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2.6 The Use of Requirements Management Tools in the Systems Engineering Process; 2.7 Weapons Integration Requirements Capture; 2.8 The Need for Unambiguous, Clear and Appropriate Requirements; 2.9 Minimising Requirements; Further Reading; 3 Requirements Analysis, Partitioning, Implementation in Aircraft Subsystems; 3.1 Chapter Summary; 3.2 Introduction; 3.3 System Architecture; 3.4 Requirements Decomposition; 3.5 Requirements Partitioning; 3.6 Subsystem Implementation; 3.7 Maturity Reviews; 3.8 Right-Hand Side of the V-Diagram; 3.9 Proving Methods; 3.10 Integration; 3.11 Verification; 3.12 Validation; 3.13 The Safety Case and Certification; Further Reading; 4 Armament Control System and Global Positioning System Design Issues; 4.1 Chapter Summary; 4.2 Stores Management System Design; 4.2.1 SMS Design Requirements; 4.2.2 Other System Components; 4.2.3 Typical System Architectures; 4.2.4 Training System; 4.3 GPS: Aircraft System Design Issues; 4.3.1 GPS Overview; 4.3.2 Satellite Acquisition Concepts; 4.3.3 Acquisition Strategies; 4.3.4 GPS Signal Distribution; 4.3.5 Aircraft Requirements; 4.3.6 Aircraft Implementation Concepts; 4.3.7 Cost of Complexity; Further Reading; 5 Weapon Initialisation and Targeting; 5.1 Chapter Summary; 5.2 Targeting; 5.3 Aiming of Ballistic Bombs; 5.4 Aircraft/Weapon Alignment; 5.5 Aiming of Smart Air-to-Ground Weapons; 5.6 Air-to-Air Missiles; 5.6.1 Sensors; 5.6.2 Engagement Modes; 5.6.3 Air-to-Air Weapons Training; Further Reading; 6 Weapon Interface Standards; 6.1 Chapter Summary; 6.2 Benefits of Standardisation; 6.3 MIL-STD -1760 AEIS; 6.3.1 MIL-STD -1760 Interface Points; 6.3.2 Connectors; 6.3.3 Signal Sets; 6.3.4 GPS RF Signal Distribution; 6.3.5 Data Protocols; 6.3.6 Data Entities; 6.3.7 Time Tagging; 6.3.8 Mass Data Transfer; 6.3.9 High-Speed 1760

Sommario/riassunto

From the earliest days of aviation where the pilot would drop simple bombs by hand, to the highly agile, stealthy aircraft of today that can deliver smart ordnance with extreme accuracy, engineers have striven to develop the capability to deliver weapons against targets reliably, safely and with precision. Aircraft Systems Integration of Air-Launched Weapons introduces the various aspects of weapons integration, primarily from the aircraft systems integration viewpoint, but also considers key parts of the weapon and the desired interactions with the aircraft required for succe
