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Model governance and inventory management under E-23

1 Executive summary

The Office of the Superintendent of Financial Institutions (OSFI)'s revised E-23 guideline sets a clear direction for how model risk management must be implemented, shifting expectations toward an enterprise-wide, risk-based approach with stronger governance across the full model lifecycle.

These expectations bring a sharper focus on how model risk management is operationalized in practice. Institutions are expected to maintain end-to-end visibility of models, clearly defined ownership, and the ability to understand, monitor, and justify model outcomes within decision-making processes.

This paper provides a practical implementation guide for model governance and inventory management under E-23. It outlines common governance challenges and their remediation approaches, E-23 expectations around model inventory and the evolving industry trends in next gen model inventory systems.

2 Key model governance challenges and remediation approaches

The table below outlineas as set of common structural and operational challenges institutions encounter when governing models throughout their lifecycle and presents some approaches for addressing these challenges effectively

Stage	Challenges	Recommended approaches
 Model identification & inventory	• Ambiguity in defining model scope and inconsistent definitions • Fragmented model inventory, shadow models, and outdated records • Limited visibility into model interconnectedness • Inconsistent governance practices and breaks in lifecycle governance • Complexity in applying risk-based tiering	• Establish an enterprise-wide MRM policy with clear definitions (including qualitative scorecards, judgmental assumptions, EUC tools, and AI/ML). • Create a centralized model inventory as a single source of truth. • Capture dependencies across upstream data, feeder models, and downstream usage; institute regular update processes. • Standardize governance processes and embed end-to-end lifecycle controls with clear entry/exit criteria. • Implement a transparent, structured risk rating framework aligned to materiality, complexity, and impact, embedded within governance systems.
 Model development	• Data governance gaps within model risk management (poor data quality, lineage issues) • Challenges in scaling governance as model volumes increase • Capability and accountability gaps • Inadequate documentation, inadequate processes for AI/ML models including bias detection/ mitigation, and overfitting.	• Strengthen governance over model inputs/outputs, define data ownership, perform quality checks, and maintain end-to-end data lineage. • Leverage standardized processes and integrated platforms ensure consistency and efficiency. • Define clear roles/responsibilities and invest in training across functions. • Use standardized documentation templates, implement best practices, and conduct peer reviews.
 Model validation	• Auditability and regulatory readiness pressure • Validator independence, incorrect testing, and edge case testing • Resource constraints and difficulty communicating findings	• Establish robust documentation standards, ensure traceability, and maintain evidence of governance across the lifecycle. • Maintain a separate validation team and formalize validation plans. • Use alternative benchmark models, perform back-testing/ stress testing, and rigorously track validation exceptions.
 Model approval	• Lack of clear decision-making authority and conflicting viewpoints • Managing approval deadlines and documenting conditions • Stakeholder engagement	• Define a Model Risk Committee (MRC) with clear authority. • Establish a formalized voting/decision matrix. • Track approval conditions, escalate disagreements systematically, and thoroughly document approval rationale.
 Model implementation & use	• Operational integration and data quality changes in production • Improper use (use creep) and version management • Change management and access control	• Conduct rigorous post-implementation reviews. • Monitor production inputs/outputs and restrict access. • Define clear rules for end-users and establish strict version control and change management policies.
 Ongoing monitoring	• Limited visibility into monitoring and risk indicators • Lack of structured exception management • Defining/tracking KPIs, detecting drift, and timely identification of issues	• Implement periodic and trigger-based monitoring supported by centralized dashboards tracking performance, validation status, data drift, and exceptions. • Define thresholds, approval workflows, and escalation mechanisms for managing deviations from governance standards. • Establish formal refresh cycles and integrate monitoring results into ongoing risk assessments.
 Model decommissioning	• Recognizing obsolescence and managing dependencies • Complete data archival and documenting the decommissioning process • Data retention and security risks	• Establish a clear decommissioning policy and checklist. • Analyze the impact on interconnected systems. • Securely archive code, data, and documentation. • Define an end-of-life plan and obtain final MRC approval.

3 Model inventory

A model inventory should support effective, risk-based governance rather than function as a static repository. Regulatory expectations emphasize completeness of information along with the ability to enable oversight, validation, and lifecycle control.

E-23 recommends that at a minimum, institutions are expected to maintain the following for all identified models:

- Model ID, name, and description of key features and use
- Model risk rating
- Model owner and developer
- Model origin (e.g., internally developed or vendor)

For models with non-negligible risk, the following additional information is required to support enhanced governance:

- Model version and deployment date
- Model reviewer and approver
- Data sources and key inputs
- Model dependencies (upstream data, feeder models, downstream usage)
- Approved uses of the model
- Model limitations, including exceptions
- Most recent review date and validation status
- Monitoring status, including exceptions
- Next review date

This structured capture enables differentiated governance, where validation, rigor, monitoring, and oversight intensity are aligned to model materiality and complexity.

In practice, many inventories continue to be maintained through manual processes, resulting in inconsistent data capture, delayed updates, and limited visibility. In addition, a lack of integrated workflows and flexible risk scoring limits its ability to support risk-based governance.

To address data quality and governance gaps arising from manual and fragmented inventory practices, model onboarding should be subject to defined quality checks prior to inclusion in the inventory. This includes validation of mandatory fields, confirmation of ownership and accountability, completeness of documentation, and evidence of model review or validation (where applicable). It also involves ensuring clarity of model purpose and approved usage, alignment of risk classification with defined criteria, and identification of key data inputs and dependencies. These checks help ensure that the model inventory continues to remain a reliable and consistent source of information.

4 Beyond E-23 - Key trends and next gen capabilities of model inventory systems

As organizations move beyond simple spreadsheets, modern model governance systems are becoming active management tools. They are designed to reduce manual effort, improve accuracy, and facilitate collaboration across teams.

- Ability to script bespoke model risk scoring allows organizations to tailor risk assessments to specific needs, ensuring more accurate and relevant risk evaluations.
- Workflows to link residual risk to validation outcomes enable automatic updates of a model's risk rating based on validation results, ensuring that risk assessments stay current and reflective of validation findings.
- Gen AI-enabled workflows bring automation and intelligence into routine governance tasks:
  - Automated checks determine if uploaded artifacts comply with firmwide policies and regulatory guidelines.
  - Automated population extracts key information such as findings, assumptions, and limitations from uploaded documentation.
  - Automated model artifact discovery helps keep the inventory up to date by identifying new or changed models and components.
  - Chat-based search provides intuitive, natural language access to model information, making retrieval faster and easier.
  - Auto-summarization of model risk reports delivers concise insights, saving time and improving understanding.

- Model Card generation creates standardized, easy-to-understand summaries of each model's purpose, limitations, and key features, supporting transparency and communication.
- Shared model and data set identification features help track dependencies and common components across models, providing clarity on interconnectedness and risk propagation.
- Exportable decks for various committees streamline reporting by allowing easy creation of presentation materials tailored for governance reviews.
- Discussion threads and forums on models facilitate collaboration, questions, and issue resolution directly within the model governance platform.
- Mobile-ready views enable users to access the model inventory securely from corporate devices, supporting on-the-go oversight and decision-making.

A more advanced approach incorporates workflow-driven lifecycle tracking, embedded risk-based tiering, and automated data capture. Capturing model dependencies provides visibility into interconnectedness across models and supports assessment of how risks propagate.

Centralized dashboards further enhance visibility into model status, validation outcomes, review timelines, and exceptions, supporting both periodic and trigger-based monitoring.

Together, these capabilities position the model inventory as a core control layer for scalable, risk-based model governance that adapts to organizational growth and complexity.

How we can help

We offer comprehensive services to support FRFIs in meeting the revised Guideline E-23, including:

Our team brings extensive industry knowledge and regulatory expertise, positioning us as a trusted partner for Canadian FRFIs. While Guideline E-23 is complex, we can help streamline your compliance efforts. Please contact us to discuss how we can support your team's preparation.

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