

Administrative Office of the Courts

The Statewide Case Management Project Faces Significant Challenges Due to Poor Project Management

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This report concludes that the Administrative Office of the Courts (AOC) has not adequately planned the statewide case management project since 2003 when the Judicial Council of California (Judicial Council) directed the AOC to continue its development. The statewide case management project includes two interim systems and the most recent version, the California Court Case Management System (CCMS). Further, the AOC has not analyzed whether the project would be a cost-beneficial solution to the superior courts' technology needs and it is unclear on what information the AOC made critical decisions during the project's planning and development. In addition, the AOC did not structure its contract with the development vendor to adequately control contract costs. As a result, over the course of seven years, the AOC entered into 102 amendments and the contract has grown from \$33 million to \$310 million. Further, although the AOC fulfilled its reporting requirements to the Legislature, the four annual reports it submitted between 2005 and 2009 did not include comprehensive cost estimates for the project, and the AOC's 2010 report failed to present the project's cost in an aggregate manner. Moreover, the AOC has consistently failed to develop accurate cost estimates for the statewide case management project, which is now at risk of failure due to a lack of funding.

As of June 2010 the AOC and several superior courts had spent \$407 million on the project. The AOC's records show that as of fiscal year 2015–16—the year it expects that CCMS will be deployed statewide—the full cost of the project will be \$1.9 billion. However, this amount does not include \$44 million that the seven superior courts reported to us they spent to implement the interim systems or the unknown but likely significant costs the superior courts will incur to implement CCMS.

In addition, our survey of the seven superior courts using interim versions of the statewide case management project found they experienced challenges and difficulties in implementation, and some are reluctant to implement the CCMS. Many of the remaining 51 superior courts not using an interim version expressed uncertainty about various aspects of the project. Although the Judicial Council has the authority to compel the superior courts to implement CCMS, our survey results indicate that its successful implementation will require the AOC to more effectively foster court support. Although state-level justice partners indicated to us they look forward to CCMS, the extent to which local justice partners will integrate their systems with CCMS is unclear due to cost considerations.

Finally, the AOC has not contracted for adequate independent oversight of the statewide case management project. Our information technology expert believes that as a result of the AOC's failure to address significant independent oversight concerns and quality problems experienced, CCMS may be at risk of future quality problems. In light of these issues, we believe that prior to proceeding with the AOC's plan to deploy CCMS at three courts that will be early adopters of the system, there would be value in conducting an independent review to determine the extent of any quality issues and problems.

In the report, the California State Auditor (state auditor) made the following recommendations to the AOC. The state auditor's determination regarding the current status of recommendations is based on the AOC's response to the state auditor as of August 2011.

Recommendation 1.1—See pages 24—26 of the audit report for information on the related finding.

To understand whether CCMS is a cost-beneficial solution to the superior courts' case management needs, the AOC should continue with its planned cost-benefit study and ensure it completes this study before spending additional significant resources on the project. The AOC should ensure that this study includes a thorough analysis of the cost and benefits of the statewide case management project, including a consideration of costs and benefits it believes cannot be reasonably quantified. The AOC

should carefully evaluate the results of the study and present a recommendation to the Judicial Council regarding the course of action that should be taken with CCMS. Further, the AOC should fully share the results of the study as well as its recommendation to all interested parties, such as the superior courts, justice partners, the Legislature, and the California Technology Agency (Technology Agency).² The AOC should update this cost-benefit analysis periodically and as significant assumptions change.

AOC's Action: Partially implemented.

In October 2010 the AOC engaged a consultant to perform a cost-benefit analysis for developing CCMS and deploying it to all 58 superior courts in California, which was completed on February 22, 2011. The AOC stated it will use the results of the analysis and the underlying cost-benefit model to develop recommendations regarding the CCMS deployment strategy for key decision makers. We released our review of this cost-benefit analysis on March 3, 2011. The AOC additionally stated it concurs that the cost-benefit analysis should be updated at key junctures, and further stated it has already directed that the cost benefit analysis be updated after deployment to the three early adopter courts before further deployment decisions are finalized. The AOC stated the Judicial Council is regularly updated on the status and progress of the development of the case management system and makes decisions about the allocation of funding to support its further development and deployment. The AOC stated its intent is to be fully transparent with the cost-benefit study and to share it with the superior courts, justice partners, the Legislature, the Technology Agency, and all other interested parties, and it has made the study publicly available on its Web site. The AOC further stated that the new governance structure makes it clear that any changes to the CCMS program budget that increases the total cost of the program will require approval by the AOC Project Review Board and the Judicial Council.

Recommendation 1.2—See pages 26—29 of the audit report for information on the related finding.

To ensure the statewide case management project is transparent, the AOC should make sure all key decisions for future activities on CCMS are documented and retained.

AOC's Action: Fully implemented.

The AOC stated all key decisions will be documented and all documentation provided to or produced by the CCMS governance committees and the CCMS Project Management Office will be retained throughout the life of the CCMS project. It also stated all available documentation predating this new governance model will also be retained throughout the life of the CCMS project. The AOC stated that CCMS documentation will be available to the public in a manner consistent with rule 10.500 of the California Rules of Court, which strives for transparency of judicial administrative records and to ensure the public's right of access to such records.

Recommendation 1.3—See pages 32—34 of the audit report for information on the related finding.

To ensure its contract with the development vendor protects the financial interests of the State and the judicial branch, the AOC should consider restructuring its current contract to ensure the warranty for CCMS is adequate and covers a time period necessary to ensure that deployment of CCMS has occurred at the three early-adopter courts and they are able to operate the system in a live operational environment.

² Chapter 404, Statutes of 2010, which became effective January 1, 2011, renames the Office of the State Chief Information Officer as the California Technology Agency and the position of the State's chief information officer as the Secretary of California Technology.

AOC's Action: Pending.

The AOC agreed that the warranty needs to be of sufficient length to allow CCMS to operate in a live environment before the expiration of the warranty. The existing contract includes a 12-month system warranty for CCMS that will begin no later than eight months after system acceptance, which occurred on November 28, 2011. However, the AOC indicates that it is continuing to negotiate the terms of the warranty period with the development vendor.

Recommendation 1.4.a—See pages 34 and 35 of the audit report for information on the related finding.

If the Judicial Council determines that CCMS is in the best interest of the judicial branch and it directs the AOC to deploy the system statewide, assuming funding is available, the AOC should ensure that any contract it enters into with a deployment vendor includes cost estimates that are based on courts' existing information technology (IT) environments and available resources to assist with deployment activities.

AOC's Action: Pending.

The AOC stated any deployment contract will take into account assessments of each court's existing IT environment and available resources. The AOC also stated information gathered through the deployments to the early adopter courts will enable the AOC to accurately estimate deployment costs. The AOC indicated it will take into account both the state auditor and Technology Agency recommendations on this issue and will consider all options for deployment to best protect the financial interests of the branch, including consideration of not outsourcing deployment services for some smaller court deployments.

Recommendation 1.4.b—See pages 35 and 36 of the audit report for information on the related finding.

If the Judicial Council determines that CCMS is in the best interest of the judicial branch and it directs the AOC to deploy the system statewide, assuming funding is available, the AOC should ensure that any contract it enters into with a deployment vendor includes well-defined deliverables.

AOC's Action: Pending.

The AOC indicated it will ensure that any deployment contract requires the vendor to provide all services necessary to complete the deliverables due under the contract and that all deliverables are well-defined.

Recommendation 1.4.c—See pages 34 and 35 of the audit report for information on the related finding.

If the Judicial Council determines that CCMS is in the best interest of the judicial branch and it directs the AOC to deploy the system statewide, assuming funding is available, the AOC should ensure that any contract it enters into with a deployment vendor includes that adequate responsibility be placed on the vendor for conducting key steps in the deployment of the system.

AOC's Action: Pending.

The AOC stated it will negotiate the most favorable terms possible when entering into a deployment contract, including placing appropriate responsibility on the vendor.

Recommendation 1.5—See pages 29—32 of the audit report for information on the related finding.

The Judicial Council should make certain that the governance model for CCMS ensures that approval of contracts and contract amendments that are significant in terms of cost, time extension, and/or change in scope occur at the highest and most appropriate levels, and that when contracts or contract amendments above these thresholds are approved, that the decision makers are fully informed regarding both the costs and benefits.

AOC's Action: Pending.

The AOC stated the CCMS governance committees, the CCMS Project Management Office, and the AOC Project Review Board will have structured protocols in place to ensure that all significant contract amendments, changes in cost and scope, and extensions to time frames will be approved at the appropriate levels based on full and complete information, including costs and benefits associated with the contract or contract amendments. The AOC explained the governance committees are charged with providing oversight of the CCMS program, including the program scope, program budget, application functionality, implementation priorities, and deployment schedules. The AOC further indicated that key decisions, as appropriate within the governance model, will be elevated to the Administrative Director of the Courts or the Judicial Council.

Recommendation 1.6.a—See pages 24—26 of the audit report for information on the related finding.

To ensure that any future IT projects are in the best interest of the judicial branch and the State, the AOC should complete a thorough analysis of the project's cost and benefits before investing any significant resources and time into its development, and update this analysis periodically and as significant assumptions change.

AOC's Action: Fully implemented.

The AOC stated it has been working diligently with the Technology Agency since its review of CCMS. The AOC further stated it has taken steps to integrate the Technology Agency's recommendations into its existing technology project management process. The AOC reported this includes working with the Technology Agency on project concept documents and the project charters for future IT projects and using project planning documents more similar to those typically used for executive branch IT projects.

Recommendation 1.6.b—See pages 26—29 of the audit report for information on the related finding.

To ensure that any future IT projects are in the best interest of the judicial branch and the State, the AOC should document and retain all key decisions that impact the project in general, including the goals of the project.

AOC's Action: Fully implemented.

The AOC indicates incorporating the Technology Agency's recommendations into its existing processes, and using and retaining project concept documents, project charters, and other project planning documents more similar to those typically used for executive branch IT projects.

Recommendation 1.6.c—See pages 29—36 of the audit report for information on the related finding.

To ensure that any future IT projects are in the best interest of the judicial branch and the State, the AOC should better structure contracts with development and deployment vendors to protect the financial interests of the judicial branch and ensure the contracts provide for adequate warranty periods.

AOC's Action: Fully implemented.

The AOC stated it will continue to work with the best qualified legal counsel to ensure that its development and deployment contracts protect the financial interests of the judicial branch and the State. The AOC also stated it will include appropriate warranty periods in IT projects and will ensure that any future development and deployment contracts address the length and timing of a warranty period to ensure necessary protection.

Recommendation 2.1.a—See pages 40—47 of the audit report for information on the related finding.

To ensure that the financial implications of the statewide case management project are fully understood, the AOC should report to the Judicial Council, the Legislature, and stakeholders a complete accounting of the costs for the interim systems and CCMS. This figure should be clear about the uncertainty surrounding some costs, such as those that the AOC and superior courts will incur for deployment of CCMS.

AOC's Action: Partially implemented.

The AOC issues an annual report to the Legislature on case management project costs. In future reports the AOC stated it will also include all identifiable costs related to CCMS incurred by the trial courts. It will work with the courts to identify and report, on an ongoing basis, the costs they are incurring for other local interim case management systems. The AOC stated these reports will be submitted to the Judicial Council and the Legislature and posted on the Judicial Council's Web site, consistent with the distribution of prior year's reports.

Recommendation 2.1.b—See pages 44—47 of the audit report for information on the related finding.

The AOC should require superior courts to identify their past and future costs related to the project, particularly the likely significant costs that superior courts will incur during CCMS deployment, and include these costs in the total cost.

AOC's Action: Partially implemented.

The AOC reported it has already modified the trial court's financial reporting system to enable courts to track current and future case management system costs distinct from other technology expenditures. The AOC stated it provided guidance to the trial courts to assist them to identify costs specific to development, deployment, and ongoing operations. The AOC further stated it will work with the trial courts to identify any additional expenditure information not already included in its reporting for prior fiscal years. Although the AOC believes that a substantial portion of court costs for the deployment of CCMS have been identified and captured in the costs already projected and reported, the AOC will be better able to estimate and refine the costs that superior courts will likely incur based on information gathered from early adopter and subsequent court deployments. It will include such costs in the total CCMS cost estimates where applicable.

Recommendation 2.1.c—See pages 44—47 of the audit report for information on the related finding.

Further, the AOC should be clear about the nature of the costs that other entities, such as justice partners, will incur to integrate with CCMS that are not included in its total cost.

AOC's Action: Partially implemented.

The AOC stated it currently identifies the nature of costs that justice partners will incur to integrate with CCMS and will continue to do so. To ensure broader understanding of the types of costs justice partners may incur to integrate with CCMS, the AOC stated it will begin including this information in the annual CCMS report to the Legislature. The AOC additionally stated, as part of the comprehensive cost-benefit analysis of the CCMS project currently being performed, it will evaluate integration costs likely to be incurred by the justice partners of the early adopter courts. The AOC stated the Justice Partner Advisory Committee will also be working with justice partners to help ascertain the administrative and financial benefits, in addition to costs, accruing as a result of CCMS deployment or enhancements.

Recommendation 2.1.d—See pages 40—47 of the audit report for information on the related finding.

The AOC should update its cost estimate for CCMS on a regular basis as well as when significant assumptions change.

AOC's Action: Partially implemented.

The AOC stated it currently updates its cost estimates on a regular basis or when significant assumptions change. The AOC also stated as part of its Information Technology Investment Management Program (ITIMP), the estimated cost and allotted budget for CCMS are reviewed monthly and revised and updated when scope or other project changes with cost implications are identified or approved. The AOC provided a cost update in its 2011 report to the Legislature, which was released in May 2011, but it has not provided a cost update since that time despite a one-year increase in the timeline for full CCMS deployment.

Recommendation 2.2—See pages 47—49 of the audit report for information on the related finding.

To address the funding uncertainty facing CCMS, the AOC should work with the Judicial Council, the Legislature, and the governor to develop an overall strategy that is realistic given the current fiscal crisis facing the State.

AOC's Action: Partially implemented.

The AOC stated it has, as directed and authorized by the Judicial Council, modified its strategy and will continue to do so in light of current and foreseeable future economic realities as well as the needs of courts whose current systems are at imminent risk of failing. The AOC also stated it will continue to work with the Legislature and the governor to explore all potential approaches for securing sufficient funding to complete the statewide deployment of CCMS. The AOC indicated such options may include consideration of project financing, as well as state, federal, and private funding. The AOC reported the Judicial Council, in coordination with legislative and executive branch leadership, has demonstrated prudence and flexibility in its overall funding strategy in light of the fiscal crisis, redirecting more than \$200 million in the last two fiscal years from funding that would have been available for technology projects to cover reduced court funding, and scaling back initial CCMS deployment plans to three early adopter courts.

Legislative Action: Unknown.

The state auditor is not aware of any action taken by the Legislature as of January 5, 2012.

Recommendation 2.3.a—See pages 40—44 of the audit report for information on the related finding.

To better manage costs of future IT projects, the AOC should estimate costs at the inception of projects.

AOC's Action: Partially implemented.

The AOC stated its ITIMP already incorporates many of the steps identified in our recommendation, but that it will be revised to incorporate the fiscal impact on local courts and justice partners.

Recommendation 2.3.b—See pages 43 and 44 of the audit report for information on the related finding.

To better manage costs of future IT projects, the AOC should employ appropriate budget and cost management tools to allow it to appropriately budget, track, manage, and estimate costs.

AOC's Action: Partially implemented.

See the AOC's response under recommendation 2.3.a.

Recommendation 2.3.c—See pages 44—47 of the audit report for information on the related finding.

To better manage costs of future IT projects, the AOC should ensure that cost estimates are accurate and include all relevant costs, including costs that superior courts will incur.

AOC's Action: Partially implemented.

See the AOC's response under recommendation 2.3.a.

Recommendation 2.3.d—See page 46 of the audit report for information on the related finding.

To better manage costs of future IT projects, the AOC should disclose costs that other entities will likely incur to the extent it can reasonably do so.

AOC's Action: Partially implemented.

See the AOC's response under recommendation 2.3.a.

Recommendation 2.3.e—See pages 40—44 of the audit report for information on the related finding.

To better manage costs of future IT projects, the AOC should update cost estimates on a regular basis and when significant assumptions change.

AOC's Action: Partially implemented.

See the AOC's response under recommendation 2.3.a.

Recommendation 2.3.f—See pages 40—47 of the audit report for information on the related finding.

To better manage costs of future IT projects, the AOC should disclose full and accurate cost estimates to the Judicial Council, the Legislature, and stakeholders from the beginning of projects.

AOC's Action: Partially implemented.

See the AOC's response under recommendation 2.3.a.

Recommendation 2.3.g—See pages 47—49 of the audit report for information on the related finding.

To better manage costs of future IT projects, the AOC should ensure that it has a long-term funding strategy in place before investing significant resources in a project.

AOC's Action: Partially implemented.

The AOC stated its ITIMP already incorporates many of the steps identified in our recommendation, but that it will be revised to incorporate the fiscal impact on local courts and justice partners.

Recommendation 3.1.a—See pages 52—64 of the audit report for information on the related finding.

Although the Judicial Council has the legal authority to compel the courts to adopt CCMS, to better foster superior court receptiveness to deploying CCMS, the AOC should use the results from its consultant's survey of the superior courts to identify and better understand the courts' input and concerns regarding CCMS, including the manner in which the project has been managed by the AOC. To the extent the survey results indicate courts have significant concerns regarding CCMS or that they believe their case management systems will serve them for the foreseeable future, the AOC should take steps to address these concerns and overcome any negative perceptions and modify its deployment plan for CCMS accordingly.

AOC's Action: Partially implemented.

The AOC stated participation and input from the courts are vital to the success of CCMS. The AOC indicated the results from a consultant's survey, which was prepared as part of the cost benefit study, will be used to refine a variety of deployment alternatives for consideration by the AOC, the CCMS governance committees, and the Judicial Council. Along with the experience gained and lessons learned from deployment of CCMS at early adopter courts, further information on the impact of CCMS implementation on court business processes, courts' concerns regarding the timing for deployment of the system, status of existing legacy systems, anticipated cost savings, and needs of the court users will all be factors given great weight in assessing the several deployment alternatives.

Recommendation 3.1.b—See pages 52—57 of the audit report for information on the related finding.

Although the Judicial Council has the legal authority to compel the courts to adopt CCMS, to better foster superior court receptiveness to deploying CCMS, the AOC should continue to work with the superior courts that have deployed the civil system to ensure it is addressing their concerns in a timely and appropriate manner.

AOC's Action: Partially implemented.

The AOC stated, going forward, the CCMS Operational Advisory Committee is responsible for setting the priorities for defects and enhancements for CCMS. The AOC further indicated the CCMS Project Management Office has dedicated staff assigned to work with courts using the interim civil system to address their needs and concerns. Since deployment of the interim civil system, the AOC reported, there have been numerous releases to improve the functionality and enhance the system in response to suggestions raised by the courts using it.

Recommendation 3.1.c—See pages 52 and 57—59 of the audit report for information on the related finding.

Although the Judicial Council has the legal authority to compel the courts to adopt CCMS, to better foster superior court receptiveness to deploying CCMS, the AOC should work with superior courts to address concerns about hosting data at the California Court Technology Center (Technology Center). Further, the AOC should take steps to ensure that superior courts do not lose productivity or efficiencies by hosting data at the Technology Center.

AOC's Action: Partially implemented.

The AOC stated it is committed to ensuring that the performance of systems hosted at the Technology Center is comparable to performance of a locally hosted system. The AOC further stated that it is presently working closely with the courts, and will continue to do so, to address their concerns. The AOC indicated the CCMS Operational Advisory Committee will work directly with the CCMS Project Management Office and the courts to review, modify, and add service level metrics as needed to ensure that centrally delivered services are provided in a manner that is fully responsive to the courts' business needs.

Recommendation 3.2—See pages 64—65 of the audit report for information on the related finding.

The AOC should continue working with local and state justice partners to assist them in their future efforts to integrate with CCMS, and in particular provide local justice partners the information needed to estimate the costs involved.

AOC's Action: Partially implemented.

The AOC stated it has a data integration team dedicated to working with state and local justice partners to prepare them to integrate with CCMS. The AOC indicated this team participates in justice partners' association meetings, conferences, and other events to create awareness about CCMS and highlight the benefits of integration. The AOC also stated the CCMS justice partner data integration team disseminates information about tools, resources, and information to support their integration efforts. The AOC has developed and maintains a justice partner integration website which provides information about the 121 CCMS data exchanges and offers instructions for their implementation. All justice partners have access to the site, which identifies resources they may need to integrate with CCMS. The AOC stated the information provided helps partners estimate their costs of integrating with CCMS. Finally, the AOC stated the CCMS Justice Partner Advisory Committee is charged with ensuring that the implementation of CCMS and its data exchanges maximizes state and local justice partner participation and minimizes disruptions to existing automated processes between courts and their justice partners.

Recommendation 3.3.a—See pages 52—64 of the audit report for information on the related finding.

Before embarking on future statewide IT initiatives and to ensure it secures appropriate support from users of the systems being proposed, the AOC should determine the extent to which the need for the IT initiative exists, including the necessary information to clearly demonstrate the extent of the problem the IT initiative will address.

AOC's Action: Fully implemented.

The AOC stated it has both formal and informal processes and procedures in place to identify and assess the need for statewide technology improvements for the judicial branch in partnership with the courts. The AOC also stated it is committed to these processes and will continue to leverage these opportunities. As technology project needs are identified through these many communication channels, the AOC stated project concept documents are drafted that include statements of the problem, anticipated costs and benefits of the IT solution, impacts on courts and court operations, and known risks.

Recommendation 3.3.b—See pages 52—64 of the audit report for information on the related finding.

Before embarking on future statewide IT initiatives and to ensure it secures appropriate support from users of the systems being proposed, the AOC should take steps to ensure that superior courts support the solution the AOC is proposing to address the need, which could include conducting a survey of courts to determine their level of support.

AOC's Action: Fully implemented.

The AOC stated regional meetings provide a solid foundation for the AOC and the courts to share information to learn about, better understand, and evaluate statewide technology needs. The AOC also stated the Judicial Council's Court Technology advisory committee, trial court presiding judges advisory committee, and court executives advisory committee provide additional avenues of communication that enhance the exchange of information between and among the AOC and the courts to influence the direction and strategies for future statewide technology improvements. The AOC indicated that statewide meetings of presiding judges and court executive officers build on those committee meetings to ensure that superior court feedback is received.

Recommendation 3.3.c—See pages 64 and 65 of the audit report for information on the related finding.

Before embarking on future statewide IT initiatives and to ensure it secures appropriate support from users of the systems being proposed, the AOC should if necessary, determine whether other stakeholders, including local and state justice partners, support the IT initiative.

AOC's Action: Fully implemented.

The AOC stated its Project Review Board is to ensure that all branch-wide technology projects follow a structured analysis protocol that will produce the information required to adequately assess the need for and value of the project proposal. The AOC further stated court and stakeholder surveys will be included in this structured analysis protocol.

Recommendation 4.1—See pages 68—78 of the audit report for information on the related finding.

To provide for an appropriate level of independent oversight on CCMS, the AOC should expand and clarify the scope of oversight services and require that oversight consultants perform oversight that is consistent with best practices and industry standards.

AOC's Action: No action taken.

The AOC stated it strongly agrees the project oversight should be performed consistent with best practices and industry standards, although it does not agree that this can only be done by external contractors that are independent of the vendor developing CCMS. The AOC continues to assert that the approach it used for the verification and validation process—which includes independent verification and validation (IV&V) and independent project oversight (IPO), as well as using AOC and court experts independent of the CCMS project—is entirely consistent with industry standards and guidelines and best practices for information technology projects of the size and complexity of CCMS. The AOC plans to request an interpretation from the Institute of Electrical and Electronic Engineers, Inc (IEEE) regarding whether the verification and validation approach that the AOC has been using for CCMS complies with the IEEE Standard 1012. However, as we noted in our audit report, we believe the AOC does not fully understand the purpose and importance of IV&V and IPO on a project of the size, scope, and complexity of CCMS. As we indicated in our audit report, IV&V services should be documented in a software verification and validation plan; be scaled in level of rigor based on complexity, criticality, and other project characteristics; and be performed by an organization that is technically, managerially, and financially independent. Moreover, our audit found that the AOC lacked a software verification and validation plan, which according to IEEE Standard 1012, would define and document its verification and validation effort. Such a plan would also describe the organization of the AOC staff's effort, including the degree of independence required. The IEEE Standard 1012 does indicate that many different verification and validation structures will work well as long as project responsibilities, data flows, and reporting flows are defined and documented. Because the AOC had no such plan, we could not analyze or evaluate the verification and validation efforts the AOC asserts were conducted. Further, the AOC provided us no reports resulting from the staff's efforts it asserts were performed and we found no mention of AOC staff effort in any of the oversight documents provided to us during the audit.

Recommendation 4.2—See pages 69—72 of the audit report for information on the related finding.

To ensure that no gaps in oversight occur between CCMS development and deployment, the AOC should ensure that it has IV&V and IPO services in place for the deployment phase of CCMS. Further, to allow for independent oversight of the IV&V consultant, the AOC should use separate consultants to provide IV&V and IPO services.

AOC's Action: Pending.

The AOC indicates that it will contract with separate entities to perform IPO and IV&V services for CCMS deployment.

Recommendation 4.3—See pages 80—86 of the audit report for information on the related finding.

To ensure no significant quality issues or problems exist within CCMS, the AOC should retain an independent consultant to review the system before deploying it to the three early-adopter courts. This review should analyze a representative sample of the requirements, code, designs, test cases, system documentation, requirements traceability, and test results to determine the extent of any quality issues or variances from industry standard practices that would negatively affect the cost and effort required of the AOC to operate and maintain CCMS. If any quality issues and problems identified by this review can be adequately addressed, and system development can be completed without significant investment beyond the funds currently committed, the AOC should deploy it at the early-adopter courts during the vendor's warranty period.

AOC's Action: Partially implemented.

The AOC commissioned two independent assessments of CCMS which were published in August 2011. Integrated Systems Diagnostics, Inc. performed a review of the development process employed by the CCMS development vendor, Deloitte Consulting. The *Appraisal Report* by Integrated System Diagnostics, Inc. found that the development vendor did not follow certain best practices during CCMS development, meaning that the development vendor did not perform at the standard it had originally promised.

K3 Solutions, LLC (K3) performed an assessment of software quality and whether the CCMS product has been developed as designed. In its *Final CCMS Application Assessment Report*, K3 found that CCMS appears to be architecturally sound and comprehensively tested. However, it did identify seven areas that, if not addressed going forward, could have significant implications for the maintenance and deployment of CCMS. To address these issues, the AOC indicates working with the development vendor and K3 to develop an action plan that addresses both reports' findings and recommendations. The AOC maintains that if the plan is followed, concerns regarding the maintenance and deployment of CCMS should be alleviated and no additional costs to the State should be incurred going forward. AOC has reiterated that the development vendor is committed to providing a quality product to protect its professional reputation and that it will follow the action plan accordingly. We received the action plan in December 2011 but we have not reviewed it.³

Recommendation 4.4.a—See pages 68—72 of the audit report for information on the related finding.

To ensure that future major IT projects receive appropriate independent oversight over technical aspects and project management, the AOC should obtain IV&V and IPO services at the beginning of the projects and ensure this independent oversight is in place throughout and follows best practices and industry standards appropriate for the size and complexity of the project.

AOC's Action: Partially implemented.

The AOC stated it strongly agrees that it is critical that information technology projects receive the necessary and appropriate project oversight and that it will follow the Technology Agency's guidance as well as all appropriate industry guidance. The AOC also stated it will assess each project for its risk, sensitivity, and criticality and will give great deference to the Technology Agency's guidance to determine the manner and extent of project oversight that will be implemented. The AOC stated it commits to timely obtaining and maintaining the appropriate independent project oversight services based on the size, scope, and complexity of the project and to ensuring that complete access is granted to all necessary materials. However, the AOC continues to believe that its staff is able to act independently of the AOC to perform significant elements of this oversight, as noted under its action for recommendation 4.1 above.

Recommendation 4.4.b—See pages 69—72 of the audit report for information on the related finding.

To ensure that future major IT projects receive appropriate independent oversight over technical aspects and project management, the AOC should employ separate firms for IV&V and IPO services to allow for the IPO consultant to provide independent oversight on the IV&V consultant as well as the project team's response to IV&V findings.

AOC's Action: Fully implemented.

The AOC stated it will work closely with the Technology Agency on all future IT projects that will have a cost in excess of \$5 million, and will carefully consider its recommendations for such projects, including those relating to oversight and risk mitigation.

³ The AOC indicates that the development vendor has completed all action plan items, but as of March 13, 2012, the AOC has not provided us sufficient information to confirm their completion.

Recommendation 4.4.c—See pages 68—78 of the audit report for information on the related finding.

To ensure that future major IT projects receive appropriate independent oversight over technical aspects and project management, the AOC should ensure that the staff performing IV&V and IPO services have experience and expertise that is commensurate with the size, scope, and complexity of the project they are to oversee.

AOC's Action: Fully implemented.

See the AOC's response under recommendation 4.4.b.

Recommendation 4.4.d—See pages 78—80 of the audit report for information on the related finding.

To ensure that future major IT projects receive appropriate independent oversight over technical aspects and project management, the AOC should ensure that independent oversight is not restricted in any manner and that all parties—the IV&V and IPO consultants, senior management, the project management team, and the development vendor—understand that the IV&V and IPO consultants are to have complete access to all project materials.

AOC's Action: Fully implemented.

See the AOC's response under recommendation 4.4.b.

Recommendation 4.4.e—See pages 80—86 of the audit report for information on the related finding.

To ensure that future major IT projects receive appropriate independent oversight over technical aspects and project management, the AOC should address promptly and appropriately the concerns that independent oversight consultants raise.

AOC's Action: Fully implemented.

The AOC stated it concurs with the importance of the identification of concerns raised by IV&V and IPO consultants and that their concerns be reported and monitored to ensure they are appropriately addressed. The AOC also stated concerns raised by IV&V and IPO consultants will be taken off watch status only after careful consideration and discussion of all risks and mitigation efforts that must occur to ensure that system function is unaffected.