Jacobs

ORAT in Asset Renewal Programs

Document no: 01
Revision: Final

August 21, 2024

Jacobs Challenging today. Reinventing tomorrow.

ORAT in Asset Renewal Programs

Prepared by:	Melvin Price
Graphics by:	Jerome Lim
File name:	ORAT Asset Renewal Programs
Document no:	01
Revision:	Final
Date:	August 21, 2024

Jacobs Engineering Group Inc

Melvin E. Price, MBA, C.M., ENV SP
ORAT National Practice Lead
818 Town & Country Blvd
Suite 500
Houston, TX 77024
United States

T +1.816.721.0640
www.jacobs.com

Executive Summary

Introduction

Operational Readiness Activation and Transfer (ORAT) is a critical process ensuring that new or refurbished airport facilities transition smoothly into operational use. This white paper details how ORAT can be effectively integrated into an Asset Renewal Program at an airport, highlighting the benefits and strategies for successful implementation.

With the rise in global air travel, airports are challenged to keep operations smooth while updating infrastructure for future needs. ORAT processes are now essential for ensuring new or refurbished facilities work perfectly from the start. This white paper examines how ORAT fits into asset renewal programs, offering practical insights and effective strategies for success.

Objectives

This white paper aims to provide a comprehensive understanding of ORAT, outlining the key components and challenges of an Asset Renewal Program. It demonstrates how ORAT can be effectively integrated within such a program, offering detailed implementation strategies supported by real-world examples. Additionally, the paper highlights technological tools and resources that facilitate ORAT processes, discusses methods for measuring success and continuous improvement, and addresses risk management and mitigation strategies.

Key Takeaways

ORAT ensures operational readiness and minimizes disruptions during asset renewal by emphasizing the importance of effective stakeholder engagement and training for successful implementation. Real-world examples and case studies offer valuable insights and best practices, while technological tools enhance the efficiency and effectiveness of ORAT processes. Continuous improvement and risk management are integral components that contribute to the long-term success of asset renewal programs.

Contents

Acronyms and Abbreviations

IT	Information Technology
KPI	Key Performance Indicator
NPS	Net Promoter Score
ORAT	Operational Readiness, Activation, and Transition

1. Understanding Asset Renewal Programs

1.1 Definition and Purpose

An Asset Renewal Program is a strategic initiative aimed at upgrading, refurbishing, or replacing airport assets to maintain or improve operational efficiency, safety, and service quality. This often involves infrastructure that has reached or exceeded its useful life and can include existing terminal buildings, utilities, airfield pavements, navigation systems, and other critical infrastructure.

1.2 Key Components

- Assessment: Comprehensive evaluation of existing assets to identify needs and prioritize renewal efforts.
- Planning: Developing a strategy to efficiently and cost effectively renew assets with minimal disruption to operations.
- Budgeting and Funding: Securing necessary financial resources through budgeting, grants, or private investment.
- Stakeholder Engagement: Engaging all relevant parties, including airlines, airport staff, regulators, and passengers.
- Execution: Implementing renewal activities with minimal disruption to ongoing operations.
- Monitoring and Evaluation: Continuously monitoring progress and evaluating the impact of renewal activities to ensure goals are met.

1.3 Challenges and Opportunities

1.3.1 Challenges

Budget constraints present a challenge in securing adequate funding, necessitating careful financial planning and prioritization. Renewal activities can lead to operational disruptions, which require meticulous planning to minimize their impact on daily operations. Effective communication and collaboration among diverse stakeholders are critical to ensuring smooth coordination, while maintaining strict adherence to aviation and safety regulations throughout the process.

1.3.2 Opportunities

Enhanced operational efficiency is achieved through upgraded assets, leading to more efficient operations and reduced maintenance costs. Improved passenger experience is another key benefit, as modern facilities and technology significantly enhance passenger satisfaction. Asset renewal also offers the opportunity to adopt and integrate the latest technologies, further boosting efficiency and service quality. Additionally, regular renewal activities contribute to increased asset lifespan, ensuring long-term sustainability of airport assets and moving away from a “run to failure” mentality.

2. Integration of ORAT in Asset Renewal Programs

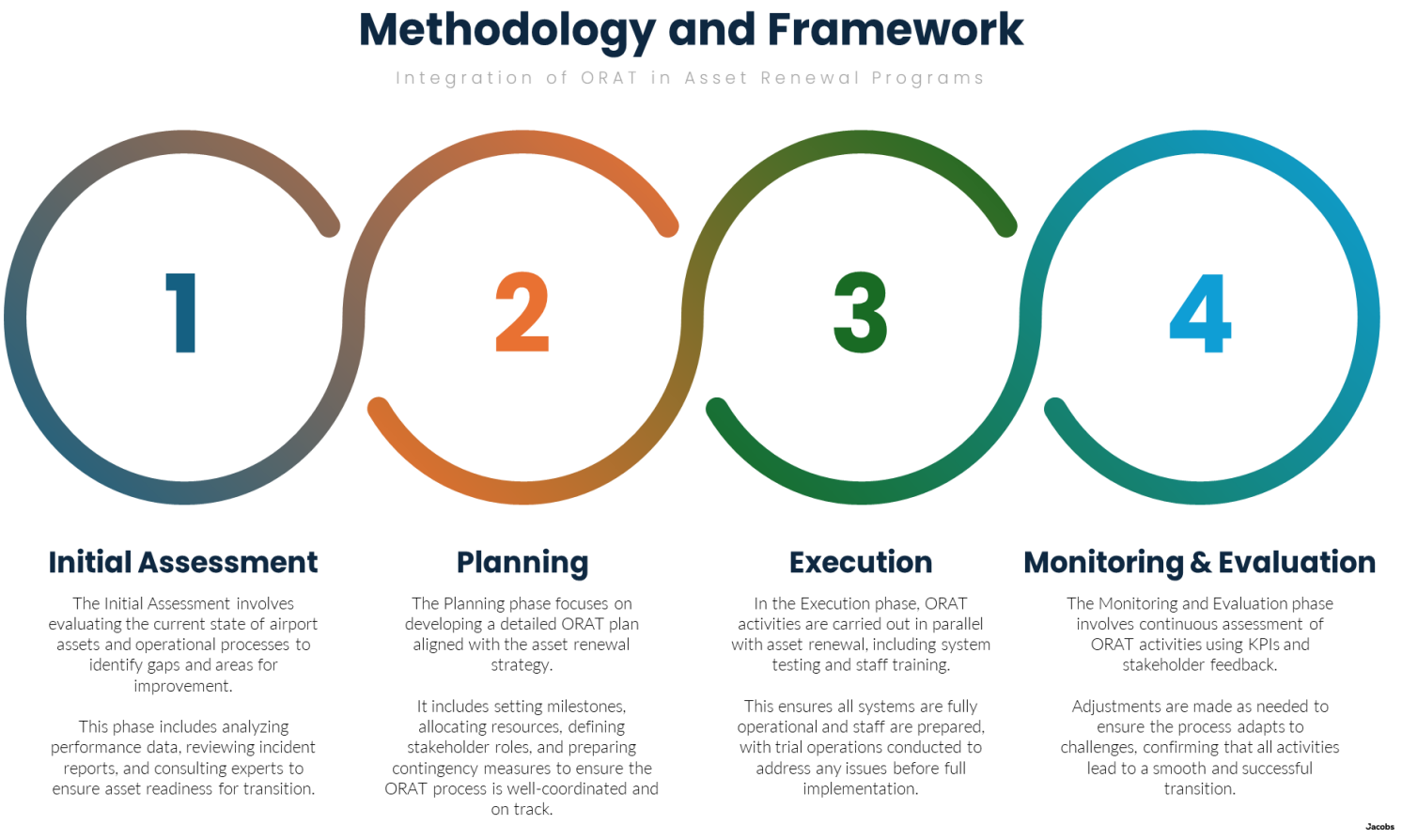
2.1 Alignment of Objectives

Integrating Operational Readiness, Activation, and Transition (ORAT) with asset renewal objectives ensures a coordinated approach, enhancing operational efficiency, safety, and passenger satisfaction. Both initiatives should align to support the overall strategic goals of the airport.

2.2 Methodology and Framework

The integration follows a structured methodology:

- **Initial Assessment:** Evaluate the current state of assets and operational readiness, identifying gaps and areas for improvement.
- **Planning:** Develop a detailed ORAT plan that aligns with the asset renewal strategy, including timelines, resource allocation, and stakeholder responsibilities.
- **Execution:** Implement ORAT activities in parallel with asset renewal activities, ensuring that all systems and processes are tested, and staff are trained.
- **Monitoring and Evaluation:** Continuously assess the effectiveness of ORAT activities, making necessary adjustments to ensure readiness.



3. Detailed Implementation Strategy

3.1 Initial Assessment and Planning

- **Operational Readiness Assessment:** Evaluate the readiness of operational processes and systems.
  - **Example:** Assess the readiness of information technology (IT) systems, security protocols, and passenger processing procedures.
  - **Data**: Gather data on current operational performance, incident reports, and system reliability.
- **Stakeholder Identification:** Identify all relevant stakeholders and their roles in the renewal and ORAT process.
  - **Example:** List stakeholders such as airport management, airlines, ground handling services, and regulatory bodies.
  - **Data:** Create a stakeholder matrix detailing roles, responsibilities, and communication channels.
- **Plan Development:** Develop a comprehensive ORAT plan that aligns with the asset renewal strategy.
  - **Example:** Create a detailed project plan with timelines, resource allocation, and milestones.
  - **Data:** Use project management tools to track progress and adjust plans as needed.

3.2 Stakeholder Engagement

- **Communication Plan:** Develop a communication plan to keep stakeholders informed and engaged throughout the process.
  - **Example:** Schedule regular meetings, updates, and briefings for all stakeholders.
  - **Data:** Use communication platforms to disseminate information and gather feedback.
- **Workshops and Training:** Conduct workshops and training sessions for stakeholders to ensure understanding and readiness.
  - **Example:** Organize training sessions on new systems, processes, and safety protocols.
  - **Data:** Track attendance, participation, and feedback from training sessions.
- **Feedback Mechanisms:** Establish mechanisms for stakeholders to provide feedback and suggestions.
  - **Example:** Implement surveys, suggestion boxes, and feedback forms.
  - **Data:** Analyze feedback data to identify areas for improvement and adjust plans accordingly.

3.3 Familiarization, Induction, and Training

- **Training Programs:** Develop training programs tailored to the needs of airport staff and stakeholders.
  - **Example:** Create training modules on new technologies, customer service, and emergency procedures.
  - **Data:** Use training management systems to track progress and assess competency.
- **Simulation Exercises:** Conduct simulation exercises to test operational readiness and identify potential issues.
  - **Example:** Simulate emergency scenarios, passenger processing, and baggage handling operations.

  - **Data:** Collect data on performance, response times, and areas for improvement.
- **Performance Evaluation:** Evaluate the performance of staff and stakeholders during training and simulations.
  - **Example:** Use performance metrics to assess readiness and identify additional training needs.
  - **Data:** Analyze performance data to ensure readiness and address any gaps.

3.4 Operational Readiness

- **System Testing:** Test all systems and processes to ensure operational readiness.
  - **Example:** Conduct end-to-end testing of IT systems, security protocols, and passenger processing procedures.
  - **Data:** Gather test results, identify issues, and implement corrective actions.
- **Trial Operations:** Conduct trial operations to identify and address any issues before the official launch.
  - **Example:** Run full-scale trial operations with real passengers, baggage, and flights.
  - **Data:** Collect data on trial operations, analyze performance, and make necessary adjustments.
- **Final Readiness Check:** Conduct a final readiness check before the official launch.
  - **Example:** Perform a comprehensive review of all systems, processes, and personnel readiness.
  - **Data:** Use checklists, performance metrics, and stakeholder feedback to ensure readiness.

3.5 Trials

- **Pilot Testing:** Conduct pilot testing of new systems and processes to identify potential issues.
  - **Example:** Test new IT systems, security protocols, and passenger processing procedures.
  - **Data:** Collect pilot test data, analyze results, and implement corrective actions.
- **Full-Scale Trials:** Conduct full-scale trials to ensure operational readiness.
  - **Example:** Run full-scale trials with real passengers, baggage, and flights.
  - **Data:** Collect trial data, analyze performance, and make necessary adjustments.
- **Issue Resolution:** Address any issues identified during testing and trials.
  - **Example:** Implement corrective actions and retest systems and processes.
  - **Data:** Track issue resolution and verify readiness.

Implementation Strategy

ORAT in Asset Renewal Programs

Initial Assessment and Planning

- Operational Readiness Assessment
- Stakeholder Identification
- ORAT Plan Development

Stakeholder Engagement

- Communication Plan
- Workshops and Training
- Feedback Mechanisms

Familiarization, Induction, and Training

- Training Programs
- Simulation Exercises
- Performance Evaluation

Operational Readiness

- System Testing
- Trial Operations
- Final Readiness Check

Trials

- Pilot Testing
- Full-Scale Trials
- Issue Resolution

Jacobs

4. Case Studies and Examples

4.1 Successful Implementation in Major Airports

- **Case Study 1: Heathrow Airport**
  - **Background and Objectives:** Heathrow Airport undertook a major asset renewal program to modernize Terminal 2.
  - **Implementation Strategy:** The ORAT team developed a detailed plan, engaged stakeholders, conducted extensive training, and performed rigorous testing.
  - **Outcomes and Lessons Learned:** The terminal opened smoothly with minimal disruptions, highlighting the importance of thorough planning and stakeholder engagement.
- **Case Study 2: Changi Airport**
  - **Background and Objectives:** Changi Airport's Terminal 4 renewal aimed to enhance passenger experience with advanced technologies.
  - **Implementation Strategy:** The ORAT team focused on integrating new technologies, training staff, and conducting multiple trial runs.
  - **Outcomes and Lessons Learned:** The successful launch demonstrated the benefits of leveraging technology and continuous testing.
- **Case Study 3: Dubai International Airport**
  - **Background and Objectives:** Dubai International Airport's Concourse D renewal aimed to increase capacity and improve operational efficiency.
  - **Implementation Strategy:** The ORAT team implemented a phased approach, engaging stakeholders, and conducting comprehensive training.
  - **Outcomes and Lessons Learned:** The phased approach minimized disruptions and ensured a smooth transition, underscoring the importance of flexibility and adaptability.

4.2 Lessons Learned

Early and continuous stakeholder engagement is essential, involving stakeholders from the outset and maintaining open communication throughout the process. Thorough training and realistic simulation exercises are critical to ensuring readiness, while leveraging advanced technologies and data analytics can significantly enhance efficiency and effectiveness. Additionally, flexibility and adaptability are key, as being prepared to adjust plans and strategies based on real-time feedback and changing circumstances is crucial for success.

4.3 Best Practices

Developing a detailed ORAT plan requires a comprehensive strategy that includes clear timelines, defined responsibilities, and specific milestones. It is crucial to engage stakeholders early and maintain open communication and collaboration throughout the process. Investing in training and development, including extensive training and simulation exercises, ensures operational readiness. Additionally, leveraging advanced technologies and data analytics enhances efficiency and optimizes processes. Continuous monitoring and evaluation of progress, coupled with gathering feedback and making necessary adjustments, are essential for the ongoing success of the ORAT plan.

5. Measuring Success and Continuous Improvement

5.1 Key Performance Indicators (KPIs)

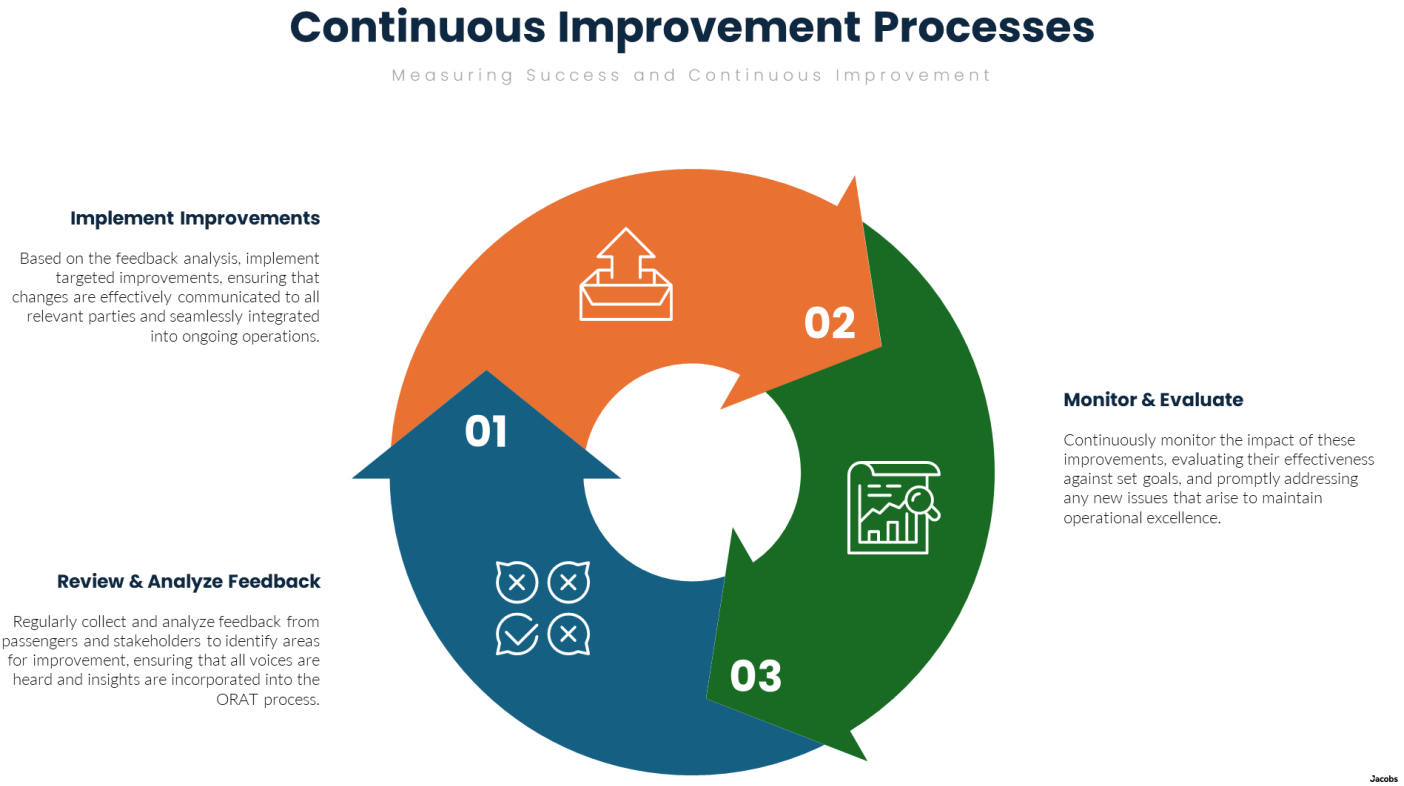
- **Safety and Security:** Metrics such as incident rates, compliance with safety regulations, and security breaches.
- **Passenger Satisfaction:** Metrics such as passenger feedback, satisfaction scores, and Net Promoter Scores (NPSs).

5.2 Feedback Mechanisms

- **Surveys:** Administer surveys to collect input from passengers and stakeholders on a range of issues.
- **Focus Groups:** Conduct focus groups to gather in-depth feedback from specific stakeholder groups.
- **Feedback Forms:** Provide feedback forms for passengers and stakeholders to submit their feedback and suggestions.

5.3 Continuous Improvement Processes

- **Review and Analyze Feedback:** Regularly review and analyze feedback from passengers and stakeholders to identify areas for improvement.
- **Implement Improvements:** Implement improvements based on feedback and analysis, ensuring that changes are effectively communicated and executed.
- **Monitor and Evaluate:** Continuously monitor and evaluate the impact of improvements to ensure that goals are met and new issues are promptly addressed.



6. Risk Management and Mitigation

- **Identifying Potential Risks**
  - **Operational Risks:** Risks related to operational disruptions, system failures, and process inefficiencies.
  - **Example:** Identify potential disruptions to baggage handling, passenger processing, and flight operations.
  - **Data:** Use historical incident data, expert assessments, and scenario analysis to identify risks.
- **Safety Risks:** Risks related to safety incidents, security breaches, and non-compliance with safety regulations.
  - **Example:** Assess risks related to fire safety, emergency procedures, and security protocols.
  - **Data:** Use safety incident reports, compliance audits, and risk assessments to identify safety risks.
- **Financial Risks:** Risks related to budget overruns, funding shortfalls, and financial constraints.
  - **Example:** Identify risks related to project budgeting, funding sources, and financial management.
  - **Data:** Use financial projections, budget reports, and funding assessments to identify financial risks.
- **Stakeholder Risks:** Risks related to stakeholder engagement, communication breakdowns, and resistance to change.
  - **Example:** Assess risks related to stakeholder communication, collaboration, and support.
  - **Data:** Use stakeholder analysis, feedback data, and communication audits to identify stakeholder risks.
- **Mitigation Strategies**
  - **Risk Assessment:** Conduct a thorough risk assessment to identify and prioritize potential risks.
  - **Mitigation Planning:** Develop mitigation plans for identified risks, outlining specific actions and responsibilities.
  - **Implementation:** Implement mitigation plans and monitor their effectiveness, adjusting as needed.

6.1 Contingency Planning

- **Develop Contingency Plans**: Develop contingency plans for potential risks, outlining alternative actions and procedures.
  - **Example:** Heathrow Airport developed contingency plans for emergency situations and operational disruptions during the Terminal 2 renewal.
  - **Data:** Use scenario planning and risk analysis to create contingency plans.
- **Regularly Review and Update:** Regularly review and update contingency plans to ensure they remain relevant and effective.
  - **Example:** Changi Airport regularly reviewed and updated contingency plans based on feedback and operational changes during the Terminal 4 renewal.
  - **Data:** Use feedback data and scenario analysis to keep contingency plans up to date.
- **Conduct Drills and Exercises:** Conduct drills and exercises to test contingency plans and ensure readiness.

- **Example:** Dubai International Airport conducted emergency drills and operational exercises to test contingency plans during the Concourse D renewal.
- **Data:** Use drill and exercise data to identify gaps and improve contingency plans.

7. Conclusion

7.1 Summary of Key Points

ORAT is essential for ensuring operational readiness and minimizing disruptions during asset renewal. Effective stakeholder engagement, training, and technological tools are crucial for successful implementation. Real-world examples and case studies provide valuable insights and best practices. Continuous improvement and risk management are integral to the long-term success of asset renewal programs.

7.2 Outlook and Final Thoughts

ORAT is already an accepted and essential part of airport modernization and expansion throughout the world. Airports are increasingly addressing existing dated infrastructure not included in these projects under defined asset renewal programs. Incorporating ORAT in these asset renewal initiatives is anticipated to gain greater significance in the years ahead. Technological advancements and data analytics are set to further boost the efficiency and effectiveness of ORAT procedures in these applications.

To seamlessly incorporate ORAT into an Asset Renewal Program, thorough planning, strong stakeholder collaboration, comprehensive training, and ongoing refinement are essential. By implementing the strategies and best practices detailed in this white paper, airport operators can facilitate a smooth transition for their facilities, maintaining operational efficiency and boosting passenger satisfaction. We urge all airport operators to perform a readiness assessment and integrate the recommended best practices from this white paper into their future projects to achieve a successful and seamless transition.