the probabilistic JCL analysis, any reduction in

Question	Answer
	UFE reduces the probability of the program or project achieving its cost and schedule targets in a manner that can be explicitly quantified. • For programs and projects not required to develop confidence levels, UFE is informed by the program or project's risk posture in accordance with Mission Directorate and Center guidance and requirements. Rationale used in developing the UFE should be documented, traceable, repeatable, and defendable. • The term "reserves" is obsolete and the use of reserves by programs and projects is no longer an accepted practice. Reserves were typically based on program or project estimates developed via numerous different processes. Instead, projects and programs use UFE, which is determined via Agency/Center approved analytical processes. (See Section 5.7.5 of the PM Handbook for more information on UFE.)
Standing Review Board (SRB)	
Question 22: What is the intent of "standing" with respect to Standing Review Boards?	**Answer:** The intent of a "standing" review board is to provide continuity in the engagement of the review team with the program or project by having the same core review team perform all the SRB independent life-cycle reviews throughout the life cycle. Note that it is NOT intended to have the SRB constantly engaged with the program or project between life-cycle reviews.
Question 23: What is the difference between the SRBs structure types?	**Answer:** There are three types of SRBs structures: Civil service consensus board; civil service consensus with consultants support (CS2); and non-consensus mixed boards. • **Consensus boards** are all civil servant members. The chair is responsible for leading the team to reach a consensus on the findings and recommendations. A minority opinion may be prepared if there is a member(s) who has a disagreement with the consensus. • **Consensus with consultant support (**CS2) SRB is comprised of civil servants as members and consultants (civil servants or contractors) that are not part of the board but provide input to the board. When the chair is ready to form a consensus opinion, this must done apart from the consultants. A minority report from the members (not the consultants) is acceptable. • N**on-consensus board (NC) board** is made up of civil servants and/or consultants (it can be all consultants). Board discussions are open and the chair receives inputs from all the members. The chair forms his/her opinion, not a consensus, based on inputs. An alternate opinion is available if a member strongly disagrees with the chair's report.
Question 24: How is the membership of SRBs determined? **Question 25: How are the members of a SRB team selected? Are there any special**	**Answer:** Each SRB has a chair, a review manager, board members, and in some instances, expert consultants-to-the-board. The chair and review manager are the primary interfaces with the program or project. The chair, review manager, board members, and expert consultants are carefully chosen and need to be competent, current and free from conflicts of interest and acceptable to each senior manager that is a Convening Authority. The process of identifying the proposed SRB chair, board members and

Question	Answer
qualifications?	expert consultants involves the Independent Program Assessment Office (IPAO) (when IPAO is responsible for the SRB), the Mission Directorate (usually its Program Executive (PE)), and the responsible Center. The SRB membership is approved by the Convening Authorities that include the Center Directors, the Mission Directorate AA, the Chief Engineer, the Director of Evaluation, and the Associate Administrator. The SRB chair nomination requires collaboration among the Convening Authorities. The nomination can come from any of the Convening Authorities. The Review Manager (RM) is assigned by IPAO. The SRB chair and RM work with the Centers and the Mission Directorates to populate the team and recommend approval of the full SRB to the Convening Authorities based on an assessment that the SRB is appropriately balanced for competency, currency and independence. Individuals that serve in SRBs are highly qualified and experienced in areas such as project management, systems engineering, programmatic analyses, specialized technical disciplines, and safety and mission assurance. (See Chapter 3 of the SRB Handbook for guidance and best practices, including details on the independent requirements and collaborative processes on forming a standing review board. See also Section 5.10 in the PM Handbook for more information on the SRB.)
Question 26: Exactly who does the SRB ultimately report/answer to?	**Answer:** Independent assessment conducted by a SRB is a fundamental component of the Agency's governance checks and balances. The SRB is an independent advisory board in that it is chartered to assess programs and projects at specific points in their life cycle and to provide the program or project, the designated Decision Authority and other senior management (i.e. the Convening Authorities) with a credible, objective assessment of how the program or project is doing relative to Agency criteria and expectations. Thus, the SRB reports and answers to the Decision Authority and the Convening Authorities. (The independent review also provides vital assurance to external stakeholders that NASA's basis for proceeding is sound.) (See the SRB Handbook and Section 5.10 of the PM Handbook for more information on the SRB.)
Question 27: If a Program Manager is concerned with the makeup of an SRB - e.g., too loaded with technical experts, not enough on Programmatic expertise et al - what are his/her options? To go through the Center Director, or Center Chief Engineer's Office?	**Answer:** The program or project does not have an official voice in the selection of the SRB members. However, the program and projects have a right to voice their opinions, particularly if the program or project believes that the board members are not competent and current. In the case that the concern is not satisfactorily addressed, the Program Manager may use the Dissenting Opinion process to raise his/her concerns. (See Chapter 3 of the SRB Handbook for more information on forming the SRB. Specifically, Section 3.4.3 provides best practices for nominating members and consultants to the SRB. See Section 5.3 of the PM Handbook for more information on the Dissenting Opinion, especially Section 5.3.3 for a discussion on resolution of issues.)

Question	Answer
Question 28: Is there a $ threshold for conducting a SRB?	**Answer:** The short answer is "No" – all designated agency programs and projects are required to have a SRB. The Agency assigns responsibility for independent SRBs to two different organizations, the Independent Program Assessment Office (IPAO) and the Centers. For all programs the independent SRB is the responsibility of IPAO. For projects, the responsibility for the independent SRB is determined by the Decision Authority. The responsibility for the independent SRB for projects over $250 million LCC is typically assigned to IPAO. The responsibility for the independent SRB for projects with a LCC less than $250 million is typically assigned to a Center independent review team at the project's host Center. (See the SRB Handbook and Section 5.10 of the PM Handbook for more information on the SRB.)
Question 29: What authority do SRBs have to direct programs and projects?	**Answer:** SRBs are advisory and thus have no authority to direct programs and projects. SRBs provide findings and recommendations to the governing councils (CMCs, DPMCs and APMCs) and the program or project's Decision Authority who have authority to direct programs and projects to implement any of the SRB's recommendations.
Life-Cycle Reviews	
Question 30: Which group is responsible for establishing the Entrance/Exit Criteria for a Life-Cycle Review? The SRB? The Technical Team? The Project Management Team? Or is it a collaborative process that all agree to and document?	**Answer:** NPR 7120.5 specifies six assessment criteria that must be addressed at each LCR. In addition, NPR 7123.1 Appendix G describes the recommended best practices for entrance and success criteria for Life-Cycle Reviews. Programs or projects may recommend modification of these criteria as needed according to the size, complexity, type of end product being produced, formality, center practices, etc. Also, many centers have unique or more detailed criteria that they use to assess the maturity of the program or project. Based on discussions with center management and IPAO (as appropriate) program or projects document the resulting entry/exit criteria and get necessary approvals on the modifications. The resulting entry/exit criteria are discussed with the SRB during the planning stages of the Life-Cycle Review.
Question 31: Is there a preference between one-stage and two-stage KDP's? Seems that there is an unwritten preference for one-stage for SRB efficiency/convenience.	**Answer:** (Note: The "one-step" and "two-step" terminology is used in reference to life-cycle reviews, not KDPs.) The life-cycle review can be completed in one step, called a one-step review, or divided into two separate steps, called a two-step review. The program or project manager has the authority to determine whether to hold a one-step or a two-step life-cycle review. This determination usually depends on the state of the program or project's cost and schedule maturity. A two-step review is typically used when the program or project has not fully integrated the cost and schedule with the technical work, and the first-step of the review is used to make formal decisions to complete technical work and align it with cost and schedule. In a two-step life-cycle review, both steps are necessary to fulfill the life-cycle review requirements. The Agency does not have a preference for a one-step or two-step life-cycle review. However, one-step life-cycle reviews do not take as much SRB time and effort as two-step life-cycle reviews, and are therefore more efficient.

Question	Answer
	(See Sections 3.1.2, 4.1.2 or 5.10.2.1 of the PM Handbook for more information on one-step and two-step life-cycle reviews.)
Question 32: Who chairs the life-cycle reviews (LCR)?	**Answer:** Except in special cases, a one-step LCR and both steps of a two-step LCR are chaired by the SRB. There are special cases, particularly for human space flight programs and projects, where the LCR is used to make formal decisions to complete technical work and align it with cost and schedule. In these cases, the program or project manager may co-chair the LCR and the SRB will conduct the independent assessment concurrently. The program or project manager works with SRB chair to develop the LCR agenda and agree on how LCR will be conducted to ensure that the SRB can fully accomplish the independent assessment. The program or project manager and SRB chair work together to ensure the LCR Terms of Reference (ToR) reflect their agreement and the convening authorities approve the approach.
Question 33: What is the readiness assessment and why is it done?	**Answer:** The readiness assessment is an informal discussion between the SRB chair and the IPAO Review Manager (RM) with the Project or Program Manager and the Center representative to determine whether the data and products that support the review entry and exit criteria are expected to be available in accordance with the planned site review schedule. The assessment is done to help ensure the review activity is entered when all expected data and products are mature and available to support the site review or to discuss mitigations when that is not the case. Please note that the readiness assessment is not a pre-review of the data and products but a discussion of the readiness of those to support the site review.
Question 34: What is the snap-shot report and why is it needed?	**Answer:** The snap-shot report (also known as the "quick-look" report or the "one-pager") is a teleconference organized to provide a summary of the major findings of the review to the Decision Authority (DA). The teleconference is scheduled between 24-48 hours after the site review and allows for an early discussion of the major findings of the review with an emphasis on any major items that could impact the readiness of the project or program to proceed to the governing councils for approval. The discussion is documented in a one-pager (text) prepared and summarized by the SRB chair. The program or project manager participates in the discussion and provides his/her views on the issues highlighted by the SRB. The convening authorities are also invited to participate in the telecon.
Earned Value Management (EVM)	
Question 35: (As part of the rebaseline discussion > 30% requiring Congressional Approval.) How does negative Earned Value Variance(s) interrelate with PM/Project Manager actions during periods of lifecycle cost growth? In other	**Answer:** The EVM reporting thresholds are typically established by the Mission Directorates or the program and flowed down to projects. For example, variance reporting is required for variances of x% (-10%) and/or variances of x$ (- $500k). (The variance reporting thresholds can apply for either negative or positive variance, depending on the flow down reporting requirement, but usually just apply to negative variances.) EVM variances are not reported externally. EVM variances provide insight to management as to the health of the project, and may result in concerns about compliance with the ABC, and management actions, if variances are headed in the wrong direction. Note: The EVM baseline is set at the project level. It is called the

Question	Answer
words, when is it reportable? What are the thresholds requiring action by the PM/Project Manager?	Performance Management Baseline (PMB). UFE held above the project level are not included in the PMB, but are included in the Agency Baseline Commitment. Thus, the EVM baseline (PMB) is part of, but not equal to the ABC. (See Section 5.14 in the PM Handbook for more information on EVM.)
Applicability to Commercial Companies	
Question 36: Do these handbooks apply to the commercial companies?	**Answer:** Projects can result from several types of acquisition authorities, including, but not limited to, grants, cooperative agreements, and Space Act Agreements (SAA). As an example, the Commercial Crew & Cargo Program (C3PO) is using SAAs for initiating and managing NASA's Commercial Orbital Transportation Services (COTS) projects. All NASA space flight programs and projects are subject to NPR 7120.5 requirements. NPR 7120.5 requirements apply to contractors, grant recipients, or parties to agreements only to the extent specified or referenced in the appropriate contracts, grants, or agreements. Since the PM Handbook is a guidance document, all NASA partners, including commercial companies, are welcome to review the handbook and use any guidance deemed useful in implementing any NPR 7120.5 requirements specified or referenced in their associated contracts, grants, or agreements.
Handbooks	
Question 37: Is someone going to address the question: are the handbooks requirements or truly guidelines?	**Answer:** The PM Handbook is a guidance document, intended to assist the program or project manager in implementing NPR requirements. There are no requirements in the PM Handbook. The SRB Handbook is a guidance document, except for Appendices C and D for the Organizational Conflict of Interest/Personal Conflict of Interest (OCI/PCI) policy. These Appendices are requirements.
Question 38: I noticed that the NPR Handbook is marked "Internal Draft: Do Not Distribute". When will it be finalized?	**Answer:** The PM Handbook is currently available in electronic format as an "Internal Draft". The PM Handbook and SRB Handbook are posted online at http://nodis3.gsfc.nasa.gov/OCE_rep/OCE_list.cfm. OCE also plans to link the handbooks to the NASA Engineering Network (NEN) Program Project Management Community of Practice (PM CoP). The PM Handbook and SRB Handbook are currently in STI review (February-March/April 2014). Once the STI review is complete, the handbooks will be final and officially released.
Question 39: Maybe I missed it, but when do you plan to make the PM Handbook available? It looks valuable.	
Myths	
Question 40: Is it true that NPR 7120.5 is just about documents? It just tells me I have to produce a bunch of paper?	**Answer:** NPR 7120.5 and the PM Handbook codify and represent the Agency's best program and project management practices and lessons learned based on decades of experience. The documents and data required by NPR 7120.5 are some of the artifacts that demonstrate that the work has been properly planned and completed. The NPR and handbook are about establishing the plans and conducting the work that must be completed

Question	Answer
	throughout the life cycle. The NPR also establishes the expected maturity of programs and projects throughout the various phases of the life cycle. The PM Handbook explains the point of and reasons why the plans and data are required. The NPR and handbook are written to help you plan your project and minimize surprises down the road and get the technical work done.