



December 1, 2011

Reply to Attn of: Office of the Chief Engineer

TO: Distribution

FROM: NASA Chief Engineer

SUBJECT: FY 12 Call for Systems Engineering Leadership Development Program (SELDP)  
Nominations

NASA leadership has identified systems engineering (SE) as a critical core competency in enabling current and future Mission success. The SELDP has been established to accelerate the development of systems engineers by providing the balance of two critical learning components referred to as the Art (leadership development), and Science (technical development) of systems engineering. A complete explanation can be found at [http://www.nasa.gov/pdf/311198main\\_Art\\_and\\_Sci\\_of\\_SE\\_LONG\\_1\\_20\\_09.pdf](http://www.nasa.gov/pdf/311198main_Art_and_Sci_of_SE_LONG_1_20_09.pdf).

SELDP as a Strategic Development Tool:

Centers are advised to utilize SELDP as a strategic mid- to long-term investment. This investment is only successful when Centers' systems engineering needs are met; which means that upon return, the participant is placed in a position where the learning and experience they gained in the program is quickly applied to meeting essential Center needs. Before identifying nominees, Centers are encouraged to first consider the systems engineering knowledge, skills and abilities they will need to successfully run programs and projects 18 to 24 months from now.

With this perspective, the Center is better positioned to identify qualified SELDP candidates who:

- Are a full-time Permanent, Civil Servant, GS-13 to GS-15 NASA employee, or a Senior Systems Engineer at JPL.
- Have an Engineering Bachelors Degree or AST Equivalent
- Are willing and available to leave their home Center and take on an assignment at another NASA Center for 6 to 12 months.
- With NASA-wide exposure, and expanded systems engineering and leadership skills and experience, are best positioned to take on these future Center challenges, versus employees who are currently available;

- Have graduated from their Center systems engineering program or can demonstrate through their experience, training and education that they have this knowledge and experience;
- Have demonstrated the leadership behaviors and aptitudes listed on Attachment A, SELDP Selection Criteria;
- Have demonstrated technical/discipline capabilities and experience applying SE competencies as defined by APPEL Level 2, Subsystem Leads at [http://www.nasa.gov/offices/oce/appel/pm-development/pm\\_se\\_competency\\_framework.html](http://www.nasa.gov/offices/oce/appel/pm-development/pm_se_competency_framework.html); and,
- Have taken APPEL SE prerequisite training including: Foundations of Aerospace at NASA, Project Management and Systems Engineering, (<http://www.nasa.gov/offices/oce/appel/curriculum/core/17.html>), and Fundamentals of Systems Engineering, (<http://www.nasa.gov/offices/oce/appel/curriculum/courses/558.html>) or equivalent.

To help Centers determine the best candidates for SELDP, a SELDP Supervisor and Engineering Director's Application Checklist is included as Attachment B. This checklist is not to be included in the application package submitted to NASA HQ.

#### Developmental Assignments:

Participants must engage in 6 to 12 month assignments away from their home Center. NASA Leadership has determined that the longer the assignment, the more effective the participant becomes at leading complex SE projects; therefore, 12 month assignments are given preference in the selection process.

Assignments are not selected by the participants. Assignments are identified by the SELDP Advocates, who conduct a full gap analysis of the participant's learning needs. *NOTE: These are full-time developmental assignments and cannot be done in conjunction with other continuing home Center responsibilities.* Program details can be found at <http://www.nasa.gov/offices/oce/appel/seldp/program/index.html>.

#### Application Logistics and Center Costs:

**Nominations are due February 10, 2012** and should be sent to Sevatec Inc., Attn: Maureen Dale, 2101 Wilson Boulevard, Suite 110, Arlington, VA 22201.

Nomination packages must include an SELDP Nomination Form, NASA Form 1781 (NOV 10) for each nominee. NASA Form 1781 (NOV 10) can be downloaded from <http://server-mpo.arc.nasa.gov/Services/NEFS/>. Applications need to be concise. No attachments will be accepted and the minimum allowable font size is 11.

A single endorsement letter covering all nominees, signed by the Engineering Director and concurred by the Center Director also must be provided.

**Please note: the format for this endorsement letter has changed.** Endorsement letters are required to be submitted in the format provided in Attachment C, Engineering Director and Center Director Nomination and Endorsement Template/Example, and must include a rank order of the Center's nominees and statements of the nominee's developmental path and the benefit to the center/reentry strategy. An example of the requested information is included in Attachment C.

Centers are requested to identify a point of contact to coordinate the announcement and selection of nominees, and provide the name and contact information of their point of contact to Maureen Dale at [mdale@sevatec.com](mailto:mdale@sevatec.com) by **December 16, 2011**.

**Candidates must be available to participate in an interview on April 3, 2012 and attend Orientation June TBD, 2012. All information from this call letter, including the requirement to attend these two events, should be clearly communicated in the Center's call letter and to all nominees.** See Attachment D for the complete SELDP Selection Schedule.

Centers are responsible for funding their participant's salary and the following travel costs: 1) travel to/from the interview; 2) travel to/from Orientation; 3) training and associated travel that is not part of SELDP workshops; 4) additional trips home, above the allowed quarterly trip; and 5) project travel required for participants assigned to their Center. OCE funds all other program travel and training for participants, including NASA employees assigned to JPL. JPL is responsible for funding all costs associated with their employee's participation in the program as noted above, with the exception of #5, project travel required for participants assigned to their Center.

Please address questions concerning this announcement to Chris Williams, [Christine.r.williams-1@nasa.gov](mailto:Christine.r.williams-1@nasa.gov) or 202-358-2146.



Michael Ryschkewitsch  
Chief Engineer

4 Enclosures:

Attachment A: SELDP Selection Criteria

Attachment B: Supervisor and Engineering Director's Application Checklist

Attachment C: Engineering Director and Center Director Nomination and Endorsement Template/Example

Attachment D: SELDP Selection Schedule

Distribution:

Associate Administrator/Mr. Scolese  
NASA Mission Directorates

NASA Center Directors  
HQ/Assistant Administrator for Human Capital Management/Ms. Buchholz  
NASA Engineering Management Board  
NASA Safety and Mission Assurance Directors  
SELDP Advocates  
NASA Human Resource Directors  
NASA Center Training Officers  
NASA APPEL Center Contacts

**SELDP Selection Criteria**

Candidates for SELDP must be full-time permanent civil servants, grade GS-13, 14, or 15 for NASA employees, and Senior Systems Engineers at JPL; possess a Bachelors Degree in Engineering or AST Equivalent; and have taken APPEL SE prerequisite training, including Foundations of Aerospace at NASA, Project Management and Systems Engineering, and Fundamentals of Systems Engineering or equivalent.

**Application Ratings: Assessing the Science of Systems Engineering**

The following rating and ranking criteria will be used by the SELDP Selection Panel to rate and rank nominee applications:

| Rating Factor   | Max Points | Description  |
|---|------------|--|
| <b>Experience</b><br>(Application Question 11)                | 40         | Has the nominee had the requisite experience in complexity and number of years to adequately prepare him/her to be successful in the SELDP? Has the nominee proven to be able to effectively translate the opportunities he/she has been provided into measurable results for the Agency?<br>Nominees will be rated on: <ul style="list-style-type: none"> <li>o Relevant Past Experience: Type &amp; Number of Years of demonstrated SE discipline knowledge and practical experience within area of expertise. SMA applicants can substitute type and number of years of demonstrated SMA discipline knowledge and practical experience applying to programs and projects.</li> <li>o Participated in, or have an understanding and exposure to, phases of project life cycle development</li> <li>o Discipline and/or Competency</li> <li>o Major Accomplishments (Results Achieved) Including Awards Received</li> </ul> |
| <b>Developmental Preparation</b><br>(Application Question 12) | 30         | Is the nominee prepared to make maximum use of SELDP and does he/she have the prerequisite training and development necessary to be successful in the program?<br>Is this the right program for this nominee at this time in his/her career? Nominees will be rated on: <ul style="list-style-type: none"> <li>o Degree(s) and certificate(s) obtained</li> <li>o APPEL and other relevant SE training completed – <u>must be noted in application</u></li> <li>o Other professional development</li> </ul>  |

**Attachment A**

|   |            |  |
|---|------------|--|
| <p><b>Senior Management Endorsement and Statement of Need</b><br/>(Application Question 13)</p> | <p>25</p>  | <ul style="list-style-type: none"> <li>o Leadership development including Agency-wide courses as applicable</li> </ul> <p>Does the Center consider the nominee an individual who is ready for the next level of SE challenge and complexity? Does the Center have a clear strategy for this individual that will effectively use the knowledge, skills and abilities gained in SELDP, to support the achievement of the Center goals? Is there a good plan to enhance NASA's return-on investment? Nominees will be rated on:</p> <ul style="list-style-type: none"> <li>o Center's overall endorsement and assessment of the nominee's SE leadership capabilities</li> <li>o Alignment of individual development needs with Agency/Center program needs</li> <li>o Reentry strategy (How quickly can the learning be applied?)</li> </ul> |
| <p><b>Discretionary</b></p>   | <p>5</p>   | <p>At the discretion of the SELDP Selection Panel member, up to 5 points can be added to the above factors, based on the information provided. This allows the panel member the latitude to recognize any exceptional strength, and/or to express a clear preference for one candidate over the others, despite the fact that the numerical weighting to that point may have been more or less equal.</p>  |
| <p><b>Maximum Points Awarded</b></p>  | <p>100</p> |  |

**Interview Ratings: Assessing the Art of Systems Engineering**

Nominees whose applications are highly ranked will be invited to interview to determine if they exhibit the Systems engineering leadership behaviors and aptitudes necessary to becoming an expert in the field. The following criteria will be used by the SELDP Selection Panel to assess nominees:

| Rating Factor                   | Max Points | Description   |
|---------------------------------|------------|---|
| <b>Leadership Skills</b>        | 25         | Nominee: <ul style="list-style-type: none"> <li>• Appreciates/Recognizes Others</li> <li>• Is Able to Build Team Cohesion</li> <li>• Understands the Human Dynamics of a Team</li> <li>• Can Create Vision and Direction and Ensure System Integrity</li> <li>• Possess Influencing Skills</li> <li>• Sees Situations Objectively</li> <li>• Coaches and Mentors</li> <li>• Delegates</li> <li>• Ensures Resources are Available</li> </ul>   |
| <b>Attitudes and Attributes</b> | 25         | Nominee: <ul style="list-style-type: none"> <li>• Remains Inquisitive and Curious</li> <li>• Seeks Information and Uses the Art of Questioning</li> <li>• Advances Ideas</li> <li>• Gains Respect Credibility, and Trust</li> <li>• Possesses Self-Confidence</li> <li>• Has a Comprehensive View</li> <li>• Possesses a Positive Attitude and Dedication to Mission Success</li> <li>• Is Aware of Personal Limitations</li> <li>• Adapts to Change and Uncertainty</li> <li>• Uses Intuition/ Sensing</li> <li>• Is Able to Deal with Politics, Financial Issues, and Customer Needs</li> </ul> |

**Attachment A**

|  |            |   |
|--|------------|---|
| <p><b>Communication</b></p>                        | <p>25</p>  | <p>Nominee Has the Ability to:</p> <ul style="list-style-type: none"> <li>• Listens Effectively and Translates Information</li> <li>• Communicates Effectively Through Personal Interaction</li> <li>• Facilitates an Environment of Open and Honest Communication</li> <li>• Uses Visuals to Communicate Complex Interactions</li> <li>• Communicates Through Story Telling and Analogies</li> <li>• Is Comfortable with Making Decisions</li> </ul>   |
| <p><b>Problem Solving and Systems Thinking</b></p> | <p>25</p>  | <p>Nominee:</p> <ul style="list-style-type: none"> <li>• Identifies the Real Problem, Assimilates</li> <li>• Analyzes, and Synthesizes Data</li> <li>• Thinks Systemically</li> <li>• Has the Ability to Find Connections and Patterns Across the System</li> <li>• Sets Priorities</li> <li>• Keeps the Focus on Mission Requirements</li> <li>• Possesses Creativity and Problem Solving Abilities</li> <li>• Validates Facts, Information and Assumptions</li> <li>• Remains Open Minded and Objective</li> <li>• Draws on Past Experiences</li> <li>• Manages Risk</li> </ul> |
| <p><b>Maximum Points Awarded</b></p>               | <p>100</p> |   |

**SUPERVISOR AND ENGINEERING DIRECTOR'S  
SELDP APPLICATION CHECKLIST**

| No. | Item   | Check Completed |
|-----|--|-----------------|
| 1   | Is the nominee a full-time permanent civil servant, grade GS-13, 14, or 15 for NASA employees, and Senior SE's at JPL?   |                 |
| 2   | Does the nominee have a Bachelor's in engineering or AST equivalent?   |                 |
| 3   | Have you assessed the systems engineering knowledge, skills and abilities the nominee will need to successfully run programs and projects 18 to 24 months from now; and the knowledge, skills and experience the nominee needs to obtain to support these goals?   |                 |
| 4   | Has the nominee had NASA-wide exposure, and possesses expanded systems engineering, leadership skills and experience?  |                 |
| 5   | Has the nominee demonstrated the leadership behaviors and aptitude listed on Attachment A, Selection Criteria?   |                 |
| 6   | Has the nominee graduated from their Center's systems engineering program, or can they demonstrate through their experience, training and education that they have this knowledge and experience?  |                 |
| 7   | Has the nominee taken the <u>prerequisite</u> APPEL SE training including Foundation of Aerospace at NASA, Project Management and Systems Engineering and Fundamentals of Systems Engineering or equivalent? If not, do they have the experience that shows they do not require this training to be successful in the program? |                 |
| 8   | Have you identified potential positions where the nominees' training and experience can be applied upon return, and have you talked to your nominee about what they need to focus on developing during the program to meet these needs?  |                 |
| 9   | Have you discussed with your Center SELDP Advocate the type of assignment that will help you meet your mission and your nominee's developmental needs?   |                 |
| 10  | Are you prepared to fully release your nominee from their current assignment(s) for 6 to 12 months?  |                 |
| 11  | Have you reviewed the SELDP Call Letter and are you aware of the Center's funding requirements?  |                 |
| 12  | Have you reviewed the SELDP Schedule, Attachment D, and confirmed the nominee can attend the required interviews and Orientation?  |                 |

**Engineering Director and Center Director Nomination and Endorsement Template**

To: NASA Chief Engineer

FROM: Center Chief Engineer/Engineering Management Board Member

SUBJECT: Systems Engineering Leadership Development Program (SELDP)  
Engineering Director and Center Director Nomination and Endorsement

(Center Name) is pleased to nominate the following candidates to the Systems Engineering Leadership Development Program (SELDP).

Nominee rank order and rationale:

| Priority | Nominee | Nominee Development Path | Benefit to the Center/Reentry Strategy |
|----------|---------|--------------------------|--|
| 1        |         |                          |  |
| 2        |         |                          |  |
| 3        |         |                          |  |

Signature of Center Chief Engineer/Engineering Management Board Member

Concurrence:

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Name, Center Director

Date

## Example

To: NASA Chief Engineer

FROM: Center Chief Engineer/Engineering Management Board Member

SUBJECT: Systems Engineering Leadership Development Program (SELDP)  
Engineering Director and Center Director Nomination and Endorsement

HQ is pleased to nominate the following candidates to the Systems Engineering Leadership Development Program (SELDP).

Nominee rank order and rationale:

| Priority | Nominee       | Nominee Development Path   | Benefit to the Center/Reentry Strategy   |
|----------|---------------|--|--|
| 1        | Jane Smith    | Jane has 20 years experience in Electrical engineering. She has been working in systems engineering for 2 years and has been assigned as lead on the XYZ program in the early phase of this project. Jane needs implementations experience. She has exhibited good leadership skills and will need more advanced communication and political savvy skills to move to the next level. | The Center is working more closely with international partners in implementing hardware and software in the XYZ project and needs to have SE's with an understanding of this phase and who can work cross culturally. With the experience Jane gains in implementation and with advanced leadership skills she will be able to support the Center in fulfilling this critical need upon her return.  |
| 2        | Edgar Sanchez | Edgar has a degree in systems engineering and full life cycle experience from his experience at the Center and his position in the Air Force however all the experience is in robotics. He is now working on projects that require more collaboration with Human Space Flight Centers and University partners.   | The Center will benefit great from this expanded perspective of our partners' SE processes and procedures. Edgar is our second priority because knowledge and experience currently exists to meet our immediate needs. However, the volume of work is increasing and several individuals currently working in this area are expected to retire in the next 4 years. Upon return Edgar will be well positioned to serve as a lead SE on one of our smaller projects expected to be funded in that time frame. |

Signature of Center Chief Engineer/Engineering Management Board Member

Concurrence:

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Name, Center Director

Date

**Systems Engineering Leadership Development Program (SELDP)  
2011-2012 Selection Schedule**

| <b>Target Date</b>      | <b>Activity</b>  |
|-------------------------|--|
| November, 2011          | EMB Approval Telecom   |
| December 1, 2011        | Call Letter Released   |
| February 10, 2012       | Nominations Due  |
| February 14, 2012       | Developmental Assignments Due & Applications Sent to Selection Panel |
| March 14, 2012          | Ratings Due from Panel   |
| March 19, 2012          | Panel Decision Telecom & Candidates Invited to Interview             |
| <b>*April 3, 2012</b>   | <b>Interviews Held at NASA HQ *</b>                                  |
| April 4, 2012           | Final Selection Panel Meeting Held at NASA HQ                        |
| April 4-5, 2012         | Advocate Meeting at Held at NASA HQ                                  |
| April 9, 2012           | Selected Participants Notified                                       |
| <b>**June TBD, 2012</b> | <b>Orientation**</b>   |

**\*Interviews will be held at NASA HQ on April 3, 2012. All nominees are requested to reserve this date for interview. Centers pay for travel to DC for interviews.**

**\*\*Mandatory for all 2012-2013 SELDP Participants to attend Orientation, June TBD, 2012. Centers pay for travel to and from Orientation.**