Changes in this document were discussed in Sep\_1\_Update.pdf and Sep\_8\_Tutor\_Meeting.pdf

# Revision History

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Version No. | Author & Date | Approval & Date | Description | Verification |

# Contents

# Applicable Documents

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Document ID | Source | Title | Version | Date |

# Acronyms

# Executive Summary

* Project name
* Stakeholders
* Subsystems

# Introduction

# System Requirements

* Top level performance requirements
* Budgets
  + Heat
  + Electricity
  + Mechanical
  + Mass
* Passive/active systems
  + Frequency of use – calibration frequency
* Risk Assessment of most important subsystems

## Subsystem (structural, vibrational reduction, conceptual, temperature, air quality, cooling systems, interior configuration & logistics, electronics & communications)

* List requirements relevant to the system
* Physical characteristics of the system (values + metric)
* Performance characteristics (values + metrics)
* Functional subsystem diagram
* System architecture diagram
* Performance requirement

|  |  |  |  |
| --- | --- | --- | --- |
| Requirement ID – title | Requirement statement | Value + units | Notes |
|  |  |  | (a) |

1. – xxx

* Error Budget table

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Requirement Level | | 1 | 2 | 3 | 4 |
| Subsystem component error | |  |  |  |  |
| Requirement | Metric |  | Value |  |  |
| Total Error | Metric | Value |  |  |  |

* Associated risks

## Concept Design

* Written
* CAD + Render
  + Annotated components
  + Dimensions
* Scalability of design
  + Scalability of design components
* Architecture flow chart comparison of multiple design options
* Limitations due to alternate subsystem designs or components

|  |  |  |  |
| --- | --- | --- | --- |
| Requirement title | Requirement statement | Optical design | Derived mechanical design requirements |
|  |  |  |  |

* Issues relevant to subsystem
* Error accumulation calculation

|  |  |
| --- | --- |
| Subsystem | Value (Error percentile) |

* External Interfaces
  + External system requirements
* Operation modes if multiple
* Prototyping
* Testing
  + Simulation tools
  + Analysis
    - Tables + plots
    - Noise + error analysis
  + Heat map diagrams
    - Description of colours
  + Calculations (if any)
  + Simulation parameters table

|  |  |
| --- | --- |
| Variable | Value |

* + Baseline assumptions table

|  |  |  |
| --- | --- | --- |
| Parameter | Metric + Value | Notes |

* + CAD models
  + Simulation maps
  + Predicted values on simulation
  + Control Systems diagram
    - Block diagram
    - High level block diagram
    - Detailed
    - Recommendations to design
* Maintenance
* Summary and conclusion

# Risk Management

# References

* IEEE referencing