



Quality Outcome Criteria in Whole Quality

How Expected States and Results Support Responsible Interpretation

Foundational Article 10 — Third Edition

Whole-Quality Institute

The preceding Foundational Articles established the progressive methodological architecture of Whole Quality.

They explained that Whole Quality begins with the definition of the Quality Object, whose Intended Function is realized through multiple Intended Results.

They further established that Function Realization is understood through its principal Quality Factors, which are examined through one or more Quality Indicators.

A further methodological question now naturally follows:

Against what expected states or results should the observations associated with a Quality Indicator be interpreted?

Whole Quality answers this question through **Quality Outcome Criteria**.

This article explains the methodological role of Quality Outcome Criteria, their relationship to Quality Indicators, and how they prepare responsible Quality Determination without replacing Evidence, Verification, or the determination process.

A Quality Indicator identifies what should be examined. A Quality Outcome Criterion establishes the expected state or result used to interpret the associated observations.

The article also establishes that a Quality Indicator may be interpreted through one or more applicable Quality Outcome Criteria because the aspect is commonly multidimensional.

Context, physical time, Lifecycle stage, Boundaries, Interfaces, Reference Layers, and other applicable conditions then refine which criteria apply and how they are interpreted.

The recurring example remains Human Body Health, with Cardiovascular Health as one Quality Factor and Heart Health as one Quality Indicator.

FTA10 asks which expected states or results should be used to interpret observations concerning Heart Health.

Responsible interpretation ordinarily requires multiple complementary Quality Outcome Criteria.

FTA10 continues the progression established in FTA4 and FTA6-FTA9: methodological resolution reveals Intended Results, Boundaries and Interfaces, Quality Factors, Quality Indicators, and now the Quality Outcome Criteria through which observations become interpretable.

Quality Outcome Criteria establish the expected states or results through which observations associated with Quality Indicators are interpreted, preparing the foundation for responsible Quality Determination.

1. Why Quality Outcome Criteria Matter

The authoritative definition of Quality Outcome Criterion remains established in the Whole Quality Root Vocabulary Standard (WQI VOC1). This article explains its methodological role.

FTA9 established what should be examined through Quality Indicators. FTA10 establishes the expected states or results against which the resulting observations are interpreted.

1.1 Observation Alone Is Not Sufficient

An observation describes what has been found, but it does not establish a Quality State by itself.

Interpretation requires one or more applicable Quality Outcome Criteria that provide the expected states or results.

Quality Outcome Criteria provide the interpretive framework for observations. They prepare, but do not independently perform, Quality Determination.

Whole Quality therefore preserves distinct roles for the Quality Indicator, the applicable Quality Outcome Criteria, the observations and Evidence, and the subsequent interpretation within the declared Context.

2. From Quality Indicators to Multiple Quality Outcome Criteria

FTA9 established that a Quality Indicator identifies what should be examined. FTA10 addresses the expected states or results through which its observations are interpreted.

One criterion is usually insufficient; a Quality Indicator may be interpreted through one or more applicable Quality Outcome Criteria.

2.1 One Criterion Is Usually Insufficient

A Quality Indicator represents one aspect of a Quality Factor.

However, that aspect is rarely simple.

It commonly includes several interrelated characteristics, conditions, relationships, capabilities, behaviors, or other expected aspects that together express successful Function Realization.

A single Quality Outcome Criterion can usually represent only one of these expected aspects.

Consequently, one criterion alone is seldom sufficient to support responsible interpretation of the observations associated with the Quality Indicator.

Whole Quality therefore commonly requires multiple complementary Quality Outcome Criteria.

2.2 The Fundamental Reason

This requirement does not arise because different Contexts exist.

It arises because the aspect represented by the Quality Indicator is itself naturally multidimensional.

The methodology does not create this multidimensionality.

It progressively reveals it through a Methodological Resolution adequate for the intended Quality Determination.

Accordingly,

- an Intended Function may be realized through multiple Intended Results;
- a Quality Factor may be examined through multiple Quality Indicators;
- one Quality Indicator is interpreted through multiple Quality Outcome Criteria.

This repeating methodological progression reflects the natural organization of Function Realization.

2.3 Recurring Example — Human Body Health

Assume again that the defined Quality Object is:

Human Body Health

One Quality Factor is:

Cardiovascular Health

One Quality Indicator is:

Heart Health

The question is not simply:

Is the heart healthy?

Whole Quality asks:

What expected states or results together characterize Heart Health?

Responsible interpretation commonly requires multiple complementary Quality Outcome Criteria concerning such matters as:

- effective pumping function;
- appropriate cardiac rhythm;
- proper electrical conduction;

- effective valve performance;
- adequate myocardial perfusion;
- structural integrity of the heart;
- appropriate adaptation to physiological demand;
- appropriate recovery following demand.

Together these criteria provide a substantially more complete methodological basis for interpreting the observations associated with Heart Health.

None alone adequately represents the expected realization of the Quality Indicator.

2.4 A Structured Set of Quality Outcome Criteria

The applicable Quality Outcome Criteria should therefore be regarded as a structured methodological set rather than as independent individual criteria.

Each criterion contributes one part of the expected realization represented by the Quality Indicator.

Together they establish the interpretive basis for responsible determination of the observed Quality Indicator.

Whole Quality therefore seeks neither one universal criterion nor an unlimited number of unrelated criteria.

Instead, it seeks a coherent and sufficiently complete set of complementary Quality Outcome Criteria.

2.5 Preparing for Context-Specific Refinement

The discussion so far has established the fundamental need for multiple Quality Outcome Criteria.

This need exists before consideration of Context.

The next methodological question is therefore different.

It is no longer:

Why are multiple Quality Outcome Criteria required?

Instead it becomes:

How do Context, physical time, Lifecycle stage, Boundaries, Interfaces, and other applicable conditions influence which Quality Outcome Criteria are applicable and how they should be interpreted?

The following section addresses that question.

3. Context-Specific Refinement of Quality Outcome Criteria

The preceding section established that one Quality Indicator is interpreted through multiple Quality Outcome Criteria because the aspect represented by that Quality Indicator is naturally multidimensional.

This methodological necessity exists before consideration of Context.

The next question therefore becomes:

How should the applicable Quality Outcome Criteria be refined for a particular Quality Determination?

Whole Quality answers this question through Context.

Context does not by itself create the Quality Outcome Criteria. The applicable criteria must be justified by the Applicable Basis and supported, where appropriate, by the Reference Layer. Context affects which criteria apply and how they are formulated and interpreted for the intended Quality Determination.

It refines their applicability, formulation, interpretation, and relative importance for the declared Quality Determination.

3.1 Context, Applicable Basis, and Criterion Applicability

Whole Quality distinguishes between:

- the inherent need for multiple Quality Outcome Criteria; and
- the Context-specific refinement of those criteria.

This distinction is fundamental.

The need for complementary criteria may arise from the nature of the aspect being examined and from the Applicable Basis. Context then affects their applicability and interpretation for the particular Quality Determination.

The second arises from the circumstances within which the Quality Determination is performed.

Confusing these two concepts may lead to the incorrect conclusion that multiple Quality Outcome Criteria exist only because different Contexts exist.

Whole Quality therefore does not treat Context alone as the source of the applicable criteria.

Multiple Quality Outcome Criteria are already methodologically necessary before Context is considered.

3.2 Physical Time

One important Context dimension is **physical time**.

The expected states or results associated with a Quality Indicator may legitimately differ:

- at one point in time;

- during continuous operation;
- during deterioration;
- during recovery;
- before or after an intervention;
- throughout long-term observation.

Physical time therefore influences the application of the Quality Outcome Criteria.

It does not create the need for multiple criteria.

3.3 Lifecycle Stage

Another Context dimension is the applicable Lifecycle stage.

Expected states or results may differ during:

- planning;
- design;
- construction;
- operation;
- maintenance;
- rehabilitation;
- decommissioning;

or, in biological systems,

- development;
- maturity;
- ageing;
- recovery.

Lifecycle therefore refines the application of the Quality Outcome Criteria while preserving their fundamental methodological role.

3.4 Boundaries and Interfaces

FTA7 established that every Quality Determination is performed within declared Boundaries and across relevant Interfaces.

Accordingly, the applicable Quality Outcome Criteria shall remain consistent with:

- the declared Boundaries;
- the relevant Interfaces;
- the methodological scope of the determination.

Changing the declared Boundaries or Interfaces may require refinement of the applicable Quality Outcome Criteria.

It does not eliminate their inherent multiplicity.

3.5 Additional Context Dimensions

Depending upon the defined Quality Object, additional Context dimensions may include:

- operating conditions;
- environmental conditions;
- population characteristics;

3. Context-Specific Refinement of Quality Outcome Criteria

Multiple Quality Outcome Criteria are required because the aspect represented by the Quality Indicator is commonly multidimensional. Context then refines their applicability, formulation, interpretation, and relative importance for a particular Quality Determination.

Whole Quality distinguishes between the inherent need for multiple criteria and their Context-specific refinement.

The first arises from the aspect itself; the second arises from the circumstances of the determination.

This distinction prevents Context from being mistaken as the source of the criteria's multiplicity.

After the applicable Quality Outcome Criteria have been refined for the declared Context, another methodological question remains.

On what recognized basis should these Quality Outcome Criteria be established, applied, and interpreted?

Whole Quality answers this question through **Reference Layers**.

Reference Layers strengthen the transparency, consistency, reproducibility, and trustworthiness of Quality Outcome Criteria and the Quality Determinations that depend upon them.

4. Reference Layers Supporting Quality Outcome Criteria

Applicable Basis establishes what applies. Reference Layer supports what is expected. Evidence supports what is actually found.

The preceding sections established why one Quality Indicator is interpreted through multiple Quality Outcome Criteria and how those criteria are refined for the declared Context.

A further methodological question now arises:

On what recognized basis should Quality Outcome Criteria be established, applied, and interpreted?

Whole Quality answers this question through **Reference Layers**.

Reference Layers provide sources used to support or justify the Quality Outcome Criteria applicable to the Quality Object. They are distinct from the Applicable Basis, which establishes what applies.

They strengthen the transparency and credibility of Quality Determination.

They do not replace the methodology.

4.1 Why Reference Layers Matter

Quality Outcome Criteria should not depend solely upon individual opinion or isolated professional judgment.

Whenever appropriate, they should be supported by recognized Reference Layers that explain:

- why particular Quality Outcome Criteria have been established;
- how they should be applied;
- how they should be interpreted;
- under what conditions they remain applicable.

Reference Layers therefore improve methodological consistency and transparency.

4.2 Types of Reference Layers

Depending upon the defined Quality Object and the purpose of the determination, Reference Layers may include:

- recognized methods and procedures;
- standards and technical specifications;
- regulations and legal requirements;
- scientific and technical knowledge;
- professional guidance;
- organizational requirements;
- industry-recognized practices;

- validated research;
- other recognized sources appropriate to the declared Context.

Whole Quality does not require one universal Reference Layer.

The applicable Reference Layers depend upon the defined Quality Object and the purpose of the determination.

4.3 Recognized Organizations

Reference Layers frequently originate from recognized organizations responsible for developing, maintaining, validating, or approving the relevant methods, procedures, standards, regulations, or guidance.

Depending upon the application domain, these organizations may include:

- standards development organizations;
- regulatory authorities;
- accreditation bodies;
- scientific and professional organizations;
- healthcare organizations;
- engineering organizations;
- other recognized competent authorities.

Whole Quality does not assign authority to one type of organization alone.

The appropriate Reference Layer depends upon the defined Quality Object and the declared Context.

4.4 Recurring Example — Human Body Health

Assume again that the defined Quality Object is:

Human Body Health

One Quality Indicator is:

Heart Health

One applicable Quality Outcome Criterion concerns effective pumping function.

The concept of a Quality Outcome Criterion belongs to the Whole Quality methodology. The substantive expected state used in an application must be established or justified from the Applicable Basis and, where appropriate, supported by recognized Reference Layers.

However, its practical application may appropriately rely upon recognized Reference Layers such as:

- accepted clinical examination methods;
- recognized medical practice guidelines;
- validated diagnostic procedures;
- applicable healthcare standards;
- scientific evidence supporting those methods.

These Reference Layers strengthen confidence in the interpretation.

They do not replace the Quality Outcome Criterion.

4.5 Reference Layers Support Trusted Quality Claims

Reference Layers contribute to the credibility of subsequent Quality Determinations by making the basis for interpretation transparent and reproducible.

They support:

- consistency;
- traceability;
- reproducibility;
- transparency;
- professional confidence.

Accordingly, appropriately identified Reference Layers strengthen the foundation upon which later Evidence, Verification, Quality Determination, and appropriately bounded Quality Claims are built.

4.6 Reference Layers Do Not Replace Methodology

Whole Quality distinguishes clearly between:

- the methodology itself;
- the applicable Quality Outcome Criteria;
- the Reference Layers supporting those criteria.

Reference Layers provide recognized support.

They do not determine the methodology.

They do not replace professional reasoning.

They do not replace responsible Quality Determination.

Their role is to strengthen the transparency, reproducibility, and credibility of the methodological process.

The following section explains how Quality Outcome Criteria themselves are organized into a coherent methodological structure rather than functioning as isolated individual criteria.

5. Relational Organization of Quality Outcome Criteria

The preceding sections established:

After criteria have been identified and refined for the declared Context, Whole Quality asks what recognized basis supports their establishment, application, and interpretation.

Reference Layers provide that recognized foundation and strengthen transparency, reproducibility, and credibility without replacing the methodology.

Each criterion contributes one aspect of the expected realization represented by that Quality Indicator.

Together, the criteria provide a substantially more complete interpretive framework than any individual criterion considered alone.

Whole Quality therefore evaluates the organization of the criteria as well as the individual criteria themselves.

5.2 Relationships Among Quality Outcome Criteria

Quality Outcome Criteria commonly exhibit logical relationships.

Some criteria complement one another.

Some provide supporting interpretation.

Some establish prerequisite conditions.

Some express dependent relationships.

Some address different aspects of the same Quality Indicator.

Understanding these relationships contributes to more consistent interpretation.

5.3 Completeness

A structured set of Quality Outcome Criteria should be sufficiently complete to represent the multidimensional aspect associated with the Quality Indicator.

Completeness does not require the largest possible number of criteria.

It requires that the organized set provides sufficient methodological coverage of the expected realization represented by the Quality Indicator.

5.4 Consistency

The Quality Outcome Criteria within one structured set should remain mutually consistent.

Individual criteria should not contradict one another or require incompatible interpretations.

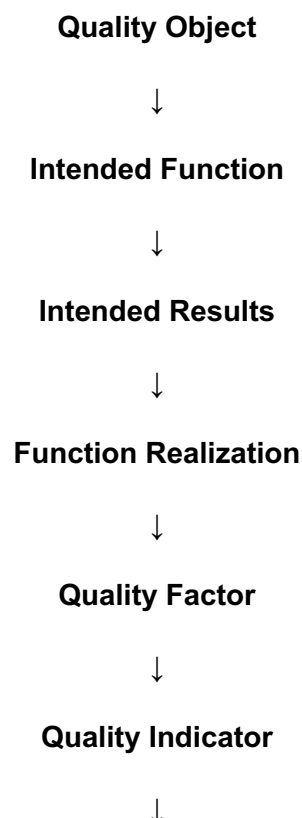
Consistency should also be maintained with:

- the defined Quality Object;
- the Intended Function;
- the Intended Results;
- the applicable Quality Factor;
- the relevant Quality Indicator;
- the declared Boundaries;
- the applicable Interfaces;
- and the declared Context.

5.5 Traceability

Each Quality Outcome Criterion should remain traceable to the relevant Quality Object, Intended Function(s) and Intended Result(s), Quality Factor, Quality Indicator, Applicable Basis, and supporting Reference Layer.

Its methodological origin should be identifiable through the progression:



Quality Outcome Criterion

This traceability strengthens transparency, consistency, reproducibility, and later Quality Determination.

5.6 Methodological Resolution

FTA4 introduced the principle of a Methodological Resolution adequate for the intended Quality Determination.

The same principle applies to Quality Outcome Criteria.

At a Methodological Resolution adequate for the intended Quality Determination:

- additional Quality Outcome Criteria may become distinguishable;
- relationships among criteria may become more explicit;
- interpretation may become progressively more refined.

The methodology does not create additional complexity.

It progressively reveals the interpretive structure already associated with the aspect represented by the Quality Indicator.

5.7 Preparing for Application Across Domains

The relational organization of Quality Outcome Criteria is independent of any particular application domain.

Infrastructure, manufacturing, healthcare, support services, environmental systems, management systems, and other Quality Objects may require different Quality Outcome Criteria.

The organizational principles remain the same.

The following section illustrates this universal methodology across different application domains.

6. Quality Outcome Criteria Across Application Domains

The methodological role of Quality Outcome Criteria remains stable across application domains.

The defined Quality Objects, Quality Factors, Quality Indicators, and applicable criteria differ.

The relationship remains the same:

A Quality Indicator identifies what is examined. Multiple Quality Outcome Criteria establish the complementary expected conditions or results through which that Indicator is interpreted.

6.1 Infrastructure Example

Within the Infrastructure Quality Initiative, the Core Standard establishes invariant Core Quality Factors and Core Quality Indicators.

The MNT1 Context Guide interprets those Indicators for onshore natural gas main pipeline transportation infrastructure and develops applicable Context-Specific Quality Outcome Criteria.□

For example:

Core Quality Indicator — Independence and Objectivity of Conformity Assessment

Applicable criteria consider whether:

- the assessment role is identified;
- potential conflicts of interest are visible;
- the assessment criteria are stated;
- conclusions are supported by records;
- unresolved limitations are disclosed;
- the level of independence is not overstated.

One criterion alone would not adequately represent the expected condition of independent and objective conformity assessment.□

6.2 Support-Service Example

Within the American Support Standards Initiative, PCA1 establishes invariant Core Quality Factors and Core Quality Indicators.

The PAB1 Context Guide interprets them for the bounded Bathing Support Context and develops bathing-specific Context-Specific Quality Outcome Criteria.□

For example:

Core Quality Indicator — Maintenance of Privacy and Bodily Dignity

Applicable criteria establish that:

- privacy is maintained;
- unnecessary exposure is avoided;

The preceding sections established why multiple criteria are needed, how Context refines them, and how Reference Layers support them.

The remaining question is how the criteria should be organized so that they collectively support interpretation and later Quality Determination.

Quality Indicator — Heart Health

multiple Quality Outcome Criteria may concern:

- pumping function;
- cardiac rhythm;
- electrical conduction;
- valve performance;
- myocardial perfusion;
- structural condition;
- response and recovery following physiological demand.

This example is explanatory. It is not taken from an established WQI Health Core Standard or Health Context Guide.

6.4 One Methodology, Different Applications

The examples differ because the defined Quality Objects differ.

The methodological structure remains unchanged:

Quality Indicator



Multiple complementary Quality Outcome Criteria



Preparation for responsible interpretation and Quality Determination

The following section explains how the criteria prepare the basis for Quality Determination without replacing Evidence, Evidence-Supported Findings, Verification, or the determination process itself.

7. Preparing for Responsible Quality Determination

Quality Outcome Criteria do not determine the Quality State by themselves. They prepare the methodological basis for evaluating observations and Evidence against expected states or results.

Quality Outcome Criteria connect observations and Evidence to interpretation and subsequent Quality Determination.

Each criterion should remain traceable to the defined Quality Object, Intended Function, Intended Results, applicable Quality Factor and Quality Indicator, declared Context, and applicable Reference Layers.

Quality Outcome Criteria prepare—but do not replace—Evidence evaluation, Evidence-Supported Findings, Quality Factor Interpretation, Quality Determination, and appropriately bounded Quality Claims.

8. Methodological Sources and Related Work

Whole Quality distinguishes the aspect to be examined, the expected state or result used for interpretation, the Evidence obtained, and the subsequent Finding and interpretation. Established measurement and evaluation literature provides related context for maintaining these distinctions.

ISO/IEC 25019 provides established terminology concerning quality measurement and quality requirements, while NIST guidance on decision rules illustrates the importance of stating how evidence is interpreted against specified requirements or acceptance criteria [1][2]. These sources provide methodological context; they do not define the WQI Root Concepts.

The WQI contribution in this article is the cross-domain placement of Quality Outcome Criteria between Quality Indicators and Evidence-supported interpretation, together with the distinction among Applicable Basis, Reference Layer, and Evidence and the requirement for traceable, relationally coherent criterion sets. WQI_VOC1 remains authoritative for the controlled definitions.

References

[1] ISO/IEC 25019:2023, Systems and software engineering — Systems and software Quality Requirements and Evaluation (SQuaRE) — Quality-in-use model.

[2] National Institute of Standards and Technology (NIST), guidance on conformity-assessment decision rules and statements of conformity.

Conclusion

FTA10 has explained that Quality Indicators identify what should be examined, while Quality Outcome Criteria establish the expected states or results through which the associated observations are interpreted.

A Quality Indicator may be interpreted through one or more applicable Quality Outcome Criteria because the aspect is commonly multidimensional. Context and Reference Layers then refine and support their application.

The criteria form a coherent, sufficiently complete, consistent, and traceable set rather than isolated statements.

The IQI, AMSI, and Human Body Health examples demonstrate that the methodological relationship remains stable even though the applicable criteria differ among Quality Objects.

FTA10 completes the present Foundation Series progression from the Quality Object and Intended Function to Intended Results, Quality Factors, Quality Indicators, and the Quality Outcome Criteria needed for responsible interpretation.

This foundation prepares—but does not replace—Evidence evaluation, Evidence-Supported Findings, Verification, responsible Quality Determination, and appropriately bounded Quality Claims.

Whole Quality does not create the quality-relevant structure. It examines that structure at a Methodological Resolution adequate for the intended Quality Determination.

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