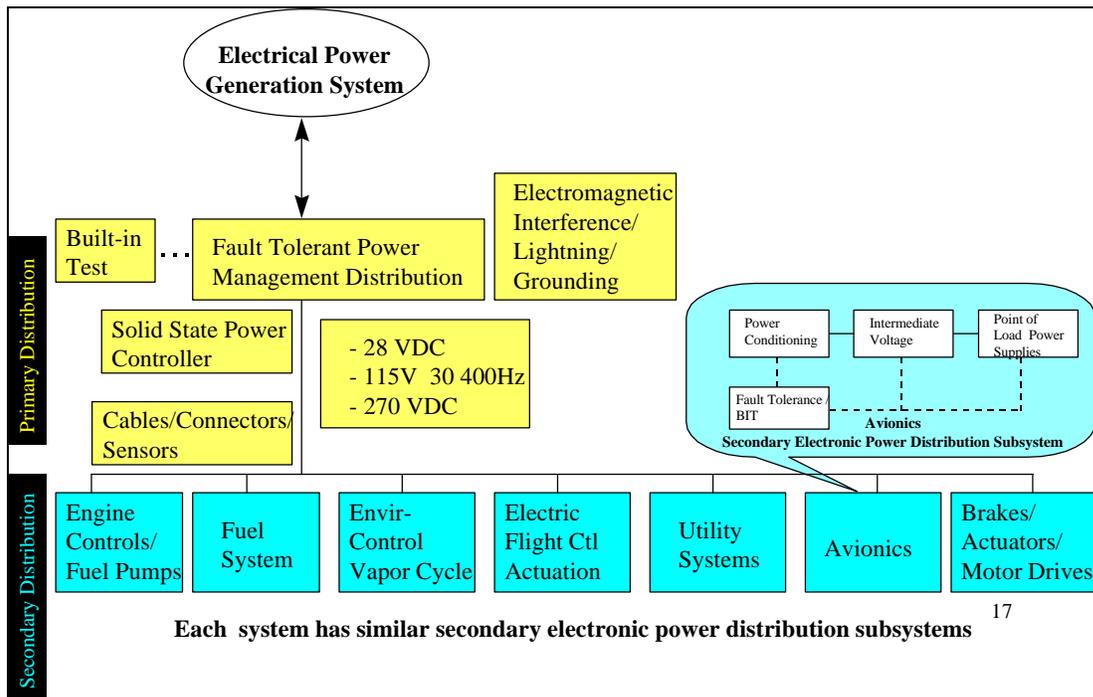


**Executive Summary**  
**Electronic Power Specification Standardization (EPSS)**  
**PNUM 9-20**

**Background:** In line with the Open Systems Joint Task Force's (OS-JTF) strategy to leverage and promote the use of commercial industry's "Best Commercial Practices," the EPSS program activity focuses on standardization of the basic elements relevant to electronic power distribution subsystems. The activity is facilitated by the EPSS Core Team which consists of personnel from TRW, Hughes, and USAF / Air Force Research Laboratory. EPSS is an ideal standardization effort because electronic power distribution systems have the following characteristics: 1) significant portion of electronic system costs; 2) prevalent in electronic systems; and 3) not considered product discriminators.

The EPSS activity has led to the military and commercial industry's better understanding of and justification for the EPSS goal and objectives. Its goal is to coordinate a standard for broad use by electronic power distribution subsystem designers and developers. Its objective is to coordinate a standard that contains: 1) a conclusive description of commonly used specification language, which defines standard test parameters, test conditions, and test methods to impart integrity in product development, characterization, and advocacy and 2) purposeful guidelines and /or specifications for the design of electronic power distribution subsystems. To allow for early success, an EPSS Working Group (now numbering about 100) has been formed. In the near term the EPSS activity will focus on secondary electronic power distribution subsystems which begin at the end of the primary distribution system and end at the point-of-load. See the figure below. Based on EPSS Core Team interaction with the members of the EPSS Working Group, the telecommunications industry is envisioned to provide the highest leverage; although the automotive industry is also being monitored.



**Progress:** EPSS kicked off in April 1997 with the formation of the EPSS working group to discuss standardization issues. In communicating with the industry (military and commercial) regarding their approach to the design of electronic power distribution subsystems or components, the Core Team realized that: 1) each design organization essentially follows its own basic building codes ("technical architecture") and 2) this knowledge base can be enhanced and basically used across the industry if these organizations would pool their resources to develop a common base for design of electronic power distribution. Therefore the question is not whether an EPSS

technical architecture(s) needs to be developed but rather how much of their respective “technical architectures” do electronic system developers want to include / formalize in an “open” industry standard (IEEE). Based on input from a number of electronic system developers and power supply producers, some level of standardization is desirable. The EPSS Working Group has agreed that a standard “parameter specification language” should be established. In this regard, an IEEE Project Authorization Request (PAR) was submitted and approved in December 1997.

**Approach:** One key challenge is that electronic system developers must actively support the standardization activities to insure broad usage of the ultimate standard. The electronic power distribution component designers view the electronic system developers as their customers. Consequently, to achieve open electronic power distribution subsystems, electronic system developers must help define the technical architecture(s) rules and interfaces to be included in an open industry standard. To help realize this, the EPSS Core Team is suggesting the formation of a consortium of electronic power system developers to further focus on the selection of “a technical architecture(s).” The consortium would: 1) lead to increase in the knowledge base of the industry’s electronic power distribution developers, 2) better utilize resources by reducing duplication of research activities, 3) increase industry’s responsiveness in making electronics / avionics power subsystem product available, and 4) enhance rapid insertion of new technologies and requirements.