CHANGE REQUEST COVER SHEET

Change Request Number: 10-16 **Date Received:** 9/27/2010

Title: Service Analysis and Concept and Requirements Definition Policy

Name: David Woodson

Phone: 202-267-7601

Policy OR Guidance: Policy

Section/Text Location Affected: Section 2.3.2 Service Analysis, 2.3.2.1 What Must Be Done, 2.3.2.2 Outputs and Products, 2.3.2.3Who Does It? 2.3.2.4. Who Approves? Section 2.3.3 Concept and Requirements Definition, 2.3.3.1 What Must Be Done, 2.3.3.2 Outputs and Products, 2.3.3.3, Who Does It? 2.3.2.4. Who Approves?

Summary of Change: Requires some additional activity during service analysis (i.e., preliminary shortfall analysis, preliminary ACAT designation) and CRD (quantify shortfall, update functional analysis, conduct preliminary safety assessment). Also updates both policy sections to be consistent with the recent AMS ACAT change.

Reason for Change: Ensure readiness for CRD by requiring preliminary shortfall and. functional analysis during service analysis and ensure readiness for investment analysis by requiring mature shortfall and functional analysis during CRD. Also reduces the number of required approvals for each CRD product.

Development, Review, and/or Concurrence: Approved by the AEB.

Target Audience: AMS workforce

Potential Links within FAST for the Change: None

Briefing Planned: No

ASAG Responsibilities: None

Potential Links within FAST for the Change: None

Links for New/Modified Forms (or) Documents (LINK 1)

Links for New/Modified Forms (or) Documents (LINK 2)

Links for New/Modified Forms (or) Documents (LINK 3)

SECTIONS EDITED:

Acquisition Management Policy:
Section 2.3.3 : Concept and Requirements Definition Readiness Decision [Old Content][New Content] [RedLine Content]
Acquisition Management Policy:
Section 2.3.3.1 : Entrance Criteria [Old Content][New Content] [RedLine Content]
Acquisition Management Policy:
Section 2.3.3.2 : Decision Actions [Old Content][New Content] [RedLine Content]
Acquisition Management Policy:
Section 2.3.4 : Concept and Requirements Definition [Old Content][New Content] [RedLine Content]
Acquisition Management Policy:
Section 2.3.4.1 : What Must Be Done [Old Content][New Content] [RedLine Content]
Acquisition Management Policy:
Section 2.3.4.2 : Outputs and Products [Old Content][New Content] [RedLine Content]
Acquisition Management Policy:
Section 2.3.4.3 : Who Does It? [Old Content][New Content] [RedLine Content]
Acquisition Management Policy:
Section 2.3.4.4 : Who Approves? [Old Content][New Content] [RedLine Content]
Acquisition Management Policy:
Section 2.3.2 : Service Analysis [Old Content][New Content] [RedLine Content]
Acquisition Management Policy:
Section 2.3.2.1 : What Must Be Done [Old Content][New Content] [RedLine Content]
Acquisition Management Policy:
Section 2.3.2.2 : Outputs and Products [Old Content][New Content] [RedLine Content]
Acquisition Management Policy:
Section 2.3.2.3 : Who Does It? [Old Content][New Content] [RedLine Content]
Acquisition Management Policy:
Section 2.3.2.4 : Who Approves? [Old Content][New Content] [RedLine Content]

SECTIONS EDITED:

Section 2.3.3 : Concept and Requirements Definition Readiness Decision

Old Content: Acquisition Management Policy:
Section 2.3.3 : Concept and Requirements Definition Readiness Decision

The concept and requirements definition readiness decision occurs when an enterprise architecture roadmap indicates action must be taken to address a critical mission shortfall or opportunity. At this decision, the Director, ATO Systems Engineering verifies that the service need proposed to enter concept and requirements definition is a valid investment opportunity within an enterprise architecture roadmap and that planning and resources for concept and requirements definition are in place. The Director, ATO Systems Engineering notifies the cognizant investment decision authority of the decision to begin concept and requirements definition. This decision does not apply to small ACAT 5 needs managed by the Information Technology Executive Board.

New Content: Acquisition Management Policy:
Section 2.3.3 : Concept and Requirements Definition Readiness Decision

The concept and requirements definition readiness decision occurs when an enterprise architecture roadmap indicates action must be taken to address a critical mission shortfall or opportunity. At this decision, the Enterprise Architecture Board (NAS) or Chief Technology Officer (non-NAS) verifies (1) the service need proposed to enter concept and requirements definition is a valid investment opportunity within an enterprise architecture roadmap, and (2) planning and resources for concept and requirements definition are in place. The readiness decision is the gateway between service analysis and concept and requirements definition.

Red Line Content: Acquisition Management Policy:
Section 2.3.3 : Concept and Requirements Definition Readiness Decision

The concept and requirements definition readiness decision occurs when an enterprise architecture roadmap indicates action must be taken to address a critical mission shortfall or opportunity. At this decision, the ~~Director,~~ ***Enterprise Architecture Board (NAS) or Chief*** ~~ATO Systems~~***Technology Officer*** ~~Engineering~~***(non-NAS)*** verifies ~~that~~***(1)*** the service need proposed to enter concept and requirements definition is~~-~~ a valid~~-~~ investment opportunity within an enterprise architecture roadmap~~,~~ and ~~that~~***(2)*** planning and resources for concept and requirements definition are in place. The ~~Director, ATO Systems~~***readiness*** ~~Engineering notifies~~***decision is*** the~~ cognizant investment decision authority of~~***gateway*** ~~the decision to begin~~***between service analysis and*** concept and requirements definition.~~ This decision does not apply to small ACAT 5 needs managed by the Information Technology Executive Board.~~

Section 2.3.3.1 : Entrance Criteria

Old Content: Acquisition Management Policy:
Section 2.3.3.1 : Entrance Criteria

The following is required for the concept and requirements definition readiness decision:

- Service shortfall or opportunity is in an enterprise architecture roadmap and is the highest priority at the time; and the
- Plan for concept and requirements definition is approved.

New Content: Acquisition Management Policy:
Section 2.3.3.1 : Entrance Criteria

The following are required for the concept and requirements definition readiness decision:

- Service shortfall or opportunity is in an enterprise architecture roadmap and represents a compelling need of the FAA; and the
- Plan for concept and requirements definition is approved.

Red Line Content: Acquisition Management Policy:
Section 2.3.3.1 : Entrance Criteria

The following ~~is~~ ***are*** required for the concept and requirements definition readiness decision:

- Service shortfall or opportunity is in an enterprise architecture roadmap and ~~is the highest priority at~~***represents a compelling need of*** the ~~time~~***FAA***; and the
- Plan for concept and requirements definition is approved.

Section 2.3.3.2 : Vice President (ATO) or Director (non-ATO) Actions

Old Content: Acquisition Management Policy:
Section 2.3.3.2 : Vice President (ATO) or Director (non-ATO) Actions

The Vice President (ATO) or Director (non-ATO) of the service organization with the mission need:

- Makes the decision to enter concept and requirements definition.

New Content: Acquisition Management Policy:
Section 2.3.3.2 : Decision Actions

The Vice President (NAS) or Director (non-NAS) of the service organization with the need:

- Makes the decision to enter concept and requirements definition; and
- Notifies the preliminary investment decision authority.

Red Line Content: Acquisition Management Policy:
Section 2.3.3.2 : ~~Vice~~*Decision* ~~President (ATO) or Director (non-ATO)~~ Actions

The Vice President (~~ATO~~***NAS***) or Director (non-~~ATO~~***NAS***) of the service organization with the ~~mission~~ need:

- Makes the decision to enter concept and requirements definition***; and***
- ***Notifies the preliminary investment decision authority***.

Section 2.3.4 : Concept and Requirements Definition

Old Content: Acquisition Management Policy:
Section 2.3.4 : Concept and Requirements Definition

All investment opportunities that require funding outside the scope of an approved acquisition program baseline undergo concept and requirements definition. This includes upgrades to existing capability without approved investment funding.

Concept and requirements definition translates priority operational needs in the enterprise architecture into preliminary requirements and a concept of use for the capability needed to improve service delivery. It also quantifies the service shortfall in sufficient detail for the definition of realistic preliminary requirements and the estimation of potential costs and benefits. Finally, concept and requirements definition identifies the most promising alternative solutions able to satisfy the service need, one of which must be the alternative in the enterprise architecture.

Planning for concept and requirements definition begins when a roadmap in the enterprise architecture specifies action must be taken to address a priority service or infrastructure need. These needs typically relate to existing or emerging shortfalls in the "as is" architecture or essential building blocks of the "to be" architecture. Should a service organization wish to pursue an investment opportunity not in an enterprise architecture roadmap, it must first develop architectural change products and amendments and get endorsement from the cognizant architectural review board.

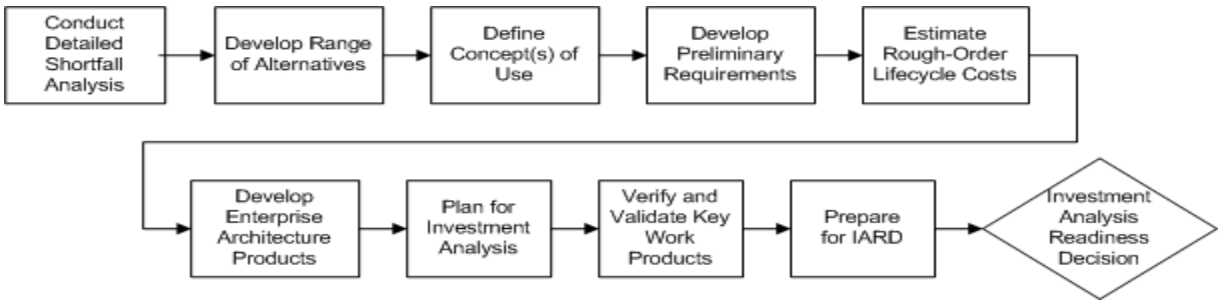
The FAA may undertake research activity or employ research by other agencies or industry to define the operational concept, develop preliminary requirements, demonstrate and refine computer-human interfaces, reduce risk, or achieve customer buy-in to potential solutions to mission need.

A nonmaterial solution that emerges during concept and requirements definition may be implemented without proceeding further in the lifecycle management process, provided it satisfies the need, can be achieved within approved budgets, and is acceptable to users and customers. This determination is made by the Vice President or Director of the service organization with the mission need with the concurrence of the appropriate enterprise architecture control board.

Key functional disciplines such as safety, security, and human factors *must* participate in the activities of concept and requirements definition in order to determine mandatory requirements and evaluate their impact on potential alternative solutions.

The key activities of concept and requirements definition are shown in Figure 2.3.4-1.

Figure 2.3.4-1 Key Activities of Concept and Requirements Definition



Note: The activity flow diagram specifies what must be done during concept and requirements definition. The scope and order of work may be adjusted for each investment initiative.

New Content: Acquisition Management Policy:
Section 2.3.4 : Concept and Requirements Definition

All investment opportunities that require funding outside the scope of an approved acquisition program baseline undergo concept and requirements definition. This includes upgrades or replacements to existing capability without approved investment funding.

Concept and requirements definition translates priority operational needs in the enterprise architecture into preliminary requirements and a solution concept of operations for the capability needed to improve service delivery. It also quantifies the service shortfall in sufficient detail for the definition of realistic preliminary requirements and the estimation of potential costs and benefits. Finally, concept and requirements definition identifies the most promising alternative solutions able to satisfy the service need, one of which must be consistent with the conceptual framework in the enterprise architecture.

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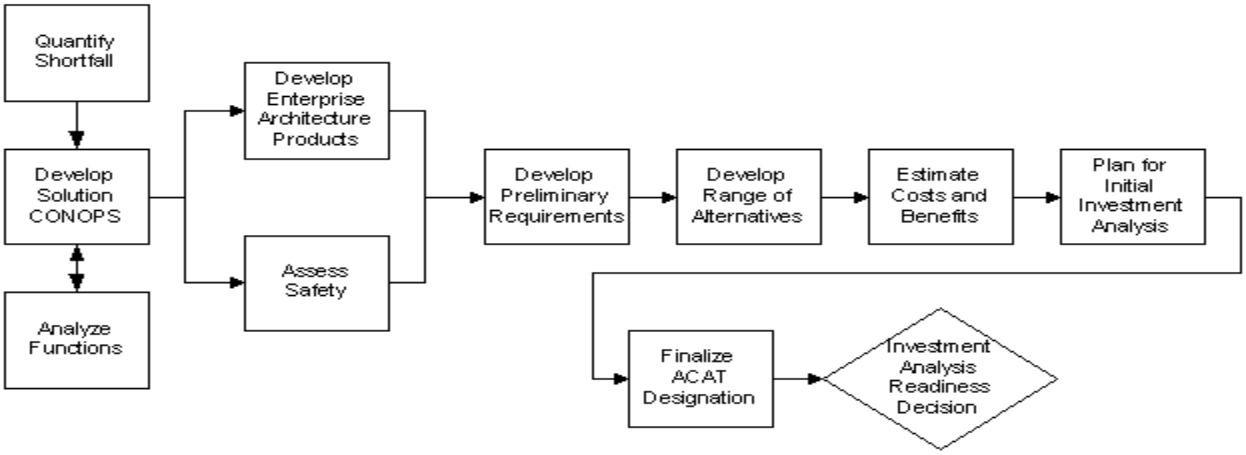

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Section 2.3.4 : Concept and Requirements Definition

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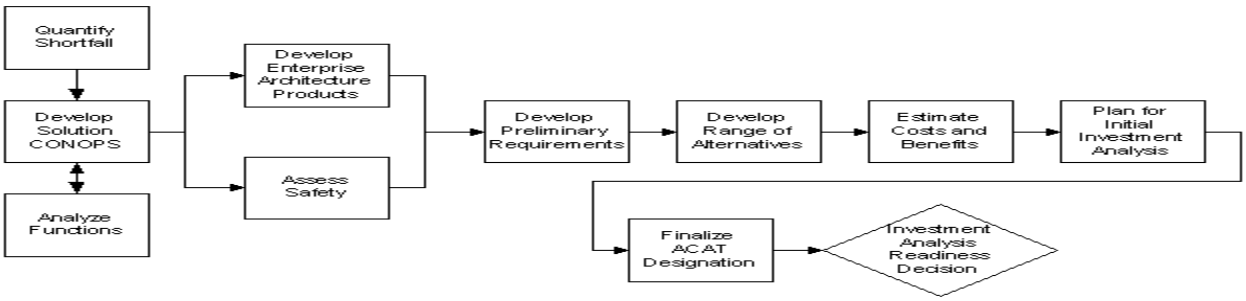


Note: The activity flow diagram specifies what must be done during concept and requirements definition. The scope and order of work may be adjusted for each investment initiative.

Section 2.3.4.1 : What Must Be Done

Old Content: Acquisition Management Policy:
Section 2.3.4.1 : What Must Be Done

NOTE: The plan for concept and requirements definition must be approved by the Vice Presidents (ATO) or Directors (non-ATO) of the service organization with the mission need and the operating service organization before the start of any CRD activity (see AMS Section 2.3.2.1). Roadmap planning in the enterprise architecture specifies when concept and requirements definition activity must begin.

- **Conduct detailed shortfall analysis.** The priority infrastructure or service shortfall in the enterprise architecture and its impact on service delivery is quantified in sufficient detail to serve as the basis for (1) determining realistic and economic alternative solutions to the service need, (2) developing a concept of use, and (3) defining preliminary program requirements. This detailed shortfall analysis is also the basis for quantifying likely program costs and benefits during investment analysis.
- **Develop range of alternatives.** The marketplace is surveyed to identify feasible and economic alternative solutions to the service need. Both material and non-material alternatives are evaluated. One must be the hypothesized "best" alternative in the enterprise architecture. Key factors to consider are safety, operational cost efficiencies (particularly those related to telecommunications and information systems security), technological maturity, and impact on the workforce and enterprise architecture. Alternatives should be qualitatively different from each other (e.g., different technologies such as ground-based versus airborne solutions or different acquisition strategies such as

developmental versus commercially available items). Low risk, cost-effective, and operationally suitable commercial or non-developmental solutions are preferred. Alternatives may not meet 100 percent of preliminary requirements. Concept and technical descriptions are developed for each alternative.

- **Define concept(s) of use.** The concept of use explains how new capabilities will function within the existing operational environment and how they will satisfy the service need. It defines key elements of the required capability and the roles and responsibilities of key participants (e.g., controllers, maintenance technicians, pilots). It explains operational issues that system engineers must understand when developing requirements; identifies procedural issues that may lead to operational change; and establishes a basis for evaluating benefits. If proposed alternative solutions are significantly different from each other, more than one concept of use may be required. The concept of use is recorded in the preliminary program requirements document.
- **Develop preliminary requirements.** The functional analysis performed during service analysis is the foundation for defining preliminary requirements. Preliminary requirements specify how well the new capability must perform intended functions. Safety, security, integrated logistics support, and human factors are key disciplines that must be considered. Preliminary requirements specify *only* function and performance, and *do not* define a solution. They must be expressed such that the degree to which different solutions satisfy them can be measured and evaluated. Research and analysis or even prototyping may be necessary to define preliminary requirements adequately. They are recorded in the preliminary program requirements document.
- **Estimate rough lifecycle costs.** A rough lifecycle cost is developed for the range of alternatives that will be evaluated during initial investment analysis. A preliminary assessment of the availability of funding is also conducted. The head of the line of business uses this information as a basis for determining whether to pursue this service need in competition with all other service needs.
- **Develop enterprise architecture products and amendments.** Enterprise architecture products and amendments include the operational (business rule) and systems (engineering) view families. These families facilitate development, support, and execution of both service and infrastructure investment programs.
- **Plan for investment analysis.** The plan for investment analysis defines: (1) scope and assumptions; (2) alternatives and rough-order lifecycle cost estimates; and (3) organizational roles and responsibilities. It also specifies (4) a target schedule and defines (5) the resources needed for the work. By signing the plan for investment analysis, the organizations that will conduct the analysis agree to provide the resources necessary to complete the work.
- **Verify and validate key work products.** Incremental verification and validation is performed on key work products of concept and requirements definition, including the concept of operations (developed through research and systems analysis), initial investment analysis plan, and preliminary requirements document (including the concept of use). Verification and validation supports the investment analysis readiness decision.
- **Prepare for the investment analysis readiness decision.** This includes development of the decision package, verification that the activities of concept and requirements definition are complete, and pre-briefings to designated decision-makers.

New Content: Acquisition Management Policy:
Section 2.3.4.1 : What Must Be Done

NOTE: The plan for concept and requirements definition must be approved by the Vice Presidents (ATO) or Directors (non-ATO) of the service organization with the mission need and the operating service organization before the start of any CRD activity (see AMS Section 2.3.2.1). Roadmap planning in the enterprise architecture specifies when concept and requirements definition activity must begin.

- **Quantify shortfall.** The service organization updates and refines the preliminary shortfall identified during service analysis in sufficient detail to serve as the basis for (1) clearly understanding the nature, urgency, and impact of the service need; (2) defining preliminary requirements; (3) determining realistic and economic alternative solutions; and (4) quantifying likely program costs and benefits.
- **Define solution concept of operations.** The solution concept of operations describes how users will employ the new capability within the operational environment and how it will satisfy service need. It defines the roles and responsibilities of key participants (e.g., controllers, maintenance technicians, pilots); explains operational issues that system engineers must understand when developing requirements; identifies procedural issues that may lead to operational change; and establishes a basis for identifying alternative solutions and estimating their likely costs and benefits. More than one solution concept of operations may be required if proposed alternative solutions differ significantly from each other.
- **Analyze functions.** The service organization works with the appropriate systems engineering organization to translate stakeholder needs in the shortfall analysis, solution concept of operations, and SR-1000 (NAS System Requirements) into high-level functions. These high-level functions are then decomposed sequentially into lower-level sub-functions. A function is an action or activity that needs to be performed to achieve the desired service outcome. This activity establishes the foundation for defining preliminary requirements and alternative solutions.
- **Develop enterprise architecture products.** The service organization engages with the appropriate enterprise architecture organization to develop architecture products and amendments. These include the operational (business rule) and systems (engineering) view families.
- **Assess safety.** The service organization works with the ATO Systems Engineering and Safety organization to assess operational safety of the proposed initiative. This assessment supports definition of preliminary safety requirements. The service organization also identifies, assesses, and documents operational hazards and risks associated with potential alternative solutions. No alternative is pursued whose operational risk cannot be mitigated to an acceptable level at affordable cost.
- **Develop preliminary requirements.** The solution CONOPS, functional analysis, shortfall analysis, EA products, and operational safety assessment are the foundation for defining preliminary program requirements. Preliminary requirements specify how well the new capability must perform its intended functions. Safety, security, and human factors are key disciplines that must be considered. Preliminary requirements specify only function and performance, and do not define a solution. They must be expressed such that

the degree to which different solutions satisfy them can be measured and evaluated. Research and analysis or even prototyping may be necessary to define preliminary requirements adequately.

- **Develop range of alternatives.** Developing a range of distinct alternatives increases the likelihood that the best possible solution will be selected to satisfy the service need. The service organization surveys the marketplace to identify feasible and economic solutions. Both material and non-material alternatives are evaluated. One solution must be the hypothesized "best" alternative in the enterprise architecture. Key factors to consider are safety, operational cost efficiencies, technological maturity, and impact on the workforce and enterprise architecture. Alternatives should be qualitatively different from each other (e.g., different technologies such as ground-based versus airborne solutions or different acquisition strategies such as developmental versus commercially available). Low risk, cost-effective, and operationally suitable commercial or non-developmental solutions are preferred. Alternatives may not meet 100 percent of preliminary requirements. Technical descriptions are developed for each.
- **Estimate costs and benefits.** Rough lifecycle costs and benefits are developed for each preliminary alternative as a basis for determining whether it should be retained or eliminated from consideration. Rough lifecycle costs and benefits are also calculated for sustaining the legacy case in service. The availability of funding is considered by the investment decision authority when determining whether to pursue this service need in competition with all other service needs.
- **Plan for initial investment analysis.** The plan for initial investment analysis: (1) defines scope and assumptions; (2) describes alternatives and their associated rough lifecycle costs and benefits; (3) defines organizational roles and responsibilities; (4) specifies a target schedule; and (5) estimates resources needed for the work. By signing the plan for investment analysis, the organizations that will conduct the analysis agree to provide the resources necessary to complete the work. This activity includes development of the investment analysis readiness decision package, verification that the key products of concept and requirements definition are complete and high quality, and pre-briefings to decision-makers.
- **Finalize ACAT designation.** The service team prepares the final ACAT determination request based on information generated during concept and requirements definition. The request is submitted to the Acquisition Executive Board for a designation at least one month before the investment analysis readiness decision.

Red Line Content: Acquisition Management Policy:
Section 2.3.4.1 : What Must Be Done

NOTE: The plan for concept and requirements definition must be approved by the Vice Presidents (ATO) or Directors (non-ATO) of the service organization with the mission need and the operating service organization before the start of any CRD activity (see AMS Section 2.3.2.1). Roadmap planning in the enterprise architecture specifies when concept and requirements definition activity must begin.

- ~~**Conduct detailed**~~***Quantify*** **shortfall** ~~**analysis.**~~ The ~~priority infrastructure or~~ service ~~shortfall in~~***organization*** ~~the enterprise architecture and~~***updates and refines the***

its impact*preliminary* on service delivery is quantified*shortfall identified during service analysis* in sufficient detail to serve as the basis for (1) determining realistic and economic alternative solutions*clearly* to*understanding* the service need*nature*, (2) developing*urgency,* a concept*and impact* of use,*the* and*service need;* (3)*32* defining preliminary program requirements.*;* This*(3)* detailed shortfall analysis is also*determining realistic and economic alternative* the*solutions;* basis*and* for*(4)* quantifying likely program costs and benefits during investment analysis.

- Develop*Define* **range***solution concept* **of alternatives***operations*.- The marketplace is surveyed to identify feasible and economic alternative solutions*solution concept of operations describes how users will employ the* to*new capability within* the *operational environment and how it will satisfy* service need. Both material and*It defines the* non-material*roles* alternatives are*and responsibilities* evaluated.*of* One must*key participants* be*(e.g.,* the*controllers,* hypothesized*maintenance* "best"*technicians,* alternative*pilots);* in the enterprise*explains operational issues* architecture.*that* Key factors to consider are*system engineers must understand when* safety,*developing* operational*requirements;* cost efficiencies*identifies procedural* (particularly*issues that* those related*may lead* to telecommunications*operational change;* and information systems*establishes a* security),*basis* technological*for* maturity,*identifying alternative solutions* and impact on the workforce*estimating their likely costs* and enterprise architecture*benefits*. Alternatives*More* should*than one solution concept of operations may* be qualitatively*required* different*if proposed alternative solutions differ significantly* from each other (e.g
- *Analyze functions*.*,* **different technologies such as** *The service organization works* ground-based*with* versus airborne solutions or different acquisition strategies such as developmental versus commercially*the appropriate systems engineering organization to translate stakeholder needs in the shortfall* available*analysis,* items).*solution* Low*concept* risk,*of* cost-effective*operations*, and operationally suitable*SR-1000* commercial*(NAS* or*System* non-developmental*Requirements)* solutions*into* are*high-level* preferred*functions*. Alternatives*These* may*high-level* not meet 100 percent of preliminary*functions are then decomposed sequentially into* requirements*lower-level sub-functions*. Concept and technical descriptions are developed for each*A function is an action or activity that* alternative. Define*needs* concept(s)*to* of*be* use.*performed* The concept of use explains*to achieve the desired service* how*outcome.* new capabilities will function within the existing operational environment*This activity establishes the foundation for defining preliminary requirements* and how*alternative solutions.*
- *Develop* **they will***enterprise architecture* **satisfy***products.* the*The* service need.*organization* It defines key elements of the required capability and the roles*engages with the appropriate enterprise architecture organization to develop architecture products* and responsibilities*amendments.* of key*These include* participants*the operational* (e.g.,*business* controllers,*rule)* maintenance*and* technicians,*systems* pilots*(engineering*) *view families*.
- *Assess* **It***safety.* explains operational issues that system engineers must understand when developing*The service organization works with the ATO Systems Engineering and* requirements;*Safety* identifies procedural issues that may lead to operational*organization to assess operational safety of the proposed* change;*initiative.* and establishes a basis*This assessment supports definition* for*of preliminary* evaluating benefits*safety*

requirements. ~~If~~*The* ~~proposed alternative solutions~~*service organization also* ~~are~~*identifies,* ~~significantly~~*assesses,* ~~different from each~~*and documents operational* ~~other,~~*hazards* ~~more than one concept of use~~*and risks associated with potential alternative* ~~may~~*solutions.* ~~be~~*No* ~~required.~~*alternative* ~~The concept of use is recorded in the preliminary program~~*is pursued whose operational risk cannot be mitigated to an* ~~requirements~~*acceptable level at* ~~document~~*affordable cost*.

- **Develop preliminary requirements.** The *solution CONOPS,* functional analysis*,* ~~performed~~*shortfall* ~~during~~*analysis,* ~~service~~*EA* ~~analysis~~*products,* ~~is~~*and operational safety assessment are* the foundation for defining preliminary *program* requirements. Preliminary requirements specify how well the new capability must perform *its* intended functions. Safety, security, ~~integrated logistics support,~~ and human factors are key disciplines that must be considered. Preliminary requirements specify only function and performance, and do not define a solution. They must be expressed such that the degree to which different solutions satisfy them can be measured and evaluated. Research and analysis or even prototyping may be necessary to define preliminary requirements adequately.
- *Develop* ~~**They**~~*range* ~~**are**~~*of alternatives.* ~~recorded~~*Developing* ~~in~~*a range of distinct alternatives increases* the ~~preliminary program requirements~~*likelihood that the* ~~document. Estimate~~*best* ~~rough lifecycle~~*possible solution* ~~costs.~~ *will* ~~A rough lifecycle cost is developed~~*be selected to satisfy the service* ~~for~~*need. The service organization surveys* the ~~range~~*marketplace* ~~of~~*to identify feasible and economic solutions. Both material and non-material* alternatives ~~that~~*are* ~~will~~*evaluated. One solution must* be ~~evaluated during~~*the hypothesized* ~~initial~~ *"best"* ~~investment~~*alternative* ~~analysis~~*in the enterprise architecture*. ~~A preliminary assessment~~*Key factors to* ~~of~~*consider are safety, operational cost efficiencies, technological maturity, and impact on* the ~~availability of funding~~*workforce and enterprise* ~~is~~*architecture.* ~~also~~*Alternatives should be qualitatively different from each* ~~conducted~~*other (e.g.,* ~~The head~~*different* ~~of the line~~*technologies such as* ~~of~~*ground-based* ~~business uses~~*versus* ~~this~~*airborne* ~~information~~*solutions or different acquisition strategies such* as ~~a basis for~~*developmental versus commercially* ~~determining~~*available).* ~~whether~~*Low* ~~to~~*risk,* ~~pursue~~*cost-effective,* ~~this service need in competition~~*and operationally suitable commercial or* ~~with~~*non-developmental* ~~all other~~*solutions are* ~~service~~*preferred.* ~~needs~~*Alternatives may not meet 100 percent of preliminary requirements. Technical descriptions are developed for each*.
- ~~Develop~~*Estimate* ~~**enterprise**~~*costs* ~~**architecture**~~*and* ~~**products**~~*benefits. Rough lifecycle costs* and ~~amendments~~*benefits are developed for each preliminary alternative as a basis for determining whether it should be retained or eliminated from consideration*. ~~Enterprise architecture products~~*Rough lifecycle costs* and ~~amendments~~*benefits* ~~include the operational~~*are also calculated* ~~(business~~*for* ~~rule)~~*sustaining* ~~and systems~~*the legacy* ~~(engineering)~~*case* ~~view families~~*in service*. ~~These~~*The* ~~families facilitate~~*availability of* ~~development,~~*funding* ~~support,~~*is* ~~and execution~~*considered by* ~~of~~*the investment decision authority when determining whether to pursue* ~~both~~*this* service ~~and~~*need* ~~infrastructure~~*in* ~~investment~~*competition with all* ~~programs~~*other service needs*.
- **Plan for *initial* investment analysis.** ~~-~~ The plan for *initial* investment analysis ~~defines~~: (1) *defines* scope and assumptions; (2) *describes* alternatives and *their associated* rough~~-order~~ lifecycle ~~cost estimates;~~*costs* and *benefits;* (3) *defines* organizational roles and responsibilities~~. It also specifies~~*;* (4) *specifies* a target schedule*;* and ~~defines~~ (5)

~~the~~***estimates*** resources needed for the work. By signing the plan for investment analysis, the organizations that will conduct the analysis agree to provide the resources necessary to complete the work. ~~Verify and validate key work~~***This activity includes development*** ~~products.~~ ~~***of***~~ ~~Incremental verification and validation is~~***the investment analysis readiness decision*** ~~performed~~***package,*** ~~on key~~***verification that*** ~~work~~***the key*** products of concept and requirements definition~~, including the concept of operations (developed through~~***are*** ~~research~~***complete*** and ~~systems~~***high*** ~~analysis)~~***quality***, ~~initial investment analysis~~***and*** ~~plan,~~***pre-briefings*** ~~and~~***to*** ~~preliminary~~***decision-makers.***

- ***Finalize*** ~~**requirements**~~***ACAT*** ~~**document**~~***designation.*** ~~(including~~***The*** ~~the concept of~~***service team prepares*** ~~use).~~***the*** ~~Verification and validation supports the investment analysis readiness~~***final ACAT determination request based on information generated*** ~~decision. Prepare~~***during*** ~~for the~~***concept*** ~~investment analysis~~***and requirements*** ~~readiness decision~~***definition***. ~~This includes development~~***The request is*** ~~of~~***submitted to*** the ~~decision package,~~***Acquisition*** ~~verification that~~***Executive Board*** ~~the activities~~***for*** ~~of concept and requirements~~***a designation at least*** ~~definition are~~***one*** ~~complete,~~***month*** ~~and~~***before*** ~~pre-briefings~~***the*** ~~to~~***investment analysis*** ~~designated~~***readiness*** decision ~~makers~~.

Section 2.3.4.2 : Outputs and Products

Old Content: Acquisition Management Policy:
Section 2.3.4.2 : Outputs and Products

- Preliminary program requirements document;
- Enterprise architecture products and amendments;
- Investment analysis plan.

New Content: Acquisition Management Policy:
Section 2.3.4.2 : Outputs and Products

- Solution concept of operations;
- Preliminary program requirements document;
- Enterprise architecture products and amendments;
- Realistic alternatives with rough cost and benefit estimates;
- Detailed shortfall and functional analyses;
- Safety risk assessment;
- ACAT designation request; and
- Initial investment analysis plan.

The key work products of concept and requirements definition are verified and validated before the investment analysis readiness decision.

Red Line Content: Acquisition Management Policy:
Section 2.3.4.2 : Outputs and Products

- ***Solution concept of operations;***

- Preliminary program requirements document;
- Enterprise architecture products and amendments;
- ~~Investment~~***Realistic alternatives with rough cost and benefit estimates;***
- ***Detailed shortfall and functional analyses;***
- ***Safety risk assessment;***
- ***ACAT designation request; and***
- ***Initial investment*** analysis plan.

The key work products of concept and requirements definition are verified and validated before the investment analysis readiness decision.

Section 2.3.4.3 : Who Does It?

Old Content: Acquisition Management Policy:
Section 2.3.4.3 : Who Does It?

The implementing service organization with the mission need leads concept and requirements definition activity unless otherwise specified in the CRD plan. The implementing and operating service organizations work in conjunction with the ATO Strategy and Business Planning organization to produce a detailed shortfall analysis. They work with ATO Systems Engineering or AIO to define preliminary requirements and to develop enterprise architecture products and amendments. Service organizations and operational experts work together to develop the concept of use. The implementing service organization leads development of the plan for investment analysis, working in conjunction with the operating service organization and the ATO Investment Planning and Analysis organization. The implementing service organization works with the ATO Systems Engineering organization to determine the best alternative solutions to mission need and to assess any impact on the enterprise architecture. The service organization works with the integrated logistics management team to identify key logistics issues associated with the concept of use and preliminary requirements.

The ATO Executive Council chaired by the Chief Operating Officer or the Associate or Assistant Administrator (non-ATO) of the line of business with the need conducts the investment analysis readiness review. This review determines whether there is sufficient information (i.e., data, planning, and resources) to begin investment analysis. Before the review, the ATO Operations Planning organization and the service organization jointly develop information to support the readiness decision. Readiness is based on development of sound and measurable preliminary requirements; a concept of use acceptable to users; a viable set of alternative that would satisfy the need; and the availability of resources to conduct investment analysis.

New Content: Acquisition Management Policy:
Section 2.3.4.3 : Who Does It?

The implementing service organization with the service need leads and is responsible for completion of all activities and outputs and products of concept and requirements definition unless otherwise specified in the CRD plan. Specific roles and responsibilities of participating

organizations for each activity and output/product are found in the Service Analysis and Concept and Requirements Definition Guidelines (link)

Red Line Content: Acquisition Management Policy:
Section 2.3.4.3 : Who Does It?

The implementing service organization with the ~~mission~~***service*** need leads ~~concept and requirements definition activity unless otherwise specified in the CRD plan. The implementing~~ and ~~operating service organizations work~~***is*** ~~in conjunction with the ATO Strategy~~***responsible for completion of all activities*** and ~~Business Planning~~***outputs*** ~~organization to produce a detailed shortfall analysis. They work with ATO Systems Engineering or AIO to define preliminary requirements~~ and ~~to develop enterprise architecture~~ products ~~and amendments. Service organizations and operational experts work together to develop the concept of use. The implementing service organization leads development~~ of ~~the plan for investment analysis, working in conjunction with the operating service organization and the ATO Investment Planning and Analysis organization. The implementing service organization works with the ATO Systems Engineering organization to determine the best alternative solutions to mission need and to assess any impact on the enterprise architecture. The service organization works with the integrated logistics management team to identify key logistics issues associated with the~~ concept ~~of use~~ and ~~preliminary~~ requirements~~. The ATO Executive Council chaired by the Chief Operating Officer or the Associate or Assistant Administrator (non-ATO) of the line of business~~***definition*** ~~with the need conducts~~***unless otherwise specified in*** the ~~investment analysis readiness review. This review determines whether there is sufficient information~~***CRD*** ~~(i.e~~***plan***~~.,~~ ~~data,~~***Specific*** ~~planning,~~***roles*** and ~~resources) to begin investment analysis. Before the~~***responsibilities*** ~~review,~~***of*** ~~the ATO Operations Planning organization~~***participating organizations for each activity*** and ~~the service organization jointly develop~~***output/product*** ~~information to support~~***are found in*** the ~~readiness decision. Readiness is based on development of~~***Service*** ~~sound~~***Analysis*** and ~~measurable preliminary requirements; a concept of use acceptable to users; a viable~~***Concept*** ~~set of alternative that would satisfy the need;~~ and ~~the availability of resources to~~***Requirements*** ~~conduct investment~~***Definition Guidelines*** ~~analysis.~~***(link)***

Section 2.3.4.4 : Who Approves?

Old Content: Acquisition Management Policy:
Section 2.3.4.4 : Who Approves?

The Vice Presidents (ATO) or Directors (non-ATO) of the service organization with the mission need and the operating service organization approve the preliminary program requirements document. The Chief Architect for the NAS enterprise architecture approves NAS architecture products and amendments. The Chief Information Officer approves mission support, administrative, and any other architecture products and amendments delegated to the ITEB by the JRC.

The Vice Presidents (ATO) or Directors (non-ATO) of the service organization with the mission need and the operating service organization approve the plan for initial investment analysis.

New Content: Acquisition Management Policy:
Section 2.3.4.4 : Who Approves?

The key work products of concept and requirements definition must be verified and validated according to FAA V&V guidance and standards before submission for approval. Approval authorities are found in the Service Analysis and Concept and Requirements Definition Guidelines (link).

Red Line Content: Acquisition Management Policy:
Section 2.3.4.4 : Who Approves?

The ~~Vice Presidents~~***key work*** ~~(ATO) or Directors (non-ATO)~~***products*** of ~~the service organization with the mission need~~***concept and requirements definition must be verified*** and ~~the~~***validated according*** ~~operating service organization~~***to FAA V***&~~#160~~***amp***;~~approve the~~***V*** ~~preliminary~~***guidance*** ~~program requirements document.~~***and*** ~~The Chief Architect~~***standards before submission*** for ~~the NAS enterprise architecture approves NAS architecture products and amendments~~***approval***. ~~The Chief Information Officer approves mission~~***Approval authorities are found in the*** ~~support,~~***Service*** ~~administrative,~~***Analysis*** and ~~any other architecture~~***Concept*** ~~products~~ and ~~amendments delegated to the ITEB by the JRC. The Vice Presidents (ATO)~~***Requirements*** ~~or Directors~~***Definition Guidelines*** (~~non-ATO~~***link***) ~~of the service organization with the mission need and the operating service organization approve the plan for initial investment analysis~~.

Section 2.3.2 : Service Analysis

Old Content: Acquisition Management Policy:
Section 2.3.2 : Service Analysis

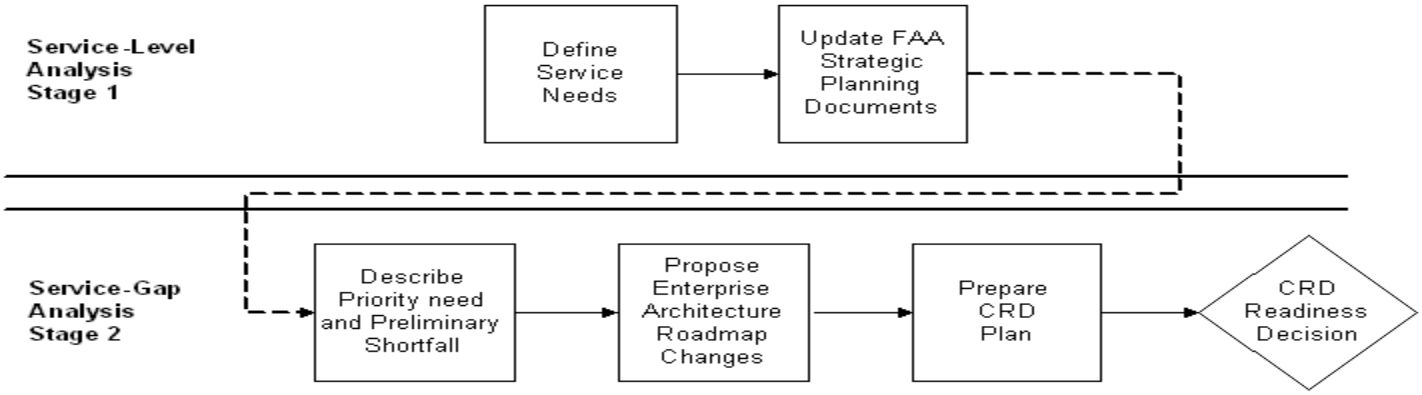
Service analysis is conducted within the framework of the FAA flight plan and enterprise architecture to determine what capabilities must be in place now and in the future to meet agency goals and the service needs of customers. Service analysis is the basis for long-range planning by the lines of business and their service organizations. Results are captured in the enterprise architecture, which documents the "as is" and "to be" states of the FAA's architecture, as well as the roadmaps for transitioning from the current to the future state. Enterprise architecture roadmaps are the foundation for each LOB business plan, which in turn is the basis for service organization operating plans within the line of business. LOB business plans and service organization operating plans specify how each will manage its RE&D, F&E, and O&M resources over time. These plans integrate new investment initiatives with the operation and support of fielded assets and other necessary actions to optimize service delivery.

Industry best practices (e.g., technology and service demand forecasting, portfolio management, customer surveys) are employed during service analysis to align service outcomes with actions and activities necessary and sufficient to realize benefits for the FAA and its customers. During service analysis, all business, technology, organizational, process, and human resource issues are considered that affect desired service outcomes; service demand, assumptions, constraints,

actions, initiatives, and risks are correlated with desired service outcomes; and opportunities and initiatives are identified that offer the greatest value toward achieving service goals. Continuing analysis keeps planning current with changes in the mission and operational environment.

The result of service analysis may be the refocus, reduction, or elimination of ongoing investment programs, and may identify new and more productive ways of doing business. Service analysis may identify alternative paths for achieving service goals in a dynamic environment, and identify opportunities for improving FAA strategic planning when the mission environment evolves in ways not anticipated. Some investment options may require research and development activity to demonstrate operational concepts, reduce risk, or define requirements before proceeding further in the lifecycle management process. Figure 2.3.2-1 illustrates the key activities of service analysis.

Figure 2.3.2-1 Key Activities of Service Analysis



New Content: Acquisition Management Policy:
Section 2.3.2 : Service Analysis

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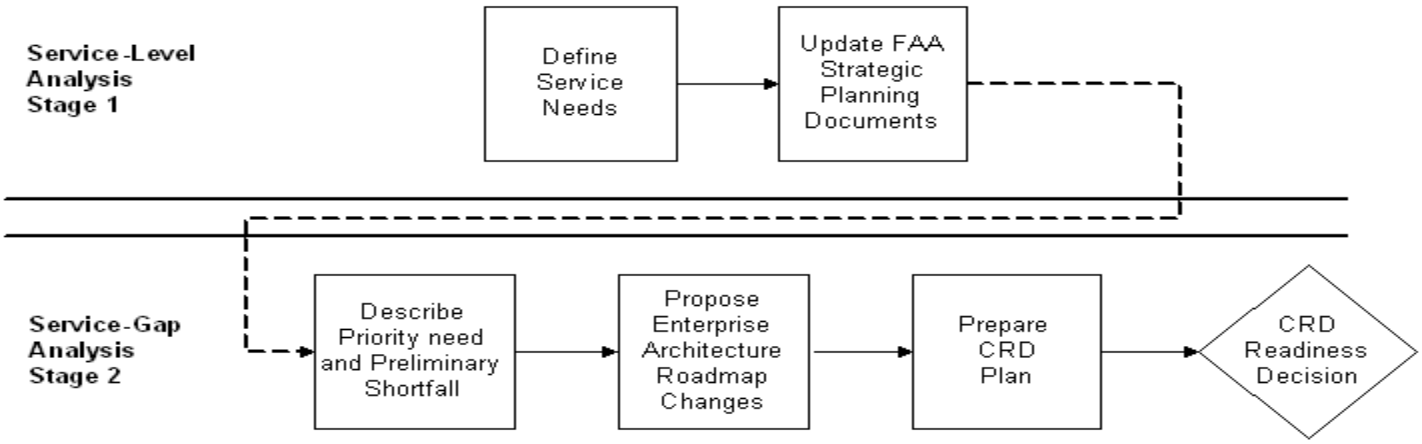
Industry best practices (e.g., technology and service demand forecasting, portfolio management, customer surveys) are employed during service analysis to align service outcomes with actions and activities necessary and sufficient to realize benefits for the FAA and its customers. Service analysis may lead to the refocus, reduction, or elimination of ongoing investment programs, and

may identify new and more productive ways of doing business. It may also identify alternative paths for achieving service goals in a dynamic environment, and may identify opportunities for improving FAA strategic planning when the mission environment evolves in ways not anticipated. Some investment opportunities may require research and development to demonstrate operational concepts, reduce risk, or define requirements before proceeding further in the lifecycle management process.

As shown in Figure 2.3.2-1, service analysis is a 2-stage process. Stage 1 (service-level analysis) is the recurring analysis from which service organizations determine and prioritize service shortfalls and opportunities over time and propose modifications to agency strategic planning documents. Stage 2 (service-gap analysis) develops the information needed for entry of high-priority service needs from the enterprise architecture roadmaps into concept and requirements definition.

Figure 2.3.2-1 Key Activities of Service Analysis

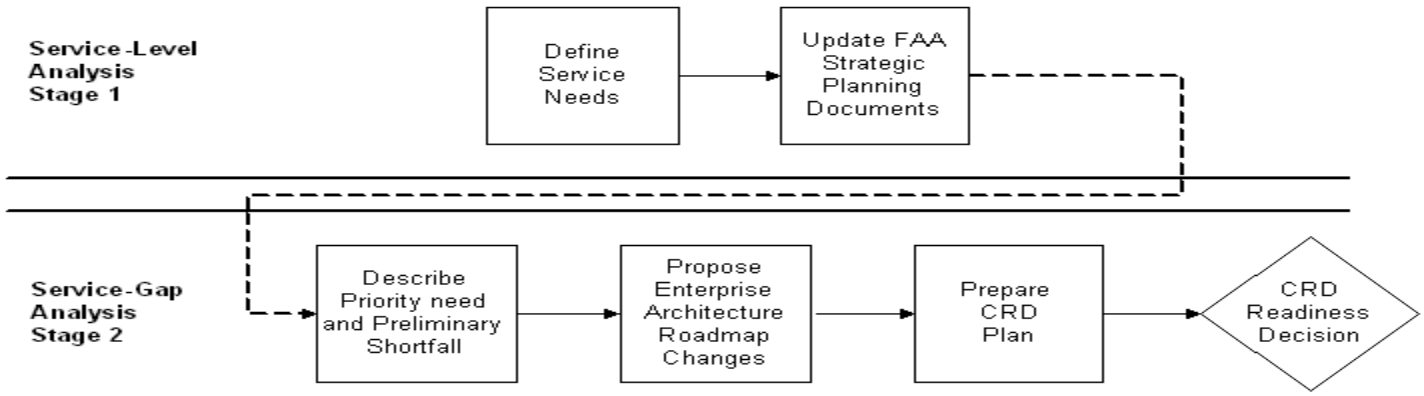


Red Line Content: Acquisition Management Policy:
Section 2.3.2 : Service Analysis

Service analysis is conducted within the framework of the FAA flight plan and enterprise architecture to determine what capabilities must be in place now and in the future to meet agency goals and the service needs of customers. ~~Service analysis is the basis for long-range planning by the lines of business and their service organizations.~~ Results are captured in the enterprise architecture, which documents the "as is" and "to be" states of the FAA's architecture, as well as the roadmaps for ~~transitioning~~***moving*** from the current to the future state. ~~Enterprise architecture roadmaps~~***Results*** are ~~the foundation for each LOB business plan,~~***also*** ~~which~~***captured*** in ~~turn is the basis for service organization operating plans within the line of business.~~ LOB business plans and service organization operating plans***, which*** specify how each will manage its RE&D, F&E, and O&M resources over time. These plans integrate new investment initiatives with the operation and support of fielded assets and other necessary actions to optimize service delivery. ~~Industry~~ ***Continuing analysis keeps planning current with changes in the mission and operational environment.***

Industry best practices (e.g., technology and service demand forecasting, portfolio management, customer surveys) are employed during service analysis to align service outcomes with actions and activities necessary and sufficient to realize benefits for the FAA and its customers. ~~During service analysis, all business, technology, organizational, process, and human resource issues are considered that affect desired service outcomes; service demand, assumptions, constraints, actions, initiatives, and risks are correlated with desired service outcomes; and opportunities and initiatives are identified that offer the greatest value toward achieving service goals. Continuing analysis keeps planning current with changes in the mission and operational environment. The result of service~~***Service*** analysis may ~~be~~***lead to*** the refocus, reduction, or elimination of ongoing investment programs, and may identify new and more productive ways of doing business. ~~Service analysis~~***It*** may ***also*** identify alternative paths for achieving service goals in a dynamic environment, and ***may*** identify opportunities for improving FAA strategic planning when the mission environment evolves in ways not anticipated. Some investment ~~options~~***opportunities*** may require research and development ~~activity~~ to demonstrate operational concepts, reduce risk, or define requirements before proceeding further in the lifecycle management process. ***As shown in*** Figure 2.3.2-1***, service analysis is a 2-stage process. Stage 1 (service-level analysis)*** ~~illustrates~~***is*** the ~~key~~***recurring*** ~~activities~~***analysis*** ~~of~~***from which service organizations determine and prioritize service shortfalls and opportunities over time and propose modifications to agency strategic planning documents. Stage 2 (***service***-gap*** analysis***) develops the information needed for entry of high-priority service needs from the enterprise architecture roadmaps into concept and requirements definition***.

Figure 2.3.2-1 Key Activities of Service Analysis



Section 2.3.2.1 : What Must Be Done

Old Content: Acquisition Management Policy:
Section 2.3.2.1 : What Must Be Done

- **Define services.** This activity defines expected service outcomes in terms of improvements in service delivery and contribution to FAA strategic and performance goals. A continuing dialog with and feedback from the customers of FAA services is

crucial (e.g., commercial air carriers, general aviation, air transport industry, state and local airport authorities). This activity identifies business, technology, organizational, process, and personnel issues that affect service outcomes, as well as assumptions, risks, and dependencies.

- **Gather information on the service environment.** Data are collected to forecast service demand over the next 5 – 15 years and to stay abreast of opportunities for improving service delivery. Data sources include technology and aviation forecasts, customer surveys, operational environment, the enterprise architecture, capital investment plan, and FAA and Department of Transportation strategic plans. The operational outlook for fielded assets is crucial. Feedback from post implementation reviews and evaluation of operational assets provide information for determining when and how service shortfalls must be addressed and when existing capability will no longer be supportable.
- **Analyze functions.** Functional analysis is performed within context of the enterprise architecture. It develops a sequenced and traceable architecture that defines the functions and sub-functions necessary to provide the intended service or operational capability. It defines what must be done without defining how to do it. Functional analysis evaluates the impact of individual functions on such factors as cost, benefit, and risk to service delivery. Results provide a basis for determining what capability level to specify.
- **Determine capability gaps and technology opportunities.** Service capability that can be provided by existing and programmed assets is compared with projected demand for services to determine shortfalls. Technology innovations are investigated on a continuing basis to explore opportunities for improving service delivery. The assessment extends over the range of capabilities necessary for service delivery (e.g., automation and data processing, surveillance, communications, and navigation), and is conducted within context of the enterprise architecture. Shortfalls and opportunities are defined in quantified, measurable terms. They are prioritized according to their criticality for achieving FAA strategic and performance goals and are traceable directly to them.
- **Recommend changes to the enterprise architecture.** Service analysis defines and prioritizes service and infrastructure needs within a line of business, ties them to FAA strategic and performance measures, indicates when they need to be resolved, and explains how benefits accrue to the FAA and its customers. When service analysis identifies conditions in the service environment that are different from those in FAA strategic planning, the service organization recommends changes to the FAA flight plan and enterprise architecture.
- **Plan for concept and requirements definition.** When an enterprise architecture roadmap specifies that action must be taken now to address a priority service need, ATO Systems Engineering works with the implementing and operating service organizations to prepare a plan for concept and requirements definition. This plan (1) specifies how the tasks of concept and requirements definition will be accomplished, including any supporting research or analysis; (2) defines the roles and responsibilities of participating organizations; (3) defines outputs and exit criteria; (4) establishes a schedule for completion; and (5) specifies needed resources.

New Content: Acquisition Management Policy:
Section 2.3.2.1 : What Must Be Done

Service-Level Analysis:

- **Define service needs.** Service organizations analyze forecasts for aviation service needs and stay abreast of opportunities for improving service delivery as a basis for determining and prioritizing service needs and shortfalls. A continuing dialog with and feedback from customers (e.g., commercial air carriers, general aviation, air transport industry, state and local airport authorities) and users (air traffic and technical operations) are crucial, as is the supportability and operational outlook for fielded assets. This activity identifies business, technology, organizational, process, and personnel issues that affect service outcomes, as well as assumptions, risks, and dependencies.
- **Update FAA strategic planning documents.** When service and infrastructure needs within and across lines of business emerge that differ from those in the enterprise architecture roadmaps and FAA strategic planning, the service organization proposes changes, ties them to FAA strategic and performance measures, and indicates when they need to be resolved. These emerging needs are reviewed, vetted, and integrated within agency-level strategic planning documents (e.g., Enterprise Architecture Roadmaps, FAA Flight Plan, and NAS Midterm CONOPS) using appropriate processes.

Service-Gap Analysis:

- **Describe priority need and preliminary shortfall.** When a priority service need within an enterprise architecture roadmap requires action to start now on the search for a best overall solution, the service organization defines the capability that must be put in place to improve service delivery and achieve agency strategic and performance goals. Improvements are stated as performance objectives (e.g., increased capacity, improved safety, more efficient operations, clearer communications, faster surveillance update), which are used later in concept and requirements definition to quantify needed physical and operational improvements. The service organization also defines the service shortfall as a foundation for understanding the problem and its nature, urgency, and impact. The shortfall is the difference between future service need and current capability. Finally, the service organization describes legacy assets that now perform the function or service. Legacy assets include all existing and funded systems, facilities, people, and processes. It does not include any additional investment beyond what is in an investment segment baseline approved by an investment decision authority. The service need, shortfall, and legacy case are recorded in the preliminary shortfall analysis report.
- **Propose Enterprise Architecture Roadmap Changes.** Should the preliminary shortfall analysis identify important service needs not in an enterprise architecture roadmap, the service organization prepares change documents for inclusion and submits them to the appropriate architecture board for approval. Approval is required before entry into concept and requirements definition.
- **Prepare CRD Plan.** ATO Systems Engineering and Safety (NAS) or the AIO Office of IT Research & Development (non-NAS) works with the implementing and operating service organizations to prepare a plan for concept and requirements definition. This plan (1) specifies how the tasks of CRD will be accomplished, including any supporting research or analysis; (2) defines the roles and responsibilities of participating organizations; (3) defines outputs and exit criteria; (4) establishes a schedule for

completion; and (5) specifies needed resources. By signing the plan for concept and requirements definition, organizations that will do the work agree to provide the necessary resources. The service organization also recommends a preliminary ACAT level to ATO Systems Engineering and Safety. The recommendation is based on preliminary financial data, as well as subjective assessments of complexity, risk, political sensitivity, and safety. ATO Systems Engineering and Safety either concurs with the recommendation or proposes a different level to the Acquisition Executive Board which makes the final determination.

Red Line Content: Acquisition Management Policy:
Section 2.3.2.1 : What Must Be Done

Service-Level Analysis:

- **Define** ~~**services**~~***service needs***.~~ This activity~~***Service organizations*** ~~defines~~***analyze forecasts for*** ~~expected~~***aviation*** service ~~outcomes~~***needs*** ~~in~~***and*** ~~terms~~***stay abreast*** of ~~improvements in~~***opportunities for improving*** service delivery ~~and contribution to FAA strategic~~***as a basis for determining*** and ~~performance~~***prioritizing*** ~~goals~~***service needs and shortfalls***. A continuing dialog with and feedback from ~~the~~ customers ~~of FAA services is crucial~~ (e.g., commercial air carriers, general aviation, air transport industry, state and local airport authorities) ***and users (air traffic and technical operations) are crucial, as is the supportability and operational outlook for fielded assets***. This activity identifies business, technology, organizational, process, and personnel issues that affect service outcomes, as well as assumptions, risks, and dependencies.
- ~~Gather information~~***Update*** ~~**on the service environment**~~***FAA strategic planning documents***.~~ **Data are collected to** forecast~~***When*** service ~~demand over the next 5~~***and*** ***infrastructure*** ~~15 years~~***needs within*** and ~~to stay~~***across*** ~~abreast~~***lines*** of ~~opportunities for~~***business*** ~~improving service~~***emerge that*** ~~delivery.~~***differ*** ~~Data sources include technology and aviation~~***from those in the enterprise architecture*** ~~forecasts,~~***roadmaps*** ~~customer~~***and*** ~~surveys,~~***FAA*** ~~operational environment~~***strategic planning***,~~ the enterprise~~***the*** ~~architecture,~~***service*** ~~capital investment plan~~***organization proposes changes***, ~~and FAA and~~***ties*** ~~Department of Transportation~~***them to FAA*** strategic ~~plans.~~***and*** ~~The~~***performance*** ~~operational~~***measures,*** ~~outlook for fielded assets is~~***and indicates when they need*** ~~crucial.~~***to*** ~~Feedback~~***be*** ~~from~~***resolved.*** ~~post implementation reviews and~~***These emerging needs are*** ~~evaluation~~***reviewed,*** ~~of~~***vetted,*** ~~operational assets provide~~***and integrated within*** ~~information~~***agency-level*** ~~for determining when~~***strategic planning documents*** ~~and~~***(e.g., how service~~***Enterprise Architecture*** ~~shortfalls~~***Roadmaps,*** ~~must be~~***FAA Flight*** ~~addressed~~***Plan,*** and ~~when existing capability~~***NAS*** ~~will~~***Midterm*** ~~no~~***CONOPS)*** ~~longer be supportable~~***using appropriate processes***.

Service-Gap Analysis:

- ~~**Analyze**~~***Describe priority need and preliminary*** ~~**functions**~~***shortfall***.~~ Functional analysis~~***When*** ~~is performed within context of the~~***a priority service need within an*** enterprise architecture~~. It develops a sequenced and traceable architecture that defines~~***roadmap requires action to start now on*** the ~~functions~~***search*** ~~and~~***for*** ~~sub-~~

~~functions~~***a*** ~~necessary to~~***best overall*** ~~provide~~***solution,*** the ~~intended~~ service ~~or operational~~***organization*** ~~capability.~~***defines*** ~~It defines what~~***the capability that*** must be ~~done without~~***put*** ~~defining how~~***in place*** to ~~do~~***improve*** ~~it.~~***service*** ~~Functional analysis evaluates the impact of individual~~***delivery and achieve agency strategic and performance*** ~~functions~~***goals.*** ~~on such factors~~***Improvements are stated*** as ~~cost,~~***performance objectives*** ~~benefit~~***(e.g.***, ~~and~~***increased*** ~~risk~~***capacity,*** ~~to~~***improved*** ~~services~~***safety,*** ~~delivery.~~***more*** ~~Results~~***efficient*** ~~provide~~***operations,*** ~~a~~***clearer*** ~~basis~~***communications,*** ~~for determining~~***faster surveillance*** ~~what~~***update),*** ~~capability level to~~***which are used*** ~~specify. Determine~~***later*** ~~capability~~***in*** ~~gaps~~***concept*** and ~~technology opportunities. Service capability that~~***requirements*** ~~can be provided by existing~~***definition to quantify needed physical*** and ~~programmed assets is compared~~***operational*** ~~with~~***improvements.*** ~~projected demand for~~***The service organization*** ~~services to~~***also*** ~~determine~~***defines*** ~~shortfalls.~~***the*** ~~Technology innovations are investigated on a continuing basis to explore opportunities~~***service shortfall as a foundation for understanding the problem and its*** ~~for~~***nature,*** ~~improving~~***urgency,*** ~~service delivery~~***and impact***. The ~~assessment~~***shortfall*** ~~extends over~~***is*** the ~~range of capabilities~~***difference*** ~~necessary for~~***between future*** service ~~delivery (e.g., automation~~***need*** and ~~data~~***current*** ~~processing,~~***capability.*** ~~surveillance~~***Finally***, ~~communications,~~***the*** ~~and~~***service*** ~~navigation),~~***organization*** ~~and is conducted within context of~~***describes legacy assets that now perform*** the ~~enterprise architecture. Shortfalls and opportunities are defined in~~***function*** ~~quantified, measurable~~***or*** ~~terms~~***service***. ~~They~~***Legacy*** ~~are prioritized~~***assets*** ~~according to their criticality for~~***include all existing and funded*** ~~achieving~~***systems,*** ~~FAA~~***facilities,*** ~~strategic~~***people,*** and ~~performance goals and~~***processes.*** ~~are traceable directly to~~***It does not include*** ~~them. Recommend~~***any*** ~~changes to the enterprise~~***additional investment beyond what*** ~~architecture.~~***is*** ~~Service analysis defines and prioritizes service and infrastructure needs within~~***in an investment segment baseline approved by an investment decision*** ~~a~~***authority.*** ~~line of business~~***The service need***, ~~ties them to FAA strategic~~***shortfall,*** and ~~performance~~***legacy*** ~~measures,~~***case*** ~~indicates when they need to be~~***are recorded in the preliminary shortfall*** ~~resolved,~~***analysis*** ~~and~~***report.***

- ***Propose*** ~~**explains how benefits**~~***Enterprise Architecture Roadmap*** ~~**accrue**~~***Changes.*** ~~to~~***Should*** the ~~FAA~~***preliminary*** ~~and its~~***shortfall analysis*** ~~customers.~~***identify*** ~~When~~***important*** service ~~analysis identifies~~***needs*** ~~conditions~~***not*** in ***an enterprise architecture roadmap,*** the service ~~environment that are different from those in FAA strategic~~***organization prepares change documents for inclusion and submits them*** ~~planning,~~***to*** the ~~service organization recommends~~***appropriate*** ~~changes to the~~***architecture board for*** ~~FAA~~***approval.*** ~~flight plan and enterprise~~***Approval is required before*** ~~architecture. Plan~~***entry*** ~~for~~***into*** concept and requirements definition. ~~When an~~
- ***Prepare*** ~~**enterprise**~~***CRD*** ~~**architecture**~~***Plan.*** ~~roadmap specifies~~***ATO*** ~~that action must be~~***Systems Engineering and Safety*** ~~taken~~***(NAS)*** ~~now to address a priority service~~***or the AIO Office of IT*** ~~need,~~***Research*** ~~ATO~~***&*** ~~Systems~~***Development*** ~~Engineering~~***(non-NAS)*** works with the implementing and operating service organizations to- prepare a plan for concept and requirements definition. This plan (1) specifies how the tasks of ~~concept and requirements definition~~***CRD*** will be accomplished, including any supporting research or analysis; (2) defines the roles and responsibilities of participating organizations; (3) defines outputs and exit criteria; (4) establishes a schedule for completion; and (5) specifies needed resources. ***By signing the plan for concept and requirements***

definition, organizations that will do the work agree to provide the necessary resources. The service organization also recommends a preliminary ACAT level to ATO Systems Engineering and Safety. The recommendation is based on preliminary financial data, as well as subjective assessments of complexity, risk, political sensitivity, and safety. ATO Systems Engineering and Safety either concurs with the recommendation or proposes a different level to the Acquisition Executive Board which makes the final determination.

Section 2.3.2.2 : Outputs and Products

Old Content: Acquisition Management Policy:
Section 2.3.2.2 : Outputs and Products

- Recommended changes to the enterprise architecture;
- Plan(s) for concept and requirements definition, as determined from an enterprise architecture roadmap.

New Content: Acquisition Management Policy:
Section 2.3.2.2 : Outputs and Products

- Preliminary shortfall analysis report that describes qualitatively the service need, shortfall, and legacy assets;
- Recommended changes to an enterprise architecture roadmap; and
- Concept and requirements definition plan, including the preliminary ACAT determination request as an attachment.

The key work products of service analysis are verified and validated according to the V&V guidelines before the CRD readiness decision.

Red Line Content: Acquisition Management Policy:
Section 2.3.2.2 : Outputs and Products

- ~~Recommended changes~~***Preliminary shortfall*** ~~to~~***analysis report that describes qualitatively*** the ~~enterprise~~***service*** ~~architecture~~***need, shortfall, and legacy assets***;
- ~~Plan(s)~~***Recommended changes*** ~~for~~***to an enterprise architecture roadmap;*** ~~concept~~***and Concept*** and requirements definition ***plan***, ~~as~~***including the*** ~~determined from an enterprise architecture~~***preliminary ACAT determination request as*** ~~roadmap~~***an attachment***.

The key work products of service analysis are verified and validated according to the V&V guidelines before the CRD readiness decision.

Section 2.3.2.3 : Who Does It?

Old Content: Acquisition Management Policy:
Section 2.3.2.3 : Who Does It?

Lines of business (non-ATO) and service units (ATO) conduct service analysis and maintain service planning in conjunction with ATO Systems Engineering, as appropriate. Service needs and opportunities across all lines of business are recorded and integrated in an enterprise architecture roadmap in response to changes in the service environment or new technological opportunities. ATO Systems Engineering works with service units and other lines of business to ensure consistency of service planning across service organizations. The implementing service organization works with ATO Systems Engineering and the operating service organization to plan for concept and requirements definition. The integrated logistics management team contributes logistics and operational support data to service analysis.

New Content: Acquisition Management Policy:
Section 2.3.2.3 : Who Does It?

Service directorates (non-ATO) and service units (ATO) conduct service analysis and prepare outputs and products in conjunction with ATO Systems Engineering and Safety (NAS) or the AIO Office of IT Research and Development (non-NAS), as appropriate. This includes the preliminary need analysis, enterprise architecture products and amendments, and plan for CRD. The Enterprise Architecture Board (NAS) or Architecture Review Board (non-NAS) verify and validate the key work products of service analysis before the CRD readiness decision.

Red Line Content: Acquisition Management Policy:
Section 2.3.2.3 : Who Does It?

~~Lines of~~***Service*** ~~business~~***directorates*** (non-ATO) and service units (ATO) conduct service analysis and ~~maintain~~***prepare*** ~~service~~***outputs*** ~~planning~~***and products*** in conjunction with ATO Systems Engineering~~, as appropriate. Service~~***and*** ~~needs~~***Safety*** ~~and~~***(NAS)*** ~~opportunities across all lines~~***or the AIO Office*** of ~~business are~~***IT*** ~~recorded~~***Research*** and ~~integrated in an enterprise architecture roadmap~~***Development*** ~~in~~***(non-NAS),*** ~~response~~***as*** ~~to~~***appropriate.*** ~~changes in~~***This includes*** the ~~service environment or new technological opportunities. ATO Systems~~***preliminary*** ~~Engineering~~***need*** ~~works~~***analysis,*** ~~with service units~~***enterprise architecture products*** and ~~other lines of business to ensure consistency of service~~***amendments,*** ~~planning across service organizations~~***and plan for CRD***. The ~~implementing service organization works with ATO Systems Engineering~~***Enterprise*** ~~and the~~***Architecture Board*** ~~operating~~***(NAS)*** ~~service organization to plan~~***or Architecture Review Board*** ~~for~~***(non-NAS)*** ~~concept~~***verify*** and ~~requirements~~***validate*** ~~definition. The integrated logistics~~***the*** ~~management team contributes logistics and operational support data to service analysis~~***key work products of service analysis before the CRD readiness decision***.

Section 2.3.2.4 : Who Approves?

Old Content: Acquisition Management Policy:
Section 2.3.2.4 : Who Approves?

The Vice Presidents (ATO) or Directors (non-ATO) of the service organization with the mission need and operating service organization approve the plan for concept and requirements definition. The Joint Resources Council approves changes to the enterprise architecture.

New Content: Acquisition Management Policy:
Section 2.3.2.4 : Who Approves?

The Enterprise Architecture Board (NAS) or Architecture Review Board (non-NAS) reviews the plan for CRD and recommends approval. The Vice President (ATO) or Director (non-ATO) of the service organization with the service need approves the plan. The NAS Chief Architect or the Chief Technology Officer approves amendments and updates to the enterprise architecture, as appropriate. The Director, Systems Engineering and Safety and the Director of the service organization with the need approve the preliminary shortfall analysis report.

Red Line Content: Acquisition Management Policy:
Section 2.3.2.4 : Who Approves?

The ***Enterprise Architecture Board (NAS) or Architecture Review Board (non-NAS) reviews the plan for CRD and recommends approval. The*** Vice ~~Presidents~~***President*** (ATO) or ~~Directors~~***Director*** (non-ATO) of the service organization with the ~~mission~~***service*** need ~~and~~***approves*** ~~operating~~***the*** ~~service~~***plan.*** ~~organization~~***The*** ~~approve~~***NAS Chief Architect or*** the ~~plan~~***Chief*** ~~for~~***Technology Officer approves*** ~~concept~~***amendments*** and ~~requirements~~***updates to the enterprise architecture, as*** ~~definition~~***appropriate***. The ~~Joint~~***Director,*** ~~Resources Council approves changes to~~***Systems Engineering and Safety and*** the ~~enterprise~~***Director*** ~~architecture~~***of the service organization with the need approve the preliminary shortfall analysis report***.
