LLOYD'S

Lloyd's Minimum Standards MS6 – Exposure Management

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MS6 – Exposure Management

Minimum Standards and Requirements

These are statements of business conduct required by Lloyd's. The Minimum Standards are established under relevant Lloyd's Byelaws relating to business conduct. All managing agents are required to meet the Minimum Standards. The Requirements represent the minimum level of performance required of any organisation within the Lloyd's market to meet the Minimum Standards.

Within this document the standards and supporting requirements (the "must dos" to meet the standard) are set out in the blue box at the beginning of each section. The remainder of each section consists of guidance which explains the standards and requirements in more detail and gives examples of approaches that managing agents may adopt to meet them.

Guidance

This guidance provides a more detailed explanation of the general level of performance expected. They are a starting point against which each managing agent can compare its current practices to assist in understanding relative levels of performance. This guidance is intended to provide reassurance to managing agents as to approaches which would certainly meet the Principles and Minimum Standards and comply with the Requirements. However, it is appreciated that there are other options which could deliver performance at or above the minimum level and it is fully acceptable for managing agents to adopt alternative procedures as long as they can demonstrate the Requirements to meet the Minimum Standards.

Definitions

Catastrophe Modelling: (also known as cat modelling) is the process of using computer-assisted calculations to estimate the losses that could be sustained due to a catastrophic event such as a hurricane or earthquake.

CROF: Catastrophe Risk Operational Framework

LCM: Lloyd's Catastrophe Model

Lloyd's Returns: this will include, but not be limited to: Broker Remuneration Return; LCM Submissions; PMDR; QMB; RDL; RDS; Related Parties Return; SBF; Self-Assessment of Compliance versus Lloyd's Underwriting and Claims Standards; Syndicate Business Plan; Syndicate Reinsurance Programme Return; Xchanging Claims

Non-Natural Catastrophe Risk: this includes, but may not be limited to, Cyber and Liability exposures; typically risks which are subject to potential accumulations and may give risk to "catastrophic" levels of loss, but which are not traditionally recorded and modelled on the basis of geographic concentrations

ORSA: Own Risk and Solvency Assessment

PMDR: Performance Management Data Return

QMA: Quarterly Monitoring Return – Part A

QMB: Quarterly Monitoring Return – Part B

RDL: Realistic Disaster Scenario (Light)

RDS: Realistic Disaster Scenario

Related Party: A related party shall mean:

- Any company within the same group as the managing agent
- Another syndicate managed by the same managing agent or a service company coverholder that is part of the managing agent's group.
- Any company which has two or more directors in common with the managing agent
- Any company within the same group as a corporate member of the syndicate which has a member's syndicate premium limit of more than 10% of the syndicate allocated capacity

Risk Appetite: Is the level of risk that an organisation is prepared to accept, before action is deemed necessary to reduce it.

SBF: Syndicate Business Forecast

SRP: Syndicate Reinsurance Programme

Syndicate Business Plan: means a business plan prepared by a managing agent in accordance with paragraph 14A of the Underwriting Byelaw.

The Board: Where reference is made to the Board in the standards, managing agents should read this as Board or appropriately authorised committee. In line with this, each agent should consider the matters reserved for the Board under the Governance Standard in order to evidence appropriate full Board discussion and challenge on the material items.

MS6 – Exposure Management

EM 1.1 Exposure Management System and Controls Framework

Managing agents shall have effective technology, systems and processes to record, monitor and assess its underwriting exposures.

Managing agents shall:

- have effective, documented policies and procedures in place for managing exposure;
- include within policies and procedures:
    - risk appetite statements that specifically include exposure and, where applicable, both natural and non-natural catastrophe risk, including Terrorism, Cyber and Liability;
    - procedures for risk recording, loss estimation, exposure controls and regular limits monitoring;
    - clear identification of responsibility for ensuring that all relevant, material and quantifiable catastrophe-related risks are represented in the internal model;
    - clear identification of responsibility for systematically considering exposure-related risks that may not yet be explicitly represented in the internal model, including long-tail and emerging perils;
    - the managing agent's approach to catastrophe risk, including how it is represented in the internal model; for natural catastrophe this shall be consistent across exposure management, underwriting, capital modelling and business planning, while for some perils this consistency may be under development;
    - the methodology for validating exposure management tools;
    - managing the use of external models for exposure management; and
    - standards for data accuracy, appropriateness and completeness (including data owners and controls) for all types of catastrophe risk.

Lloyd's expects all managing agents to have appropriate documentation to demonstrate effective exposure management. There is no specific set list of documentation titles that an agent should hold, but there are a number of areas that an agent will be expected to cover, as discussed below. The level and detail into which the agent should address these areas should be proportionate to the risk involved. Managing agents should have defined the level of exposure and risk (however expressed) that they wish to assume; and exposures and/or loss potential should be routinely monitored relative to the stated risk appetites.

There are many ways to express risk appetites. Common expressions relating to exposure and loss potential include:

- probabilistic loss estimate (e.g. 1-in-100 OEP no greater than x);
- deterministic loss estimate (e.g. for scenario 1, losses no greater than x); and
- aggregate exposure (e.g. county-level aggregate exposures for country 1 no greater than x).

Exposures and/or loss estimates must be capable of being monitored and reported consistently with the risk appetite.

'Catastrophe Risk' is not restricted to natural catastrophes affecting property lines of business; it should include any class and any peril for which major, accumulating non-independent events could occur. Lloyd's expects consideration to be given to non-independence (i.e. correlation) across and between classes.

Exposure managers are expected to understand how exposure management outputs (including stochastic event- or period-loss tables, scenarios, "loss ladders" etc.) are used in the Internal Model and to be comfortable that any amendments made are appropriate. Whilst models should be consistent across the managing agent this does not mean that the Internal Model is required to replicate all the complexity of pricing models, but that core assumptions should be consistent. Where complexity is omitted from the Internal Model it should be tested to ensure that this is not a material omission.

Documentation should additionally cover the selection, validation (including approach, roles and responsibilities, frequency, and escalation of challenges made) and change of any loss estimation techniques employed, including in-house and external catastrophe models for natural perils, cyber, terrorism and/or liability risk.

EM 1.2 Materiality, Risk Recording for Exposure Management and the Internal Model

Managing agents shall have clear processes for recording and considering all material accumulations of underwriting exposures and loss potential, and shall ensure appropriate representation within the Internal Model

Managing agents shall:

- define and clearly articulate the levels of exposure and/or loss potential which are considered material;
- have a process of risk ranking that reflects risk appetite and controls; and that clearly identifies the key risk data, exposure data and loss potential in assessing materiality; and
- ensure that exposure data is obtained when risks are underwritten, and entered promptly into a robust risk recording system capable of capturing and storing risk and policy information, from which data can be extracted in a timely manner, with appropriate adjustment to give a complete risk profile for all perils and all lines of business;
- ensure that there is appropriate monitoring and reporting of both in-force and planned exposures against all forms of catastrophe risk appetites and other controls;
- have robust systems and processes whereby data outputs from Exposure Management systems are incorporated into the Internal Model;
- ensure that the parameterisation of catastrophe risk in the Internal Model is materially complete and that methodologies and assumptions meet Solvency II standards; and
- ensure that Internal Model change management processes apply to Exposure Management.

Solvency II guidance specifies that data should be “accurate, complete and appropriate”.

Lloyd's expects all risks to be identified – there should be no “gaps” in the agent’s representation of the risks assumed.

The requirement for completeness in the context of risk-recording for exposure management will be strongly linked to materiality both of exposure and loss potential. For example, if US Earthquake is a very material catastrophe peril, data capture will be expected to be sufficiently detailed to allow appropriate loss modelling. For Property risks this may include street-level geocoding and the capture of key building characteristics; for Workers’ Compensation this may include information about the number of insured lives at risk; for Liability this may include an assessment of which lines could be exposed following a major event, as well as industry classification and revenue data for the insureds. Methods of loss estimation for a less material region/peril may not benefit from the capture of detailed data, so the requirements could be commensurately reduced.

Systems and processes which may be appropriate when materiality is low may not remain appropriate as materiality changes over time; managing agents should regularly assess appropriateness in the context of materiality.

Managing agents should note that ‘planned exposures’ means foreseeable movements in exposure levels in the near future, for example as a result of run-off or build-up of delegated underwriting portfolios, changes in underwriting strategy and/or new lines of business.

When catastrophe perils (including but not limited to natural perils as well as cyber, liability and terrorism) are material, a syndicate's Internal Model may rely heavily on outputs from exposure management systems in representing catastrophe risk. These outputs may include stochastic losses, exposure data, deterministic scenarios, etc. There may also be outputs from the process of systematically considering model completeness / 'non-modelled risks'. The processes whereby these various outputs are incorporated into the Internal Model should be documented, and where functions are performed by separate teams, the respective responsibilities of each for data transfer, knowledge transfer and peer review should be considered and defined.

EM 1.3 Exposure Management Methodologies for Loss Estimation and Assessment

Managing agents shall use appropriate loss estimation techniques for each managed syndicate.

Managing agents shall ensure that:

- exposure and loss potential are assessed using one or more documented, validated methodologies or models;
- the assessment / modelling is carried out by appropriately skilled and experienced personnel;
- the view of risk is articulated and understood throughout the organisation, and the board and senior management provide effective challenge;
- following a significant loss event, existing models and underlying assumptions are reviewed and adjusted as appropriate;
- any external model used meets generally accepted and regulatory requirements for an internal model;
- any material expert judgements related to exposure management information feeding the internal model are documented and governed in accordance with Solvency II standards; and
- when outsourcing the operation of any exposure management activity, responsibility for understanding the risk, including model selection, validation and change, remains with the managing agent.

Methods used in exposure management must be valid, robust, appropriately consistent and properly understood. This applies both to understanding exposures and estimating loss potential, and methodologies or models may be internally developed or externally sourced. The requirement for them to be documented, validated and understood remains the same, for both natural catastrophe perils and cyber, liability and terrorism risks.

Where differing methodologies (either in use or under consideration) produce varying views of loss potential, reasons for such variances should be investigated and understood.

Methods may differ depending on relative materiality of risk, or for other reasons. However, methods should generally be consistent within categories or classifications of materiality, as should levels of validation.

Sources of uncertainty should be documented and should be considered within individual model or methodology validations. These could include data, model parameters, available scientific consensus, in-model randomness and model omissions.

Lloyd's understands that real-world events have unique characteristics and therefore single events rarely invalidate models. Events may however highlight data deficiencies or errors in assumptions which can therefore be improved and may also highlight areas of hazard that may be more material than previously thought. Lloyd's therefore expects firms to make appropriate adjustments and re-calibrate models as necessary.

When using an external model, whether internally or outsourced, agents should ensure that Solvency II standards apply in the selection, validation and use of these models. Any modelling results produced externally should be adjusted if necessary to align with the agent's own view of risk.

EM 1.4 Internal and External Review and Reporting of Exposure Management

Managing agents shall regularly review exposure and loss potential in line with exposure management policies and procedures, and report to the Board and Lloyd's as required.

Managing agents shall:

- ensure formal, evidenced sign-off of exposure management reports for all material catastrophe risk at the appropriate level, including regular challenge and testing of assumptions independently of the exposure management function by individuals with sufficient knowledge and experience;
- ensure that any material expert judgements related to stress and scenario tests feeding the internal model are documented and governed in accordance with Solvency II standards
- regularly review their exposures against Lloyd's thresholds and seek Lloyd's approval for any actual or foreseeable exceedances;
- produce Lloyd's exposure management returns on time and as required; and
- ensure that exposure recording processes are regularly audited as appropriate by suitably experienced personnel, and that audit findings are documented and evidenced.

The Board and senior management should be aware of exposure and loss potential; they should be able to relate these to catastrophe risk appetites and other controls; they should be able to discuss and consider exposures in the context of the wider business and they should be appropriately aware of actual or potential variances to plan. The following may be helpful in considering appropriate frequency and detail of reporting to the Board:

- the materiality of exposure to accumulation risks, for example different region/perils for property catastrophe or different litigation scenarios for long-tail lines;
- how much the portfolio is likely to be changing at different times during the year;
- levels of exposure and loss potential relative to risk appetite; and
- recent loss experience.

In terms of frequency, the expectation for Board-level reporting is *at least* six-monthly; examples of evidenced sign-off include meeting minutes of the Board or its nominated committee. More regular reporting to underwriting teams and management is also expected.

There should be a defined, documented process for regular challenge and testing of exposure assumptions, including identifying the role(s) which have this function. The process should specify responsibility for evidenced sign-off of challenge, and how this is reported.

Independent review and challenge can come from a number of sources, including (but not limited to) underwriting ("why has the RDS for my portfolio increased so much in the last six months?") and capital modelling ("why is there an assumption of no dependency between these classes of business?"). Where a managing agent uses an external catastrophe model, the process of model validation will itself involve challenge and testing of assumptions; documentation of this process would constitute evidence of challenge.

The agent should ensure that: controls on exposure and loss potential are understood and taken seriously at all levels of the business; senior management are made aware of potential breaches of control as soon as possible; there are processes for dealing with potential breaches; and appropriate remedial actions are taken following actual breaches. Materiality of an actual or potential breach should determine the extent of any reporting and remedial actions, but there should always be evidence of notification and discussion. Examples of early warning of potential breaches could include specific reporting when levels of exposure or loss potential are at x% of a threshold.

Recording exposures accurately is fundamental to managing them; therefore internal audit or oversight functions should regularly review the processes for this. Where an agent's internal audit or oversight team does not have the necessary experience to fulfil this function, it may be outsourced. Any audit should include review of the annual self-assessment against Minimum Standards, and this self-assessment should also take account of any audit findings.