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|  |  | ***Acquisition Management System Guidance*** | |
| **Business Case Template for**  **Technology Refreshment Investment**    **January 2019** | | |  |

Federal Aviation Administration

800 Independence Avenue SW

Washington, DC 20591

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|  |  | **Federal Aviation**  **Administration** | |
|  |  |  | |
|  |  | (Date) | |
| **Final Business Case for**  **(Name of Proposed Tech Refresh Investment or Tech Refresh Portfolio Project)**  Enterprise Architecture Roadmap Statement # | | |  |

Approved by: Date:

Vice President (ATO) or Director (Non-ATO) of

Sponsoring Service Organization or Line of Business

Contact Point

*Name*

*Organizational Code*

*Phone Number*

*FAX Number*

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**APPENDICES**

Appendix A: Business Case Analysis Team Members

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**SUPPORTING DOCUMENTS**

Shortfall Analysis Report

Acquisition Program Baseline

Life Cycle Cost Estimate

Cost Basis of Estimate

PMO Risk, Issues, and Opportunities Management Plan (ATO investments only)

*The business case for Tech Refresh investment or Tech Refresh Portfolio initiatives is developed during final investment analysis using this template and instruction which may be tailored by the Investment Planning & Analysis (IP&A) Business Case Review group. Requests for tailoring should be made very early in final investment analysis.*

*All guidance documents cited in this template can be found on the IP&A website at* [*www.ipa.faa.gov*](http://www.ipa.faa.gov) *or the FAA Acquisition System Toolset website at http://fast.faa.gov*

**EXECUTIVE SUMMARY**

*Summarize the key information in this document, highlighting those elements that are most relevant to the Joint Resources Council when making the final investment decision. Include the following at a minimum: A brief summary of the operational shortfall or opportunity; a brief description of the proposed investment; a summary of the business case cost, schedule, and risk analyses; and the impact on FAA operational capability if the investment is delayed or not funded.*

# INVESTMENT DESCRIPTION

*Identify and describe the proposed Tech Refresh investment or Tech Refresh Portfolio initiative. If the template is being used for a project under a Tech Refresh Portfolio, briefly describe the portfolio. Briefly describe each key project or activity comprising the initiative. Examples of typical Tech Refresh projects and activities include:*

* *Refresh of COTS components (e.g., purchase new workstations every 3-5 years, new servers every 4-6 years, upgrades to COTS software)*
* *Upgrade to testing/diagnostic processes and procedures to improve maintainability*
* *Redesign or upgrade LRUs/subsystems/systems because of initial design flaws, high failure rates, or obsolescence*
* *Purchase additional site or depot spares*
* *Other activities necessary to sustain the operational asset*
* *Potential Impacts to other inter-dependent FAA investments*

# Problem Statement

*Explain why the asset must be refreshed now to support the operational environment. Identify operational shortfalls and opportunities and the key drivers for this investment. Support each with technical, operational, or legislative requirements. Identify potential impacts to inter-dependent FAA investments. This section should be an updated version of Section 1 of the Final Shortfall Analysis Report produced during concept and requirements definition. Express the information succinctly so the audience can quickly understand the need for the initiative.*

*This section is the basis for your analysis in Section 8, Impact if not Funded or Delayed.*

# ****Assumptions****

*List the key assumptions and conditions having major influence on this business case analysis and its conclusions. The list should include at a minimum:*

* The assumed remaining service life and disposition date of the existing capability
* The assumed required implementation date for the proposed investment
* The assumed service life of the proposed investment
* The future operational environment
* Potential impacts to other FAA investments

*See “Business Case Analysis Guidance, Appendix B” found at* [*http://ipa.faa.gov*](http://ipa.faa.gov) *for a definition of assumptions, constraints, and ground rules.*

# Business Case Analysis

*See Business Case Analysis Guidance, Appendix A, Table A-1 for business case analysis requirements by ACAT located on the Investment Planning & Analysis (IP&A) website at* [*http://www.ipa.faa.gov*](http://www.ipa.faa.gov)*.*

## Cost Analysis

*A Tech Refresh investment or Tech Refresh Portfolio initiative is cost-effective if on the basis of lifecycle cost analysis it is determined to have a lower cost than sustaining the current capability.*

*Determine the lifecycle costs for the proposed investment over the intended service life. Include both acquisition and implementation costs (F&E) and operational and maintenance costs (OPS). Break down cost by project or activity as defined in Section 1, Investment Description.*

*Estimate the cost of operating and supporting the current capability over the intended service life. Determine the cost savings from the refreshed asset; e.g., lower operational and support costs than the current capability. Record results as net-present-value using the following table (or appropriate variation).*

|  |  |  |  |
| --- | --- | --- | --- |
| **Project Descriptor** | **F&E Cost** | **OPS Cost** | **Total Cost** |
| Project 1 |  |  |  |
| Project 2 |  |  |  |
| Project ‘n’ |  |  |  |
|  |  |  |  |
| **Total Initiative Cost** |  |  |  |
|  |  |  |  |
| **Current Capability Cost** |  |  |  |
|  |  |  |  |
| **Cost Savings** |  |  |  |

*This section should also include a budget summary chart for this initiative containing both acquisition (F&E) and operational (OPS) costs in then-year risk-adjusted dollars.*

*Briefly summarize the methodology used to generate high-confidence, risk-adjusted lifecycle cost estimates. Describe briefly the sensitivity analysis performed on key cost drivers and the effect of technical, schedule, and cost risk on cost estimates. Attach as supporting documents the Life Cycle Cost Estimate and Cost Basis of Estimate.*

## Schedule Analysis

*Provide a risk-adjusted implementation schedule and key milestones for the proposed investment or Tech Refresh Portfolio initiative in graph, table, or network format. Briefly explain the assumptions and analysis on which the schedule is based.*

*See “Guide To Conducting Business Case Schedule Evaluations” found on the IP&A website at* [***http://www.ipa.faa.gov***](http://www.ipa.faa.gov)*.*

## Risk and Sensitivity Analysis

### Risk Analysis

*Risk analysis is an objective assessment to determine the probability of an undesirable event occurring during implementation and the significance of the consequence of the occurrence. It is a process in which a group of programmatic, technical, and analytical specialists review the cost-effectiveness analysis, as well as supporting ground rules, assumptions, and the basis of the estimates. If the analysis indicates an undesirable event may arise, the potential impact(s) resulting from such an occurrence is evaluated. At a minimum, the areas of risk to be analyzed are: costs, benefits, schedule, and technical.*

*Summarize the risks associated with implementing this Tech Refresh investment or Tech Refresh Portfolio initiative. Include the overall risk rating supported by a 5 X 5 risk matrix. Identify and evaluate major risks and summarize the mitigation strategy for each. Reference the Risk Mitigation Plan for the initiative.*

See “*Guide to Conducting Business Case Risk Assessments*” *found on the IP&A website at* [***http://www.ipa.faa.gov***](http://www.ipa.faa.gov)*for more information on risk analysis and a list of all risk areas.*

### Issues and Opportunities

*Summarize major issues that have been identified, analyzed, and incorporated into the business case, as well as any opportunities that would have a positive impact on FAA service delivery. For Air Traffic Organization (ATO) investment initiatives, reference the Program Management Organization (PMO) Risk, Issues, and Opportunities Management Plan.*

### Sensitivity Analysis

*Sensitivity analysis involves changing key parameters in the cost model to test their effect on cost. In order for sensitivity analysis to reveal how the cost estimate is affected by a change in a single parameter, the cost estimator must examine the effect of changing one parameter or cost driver at a time while holding all other variables constant. Be sure to perform the sensitivity analysis on key design cost-drivers to determine their impact on cost. Sensitivity analysis includes:*

* *Testing the sensitivity of cost elements to changes in input values and key assumptions*
* *Determining the effect of changing quantities or schedule on the overall cost estimate*
* *Determining which assumptions are key cost drivers and which cost elements are affected most by changes*

*Use the following table to identify the key cost-drivers on which a sensitivity analysis was performed and summarize the impact on cost.*

|  |  |
| --- | --- |
| **Key Cost-Driver** | **Cost Impact** |
|  |  |
|  |  |

*See GAO Cost Estimating and Assessment Guide, Chapter 13 for a discussion on sensitivity analysis found on the IP&A website at* [***http://www.ipa.faa.gov***](http://www.ipa.faa.gov)*.*

# Affordability Analysis

*Send the lifecycle cost estimate for this Tech Refresh investment or Tech Refresh Portfolio initiative to FAA Finance. This office will assess the budget impact and relative contribution to FAA goals of this initiative against other proposed and ongoing investment programs in the FAA financial baseline. When a solution cannot be funded within the capital investment baseline, FAA Finance may propose offsets from lower priority programs. The budget impact assessment shapes subsequent deliberations of the business case analysis team.*

*Summarize findings and recommendations of the affordability assessment here.*

# Related Assessments

*Depending on the nature of the investment, all or some of the following assessments may be appropriate:*

* *Human Engineering and Operability Assessment*
* *Information and System Security Assessment (See AMS Policy Section 4.11)*
* *Environment and Occupational Safety and Health Assessment*
* *Other Specialty Engineering Assessments.*

*Summarize findings here.*

*See the IP&A website (*[*http://www.ipa.faa.gov*](http://www.ipa.faa.gov)*) for information on these assessments.*

# Recommendation

*Describe the recommendation and its supporting rationale (i.e., affordability, cost savings, operational efficiencies, schedule, risk, etc.). Use the following table to prioritize proposed projects from Section 1 based on their operational impact, criticality, immediacy and cost. Decision-makers will use this table to consider different funding trade-offs, assess how differing levels of funding may impact the investment’s overall effectiveness, and ultimately balance the cost of this initiative against annual budget limitations.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Project** | **Operational Impact** | **Criticality** | **Immediacy** | **Cost** |
| Project 1 |  |  |  |  |
| Project 2 |  |  |  |  |
| Project ‘n’ |  |  |  |  |

# Impact if Not Funded OR DELAYED

*Explain why this investment must be approved now. Briefly state what will happen if it is delayed or not funded (Reference the Legacy Case Risk Assessment in the final Shortfall Analysis Report). Summarize the impact on other initiatives or operational assets.*

# Procurement Strategy

*Identify the recommended contracting approach, if any, and summarize the rationale for the recommendation.*

**APPENDICES**

**Appendix A: Business Case Analysis Team Members**

*Identify the organization and briefly define the role of each business case team member in the following table.*

|  |  |  |
| --- | --- | --- |
| **Name** | **Organization** | **Role** |
|  |  |  |
|  |  |  |

**Appendix B: References**

*Use the following table to list references and documents used in this business case analysis. Examples include the Basis of Estimate for Lifecycle Costs and documentation of related assessments. Each reference should include the title, originating organization, and approval date.*

|  |  |  |
| --- | --- | --- |
| **Document Title** | **Originating Organization** | **Approval Date** |
|  |  |  |
|  |  |  |

**SUPPORTING DOCUMENTS**

Attach the following documents supporting this investment initiative:

**Final Shortfall Analysis Report**

**Acquisition Program Baseline**

**Life Cycle Cost Estimate**

**Cost Basis of Estimate**

**PMO Risk, Issues, and Opportunities Management Plan**(ATO initiatives only)