

NATIONAL ACADEMY OF ENGINEERING

Committee on Membership

NOMINATION FORM

Twenty-Fifth Election—1988

1. Candidate: Edson D. de Castro

2. Position and Affiliation (include address and telephone number):

President  
Data General Corporation  
4400 Computer Drive  
Westboro, MA 01580

3. Date and Place of Birth:

9/14/38 Plainfield, New Jersey

4. Citizen of

U.S.A.  
(name of country)

; (if Naturalized, give date):

(date)

5. Education (list highest degrees earned, major fields, institutions, and dates):

B.S., Electrical Engineering, U. of Lowell 1960

6. Registered Engineer (list state[s]):

7. Engineering Category (Item II of Instructions referring to peer committee assignment) and Areas of Specialization:

Computer Science and Engineering

8. Specific Outstanding Engineering Accomplishments and Contributions Meriting Election to the NAE (Item I of Instructions):

- Designer of the world's first 12-bit computer the DEC PDP-5 (1964)
- Father of PDP-8, first commercially successful mini-computer (1965)
- Chief architect of NOVA, the first 16-bit mini-computer with multiple accumulators and medium scale integration (1968)
- Product strategy and planning contributions to
  - first 16-bit single board mini-computer (1972)
  - first 16-bit CPU on chip (1976)
  - first "Winchester" fixed-media disc (1977)

9. Record of Professional Experience (list principal positions held and responsibilities including dates):

1960 - 1968

Digital Equipment Corporation  
Design Engineering Manager

1968 - Present

Data General Corporation  
Founder, President and Director

Candidate:

10. Contributions of Record—Publications (no. \_\_\_\_\_), Patents (no. \_\_\_\_\_) and other (list significant contributions reflected in publications, patents and other forms):

- PDP-5 architecture documents
- PDP-8 architecture documents
- NOVA architecture documents

11. Principal Technical Society Membership (grades) and Activities and Other Noteworthy Pertinent Accomplishments in Engineering and Public Service (boards, committees, consultantships, NRC and other committee activities, important offices held and contributions to society):

Director, Amercian Electronics Association  
 Founder & Executive Committee Member, Massachusetts High  
 Technology Council  
 Member, Massachusetts Capital Development Task Force, 1976  
 Member, Management Task Force, Governor Edward J. King, 1978  
 Member, Board of Trustees, Boston University  
 Member, Board of Trustees, Manhattan College  
 Member, Board of Trustees, Brigham and Women's Hospital  
 Member, Visiting Committee, Clark University School of Management

12. Professional Recognition (honors, awards, prizes, honorary degrees, etc., give name of institution and date):

Honorary Doctor of Humane Letters, U. of Lowell, 1978  
 Alumni Achievement Award, Harvard Business School, 1986

13. Proposed Citation (not more than 20 carefully edited words that reflect specific documented contributions):

For pioneering contributions to mini-computer architectures and leadership in the development of mini-computer industry.

14. I have obtained personally from each individual listed as a reference an indication of willingness to serve in that capacity.

\*Nominated by:

Dr. Raj Reddy  
 Signature

Dr. Raj Reddy  
 Name (typed)  
 Carnegie Mellon University  
 (412) 268-2597  
 (Affiliation and Telephone Number)

May 29, 1987  
 Date

\*References: (No more than 4 may be listed.)

1. Dr. Angel Jordan, Carnegie Mellon University  
 (Name) (Affiliation)

2. Dr. Robert E. Kahn, Nat'l Research Initiative  
 (Name) (Affiliation)

3. Dr. James Meindl, Rensselaer Polytechnic  
 (Name) (Affiliation)

4. \_\_\_\_\_  
 (Name) (Affiliation)

\* Nominator and references must be NAE members, two of whom should be from other than present or retired members of the candidate's institution. Members of the Committee on Membership and foreign associates cannot serve as either nominators or references.

**NATIONAL ACADEMY OF ENGINEERING  
SUPPLEMENTARY PAGE  
Twenty-Fifth Election—1988**

Candidate's Name Edson D. de Castro Date of Form May 29, 1987

Nominator's Name Raj Reddy

**INSTRUCTIONS:** This Supplementary Page should be used if the nominator believes it is necessary to augment some of the areas covered in the Nomination Form. No additional material will be accepted. The Supplementary Page will be transmitted only to the appropriate peer committee and to the Committee on Membership. It will not accompany the ballot book to membership at large in the final step of the election.

Ed de Castro helped to design Digital Equipment Corporation's first commercially successful minicomputer and subsequently founded Data General Corporation, currently a billion dollar company.

At the age of 27, after a few months of effort and the help of just one technician, he created PDP-8 architecture, which led the way to Digital's first fortune and turned the minicomputer into a multibillion dollar industry. Recognizing the importance of the 8-bit-based representation of information, rather than the 6-bit representation prevalent at that time, he created the NOVA series of systems, the first 16-bit minicomputer using MSI logic and multiple accumulators.

Both PDP-8 and NOVA architectures were clear departures from the then prevalent wisdom on computer architectures, and spawned a whole new set of previously unrecognized applications. Reduced Instruction Set Computers are currently becoming popular. The PDP-8 created in 1965, is the original precursor to the current RISC architectures.

De Castro is one of the pioneers of the computer industry and is eminently qualified for membership in the Academy.