

Engineering Design Guidelines

Requirements Review

List all requirements

- Performance

 - Top level requirements

 - Derived requirements and assumptions

- Survival

 - Any limitations (weight, size,)

Define all interface requirements

List relevant design preferences

- Use of specific existing parts

- Schedule, cost, risk priorities

- Agility (ability to re-configure to accommodate changing requirements)

Preliminary Design Review

Summarize Requirements

Show design concept clearly

- Cartoons are frequently better than detailed drawings for this

- Discuss how the choice of design concept was driven by requirements

- Preliminary Error Budget

- Discuss how you respect the design preferences

Show how requirements will drive the detailed design

Identify all significant choices that remain to be made

- Define trade studies

- Define decision path

- Define all detailed analysis that must be performed, discuss how this drives the design

Discussion of manufacturing issues

Final Design Review

Summarize requirements

Show design concept

Show relevant design details

- Show how you respect the design preferences

Preliminary fabrication plan

- Component fab/procurement

- System assembly and alignment

Summarize analysis that shows how ALL requirements will be met

Preliminary system test plan

Include as appendices

- Relevant component and system engineering drawings

- Detailed analysis

- Result of engineering trade studies performed

- Lessons learned