System Qualities

The goal of this coding standard is to produce safe, reliable, and secure systems. Additional requirements might exist for safety-critical systems, such as the absence of dynamic memory allocation. Other software quality attributes of interest include portability, usability, availability, maintainability, readability, and performance.

Many of these attributes are interrelated in interesting ways. For example, readability is an attribute of maintainability; both are important for limiting the introduction of defects during maintenance that can result in security flaws or reliability issues. In addition, readability aids code inspection by safety officers. Reliability and availability require proper resource management, which also contributes to the safety and security of the system. System attributes such as performance and security are often in conflict, requiring trade-offs to be considered.