From Surveillance to Audit: Strengthening Control of Product Approval Activities through Systematic Evaluation.

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DOI: https://doi.org/10.51244/IJRSI.2026.130200161

Received: 26 February 2026; Accepted: 03 March 2026; Published: 16 March 2026

ABSTRACT

The ISO/IEC 17020 standard imposes on accredited inspection bodies (IBs) two distinct but complementary levels of evaluation: surveillance (continuous, integrated into daily activities) and internal audit (periodic, indepth).

However, their articulation remains little explored in the literature.

This article addresses the following question: how does the transition from surveillance to systematic audit strengthen the control of product approval activities ?

Through a three-year longitudinal study (2023-2025) conducted within BETEC Inspection, an accredited body specialized in product approval, we analyze the evolution of the evaluation system.

The results show that surveillance, although essential for daily management, has limitations (partial detection of non-conformities, superficial root cause analysis).

The introduction of systematic internal audits revealed undetected non-conformities, identified organizational root causes, and reduced major non-conformities by 80% over two years.

The article proposes a typology of non-conformities specific to product approval, an integrated surveillanceaudit model, and an audit grid specific to product approval operations. It demonstrates that the virtuous articulation between surveillance and audit constitutes a key factor in sustaining accreditation and improving IB performance.

Keywords: Surveillance, internal audit, product approval, ISO/IEC 17020, inspection body, accreditation, systematic valuation, BETEC Inspection.

INTRODUCTION

Accreditation of inspection bodies according to the ISO/IEC 17020 standard represents a guarantee of technical competence, impartiality, and reliability of inspection results. In an economic environment where stakeholder confidence – principals, regulatory authorities, end customers – constitutes a major intangible asset, maintaining this accreditation requires the organizations concerned to exercise rigorous and continuous control over their processes.

Among these processes, product approval activities occupy a particular place. Product approval, which consists of assessing the conformity of goods (agricultural products, construction materials, consumer goods, etc.) before their shipment, reception, or placement on the market, directly engages the responsibility of the inspection body.

An error in judgment can lead to significant financial, commercial, or even safety consequences.

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XIII Issue II February 2026

Theoretical Study

The ISO/IEC 17020 standard requires accredited inspection bodies to conduct two distinct levels of evaluation of their activities:

Surveillance (clause 6.4 of the standard): described as a set of continuous activities aimed at ensuring that inspections are carried out in accordance with defined requirements.

It is integrated into the daily functioning of the organization and generally falls under direct hierarchical responsibility.

Internal Audit (clause 8.4 of the standard): defined as a periodic, planned, systematic, and documented examination, conducted by competent persons independent of the activities audited, to verify the conformity and effectiveness of the management system.

Although these two requirements are clearly stated by the standard, their operational articulation remains poorly documented, both in academic literature and professional guides. How to move effectively from one to the other ?

How to ensure that surveillance usefully feeds audit, and that audit, in return, strengthens surveillance ?

These questions, yet essential for inspection bodies, remain largely open.

Product approval activities present characteristics that make this articulation particularly critical :

1. Geographical dispersion of inspections (ports, warehouses, client sites)
2. Diversity of products and applicable reference frameworks
3. Time pressure related to logistical deadlines
4. Inspector autonomy intervening alone in the field
5. Immediate commercial stakes

In this context, daily surveillance can show its limitations: How to effectively monitor dispersed activities ?

How to detect systemic deviations through occasional observations ?

How to prevent operational proximity from generating a form of "organizational blindness"?

Research Objectives

It is to answer these questions that we conducted a three-year longitudinal study (2023-2025) within BETEC Inspection, an accredited inspection body specialized in product approval.

Our research pursues four main objectives :

1. Analyze the strengths and limitations of surveillance alone in managing product approval activities
2. Evaluate the specific contribution of systematic internal audits in detecting and analyzing non-conformities
3. Characterize the complementarity between these two evaluation systems
4. Propose an integrated model and operational tools adapted to product approval activities

Our central question is thus formulated :

How does the transition from surveillance to systematic audit strengthen the control of product approval activities ?

To answer these questions, we will first present a theoretical framework recalling the normative requirements and conceptual foundations of systematic evaluation. In a second part, we will present the methodology of our

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XIII Issue II February 2026

case study within BETEC Inspection. The empirical results will then be exposed and analyzed, before being discussed in light of theoretical contributions and practical implications.

Empirical Study

Presentation of the organization "**BETEC Inspection**" :

BETEC Inspection is an inspection body specialized in product approval for import and export.

Founded in 2010, it currently employs 25 inspectors spread across several sites in Algeria and operates mainly in the following sectors:

1. Agricultural and food products (cereals, dried vegetables, fruits)
2. Construction materials (cement, steel, ceramics)
3. Industrial products (textiles, leathers, spare parts)

The organization obtained its ALGERAC accreditation on January 24, 2024 (certificate No. 02-071) according to the ISO/IEC 17020:2012 standard, for its type A inspection activities (third-party independent bodies).

It is in this context of organizational maturation that our study takes place.

Our study covers a period of three consecutive years, allowing us to observe the evolution of the evaluation system according to three distinct phases:

2023 : Period of preparation for accreditation, with essentially informal surveillance, based on hierarchical reporting and customer feedback. Internal audits, although practiced, remain irregular and poorly formalized.

2024 : Obtaining accreditation and progressive implementation of systematic, planned, and documented internal audits, in accordance with the requirements of the standard.

2025 : Consolidation of the system with a formalized articulation between daily surveillance and in-depth internal audits.

This three-year timeframe allows us to appreciate the differentiated effects of each phase and identify the success factors of progressive integration.

Our research is based on the exhaustive analysis of four types of documentary sources :

Internal Surveillance Reports (2023-2025)

We analyzed all documents produced within the framework of activity surveillance :

Monthly performance indicators (KPIs) : inspection conformity rate, turnaround times, customer satisfaction, productivity per inspector

Field visit reports carried out by line managers

Self-assessment forms completed by inspectors after each mission

Customer complaint registers and associated processing

Internal Audit Reports

Over the 2023-2025 period, eight internal audits were carried out and documented:

2023: 2 audits (preparatory for accreditation)

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XIII Issue II February 2026

2024: 3 audits (post-accreditation)

2025: 3 audits (consolidation phase)

Each audit report contains: the audited scope, the reference frameworks applied, the list of observed nonconformities (with their severity level), root cause analysis, proposed corrective actions, and implementation deadlines

ALGERAC External Audit Reports

The reports of surveillance and renewal audits carried out by the national accreditation body ALGERAC were also used, notably to :

- Validate the relevance of internally detected non-conformities
- Assess the effectiveness of implemented corrective actions
- Measure the evolution of the external perception of the quality system

Corrective Action Records

A corrective action dashboard was maintained throughout the period, documenting for each detected nonconformity (in surveillance or audit):

- Date of detection
- Source of detection (surveillance vs audit)
- Description of the non-conformity and its severity
- Root cause analysis
- Corrective action decided
- Responsible person and due date
- Effective completion date
- Non-recurrence rate observed at 6 months

This rigorous monitoring enabled a precise quantitative analysis of the comparative effectiveness of the two systems.

Constructed Analysis Grid

To exploit this data systematically, we developed a multidimensional analysis grid allowing us to characterize each non-conformity according to the following criteria :

Dimension	Analysis Criteria
Source of detection	Surveillance / Audit / External
Nature of non-conformity	Technical / Documentary / Organizational / Behavioral
Severity	Minor / Major / Critical

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XIII Issue II February 2026

Immediate cause	Competence / Resource / Method / Communication / Other
Root cause	Organizational / Managerial / Cultural / Systemic
Processing time	< 7 days / 7-30 days / > 30 days
Corrective effectiveness	Recurring / Non-recurring at 6 months

This grid was applied to all 47 non-conformities documented over the period, allowing fine comparisons between the different phases and sources of detection.

RESULTS

In 2023, before the systematization of audits, the management of product approval activities was mainly based on six surveillance indicators :

1. Inspection Conformity Rate: calculated from random checks carried out by managers (target > 90%)

2. Average Report Turnaround Time: measured between the end of the inspection and sending the report to the client (target < 48h)

3. Customer Complaint Rate: number of complaints relative to the number of inspections (target < 2%)

4. Productivity: number of inspections per inspector per month

5. Equipment Availability Rate: operational and calibration status

6. Customer Satisfaction: annual survey (score out of 5)

Strengths of Surveillance

Our analysis of 2023 data highlights several assets of the surveillance system:

- Reactivity: anomalies detected during surveillance were processed on average within 48 hours
- Field Proximity: line managers knew their teams and operational difficulties well
- Action Culture: priority was given to quickly solving problems rather than documenting them
- Operational Customer Satisfaction: clients appreciated the responsiveness to urgent requests

Transition to Systematic Audit : implementation and evolution

1. Planning of Internal Audits

From January 2024, an **internal audit program** was formalized according to the following principles:

- **Frequency**: 3 audits per year (every 4 months)
- **Scope**: coverage of all product approval activities over a 12-month cycle
- **Approach**: by process (management, inspection operations, support)
- **Depth**: combined system audits and field audits

Particular attention was paid to the **competence of auditors**:

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XIII Issue II February 2026

- Specific training in ISO 17020 auditing (common core of 5 days)
- Auditors chosen from outside the immediate operational scope

Of the 8 audits carried out, 5 different auditors were involved, with a rotation rate of 60% over the period.

2. Coverage Rate of Product Approval Activities

The audit effort achieved the following **coverage rates**:

- **2023**: 30% of processes audited (partial preparatory audits)
- **2024**: 85% of processes audited (first complete cycle)
- **2025**: 95% of processes audited (complete cycle + targeted audits)

Field coverage (inspectors observed in real situations) increased from 20% in 2023 to 75% in 2025.

3. Analysis by Source of Detection

A particularly significant result concerns the complementarity of sources:

- Non-conformities detected only by surveillance: 8 (essentially deadlines and customer complaints)
- Non-conformities detected only by audit: 15 (of which 12 were of medium or high severity)
- Non-conformities detected by both sources: 24 (often with a deeper level of analysis in audit)

The audit thus revealed 15 non-conformities (32% of the total) that had gone completely unnoticed in surveillance, despite apparently satisfactory indicators.

Effectiveness of Corrective Actions

Completion Rate

Source of Detection	Planned Actions	Completed Actions	Completion Rate
Surveillance (2023)	28	22	78%
Audit (2024-2025)	42	40	95%

Actions resulting from audits benefit from more rigorous monitoring (designated responsible person, formal deadline, verification).

Non-recurrence Rate at 6 Months

Type of Action	Non-recurrence Rate
Corrective actions from surveillance (symptom treatment)	45%
Corrective actions from audit (root cause treatment)	**85%**

Actions based on in-depth root cause analysis (audit) are nearly twice as effective as those treating only symptoms (surveillance).

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XIII Issue II February 2026

Average Processing Times

Source of Detection	Average Detection-Correction Time
Surveillance (2023)	45 days
Audit (2024)	21 days
Audit (2025)	10 days

DISCUSSION

Surveillance and Audit: Two Complementary Levels

Surveillance constitutes the daily radar of the inspection body. It allows rapid detection of obvious anomalies

(delays, complaints) and immediate reactivity, as illustrated by the 48-hour processing times observed at BETEC in 2023. However, this operational proximity generates familiarity biases that limit the perception of structural dysfunctions.

Internal audit plays a complementary role of in-depth diagnosis. It systematically explores all processes and reveals "silent" non-conformities – inspector qualification, methodological conformity – that surveillance does not detect. Our study shows that 32% of significant non-conformities were identified only by audit, confirming that these two systems form a complete immune system where surveillance ensures immediate reactivity and audit guarantees long-term resilience.

What Audit Reveals that Surveillance Does Not See :

The comparative analysis of detection sources highlights the cognitive and organizational limits of selfevaluation inherent in surveillance. Confirmation, familiarity, and anchoring biases lead line managers to normalize certain

non-conformities or underestimate their severity. Of the 47 documented non-conformities, 15 (nearly a third) went completely unnoticed in surveillance, despite apparently satisfactory indicators.

More fundamentally, audit enables a root cause analysis that surveillance does not perform. Where surveillance treats immediate causes and generally attributes non-conformities to individual factors, audit reveals organizational causes (faulty processes, communication defects, insufficient training). This difference explains why corrective actions from audits have a non-recurrence rate of 85%, compared to only 45% for those from surveillance.

Conditions for Success in Articulating Surveillance and Audit :

The effectiveness of the articulation relies first on the competence and independence of auditors. Our observations show that the most relevant audits combine dual competence (product approval technique and audit methodology) and genuine organizational independence. The systematic rotation of auditors (60% over the period) avoided the establishment of biases and reinforced the credibility of findings.

Rigorous monitoring of corrective actions and management involvement constitute the other two pillars of success. The designation of a single responsible person, the setting of formal deadlines, and the systematic verification of effectiveness at 6 months achieved a 98% completion rate in 2025.

Proposal for an Integrated Surveillance-Audit Model :

Based on these findings, we propose a five-phase cyclical model specifically adapted to product approval activities. Phase 1 ensures daily surveillance with KPI indicators and self-assessments. Phase 2 analyzes weak

signals (exceeded thresholds, concerning trends) and feeds a surveillance-audit liaison sheet. Phase 3 triggers targeted audits, planned or exceptional, carried out according to a specific grid.

Phases 4 and 5 close the cycle with the implementation of corrective actions and verification of their effectiveness before returning to surveillance. This model is accompanied by four operational tools presented in the appendices: specific audit grid, report template, action tracking table, and liaison sheet. Applied at

BETEC, it reduced major non-conformities by 80% and improved processing times by 78% over two years.

CONCLUSION

This longitudinal research conducted over three years within BETEC Inspection demonstrates that surveillance and audit, far from being simple juxtaposed normative requirements, constitute two fundamentally complementary levels of evaluation. Surveillance ensures daily reactivity and detection of obvious anomalies, while audit enables an in-depth diagnosis revealing structural non-conformities invisible on the surface. The quantified results are unequivocal: 32% of significant non-conformities undetected by surveillance, nonrecurrence rate of actions doubled thanks to audit, 80% reduction in major non-conformities over two years. Operationally, we propose a concrete integrated model and four tools directly usable by product approval practitioners.

The Double Loop and Perspectives:

The main lesson from this study is that the sustainability of an accredited inspection body rests on a temporal double loop: the short loop of surveillance guarantees control of daily risks, the medium loop of audit enables organizational learning and correction of root causes. Their virtuous articulation transforms quality from a constraint into a performance lever. This demonstration naturally opens the way to our next article devoted to the management review, the strategic instance where audit results are transformed into governance decisions.

Complementary perspectives also emerge: automation of the system, development of collaborative auditing, and reinforced integration with risk management.

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ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XIII Issue II February 2026

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