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Glossary

Key terms used throughout this methodology. Terms shared with the companion Analytical Foundations methodology are carried forward.

- Capability Maturity Platform** The common analytical ground that aligns strategic (top-down) and operational (bottom-up) priorities by producing a current-state maturity picture for every ECCC business capability across every assessment dimension.
- Directorate** An ECCC organizational unit that is assessed for maturity and contributes to capability delivery. Fifty-five directorates were assessed; the weights matrix spans 71.
- Branch** A grouping of directorates; ECCC has 13. Branch-level maturity is the average of a branch's constituent directorates.
- Business capability** A discrete function the department must perform to fulfil its mandate — 60 capabilities under 12 groups, of which 48 are leaf-level (operational).
- Assessment criterion** One of 23 standardized maturity dimensions, organized across four pillars — Information, Technology, Process, and Workforce.
- Maturity level** The 1-5 scale on which each criterion is scored, from 1 (ad hoc / initial) to 5 (optimized / autonomous).
- Delivery involvement (weight)** The 0-4 score of how heavily a directorate contributes to delivering a capability.
- BCMM** Business Capability Maturity Matrix — the terminal output: a computed maturity score for each of 48 operational capabilities on each of 23 criteria, derived from directorate maturity and delivery weights.
- Quadratic weighting** The use of the squared delivery weight (w^2) in aggregation, so primary delivery owners dominate a capability's score.
- Assessment gap** The deliberate dilution of a capability's score when a delivering directorate was not assessed (contributing a maturity of zero), preventing overstatement of maturity where evidence is incomplete.

Abstract

The Capability Maturity Platform is the common analytical ground within the ECCC Digital Roadmap that enables alignment between strategic priorities (top-down from the PMO, the Minister, and the Deputy Minister) and operational priorities (bottom-up from ADMs and DGs, surfaced through approximately 200 stakeholder interviews). The platform produces a current-state maturity picture for every ECCC business capability across every assessment dimension — the evidence base needed to identify where capability improvement is required, and where the gap between current and target maturity is greatest.

This document describes the three core data assets that constitute the platform — the Branch Maturity Assessments, the Directorate Capability Weights, and the derived ECCC Business Capability Maturity Matrix (BCMM) — explaining how each was developed, what information it contains, its strategic value, and the mathematical relationship through which two combine to produce the third. The platform's defining discipline is that the BCMM is not estimated or subjectively judged but mathematically computed from two validated, evidence-based inputs, with a deliberate

design choice that surfaces rather than hides assessment coverage gaps.

A current-state maturity score for every capability on every dimension – computed, not guessed, from directorate evidence and delivery structure, and honest about where the evidence runs out.

1. Introduction

The Capability Maturity Platform is the common analytical ground within the ECCC Digital Roadmap that enables alignment between strategic priorities (top-down from the PMO, the Minister, and the Deputy Minister) and operational priorities (bottom-up from ADMs and DGs surfaced through approximately 200 stakeholder interviews). It produces a current-state maturity picture for every ECCC business capability across every assessment dimension — the evidence base needed to identify where capability improvement is required, and where the gap between current and target maturity is greatest.

This document describes the three core data assets: the Branch Maturity Assessments, the Directorate Capability Weights, and the derived Business Capability Maturity Matrix (BCMM). It explains how each was developed, what information it contains, its strategic value, and the mathematical relationship through which two of them combine to produce the third.

2. The Three Core Data Assets

2.1 Branch Maturity Assessments

What it is

A comprehensive set of individual capability-maturity evaluations for each of ECCC's 55 assessed directorates across all 13 branches. Each directorate is assessed on 23 criteria across four pillars: Information (5), Technology (6), Process (6), and Workforce (6). Each criterion receives a maturity score on a 1-5 scale, where 1 is ad hoc/initial and 5 is optimized/autonomous.

How it was developed

From AI-assisted analysis of approximately 200 stakeholder interviews across all ECCC branches. For each directorate, its staff's transcripts were analyzed across the 23 dimensions using a five-level maturity model with criterion-specific descriptors. For each criterion, five assessment questions probe current state, how well-defined practices are, how performance is measured, level of optimization, and maturity relative to external standards; the five responses are averaged to produce the criterion score — so it reflects multiple facets rather than a single subjective judgment.

The workbook contains 55 individual directorate tabs (e.g., C.1 Prediction Services, F.2 Wildlife Enforcement), each with the full 23-criterion assessment (all five questions, selected levels, computed average, overall label). A summary sheet aggregates all directorate scores into one cross-departmental matrix; a Branch Summary computes branch-level averages.

Information content

55 directorate assessments, each with 23 criterion scores from 5 questions — 6,325 individual maturity judgments (55 x 23 x 5). The summary provides a 55 x 23 directorate matrix; the Branch Summary a 13 x 23 branch matrix. The 23 criteria and their maturity scales by pillar:

Information	Data Quality & Accuracy, Data Integration & Accessibility, Analytics & Insights, Information Governance, Knowledge Management. Scale: Ad Hoc -> Managed -> Centralized -> Advanced -> Prescriptive.
Technology	Systems & Applications, Infrastructure & Platforms, Automation & AI/ML, Integration Architecture, Technology Innovation, Cybersecurity & Resilience. Scale: Legacy -> Standardized -> API-First -> Continuous -> Autonomous.
Process	Process Standardization & Documentation, Process Efficiency & Optimization, Quality Management, Workflow Automation, Compliance & Risk Management, Collaboration & Handoffs. Scale: Informal -> Documented -> Standardized -> Integrated -> Adaptive.
Workforce	Talent & Skills, Capacity & Utilization, Training & Development, Organizational Structure & Roles, Funding & Budget, Vendor & Partner Ecosystem. Scale: Reactive -> Developing -> Planned -> Optimized -> Orchestrated.

Value

Answers: "How mature is each directorate across each capability dimension?" It gives each directorate and branch a precise diagnostic, enables comparison within and across branches, and is the foundational input to the BCMM.

2.2 Directorate Capability Weights

What it is

A matrix mapping ECCC's 60 departmental business capabilities (under 12 groups) against all 71 directorate-level units, scoring each directorate's involvement in delivering each capability on a 0-4 scale.

How it was developed

The taxonomy was derived from ECCC's mandate, program-alignment architecture, and operational structure — 60 discrete functions from weather forecasting and wildlife management to grants administration and enforcement, organized into parent groups containing leaf-level capabilities. Each capability was assessed for which directorates contribute and with what intensity: 0 none, 1 peripheral, 2 moderate, 3 significant, 4 primary delivery owner. Typically 3-8 directorates are involved per capability, with 1-2 carrying primary responsibility; some capabilities engage a wide supporting set, others concentrate in a few specialized directorates.

Information content

60 capability rows x 71 directorate columns = 4,260 potential cells. 48 of the 60 capabilities are leaf-level (operational) with weights; 12 are grouping headers. Each non-zero cell is a confirmed directorate-to-capability delivery relationship (intensity 1-4).

Value

Answers: "Who delivers what, and how heavily?" It is the structural bridge between organizational units (which have maturity scores) and business capabilities (which the department must deliver). Without it, there is no principled way to translate directorate-level maturity into capability-level maturity.

2.3 ECCC Business Capability Maturity Matrix (BCMM)

What it is

The terminal output: a matrix assigning a maturity score to each of ECCC's 48 operational capabilities across each of the 23 criteria. Each score reflects the current-state maturity of the units responsible for delivering that capability, weighted by delivery-involvement intensity.

How it was developed

Derived algorithmically from the Branch Maturity Assessments and the Directorate Capability Weights using a quadratic-weighted aggregation formula (Section 3). For each capability-criterion pair, it aggregates the maturity scores of all delivering directorates, each weighted by the square of its delivery weight, normalized by the sum of squared weights. It is computed, not estimated — any change to a maturity score or weight propagates automatically, making it a living model.

Information content

1,104 cells (48 operational capabilities x 23 criteria). Scores are continuous, typically ~1.0 to 4.5. Capabilities delivered by high-maturity directorates score high; those depending on lower-maturity or unassessed directorates score proportionally lower. Twelve grouping-header rows carry no scores.

Value

Answers: "What is the current maturity of each business capability, across every dimension that matters?" It sets the current-state baseline against which targets are set, identifies the widest current-to-target gaps, and reveals which dimensions are systematically weak across capabilities.

Critically, the BCMM surfaces the consequences of unassessed directorates: when a capability depends on directorates whose maturity was not assessed, those contribute a maturity of zero to the weighted calculation — a deliberate choice that lowers the score, highlights coverage gaps, and prevents overstatement where evidence is incomplete.

3. Relational Architecture and BCMM Derivation

The three data assets form a directed analytical chain. The Branch Maturity Assessments provide the raw maturity evidence; the Directorate Capability Weights provide the structural mapping; and the BCMM is derived from their combination. Understanding this derivation is essential to interpreting the maturity scores and trusting their validity.

3.1 The two input relationships

Relationship 1 — Directorate Maturity (assessments)

Answers "how mature is each directorate on each criterion?" For each of the 55 assessed directorates, a score (1-5) for each of the 23 criteria — a directorate-specific maturity fingerprint across all dimensions.

Relationship 2 — Directorate Delivery Involvement (weights)

Answers "which directorates deliver each capability, and how heavily?" For each of the 48 operational capabilities, 3-8 involved directorates with involvement scores (1-4) — a capability-specific delivery profile.

3.2 The quadratic derivation formula

The BCMM score for each capability-criterion pair is computed as follows:

$$\text{BCMM}(\text{cap}, k) = \frac{\sum_d [w_d^2 \times \text{Maturity}(d, k)]}{\sum_d [w_d^2]}$$

where cap is the capability; k is the criterion (one of 23); d ranges over all directorates involved in delivering the capability; w_d is directorate d's delivery weight (1-4); and $\text{Maturity}(d, k)$ is d's maturity on criterion k (0-5; 0 if unassessed). The summations run over all directorates with non-zero delivery weights. Unassessed directorates (maturity 0) still appear in the denominator via their squared weight, properly diluting the score to reflect the assessment gap.

3.3 Why quadratic weighting

Quadratic weighting (w^2) rather than linear (w) is deliberate. Under linear weighting, a directorate with weight 4 contributes twice the influence of one with weight 2; under quadratic, four times (16 versus 4). This reflects that a primary delivery owner's maturity has an outsized effect on the capability's actual performance compared to a peripheral contributor's. If the directorate most responsible for weather forecasting (weight 4) has high analytical maturity, that capability's analytical maturity is genuinely high — even if a minor contributor (weight 1) scores lower. The quadratic approach ensures the score is dominated by the directorates that actually drive delivery.

3.4 Worked example

Consider the Weather Forecast Management capability, delivered by four directorates (criterion: Data Quality):

Directorate	w	w ²	Maturity	w ² x Mat
C.1 Prediction Services	4	16	3.4	54.4
C.2 Monitoring & Data Svcs	2	4	3.4	13.6
C.4 CCMEP	4	16	4.4	70.4
K.1 Data & Digital Transf.	1	1	3.2	3.2
Totals		37		141.6

$$\text{BCMM}(\text{Weather Forecast Management, Data Quality}) = 141.6 / 37 = 3.83$$

The two primary directorates (C.1 and C.4, both weight 4) dominate: their combined squared weight is 32 of 37 (86.5%), ensuring the score reflects the units that actually produce forecasts. The minor contributor K.1 (weight 1) influences only 2.7%. Under linear weighting the same calculation would yield 3.75 — subtly understating the primary delivery owners.

3.5 Treatment of unassessed directorates

A critical design choice is that unassessed directorates contribute a maturity of zero while their squared weight still appears in the denominator. When a capability depends on directorates for which no interview evidence exists, the BCMM score is mathematically diluted — producing a lower score than if only assessed directorates were considered. This is deliberate: it ensures the BCMM does not overstate maturity where evidence is incomplete, flags such capabilities for attention, and incentivizes assessment-coverage expansion rather than false confidence.

4. Analytical Data Flow

The complete chain runs from interview evidence to business-capability maturity. Approximately 200 stakeholder interviews are processed through AI-assisted analysis — a five-question maturity

framework across 23 criteria and four pillars — to produce the Branch Maturity Assessments (55 directorates x 23 criteria, 1-5 scores). These are combined with the Directorate Capability Weights (48 capabilities x 71 directorates, involvement 0-4) through quadratic aggregation —

$$\text{BCMM}(\text{cap}, k) = \frac{\sum [w^2 \times \text{Maturity}(d, k)]}{\sum w^2}$$

— to yield the terminal Business Capability Maturity Matrix (48 capabilities x 23 criteria, current-state maturity scores).

5. Relationship to Other Digital Roadmap Assets

The Capability Maturity Platform does not exist in isolation. It connects to and complements the other analytical assets in the Digital Roadmap framework.

Business Capability Delivery Risk

The BC Delivery Risk matrix uses the same Directorate Capability Weights but derives its scores from pain-point severity and criterion impact rather than maturity. The BCMM tells you "how mature is this capability today"; Delivery Risk tells you "how much risk do current pain points pose." Together they give the current-state baseline (BCMM) and the threat landscape (Delivery Risk).

Pain Point Rubric-4 Heatmap

The heatmap identifies which pain points afflict which directorates. The maturity assessments, from the same interview evidence, capture the broader capability state. A directorate may have moderate overall maturity but suffer specific acute pain points that create concentrated risk.

Strategic Gap Analysis

When the strategic track sets target maturity levels for priority capabilities, the BCMM provides the current-state baseline. The gap between current BCMM scores and target maturity directly identifies where capability-improvement investment is needed and its magnitude.

6. Interpreting BCMM Scores

BCMM scores should be interpreted with an understanding of their construction.

4.0 - 5.0 • Optimized

The directorates delivering this capability are highly mature on this dimension. Practices are well-defined, measured, and continuously improving. Minimal intervention needed.

3.0 - 3.9 • Managed

Solid operational capability with standardized practices. Some room for optimization and advancement toward leading practices.

2.0 - 2.9 • Developing

Practices exist but are inconsistently applied. The capability functions but with significant room for improvement in standardization and measurement.

1.0 - 1.9 • Initial

Ad hoc or informal practices. The capability relies on individual effort rather than organizational

systems. Significant investment required.

< 1.0 · Assessment Gap

Scores below 1.0 indicate that key delivery directorates were not assessed. The low score reflects incomplete evidence rather than confirmed low maturity. Priority for assessment expansion.

Scores reflect the weighted maturity of the directorates involved in delivery. A low score on a specific criterion for a capability does not mean that criterion is globally immature — it means the particular directorates responsible for delivering that capability have lower maturity on that dimension. Two capabilities may show different profiles on the same criterion because their delivery teams differ.

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