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Roadmap Initiatives for Continuous Auditing (CA) within Government Internal Supervisory Apparatus (APIP)

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ABSTRACT	INFO ARTIKEL
This study aims to develop a concise and contextually relevant roadmap for implementing Continuous Auditing (CA) within the Government Internal Supervisory Apparatus (APIP), focusing on the Inspectorate General of Ministry ABC. The research is driven by the 2025–2029 National Medium-Term Development Plan (RPJMN), which prioritizes digital governance, and the Ministry ABC's Strategic Plan that mandates accelerated CA adoption. Using the phased approach of the KPMG Framework (2011), the study collects primary data through interviews with officials from the Inspectorates General of Ministries XYZ and ABC, supported by secondary data from regulations and strategic documents. The outcome is a 20-year CA roadmap that operationalizes the KPMG stages and reinforces the people, process, and technology dimensions. This roadmap is designed to enable sustainable, adaptive CA implementation and support the advancement of the Internal Audit Capability Model (IACM) maturity level within the Inspectorate General of Ministry ABC.	Article History: <i>Submitted/Received 20 Oct 2025</i> <i>First Revised 10 Nov 2025</i> <i>Accepted 17 Nov 2025</i> <i>First Available online 28 Nov 2025</i> <i>Publication Date 13 Dec 2025</i> Keyword: <i>Continuous auditing, Internal audit, Internal audit capability model</i>
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1. INTRODUCTION

The advancement of information technology has driven a significant transformation in the role of internal auditing through the concept of Continuous Auditing (CA). Unlike traditional audits, which are retrospective in nature, CA enables real-time oversight by utilizing information systems and continuous data analytics. The integration of audit systems with transactional processes facilitates early detection of irregularities, positioning auditors not merely as end-stage examiners but as strategic partners functioning as an early warning system.¹

The implementation of CA aligns with the Internal Audit Capability Model (IACM) issued by the Institute of Internal Auditors (IIA), which assesses the maturity of internal audit functions from Level 1 (Initial) to Level 5 (Optimizing). At Level 4 (Managed), internal audit units are expected to leverage technology strategically. Accordingly, the successful adoption of CA requires adequate digital infrastructure, integrated information systems, and enhanced auditor competencies in data and technology.²

The Inspectorate General of Ministry ABC has expressed its commitment to developing Continuous Auditing and Continuous Monitoring (CA–CM) as part of its internal oversight transformation agenda. This initiative aims to strengthen the effectiveness of internal supervision and enhance APIP capability, as mandated in the Ministry ABC’s Strategic Plan (Renstra) for 2025–2029, which is aligned with the policy direction of the 2025–2029 National Medium-Term Development Plan (RPJMN).

Table 1. Target Outcomes of Ministry Programs for 2025–2029

No	Program Outcomes / Indicators	Unit	2024	2025	2026	2027	2028	2029
1.	Percentage of CA–CM implementation within the Inspectorate General	(%)	-	25	30	35	40	45
2.	APIP Capability Level Score	Score	3,4	3,4	3,5	3,6	3,8	4,0

Source: Strategic Plan (Renstra) of Ministry ABC, 2025–2029.

The Strategic Plan (Renstra) of Ministry ABC for 2025–2029 targets the implementation of CA–CM at 25 percent in 2025, increasing to 45 percent by 2029. This target reflects the Ministry’s commitment to digital oversight integration and to improving APIP capability from Level 3.4 to 4.0. Strengthening auditor competencies, methodologies, and the utilization of technology serves as a critical foundation for achieving effective and sustainable oversight.³ In general, the oversight function within the Inspectorate General of Ministry ABC has been running adequately; however, the development of CA remains constrained by limited auditor availability and the absence of dedicated IT specialists to support data analytics. Therefore, fulfilling auditor staffing needs according to the Job Analysis and Workload Analysis (AnJab–ABK), along with appointing IT personnel, constitutes a strategic step to accelerate the digital transformation of internal oversight.⁴

A leading example of CA implementation in Indonesia is the Inspectorate General of Ministry XYZ, which has reached IACM Level 4, demonstrating strong technological capability in applying CA. In contrast, the Inspectorate General of Ministry ABC is still in the early stages, following BPKP’s

¹ Peraturan Pemerintah Nomor 60 Tahun 2008 tentang Sistem Pengendalian Intern Pemerintah (SPIP)

² Peraturan Kepala BPKP Nomor 8 Tahun 2021 tentang Penilaian Kapabilitas Aparat Pengawasan Intern Pemerintah

³ Strategic Plan (Renstra) of Ministry ABC, 2025–2029

⁴ Employee Data of the Inspectorate General of Ministry ABC as of July 2025.

recommendations to strengthen APIP capability through CA adoption. To move forward, ABC must prepare concrete steps that support this transformation. Given the significant organizational and technological changes required, a layered or modular roadmap is appropriate, as it provides structured sequencing with flexibility. This approach aligns with the principles of continuous improvement, the building-block logic of the KPMG Framework (2011), and IACM requirements.⁵

The research concept developed in this study draws upon a range of prior works, including Analysis of Continuous Auditing Implementation in the Public Sector: A Case Study of the Ministry of ABC (Suharto & Kurniawati, 2024); Analisis Implementasi Continuous Auditing pada Inspektorat Kabupaten Gorontalo (Mudeng, Monoarfa, & Usman, 2024); Analisis Adopsi Continuous Auditing pada Fungsi Audit Intern di Lembaga Negara XYZ (Rahayu & Prasetya, 2024); Strategi Implementasi Continuous Auditing di Inspektorat Daerah: Studi Inspektorat Daerah Kabupaten Probolinggo (Yuliono, 2023); and Evaluasi Penerapan Continuous Auditing pada Inspektorat Jenderal Kementerian Keuangan (Pratomo, 2019). Additionally, this study is conceptually strengthened by Mantelaers and Zoet (2018), who propose a practical maturity model for continuous auditing, providing an important theoretical perspective that complements the empirical insights drawn from public-sector CA implementation in the Indonesian context.

Based on the background above, this study seeks to answer the central question: What roadmap is appropriate for implementing continuous auditing within the Government Internal Audit Apparatus (APIP), particularly at the Inspectorate General of Ministry ABC? Accordingly, the study aims to develop a comprehensive and contextually relevant roadmap to guide CA implementation within APIP, with a specific focus on the Inspectorate General of Ministry ABC.

2. METHODOLOGY

This study employs a qualitative approach with an exploratory case study design. As stated by Yin (2018), an exploratory case study is appropriate when established hypotheses or theoretical models are not yet available, as it enables an in-depth examination of a phenomenon within its real-world context.⁶ This approach is therefore suited for developing a new conceptual framework that contributes to the novelty of research on continuous auditing (CA). To strengthen the analysis and design of CA implementation in the Inspectorate General of Ministry ABC, benchmarking was undertaken at the Inspectorate General of Ministry XYZ, an institution that has previously implemented an integrated CA system. The benchmarking results were utilized to assess organizational readiness and to inform the formulation of a CA implementation roadmap. The subsequent analysis linked theoretical foundations particularly the KPMG CA Framework (2011) with empirical field practices to derive an implementation model that aligns with the characteristics and capacity of APIP within Ministry ABC.

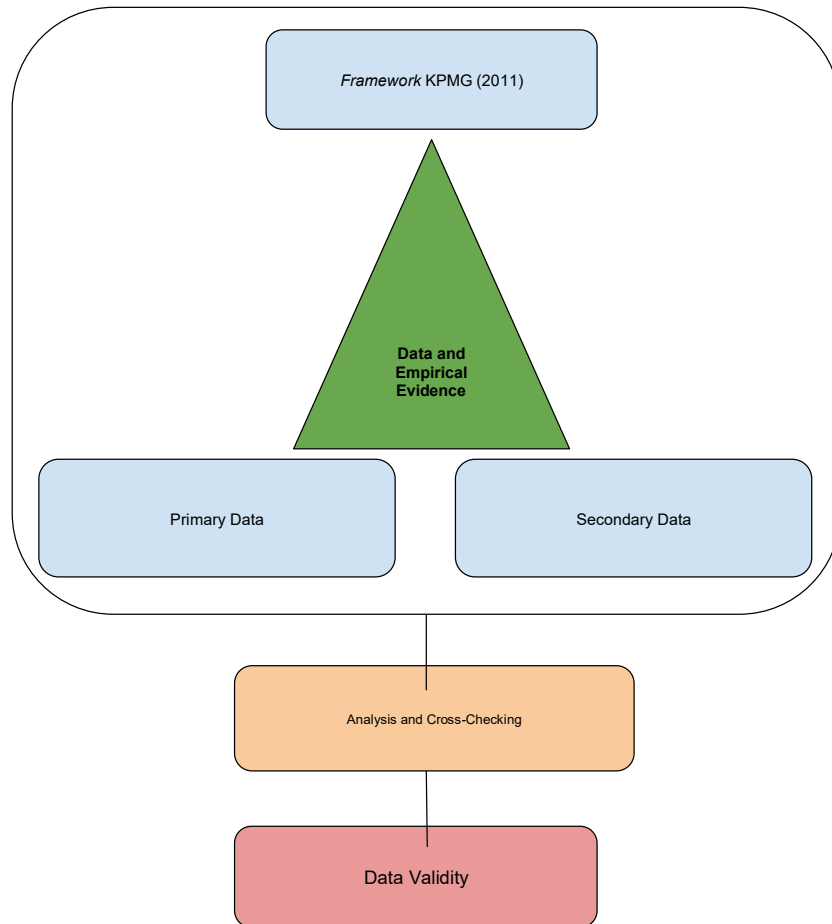
Data were analyzed using the interactive analysis model developed by Miles, Huberman, and Saldana (2014), which consists of four key stages. The first stage, data collection, involved gathering primary data through benchmarking and interviews and compiling secondary documents relevant to CA implementation. The second stage, data reduction, entailed selecting and simplifying information in accordance with the study's focus on organizational readiness particularly regarding people, processes, and technology while maintaining alignment with the KPMG Framework (2011). The third stage, data display, organized the reduced data into thematic narratives, tables, and

⁵ Laporan Hasil Evaluasi atas Penilaian Mandiri Kapabilitas Inspektorat Jenderal Kementerian ABC tahun 2024

⁶ Yin, R. K. (2018). Case Study Research and Applications: Design and Methods (6th ed.)

comparative matrices to illustrate the relationship between empirical findings and the theoretical framework. The fourth stage involved drawing and verifying conclusions by identifying gaps between existing conditions and ideal practices, which were validated through technique triangulation and theoretical comparisons with the KPMG Framework (2011).⁷

To ensure the validity of the data, this study applied technique triangulation as recommended by Creswell and Poth (2018). This involved integrating multiple sources of evidence, primary and secondary data, policy documents, and established theoretical references such as the KPMG Framework (2011) to ensure the consistency, reliability, and credibility of the findings.⁸



Gambar 1. Technique Triangulation

The study draws upon both primary and secondary data. Primary data were obtained through benchmarking observations at the Inspectorate General of Ministry XYZ, during which the researchers were provided with presentation materials, policy documents, and relevant soft-copy files. In addition, semi-structured interviews were conducted with structural officials and functional auditors from both Ministries XYZ and ABC who were directly involved in strengthening CA practices. These interviews aimed to explore the phases of CA implementation in accordance with the KPMG Framework (2011). Secondary data were sourced from documents obtained through the Information and Documentation Management Unit of the Inspectorate General of Ministry XYZ as well as data from the Program and Budget Division of the Secretariat of the Inspectorate General, Ministry ABC.

⁷ Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative Data Analysis: A Methods Sourcebook* (3rd ed.)

⁸ Creswell, J. W., & Poth, C. N. (2018). *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*

Empirical data were collected through in-depth interviews with two key informants from the Inspectorate General of Ministry XYZ and the Inspectorate General of Ministry ABC, conducted at different locations and times. These interviews were complemented by document and policy triangulation to strengthen the validity of the findings. The theoretical analysis employed the KPMG Framework (2011), consisting of six phases “Plan, Assess, Design, Implement, Execute, and Evaluate” which served as the conceptual lens for understanding and designing a continuous and systematic CA implementation cycle.

3. RESULT AND DISCUSSION

In this study, each phase of the KPMG Framework (2011) was analyzed through interviews with officials from the Inspectorate General of Ministry XYZ and the Inspectorate General of Ministry ABC to understand the end-to-end workflow of CA, from planning to evaluation. The results of these interviews were used to conduct a gap analysis and identify priority areas for improvement, which then served as the basis for designing a CA implementation roadmap for the Inspectorate General of Ministry ABC.

The present study builds substantively upon existing literature on CA within the Indonesian public sector, reinforcing and extending the empirical and conceptual foundations established by prior research. Earlier studies such as those by Suharto & Kurniawati (2024), Mudeng et al. (2024), Rahayu & Prasetya (2024), Yuliono (2023), Pratomo (2019) and Mantelaers & Zoet (2018) highlight the growing need for digital transformation in government internal audit functions, as well as the recurring structural, technological, and human resource challenges that hinder the effective adoption of CA. This study strengthens those findings by demonstrating that successful CA implementation within APIP is strongly influenced by organizational readiness, auditor competencies, well-defined processes, and technological adequacy. Through detailed analysis based on the KPMG Framework (2011) and benchmarking the mature CA practices of the Inspectorate General of Ministry XYZ against the early-stage conditions at the Inspectorate General of Ministry ABC, the research provides empirical validation of key success factors and recurring obstacles identified in previous studies. It further contributes to the existing body of knowledge by translating these insights into a structured CA implementation roadmap that bridges the gap between current conditions and ideal practices, offering practical and actionable guidance for developing CA within government internal audit institutions.

Building upon these findings, the researcher proposes a comprehensive roadmap that outlines the transformation trajectory of the Inspectorate General of Ministry ABC from the initial Plan phase to the sustainable optimization of a fully integrated CA system. The roadmap focuses on three core dimensions “people, process, and technology” aligned with the principles of the KPMG Framework (2011), which underscores the balance between human competencies, process governance, and technological support. This phased approach enables the organization to systematically address the identified gaps and institutionalize CA as the foundation of future oversight practices. Furthermore, the study introduces a twenty-year implementation roadmap for Continuous Auditing (CA) and Continuous Monitoring (CM), structured according to the Ministry ABC’s Strategic Plan (Renstra) 2025–2029, which targets 45% implementation by 2029. This long-term roadmap provides a strategic baseline for the Inspectorate General to progressively advance its digital oversight transformation toward a mature, resilient, and sustainable state.

a. PLAN Phase (2025–2027): Strategic Planning and Foundational Development

The initial phase focuses on establishing the strategic foundation for Continuous Auditing (CA) within the Inspectorate General. The CA/CM vision is disseminated across the organization to ensure shared understanding and collective commitment. Governance structures are formed through the establishment of the CA Steering Committee and CA Champion Teams in each work unit. A Human Resource Roadmap for CA is prepared to identify competency requirements for auditors. In terms of process, CA is integrated into the 2025–2029 Strategic Plan and the Inspectorate’s Action Plan, accompanied by the formulation of internal policies and initial performance indicators. On the technology side, the IT Masterplan for CA/CM is developed, relevant applications are mapped, and infrastructure needs such as servers, data storage, and network connectivity are identified.

b. ASSESS Phase (2028–2029): Readiness Assessment and Capability Mapping

This phase emphasizes a comprehensive assessment of organizational readiness for CA adoption. Auditor readiness is evaluated through assessments of digital literacy, data analytics capability, and technical preparedness, forming the basis for basic CA training programs and the selection of CA Champions. In terms of processes, risk-based audit procedures are reviewed to determine priority areas for CA implementation, while the baseline maturity of audit processes is updated. Alignment of CA with SPIP and the risk management system is also conducted. From the technological perspective, infrastructure readiness, data quality, system interoperability, and cybersecurity are assessed, including identification of priority systems such as Simonev for integration.

c. DESIGN Phase (2030–2032): Development of Systems, Governance, and Technological Architecture

This phase represents a critical point in defining a comprehensive blueprint for CA implementation. For human resources, intermediate and advanced CA training curricula are developed, career pathways for CA-oriented auditors are established, and CA Champion Teams are strengthened. Process development includes the creation of rule books, risk control matrices (RCM), CA standard operating procedures (SOP), and a data-driven audit methodology. A Continuous Monitoring Protocol is also established to support risk management. On the technological side, the organization designs a data warehouse architecture, data integration mechanisms, and the first phase of the CA dashboard, featuring exception reporting and risk heatmaps. Appropriate analytical tools (SQL, ACL, Power BI, Python) are formally selected.

d. IMPLEMENT I Phase (2033–2036): Pilot Implementation and Proof of Concept

During this phase, implementation begins on a limited scale. Advanced CA training is delivered, particularly to early-career auditors, to strengthen analytical competencies. Pilot testing is conducted by the CA Champion Teams, focusing on high-risk audit areas. The pilot evaluates the effectiveness of data analytics, exception rule performance, and the readiness of audit processes. Lessons learned from the pilot are documented and used to refine the subsequent annual audit planning (PKPT). Technological implementation also progresses through the development of prototype dashboards, initial application integration, and testing of rule-based exception algorithms.

e. *IMPLEMENT II* Phase (2037–2038): Expansion and Institutionalization

Following the successful pilot, CA implementation is expanded across all audit units. CA competency standards are formally established, and incentive mechanisms are introduced to recognize outstanding CA Champions. CA is applied to all audit types including financial, performance, and thematic audits and Continuous Monitoring is introduced to provide real-time risk information to senior management. On the technology dimension, the CA dashboard is enhanced (Phase 2) with real-time monitoring and advanced visual analytics. The data warehouse is strengthened, and automated data extraction tools begin to be deployed.

f. *EXECUTE* Phase (2039–2042): Full Operationalization and System Integration

This phase signifies the full operationalization of CA as part of routine oversight activities. Auditors regularly use CA tools in conducting audits and preparing reports, supported by the establishment of a dedicated Data and Analytics Center under the Inspectorate General. Continuous training is institutionalized through an e-learning system. CA becomes an integral component of all audit engagements, with exception-based supervision and risk visualization implemented comprehensively. The CA dashboard becomes fully operational and connected to the enterprise data warehouse, while early warning systems generate automated notifications. Basic machine learning capabilities are introduced to support more advanced analytical functions.

g. *EVALUATE I* Phase (2043–2044): Maturity Evaluation and System Refinement

The first evaluation phase focuses on assessing the maturity of CA competencies within the Inspectorate. An internal CA certification scheme is introduced, and a knowledge-sharing network among CA-oriented auditors is strengthened. Process evaluation examines the effectiveness of CA in improving audit quality, efficiency, and risk detection. Policies and SOPs are refined based on evaluation findings. On the technological side, the dashboard and supporting systems are evaluated to reduce false positives, strengthen data protection, and upgrade the system to second-generation CA featuring predictive analytics.

h. *EVALUATE II* Phase (2045–onward): Optimization and Continuous Improvement

The final phase reflects a mature and adaptive CA ecosystem. Human resources achieve competency levels equivalent to professional digital auditors, and CA becomes a core competency within the Inspectorate's career development framework. Collaboration with universities and national certification institutions is expanded to enhance competence development. CA becomes fully integrated with national risk management and government ERP systems. Predictive auditing is implemented to proactively identify emerging risks. Technologically, third-generation CA characterized by AI-driven audit analytics and self-learning systems is adopted to autonomously detect new risk patterns, ensuring continuous improvement and long-term sustainability of digital oversight.

According to the 2024 BPKP assessment places the Inspectorate General of Ministry ABC at IACM Level III, indicating that oversight processes are not yet consistent or sustainable in supporting Governance-Risk–Control (GRC). Advancing to Level IV requires a systematic, integrated, and technology-enabled approach. Implementing Continuous Auditing (CA) with CAATs and audit dashboards is a key step to improve early anomaly detection, shift oversight from detection to prevention, and strengthen adaptive internal control. CA promotes more consistent and measurable control systems, in line with IIA (2017), which positions Level IV APIP as a trusted advisor rather than a watchdog.

4. CONCLUSION

This study concludes that the Inspectorate General of Ministry ABC is still at an early stage of digital oversight maturity, with significant gaps in auditor competencies, data-driven audit processes, and technological infrastructure that impede the effective implementation of Continuous Auditing (CA). The proposed 20-year roadmap, structured according to the six phases of the KPMG Framework (2011), offers a realistic and systematic pathway for strengthening organizational readiness and advancing APIP capability toward an optimized, predictive, and evidence-based internal audit function by 2045. The findings carry important implications for policymakers and internal audit leaders, emphasizing the need for sustained investment in human resource development, institutionalization of standardized CA processes, and modernization of integrated digital systems to enhance public sector governance. Nevertheless, the study is limited by its reliance on qualitative benchmarking involving only two inspectorates, which may not fully capture the broader operational dynamics of CA across APIP. Future research should empirically validate the proposed roadmap across a wider range of APIP entities and develop quantitative maturity indicators to measure progress and assess the impact of CA implementation on audit effectiveness.

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