



## County of Orange

### **Assessment Tax System (ATS) Re-Engineering Project Independent Verification and Validation**

Final Assessment Report –  
**FINAL 1.0**

August 7, 2009

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## EXECUTIVE SUMMARY

In February 2009, the County of Orange, County Executive Office/Information Technology (CEO/IT) contracted with Eclipse Solutions to provide Independent Verification and Validation (IV&V) services for the Assessment Tax System (ATS) Re-Engineering Project.

The Eclipse IV&V team was initially tasked with performing a health assessment of the ATS Re-Engineering Project, beginning on March 4, 2009. The purpose of the assessment was to determine if there was evidence that the ATS Re-Engineering Project was on a reasonable course meet stated objectives. The objectives of the ATS Re-Engineering Project have been defined in the ATS Re-Engineering Project Charter and Project Plan:

- 1) Re-Engineer the existing legacy mainframe functionality and re-host to a Client Server platform using Microsoft .NET technology.
- 2) Implement a new ATS that is modular in design, process-oriented, provides interfaces between systems, and provides a more simplified single point-of-access for property information.
- 3) Transition the Assessor Department users to the new version of the ATS with minimal impact to staff productivity.
- 4) Implement revised workflow and procedures required to facilitate the new ATS and provide direct user training and interaction with system and documentation.
- 5) Provide a functional, adaptable, maintainable, reliable, and scalable foundation upon which to support further assessment and valuation requirements and automation opportunities.
- 6) Produce the Year 2009 Assessor Roll(s) using this new system.

The Eclipse IV&V team executed a four step process to complete the project health assessment and to provide feedback to the Assessor, CEO/IT, and other stakeholders. The four steps of the process were **Discovery, Research & Analysis, Clarification, and Documentation**. The process planned by the IV&V team was to:

- Assess the level of project documentation;
- Interview personnel from the Assessor Department, ATS Re-Engineering Project, and the CEO/IT Data Center;
- Assess the responses from the survey distributed to ATS project personnel;
- Validate the proposed project methodology;
- Identify potential risks; and
- Present findings.

Following completion of the project health assessment, the Eclipse IV&V team determined that in regard to ATS Re-Engineering Project performance to-date compared to the stated objectives:

- 1) The ATS Re-Engineering Project is on course to re-engineer the existing legacy mainframe functionality and re-host to a Client Server platform using Microsoft .NET technology.
- 2) The ATS Re-Engineering Project is currently on course to implement a new ATS that is modular in design, process-oriented, provides interfaces between systems, and provides a more simplified single point-of-access for property information. The project must still face and overcome significant challenges to the successful development of interfaces from new ATS to the legacy ATS and new Property Tax Management System (PTMS).
- 3) The ATS Re-Engineering Project is on course to transition the Assessor Department users to the new version of the ATS with minimal impact to staff productivity.
- 4) The ATS Re-Engineering Project is on course to implement revised workflow and procedures required to facilitate the new ATS and provide direct user training and interaction with system and documentation.
- 5) The ATS Re-Engineering Project is on course to provide a functional, adaptable, maintainable, reliable, and scalable foundation upon which to support further assessment and valuation requirements and automation opportunities. The project must still complete definition, procurement, installation, and testing of the final ATS production environment.
- 6) The ATS Re-Engineering Project is not on course to produce the Year 2009 Assessor Roll(s) using this new system. The Eclipse IV&V team understands the current project schedule to include the following milestones:
  - Unsecured sub-system installed on the preliminary production environment – July 2009
  - Roll production on legacy ATS – July 2009
  - Unsecured sub-system parallel processing on legacy and new ATS – July 2009 to June 2010
  - Secured sub-system installed on the final production environment – July 2010
  - Roll production on legacy ATS – July 2010
  - Parallel Unsecured and Secured sub-systems processing on legacy and new ATS – July to December 2010
  - Assessor Department operations cutover to new ATS and end of parallel processing – January 2011 (lien day)
  - Roll production on new ATS – July 2011

Overall, the Eclipse IV&V team concluded, through the interviews with the Assessor Department personnel and CEO/IT staff that it appears that the ATS Re-Engineering Project is currently functioning and moving forward to create a new ATS application. That opinion has not changed since the original assessment. Although the project is not following a generally accepted development methodology the users are pleased with the new ATS application and the functionality is present to support Unsecured activity.

In summary some of the original general findings of the Eclipse IV&V team based on the interviews with ATS Re-Engineering Project and CEO/IT staff were:

- 1) Use of non-traditional, less structured approaches to software development and project management appears to be effective for the Assessor Department and ATS Re-Engineering Project team but creates difficulties in communications and interactions with external parties, such as CEO/IT and the PTMS Project. The project has limited emphasis on documentation. This has allowed their operations to be lean but at the same time raised reasonable concerns about project status and product quality.
- 2) Project scope is managed and has remained consistent since project initiation. This is done by the Assessor who is very hands-on with this project and who is the final decision maker regarding additional functionality.
- 3) Project schedule milestones appear to have shifted multiple times since project initiation. The project continues to move toward a successful completion but it is significantly delayed from the original plan. That is, what defines the July 1, 2009 ATS “go live” is different today than what was defined at project initiation and in later reports. Challenges remain that could result in further project delays. Key challenges remaining include:
  - Conducting formal user acceptance testing
  - Conducting infrastructure performance and stress testing
  - Developing technical interfaces to legacy ATS and new PTMS
  - Implementing a complete technical solution at the CEO/IT Data Center. Finalizing the data center requirements for hardware configuration (this could change since there is some latitude in choosing hardware and the technologies are constantly changing i.e., having redundancy within the servers)
  - Preparing documentation to support maintenance and operations of ATS in production.
- 4) Project budget requires closer scrutiny. Contractor hours/costs are closely tracked, but the project's overall actual to-date and future estimated costs (including costs for Assessor staff, hardware/software purchases, and CEO/IT data center services) to the County are not clear. The current budget has been accepted by the Assessor, but the concern that delays to development due to the budget not being approved could cause additional costs to be incurred.

The Eclipse IV&V team, through interviews with ATS Re-Engineering Project team and CEO/IT staff, through meetings with the project development staff, and through review of documentation, believes that while the project has suffered from some controlled scope creep, schedule slippage and budget shortfalls, there is great confidence that a new ATS can be successfully delivered. The Assessor Department and ATS Re-Engineering Project development team are very aware of the task and have proven capable of completing it. Since the current ATS is based on older technologies, hardware, and code that will not be supported in the near future it is imperative that a new system be developed to perform the assessment functions. Additionally, the workforce is changing and newer technologies provide enhancements and capabilities that will be utilized to aid the Assessor Department in producing accurate assessment rolls.

At the time of the Schedule and Budget Assessment Interim Report delivery the following ATS Re-Engineering Project progress achievements and estimates were noted (Table 1 - ATS Achievements and Estimates).

**Table 1 - ATS Achievements and Estimates**

ATS Re-Engineering Project Phase 9 of 14 planned phases was in progress.
The total number of planned phases was adjusted from 10 to 14 in July 2008
The Phase 14 milestone is completion of the consolidated ATS (Unsecured & Secured) cutover from the legacy mainframe prior to the January 2011 Lien date.
The completion of the Phase 14 milestone will enable the Assessment Roll to be produced during July 2011 in the new ATS Re-Engineering environment.
The estimated total number of ACS contract services hours for development of the new ATS has remained steady at approximately 165,000 hours since January 2008.
The estimated total project cost (all contract services hours, hardware/software, & training) has remained steady at approximately \$19 million since January 2008*
Approximately 115,000, or 70% of the total estimated ACS contract services hours have been expended.

\* In addition to the \$19 million, the current project budget includes \$1 million of contingency funding to cover unanticipated cost overruns and/or expenses.

Since the time of completion of the Schedule and Budget Assessment, the Unsecured functionality has been promoted to a near “live” platform (or near-production). Given the demonstrated ability of the ATS Re-Engineering Project team to deliver functionality, the IV&V team believes it is reasonable to expect that the ATS software development (Unsecured and Secured functionality) will be completed in line with current schedule and budget plans.

In regard to infrastructure, it appears sufficient to support the entire project and produce accurate assessment rolls. At this time, however, the hardware does not

have the redundancy needed to assure that the system has adequate up-time. Additionally, the open systems platform that will be used for the new ATS project is new to the Orange County Data Center which poses some risk to the project. The Assessor Department has stated that analysis into a new platform is underway and that the project may benefit by procuring servers with additional capability nearer the true production go-live date.

Following the ATS Re-Engineering Project Health Assessment the Assessor Department continued to provide information to the Eclipse IV&V team to assist in an understanding of the communication, documentation, and progress being made to support the project. A large number of documents were provided and presented by the Assessor Department that substantiate the position that communication is being made to stakeholders and others involved in the implementation of the ATS and PTMS projects.

While not all of the previous recommendations made by the Eclipse IV&V team have been fully implemented by the ATS Re-Engineering Project, positive progress has been observed that demonstrates the willingness of the Assessor Department to provide pertinent information to stakeholders and interested agencies and personnel.

In summary, it is the opinion of the Eclipse IV&V team that without unexpected impedances the Assessor Department and the ATS Re-Engineering Project team will be successful in meeting budget and schedule expectations, and delivering a new ATS application (both Secured and Unsecured) that will meet the user's needs in producing accurate Assessment Rolls.

## 1. INTRODUCTION

The purpose of this report is to present the final findings and recommendations of the Eclipse Solutions IV&V team regarding the Assessment Tax System (ATS) Re-Engineering Project. Since the inception of effort in March 2009, the Eclipse IV&V team has performed an ATS Re-Engineering Project Health Assessment, a subsequent Schedule and Budget Assessment, and has continued to interact with the CEO/IT and Assessor Department and monitor ongoing ATS Re-Engineering Project activity leading up to delivery of this Final Assessment Report.

This report is comprised of the following sections:

- **Section 1, Introduction**, states the purpose and goal of the Final Assessment Report and provides an overview of the reports contents.
- **Section 2, IV&V Engagement Historical Summary**, provides a brief description of the historical efforts made by the Eclipse IV&V team in assessing the ATS Re-Engineering Project.
- **Section 3, Overall Project Status Assessment**, contains the overall project status and Eclipse IV&V team assessment for the ATS Re-Engineering Project.
- **Section 4, Project Risks**, defines risks associated with the findings identified in the Final Assessment Report.

**1.1 STATEMENT OF INDEPENDENCE**

Eclipse Solutions and Public Consulting Group (PCG) are independent from the Orange County Assessor Department and the County Executive Office, Information Technology (CEO/IT) technically, managerially, and financially as specified in *IEEE 1012-1998* Annex C.

The IV&V environment in Orange County was organized so that IV&V staff members were not subjected to undue pressure or inducement that might influence judgment, or the results or quality of work.

**1.2 TABLE OF ACRONYMS**

The acronyms provided in Table 2 - Acronyms will be used throughout the document.

**Table 2 - Acronyms**

<b>Acronym</b>	<b>Definition</b>
ATS	Assessment Tax System
BPS	Business Property Statements
CEO/IT	County Executive Office/Information Technology
COB	Clerk of the Board
FTE	Full Time Equivalent
FY	Fiscal Year
IEEE	Institute of Electrical and Electronics Engineers
IV&V	Independent Verification and Validation
OC	Orange County
PM	Project Manager
PMO	Program Manager Office
POC	Point of Contact
PTMS	Property Tax Management System
SME	Subject Matter Expert
SOW	Statement of Work
UAT	User Acceptance Testing
UC	Use Case
WBS	Work Breakdown Structure

## **2. IV&V ENGAGEMENT HISTORICAL SUMMARY**

### ***2.1 PURPOSE***

This section provides a brief description of the historical and recent efforts made by the Eclipse IV&V team in assessing the ATS Re-Engineering Project. Key objectives of the Final Assessment Report are to re-assess whether recommendations made previously by the IV&V team were successfully completed and to re-assess the Assessor Department's probability to provide a re-engineered ATS within the time and budget provided.

Earlier during this engagement the Eclipse IV&V team delivered two reports:

- ATS Re-Engineering Project Health Assessment Report – April 28, 2009
- ATS Re-Engineering Project Schedule and Budget Assessment Interim Report - June 5, 2009

### ***2.2 ORIGINAL ATS PROJECT HEALTH ASSESSMENT REPORT***

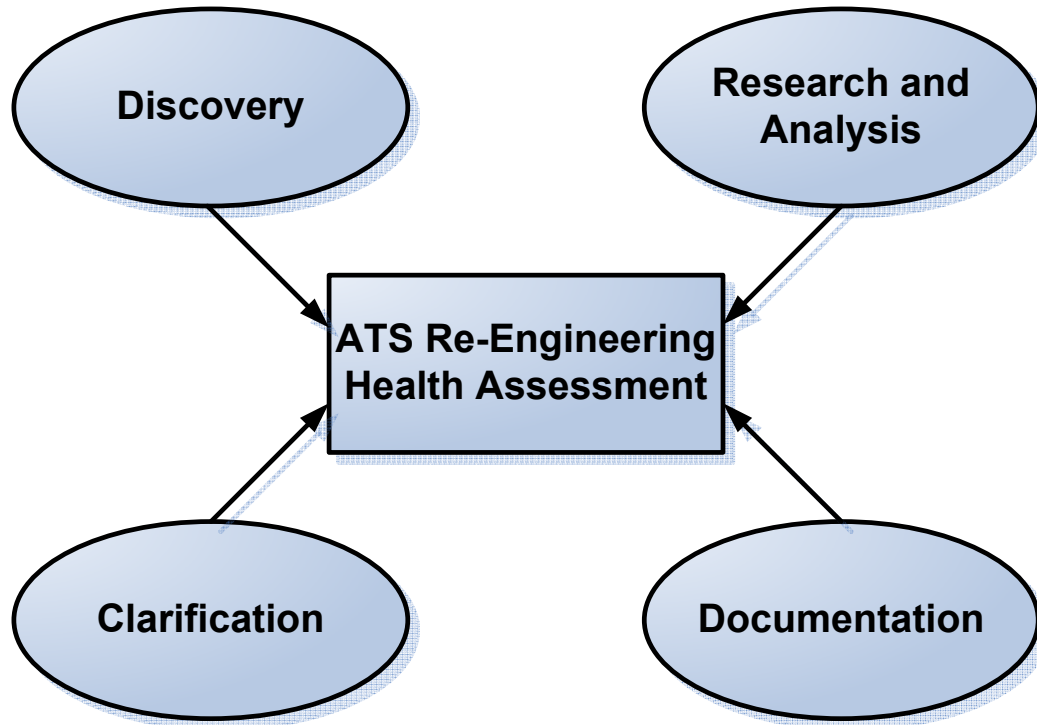
This section briefly describes the methodology employed during the Eclipse IV&V team's health assessment of the ATS Re-Engineering Project. This assessment was based on the existence of key document deliverables and interviews with personnel involved in the re-engineering effort from the Assessor Department and the CEO/IT staff.

The process followed in developing the ATS Re-Engineering Project Health Assessment Report was to:

- Determine whether the level of documentation existed to support the development and implementation of the ATS Re-Engineering Project;
- Interviewing of personnel from the Assessor Department, the development vendor (ACS, ARK, etc.), and the CEO/IT to assess the level of understanding, communication, tools, methodologies, processes, documentation associated with the ATS Re-Engineering Project;
- Validate that proposed methodology was sound and technically feasible, providing technical assessment of the given solution;
- Identification of potential risks identified during the ATS Re-Engineering Project health assessment effort; and,
- Presentation of findings based on the initial health assessment of the ATS Re-Engineering Project.

The Eclipse IV&V team proposed a 4-Step process (see Figure 1 - Assessment activities for ATS Project Health) to assess the health of the ATS Re-Engineering Project. Given the time-frame available to complete the assessment it was understood that only a high-level analysis of the project was expected be completed

and presented. The steps followed by the Eclipse IV&V team were **Discovery, Research and Analysis, Clarification, and Documentation.**



**Figure 1 - Assessment activities for ATS Project Health**

During **Discovery** the Eclipse IV&V team requested deliverable and work product documentation used to support the ATS Re-Engineering Project. After receiving access to project documentation the Eclipse IV&V team verified that the expected documentation existed. A cursory assessment of the form of the documentation was then completed. Finally, the documentation content was reviewed in a limited capacity due to the time constraints of the effort.

- The Eclipse IV&V team requested deliverable and work product documentation used to support the ATS Project
  - IV&V Statement of Work
  - ATS Project Plan
  - ATS Project Self Assessment Document
- The Eclipse IV&V team verified that the expected documentation existed
- The Eclipse IV&V team performed cursory assessment of the form of the documentation
- Due to time constraints, documentation content reviews were limited during the Project Health Check Assessment period

The **Research and Analysis** process included a determination of accessibility and method of collecting data from ATS personnel. Face-to-face interviews were scheduled with 37 individuals from Assessor Department staff, ACS staff, ARK staff, and CEO/IT staff. A short questionnaire was prepared and distributed and collected from 48 additional Assessor Department staff, and ACS staff members.

- The Eclipse IV&V team performed 37 face-to-face interviews
  - Assessor Department SMEs
  - ATS Project staff (County and contractor)
  - CEO/IT Data Center staff
- The Eclipse IV&V team prepared and collected 48 short questionnaires
  - Assessor Department SMEs
  - ATS Project staff (County and contractor)
- The Eclipse IV&V team compiled and interpreted interview / questionnaire results

**Clarification** to determine the ATS Re-Engineering Project health based on those findings followed. Results of the interviews and responses to the questionnaire were then compiled. The interview responses were then interpreted by the Eclipse IV&V team based on an independent assessment of answers to each question and trending of those responses. The numeric responses to the questionnaires were then compiled and statistical metrics (Average Mean, Median, and Mode) calculated. Graphs were prepared for each of the 45 questions showing scatter plot data. Trends in the data and grouping of ratings were analyzed and, when possible, interpretation of the results noted. The ultimate goal of the presentation of the analysis of the survey and questionnaire were to:

- Determine initial Project Health Assessment findings and risks
- Provide an opportunity by the Assessor Department for clarification of findings and risks
- If necessary, apply changes to the Project Health Assessment findings and risks based on clarification

Finally, all results of **Documentation** review, interviews, and questionnaires were documented in spreadsheets and presented in the Project Health Assessment Report. Delivery and presentation of the Project Health Assessment Report to key stakeholders completed this task. The purpose of this report was to:

- Document results of deliverable and work product reviews, face-to-face interviews, and short questionnaires
- Prepare the **DRAFT** Project Health Assessment Report
- Focus on key project performance categories:
  - Scope, Schedule, Cost, Risk, Quality, Business, Technical

- Provide overall assessment of project status
- Deliver and present Project Health Assessment Report to key stakeholders
- Answer the following question:
  - Is the project on a reasonable course to meet stated objectives?

### ***2.3 PROJECT SCHEDULE AND BUDGET ASSESSMENT – INTERIM REPORT***

In addition to the ATS Re-Engineering Project Health Assessment the Eclipse IV&V team also provided an interim report that provided an assessment of the project budget and schedule. The details are summarized below.

#### **2.3.1. BACKGROUND AND ASSUMPTIONS**

Following delivery of the Project Health Assessment Report, the Eclipse IV&V team was requested to perform a more detailed assessment of the ATS Re-Engineering Project's current schedule and budget estimates. This assessment was requested as information in support of FY 2009-10 budget hearings to occur in June.

A primary assumption of the Eclipse IV&V team was that detailed information to support the assessment would be readily available and promptly shared by the Assessor Department with the Eclipse IV&V team.

In the report, the Eclipse IV&V team noted that the general principles affecting or influencing any project's schedule and budget estimations include:

- Project schedule estimation is difficult due to the volume of unknown factors. Estimation is more accurate when there is legacy system knowledge and/or experience is gained over the course of the project. Initial estimates are often very inaccurate.
- Project schedule estimates are more accurate when objective criteria is used (e.g., legacy system lines of code, function points). If schedule estimates are consistently inaccurate, the estimate criteria must be changed.
- Project estimates must be refined after each phase or milestone is completed
- Once there is a significant schedule slippage, projects rarely catch up without a reduction in functional scope
- Project work and costs typically expand until budgeted contingency time and funding is used; i.e., projects with excessive contingency time and funding are usually less efficient

#### **2.3.2. ASSESSMENT OBJECTIVES**

The objectives of the Eclipse IV&V team assessment of the ATS Re-Engineering Project schedule and budget were to:

- Review the project schedule and budget estimation methodology

- ***What is their process and procedures for developing estimates?***
- Validate current project schedule and budget estimates
  - ***Are they following their process and procedures?***
- Determine reasonableness of current estimates
  - ***Is their process rational?***
  - ***Do the current estimates appear accurate based on historical project performance?***
- Provide independent assessment of current estimates
  - ***How probable is it that the project will complete within range of the current estimates?***

### **2.3.3. SCHEDULE AND BUDGET ESTIMATION METHODOLOGY**

The Eclipse IV&V team determined that a combination of objective and subjective criteria was being applied by the Assessor Department when developing contract services hour estimates for each unique ATS software module. The following criteria were taken into account by the Assessor Department regarding schedule and budget estimation:

- **Level of complexity**
  - Update or Inquiry requirements
  - Number of database calls
  - Number of database tables accessed
  - Number and complexity of algorithms to be developed
  - Number of related programs/lines of code/etc. in legacy system
- **Level of certainty**
  - Subject Matter Expert (SME) knowledge of functional requirements/business rules in legacy system improves confidence.
  - New or legal-based functionality will generally require more effort.
  - Secured design & development work will generally require less effort since completed Unsecured work can be leveraged.
- Multiple modules were logically grouped into a discrete phase that could be accomplished during a 17-week period based on projected resource (staff & funding) availability.
- The scope of each unique phase could be impacted by the amount of funding available to support staffing needs.
- The overall project schedule could slip as a result of insufficient or deferred funding.

- The overall project schedule has dependency on the Assessor Department's annual business cycle.
  - Lien date (January)
  - Roll production (July)
- Due to the dependency on the Assessor Department's annual business cycle, a moderate project schedule slippage may result in a one-year implementation delay.

#### **2.3.4. INTERIM SCHEDULE AND BUDGET ESTIMATES**

At the time of the Schedule and Budget Assessment Interim Report delivery the following ATS Re-Engineering Project progress achievements and estimates were noted:

- ATS Re-Engineering Project Phase 9 of 14 planned phases was in progress.
- The total number of planned phases was adjusted from 10 to 14 in July 2008
- The Phase 14 milestone is completion of the consolidated ATS (Unsecured & Secured) cutover from the legacy mainframe prior to the January 2011 Lien date.
- The completion of the Phase 14 milestone will enable the Assessment Roll to be produced during July 2011 in the ATS Re-Engineering environment.
- The estimated total number of ACS contract services hours has remained steady at approximately 165,000 hours since January 2008\*.
- The estimated total project cost (all contract services hours, hardware/software, & training) has remained steady at approximately \$19 million since January 2008\*
- Approximately 115,000, or 70% of the total estimated ACS contract services hours have been expended.

#### **2.3.5. SUGGESTED LIST OF MAJOR MILESTONES FOR FUTURE ATS RE-ENGINEERING PROJECT REPORTING**

In the report, the Eclipse IV&V team presented the following table (Table 3 - Major Milestones for Future Project Reporting) detailing the estimated remaining major milestone dates for the ATS Re-Engineering project at the time that the Schedule and Budget Assessment was performed.

**Table 3 - Major Milestones for Future Project Reporting**

<b>Major Milestone</b>	<b>Phase Associated</b>	<b>Date Estimated</b>
Unsecured Sub-Systems deployed on Pre-Production Environment for Testing/Parallel Processing	Phase 9	July 2009
Secured Sub-Systems Release 1 (functional scope frozen for associated modules)	Phase 9	July 2009
Unsecured Sub-Systems User Acceptance Testing (UAT) Complete	Phase 10	November 2009
Secured Sub-Systems Release 2 (functional scope frozen for associated modules)	Phase 11	March 2010
Final Production Environment Installation	n/a	Spring 2010
Secured Sub-Systems Release 3 (functional scope frozen for associated modules)	Phase 12	July 2010
Consolidated ATS (Unsecured & Secured) deployed on Final Production Environment for Testing/Parallel Processing	Phase 12	July 2010
PTMS Interface(s) Implementation	n/a	2010
ATS Production Go-Live / Mainframe Cutover Completed	Phase 14	January 2011
Consolidated Roll Production in new ATS Environment	n/a	July 2011

### 3. OVERALL PROJECT STATUS ASSESSMENT

#### *3.1 ORIGINAL ATS PROJECT HEALTH ASSESSMENT GENERAL FINDINGS*

It is still the opinion of the Eclipse IV&V team that the ATS Re-Engineering project is functioning and moving forward to create a new ATS application within the budget and schedule estimates currently in place. The structure of a generally accepted development lifecycle (waterfall, iterative incremental, agile etc.) is not being followed, but based on testing to-date the application being built is clearly acceptable to users and the functionality is present to support Unsecured activity. The Eclipse IV&V team expects this to continue to be effective for the development of the Secured functionality. There is still concern that if the project were to suffer an extended delay or deferment, that the current project team would be disbanded. Any attempt to later re-establish a team to complete development of the new ATS system would be very expensive and time consuming due to the requirement for retraining and reeducation of both Assessor and contractor staff.

Some of the general findings of the Eclipse IV&V team based on the interviews with ATS, ACS, ARK, and CEO/IT staff were:

1. Use of non-traditional, less structured approaches to software development and project management appears to be effective for the Assessor Department and ATS Re-Engineering Project Team but creates difficulties in communications and interactions with external parties, such as CEO/IT and the PTMS Project. The project has limited emphasis on documentation. This has allowed their operations to be lean but at the same time raised concerns about project status and product quality. Note: This concern still remains, but through the ongoing efforts of the team it appears that the “paper-light” approach works for this team and the maintenance and operations is expected to be successful since there is adoption and current use by users.
2. Project scope is managed and has remained consistent since project initiation. Note: The Assessor is very involved in every aspect of this project and is instrumental in risk management, limiting scope creep, project estimations (cost and schedule).
3. Project schedule milestones appear to have shifted multiple times since project initiation. The project continues to move toward a successful completion but it is significantly delayed from the original plan. That is, what defined the July 1, 2009 ATS “go live” changed significantly from what was defined at project initiation and in later reports. Challenges remain that could result in further project delays. Key challenges remaining include:
  - Conducting formal user acceptance testing
  - Conducting infrastructure performance and stress testing
  - Developing technical interfaces to legacy ATS and new PTMS

- Implementing a complete technical solution at the CEO/IT Data Center
  - Preparing documentation to support maintenance and operations of ATS in production.
4. Project budget requires closer scrutiny. Contractor hours/costs are closely tracked, but the project's overall actual to-date and future estimated costs (including costs for Assessor staff, hardware/software purchases, and CEO/IT data center services) to the County are not clear.
  5. The project appears on course to deliver application functionality that will meet the business needs of the Assessor Department in the timeframe currently estimated.

### **3.1.1. INITIAL IV&V RECOMMENDATIONS FOR THE ATS RE-ENGINEERING PROJECT**

During the initial health assessment the Eclipse IV&V team recommended the following actions be taken to help ensure all involved organizations are as fully versed in the state of the ATS Re-Engineering Project as possible. It is understood that while the ATS Re-Engineering Project does not follow a standard Software Development Lifecycle (SDLC), it has adopted a modified Agile approach (design/build) to development that is proving to be effective in meeting the user needs. It has also been recognized that there is a significant lack of documentation regarding requirements, traceability, unit testing, and project plans. In order to effectively support Maintenance and Operations of the application some effort must be made to produce a minimum amount of documentation that identifies more fully those areas. There is evidence that the traceability of requirements is being kept by the project and if utilized fully will relate the project progress and the ability of the new ATS to meet the requirements as defined.

Following (Table 4 - Recommended Actions and Response) are specific actions that were recommended by the Eclipse IV&V team. The Assessor Department responded to the Eclipse IV&V team recommendations in a June 4, 2009 memorandum to the Board of Supervisors.

**Table 4 - Recommended Actions and Response**

Item	Eclipse IV&V Team Recommendation	Eclipse IV&V Team Rebuttal to Assessor Department Response	Additional Comments
1.	Develop and implement a formal ATS Re-Engineering Project status reporting format that will meet the needs of all County stakeholders.	The Assessor Department response focused on the volume of status reporting, while the Eclipse IV&V team recommendation addressed the usefulness of the status reporting. The Eclipse IV&V team does not recommended further increasing the Assessor Department’s administrative burden via the preparation and production of additional status reports. The Eclipse IV&V team does continue to recommend, however, that the Assessor Department consult with the primary recipients of their status reports to ensure that the information in the status reports is of maximum value and presented in a format that is clearly understood by the reader. In line with the Assessor Department’s concern, the Eclipse IV&V team believes the recommended approach will lead to concise status reports that actually reduce the Assessor Department’s administrative burden.	The Eclipse IV&V team acknowledges the Assessor Department’s efforts made at the June 18, 2009 meeting of the Property Tax Management System (PTMS) Steering Committee to improve their status reporting.

<p>2.</p>	<p>Conduct a detailed analysis of remaining key ATS Re-Engineering Project schedule risks and provide a report to the Board of Supervisors.</p>	<p>The Assessor Department response discussed risks presented by the Assessor Department in recent quarterly status update reports to the Board of Supervisors, while the Eclipse IV&amp;V team recommendation was specific to schedule risks identified throughout the Project Health Assessment Report, including:</p> <ul style="list-style-type: none"> <li>➤ Conducting formal user acceptance testing</li> <li>➤ Conducting infrastructure performance and stress testing</li> <li>➤ Developing technical interfaces to legacy ATS and new PTMS</li> <li>➤ Implementing a complete technical solution at the CEO/IT Data Center</li> <li>➤ Preparing documentation to support maintenance and operations of ATS in production.</li> </ul>	<p>These schedule risks remain open, and must be addressed by the Assessor Department in the manner originally recommended by the Eclipse IV&amp;V team.</p>
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<p>3.</p>	<p>Provide the Board of Supervisors a full report on actual costs to-date and estimated costs for the duration of the ATS Re-Engineering Project.</p>	<p>The Assessor Department response does not address all Eclipse IV&amp;V team recommended cost reporting categories. The Eclipse IV&amp;V team continues to recommend that project cost reporting be expanded to include categories for costs associated with Assessor staff and CEO/IT Data Center services so that the full and true cost of the ATS Re-Engineering Project can be determined.</p>	<p>This recommendation should be given consideration by Orange County as a standard for all information technology projects that require substantial one-time funding.</p>
<p>4.</p>	<p>Define fully the Development, Test, and Production environments, architectures and capacity plans to the CEO/IT Data Center staff, to support development, performance/stress testing, and deployment under more realistic conditions</p>	<p>The Assessor Department response to the IV&amp;V recommendation indicates that the requirements for the “final” production environment will be developed and defined between July 2009 and March 2010. The Eclipse IV&amp;V team further recommends that the Assessor Department work with the CEO/IT staff to identify specific interim milestones for delivery of these requirements as well as associated target completion dates (between July 2009 and March 2010) for the milestones.</p>	<p>The Eclipse IV&amp;V team acknowledges that on July 6, 2009 that the ATS Unsecured Sub-systems were successfully deployed to the “near-production” environment installed at the CEO/IT Data Center.</p>

### 3.2 *ATS PROJECT DOCUMENTATION AND MEETING SUPPORT*

Following the ATS Re-Engineering Project Health Assessment a number of interviews and meetings were held as well as the Assessor Department provided additional documentation to the Eclipse IV&V team for review and analysis. The documentation provided gave more evidence that the Assessor Department is communicating with stakeholders and the CEO/IT. To this point, the following table (Table 5 – Key ATS Project Documentation) presents a sampling of the key types of documents provided by the Assessor Department, the date of the particular sample, the content of the document, and notes about the usefulness and function of the document.

**Table 5 – Key ATS Project Documentation**

Item	Artifact	Date	Content	Notes
1.	ATS Re-Engineering Responsibilities Matrix	March 4, 2009	ATS Project responsibilities for Project Management, Infrastructure, Application Development, S/W Configuration Management, S/W Release Management, Reports, Performance Testing, Data Archival for Project/Transition/Ongoing Operations	Useful in providing an overview of who is responsible for what part of the project at different points in time.

2.	Test Case Status Report for Audit Test Cases	April 28, 2008 April 21, 2009	Provides Test ID, Test Case Name, Use Case #, Test Scenario, Test Status for each applicable build, and comments	Useful functional area testing status, but updates are not very frequent (nearly a year apart). This could be due to no changes in the functional area, so no retest needed. The Assessor Department has stated that test case status reports can be created on demand, and that the test case results and comments are updated continually as testing takes place.
3.	Unsecured Subsystem - Audits Existing System Summary report	August 31, 2007	Description of Audit example. Provides Existing system summary of Audits concepts and terminology, sample data, code tables, screens, navigation (at the time), major functions, major data fields, batch programs, new requirements, reference documents.	Very useful document. If prepared and updated for each functional area this could be used for maintenance and operations following deploy.
4.	Test Results matrix (audit)	April 21, 2009	Provides Use Case Requirements traceability, Property, Priority, Status, Test Case Name, Test Set, Test Status, Test Result, Comments	This traceability matrix if maintained and created for each functional area could be used to provide information regarding where the project is and how testing is progressing and trace-from and trace-to information.

5.	Attachment 1 - Progress report	October 10, 2007	Provides an overview of the status of the ATS project regarding PTMS interface, ATS existing tools, Development ground rules, Modular development approach, Lessons Learned, ATS Infrastructure, Workflow, System Security, Development focus, User Interface, Data Dictionary/Database, ATS Production Platform, Demonstration (UI) and Field Data Canvass Tool (FDC)	Useful as a way to communicate the progress of the project to interested stakeholders. Provide a platform to ask questions and get issues raised and addressed.
6.	Attachment 2 - Steering Committee Update	May 7, 2008	Slide deck providing New-ATS project update, Schedule, Planning status, ATS-IBM-PTMS interface (mainframe interface, data transfer environment, Existing interface support [data continuity]), ATS Hardware, Project Timeline	Useful for high level communication to stakeholders of schedule, plans, interfaces etc. If done on a regular basis these presentations are helpful in answering questions.

7.	Attachment 3 - Board of Supervisors Update	January 27, 2009	Slide deck providing overview, history, top 3 risks (financing, knowledge base, migration from the mainframe), risk mitigation, accomplishments (22 of 37 modules in first release), schedule/timeline, work estimates vs. actuals, Budget, completion schedule for unsecured subsystem phased development, Phase 6 estimated vs. actual development hours, Phase 7 estimated vs. actual development hours, Phase 8 estimated vs. actual development hours.	Good high level presentation to present to Board of Supervisors and relate project status.
8.	Attachment 4 - Unsecured Subsystem AUDIT Use Cases	January 4, 2007	Report providing Audit Use Case information, process, diagrams, timelines, Use Cases, terms. Use Case descriptions contain parent UCs, Child UCs, Primary actors, Secondary actors, Description, Triggers, Pre-Conditions, Post-Conditions, and User Stories.	Provides detail necessary for test case creation, UAT test cases. If provided for all functional areas this will support testing efforts.

9.	ATS Re-Engineering Unsecured Sub-Systems Design Review	March 17, 2009	This design review provided demonstration script for Unsecured Business Processing (BPS and Audit) for Initiate ATS, Regenerating BPS, Receiving BPS, Assigning BPS, Researching and Updating BPS, Performing BP Validation, New ATS User Navigation Features, Performing Roll Correction, Planning and Conducting Audits, BP Canvassing, Marine and Air.	It is unclear who the audience was, but if this was provided for stakeholders it would be useful in demonstrating BPS functionality/design. If this is provided for all functional areas the project could benefit from the cross-training and demonstration.
10.	Unsecured Sub-Systems Progress Review	January 29, 2009	Provides the overall status of the unsecured sub-systems. Contains an outline of the last 180 day finish line activities/tasks, activities trending, Completion schedule, release schedule, progress, user validation process, pending tasks, status report by module, status of database methodology for data conversion, pending tasks, critical resources, Demo.	This slide deck provides a review of what's been done, plans for remaining unsecured tasks.

11.	ATS Re-Engineering Assessor - Clerk of the Board Interface (Draft)	January 13, 2009	Provides a description of the current ATS interfaces, existing COB interface, needs and goals of the Assessor-COB interface, recommended approach for the target interface, recommended approach for the transitional interface, considerations for interface, technology considerations/assumptions, and next steps.	This presentation provides information that could be used for answering questions concerning the interface and planning for COB interface with the New ATS. If this kind of detail is provided for all interfaces it will be sufficient to communicate to stakeholders the intent, requirements, and answer questions and address concerns.
12.	ATS Re-Engineering Unsecured Roll Design Review	August 7, 2008	This design review contains a definition of the benchmark for the New ATS, upgraded functionality, a release schedule, milestones with dates, release mapping, ATS navigation, User access, Queue Security, status of unsecured database, issues and challenges, and next steps.	This design review provides detail regarding the unsecured roll functionality and use. It could be effective in keeping stakeholders updated on the progress and current state of this functionality.

13.	ATS Re-Engineering Project Overview Storybook	September 2, 2008	This storybook document provides an overall project overview with the mission statement, current state of ATS (updated), project approach, organization chart, implementation methodology, system delivery, PM approach.	This perpetual document is to be updated throughout the life of the project. If this is done it will provide an up-to-date overview that would be useful to stakeholders in understanding interfaces, the approaches used, components, security, development platform, project structure, change management process, quality management flow, issue management flow, tools available, updated delivery schedule, deliverables, overall project structure, design review schedule, project schedule, and 30-90 day project issues.
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In addition to the documentation above, the Assessor Department provided information to the Eclipse IV&V team via interviews and meetings. Following is a table (Table 6 - Interviews and Meeting Participation) of interviews conducted/meeting participated in since completion of the Project Health Assessment Report. Through these events and a number of other communications with the Eclipse IV&V team, the Assessor and Department staff have clarified their processes, actions, and development methodologies. These meetings have proven very effective in showing the Eclipse IV&V team that the project is being managed effectively.

**Table 6 - Interviews and Meeting Participation**

Item	Person/Group	Date	Topic
1.	Assessor & ATS Project Managers	June 1, 2009	ATS Schedule & Budget Assessment
2.	CEO/IT Data Center Staff	June 30, 2009	ATS Stress/Performance Testing
3.	Assessor & Department Management Team	June 30, 2009	Various ATS-related topics
4.	PTMS Project Manager, Treasure-Tax Collector (Clarissa Adriano-Ceres)	July 9, 2009	ATS-PTMS Interface

The following table (Table 7 - Documents Reviewed) provides a more comprehensive list of documents reviewed since completion of the Project Health Assessment Report. In some case the documents provided by the Assessor Department were examples and are therefore assumed to represent the actual processes and documentation being maintained across the entire project.

**Table 7 - Documents Reviewed**

Item	Title	Document Date	Date Received
1.	ATS Re-Engineering Project Board of Supervisors Quarterly Update	May 12, 2009	May 12, 2009
2.	ATS Re-Engineering Estimated Development Hours by Process	January 7, 2008	June 1, 2009
3.	ATS Re-Engineering Summary of Cost and Budget Projections	August 7, 2008	June 1, 2009
4.	ATS Re-Engineering Summary of Cost and Budget Projections	May 28, 2009	June 1, 2009
5.	ATS Re-Engineering Weekly Hour Expenditure Tracking, FY 2007-08 Actual vs Budget	May 28, 2009	June 1, 2009
6.	ATS Re-Engineering Weekly Hour Expenditure Tracking, FY 2008-09 Actual vs Budget	May 28, 2009	June 1, 2009
7.	Unsecured Sub-Systems Phased Development and Completion Phasing	May 12, 2009	June 1, 2009

8.	Secured Sub-Systems Phased Development and Completion Phasing	May 12, 2009	June 1, 2009
9.	Unsecured Roll Processing Block Diagram	May 12, 2009	June 1, 2009
10.	ATS Re-Engineering, Unsecured Subsystems Program Inventory	May 12, 2009	June 1, 2009
11.	Secured Roll Processing Block Diagram	May 12, 2009	June 1, 2009
12.	ATS Re-Engineering, Secured Sub-Systems Program Inventory Summary	May 12, 2009	June 1, 2009
13.	ATS Re-Engineering, Considerations for Applying Module Complexity, Unsecured and Secured Sub-systems	undated	June 1, 2009
14.	Secured Sub-Systems Complexity Level Assignment	undated	June 1, 2009
15.	ATS Phase 8 Schedule, version 060309	June 3, 2009	June 3, 2009
16.	ATS Phase 9 Schedule, version 060309	June 3, 2009	June 3, 2009
17.	ATS Performance Document, prepared by CEO/IT Network Platform Services	June 3, 2009	June 3, 2009
18.	ATS Phase 8 Recap, version 060309	June 3, 2009	June 4, 2009
19.	ATS Phase 9 Plan, version 060309	June 3, 2009	June 4, 2009
20.	“Recommendations in IV&V Project Health Assessment Report” memo from Assessor to Board of Supervisors	June 4, 2009	June 26, 2009
21.	Property Tax Management Systems (PTMS) Steering Committee presentation deck	May 13, 2009	June 26, 2009
22.	Property Tax Management Systems (PTMS) Steering Committee presentation deck	June 18, 2009	June 26, 2009
23.	ATS Re-Engineering Operational Readiness Workshop 1 agenda	April 17, 2009	June 29, 2009
24.	ATS Rough Order of Magnitude Production Platform Costs, prepared by CEO/IT Network Services Division	June 2006	June 30, 2009
25.	ATS Platform Document, prepared by CEO/IT Network Services Division	March 2007	June 30, 2009
26.	ATS Platform Update presentation deck, prepared by CEO/IT	undated	June 30, 2009
27.	ATS Re-Engineering, Estimated and Actual Labor Hours Tracking by Modules and Processes	June 28, 2009	June 30, 2009
28.	ACS memo – Platform System Performance Recommendations	June 28, 2009	June 30, 2009

29.	ATS Platform System Performance Recommendations, prepared by CEO/IT	June 4, 2009	June 30, 2009
30.	Assessor Traffic Analysis, version 1.0, prepared by CEO/IT	February 19, 2009	June 30, 2009
31.	ACS memo, ATS/PTMS Interface	June 28, 2009	June 30, 2009
32.	Meeting Minutes, Assessor-Clerk of the Board Interface	August 28, 2008	June 30, 2009
33.	Meeting Minutes, Assessor-Clerk of the Board Interface	October 2, 2008	June 30, 2009
34.	Data Elements – External Interfaces for Auditor-Controller, Treasurer-Tax Collector, Clerk of the Board	April 27, 2009	June 30, 2009
35.	Assessor and County Department Interface storybook	February 15, 2009	June 30, 2009
36.	ATS-PTMS Interface Issues storybook	April 23, 2009	June 30, 2009
37.	Assessor Department Network Architecture to Support ATS Interface to County Departments storybook	June 15, 2009	June 30, 2009
38.	ACS memo, Readiness and Data Center Interface	June 28, 2009	June 30, 2009
39.	New ATS Unsecured Sub-systems Test Production Deployment Milestones	June 28, 2009	June 30, 2009
40.	New ATS Unsecured Sub-systems Test Production Deployment Open Items Checklist, Operational Items	June 28, 2009	June 30, 2009
41.	New ATS Unsecured Sub-systems Test Production Deployment Readiness Checklist, Software Application	June 30, 2009	June 30, 2009
42.	New ATS Unsecured Sub-systems Test Production Cut-over Task List, Pre-Launch	June 22, 2009	June 30, 2009
43.	OC Data Center Service Desk Application/System Registration Form	undated	June 30, 2009
44.	CEO/IT Support for New ATS Platform, Prioritized Activities	June 28, 2009	June 30, 2009
45.	Data Input for System Backup and Tape Retention Requirements to CEO/IT	June 4, 2009	June 30, 2009
46.	ATS Release Management Process for Assessor Department and CEO/IT storybook	June 4, 2009	June 30, 2009

47.	Infrastructure – Job Scheduling Overview storybook	June 17, 2009	June 30, 2009
48.	Infrastructure – Printing Overview storybook	June 28, 2009	June 30, 2009
49.	ACS memo, User Testing Overview and Feedback	June 30, 2009	June 30, 2009
50.	Unsecured Sub-systems User Test Approach storybook	April 20, 2009	June 30, 2009
51.	Unsecured Business Process Testing, Test Case Tracking	June 29, 2009	June 30, 2009
52.	Unsecured Business Process Testing, Test Scenarios example	January 13 & 14, 2009	June 30, 2009
53.	Unsecured Business Process Testing, Problem Resolution Tracking example	June 26, 2009	June 30, 2009
54.	Unsecured Audit Module Testing, Test Cases Tracking	June 29, 2009	June 30, 2009
55.	Unsecured Audit Module Testing, Test Scenarios example	undated	June 30, 2009
56.	Unsecured Audit Module Testing, Problem Resolution Tracking example	June 26, 2009	June 30, 2009
57.	ATS Deployment and PTMS Interface Planning Overview chart	undated	June 30, 2009
58.	Property Tax Management System – Development and Implementation Status at a Glance	June 18, 2009	June 30, 2009
59.	CEO/IT Data Center Request for Change Completion Notification	July 6, 2009	July 10, 2009
60.	ATS Unsecured Sub-System Deployment Status memo	July 7, 2009	July 10, 2009

### ***3.3 ATS PROJECT ASSESSMENT***

The following table (Table 8 - ATS Project Assessment) presents the Eclipse IV&V team assessment of the major project activity areas. The columns of the table are Project Area, which contains the name of the major project activity area, Progress Status Rating, which contains a rating by the Eclipse IV&V team of the level of progress made for that area, and comments, which details how the Eclipse IV&V team views the progress of the major project area. The ratings for progress are “**Significant**”, “**Moderate**”, and “**Minimal**”. Where “**Significant**” indicates that a great deal of progress was made in responding to the Eclipse IV&V team recommendations, “**Moderate**” indicates that some progress was made in responding to the Eclipse IV&V team recommendations, and “**Minimal**” indicates that little or no progress was made in responding to the Eclipse IV&V team recommendations.

**Table 8 - ATS Project Assessment**

Project Area	Progress Status Rating	Comments
ATS Project (General)	<b>Minimal</b>	In general the ATS Re-Engineering Project, regarding the suggestions made by the Eclipse IV&V team, has made some progress regarding communication with stakeholders, and documentation of progress (schedule and budget).
PTMS Interface	<b>Moderate</b>	The communication with the PTMS project, regarding interfaces and shared data, appears to have increased and become a little more efficient. As the legacy database is retired additional effort will be required to make that transition effective and seamless.
Unsecured Functionality Development	<b>Significant</b>	The Unsecured functionality was successfully placed in a “live” environment and users continue to test and train using this part of the application.
Secured Functionality Development	<b>Moderate</b>	Expected progress appears being made using the existing development environment and infrastructure (leveraged from the Unsecured development efforts).

Project Area	Progress Status Rating	Comments
Data Center	<b>Moderate</b>	It appears that hardware, network, and support needs are being handled between the Assessor Department and the Data Center. While there are still major decisions to be made regarding servers and hardware purchases, there is adequate time for those decisions. Additionally, the project can benefit by obtaining more recent technologies (better servers etc.) as the time to a full “go-live” comes closer.
Communication	<b>Moderate</b>	Communications and presentations continue to be held by the Assessor Department with additional emphasis being made to budget and schedule. The efforts made by both the ATS and PTMS projects appears to be effective in communicating needs and timeframes and will help with the successful transition of both projects.

## 4. PROJECT RISKS

Risk Analysis typically involves a full assessment of the system under development, beginning at the requirements phase of the design effort or as early in the development cycle as possible. The objective is to identify potential risk to the project related to software, human, hardware, and interface failures or errors (risks), and to make recommendations for mitigation of those risks.

In terms of each identified risk, the objectives of the risk analysis are to:

- Mitigate the risk when possible
- Prevent or minimize the occurrence of the risk
- Control the risk if it occurs
- Minimize the damage

Depending on when risks are identified and the form of the mitigation, risk recommendations may feed into requirements, hardware and software design documents, test plans, or user documentation/training. The ATS Re-Engineering Project manages risk by identifying risks and potential mitigation actions and presentation of those items to the Assessor. The Assessor then makes the ultimate determination of the actions to be taken to either mitigate the risk or to just monitor the risk.

The Eclipse IV&V team has identified below in (Table 11 – IV&V Identified Risks) some of the most significant risks remaining for the ATS Re-Engineering Project and has assigned an initial probability level based on the definitions in Table 9 – Risk Assessment Probability Definitions and a failure impact level based on the definitions in the Table 10 – Risk Assessment Impact Definitions.

**Table 9 - Risk Assessment Probability Definitions**

<b>Descriptive Word</b>	<b>Definition</b>
Frequent	Likely to occur frequently in the life cycle
Probable	Will occur several times in the life of the software
Occasional	Likely to occur sometime in the life of the software
Remote	Unlikely but possible to occur in the life of the software

Improbable	So unlikely it can be assumed the occurrence may not be experienced
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**Table 10 - Risk Assessment Impact Definitions**

Descriptive Word	Definition
Catastrophic	A failure that will cause loss of a major business function, data corruption, and/or system crash
Critical	A failure that will cause loss of business function, data loss, and/or system performance
Marginal	A failure that will cause loss of an auxiliary business function, minor impact to system performance, and/or negatively impact usability
Negligible	No effect on system performance or business function within the system design but cumbersome to the user

**Table 11 - IV&V Identified Risks**

Item	Risk	Mitigation	Comments	Probability	Impact
1.	Financing – insufficient funding is available to complete the project.	Provide requested funding to complete the project without impacting the schedule.	The Assessor has established a contingency budget to cover incidental costs.	Probable	Critical

2.	Schedule – the ATS Project team may not complete development of modules to support Secured functionality and PTMS interface functionality by the estimated dates due to impacts resulting from the Assessor Department’s ongoing business priorities.	In the event that modules are not developed in the estimated timeframes additional staff could be added (at additional cost), additional hours could be made available to existing staff (also increasing cost), or the requirements changed.	It is expected that the ATS Project team would react to deviations in the development schedule by either adding either staff or hours, as by changing requirements critical application functionality could be lost.	Probable	Critical
3.	Disbanding the project – in the event that due to a lack of available funding or similar event resulted in an interruption of project activities, the ATS Project team (including contract staff) will be re-deployed. It is unlikely that the same staff would be available following a project re-start, resulting in loss of project knowledge and requisite skill set.	Attempt to keep the existing team together by continuing to fund the project to completion.	The Assessor Department is actively working with the County Executive Office to ensure necessary funding is available to complete the project as currently planned.	Remote	Catastrophic

<p>4.</p>	<p>Hardware – the needed hardware to support the production system must be defined in a timely manner to the CEO/IT Data Center so that it can be purchased, installed, and tested prior to being needed to support the new ATS application in production.</p>	<p>Remain cognizant of the CEO/IT Data Center process for Hardware procurement and the timeframes necessary to obtain, install and test the hardware needed.</p>	<p>It is understood that hardware changes very quickly and that the Assessor Department could benefit by not choosing a hardware solution until closer to the “go-live” date.</p> <p>The specific tasks related to a final determination of the production environment have been scheduled for February-April 2010, and as such are planned events for the Assessor Department. Funding to support the procurement of any new hardware to be purchased has already been approved.</p> <p>The existing “near-production” environment is functioning adequately for current new ATS usage levels.</p>	<p>Probable</p>	<p>Critical</p>
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5.	User Acceptance – there is risk that the users of the new ATS will not be able, or willing to use the new application	Keep the users involved in the development process and continue to react to their findings, issues and requests to ensure the new ATS application usable and efficient.	Assessor Department personnel have been continuously involved in the process of testing and helping the development team in creating the new ATS solution so that the chance of users not accepting the application is minimized.	Remote	Marginal
6.	Performance – the application must be timely in its response to users. If it is not there is risk that it will not be effective in supporting the future production and maintenance of assessment rolls.	Execute performance/ stress/ load tests to assure that performance and load requirements are met.	Performance/Stress/Load and Capacity tests designed and executed to assure that the new ATS application meets those requirements should be performed as production hardware is procured in the Data Center.	Probable	Marginal

7	<p>Open System Architecture - The size and complexity of the enterprise system that will be used for the new ATS project is new to the Orange County Data Center which poses some risk to the project.</p>	<p>Additional rigor in setting up and administering the open system for the new ATS initially to gain knowledge and experience.</p>	<p>The standards and interfaces need to be shared with other systems that will interoperate with the new ATS open system platform.</p> <p>Similar standards, etc. have been/are being developed for the other mission-critical, enterprise systems (CAPS and PTMS) that are hosted at the Data Center. Work completed and knowledge gained for these similarly deployed systems can be leveraged for the new ATS.</p>	Probable	Marginal
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