VALIDMIND™

SS1/23 Compliance with the ValidMind Platform

Five guiding principles for effective Model Risk Management in the United Kingdom

INTRODUCTION

The Prudential Regulation Authority's Supervisory Statement 1/23 (SS1/23), effective from May 2024, established a structured, principle-based Model Risk Management (MRM) framework designed to mitigate risks arising from model inaccuracies, improper usage and other operational vulnerabilities. While the scope of SS1/23 is broad, encompassing traditional models as well as advanced AI and machine learning applications, institutions must diligently ensure comprehensive adherence to these regulatory expectations across all model categories.

ValidMind is a specialised MRM platform, purpose-built to support institutions in achieving compliance with all MRM frameworks and regulations, including SS1/23. This product brief outlines each principle and relevant subsections of SS1/23, clearly demonstrating how ValidMind enables robust and efficient regulatory compliance. ValidMind provides out-of-the-box assets specifically tailored for SS1/23, including a pre-configured environment equipped with regulation-standard workflows, custom fields and comprehensive settings covering the entire MRM lifecycle. Additionally, ValidMind offers dedicated SS1/23 documentation and training material, developed and supported by our in-house MRM experts, ensuring institutions can quickly and effectively operationalise regulatory requirements.

PRINCIPLE 1: Model Identification and Risk Classification

Firms should have an established definition of a model that sets the scope for MRM, a model inventory and a risk-based tiering approach to categorise models to help identify and manage model risk.

1.1 Model Definition and Scope:

Firms must establish a clear, organisation-wide definition of models that encompasses all use cases, including AI and machine learning applications, ensuring no ambiguities regarding what constitutes a model.

1.2 Comprehensive Model Inventory

A comprehensive model inventory should be maintained to enable firms to: identify the sources of model risk; provide the management information needed for reporting model risk; and help to identify model inter-dependencies.

1.2a Complete Information: Firms are required to maintain an accurate, centralised inventory capturing all active, developing and decommissioned models, with comprehensive data such as model status and lifecycle stages.

1.2b Inventory Management: While each line of business or legal entity may maintain its own inventory, firms must ensure an organisation-wide, centralised inventory to understand direct and indirect model interdependencies clearly.

1.2c Essential Inventory Data: Information must include model purposes, assumptions, limitations, validation findings, governance details, responsible individuals, validation dates and frequency of future validations.

1.3 Model Risk Tiering

Risk-based model tiering should be used to prioritise validation activities and other risk controls through the model lifecycle, and to identify and classify those models that pose most risk to a firm's business activities, and/or firm safety and soundness.

1.3a Consistent Approach: Firms must consistently apply a risk-based tiering methodology, considering materiality and complexity ratings.

1.3b Quantitative and Qualitative Measures: Tiering must incorporate quantitative factors (exposure, market value, customer impact) and qualitative aspects (model importance and complexity).

1.3c Risk Factors to Consider: The assessment of a model's complexity should consider the risk factors that impact a model's inherent risk within each component of the modelling process.

1.3d Periodic Validation: The tiering methodology itself requires periodic validation to remain relevant.

1.3e Independent Reassessment: Regular reassessment of model tiers must be part of ongoing model validation processes.

ValidMind's Answer:

With ValidMind, organisations can establish their own clear and comprehensive model definitions via configurable workflows, accommodating all use cases, including traditional quantitative models and AI/ML applications, ensuring clarity and consistency across the organisation (1.1). Custom fields can be set up to capture essential model details such as lifecycle stages (active, developing, decommissioned), model purposes, assumptions, limitations, validation dates and any other relevant governance information. Responsible individuals can be configured as model stakeholders in ValidMind where additional levels of permission can be configured flexibly (1.2a,c).

Additionally, ValidMind includes a dedicated model interdependencies feature, enabling organisations to explicitly link models to one another, providing comprehensive visibility of both direct and indirect model interdependencies at the firm-wide level. Meanwhile, the platform's groups and user roles permissions capabilities allow specific business lines to have controlled access to relevant inventories (1.2b).

For model risk tiering, ValidMind facilitates the creation and execution of firm-specific, risk based tiering methodologies through customisable workflows, incorporating both quantitative metrics (e.g. exposure, market value, customer impact) and qualitative assessments (model complexity and significance). These tiering workflows can be initiated at any stage during the MRM lifecycle, ensuring ongoing alignment with organisational risk management practices. (1.3a-e). ValidMind also allows organisations to implement their risk tiering methodology through calculated fields, which will enforce and automate the classification of models. Additionally, workflows can be configured to regularly validate and independently reassess risk tier assignments, ensuring continual compliance and effectiveness of the organisation's tiering approach.

PRINCIPLE 2: Governance

Firms should have strong governance oversight with a board that promotes an MRM culture from the top through setting clear model risk appetite. The board should approve the MRM policy and appoint an accountable individual to assume the responsibility to implement a sound MRM framework that will ensure effective MRM practices.

2.1 Board of Directors' Responsibilities

Firms are required to establish clear board-level oversight, defining a robust MRM culture through clear model risk appetite statements and ensuring appropriate delegation of responsibilities.

2.2 SMF Accountability

An accountable Senior Management Function (SMF) must have overall oversight and responsibility for ensuring the effective implementation, execution and maintenance of the MRM framework.

2.3 Policies and Procedures

Firms must document comprehensive policies and procedures formalising the MRM framework, covering model identification, tiering, development standards, validation, monitoring, and approval processes.

2.4 Roles and Responsibilities

Clearly documented roles, responsibilities and required expertise must be established across all model lifecycle stages, ensuring accountability and effective model risk oversight.

2.5 Internal Audit:

An independent internal audit function must regularly assess the effectiveness of the MRM framework, model validation processes, and adherence to internal policies, reporting directly to the board.

2.6 Use of Externally Developed Models

Firms must effectively manage and validate third-party and externally developed models, ensuring standards and rigour comparable to internal model validation practices.

ValidMind's Answer:

ValidMind facilitates strong governance through configurable roles and permissions, audit-ready documentation and clear accountability trails for the board and the SMF. Every test submission, documentation update, validation finding and workflow execution is captured and retained on the platform with the associated meta data (2.1-2,2).

Policies and procedures can be operationalised through workflows, defined through guidelines which in turn are integrated into documentation and monitoring capabilities aligning fully with governance expectations (2.3).

Clearly defined roles and responsibilities across lifecycle phases can be built into specific workflow steps to effectively delegate tasks while internal audit reviews are supported by comprehensive, accessible and auditable model inventory object records (2.4-2.5).

PRINCIPLE 3: Model Development, Implementation and Use

Firms must ensure robust standards for developing, testing, documenting and implementing models.

3.1 Model Purpose and Design

Models must have clearly defined purposes, conceptually sound methodologies and reasonable assumptions consistent with intended use.

3.2 The Use of Data

Data used in model development must be suitable, representative, unbiased and compliant with data quality and regulatory requirements.

3.3 Model Development Testing

Comprehensive testing must demonstrate models operate effectively across relevant economic and market conditions, including sensitivity analyses and benchmarking against alternative models.

3.4 Model Adjustments and Expert Judgement

Firms must transparently document, justify and independently validate model adjustments and any use of expert judgement.

3.5 Model Development Documentation

Comprehensive and up-to-date documentation must clearly detail model design, methodologies, data sources, assumptions and testing, enabling independent replication and validation.

3.6 Supporting Systems

Models must be implemented within robust and rigorously tested systems and environments that ensure accuracy, quality control and integrity.

ValidMind's Answer:

ValidMind provides structured workflows and automated validation features ensuring clear model purpose and assumptions, captured ,for example, at model registration through configurable custom fields. Conceptual soundness and methodologies can be documented qualitatively within developer documentation or additional custom fields (3.1).

Data quality tests are preconfigured into the developer documentation templates, ensuring consistency and standardisation of data management procedures across models (3.2). ValidMind includes an extensive out-of-the-box testing library, with approximately 300 tests covering diverse use cases, which can be directly integrated into documentation templates. This facilitates thorough backward- and forward-looking testing, sensitivity analyses and comparison testing (benchmarking) with multiple models or datasets (3.3).

Expert judgement and model adjustments are transparently documented and independently reviewed within dedicated workflows (3.4). Developer documentation is fully traceable from an audit perspective, with all changes and revision history maintained.

Validators can directly reference and replicate relevant sections of developer documentation within validation reports, accessing associated metadata for additional context (3.5). Comprehensive system checks ensure robust model implementation and adherence to SS1/23 (3.6).

ValidMind's model registration process can be purpose built to consider externally developed models and the consequential differences in processes and properties may be configured through additional custom fields and workflows (2.6).

PRINCIPLE 4: Independent Model Validation

Validation must be independent, rigorous and ongoing, providing an effective challenge to model development and use throughout the entire model lifecycle. irms must ensure robust standards for developing, testing, documenting and implementing models.

4.1 The Independent Validation Function

Firms must ensure independent and objective validation to effectively challenge models across the full lifecycle, maintaining clear separation from model development activities.

4.2 Independent Review

All model components must undergo independent review to confirm conceptual soundness, suitability and completeness, supported by rigorous analysis and appropriate testing.

4.3 Process Verification

Validation must verify that model inputs are representative and reliable, calculations are accurate, and outputs are complete and appropriate for their intended use.

4.4 Model Performance Monitoring

Ongoing performance monitoring must regularly assess model accuracy against defined performance criteria and thresholds, identifying issues promptly.

4.5 Periodic Revalidation

Firms must schedule regular independent revalidations to reassess model validity and ensure continuous alignment with business and regulatory expectations.

ValidMind's Answer:

ValidMind maintains rigorous independence through clearly defined roles, segregated workflows and detailed validation reporting. Validators can submit independent testing directly into ValidMind, leveraging risk assessment notes to systematically compare developer and validator evidence against predefined validation guidelines. The integrated model findings system enables validators to log identified issues or required revisions, facilitating transparent collaboration between developers and validators and providing official evidence of effective challenge to regulators (4.1).

Independent reviews can be streamlined into structured workflows, easily executed whenever required (4.2). Process verification is enhanced through the ability of validators to replicate testing utilising the respective metadata captured in ValidMind and submitting evidence under clearly defined validation guidelines (4.3).

Thresholds integrated into ongoing performance monitoring workflows automatically alert responsible stakeholders to model breaches in the documentation section, triggering appropriate actions such as recalibration, revalidation or PMA processes (4.4).

Finally, periodic validation workflows can be scheduled and managed automatically via configurable logic based on information such model approval dates, risk classification or use-case criteria for example (4.5).

PRINCIPLE 5: Model Risk Mitigants

Firms must define clear processes for applying mitigants, restrictions, and escalation procedures to effectively address model risks and limitations.

5.1 Process for Applying Post-model Adjustments (PMAs)

Firms must establish a transparent and justified process for applying PMAs, supported by independent reviews and clear documentation.

5.2 Restrictions on Model Use

Clearly defined procedures must be in place for restricting or limiting the use of models when deficiencies or performance issues are identified.

5.3 Exceptions and Escalations

Firms must implement formal, approved escalation processes to manage exceptions and temporary usage of models that fall outside defined thresholds.

ValidMind's Answer:

ValidMind enables systematic PMA management through transparent workflows that capture justifications, define calculation methodologies and ensure independent reviews aligned with regulatory expectations (5.1). Restrictions on model use can be built into the platform as configurable custom fields within the model inventory object, providing clear visibility of model status and any limitations imposed (5.2).

Policy exceptions processes can be operationalised through dedicated workflows, allowing validators or governance users to formally initiate and track approval of exceptions, with built-in expiry tracking for time-limited usage. Escalation mechanisms can be defined through documentation and implemented as thresholds within quantitative testing, ensuring that exceptions or breaches trigger the appropriate engagement and governance actions (5.3).

Conclusion

SS1/23 sets a new regulatory benchmark for model risk management across the UK financial sector, requiring firms to adopt a principle based, end-to-end framework that embeds accountability, transparency and effective challenge through the model lifecycle. The scope of SS1/23 covers all model types, including traditional statistical methods and advanced AI and machine learning systems and demands consistent governance, rigorous validation, comprehensive documentation, and clear mitigation mechanisms.

ValidMind has been purpose-built to help institutions implement these principles in a consistent, auditable and scalable manner. The out-of-the-box SS1/23 aligned assets combined with robust model inventory capabilities, automated documentation, vast governance workflow flexibility, tiering and risk assessment logic as well as integrated model findings and threshold handling, ensures that firms can operationalise compliance while improving maturity and resilience of their model risk practices. Additionally, ValidMind's ValidChecker functionally allows institutions to automatically review developer documentation against regulatory requirements such as SS1/23, generating findings and tailored recommendations to strengthen adherence and close potential compliance gaps.

By adopting ValidMInd, institutions are equipped not only to meet the letter of SS1/23, but also to elevate their internal standards to a level of governance and control that reflects global best practices in model risk management.

Ready to transform your AI governance and model risk management?

Discover how ValidMind can simplify model validation, ensure compliance, and empower your teams with an integrated, scalable solution. Request a demo today to see how our platform can streamline your workflows, reduce costs, and build trust in your AI and statistical models.

Request a demo at ValidMind.com.