Source Selection Statement

for
Commercial Crew Transportation Capability Contract (CCtCap)
(Solicitation Number NNK14467515R)

On August 6, 2014, the Source Evaluation Board (SEB) appointed to evaluate proposals for the Commercial Crew Transportation Capability Contract (CCtCap) under Request for Proposals (RFP) NNK14467515R presented the results of its evaluation to me and other senior officials of the National Aeronautics and Space Administration (NASA). I held a follow-up meeting on August 19th to ask additional questions of the SEB and receive input from my advisors. My decision on selection of the successful Offeror is set forth in this Source Selection Statement.

BACKGROUND / PROCUREMENT DESCRIPTION

NASA is using a two-phased acquisition to complete the development of a commercial, U.S. fully integrated Crew Transportation System (CTS) that can safely and reliably transport NASA crew to the International Space Station (ISS) with a goal of no later than 2017; certify that the CTS meets specified technical standards for human spaceflight safety and ISS requirements; and begin missions to the ISS to meet NASA's crew rotation and emergency return needs. An integrated CTS includes the spacecraft, launch vehicle, and all necessary hardware, systems, and interfaces. Each commercial service provider designs and owns its CTS. Certification of the CTS will occur through testing and analysis, data deliverables, and reviews to verify that the CTS meets NASA's standards. The CCtCap RFP stated the Government would award one or more contracts.

Phase 1, the Certification Products Contract (CPC), required delivery of four early lifecycle products that address CTS compliance with, and the contractor's understanding of, NASA's standards and requirements for an ISS mission. The deliverables were hazard reports, verification and validation plans, certification plans, and identification of alternate standards and proposed variances. The CPC deliverables were required to mature in parallel with the maturation of the CTS design. The contractor was required to engage in technical interchange with NASA to disposition the deliverables and enable understanding of whether the CTS would meet certification requirements. The CPC products form a very important base for the remainder of the CTS development and certification, providing insight into the contractor's understanding of the certification requirements and enabling the Offeror to submit more informed technical content in its fixed-price proposal for Phase 2. Phase 1 is completed.

Phase 2, the Commercial Crew Transportation Capability Contract (CCtCap), was conducted as a full and open competition. Participation in Phase 1 was not a requirement for submitting a proposal for Phase 2. The RFP required Offerors who did not participate in Phase 1 to demonstrate CTS design maturity and certification maturity equivalent to the requirements specified in the Phase 1 solicitation in order to be considered for Phase 2.

The CCtCap contract includes three CLINs. In CLIN 001, the Contractor shall complete the final Design, Development, Test and Evaluation (DDTE) activities necessary to achieve NASA's certification of an integrated CTS capable of transporting NASA crew to and from the ISS, in

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accordance with the standards and requirements specified in the contract. CLIN 001 is firm fixed price. In CLIN 002, the Contractor shall provide initial Post Certification Missions (PCMs) to and from ISS including ground, launch, on-orbit, return and recovery operations. The contract guarantees a minimum of two PCMs and allows for a maximum of six. PCMs will be ordered as fixed-price tasks on an Indefinite Delivery\Indefinite Quantity (IDIQ) basis. In CLIN 003 the Contractor shall provide Special Studies, for risk reduction and other purposes related to its CTS, not otherwise required to accomplish CLIN 001 and CLIN 002. These studies will be IDIQ task orders using fixed-price labor rates.

EVALUATION CRITERIA AND PROCEDURES

This acquisition was conducted as a competitive negotiated procurement utilizing a tradeoff process as set forth in Federal Acquisition Regulation (FAR) part 15.101-1 and in accordance with the source selection procedures in FAR part 15.3 and NASA FAR Supplement (NFS) part 1815.3. The RFP defined the evaluation factors as Mission Suitability, Past Performance, and Price and provided the relative importance of these factors. The Mission Suitability factor and Past Performance factor, when combined, are approximately equal to the Price factor. The Price factor is more important than the Mission Suitability factor, which is more important than the Past Performance factor.

Mission Suitability

The Mission Suitability factor addressed the Offeror's understanding of the CCtCap requirements, the adequacy of the Offeror's proposed approach to meeting the requirements, and the Offeror's ability to perform as proposed. Mission Suitability included three subfactors: 1) Technical, Crew Safety and Mission Assurance, 2) Management Approach, and 3) Small Business Utilization. For both the Technical and Management subfactors, proposals were evaluated for overall credibility, feasibility, effectiveness, risk, and completeness, considering the specific elements to be addressed for that subfactor.

The RFP provided that each Offeror's Mission Suitability proposal would be evaluated and numerically scored. This procedure required the SEB to evaluate proposals under each subfactor, identifying findings of significant strengths, strengths, weaknesses, significant weaknesses, or deficiencies; to assign an adjectival rating for each subfactor based on the findings, using the definitions of Excellent, Very Good, Good, Fair, and Poor specified in the NFS; to determine a percentile score for each subfactor based on the findings, using the percentiles provided in the NFS; and to calculate a total point score for the Mission Suitability factor using the weighted sum of subfactor scores. The Mission Suitability subfactors and maximum available points were as indicated below. Each subfactor was evaluated in its entirety; the elements included in the subfactors were not individually rated, scored, or in a relative order of importance.

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Mission Suitability Subfactors (Scored Elements)	Weight (Points)
Subfactor 1: Technical, Crew Safety and Mission Assurance Inherent Capabilities TA01 Approach to Obtain Certification of the CTS TA02 Certification Maturity TA03 Approach to Post Certification Missions	525
Subfactor 2: Management Approach MA01 Approach to Government Insight MA02 Approach to Program Management MA03 Approach to Lifecycle Cost Management MA04 Organizational Structure and Management	400
Subfactor 3: Small Business Utilization	75
Total	1000

Past Performance

The RFP provided for the evaluation of the Past Performance factor using an overall level of confidence rating to assess the SEB's confidence in the Offeror's ability to perform CCtCap requirements. In accordance with NFS part 1815.305 (a)(2)(A), the evaluation used the following level of confidence ratings: Very High, High, Moderate, Low, Very Low, and Neutral.

Under this subfactor, the SEB was required to evaluate each Offeror's performance of recent, relevant work that was similar in size, content, and complexity to the CCtCap requirements. Recent past performance was defined as contracts or agreements performed within the last five (5) years from the date of the RFP. The RFP also provided for evaluation of past performance of any spacecraft and launch vehicle major team members, subcontractors and suppliers anticipated to perform $100 million or more of the work over the entire contract period.

Relevant work included space system development and mission services. As stated in the RFP, work related to crewed space system development was considered more relevant than work related to un-crewed space system development. Design and development of a CTS was considered more relevant than work limited to an element of a CTS. Work related to space system development and mission services to the International Space Station (ISS), including integration, was considered more relevant than work limited to space system development and

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mission services not to the ISS. The RFP stated that CPC, as Phase 1 of this phased acquisition, was considered relevant.

The past performance evaluation considered the Offeror's cost, schedule, and technical performance, safety, mission success, number and severity of problems, and corrective actions. The assessment of CPC past performance considered the maturity and quality of the delivered products, whether the products matured in parallel to the Offeror's CTS design maturity, the effectiveness of technical interchange leading up to the delivery of the products and during NASA's assessment of the deliverables, the effectiveness of the Offeror providing background data (or access) to support NASA's assessment of the deliverables, and the timeliness in which the CPC products were delivered to the Government.

For each relevant contract or agreement, the SEB assessed the degree of relevance as somewhat relevant, relevant, highly relevant, or very highly relevant. The SEB assessed the performance on each contract or agreement using the definitions in the RFP of Excellent, Very Good, Satisfactory, Unsatisfactory, or Not Applicable. The combined assessment of performance and relevancy for all of the contracts and agreements taken together resulted in an overall level of confidence rating.

Price

The total contract price for evaluation purposes consisted of the total sum of: 1) the proposed CLIN 001 DDTE/Certification fixed price; 2) the sum of the CLIN 002 Post Certification Mission proposed fixed prices for the first three calendar years based on one mission per calendar year; 3) the sum of CLIN 003 Special Studies prices for all years of the contract, which resulted from multiplying the proposed fully burdened rates for the two required labor categories (professional exempt and operations/manufacturing non-exempt) for every year by the Government-provided hours; 4) the value of each NASA Docking System (NDS) the Offeror proposed to use, at $14 million per unit; and 5) the rental equivalent of other Government property and services provided under other contracts and agreements if the proposed use gave an unfair competitive advantage in this competition.

The SEB relied on adequate price competition, and used price analysis in accordance with FAR part 15.404-1, to determine if prices were fair and reasonable. Relatively low prices were evaluated to determine whether there was a risk of default in the event of award to that Offeror. Per FAR part 15.404-1 (g), a review was conducted for each Offeror's line items (CLIN 001, 002 and 003) to analyze for unbalanced pricing.

PROPOSAL EVALUATION PROCESS

NASA issued the CCtCap RFP on November 19, 2013. Based on comments received from prospective Offerors, an amendment was issued on December 20, 2013, to address various clarifications, update instructions and clauses, revise certain technical requirements, and incorporate other minor changes. A second amendment was issued on April 22, 2014, to clarify the maximum potential number of Post Certification Missions as six per contract.

Initial proposals were received from (in alphabetical order) the Boeing Company (Boeing), Sierra Nevada Corporation (SNC), and Space Exploration Technologies (SpaceX) by the due

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date of January 22, 2014. All three Offerors had previously been awarded contracts under Phase 1. The SEB reviewed each Offeror's Mission Suitability proposal, reached consensus on findings, rated and scored each subfactor, applied the established numerical weights, and determined an overall Mission Suitability score for each proposal. To arrive at the level of confidence rating for Past Performance, the SEB relied on the performance data provided in each Offeror's proposal, data provided separately by each Offeror's references, data obtained from the Past Performance Information Retrieval System (PPIRS), information obtained from NASA personnel for other relevant contracts and agreements identified in the proposals, as well as other relevant past performance information available to the SEB. The SEB also conducted a price analysis of each Offeror's prices. In addition to the evaluation of the factors and subfactors identified above, the SEB ensured the proposals met all requirements established by the RFP and noted any proposed exceptions. The Contracting Officer found all Offerors to be responsible, and to have met all eligibility requirements as set out in the RFP.

On April 17, 2014, the SEB presented its initial findings to me as the Source Selection Authority (SSA). The presentation included a detailed evaluation of each Offeror's proposal against the evaluation factors of Mission Suitability, Past Performance, and Price, and the subfactors contained in the RFP, as well as any proposed exceptions to the contract terms or requirements. The presentation reflected the SEB's identification of significant strengths, strengths, weaknesses and significant weaknesses for each of the Offeror's Mission Suitability proposals and the resulting adjectival ratings and subfactor scores; a Past Performance Level of Confidence rating; and each Offeror's proposed and evaluated price. At the conclusion of the briefing, I concurred with the Contracting Officer's determination that all three proposals were within the competitive range.

Discussions were conducted with each Offeror during the period of April 21, 2014, through June 27, 2014. During discussions, the Contracting Officer advised each Offeror in writing of all significant weaknesses and weaknesses, aspects in its proposal requiring further discussions, and the Government's position on any proposed assumptions, exceptions, and terms and conditions of the contract. As part of discussions, each Offeror was provided an opportunity to address significant weaknesses, weaknesses, and aspects of the proposal requiring further clarification in writing, orally, and through proposal change pages.

As provided in the RFP, Offerors who had Phase 1 CPC contracts received an updated CPC Past Performance report after the final delivery of CPC products, which occurred after the CCtCap competitive range determination. The SEB also received these updated reports and considered them as part of the final evaluation. Additional past performance information was also received for all three Offerors and/or their major team members, subcontractors or suppliers after competitive range and was evaluated as part of the FPRs.

As part of this phased procurement, Offerors were required to address in their CCtCap proposals the feedback they had received during Phase 1 (CPC) from the Commercial Crew Program (CCP) on their Phase 1 deliverables. CPC required the contractors to deliver specified products (reports and plans) that are part of the certification process and receive feedback on the products from the CCP summarized in Interim and then Final Technical Summary Reports (FTSR). CCtCap Offerors were required to explain in their proposals how they planned to address that feedback during the final development and certification of their CTS under the CCtCap contract.

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Offerors' responses to the first round of CPC product feedback were included in the initial CCtCap proposals. The second, final round of feedback on CPC products (the FTSRs) occurred after initial CCtCap proposals were due. Offerors' responses addressing the FTSRs were provided to the SEB during discussions. Offerors were required to revise their proposals to address the FTSRs and to document all Approved, Approved with Conditions, and Partially Approved alternate standards and variances from CPC in Attachment J-01 to the RFP. The FTSRs reflect the CCP's assessment of the CPC products, not the SEB's assessment. The SEB evaluated the Offerors' responses to the FTSRs, not the content of the FTSRs.

The SEB generated findings during discussions based on the proposal change pages and the responses to the CPC FTSRs. Any new significant weaknesses and weaknesses, along with other open items that remained from the start of discussions, were disclosed to the Offerors. At the conclusion of discussions on June 27, 2014, each Offeror was provided an opportunity to submit a Final Proposal Revision (FPR). FPRs were received from the three Offerors by the due date of July 7, 2014.

Following the same evaluation process used for the initial evaluation, the SEB completed the final evaluation of the FPRs for all factors, made its final adjectival rating and score for each Mission Suitability subfactor, determined the overall Mission Suitability score, assigned a final Past Performance level of confidence rating, and determined the evaluated price for each proposal.

As a result of the SEB's final evaluation, the relative order of the Offerors according to Mission Suitability score (highest to lowest) is as follows: Boeing, SpaceX, SNC. The final evaluation for Past Performance yielded a Level of Confidence of Very High for Boeing and High for both Space X and SNC. For Price, the Offerors' evaluated prices from lowest to highest are as follows: SpaceX, SNC, Boeing.

MISSION SUITABILITY EVALUATION

The substance of the SEB's evaluation of each Offeror's final proposal with regard to Mission Suitability is summarized below, in order of their overall Mission Suitability score from highest to lowest:

Boeing

Boeing's proposal received the highest overall Mission Suitability score. The SEB identified five significant strengths, 13 strengths, one weakness, and no significant weaknesses or deficiencies in the proposal. The following is a summary of the SEB's evaluation of Boeing's proposal under the three Mission Suitability subfactors:

Technical, Crew Safety, and Mission Assurance Approach (Technical Approach): The SEB rated Boeing's proposal as "Excellent" in the Technical Approach subfactor. Within this subfactor, Boeing's proposal contained three significant strengths, five strengths, and one weakness. The three significant strengths are: (1) inherent capabilities that demonstrate an effective robust design that greatly enhances operational flexibility, mission performance, and crew safety; (2) use of well-characterized, existing or innovative design solutions; and (3) a proactive approach to address NASA feedback in CPC Initial and Final Technical Summary

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Reports. Boeing received strengths for its: 1) primary landing sites; 2) approach to ISS integration; 3) test flight plan; 4) co-location of operations; and 5) training facility location. Boeing's proposal had one weakness for its compressed flight test schedule, and no significant weaknesses.

Management Approach: The SEB rated Boeing's proposal as "Excellent" in the Management Approach subfactor. Within this subfactor, Boeing's proposal contained two significant strengths and seven strengths. The two significant strengths are: (1) a very highly effective, complete, and comprehensive approach for implementing Government insight and (2) a comprehensive and robust approach to program management. Boeing received strengths for its: 1) FAA and Eastern Range engagement; 2) mission assurance organization; 3) systems engineering and integration approach; 4) launch slot management; 5) lifecycle cost management; 6) investment approach; and 7) management of team members. Boeing's proposal had no weaknesses or significant weaknesses in this subfactor.

Small Business Utilization: The SEB rated Boeing's proposal as "Good" in the Small Business Utilization subfactor. Boeing's proposal contained one strength in this subfactor for its approach, goals, and commitment to work with small businesses. It had no weaknesses or significant weaknesses.

Space X

SpaceX's proposal had the second highest overall Mission Suitability score. The SEB identified four significant strengths, 10 strengths, two weaknesses, and no significant weaknesses in the proposal. The following is a summary of the SEB's evaluation of SpaceX's proposal under the three Mission Suitability subfactors:

Technical, Crew Safety, and Mission Assurance Approach (Technical Approach): The SEB rated SpaceX's proposal as "Very Good" in the Technical Approach subfactor. Within this subfactor, SpaceX's proposal contained three significant strengths, four strengths, and two weaknesses. The three significant strengths are: (1) inherent capabilities that greatly enhance operational flexibility, mission performance and crew safety; (2) use of well-characterized, existing or innovative design solutions; and (3) integrated systems and operations maturity. SpaceX's proposal had strengths for its: 1) uncrewed ISS flight test interim milestone; 2) approach to crew and cargo integration; 3) co-location of facilities; and 4) landing system availability opportunities. SpaceX had no significant weaknesses, and two weaknesses for its: 1) compressed certification schedule and sequencing inconsistencies; and 2) inadequate response to electrical, electronic, and electromechanical (EEE) parts issues from CPC.

Management Approach: The SEB rated SpaceX's proposal as "Very Good" in the Management Approach subfactor. Within this subfactor, SpaceX's proposal contained one significant strength and five strengths. The significant strength was for a very highly effective approach to managing launch slot availability and resolving conflicts between customers. SpaceX's proposal received strengths for its: 1) insight approach; 2) quality management; 3) safety advisory panel; 4) FAA and Eastern Range engagement; and 5) lifecycle cost management. There were no weaknesses or significant weaknesses in this subfactor.

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Small Business Utilization: The SEB rated SpaceX's proposal as "Good" in the Small Business Utilization subfactor. SpaceX's proposal contained one strength for its strong commitment to work with small businesses. It had no weaknesses or significant weaknesses.

SNC

SNC's proposal had the third highest overall Mission Suitability score. The SEB identified four significant strengths, nine strengths, four weaknesses, and no significant weaknesses in the proposal. The following is a summary of the SEB's evaluation of SNC's proposal under the three Mission Suitability subfactors:

Technical, Crew Safety, and Mission Assurance Approach (Technical Approach): The SEB rated SNC's proposal as "Very Good" in the Technical Approach subfactor. Within this subfactor, SNC's proposal contained two significant strengths, four strengths, and four weaknesses. The two significant strengths are: (1) inherent capabilities that greatly enhances operational flexibility, mission performance, and crew and ground safety; and (2) use of a well-characterized spacecraft design and existing launch vehicle. SNC's proposal had strengths for its: 1) flight test approach; 2) approach to address CPC feedback; 3) co-location of launch and recovery operations; and 4) cargo integration approach. SNC had no significant weaknesses in this subfactor. There were weaknesses for: 1) inadequate risk mitigation for two systems (RCS and MPS); 2) schedule risk from system complexity and lack of maturity; 3) insufficient validation of abort performance models; and 4) inadequate response to CPC feedback on a frangible joint variance request.

Management Approach: The SEB rated SNC's proposal as "Very Good" in the Management Approach subfactor. Within this subfactor, SNC's proposal contained two significant strengths and four strengths. The two significant strengths are: (1) an integrated, comprehensive and very highly effective approach to Program Management; and (2) a highly effective and comprehensive approach for implementing Government insight. SNC's proposal had strengths for its: 1) safety and mission assurance organization; 2) launch slot management; 3) FAA and Eastern Range engagement; and 4) systems engineering and integration approach. There were no weaknesses or significant weaknesses.

Small Business Utilization: The SEB rated SNC's proposal as "Good" in the Small Business Utilization subfactor. SNC's proposal contained one strength in this subfactor for its goals, approach and commitment to work with small businesses. There were no weaknesses or significant weaknesses.

PAST PERFORMANCE EVALUATION

Boeing

Boeing received a final level of confidence rating of "Very High," meaning the SEB had a very high level of confidence that Boeing will successfully perform the CCtCap work based on their past performance. Boeing's past performance demonstrated overall exemplary performance, in a timely, efficient, and responsive manner to meet contract requirements and agreement goals. The SEB concluded that Boeing demonstrated very highly relevant experience for work on development of crewed space systems on the ISS-USOS (Space Station Sustaining Engineering),

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SPOC (Shuttle Operations), CPC contracts and also on the CCiCap agreement. The ISS-USOS and CPC contracts also demonstrated experience with ISS requirements. Performance on CPC and SPOC was Excellent. Performance on CCiCap and ISS-USOS was Very Good. Boeing demonstrated highly relevant experience with elements of crewed space system development on the CAPPS contract, with Excellent performance, and on the SLS contract and the CCDev 2 agreement which both had Very Good performance. Additionally, Boeing's major team members demonstrated Very Good and Excellent performance on contracts and agreements that were highly relevant, for work on an element of a crewed system on the CCiCap agreement and for un-crewed space system development and mission services on the NLS contracts. Boeing's team members also showed Excellent and Very Good performance on other relevant contracts. All of the past performance together was very highly pertinent to the CCtCap contract and the overall performance resulted in a rating of Very High level of confidence.

SpaceX

SpaceX received a final level of confidence rating of "High," meaning the SEB had a high level of confidence that SpaceX will successfully perform the CCtCap work based on their past performance. SpaceX's past performance demonstrated overall very effective performance in a timely, efficient, and responsive manner to meet contract requirements and agreement goals. The SEB concluded that SpaceX demonstrated very highly relevant experience for work on development of crewed space systems on the CCiCap agreement, and on CPC which included ISS requirements, and highly relevant work on elements of a CTS on the CCDev 2 agreement. Performance on CCiCap and CCDev 2 was Very Good. Performance on CPC was Satisfactory. SpaceX also demonstrated very highly relevant experience for development of an un-crewed space system on the COTS agreement and for operation of an un-crewed system on mission services to the ISS on the CRS contract. Performance was Excellent on COTS and Very Good on CRS. Further, the SEB concluded that SpaceX demonstrated highly relevant experience for un-crewed space system development and mission services on the NLS II (NASA Launch Services) and OSP-3 (Orbital/Suborbital Space Program-3) contracts. Performance on NLS was Satisfactory and performance on OSP-3 was Very Good. All of the past performance together was very highly pertinent to the CCtCap contract and the overall performance resulted in a rating of High level of confidence.

SNC

SNC received a final level of confidence rating of "High," meaning the SEB had a high level of confidence that SNC will successfully perform the CCtCap work based on their past performance. SNC's past performance demonstrated overall very effective performance in a timely, efficient, and responsive manner to meet contract requirements and agreement goals. The SEB concluded that SNC demonstrated very highly relevant experience for work on development of crewed space systems on the CPC contract, which included ISS requirements, and on the CCiCap agreement. Performance on both CPC and CCiCap was Very Good. SNC demonstrated highly relevant experience with development of elements of a CTS on the CCDev 2 agreement, which also had Very Good performance, and relevant experience for the design, development, test and evaluation process on the SS2 RM2 (Space Ship 2 Rocket Motor 2) contract which had Satisfactory performance. Finally, SNC demonstrated somewhat relevant experience with program management, subcontractor management, and subsystems integration

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on the LAS (Light Air Support Aircraft) contract, with Very Good performance. Additionally, SNC's major team members demonstrated highly relevant, Excellent performance with development of an element of a crewed space system on the Orion contract and with un-crewed space system development and mission services on the NLS contracts. SNC's team members also showed Excellent and Very Good performance on other relevant contracts. All of the past performance together was highly pertinent to CCtCap and the overall performance resulted in a rating of High level of confidence.

PRICE EVALUATION

Per the RFP provision M.3, *Price Factor*, the total contract evaluated price was used to conduct the price evaluation. SpaceX had the lowest overall evaluated price. SNC had the next lowest evaluated price, which was significantly higher than SpaceX. Boeing had the highest evaluated price. For CLIN 001, SpaceX had the lowest price, followed by SNC and then Boeing, with a notable difference between the SpaceX price and the prices for SNC and Boeing. For CLIN 002, SpaceX had the lowest evaluated price followed by SNC and then Boeing, with a notable difference between each. For CLIN 003, SNC had the lowest evaluated price followed by Boeing and then SpaceX, although there was little difference between the three prices.

All Offerors' prices were considered fair and reasonable primarily based on adequate price competition, consistent with the FAR. The SEB also performed additional price analysis using other methods described in FAR part 15.404-1(b)(2). The total evaluated prices were compared to the range of prices on other spaceflight contracts. Prices for CLIN 001 development and certification were compared to a parametric estimate based on a historical human spaceflight development program. Prices for CLIN 002 service missions were compared to the range of prices on other recent spaceflight service contracts. Prices for CLIN 003 Special Studies, which are based on proposed labor rates, were compared among the proposals and compared to an independent Government estimate for labor rates.

Prices were adjusted for evaluation purposes for those Offerors requesting use of NDS flight units by adding $14 million per unit to the evaluated total price. An assessment of any other proposed Government Furnished Property and Services (GFPS) provided to Offerors under other contracts and agreements was conducted to determine if an unfair competitive advantage existed, by considering whether the Offeror would be obtaining use of the property or service at prices resulting either from competition or from the full cost value. The SEB also considered whether the value of any proposed property or service was de minimis. No adjustment was necessary for any Offeror.

There was no evidence that any Offeror's proposed prices were too low for the work to be performed such that there was a risk of default. The SEB understood that variations in prices can be attributed to each Offeror's unique CTS design, development, and operational solutions that include different technical, management and business approaches. For each Offeror's unique approach, the SEB considered the relative maturity of the design, the work to be accomplished and the unique assumptions presented in the proposal and found there was low risk of default based on the proposed prices. Also, the SEB found no evidence in the Offerors' proposals of unbalanced pricing between the three CLINS. The SEB also noted the principal reasons for changes in each Offeror's price from the initial to the final proposals. These price changes

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reflected Offerors' general understanding of the impacts to their proposals resulting from their revised approaches and resolution of weaknesses, as well as other factors.

SELECTION DECISION

During the final evaluation presentation on August 6th, I questioned the SEB on their evaluation and carefully considered the material presented. I requested and considered the comments of the senior officials who also attended the briefing. The charts presented at the meeting summarized the SEB's results for all three evaluation factors. They also included a summary description of each Offeror's proposed CTS, main events in their technical schedule to certify the CTS, primary areas of risk from Phase 1 (CPC) that they needed to discuss in their proposal, main events in their schedule for service missions, and management organization chart. I also read the more detailed reports describing the Mission Suitability findings, past performance references, and the pricing analysis for each Offeror. I also read the SEB's reports explaining how weaknesses and issues from the initial proposals had been resolved during discussions and in the final proposals, and noting the areas where concerns remained. On August 19th I again met with the SEB and key Agency officials to request their views of the evaluation and to ask additional questions. At both meetings and in the presentation and supporting reports, the SEB did a careful, thorough job evaluating the proposals, documenting their evaluation, and identifying and explaining the reasons for their findings of the strengths and weaknesses in each proposal. The SEB also provided answers to follow-up questions I asked during and after the meetings to be certain I fully understood the rationale for their conclusions and differences between findings.

As the SSA, it was my responsibility to compare the proposals looking at the SEB's evaluation of each factor and subfactor, and considering the proposals in their entirety. It also was my responsibility to make an independent judgment of the SEB's evaluation results and to determine which aspects of the evaluation I agreed with and which aspects I considered to be discriminators that inform my selection decision. I agreed in general with the SEB's findings, but did not always place the same significance on those findings or agree with the impact the finding was likely to have on the Offeror's performance of the CCtCap contract.

When assessing each proposal and comparing them to determine which proposal best met the criteria in the RFP for successfully performing the requirements of the CCtCap contract, I carefully considered the relative importance of the evaluation factors as stated in the RFP. As individual evaluation factors, Price was more important than Mission Suitability, which was more important than Past Performance. However, the combination of Mission Suitability and Past Performance together were approximately equal to Price. I also kept in mind that the purpose of the CCtCap contract is to obtain a commercial space transportation service that can safely and reliably take NASA crew to and from the ISS, within the stated schedule goal of 2017.

My assessment of each proposal on the evaluation factors and comparative assessment is as follows:

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Mission Suitability: Boeing

I noted that Boeing's proposal had the highest overall Mission Suitability score and the highest adjectival ratings of Excellent for each of the two most heavily weighted subfactors, Technical and Management. I agree with this assessment.

Technical: I agreed with the SEB's rationale regarding the significant strength for the inherent capabilities of Boeing's proposed CTS. In particular, I noted that this CTS can accommodate considerable extra cargo as well as additional crew on the same mission and can vary combinations of crew and cargo, which is important because it provides more utility in a mission and significantly increases ISS manifest flexibility. The vehicle's capability for autonomously executing missions further increases its utility. I also agreed with the SEB's significant strength for Boeing's use of well-characterized and existing design solutions. In particular, the capsule spacecraft is a low-complexity design for ascent and entry and uses flight proven technology and components, which minimizes the complexity and time of development needed to complete the system and reduces risk of non-compliance with certification requirements. The launch vehicle has demonstrated reliability and well-known failure modes and operating environments, which facilitates an integrated abort system for a crewed system and results in a safer launch vehicle. Both of these elements of the CTS design solution reduce technical and schedule risk and increase ability to meet safety requirements for human spaceflight. I also recognized that Boeing proposed to pursue an alternate launch vehicle in parallel with their baseline design work. This new launch vehicle, if used in the CTS design, provides alternatives but would negate the benefits of the established reliability of the existing launch vehicle. I was especially impressed with Boeing's significant strength for its detailed approach to address the feedback from its CPC products, which showed clear understanding of the specific activities that need to be undertaken to resolve the feedback issues and a realistic process for determining if the CTS is complying with the certification requirements and identifying when variances will be needed. This is a very comprehensive, credible plan demonstrating Boeing understands the work it is proposing, captures this work in its PWS, and has an executable way forward that reduces the risk of needing major design changes later in the certification process. This significant discriminator reduces both technical and schedule risk. I agreed with the other technical strengths the SEB presented, such as the number of supported primary landing sites which provides flexibility and maximizes return of crew safely and on schedule. The thorough and effective plan for ISS integration enhances accomplishing certification and successful mission operations. I agreed with but questioned the strength for a logical flight test plan that includes an un-crewed orbital test. This test is a good addition to the certification approach because it validates critical crew systems and increases operational knowledge without risk to crew. However, the certification DDTE schedule is aggressive, and the flight test plan does not include a dedicated ascent abort test to show effective abort capability.

The SEB explained, and I agreed, that there is a weakness in this subfactor for the compressed flight test and milestone schedule. I agreed that this is not a significant weakness, due to revision of milestone dates and an incremental approach for data review and analysis that allows adequate time between the OFT, ORR and CR milestones, but is still a weakness due to the amount of work that needs to be done in the proposed timeframe particularly between the un-crewed and crewed test flights. I also reviewed the weaknesses from the initial proposal that the SEB considered to have been resolved in the final proposal, to ensure I did not see any notable

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residual weaknesses in Boeing's technical approach. Specifically, I questioned the resolved weakness for insufficient detail to determine whether the proposed launch pad schedule was feasible, given the other launch commitments for this pad in addition to CCtCap. The SEB provided information from the proposal that resolved this concern.

Management: I agreed with the significant strength for Boeing's insight approach. The plan shows Boeing understands the importance of enabling Government insight so NASA will be aware of and can participate in resolving risks to certification as the work progresses, which reduces both technical and schedule risk. It provides very open and timely access, inclusion, and coordination throughout the contract performance for both DDTE and operational missions. Access to data will be on-going, but data may be subject to proprietary marking, which is consistent with the contract terms. I also agreed with the significant strength for comprehensive program management. All aspects of the program management significant strength identified by the SEB are good and contribute to an approach that effectively integrates cost, technical, and schedule performance with risk management and mission assurance, which enhances management of technically complex work in a fixed-price environment without compromising safety. I agreed with the other management strengths in this proposal. In particular, the comprehensive and effective systems engineering and integration approach is important because planning and integrating the sequence and schedule of activities necessary to verify and validate that the CTS meets requirements is critical to accomplishing certification. I also noted the strength for organizational structure and management, which effectively includes all subcontractors and suppliers, especially the launch provider. Boeing's organizational structure also ensures its CCtCap program manager integrates and controls the work and priorities of all the offices supporting this work.

Small Business: Boeing's approach shows strong commitment to using small businesses in this project, and their proposed subcontracting goals exceed most of the goals stated in the RFP. I agree with this strength.

Mission Suitability: SpaceX

I noted that SpaceX's proposal had the second highest overall Mission Suitability score, and adjectival ratings of Very Good for each of the two most heavily weighted subfactors, Technical and Management. I agree with this assessment.

Technical: I agreed with the significant strength for the inherent capabilities of SpaceX's proposed CTS. In particular, I noted that this CTS can accommodate additional cargo, or additional crew, or several more crew although without the full cargo requirement and with changes to the spacecraft. This provides operational flexibility. However, it was unclear what changes would be needed to the spacecraft configuration to accommodate the additional people, and whether all of the extra people really can be substituted for the required 220 pounds of cargo. The vehicle's capability for autonomously executing missions further increases its utility. I agreed with the significant strength for use well-characterized, existing or innovative design solutions, although I did not give this quite as much significance as the SEB did. The launch vehicle has flight heritage, and using common propellants for both the first and second stages simplifies the design and reduces the number of manufacturing processes, which can increase reliability and reduce manufacturing overhead. The capsule spacecraft is a low-complexity

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design for ascent and entry and uses flight proven technology and components, which minimizes the time and complexity of development needed to complete the system. However, while advantageous, the capsule is based on the company's existing cargo spacecraft, whereas the crew capsule has a different shape and outer mold line. The shape can effect ascent structural loading, acoustics and abort dynamics and needs to be watched carefully and tested early. SpaceX is building on a system which has successfully launched and operated on-orbit with the ISS, which demonstrates understanding and experience with operations around the ISS, but launch and re-entry with crew is different. I noted SpaceX's other significant strength for the maturity of its existing integrated cargo system and its plan for incrementally building on this system to transition from a cargo system to a crew system, including mature operational products from its cargo system, risk mitigations, and aligning interim milestones with high risk areas. This approach reduces risk and increases the likelihood of accomplishing certification. However, I believe the transition from cargo to crew is more complex than this finding reflects and therefore may have more technical and schedule risk than expected. I considered this finding, building on flight proven components, to be significant, but not as important as the SEB determined it to be. I agreed with the other strengths for this subfactor, particularly the un-crewed ISS flight interim milestone which reduces safety and operational risks by validating critical systems without risk to crew. I also noted the strength for a comprehensive approach to crew and cargo integration, which includes test, planning and pre- and post-launch activities that will enhance crew safety. I questioned whether the SEB also considered SpaceX's ISS integration approach since the company would be building on integration experience it already has. The SEB explained that ISS integration activities for cargo are different than for crew. I also noted that SpaceX did not have any strength in the TA02 element of the technical subfactor, regarding certification maturity and CPC. I asked the SEB why SpaceX's proposal met this evaluation criteria but did not have a strength. The SEB explained that SpaceX had an adequate approach and added work and data to its CCtCap technical content to continue assessment of risks identified during CPC. They did not have a clear process for identifying and resolving risks and variances, although they proposed new processes to implement during CCtCap.

I agreed that SpaceX's compressed DDTE schedule and sequencing inconsistencies is a weakness in its certification approach, but considered this weakness to be more significant than the SEB considered it to be. The schedule is compressed, with a lot of tests and upfront development activities in 2015 and 2016. These tests require hardware development and could slip. SpaceX proposed to complete certification in mid-2017. However, this date is likely to slip. The impacts of delays early in 2015 and 2016 are difficult to predict based on the SpaceX proposal. These early slips could result in longer and more significant impacts to completing certification. I had concerns about SpaceX's plan to develop its own docking system and space suit, which the SEB explained to me as part of the description of the proposed CTS and technical approach. This approach is innovative, and allows SpaceX to ensure these elements are specifically designed for and integrate with its CTS and to maintain control over the schedule for this work. However, this introduces additional work into an already heavy development and test schedule, and creates additional schedule and technical risk. I also had more significant concerns than the SEB did about the weakness for inadequate response to EEE parts issues resulting from Phase 1 CPC. If SpaceX does use EEE parts, this will be a cost and development burden. I believe SpaceX may be able to justify the use of non-EEE parts, but this will take a concentrated effort and additional resources. SpaceX did not successfully accomplish this during CPC or provide adequate rationale for approval in their response to the CPC feedback. This is a

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significant open area; it is critical that SpaceX understands the requirements and the impacts to their design. I did not have any questions about the other weaknesses from the initial proposal that the SEB considered to have been resolved in the final proposal.

Management: I agreed with the significant strength for launch slot management and resolving conflicts between customers, particularly the priority for CCtCap missions by using multiple launch locations for other launch services and dedication of one launch pad primarily for CCtCap missions. This management approach increases SpaceX's ability to mitigate schedule risks for operational missions and reduce launch delays. I also agreed with the program management strengths, particularly the quality management which enhances mission assurance by ensuring the consistency of manufacturing, assembly, integration and testing operations. The strength for lifecycle cost management is important, including a vertically integrated operation that designs, tests, and produces a significant percentage of its work in-house which reduces subcontractor interfaces and overhead and streamlines logistics. I questioned the SEB as to why SpaceX's insight approach was a strength but not a significant strength. The SEB explained that there were limitations on the Government's ability to access and share some data. I accepted the SEB's logic. There were no weaknesses in this subfactor, and I did not have any questions about the weaknesses from the initial proposal that the SEB considered to have been resolved in the final proposal. I did note that the proposed organizational management structure shows the various offices performing CCtCap work are matrixed to the CCtCap program manager, but their direct line of report is still through their respective senior manager. The highly matrixed structure may increase coordination, but also decentralizes work priorities for the matrixed team members. This makes systematic scheduling of tasks difficult and may lead to additional schedule uncertainty. Crew flights need to occur on schedule and this approach yields an uncertain schedule.

Small Business: SpaceX's approach shows strong commitment to using small businesses in this project. I agree with this strength.

Mission Suitability: SNC

I noted that SNC's proposal had the third highest overall Mission Suitability score, and adjectival ratings of Very Good for each of the two most heavily weighted subfactors, Technical and Management. I agree with this assessment.

Technical: Regarding the significant strength for the inherent capabilities of SNC's proposed CTS, I agreed with the SEB's rationale. In particular, I noted that this CTS can accommodate extra cargo but with fewer crew or can take an extra person but with reduced cargo. This provides flexibility for ISS manifests. I also noted the autonomous landing capability. I questioned why some details of this significant strength from the initial proposal were deleted, and understood that these details remain as features of the system but based on the explanation in the final proposal the SEB was not able to determine whether these features were as credible or certain as originally thought. The SEB's difficulty determining the value of these features reflects the maturity level of the proposed design; there is still a lot of detailed design work needed. I agreed this is still a significant strength. I also agreed with the significant strength for using a launch vehicle that has demonstrated reliability and well-known failure modes and operating environments, which facilitates an integrated abort system for a crewed system and

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results in a safer launch vehicle. Further, using a well-characterized spacecraft design with a mature outer mold line that leverages heritage subsystems reduces design and performance unknowns and therefore reduces risk. However, a winged spacecraft is a more complex design and thus entails more developmental and certification challenges and therefore may have more technical and schedule risk than expected. I agreed this was a significant strength, but not as important as the SEB determined it to be. I also considered and agreed with the strength for an incremental flight test approach, including an un-crewed orbital flight test. This is a good addition to the certification approach because it validates critical crew systems and increases operational knowledge without risk to crew. I was concerned that although the proposed system has an abort capability, which is important, the flight test plan does not include a dedicated ascent abort test or pad abort test. Powered flight tests and ground based separation testing are used in place of a dedicated ascent abort test. I thought the realistic and feasible approach SNC demonstrated to addressing the feedback issues from the CPC FTSR was an important strength. This demonstrates SNC's understanding of the design, test, and analysis activities and the data that are necessary to resolve these issues and captures the work in the PWS. I further agreed with the technical strengths of this proposal regarding the approach to conducting service missions.

I agreed with the weaknesses in SNC's technical approach, but thought they were more important than the SEB considered them to be. The proposal includes a critical design decision yet to be made regarding different main propulsion systems, which creates technical uncertainty and schedule risk if there are significant changes in the design baseline. This is evidence of an evolving design that will lead to schedule risk and uncertainty. SNC has a compressed DDTE schedule with a significant amount of work to be done to mature the CTS and its subsystems to certification, especially considering the complexities of the winged vehicle design and the many subsystems. Significant design trades remain to be made, complex hardware and software development remains, and there is a lengthy ground and flight test approach. A comprehensive test flight plan is good, but the extensive and sometimes concurrent activities, while also incrementally integrating additional systems, decreases the likelihood of completing development and achieving certification within the proposed schedule. I also was concerned that although SNC had a good approach to address the Phase 1 (CPC) issues, there were two important technical areas that lacked sufficient validation and responses. Although SNC proposes powered flight abort testing, the proposed schedule does not allow this testing to sufficiently reduce risk prior to the first crewed flight. Additionally, SNC's decision point to resolve the frangible joint issue is unclear and has risk of late design changes. Collectively, uncertainties in the CTS design maturation coupled with the complexity of the CTS design create technical and schedule risks for accomplishing certification within the timeframe proposed. Overall these weaknesses result in the lowest rated technical proposal.

Management: I agreed with the significant strength for SNC's insight plan, which is comprehensive, includes suppliers and management, enables constant NASA participation, and has a good approach to implementing the joint test team. The plan shows SNC understands the importance of enabling Government insight so NASA will be aware of and can participate in resolving risks to certification as the work progresses, which reduces both technical and schedule risk. I also agreed with the significant strength for SNC's highly effective program management, which integrates risk management, mission assurance, quality management, supply chain management, and proactive staffing. SNC's program management baseline integrates cost,

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technical, and schedule performance and establishes systematic controls, which enables SNC to make well-informed risk trades. The risk management approach, including mitigation plans with resource allocations, enhances decision-making that will not compromise crew safety. SNC also had a comprehensive systems engineering and integration approach, which is important because planning and integrating the sequence and schedule of activities necessary to verify and validate that the CTS meets requirements is critical to accomplishing certification.

Small Business: SNC's approach shows strong commitment to using small businesses in this project, and their proposed subcontracting goals exceed most of the goals stated in the RFP. I agree with this strength.

Past Performance: Boeing

I noted that Boeing had the highest level of confidence rating (Very High) for its past performance on work relevant to CCtCap. I agreed with this rating, and with the SEB's assessment of the relevance and performance of each referenced contract or agreement. All of Boeing's referenced work, including its major team members' work, was rated either Excellent or Very Good. With some exceptions, I found overall strong schedule performance combined with timely resolution of technical challenges on complex spaceflight development and operations work. This is valuable for successful performance of the CCtCap contract, which will require attention to technical detail and proactive risk assessment and resolution in order to complete and operate a human-rated system that complies with stringent safety standards within a constrained schedule. However, I also recognized that most of this past effort was done under cost reimbursement contracts whereas CCtCap will be performed in a fixed price environment.

I considered performance on CPC to be particularly important, as it was the first phase of this acquisition and established the foundation of the company's certification process and products. Boeing's performance on this contract was excellent. The overall quality of Boeing's products was excellent and almost all were mature enough to realistically capture the work remaining to be done to certify the CTS. The products met and in most cases exceeded the contract requirements, were timely, and were consistent with the level of design maturity of the CTS. Boeing identified almost all of the known areas where requirements variances were needed and either provided adequate detail to assess risk or identified the specific areas there additional information was needed. Boeing engaged in effective technical interchange and ensured sufficient insight to enable the understanding of technical concerns. I considered Boeing's performance on this contract to be highly effective because of the attention to detail, thorough products, and engagement with the customer, which will be important for CCtCap.

CCiCap also was very important, as it involved development of a complete, integrated human space transportation system. Boeing's performance was very good. Although there were technical and schedule challenges, Boeing handled them effectively. Although there were some changes to milestone dates, I was impressed that Boeing successfully adjusted schedule without reducing technical content, and also implemented a significant design change without impacting the milestone schedule. This is a good indicator of effective performance on CCtCap, which similarly will require on-going technical and schedule adjustments without compromising either.

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On the ISS-USOS and the SPOC contracts, I noted that Boeing had technical and schedule issues but effectively handled these problems. I also noted consistently high performance on the CAPPS contract, and the ability to meet major tasks and milestones. On CCDev2, Boeing was very good at meeting most milestones but had technical issues that required moving several milestones. However, Boeing was proactive in identifying areas of risk and utilizing testing to understand the issues. The past performance for the SLS Stages contract indicates Boeing's performance was very good. In general Boeing managed the contract well and had excellent schedule performance, completing milestones ahead of the baseline and maintaining the critical development path.

One of Boeing's major team member's performance on the NLS contracts was excellent, performing well on a very tight schedule and providing significant insight into the products and operations, which will also be critical to successful CCtCap performance. I also noted this team member's performance on CCiCap, but gave it less weight because the assessment of the company's performance as a subcontractor came from Boeing as the prime contractor. I also considered team members' performance on the THAAD contract, which was very good and the SLS engines contract, which was excellent, but gave these less weight because the contracts were less relevant to CCtCap.

Past Performance: SpaceX

I noted that SpaceX's past performance on work relevant to CCtCap was rated at a High level of confidence. I agree with this rating, and with the SEB's assessment of the relevance and performance of each referenced contract or agreement. I noted that most of SpaceX's prior work was rated as Very Good or Excellent, although performance on two contracts was rated as Satisfactory. Overall I found SpaceX performed very well technically on complex spaceflight development and operations work, which is very important for successfully performing the CCtCap development and operations. However, they had recurring issues with schedule and insufficient interaction and provision of data to the Government. I see improvements in responsiveness and increased attention to schedule planning which shows an ability to adjust their work to meet the contract requirements.

I considered performance on CPC to be particularly important, as it was the first phase of this acquisition and established the foundation of the company's certification process and products. SpaceX's performance on this contract was only satisfactory. The overall quality of products was satisfactory, and some were mature enough to capture the work needed to complete development and accomplish certification. No products included adequate solutions to fully meet certification requirements, but progress was made. Products were generally consistent with the level of maturity of the CTS design and were submitted on time, although there was inconsistency in the quality of the products. No concerns were noted with performance on ISS integration work. SpaceX identified some variances, but not a comprehensive set and without sufficient detail to fully assess the associated risk. SpaceX improved the level of insight it provided to the CCP and improved technical interchange to discuss its products and CTS, although not sufficiently to enable the CCP to determine whether SpaceX's system was meeting NASA's ISS and spaceflight safety standards, leaving uncertainty in various areas. I had concerns about performance on this contract due to the lack of detail and consistency in work products, limited risk identification, and limited interaction with the program.

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CCiCap also was very important, as it involved development of a complete, integrated human space transportation system. SpaceX's performance on this work was very good. SpaceX generally demonstrated effective responses to technical and schedule challenges, although there were several technical challenges that caused milestone delays and some changes resulted in reducing technical content in order to achieve milestone dates. SpaceX initially did not provide the insight into its activities established in its insight plan, but addressed this issue and improved insight.

SpaceX had excellent performance on the COTS agreement, which I considered very important, as it involved design and flight demonstration of a complete spaceflight system. There were schedule slips due to a schedule that was ambitious but assumed best case scenarios with little margin for unforeseen development issues. However, SpaceX improved its scheduling process and provided additional data, which allowed for greater visibility into critical path areas and resulted in more realistic schedules. SpaceX's overall technical performance was excellent, resulting in successful cargo demonstration flights to the ISS, which indicates a likelihood of also successfully performing the development and operation work for CCtCap flights to the ISS.

SpaceX had very good performance on the CRS contract, effectively addressing technical issues and successfully completing cargo missions to the ISS. SpaceX initially had schedule issues but has demonstrated flexibility and responsiveness. The company also had very good performance on the CCDev2 agreement, demonstrating high technical competence. SpaceX met its milestones, but had slips and high schedule risk from lack of detailed schedule tracking.

Performance on the NLS contract also demonstrated an improvement in providing adequate insight and access to its data and facilities, implementation of management changes and improved quality of technical products. However, I was concerned about instances of limited responsiveness to technical issues, delays in providing data to the Government, and lack of support due to limited resources. This created schedule risks and left the Government without timely data. Performance on this contact was only satisfactory, but improving. In contrast, performance on the OSP-3 contract showed much more willingness to engage the customer and provide sufficient data to ensure milestones were met.

Past Performance: SNC

I noted that SNC's past performance on work relevant to CCtCap was rated at a High level of confidence. I agree with this rating, and with the SEB's assessment of the relevance and performance of each referenced contract or agreement. I noted that almost all of SNC's and its team's prior work was rated as Very Good or Excellent, although performance on one contract was rated as Satisfactory. SNC and its team had effective technical performance on complex development and operational work, which is useful for CCtCap performance. There were some notable schedule issues, but overall good schedule performance.

I considered performance on CPC to be particularly important, as it was the first phase of this acquisition and established the foundation of the company's certification process and products. SNC's performance on this contract was very good. The overall quality of SNC's products was very good, most were mature enough to capture the work that still needs to be done to certify the CTS, and some included adequate solutions to meet certification. The products were consistent

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with the CTS level of design maturity. Although there were some unidentified variances, SNC did identify them for most of the known non-conformances and included adequate detail to assess the risk. SNC's technical interchange was excellent and resulted in improved products. I considered SNC's performance very effective and an indicator of continued technical progress on CCtCap.

CCiCap also was very important, as it involved development of a complete, integrated human space transportation system. SNC's performance on this work was very good. SNC experienced technical and schedule challenges but addressed them effectively and adjusted their schedule accordingly. They had some challenges with communication and decision-making, but effectively implemented staffing changes to correct this. SNC also performed very well technically on CCDev2, although they experienced a number of milestone delays due to technical issues and a slow response to poor subcontractor performance.

SNC had satisfactory technical performance on the SS2RM2 contract and sometimes responded well to technical issues, but demonstrated less rigor than expected and sometimes the customer needed to perform tasks instead to maintain schedule. SNC performed better on the LAS contract. They sometimes lacked timely technical responses due to reliance on subcontractors and sometimes delivered reports that contained insufficient detail, but overall effectively addressed technical and schedule issues. I gave less weight to performance on these contracts because the work content was less relevant to the scope of CCtCap.

Two of SNC's major team members demonstrated excellent performance on highly relevant contracts. One had very effective performance on the Orion contract, adjusting quickly to Government funding changes by coordinating closely with the Government. The company effectively responded to technical issues, mitigating cost and schedule impacts. The other team member performed very well on the NLS contracts within tight schedule constraints and provided significant insight into their products and operations. Both major subcontractors showed ability to work effectively with the Government and to respond well to time or cost constraints, which will be important for ensuring SNC's team can resolve problems within CCtCap's fixed price and constrained schedule.

I noted the performance of several other team members, which was very good or excellent but was on work less relevant to the scope of CCtCap.

Comparative Analysis

As the SSA it was my responsibility to compare the proposals, considering the evaluation criteria stated in the RFP, the SEB's evaluation of each factor and subfactor, and the proposals in their entirety.

Non-price evaluation factors

I considered the technical approach and schedule for developing each of the proposed CTS designs. I looked at their ability to meet NASA's safety certification standards in the 2017 timeframe, including addressing forward work from Phase 1, as well as the operational approach for service missions. My goal was to evaluate the proposals consistent with the stated goal of the Commercial Crew program in the RFP. (*The purpose of the Commercial Crew Program (CCP)*

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is to facilitate the development of a U.S. commercial crew space transportation capability with the goal of achieving safe, reliable and cost effective access to and from low Earth orbit (LEO) including the International Space Station (ISS) no later than 2017.)

All three proposals have a significant strength for providing additional capabilities beyond the required capacity to transport up to four crewmembers and 220 pounds of cargo, and have various beneficial landing, propellant, and autonomous operational capabilities. SNC's vehicle can accommodate some extra cargo with the required crew, additional cargo but with reduced crew, or an additional person but with less than the required cargo. SpaceX's vehicle accommodates additional cargo, or an additional person, or several additional people but without the full cargo requirement. Boeing's vehicle accommodates an additional person plus a considerable amount of additional cargo, and the proposal more clearly explained how they can trade cargo for each person. SNC's CTS can land autonomously, whereas Boeing's CTS and SpaceX's CTS can operate the complete mission autonomously. The Boeing system is of more utility and value to the Government because it enables the most flexibility for combinations of crew and cargo to meet the needs of each mission and is able to transport both additional crew and additional cargo simultaneously, thus providing the most operational flexibility to accommodate ISS manifests.

All three proposals have a significant strength for their plan to use well-characterized, existing or innovative design solutions. All three systems use launch vehicles with flight heritage, which increases reliability. Both Boeing and SpaceX use a capsule spacecraft, which is a lower complexity design than SNC's winged spacecraft and therefore minimizes the work and time required to complete development. SNC's design leverages various heritage subsystems, but the more complex winged design entails more challenges and thus will have more technical and schedule risk than expected and the integration of many subsystems adds further complexity. SNC's open trades on propulsion systems and detailed analysis needed for abort system verification will add complexity and threaten schedule performance. SpaceX is the only Offeror basing its CTS on a system that has already operated on orbit with the ISS. SpaceX also has a significant strength in this subfactor for the maturity of their integrated system and their plan to incrementally build on that system's design and flight experience, including risk mitigation and mature operational products. This approach is advantageous, although the system and associated products are for cargo transport. Transitioning from a cargo system to a human-rated system that can safely transport crew is complex and involves different design logic and system considerations. This will make the crew requirements and design more challenging than cargo. SpaceX already has mature operational processes on-orbit, but launch and re-entry will need different verification and requirements for crew than for cargo. In comparison, both Boeing and SNC are using launch vehicles with more proven reliability and well-known failure modes. However, these launch vehicles might not be available because of engine availability. Launch vehicle availability was considered, but did not factor into my decision. NASA looks to the providers to be able to accommodate launch vehicle changes during the time of this contract and the Offerors provided mitigation strategies. SpaceX and Boeing have higher overall design maturity than SNC.

All three proposals have strengths in their certification approach, but also have schedule weaknesses. All three Offerors proposed to complete certification by the end of 2017. SpaceX has the earliest date, then Boeing, then SNC. All three proposals have compressed schedules,

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but I consider the SpaceX and SNC schedules are more likely to be subject to greater schedule delays. SNC's schedule is the most compressed, technically challenged and likely to have the greatest delays.

Boeing has a well-planned schedule and logical sequence of activities, with compression mostly toward the end of development between the uncrewed and crewed test flights. They have a very detailed understanding of and thorough process for identifying risks and variances coming out of Phase 1. However, Boeing's proposal does not have a dedicated ascent abort test and this will most likely require further analysis. Their past performance on other complex spaceflight system development generally indicates very effective responses to technical problems and schedule adjustments without sacrificing technical content. This increases my confidence that Boeing has a solid plan and will be able to complete the development of their system to NASA's standards within the needed timeframe. However, I also recognize that most of this past experience was under cost reimbursement contracts, whereas CCtCap will be performed in a fixed price environment.

SNC also has demonstrated very good technical work on prior complex spaceflight projects, with some notable schedule issues but generally good schedule performance. They have a comprehensive incremental flight test approach and a clear understanding of the forward work and risks coming out of Phase 1. They also proposed the most time to complete this work and reach certification. However, they need to do a more significant amount of complex hardware and software development work than the other companies to mature the CTS and its subsystems to certification. The flight test plan is comprehensive, but the extensive and sometimes concurrent activities, combined with incrementally integrating other systems, likely will extend their schedule. The test plan includes powered flight testing but does not include a dedicated ascent abort test or pad abort test, which are important for a system with an abort capability and will require further analysis. They also still have several important design decisions to make regarding their main propulsion system, which can also impact the schedule for powered flight abort testing, and use of a frangible joint or a fallback design. This creates significant schedule risk throughout the CTS development, and their planned certification date is already at the very end of 2017.

SpaceX has good interim milestones and risk mitigations for transitioning its existing system to a crewed system and a comprehensive approach to crew and cargo integration. They proposed to complete certification sooner than either of the other Offerors. However, they have some logical inconsistencies in their schedule, have planned forward work coming out of Phase 1 but still need to implement a more rigorous process for identifying and resolving risks and variances, and have additional work in their critical path such as designing their own docking system and spacesuit. SpaceX's performance on other complex spaceflight projects has shown very good technical work overall but with more repeated schedule issues. However, their schedule performance has been improving.

The CCtCap requirement is not just to complete design and development of a CTS, but more critically to ensure the system design and operations meet NASA's stringent standards for safe human flight to the ISS. Certifying the system requires plans and processes for identifying and resolving hazards, identifying alternates and variances from the NASA standards, verifying and validating that the system meets standards, and an overall certification plan. These plans and processes are the key products each company created under the first phase of this acquisition

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(CPC), and are the underpinnings of their work during the second phase (CCtCap) to complete certification. The quality of the CPC products, and how each Offeror addressed and resolved the feedback NASA provided on the CPC products, reflect the Offeror's understanding of the certification requirements and are critical indicators of whether they have a credible, effective, complete approach for taking these systems and products successfully to certification. I consider this a significant difference in the proposals. Only Boeing had a significant strength in this area, with no weaknesses. SNC had a strength, and weaknesses that I found more important than the SEB did. SpaceX met the criteria, and had a weakness related to its plan for EEE parts that I considered more important than the SEB did.

Boeing's plan for addressing Phase 1 feedback is a significant discriminator, because it shows a credible, executable plan to achieve certification. Having a clear recognition of and path forward for the work needed not just to complete development of a CTS but to meet NASA's exacting human safety and ISS standards provides a strong basis for successfully progressing from CPC through certification and will help insure that the work proposed for CCtCap is achievable within the proposed schedule and price. Boeing provided a very thorough and realistic process to determine whether its system meets the NASA standards or whether variances must be considered, showed a clear understanding of the activities it needs to perform and data it needs to provide to resolve CPC feedback, and had detailed dispositions of the feedback and comprehensive work content in the performance work statement (PWS) to cover the additional work within the contract. Boeing had excellent and effective performance during Phase 1, providing high quality products with sufficient detail to realistically understand and assess forward risks and engaging in effective technical interchange with NASA, which increases my confidence in the quality and thoroughness of products and processes they will use during Phase 2 certification.

SNC performed well during Phase 1, providing good quality products, identification of many of the variances, and excellent technical interchange with NASA. SNC had a strength for its technical approach to address the CPC feedback. They showed a clear understanding of the forward work needed to certify their CTS and resolve the risks identified during Phase 1, and included this work in their performance work statement and appropriately reflected the additional work in schedule adjustments. Their response to NASA's feedback on the CPC products was not as good as Boeing's, but was better than SpaceX's response. However, SNC also had two weaknesses related to its resolution of CPC feedback, specifically its unclear approach to making the decision on the frangible joint and conducting validation testing for its abort performance model. The abort performance model validation testing is a concern due to its timing in the certification schedule, which does not sufficiently reduce risk prior to the first crewed flight test.

SpaceX's proposal adequately addressed the CPC feedback on its certification products, added appropriate work to its performance work statement, and proposed to implement new processes to identify and address risks and variances during Phase 2. SpaceX demonstrated understanding of the CCtCap requirements and forward work from Phase 1. However, SpaceX did not demonstrate as good understanding of the certification products, or have as effective systems for development of these key products, in comparison with the other Offerors. It also had a weakness for its response to handle electrical, electronic, and electromechanical parts issues, which concerned me. Typically human space systems use parts certified to operate in the space radiation environment. SpaceX is suggesting that parts with other than space radiation hardening

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can be used. SpaceX is proposing testing, selection and design that will allow other than fully certified parts. This can be a benefit by allowing a broader class of parts availability as well as lower cost. However, the details associated with allowing other than fully space qualified parts will take extra work and add both technical and schedule risk. The electronic parts issue is a critical decision and has big implications. Use of non-space radiation tolerant parts may be acceptable, but requires thorough justification and a discussion of system level design considerations. SpaceX did not effectively use CPC or NASA feedback to provide adequate rationale for approval of this issue early in the design process. I have concerns about SpaceX's performance during Phase 2 based on their performance during Phase 1. SpaceX did make progress, submitted adequate, timely products and identified variances. There was a lack of detail and consistency in work products, and limited risk identification, although this improved with discussion with the program. This decreases my confidence that SpaceX will recognize and address risks and variances in a timely manner and that NASA will have sufficient visibility to understand those risks within the proposed CCtCap certification schedule.

Following certification of the CTS to NASA's standards, the contract includes at least two and potentially six crew service missions to the ISS. I considered each company's approach to plan, manage, integrate and execute the missions. No proposal had any significant strength in this area, although all had one or more strengths for particular aspects of the mission and no weaknesses. I considered these strengths to be beneficial, but not discriminators.

I also considered the overall effectiveness of the proposed approaches to managing the CCtCap work, particularly the extent to which it helps recognize and control risk. Overall, Boeing had the best management approach, then SNC, then SpaceX.

The SNC and Boeing proposals had significant strengths for their insight approach. Insight is critical to the success of the CCtCap contract. It enables NASA to observe and participate in the contractor's completion of the system that will transport the NASA crew, and to be aware of and understand the contractor's progress and the risks of the system while it is still being completed and then operated. SpaceX had a strength for its insight plan, offering an effective approach that provides NASA visibility into the work, participation in meetings and joint test team activities, and access to data although with some limitations. I noted that SpaceX's record of providing sufficient formal insight on prior projects has improved. SNC and Boeing had a more comprehensive insight approach, including more open access to data. Boeing's past performance did not indicate issues with communication and insight, and SNC's performance indicated issues only on a couple of projects.

Integrated, comprehensive management of the program and balancing various technical areas of work, cost, and schedule risks is important to completing the contract work safely and in the needed timeframe. All three proposals had a significant strength in program management, although Boeing's and SNC's were more comprehensive. SpaceX had a significant strength for its management of launch slots and customer schedule conflicts. The direct management of launch slots by SpaceX, along with a launch pad dedicated to CCtCap launches, is important. Boeing and SNC also had strengths for launch slot management, although not as robust as SpaceX's. This is because Boeing and SNC both are reliant on another company to provide the launch vehicle and use a multi-user launch pad. However, Boeing does have a strength for its organizational management, including effective management of its major team members such as

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its launch provider, which increases my confidence. Boeing and SNC both had significant strengths for their more integrated approach to program management, and these significant strengths were broader than SpaceX's, including a wide range of management areas and more effectively integrating cost, schedule, and technical performance. I considered these more comprehensive program management strengths to be more important for successful overall performance of certification as well as missions than the significant strength for launch slot management. All three Offerors also had several other strengths in this subfactor, which I considered to be beneficial but not discriminators.

Only Boeing had a strength for its organizational structure, notably for its management of its entire team including both the company's internal team and its major team members. This is an important aspect of successful contract performance. Bringing a CTS to certification within a tight schedule and conducting safe operational missions on schedule will require long-term planning, coordination and prioritization of resources, and integrated decision-making. SNC did not have a separate strength for its organizational structure, but its significant strength for program management does include dedicated program team members to prioritize resources for CCtCap performance. In contrast, SpaceX's organization has fewer levels of management, which can simplify decision-making. Its highly matrixed structure may increase internal coordination, but also may make it more difficult to prioritize work across the company.

All three Offerors had good proposals for effectively utilizing small business in performance of the CCtCap contract. Although there was some variation in the Offerors' goals for their percentage of small business work, I did not find this to be a discriminator.

In addition to consideration of Offerors' past performance as it related to specific technical and management issues as discussed above, I also considered past performance overall as a general indicator of performance on CCtCap. I agreed with the SEB's overall level of confidence ratings of Excellent for Boeing and Very Good for both SNC and SpaceX. Overall I found all three companies and their major team members had strong technical past performance and for the most part were able to address technical and schedule issues that occurred during their projects.

Boeing's performance overall was the best. They had excellent technical and schedule performance combined with timely resolution of technical challenges on complex spaceflight development and operations work, including extensive human spaceflight work. This is valuable for successful performance of the CCtCap contract, which will require attention to technical detail and proactive risk assessment and resolution in order to complete and operate a human-rated system that complies with stringent safety standards within a constrained schedule. Boeing's major subcontractors also had excellent and very good past performance.

Overall I found SpaceX performed very well technically on complex spaceflight development and operations work, including human spaceflight work, which is very important for successfully performing the CCtCap development and operations. I noted that schedule planning was a recurring issue on SpaceX's projects. Although they improved, this concerns me because an essential part of successfully meeting NASA's certification standards in the contract timeframe will be planning and prioritizing complex DDTE activities and making effective real-time adjustments to the work to maintain schedule without compromising safety. For example, on the CCiCap agreement, which involved development of a complete CTS and therefore is very highly relevant to CCtCap, I considered that SpaceX sometimes had to reduce technical content of

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milestones and split milestones in order to meet the milestone schedule. In comparison, Boeing adjusted its schedule without reducing technical content and implemented a significant design change without impacting the milestone schedule. I do see improvements in SpaceX's increased attention to schedule planning, which shows an ability to adjust their work to meet the contract requirements.

SNC and its team had effective technical performance on complex development and operational work, including human spaceflight work, which is useful for CCtCap performance. Major subcontractors' past performance was very good or excellent. On highly relevant spaceflight work, they worked effectively with the Government and responded to time or cost constraints, which will be important for ensuring SNC's team can resolve problems within CCtCap's fixed price and constrained schedule. Overall SNC had good schedule performance although there were some issues with untimely responses.

Completion and operation of an integrated CTS requires both a spacecraft and launch vehicle. I noted that SpaceX does not subcontract its launch service whereas SNC and Boeing do. I considered the performance of the launch subcontractors since they will be a critical part of successful CCtCap performance. Both SNC and Boeing have launch service subcontractors with excellent performance on highly relevant work, able to work to a tight schedule and provide good insight to their customers. I considered SpaceX's prior work that included launches, noting they had excellent and very good performance on COTS and CRS respectively. SpaceX's performance on the NLS launch service contract, however, had some issues with delay, lack of data and insight, and responsiveness, which improved but resulted in a rating of only satisfactory.

Price

The CCtCap contract requires the contractor to design, develop, manufacture and operate its own CTS, and the RFP allowed each company to propose its own approach to accomplish this. Companies' technical and business approaches varied, along with their proposed prices. I understood that the proposed prices were determined to be fair and reasonable primarily based on adequate price competition, but also inquired about the additional analysis the SEB did. As discussed in the pricing report and explained to me in the selection briefing, prices on other contracts for complex spaceflight development and operations vary considerably. I considered the comparative examples the SEB used for its price analysis and found it reasonable that there was a similar range of proposed prices for the CCtCap contract. I considered that Boeing's price is higher than SNC's price, and both are significantly higher than SpaceX's price.

Recognizing the wide difference in proposed prices and the relative significance of price as an evaluation factor, I considered not just the overall evaluated prices but also the assessment the SEB made. The RFP required the Offeror to propose a fixed price for its DDTE work (CLIN 001), fixed prices for its mission services (CLIN 002) for each year of the contract, and fixed labor rates for performing Special Studies (CLIN 003) for each year of the contract. The RFP pricing instructions required the Offeror to include all resources necessary to perform the work content it proposed, including explanations of the pricing and descriptions of the work content by milestone. Offerors also were required to provide basis of estimates (BOEs) describing their resources and proposed work, using their own formats, which provided insight but were not submitted for purposes of price analysis. The SEB presented the evaluated fixed prices as called

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for in the RFP, but also verified consistency with the BOEs, the narratives, and the information in the technical and management proposals. This increased my confidence in the proposed prices.

Based on my questioning of the SEB and information in the pricing report, I understood the main reasons contributing to the difference between the lowest price (SpaceX) and the two higher prices (SNC, then Boeing). For example, SpaceX will manufacture about seventy percent of the hardware in its proposal in-house, including much of the launch vehicle. Boeing and SNC will acquire much of their hardware from subcontractors, including the launch vehicle. Boeing and SNC subcontract the launch service whereas SpaceX performs its own launches. Two companies proposed to use NASA docking systems, and the value of that equipment was added to their total evaluated price as specified in the RFP. The companies proposed to purchase use of varying quantities and types of other Government-furnished facilities and services, with a wide range of associated costs. Those costs were not added to the total evaluated contract prices, but would have contributed to each company's proposed fixed prices. The SpaceX management structure is flatter than Boeing's or SNC's with less overhead. Each company has its own risk posture; Boeing took a more conservative stance than the other companies with regard to possible impacts of contract clauses during performance.

As stated in the RFP, proposed prices to achieve milestones and contract requirements were considered to assess the risk and feasibility of the proposed approach. BOEs were considered as part of assessing the completeness of proposed work content and the Offeror's understanding of the content included in the price and lifecycle costs for the period of contract performance. This was evaluated under the Mission Suitability factor, and did not in any way adjust the proposed prices. However, it informed the SEB's understanding of the proposed prices and proposed technical content. There were no weaknesses for any proposal in this area. The SEB's explanations of how Offerors addressed any concerns from their initial proposals also indicate that the final proposals provided sufficient information such that the SEB did not have concerns in this area, which also increases my confidence. Further, both SpaceX and Boeing had strengths for this aspect of their proposals. I recognized that this assessment was part of the Mission Suitability evaluation, not the Price evaluation, but considered it for further confidence in the proposed prices.

Each Offeror proposed prices and made different adjustments from the initial to final proposed prices based on its CTS design and current level of maturity, and the varying amounts and types of forward work, tests, and data products planned to complete the CTS. Each company also proposed different ways of leveraging existing hardware, subsystems, test data and processes as part of its development. All three companies proposed sufficient work content for their proposed approach. However, I recognized that Boeing's, and to a lesser extent SNC's, identification of forward work coming out of Phase 1 that needs to be addressed during CCtCap was more clear than SpaceX's, and their prices for completing DDTE to certify their systems (CLIN 001) were notably higher than SpaceX's price. I believed SpaceX could complete its proposed work content, but as additional risks and variances become known during development there may be schedule impacts. SpaceX had the best proposal from a price perspective, and the lower price is understandable when the companies' varying technical approaches and management structures are considered.

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Summary

The evaluation criteria in the RFP are about understanding the contract requirements and the work content each Offeror needs to do to bring its integrated human-rated system from its current level of maturity to a state where it can be certified as meeting NASA's standards for safe, reliable transportation of crew to the ISS and begin operations, in the 2017 timeframe, and the feasibility, completeness, and risk of its technical and management approach to accomplish this in a fixed price environment. The criteria also are about each company's management of this work, and past performance on prior similar work.

As stated in the RFP, the combination of Mission Suitability and Past Performance is approximately equal to Price. Price is more important than Missions Suitability, which is more important than Past Performance.

Of the three proposals, SpaceX had the best price and also had Very Good mission suitability and a High level of confidence in past performance. Although I have some technical concerns about this proposal, overall it is very good and SpaceX has the most planned schedule margin to address these concerns within the stated goal of completing certification and beginning mission operations not later than 2017. Although there is risk in its approach to evolve a system designed for cargo transportation into a system that can meet the more critical and stringent standards necessary for a system that transports crew, SpaceX's system is at a higher level of design maturity. SpaceX also has a strong approach for incremental development and testing with risk reduction, but has the least robust approach for addressing the actual specific feedback on the Phase 1 products that are the foundations of certification in this second phase. Identifying and planning for execution of detailed, well-defined work content from Phase 1 to Phase 2 is less clearly demonstrated in the SpaceX proposal. This creates risk that problems not yet well identified or understood, and design trades made late in the development process, will result in the system not being certified and ready for missions in the needed timeframe. Most significantly, the company's performance on CPC was only "satisfactory," which gives me less confidence regarding its future performance on these same products and standards during CCtCap. The SpaceX proposal shows certification early and this is the main reason for the schedule compression. However, SpaceX has more schedule margin than the other companies to accommodate and adjust work as issues are identified and resolved. SpaceX has performed very well on other very relevant work, demonstrating an ability to be flexible and responsive. I see some history of schedule issues and recurring issues regarding sufficient insight during performance, but there has been improvement. My overall level of confidence in their ability to successfully perform the CCtCap contract based on their total past performance is High.

Of the other two proposals, Boeing has a higher price than SNC but also is the strongest of all three proposals in both Mission Suitability and Past Performance. Boeing's system offers the most useful inherent capabilities for operational flexibility in trading cargo and crew for individual missions. It also is based on a spacecraft design that is fairly mature in design. This maturity can clearly be seen in the products delivered as part of CPC. It is particularly important that Boeing has the most well-defined plan for addressing the specific issues from Phase 1. Boeing also has a compressed schedule and has many activities loaded towards the end of development. I see less schedule risk based on their more complete and detailed recognition and understanding of the work to be done and their plan for accomplishing it. Boeing also has the best management approach, with very comprehensive and integrated program management, and

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an effective organizational structure, further ensuring they will be able to accomplish the technical work in a manner that meets NASA's standards. Boeing's excellent past performance, particularly on CPC, gives me higher confidence that they will be able to accomplish the CCtCap work and certify a safe, reliable CTS in the goal timeframe of 2017. I consider Boeing's superior proposal, with regard to both its technical and management approach and its past performance, to be worth the additional price in comparison to the SNC proposal.

SNC has a strong management approach to ensure the technical work and schedule are accomplished, a good approach for DDTE work to complete certification, and a realistic plan for addressing the risks from Phase 1. SNC's performance on other very relevant work has been very good; in particular its performance on CPC was very good. However, I agree with the SEB's evaluation that SNC has the lowest rating for the technical subfactor, primarily as a result of the more complex system they proposed and its overall lower level of integrated design maturity. I consider SNC's design to be at the lowest level of maturity, with significantly more technical work and critical design decisions to accomplish. The proposal did not thoroughly address these design challenges and trades. SNC's proposal also has more schedule uncertainty. For example, some of the testing planned after the crewed flight could be required before the crewed flight, and the impact of this movement will greatly stress the schedule. Although SNC has the longest schedule for completing certification, it also has the most work to accomplish which is likely to further extend its schedule beyond 2017, and is most likely to reach certification and begin service missions later than the other Offerors. Although SNC's price is lower than Boeing's price, its technical and management approaches and its past performance are not as high and I see considerably more schedule risk with its proposal. Both SNC and SpaceX had High past performance, and Very Good technical and management approaches, but SNC's price is significantly higher than SpaceX's price.

CONCLUSION

As stated in the RFP, an objective of the Commercial Crew program is the development, testing, and certification of multiple commercial crew transportation systems. The RFP also stated the Government intended to award one or more contracts. CCtCap is a very complex human spaceflight development and operational effort, with significant risks. Ensuring safe, reliable U.S. crew access to the ISS is critical. Awarding multiple awards maximizes meeting the program objective, provides more options and flexibility for the Agency throughout contract performance, reduces overall risk to the program, and best ensures successfully accomplishing safe, reliable missions to the ISS. I consider it to be in the Agency's best interests to award two contracts. Based on my assessment of the proposals, in relation to the stated evaluation criteria in the RFP, I select SpaceX and Boeing for the CCtCap contracts.

William H. Gerstenmaier

William H. Gerstenmaier

Source Selection Authority

15 Sept 2014

Date