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# Introduction

## Definition of Continuous Auditing Based Certification (CABC)

This section provides a concise definition of CABC, explaining what it is and what it entails.

* Explanation of Continuous Auditing Based Certification (CABC)
* Definition of CABC and how it differs from traditional "point-in-time" certifications
* Explanation of the principles underlying CABC
* Overview of CABC processes and their benefits

## Advantages of CABC compared to traditional "point-in-time" certifications

This section highlights the benefits of using CABC over traditional certifications methods.

* Explanation of the differences between traditional point-in-time certifications and Continuous Auditing Based Certification (CABC)
* Benefits of CABC, including real-time monitoring, continuous improvement, and reduced costs
* Comparison of the level of detail and depth of assessment in traditional certifications vs. CABC
* Advantages of having a live and up-to-date certification, demonstrating an organization's ongoing commitment to quality and compliance.

## Principles

This section outlines the basic principles that underpin CABC, such as independence, reliability, and transparency.

* Explanation of the guiding principles that underlie the CABC certification process
* Discussion of the core beliefs and values that drive the CABC certification methodology
* Outline of the criteria used to determine the suitability of standards and regulations for CABC certification
* Explanation of how CABC certification helps organizations to maintain compliance and meet quality standards over time

## Overview of CABC processes

This section provides a high-level overview of the CABC certification process, including the steps involved, the roles and procedures, and the outcome.

* Explanation of the general process and flow of Continuous Auditing Based Certification (CABC)
* Steps involved in the CABC certification process
* Description of how CABC differs from traditional "point-in-time" certifications
* Explanation of the principles that guide the CABC certification process

# CABC Certification Process

## Architecture, Roles, Procedures

This section details the technical architecture of CABC, including the components and their interactions, as well as the roles and procedures involved in the certification process.

* Definition and description of the CABC architecture
* Explanation of the roles and responsibilities involved in the CABC process
* Details of the procedures involved in CABC certification, including evidence collection, assessment, and reporting
* Explanation of the separation of evidence collection and assessment to ensure independence of the audit process
* Overview of the technical requirements and protocols used to implement CABC.

## Compliance

This section explains the concept of compliance and how it is used in CABC to ensure that systems are in line with applicable standards or regulations.

* Explanation of compliance and why it is important in the context of CABC
* Theoretical Applicability of CABC to Standards and Regulations, along with any Constraints that may Apply. Discussion of the ways in which the CABC certification process ensures compliance with relevant standards and regulations
* Explanation of how the results of the assessments are used to determine compliance
* Description of the steps that are taken to ensure the independence of the audit process
* Explanation of how the certification body is involved in ensuring compliance
* Discussion of the potential consequences of non-compliance, such as the revoke of the certification.

## Risk-based quality requirement definition

This section describes how quality requirements are defined and evaluated in CABC, based on a risk-based approach.

* Definition of risk-based quality requirement definition
* Explanation of how CABC uses risk management to determine quality requirements
* Overview of the steps involved in risk-based quality requirement definition for CABC certification
* Discussion of the importance of considering emerging risks and how CABC addresses this
* Discussion of the role of stakeholders in defining quality requirements
* Discussion of how CABC adjusts quality requirements over time to respond to changing system conditions and emerging risks.

## Operationalization of quality requirements

This section explains how quality requirements are put into practice in CABC, including how they are monitored and verified.

* Overview of the process of operationalizing quality requirements for CABC certification
* Steps for defining and implementing quality requirements for the CABC process
* Role of different stakeholders (e.g. certifying bodies, auditors, and end-users) in the operationalization process
* Considerations for defining quality requirements (e.g. data security, privacy, and accuracy)
* Methods for ongoing monitoring and updating of quality requirements
* Evidence-based approaches for verifying the operationalization of quality requirements.

# Automated Assessment

## Collection of relevant artifacts

This section explains how relevant artifacts, such as data, models, and performance metrics, are collected and stored in CABC.

* Explanation of relevant artifacts used in the CABC certification process
* Methods for collecting artifacts, including automating the monitoring and collection of data from different parts of the system
* Overview of secure protocols and access controls used to ensure data security and privacy during data transfer and storage
* Explanation of how the collected artifacts are used in the automated quality assessments.

## Automated quality assessments using an assessment engine

This section describes how the assessment engine uses pre-defined quality criteria to perform automated quality assessments.

* Overview of the automated quality assessment process using an assessment engine
* The role of the assessment engine in conducting continuous quality assessments
* Explanation of the pre-defined quality criteria used by the assessment engine
* Continuous quality assessments based on pre-defined quality requirements
* Implementing measurements for quality
* Overview of the data inputs required for the assessment engine (relevant artifacts)
* Mapping results of multiple measurement tools and other data to a combined input for the assesment
* Discussion of the assessment engine's evaluation methodology and decision-making process
* Explanation of the outcomes of the assessment

## Outcome of the assessments (issuance or revocation of certification)

This section describes the outcome of the quality assessments, including the issuance or revocation of certifications.

* Explanation of the outcome of the assessments performed by the assessment engine
* Issuance of certification if the assessed artifacts comply with the pre-defined quality requirements
* Revocation of certification if the assessed artifacts do not comply with the pre-defined quality requirements
* Discussion of the process for updating or revising the pre-defined quality requirements and the corresponding impact on the certification outcome
* Explanation of the process for re-certification if necessary.

## CABC in MLOps

## Quality requirement definition based on AI-Risk-Management Frameworks

This section explains how quality requirements for ML systems are defined in CABC using AI-Risk-Management frameworks.

* Overview of AI-Risk-Management Frameworks and their relevance for CABC
* Definition of quality requirements for CABC in the context of AI-Risk-Management
* Integration of AI-Risk-Management Frameworks with CABC processes
* Alignment of CABC quality requirements with AI-Risk-Management best practices and standards
* Definition of risk-based quality requirements for AI systems, models and their components
* Continuous updating and refinement of quality requirements based on changes in the AI-Risk-Management landscape.

## CABC implementation in MLOps

This section describes how CABC is implemented in the context of MLOps, including the processes, procedures, and tools involved.

* Explanation of the integration of CABC into the MLOps pipeline
* Overview of how CABC fits into the ML lifecycle
* Discussion of the benefits of incorporating CABC into MLOps
* Explanation of how CABC can improve the quality and reliability of ML models
* Discussion of the role of CABC in managing AI-related risks in MLOps
* Overview of the process for defining and implementing quality requirements for ML models in the context of CABC.

## Collection of relevant artifacts generated during the ML lifecycle

This section explains how relevant artifacts generated during the ML lifecycle are collected and used for quality assessment in CABC. Artifacts used for quality assessment (data, model, architecture, configurations, hyperparameters, algorithm, metrics, logs, etc.) - This subsection provides a list of the artifacts that are used for quality assessment in CABC.

* Overview of relevant artifacts generated during the ML lifecycle
* Collection of artifacts relevant to the quality assessment process
* Examples of artifacts: data, model, architecture, configurations, hyperparameters, algorithm, metrics, logs, etc.
* Procedures and tools used to collect the artifacts
* Automated collection of artifacts at various stages of the ML lifecycle
* Record-keeping of collected artifacts for future reference.

## Evaluation and reporting of collected evidence via an API and Assessment Engine

This section describes how the collected evidence is evaluated and reported in CABC, using an API and assessment engine.

* Overview of the process for collecting evidence related to the ML lifecycle
* Explanation of how the evidence is evaluated and reported through an API and assessment engine
* Details on how the API and assessment engine interface to produce a comprehensive evaluation report
* Discussion of how the report is used to support the certification decision making process.

## Publication of a live certificate on a governing body platform

This section explains how the results of the quality assessments are published in CABC, including the issuance and revocation of certifications.

* Explanation of the concept of publishing a live certificate on a governing body platform
* Steps involved in publishing a live certificate on a governing body platform
* Details of the governing body platform, including its purpose, features, and accessibility
* Benefits of publishing a live certificate on a governing body platform, such as increased transparency and credibility
* Explanation of how a live certificate can be updated and revoked based on continuous quality assessments

# Conclusion

## Summary of the key points discussed in the document

This section provides a summary of the key points discussed in the document, highlighting the main benefits and drawbacks of CABC.

## Reiteration of the benefits of CABC for automated quality assessment-based certification in ML

This section reiterates the benefits of CABC for automated