EQUIPMENT DEVELOPMENT GRADE EVALUATION GUIDE
PART II—PROJECT MANAGEMENT ENGINEERING
Position Description
Factor I - Scope of Assignment
Scope will be addressed in three aspects: product capability, supported users, and incumbent's responsibilities.
The incumbent is responsible for developing a system that facilitates management of experimentation-related information through the entire research process. The project focus is to support the Wind Tunnel Enterprise at Langley, but the resulting system should be able to support all NASA programs that require experimentation. It is anticipated this system will support thousands of users. Supported processes must include test planning, design, scheduling, simulation, team communication and management, test execution and monitoring, document management, and data archiving, search, and retrieval. The system supports very high levels of data security and reliability. To reduce the potential for mistakes, the system must maximize the sharing of information between components to minimize manual entry of information. A support structure must provide on-going user support and system maintenance.
Target users are experimentalists using NASA's ground-based test facilities. These include NASA civil servants, permanently badged contractors, and external customers. Facility operations, model design and manufacturing, instrument calibration and repair, data system operation, data quality assessment, test team management, facility management, data analysis, project management, and test-technique development must all be supported. The system must be adaptable to all test facilities, centers, and agencies. The system should anticipate expansion into the commercial and academic sectors as it gains broad acceptance within NASA.
The incumbent's responsibilities span requirements definition, software development, and product marketing. It includes strategy, planning, resource acquisition, management, assessment of capabilities, integration of existing tools, developing non-existent tools, system implementation, and training. This position requires program advocacy and management experience, team leadership skills, computer science knowledge, experimentation experience (aerodynamic and structural), interpersonal skills, and a network of contacts in the research community. The incumbent must be capable of acquiring and evaluating contractor services.

Factor II – Technical Complexity of the Assignment
Technical complexity stems from several aspects. The supported area is state-of-the-art aerospace research. The delivered system must be able to support all NASA programs that involve experimentation. These programs are exceptionally broad, are rapidly changing, and have conflicting requirements. The supported programs require high levels of security and system reliability, driving the development cycle to a higher "technology readiness level" than is customary in NASA development efforts. Additionally, to support ease of use and familiarity, the components used to build the supporting system are either

existing systems developed with no consideration for integration or must be custom-developed using cutting edge computer based technologies, typically unproven, and whose longevity must be predicted.
The incumbent must manage the risks and conflicts these complications create. Past attempts to develop a similar system have been costly and unsuccessful, so successful completion of this system will necessarily advance the state of the art. Cultural differences among NASA Centers
and between NASA and DoD will make market expansion challenging, as well.

Factor III – Responsibility and Authority
The incumbent has the responsibility of developing and deploying a system that receives broad acceptance in the research community of NASA by greatly enhancing the effectiveness of research teams and research facilities. This must be done in an environment of declining budgets, particularly for research facilities. Negotiated deliverables must be satisfactorily completed in exchange for all funding that is secured by the incumbent. This is because the incumbent is also responsible for maintaining the good reputation of IGEB in the eyes of all programs approached as a representative of IGEB.
The incumbent has been given the general guideline of exploiting state-of-the-art IT components to the maximum advantage of the research community at Langley and the developed system must be designed to allow easy application to other NASA centers and, possibly, to other research organizations. The incumbent must request Information Gathering and Empowering Branch (IGEB) workforce from the Branch Head but has full authority beyond these guidelines. This authority includes:

- establishing overall operating policies, priorities, procedures and long and short-range plans;

- exercising broad authority regarding programming of effort, delegation of authority and responsibility, allocation of overall resources, insuring of functional support, approval of critical actions and changes, and continuing managerial appraisal of progress coupled with authority to require appropriate corrective actions;

- serving as an authoritative source for decisions and guidance concerning compromises and changes in program objectives relating to management of the total project effort. Such determinations are reviewed for the purpose of keeping higher levels of management informed on the status of the project.

Factor IV – Technical and Managerial Demands
Although not a supervisor, the incumbent is expected to assemble and lead a team capable of accomplishing the technical objectives associated with producing a system that significantly increases efficiency in the research community. The membership of the team must change as the system's use expands. A full-time technical expert will be provided from IGEB staff and

the incumbent will be consulted in performance planning, rewards and recognition for that employee. Other support must be acquired, as appropriate. No IGEB funds are available for this project beyond funding necessary for

4. Significant Accomplishments

administrative support. The incumbent must seek additional funding and support elsewhere. This is particularly challenging when facility funding is declining. The rapidly changing customer base (both the programs and the facilities that set the requirements) and the rapidly changing computer field (resources for fulfilling the requirements) present additional challenges. Though cultural resistance will be encountered in all stages of implementation, the President's e-Government Initiative and the "One NASA" directive make it clear that a single research information management system will be adopted as an Agency standard. The Ames Research Center, NASA's Center of Excellence for IT, will be the logical choice for developing such a standard. Having Langley's legacy components included provide obvious advantages. Perhaps the greatest challenge facing the incumbent is to assure that Langley lead the development effort and maintain Ames partnerships. Failure to develop a system that significantly enhances the efficiency of research teams could result in greater facility closures and could jeopardize NASA's research programs.

Employee Accomplishment Record

1. Name –

2. Education

1986 ME in Flight Sciences from Virginia University
1968 Courses towards Ph.D. in mathematics at Tennessee University
1967 Course work towards Ph.D. in mathematics at the University of Minnesota
1966 MA in Mathematics from North Dakota University
1964 BS, cum Laude, in mathematics from Florida University

3**. Relevant Professional Training Received**
2002 PS-8 Critical Chain Multi-Project Planning
2000 OPM Class: Management of Information Technology, Requirements Definition Class; WebObjects Training Class;
1992 LabView 2; Neural Networks
1988 Hypersonic Aerodynamics
1987 Transonic Unsteady Aerodynamics

Supporting Documentation for each accomplishment

Each contribution should identify supporting documentation. A maximum of three evidences or exhibits may be used to document each contribution. It is not necessary to use the maximum number of allowed exhibits. It is more important to carefully select those most effective in supporting your contributions. Supporting documents must be referenced to the specific contribution. Full credit for a contribution cannot be given when the contribution is documented solely by the