

Aerospace PLM Safety-Critical Implementation Checklist

Ensuring Comprehensive Lifecycle Management for Aviation Excellence

Phase 1: Foundation & Data Architecture (Weeks 1-4)

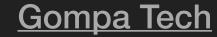
- [] Data Model Validation: Establish single source of truth for all engineering data
- [] **Traceability Framework**: Define complete component genealogy from raw materials to end-of-life
- [] Integration Architecture: Connect PLM with ERP, MES, and maintenance systems
- [] Compliance Mapping: Ensure AS9100, FAA, EASA regulatory alignment
- [] Security Framework: Implement ITAR/DFARS compliant data protection

Phase 2: Digital Twin Integration (Weeks 5-8)

- [] Real-time Data Feeds: Connect PLM to aircraft sensors and maintenance systems
- [] Predictive Analytics: Implement algorithms for component failure prediction
- [] Performance Modeling: Create virtual representations of actual aircraft performance
- [] Maintenance Correlation: Link digital twin insights to maintenance workflows
- [] Fleet-wide Visibility: Enable instant component analysis across entire fleet

Phase 3: Process Integration (Weeks 9-12)

- [] Change Management: Establish controlled engineering change processes
- [] **Supplier Integration**: Connect tier 1-3 suppliers to PLM ecosystem





- [] Quality Integration: Link quality systems with PLM for complete traceability
- [] Maintenance Planning: Integrate predictive insights into maintenance scheduling
- [] Regulatory Reporting: Automate compliance documentation and reporting

Phase 4: Operational Excellence (Weeks 13-16)

- [] User Training: Ensure all stakeholders understand safety-critical workflows
- [] **Performance Metrics**: Establish KPIs for safety, quality, and operational efficiency
- [] Continuous Improvement: Create feedback loops for system optimization
- [] **Emergency Response**: Develop rapid response protocols for safety
- [] Audit Readiness: Maintain continuous compliance and audit preparedness

Critical Success Factors

- Executive Sponsorship: Ensure C-level commitment to safety-first PLM implementation
- Cross-functional Teams: Include engineering, manufacturing, quality, and maintenance stakeholders
- **Phased Approach**: Implement in controlled phases with clear validation gates
- Training Investment: Comprehensive training ensures proper system utilization
- Continuous Monitoring: Regular system health checks and performance optimization

ROI Expectations

- 25-40% reduction in time-to-market for engineering changes
- 30-50% improvement in first-time quality metrics
- 15-25% reduction in warranty and maintenance costs
- 90%+ improvement in regulatory compliance audit results
- Significant reduction in safety incidents and recalls

Contact GompaTech for your complimentary PLM readiness assessment and customized implementation roadmap.