Assessment of the Adequacy of the Quality Management System of an Accredited Inspection Body With the Emerging Requirements of ISO/IEC 17020 : 2026

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ABSTRACT

The evolution of inspection activities and the emergence of new digital, organizational, and governance-related challenges are progressively transforming the management systems of accredited inspection bodies. In this context, the forthcoming ISO/IEC 17020:2026 standard introduces new orientations related to data governance, digital traceability, supervision mechanisms, risk management, and the integration of electronic evidence within conformity assessment systems.

This article aims to evaluate the adequacy of the Quality Management System (QMS) implemented by BETEC Inspection with respect to the emerging requirements of ISO/IEC 17020:2026. The study is based on a multicriteria analytical approach combining governance assessment, traceability analysis, supervision evaluation, and digital maturity review.

The adopted methodology relies on a case-study approach supported by analytical matrices, maturity assessment grids, and comparative evaluation mechanisms. Several dimensions were examined, including data governance, documentary continuity, digital evidence management, supervision practices, and operational traceability.

The results reveal that the existing management system demonstrates a satisfactory level of compliance regarding conventional inspection activities and operational procedures. However, the analysis also highlights several structural gaps related to fragmented digital flows, limited supervision integration, partial data governance, and insufficient traceability continuity.

The study further demonstrates that the transition toward ISO/IEC 17020:2026 requires a progressive transformation of inspection management systems toward more integrated, traceable, data-driven, and digitally supervised architectures. The proposed analytical framework contributes to strengthening organizational governance, improving conformity flow management, and supporting the modernization of accredited inspection bodies facing emerging normative challenges.

Keywords : ISO/IEC 17020:2026; Accredited Inspection Body; Quality Management System; Conformity Assessment; Data Governance; Digital Traceability; Digital Evidence; Supervision; Multicriteria Evaluation; BETEC Inspection

INTRODUCTION

Accredited inspection bodies operate in increasingly complex technical, regulatory, and digital environments that require continuous adaptation of their management systems. Over the last decades, ISO/IEC 17020 has progressively become one of the main international references governing the competence, impartiality, and operational reliability of inspection bodies involved in conformity assessment activities.

The evolution of inspection practices, digital transformation, electronic documentation, and data-driven supervision mechanisms has introduced new organizational challenges that exceed the traditional documentary approaches historically associated with inspection management systems. In this context, the forthcoming

ISO/IEC 17020:2026 standard is expected to reinforce several strategic dimensions related to digital traceability, governance of information, electronic evidence management, supervision mechanisms, risk-based approaches, and performance-oriented management.

These emerging orientations require accredited inspection bodies to progressively reconsider the structure of their Quality Management Systems (QMS) in order to ensure better integration of operational processes, digital information flows, conformity evidence, and governance mechanisms. Consequently, organizations relying on fragmented documentary systems or partially integrated supervision practices may encounter increasing difficulties in achieving full alignment with the future normative expectations.

BETEC Inspection, as an accredited inspection body operating within industrial and conformity assessment activities, represents a relevant case for evaluating the capacity of an existing management system to adapt to these evolving requirements. The organization currently operates through a combination of operational procedures, documentary controls, technical validations, and supervision mechanisms that have historically ensured conformity with previous normative frameworks. However, the transition toward ISO/IEC 17020:2026 introduces new expectations concerning data governance, digital continuity, traceability integration, and supervisory performance.

The main objective of this article is therefore to evaluate the adequacy of the Quality Management System implemented by BETEC Inspection with respect to the emerging requirements introduced by ISO/IEC 17020:2026. The study adopts a multicriteria analytical approach based on governance assessment, traceability analysis, digital evidence evaluation, and supervision mechanisms in order to identify the organization's strengths, structural gaps, and potential areas requiring transformation.

The article further aims to contribute to the ongoing reflection regarding the modernization of accredited inspection bodies facing the growing integration of digital governance, data management, and performance-oriented conformity systems within future inspection frameworks.

Emerging Requirements of ISO/IEC 17020:2026

The evolution of inspection activities and the increasing digitalization of conformity assessment systems are progressively transforming the expectations addressed to accredited inspection bodies. In this context, the forthcoming ISO/IEC 17020:2026 standard is expected to introduce stronger orientations related to governance, digital supervision, traceability continuity, and data management.

One of the most significant evolutions concerns data governance. Inspection bodies are increasingly required to ensure the integrity, reliability, accessibility, and protection of information generated throughout inspection processes. The growing dependence on digital systems, electronic documentation, cloud storage, and interconnected workflows makes information governance a strategic component of inspection management systems.

Another major orientation relates to digital evidence management. Traditional paper-based documentary approaches are progressively being replaced by electronic records, digital reports, photographs, scanned documents, emails, and interconnected databases. Consequently, inspection bodies must demonstrate the ability to ensure the authenticity, continuity, traceability, and preservation of digital evidence throughout the conformity assessment process.

The future normative orientations also reinforce the importance of operational traceability. Inspection activities are no longer evaluated only through isolated documentary records, but through the continuity established between requirements, operational activities, technical validations, and supporting evidence. This continuity becomes essential for ensuring transparency, supervision efficiency, and conformity demonstration.

Supervision mechanisms also represent a major transformation area. ISO/IEC 17020:2026 is expected to strengthen the need for dynamic supervision systems capable of providing better visibility over operational flows, technical validations, data reliability, and conformity monitoring activities.

Finally, risk-based approaches are becoming increasingly central within inspection management systems. Inspection bodies are progressively expected to identify organizational vulnerabilities, manage operational risks, reinforce resilience mechanisms, and improve preventive governance practices.

Table 1. Main Emerging Orientations of ISO/IEC 17020:2026

Emerging Requirement	Main Objective	Expected Organizational Impact
Data Governance	Information reliability and integrity	Improved control of digital information
Digital Evidence	Electronic proof management	Structured evidence continuity
Traceability	Continuity of conformity flows	Improved operational visibility
Supervision	Dynamic monitoring mechanisms	Enhanced management oversight
Risk Management	Prevention and resilience	Better vulnerability control

EVALUATION METHODOLOGY

This study adopts a qualitative and multicriteria analytical approach based on the case study of BETEC Inspection as an accredited inspection body operating within conformity assessment and industrial inspection activities.

The evaluation methodology was developed in order to assess the adequacy of the organization's existing Quality Management System with respect to the emerging requirements introduced by ISO/IEC 17020:2026. The methodological framework combines documentary analysis, operational observation, multicriteria assessment, and maturity-level evaluation.

The analysis was conducted through four principal evaluation axes :

1. data governance;
2. digital traceability;
3. supervision mechanisms;
4. management of digital evidence and operational risks.

A multicriteria evaluation grid was constructed to identify the organization's strengths, structural limitations, and adaptation gaps. Each evaluation criterion was analyzed according to observable operational practices, documentary continuity, supervision capabilities, information management mechanisms, and conformity flow integration.

To facilitate interpretation, a simplified maturity-level scale was adopted :

1. Low maturity;
2. Moderate maturity;
3. Advanced maturity;
4. Critical vulnerability.

This analytical framework allowed the identification of the organization's current level of alignment with the future orientations of ISO/IEC 17020:2026 while highlighting the transformation areas requiring progressive organizational adaptation.

Table 2. Synthetic Multicriteria Evaluation Matrix

Evaluation Axis	Evaluation Criteria	Observed Situation	Maturity Level
Data Governance	Information structuring	Partially integrated	Moderate
Traceability	Continuity of operational flows	Fragmented in some activities	Moderate
Digital Evidence	Availability and preservation	Partially digitized	Moderate
Supervision	Monitoring and visibility	Limited dynamic supervision	Low to Moderate
Risk Management	Vulnerability control	Reactive approach	Moderate

RESULTS AND ADEQUACY ANALYSIS

Data Governance and Information Management

The evaluation conducted within BETEC Inspection revealed that the organization already possesses a structured documentary and operational framework capable of supporting conventional conformity assessment activities. Inspection procedures, technical validations, reporting mechanisms, and archival practices are formally established and operationally functional. However, the analysis highlighted several structural limitations regarding data governance and digital information management.

The current system remains partially dependent on fragmented digital practices involving separate Excel files, emails, scanned documents, and dispersed storage environments. This fragmentation reduces the continuity of information flows and limits the organization's capacity to ensure fully integrated governance of inspection data. The study also identified limitations related to centralized information supervision and historical continuity of digital records. Although documentary evidence exists for most operational activities, the absence of unified governance mechanisms occasi onally affects information consistency, accessibility, and long-term traceability. Nevertheless, the organization demonstrates a favorable operational basis for progressive adaptation toward the future requirements of ISO/IEC 17020:2026, particularly due to the existence of established quality procedures, supervisory practices, and technical validation mechanisms.

Traceability and Digital Evidence

Traceability constitutes one of the most strategic dimensions evaluated during this study. The analysis demonstrated that BETEC Inspection ensures acceptable traceability regarding conventional inspection documentation and technical reporting activities. Operational records, inspection reports, photographs, and technical forms are generally available and linked to inspection activities. Despite this, the assessment identified several weaknesses regarding the continuity of digital traceability flows. In some cases, the relationship between requirements, operational activities, technical validations, and digital evidence remains partially fragmented. Documentary continuity is sometimes affected by multiple storage locations, manu al validation practices, and heterogeneous digital supports.

The management of digital evidence also presents moderate structural vulnerabilities. Emails, scanned documents, photographs, and digital records are availab le but not always integrated into a centralized supervisory architecture capable of ensuring complete continuity of conformity flows. These observations demonstrate that the transition toward ISO/IEC 17020:2026 will require stronger integration between operational activities, documentary evidence, digital archiving, and traceability supervision mechanisms.

Supervision and Management Mechanisms

The study further examined the organization's supervision and management mechanisms with respect to the future orientations of ISO/IEC 17020:2026. BETEC Inspection currently relies on established management practices including technical validations, documentary reviews, periodic supervision activities, internal quality monitoring, and managerial oversight mechanisms. These elements contribute to maintaining operational conformity and technical consistency.

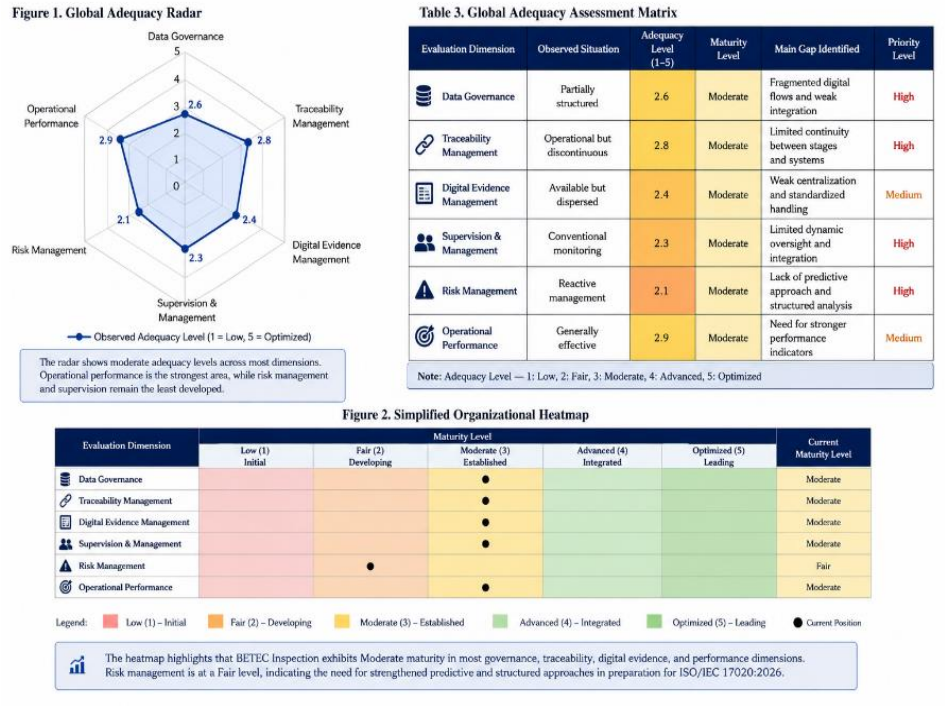
However, the analysis also revealed limitations concerning dynamic supervision capabilities and integrated monitoring systems. The current supervisory approach remains largely dependent on manual controls, documentary verification, and fragmented information flows. Consequently, visibility over operational continuity, digital evidence integration, and real-time supervisory performance remains limited in certain activities. The risk management approach is also primarily reactive rather than predictive. Organizational vulnerabilities related to data fragmentation, dispersed documentation, and digital continuity are partially controlled but require stronger integration into supervisory and governance mechanisms.

Despite these limitations, the organization demonstrates significant adaptation potential due to the existence of an operational quality structure, supervisory culture, and established conformity management practices.

Table 3. Synthetic Adequacy Assessment Matrix

Evaluation Dimension	Observed Situation	Adequacy Level	Main Gap Identified
Data Governance	Partially structured	Moderate	Fragmented digital flows
Traceability	Operational but discontinuous	Moderate	Limited continuity
Digital Evidence	Available but dispersed	Moderate	Weak centralization
Supervision	Conventional monitoring	Moderate	Limited dynamic oversight
Risk Management	Reactive management	Moderate	Lack of predictive integration

Figure 1. Simplified Organizational Heatmap



Global Analytical Interpretation

The combined analytical visualization presented through the Global Adequacy Radar, the Global Adequacy Assessment Matrix, and the Simplified Organizational Heatmap provides a synthetic overview of the current maturity and adequacy levels observed within BETEC Inspection regarding the emerging orientations of ISO/IEC 17020:2026.The results obtained demonstrate that BETEC Inspection possesses an operational management structure capable of supporting the transition toward ISO/IEC 17020:2026. The organization maintains moderate adequacy levels across several evaluated dimensions, particularly regarding operational performance, traceability management, documentary conformity, and governance practices. Existing operational procedures, technical validation mechanisms, and supervision activities constitute a favorable basis for progressive organizational adaptation.

However, the analysis also confirms that future compliance with the emerging normative orientations will require progressive transformation of the organization's governance architecture, particularly concerning :

1. digital information management;
2. continuity of traceability mechanisms;
3. integration of supervision systems;
4. governance of electronic evidence;
5. and risk-oriented monitoring and predictive management systems.

The assessment matrix and heatmap analysis further reveal that the current management system remains partially dependent on fragmented digital information flows, dispersed documentary evidence, limited supervision integration, and insufficient continuity between operational stages and digital traceability mechanisms. The analytical interpretation additionally demonstrates that the modernization of accredited inspection bodies can no longer rely solely on traditional documentary conformity approaches.

Future alignment with ISO/IEC 17020:2026 increasingly requires integrated, traceable, data-driven, and digitally supervised management architectures capable of ensuring operational continuity, governance reliability, and dynamic conformity oversight.

DISCUSSION

The results obtained from the multicriteria evaluation demonstrate that BETEC Inspection possesses a relatively structured Quality Management System capable of supporting conventional conformity assessment and inspection activities. The organization benefits from established operational procedures, technical validation practices, documentary controls, and quality supervision mechanisms that provide a solid operational foundation for future adaptation. One of the principal strengths identified during the study concerns the existence of formalized inspection workflows and documented conformity practices. The organization also demonstrates satisfactory operational traceability regarding conventional inspection records, technical reports, and documentary evidence. In addition, the presence of supervisory and managerial practices facilitates the implementation of progressive organizational improvements.

However, the study also highlights several structural vulnerabilities that may limit full alignment with the future orientations introduced by ISO/IEC 17020:2026. The most significant limitations concern fragmented digital information flows, dispersed electronic evidence management, partial integration of supervision systems, and limited continuity between operational activities, validations, and digital traceability mechanisms.The analysis further reveals that the organization's current supervision approach remains predominantly documentary and partially reactive. Dynamic monitoring mechanisms, centralized digital governance, and integrated risk-oriented supervision remain insufficiently developed in comparison with the emerging expectations associated with future conformity assessment systems.

The transition toward ISO/IEC 17020:2026 therefore represents not only a normative evolution but also an organizational transformation requiring stronger integration between governance, digital traceability, supervision, and performance management mechanisms. In this context, accredited inspection bodies are progressively expected to evolve toward more integrated, data-driven, and digitally supervised management architectures. The findings of this study confirm that BETEC Inspection demonstrates significant adaptation potential. Nevertheless, achieving higher compatibility with ISO/IEC 17020:2026 will require progressive modernization of data governance practices, digital evidence continuity, integrated supervision systems, and risk management mechanisms.

CONCLUSION

This study aimed to evaluate the adequacy of the Quality Management System implemented by BETEC Inspection with respect to the emerging requirements introduced by ISO/IEC 17020:2026.The analytical assessment conducted through a multicriteria approach demonstrates that the organization currently maintains an operationally functional management structure capable of ensuring conventional conformity assessment activities and inspection operations. The existing system provides acceptable levels of documentary conformity, operational control, and inspection supervision.

However, the study also confirms that the future orientations associated with ISO/IEC 17020:2026 introduce new expectations that extend beyond traditional documentary compliance approaches.

The increasing importance of digital governance, electronic evidence continuity, integrated supervision, traceability management, and risk-oriented monitoring requires accredited inspection bodies to progressively transform their management architectures.

While several operational foundations already exist, important transformation areas remain necessary, particularly concerning :

1. digital information governance
2. centralized supervision systems
3. continuity of traceability flows
4. digital evidence integration and predictive risk management mechanisms.

This study further demonstrates that the modernization of accredited inspection bodies cannot rely exclusively on documentary conformity systems, but increasingly requires integrated and digitally supervised governance architectures capable of ensuring operational continuity, data reliability, and dynamic supervision.

Despite the relevance of the obtained results, the study remains limited to a single organizational case study. Future research could therefore extend this analytical framework to additional accredited inspection bodies operating in different technical sectors in order to compare maturity levels, governance structures, and transition capacities toward ISO/IEC 17020:2026.

The proposed multicriteria evaluation framework may also contribute to supporting future organizational transformation strategies related to digital inspection systems, integrated conformity management, and performance-oriented governance mechanisms within accredited inspection environments.

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