

# **SOLVENCY II**

## **DETAILED GUIDANCE NOTES FOR DRY RUN PROCESS MARCH 2010**





# INTRODUCTION

The successful implementation of Solvency II at Lloyd's is critical to maintain the competitive position and capital advantages of the Lloyd's market. Absent an approved internal model, the standard formula must be used to calculate capital requirements and the current calibration of this formula would see the average syndicate regulatory capital requirements more than double compared to the current ICAS regime.

Whilst Solvency II comes into effect on 31 October 2012, much preparation is required in advance of this to ensure that the market as a whole meets Solvency II standards. Lloyd's has agreed with the FSA that it will seek approval of one internal model (the Lloyd's Internal Model or LIM) as the framework directive applies Solvency II at Society level. Syndicate models will be a key input to the LIM and as such, all managing agents are required to have an internal model which meets Solvency II standards.

Lloyd's will be working closely with the FSA on the review of syndicate models. The FSA will directly review a sample of agents and will also monitor the reviews being conducted by Lloyd's. There has been ongoing discussion with the FSA around the process for the review of these models to ensure we have a common understanding of what needs to be achieved via the dry run process and to align requirements as far as possible. One clear point established is that if any one managing agent does not meet Solvency II standards, this could jeopardise securing overall approval for the LIM. Lloyd's dry run process is, therefore, focused on ensuring that agents are sufficiently well progressed in their Solvency II preparations and that they have considered how they will meet all requirements.

Lloyd's dry run process began in late 2009 with the submission of implementation plans from all agents and will continue with phased deliverables due from all active syndicates during 2010.

## Scope of guidance

Lloyd's does not have access to any additional information on Solvency II requirements over and above that in the public domain. This guidance combines both the directive text and relevant sections of the current proposed level 2 measures for the dry run process as reference. It supplements these where possible with practical guidance for agents on how to meet the requirements, developed in liaison with the market through the LMA Solvency II committee. It does not repeat all level 2 measures and does not provide exhaustive coverage of all Solvency II material.

## Agent responsibilities

Any additional guidance provided is intended to supplement the level 2 measures, not repeat them, and **agents must therefore ensure that they are familiar with all of the requirements** and do not rely solely on the additional guidance provided here.

Lloyd's has sought to clarify the proposed approach to the dry run process and set out minimum expectations for progress made by agents against requirements. Lloyd's recognises the difficulties and uncertainties for agents in preparing for Solvency II. However, it remains the responsibility of individual managing agents to ensure they have read and are aware of both CEIOPS proposals and FSA requirements and that they are implemented in a manner which is reflective of their own risk profile and structure. Agents must ensure that they keep up to date with any changes to these requirements and that they have sufficient governance around their Solvency II preparations to make sure this happens.

Agents are encouraged to discuss any questions or concerns with their Solvency II account manager. Concerns one agent has may well be repeated elsewhere in the market and Lloyd's can help by collating queries across the market and publishing these together with a response via [lloyds.com](http://lloyds.com).

Whilst this document refers to general Solvency II requirements, this guidance is specific to Lloyd's and managing agents in many areas. Due to the unique structure of Lloyd's and the application of the Solvency II directive at society level, some of this guidance will not be relevant to non Lloyd's firms.

## Previous guidance

Lloyd's issued two guidance documents in 2009 – Guidance notes for Gap Analysis in March and Guidance notes for the Dry Run Process in November and agents should continue to refer to both of these documents. The dry run guidance issued in November provided a high level overview of the dry run process and set out the proposed stages and timings of this and we are not aware of any developments that supersede the content therein.

## Detailed guidance

This guidance gives more detail around the requirements for the dry run and guidance to assist agents with the preparation work required for the process. It contains an overview section as well as a detailed section on each of the nine separate areas identified for the qualitative phase of the dry run process.

Each of these nine sections contains the following information:

- Summary sheet highlighting the scope and contents of the section
- Extracts from agreed level 1 text together with proposed level 2 measures as they apply to Lloyd's and are relevant to the dry run process
- Practical additional guidance for agents, including illustrative examples and pro-forma templates

Agents have been invited to attend workshop sessions in April where additional material and clarification around this guidance document and stage 1 of the dry run process will be available. Further workshops will take place in May and June on stage 2 and 3 of the dry run process respectively and invitations to these sessions will be issued nearer the time.

## Minimum standards

As set out above, this guidance provides more detail around the dry run requirements together with practical guidance. It does not seek to change any of the existing franchise standards and guidelines which continue to apply. Lloyd's will continue to monitor and review all existing standards and guidelines as both level 2 and level 3 measures are finalised and consult with the market on proposed changes in due course.

## Development of guidance

Agents should note that this guidance represents Lloyd's best view of current requirements but is subject to ongoing discussion and change as both level 2 and FSA requirements become finalised and Lloyd's own development on Solvency II progresses. Lloyd's will continue to monitor and review progress in these areas and seek to update this guidance as appropriate.

The development of this guidance and any resulting change to requirements is an evolutionary process and Lloyd's seeks to continue to work closely with the market in the development of this material. Additional material will be issued as relevant in response to new issues emerging and queries being raised by the market and will be made available via [lloyds.com](http://lloyds.com).

Market feedback on this guidance, including highlighting other areas which agents would like covered, would be appreciated and agents are asked to submit any comments by email to [solvency2@lloyds.com](mailto:solvency2@lloyds.com).

## Proportionality

A key underlying principle of Solvency II is proportionality and this will be particularly relevant at syndicate level. The definition of proportionality is under continued debate as part of the Solvency II process and will be the subject of ongoing discussion with the FSA throughout the dry run reviews. Lloyd's current interpretation on proportionality is:

- That judgement is required
- Actions need to be proportional to the associated impact - for example, a section of business that represents a very small proportion of the book **and** is deemed low risk need not necessarily be modelled using sophisticated methods
- It must be linked to materiality and all actions should also be based on the principle of materiality

**Proportionality does not exempt syndicates from any of the requirements of Solvency II** but does mean that for some risks, the process for meeting these requirements may be simpler than for others. Agents should reach their own views on proportionality taking into account the nature, scale and complexity of the risks they face. Materials should be submitted on that basis and agents should state explicitly where they have applied the principle of proportionality. Agents should also be able to demonstrate how they have assessed any application of proportionality.

Lloyd's review will look to consider proportionality based on syndicate risk profiles, risk types and market segments and will consider aggregated risks in this regard, with proportionality considerations not being restricted to just the size of individual syndicates. Lloyd's will also be continuing discussions with the FSA on the practicalities of how proportionality can be applied and expects that the initial dry run submissions will better enable assessment and benchmarking to help reach a clearer view on proportionality. This view will be fed back to agents as part of the process.

### **Partial models and group models**

This guidance does not specifically address any requirements for partial internal models. As stated previously, agents are required to have full syndicate internal models to support the LIM and it is not currently expected that Lloyd's will be using the standard formula to calculate any elements of the SCR. This position will be kept under review by Lloyd's and revisited if necessary as requirements change and issues are clarified.

Any impact of group models for Lloyd's is still being considered by the FSA and Lloyd's will keep agents updated of any relevant developments.

Agents are reminded that Lloyd's review process will apply at syndicate level and therefore where agents are planning to use a group model, they must ensure that it is capable of producing syndicate specific output and calculations. Agents should note that approval by another supervisor does not mean that the model will be suitable for Lloyd's purposes. Similarly, where a model is deemed to meet Lloyd's requirements, this does not mean that it will be approved for use by another supervisor.

## DRY RUN PROCESS

Lloyd's requires all syndicates to have an internal model which meets Solvency II standards. The dry run process will apply at syndicate level rather than at agent level, although Lloyd's recognises there will be common elements across syndicates managed by the same agent. The dry run requirements will cover all syndicates active for 2010 including Life and existing RITC syndicates. It is not currently envisaged that the dry run will apply to any pure run off syndicates as at 31 December 2009, where it is expected with reasonable certainty that the syndicate will have closed by December 2012. However, for run off syndicates where this is not the case, Lloyd's will review individual cases and may require the run off agent to comply with some or all of the dry run requirements. Any syndicate going into run off during the period of the dry run process will still be expected to adhere to the dry run timetable.

The dry run process aims to review and compare progress across the market and help agents meet the standards required through detailed feedback and guidance. The internal model under Solvency II is significantly broader than the capital calculation kernel alone and it will not be sufficient just to have a sophisticated capital model. To ensure the internal model meets Solvency II standards, agents will need to demonstrate that the internal model plays a key part in the running of the business, that there is sufficient governance and standards around the model and that the risk management process is embedded within capital setting.

These qualitative requirements represent perhaps the most significant challenge under Solvency II and a major cultural change for many businesses. Accordingly, Lloyd's dry run process will focus initially on these qualitative aspects of the internal model.

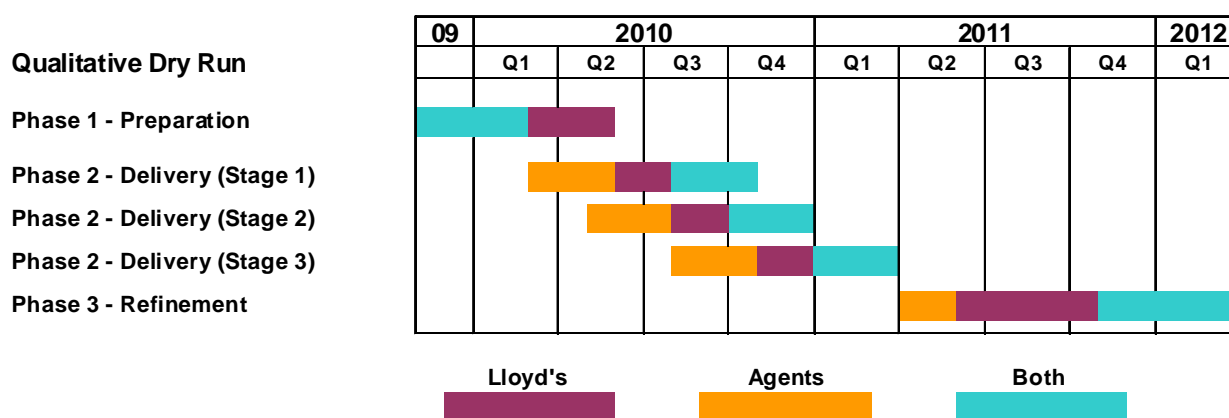
Lloyd's considers the dry run process a transitional phase between the current ICAS regime and the ultimate Solvency II position and expects it to be an iterative process of submission, review, feedback and discussion.

Whilst the initial dry run process set out below aims to allow Lloyd's to review market progress on all areas during 2010, it is expected that reviews will be ongoing through to 2012. Throughout the review process Lloyd's will look to build up detailed knowledge of agents' processes and plans so that by the final model application stage in 2012, there are no areas that have not been reviewed.

The dry run process will apply at syndicate level rather than at agent level, and therefore submissions will be expected at syndicate level. However, Lloyd's recognises there will be common elements across syndicates managed by the same agent and will agree specific requirements individually with agents during the review process.

### Structure of dry run process

Lloyd's guidance notes issued in November 2009 set out the proposed phases of the qualitative dry run and the high level timetable is shown below.



This guidance is primarily addressing Phase 2 - delivery. In order to help spread workloads for both managing agents and Lloyd's this phase has been broken down into three stages. For each of these stages the focus will be on different elements of Solvency II as set out below. This approach should benefit both Lloyd's and agents by helping to provide consistency in the review process and enhance benchmarking and feedback to agents.

As set out in our November 2009 dry run guidance document, the quantitative element of the dry run will take place in 2011 and additional guidance will be issued to the market ahead of that process.

### **Stage 1 (due 1 June 2010)**

- Systems of governance
- Model scope, governance & use
- Documentation

### **Stage 2 (due 1 August 2010)**

- Statistical quality standards
- Calibration, validation and profit & loss attribution
- External models & data

### **Stage 3 (due 1 November 2010)**

- Technical provisions
- Supervisory reporting & disclosure
- ORSA

## **Lloyd's approach to dry run review**

Lloyd's does not expect agents to be fully compliant with Solvency II standards at the point of dry run entry but does expect progress to have moved significantly beyond a pure implementation planning phase. Agents are expected to have reached a design stage and have developed both clear principles and a framework for complying with the relevant requirements and should be able to demonstrate a clear plan for implementing what is set out in this design stage and for reaching full Solvency II compliance by the final deadline. Agents should also be able to show a plan for development of the qualitative aspects alongside development of the model itself.

Lloyd's does not envisage that the dry run will consist solely of agents submitting large quantities of paper for review at this stage. The process will involve numerous meetings and discussions with agents on particular themes, supplemented by desktop review of documentation and detailed technical review as appropriate. Lloyd's will look to discuss and agree with agents as early in the process as possible an expected schedule of meetings required together with timings and agendas for these.

### **Dry run templates and assessment of readiness**

For each stage of the dry run process, Lloyd's will require agents to submit completed pro-forma documents by the relevant submission date. These pro-formas will require agents to set out clearly what progress has been made against each of the dry run requirements and show where documentary evidence is currently available or when it is expected to be available.

Agents will not be expected to formally complete the FSA's pre-application template but Lloyd's review process will aim to collect the relevant information from agents via the use of these pro-formas. In line with the FSA's approach to the pre-application process, Lloyd's will also require agents to give a self assessment of where they

think they currently are against meeting Solvency II requirements in these areas. Agents will be required to keep monitoring progress towards these requirements throughout the process and Lloyd's will require regular updates to be submitted.

**Completion of these pro-formas will be mandatory for all agents** and a draft example is attached at Appendix A. All pro-formas required will be finalised shortly and will be available for download from lloyds.com during April.

Following receipt of these pro-formas, Lloyd's will assess the documentation available from agents and use this to plan both market wide and individual review processes. It is intended that an initial meeting will be held with all agents at this stage to agree the scope of review and expected delivery of documentary evidence.

Lloyd's will aim to keep the review process as standard as possible across the market to ensure that the measuring of progress and reporting of results is on a consistent basis. However, it is recognised that agents will have reached different levels of progress in different areas and this will be addressed as far as possible in individual discussions with agents.

## Lloyd's requirements of agents for the dry run

Lloyd's requires all agents to be able to show that they are making progress towards meeting Solvency II requirements and by the relevant dry run submission dates agents must be in a position to deliver material to Lloyd's for review upon request. Agents should therefore ensure that documentation is available where they have indicated that evidence exists.

Agents should also be able to provide evidence of the governance processes around decisions that have been made and show that these have been properly discussed at the appropriate level and documented accordingly.

The following pages set out Lloyd's minimum requirements for progress under each element and agents should refer to the appropriate sections of this guidance for more detail on how these could be evidenced and achieved. In addition to the information below, agents should also continue to refer to the full dry run requirements list which contains the relevant CEIOPS references. This is attached at Appendix B and **agents should ensure that they are using this updated version as some components have been amended**. Although changes are not material, they may impact mapping to Lloyd's requirements. Agents should note that as requirements develop this list may continue to change and Lloyd's will issue amendments as relevant.

### Stage 1 – minimum progress expected against dry run requirements:

#### 1. Systems of governance

##### General governance requirements

- Review/clarify the existing governance framework and highlight key responsibilities
- Agreed changes needed to current processes
- Drafted terms of reference for any new committees to be established and agreed when they will start to meet
- For existing committees, drafted amended terms of reference where necessary and agreed when changes will take effect

##### Fit and proper requirements

- Reviewed existing policies and procedures and identified areas for update
- Identified key function holders

##### Risk Management

- Identified how their current risk management framework needs to be developed and enhanced to meet Solvency II
- Defined the risk universe
- Established a framework for risk appetite and governance thereof



- Designed the overall risk governance structure
- Reviewed existing policies and procedures and identified areas for update
- Developed a framework for a risk management function and its responsibilities in relation to the internal model

#### **Internal control**

- Reviewed existing internal control policy and identified areas for update
- Reviewed existing terms of reference for the compliance function and compliance plan and identified areas for update/enhancement

#### **Internal audit**

- Reviewed existing internal audit function against requirements and agreed changes that will be needed, including any new resources
- Reviewed existing internal audit policy (where already in place) and identified areas for update
- Where a new internal audit function will be introduced, agreed when it will start to operate

#### **Actuarial function**

- Identified how the requirements for an actuarial function will be met, in particular where it is planned to outsource the function
- Drafted terms of reference for the actuarial function
- Designed an internal reporting framework to ensure the formal requirements are met
- Be able to demonstrate consistency between the actuarial function processes and internal model development

#### **Outsourcing**

- Reviewed existing outsourcing policy and identified areas for update

## **2. Model scope, governance and use**

#### **Risk coverage and business coverage**

- Defined scope of internal model and show that they have considered implications of anything out of scope
- Identified any risks not explicitly captured
- Designed mapping process for modelled risks to the risk register
- If a group model is used, confirm which entities are within the model and define how the syndicate is split out

#### **Partial internal models**

*There are no requirements listed here as Lloyd's expects all agents to have a full internal model.*

#### **Use test**

- Outlined the intended uses of the model
- Established a clear process for the education of board and senior management
- Designed a process for embedding and evidencing uses within the business
- Identified the key risks and drivers of change in the model
- Designed a process for integration with the risk management system and link with the risk management function

### **Model governance**

- Designed a governance framework around the internal model and identified key responsibilities
- Established a process to show how this ties in to board decision making and other internal processes

### **Model change policy**

- Drafted a model change policy to include as a minimum
  - What is viewed as a major change and minor change
  - What are the internal and external changes
  - A governance process around change policy
  - Process for reporting changes both internally and externally (i.e. to Lloyd's)
- Considered the implications of major change on the design and operational details of the internal model
- Established a process to compare model results pre and post a major change

## **3. Documentation**

### **Documentation process**

- Established an index for all internal model documentation
- Designed a framework for documentation including differing levels planned for different audiences
- Established how documentation will be held and controlled
- Identified changes needed from current ICA documentation to address the model tests as set out in Level 1, articles 120 – 124 and 126

### **Design and operational details**

- Established a process for documenting the development of the internal model including identifying and showing historical developments of any components carried over from the ICA model

### **Theory, assumptions, mathematical and empirical basis**

- Completed an assessment of current ICA documentation on methods, techniques, assumptions, data and parameters used, identifying additional documentation requirements
- Designed a process for documenting key decisions and reliance on expert judgement

### **Circumstances where model does not work effectively**

- Established a clear process for documenting any model limitations throughout development/model build
- Established a process for documenting any non-compliance with the model tests as set out in Level 1, articles 120 – 124 and 126 (if relevant) as model development progresses

### **Model change documentation** *(should be consistent with model change policy)*

- Established a clear process for documenting model change policy

## **Stage 2 – minimum progress expected against dry run requirements:**

### **4. Statistical quality standards**

#### **Probability distribution forecast and risk ranking**

- Established if the full distribution will be modelled and if not, what points are expected to be modelled and rationale for these

- Completed an assessment of any current risk ranking within ICA and identified changes needed to meet Solvency II standards

#### **Methodological adequacy**

- Completed an assessment of the current ICA process for determining distributions and estimating parameters and identified the changes needed to meet the statistical quality standards
- Established a process for justifying selection of distributions and parameters
- Established a process for identifying any shortcomings in methodology

#### **Data directory and data policy**

- Established a policy for data storage
- Identified what data is used and how, including a detailed definition
- Drafted a data policy including
  - Data quality criteria and method of review
  - Process for use of expert judgement and where to be used
  - Process for recognising limitations of own data including, where appropriate, supplementing it with external data
  - Data update standards
  - Dealing with data deficiencies

#### **Dependencies**

- Completed an assessment of the current ICA process for identifying, quantifying, challenging and reviewing dependencies and identified the changes needed to meet Solvency II standards
- Established a process to document selected dependencies and reasons for selection

#### **Risk mitigation techniques**

- Identified any risk mitigation techniques currently used
- Designed a process to test the validity of these

#### **Financial guarantees and contractual options, future management actions and non-contractual payments**

- Identified any financial guarantees and contractual options used and be able to explain modelling methodology
- Identified potential future management actions and established a process to be able to show governance arrangements and modelling methodology for each
- Identified any non-contractual payments and established a process to be able to explain modelling methodology for each

#### **Assumptions**

- Completed an assessment of current ICA process for identifying and justifying assumptions and identified changes needed to meet statistical quality standards
- Identified assumptions used (setting out key assumptions as a minimum) and be able to explain any alternatives considered

#### **Methodological consistency and credibility**

- Established a process for ensuring methodological consistency with calculation of technical provisions and business planning

- Identified any current inconsistencies in process

## 5. Calibration, validation and profit & loss attribution

### Calibration

- Identified modelling changes needed to produce a Solvency II basis 1 year number

### Profit and loss attribution and back testing

- Completed an assessment of current ICA process for back-testing and identified the changes needed to meet profit and loss attribution standards
- Established a process to ensure sufficient governance is in place over process and output
- Identified potential trigger events

### Validation policy

- Drafted a validation policy including as a minimum
  - Purpose and scope of validation
  - Validation tools used
  - Frequency of validation process
  - Governance of validation results
  - How independent review will be carried out including use of benchmarks

### Model robustness and Stress and scenario testing

- Completed an assessment of current ICA processes in place for stress and scenario testing and model robustness testing and identified the changes needed to meet Solvency II standards

## 6. External models and data

- Identified all external models and external data currently used
- Established clear process for governance around use of external models and data
- Established a clear process for education of board/senior management on use of external models and data
- Completed an assessment of current ICA documentation around justification for use of external models and data and identified the changes needed to meet the required standards
- Identified any associated risks with use of external models and data and established how these will be allowed for within the internal model
- Identified any expected issues for compliance with articles 120-125

## Stage 3 – minimum progress expected against dry run requirements:

### 7. Technical provisions

QIS5 submissions will be required from all agents by the end of October 2010 and this means that much of the work on technical provisions will have to be done ahead of the November dry run submission date. Agents are reminded that QIS5 requirements will go beyond the best efforts basis of QIS4.

Lloyd's has also issued detailed separate guidance for technical provisions under Solvency II. Agents should refer to this document as it forms the basis of the quantitative assessment of technical provisions under QIS5. There are many changes to the approach for setting technical provisions under Solvency II and agents will be expected to have covered the main areas when completing QIS5. These are:

- Used a cashflow model

- Produced estimates on a best estimate basis making no allowance for pessimism or optimism
- Produced separate gross and reinsurance cashflows
- Allowed for business on a "legal obligation" basis
- Completed a full assessment of the premium provisions including expected premium income
- Included an allowance for "binary events"
- Included all relevant expenses
- Calculated risk margins
- Ensured a clear mapping process from homogenous risk group to Solvency II line of business
- Ensured a clear process to obtain best estimates for all significant currencies
- Designed a process for identifying, justifying and documenting selected methodologies, assumptions and expert judgement
- Designed a process for validation and backtesting

Whilst QIS5 will apply calculation methods and produce a quantitative result for technical provisions, Lloyd's envisages that some qualitative information on processes and the documentation of elements will still need to be collected from agents as part of the dry run process. These will be required after the submission of QIS5 results and form part of the QIS5 feedback discussions.

#### **8. Supervisory reporting and disclosure**

- Established a framework for meeting planned reporting requirements (recognising this will be high level as the detail is not yet finalised)
- Conducted an assessment of the systems required for meeting Solvency II reporting requirements
- Determined processes and structure for meeting Solvency II reporting requirements
- Evaluated the new reporting data requirements and determined where and how these will be sourced

#### **9. ORSA**

- Designed a process for the ORSA setting out scope and expected inputs and outputs
- Designed a report structure
- Designed a process for governance around the ORSA including
  - frequency of running
  - reporting of results
  - responsibilities for update
- Designed a process for embedding the ORSA within the business

#### **Ongoing project management reviews**

Whilst reviewing specific elements as per the dry run timetable, it is also important that Lloyd's maintains ongoing discussion with agents on overall Solvency II progress. Agents should therefore ensure that plans and resources are sufficient to enable progress to continue in all areas and not solely on the elements under review at any given time.

Throughout the process regular project management reviews will continue to be held between all agents and their designated Lloyd's Solvency II account manager. The main objective is for Lloyd's to measure progress against the implementation plan submitted December 2009 and the following standard agenda items will be covered:

- How have any action points/queries raised by Lloyd's been addressed

- Review copy of latest status report to board
- Progress made against plan including any key milestones achieved and/or missed
- Any change in status/rating of individual workstreams
- Any areas of concern to report
- Any significant changes to your plan including moving dates/milestones
- Any significant change in resource
- Any questions syndicates would like to raise with Lloyd's

## APPENDIX A

### DRAFT DRY RUN SUBMISSION TEMPLATE

<b>Dry run element</b>	<b>Systems of Governance</b>
<b>Sub element(s)</b>	<b>General Governance requirements</b>

<b>Lloyd’s Dry run requirements/expectations</b>					
<ul style="list-style-type: none"> <li>• Review/clarify the existing governance framework and highlight key responsibilities</li> <li>• Agreed changes needed to current processes</li> <li>• Drafted terms of reference for any new committees to be established and agreed when they will start to meet</li> <li>• For existing committees, drafted amended terms of reference where necessary and agreed when changes will take effect</li> </ul>					
<b>Agent comments / current status</b>					
<i>Please comment on current status of work and stage in process, highlighting any issues and/or difficulties, changes made to plans</i>					
<b>Progress against final Solvency II requirements</b>	<b>Design Stage</b>		<b>Evidence/deliverables</b>		
	<i>Complete</i>	<i>Expected complet'n</i>	<i>Some available</i>	<i>Complete</i>	<i>Expected complet'n</i>
governance framework					
organisation structure and lines of responsibility					
adequacy of skills and experience of board and staff					
procedures for activities					
procedures for decision-making					
adequacy of information systems					
adequacy of records and security of information					
conflicts of interest					
contingency plans					
review system of governance					
remuneration policy					
<b>Individual(s) responsible for delivery of above</b>					
<b>Self assessment score – readiness against final Solvency II requirements</b> <i>(please enter score between 1 and 10 with 1 being lowest score and 10 being fully compliant)</i>					





## APPENDIX B

### DRY RUN REQUIREMENTS

	Level 1	Level 2		
	Article	CEIOPS final advice (CEIOPS consultation paper)	Paragraph	
<b>System of governance</b>				
<b>General governance requirements</b>	41	29/09 (33)	3.29-3.36	
• governance framework				
• organisation structure and lines of responsibility				
• adequacy of skills and experience of board and staff				
• procedures for activities				
• procedures for decision-making				
• adequacy of information systems				
• adequacy of records and security of information				
• conflicts of interest				
• contingency plans				
• review system of governance				
• remuneration policy	50	51/09 (59)	3.53-3.62	
<b>Fit and proper requirements</b>	42	29/09 (33)	3.56-3.62	
• fit and proper policies and procedures for directors and senior staff				
• identification of business managers and key function holders				
<b>Risk Management</b>	44	29/09 (33)	3.72	
• risk management strategy				
• risk management policy				
• risk appetite				
• risk management processes and procedures				
• risk management reporting				
• underwriting procedures				
• reserving procedures				3.887-3.889
• claims management procedures				3.102-3.106
• ALM policies				3.130-3.135
• investment policy				3.142-3.143
• investment procedures				3.151-3.152
• liquidity contingency plan				3.166-3.169
• concentration risk procedures				3.181-3.183
• operational risk procedures				
• reinsurance strategy				

	Level 1	Level 2	
	Article	CEIOPS final advice (CEIOPS consultation paper)	Paragraph
• reinsurance procedures	44	29/09 (33)	3.188-3.190
• financial risk mitigation			
• credit risk procedures			
• risk management function			3.220-3.222
<b>Internal control</b>	46	29/09 (33)	3.254-3.258
• internal control policy			
• compliance plan			
<b>Internal audit</b>	47	29/09 (33)	3.276-3.279
• internal audit policy			
• internal audit report			
<b>Actuarial function</b>	48	29/09 (33)	3.328-3.343
• technical provisions			
• underwriting policy			
• reinsurance arrangements			
• report to board			
<b>Outsourcing</b>	49	29/09 (33)	3.376-3.382
• outsourcing policy			
• outsourcing agreements			
<b>Model scope and governance</b>			
<b>Risk and business coverage</b>	121.4	48/09 (56)	5.222-5.229
• scope of internal model			
• mapping of modelled risks to the risk register			
• explanation regarding all risks not captured			
<b>Use test</b>	120	48/09 (56)	3.102-3.127
• how the model is used in decision making			
• how senior management demonstrate understanding of the model (including any external models)			
• how the model is integrated into the risk management system			
• triggers for full or partial reruns of the internal model			
<b>Model governance</b>			
• system of governance for internal model	120	48/09 (56)	4.46-4.53
<b>Model change policy</b>			

	Level 1	Level 2	
	Article	CEIOPS final advice (CEIOPS consultation paper)	Paragraph
<ul style="list-style-type: none"> <li>categorisation into major and minor changes</li> <li>sub-categorisation into different components of the internal model</li> <li>internal governance process for model changes</li> <li>submission process for major and minor changes</li> </ul>	115	28/09 (37)	3.94-3.112
<b>Documentation</b>			
<b>Documentation process</b>	125	48/09 (56)	9.55-9.67
<ul style="list-style-type: none"> <li>control framework</li> <li>documentation database</li> <li>consistency with Solvency II standards</li> </ul>			
<b>Design and operational details</b>			
<ul style="list-style-type: none"> <li>historical development of model</li> </ul>			
<b>Theory, assumptions, mathematical and empirical basis</b>	125	48/09 (56)	9.68-9.72
<ul style="list-style-type: none"> <li>methods and techniques used</li> <li>assumptions, data and parameters used</li> <li>expert judgement used</li> <li>reasons for selections</li> </ul>			
<b>Circumstances where model does not work effectively</b>			
<ul style="list-style-type: none"> <li>design and operational limitations</li> <li>methodological and data-related limitations</li> <li>lack of compliance with Solvency II standards</li> </ul>			
<b>Model change documentation</b>	125	48/09 (56)	9.75-9.76
<ul style="list-style-type: none"> <li>compliance checking</li> <li>quantification process</li> </ul>			
<b>Statistical quality standards</b>			
<b>Probability distribution forecast</b>	121.1	48/09 (56)	5.8, 5.47-5.57
<ul style="list-style-type: none"> <li>number of points modelled</li> <li>reasons for selection</li> </ul>			
<b>Risk ranking</b>			
<ul style="list-style-type: none"> <li>risk ranking methodology</li> </ul>	121.4	48/09 (56)	5.220-5.221
<b>Methodological adequacy</b>	121.2	48/09 (56)	5.101-5.103
<ul style="list-style-type: none"> <li>process used to determine distributions and estimate</li> </ul>			

	Level 1	Level 2	
	Article	CEIOPS final advice (CEIOPS consultation paper)	Paragraph
parameters			
<ul style="list-style-type: none"> <li>selected distributions and parameters</li> <li>reasons for selections (suitability, relevance, simplicity etc)</li> <li>shortcomings in methodology and how dealt with</li> </ul>			
<b>Methodological consistency and credibility</b>			
<ul style="list-style-type: none"> <li>process for ensuring methodological consistency</li> <li>consistency with calculation of technical provisions</li> <li>consistency with business plan</li> <li>justification for any inconsistencies in methods or assumptions</li> </ul>	121.2	48/09 (56)	5.104-5.108
<ul style="list-style-type: none"> <li>process for reviewing methodology to ensure current and credible</li> </ul>	121.2	48/09 (56)	5.109-5.114
<ul style="list-style-type: none"> <li>link between model validation and model methodology review</li> </ul>	121.2	48/09 (56)	5.109-5.114
<b>Assumptions</b>			
<ul style="list-style-type: none"> <li>process for identifying and justifying assumptions</li> <li>identification of assumptions</li> <li>justification of assumptions vs. alternatives</li> </ul>	121.2	48/09 (56)	5.115-5.118
<b>Data directory and data policy</b>			
<ul style="list-style-type: none"> <li>source characteristics and usage of all data (internal and external)</li> </ul>	121.3	48/09 (56)	5.174-5.176
<ul style="list-style-type: none"> <li>data quality criteria and thresholds</li> <li>data quality review process</li> </ul>	121.3	48/09 (56)	5.177-5.187
<ul style="list-style-type: none"> <li>process for use and validation of expert judgment to complement or substitute data</li> <li>process and standards for data updates</li> </ul>	121.3	48/09 (56)	5.177-5.187
<b>Dependencies</b>			
<ul style="list-style-type: none"> <li>process for identifying, quantifying, challenging and reviewing dependencies</li> <li>selected dependencies</li> <li>reasons for selections</li> </ul>	121.5	48/09 (56)	5.252-5.257
<b>Risk mitigation techniques</b>			
<ul style="list-style-type: none"> <li>risk mitigation techniques included in model</li> <li>validation against criteria for inclusion</li> </ul>	121.6	48/09 (56)	5.264-5.266
<b>Financial guarantees, contractual options and non-contractual payments</b>			
<ul style="list-style-type: none"> <li>identification of financial guarantees and contractual options</li> <li>modelling methodology for each</li> </ul>	121.7	48/09 (56)	5.273-5.275

	Level 1	Level 2	
	Article	CEIOPS final advice (CEIOPS consultation paper)	Paragraph
<ul style="list-style-type: none"> <li>identification of expected non-contractual payments</li> <li>modelling methodology for each</li> </ul>	121.9	48/09 (56)	5.305-5.306
<b>Future management actions</b>	121.8	48/09 (56)	5.294-5.302
<ul style="list-style-type: none"> <li>identification of future management actions</li> </ul>			
<ul style="list-style-type: none"> <li>governance arrangements for each</li> <li>modelling methodology for each</li> </ul>			
<b>Calibration, validation and profit &amp; loss attribution</b>			
<b>Calibration</b>	122	48/09 (56)	6.50-6.60
<ul style="list-style-type: none"> <li>process for ensuring appropriate calibration</li> </ul>			
<b>Validation policy</b>	124	48/09 (56)	8.127-8.149
<ul style="list-style-type: none"> <li>purpose and scope of validation</li> </ul>			
<ul style="list-style-type: none"> <li>validation tools used</li> </ul>			
<ul style="list-style-type: none"> <li>frequency of validation process</li> </ul>			
<ul style="list-style-type: none"> <li>governance of validation results</li> </ul>			
<ul style="list-style-type: none"> <li>limitations and future developments</li> <li>documentation</li> <li>independent review</li> </ul>			
<b>Profit and loss attribution</b>	123	48/09 (56)	7.19-7.21
<ul style="list-style-type: none"> <li>profit and loss attribution methodology</li> </ul>			
<ul style="list-style-type: none"> <li>application of profit and loss attribution results to model validation and business decisions</li> </ul>			
<ul style="list-style-type: none"> <li>governance process over profit and loss attribution output</li> </ul>	124	48/09 (56)	8.174-8.175
<b>Backtesting</b>	124	48/09 (56)	8.150-8.157
<ul style="list-style-type: none"> <li>backtesting process</li> <li>trigger events</li> </ul>			
<b>Model robustness</b>	124	48/09 (56)	8.158-8.165
<ul style="list-style-type: none"> <li>process to establish robustness</li> <li>governance process over robustness testing output</li> </ul>			
<b>Stress and scenario testing</b>	124	48/09 (56)	8.166-8.173
<ul style="list-style-type: none"> <li>stress and scenario testing process</li> <li>governance process over stress and scenario testing output</li> </ul>			
<b>External models and data</b>			
<ul style="list-style-type: none"> <li>identification of external models and data used in the internal</li> </ul>	126	48/09 (56)	10.34-10.40

	Level 1	Level 2	
	Article	CEIOPS final advice (CEIOPS consultation paper)	Paragraph
model			
• reasons why used and alternatives considered			
• extent of any non-compliance with articles 118-123			
• identification of risks associated with the use of external models and data			
• allowance for risks in internal model			
<b>Technical provisions</b>			
<b>Valuation process</b>			
• documentation of process for valuing technical provisions	76	33/09 (39)	3.32-3.37
• feedback loop			
• demonstration of robustness, appropriateness, relevance and adequacy	84	33/09 (39)	3.37, 3.360
• justification of selected valuation methods	76	72/10 (76)	3.88-3.120
<b>Valuation methodology</b>			
• segmentation basis	80	22/09 (27)	3.35-3.52
• identification and valuation of underwriting cash-flows	77	33/09 (39)	3.79-3.87
	77	33/09 (39)	3.105-3.117
	77	25/09 (30)	3.32-3.38
• identification and valuation of reinsurance and counterparty default exposures	81	33/09 (39) 38/09 (44)	3.210-3.223 3.18-3.27
• identification, valuation and allocation of expense cash-flows	78	33/09 (39)	3.88-3.104
• identification and valuation of guarantees and options	79	33/09 (39)	3.138-3.146, 3.159-3.165
• actuarial and statistical methodologies	77	21/09 (26)	3.28-3.38
• use of simplified methods	82	72/10 (76)	3.247-3.248
• risk margin	77	36/09 (42)	3.136-3.144
	77	72/10 (76)	3.366-3.372
	77	72/10 (76)	3.459-3.461
<b>Data</b>			
• data quality criteria and thresholds	82	37/09 (43)	3.56-3.90
• data quality management and review process			
• process for dealing with data deficiencies			

	Level 1	Level 2	
	Article	CEIOPS final advice (CEIOPS consultation paper)	Paragraph
<b>Assumptions</b>			
<ul style="list-style-type: none"> <li>process for identifying and justifying assumptions</li> <li>identification of assumptions</li> <li>justification of assumptions vs alternatives</li> <li>backtesting of assumptions</li> <li>demonstration of consistency with financial markets</li> <li>demonstration of consistency with generally available (re)insurance data</li> </ul>	76	33/09 (39)	3.265-3.280
<ul style="list-style-type: none"> <li>use expert judgement</li> </ul>	76	33/09 (39)	3.286-3.290
<ul style="list-style-type: none"> <li>future management actions</li> </ul>	77	27/09 (32)	3.23-3.38
<b>Validation</b>	83	33/09 (39)	3.343-3.355
<ul style="list-style-type: none"> <li>validation process</li> </ul>			
<b>Supervisory reporting &amp; disclosure</b>			
<ul style="list-style-type: none"> <li>reporting framework</li> </ul>	35		3.33-3.37
<ul style="list-style-type: none"> <li>reporting systems</li> </ul>	51		3.546-3.551
<ul style="list-style-type: none"> <li>reporting process</li> </ul>	53	50/09 (58)	3.565-3.566
<ul style="list-style-type: none"> <li>data requirements</li> </ul>	54		3.571
	55		3.588-3.589
			3.73-3.77
<b>ORSA</b>			
<ul style="list-style-type: none"> <li>ORSA scope and process</li> </ul>	45	n/a	n/a
<ul style="list-style-type: none"> <li>report structure</li> </ul>			
<ul style="list-style-type: none"> <li>governance framework</li> </ul>			