



The Actuarial Profession

making financial sense of the future

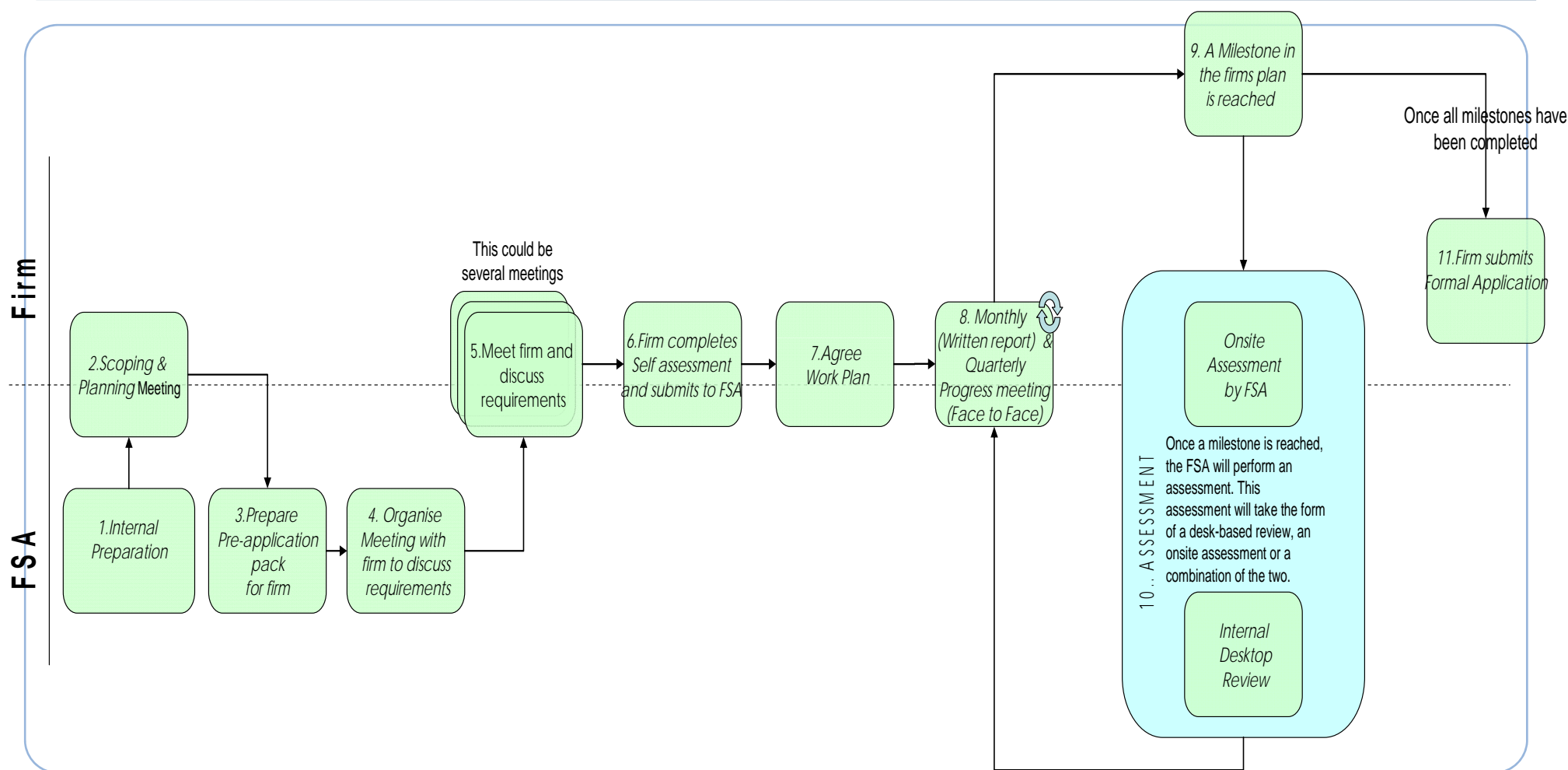
Life conference and exhibition 2010
Catherine Henshall, Deloitte
Ben Carr, Prudential Insurance Risk Department, FSA



E7: IMAP Update

7-9 November 2010

IMAP Pre-application process - overview



- Structure based on former CP80 Pre-application process for internal models

Pre-application qualifying criteria (PAQC)

Firms are asked to complete a standard template before starting pre-application. The template covers:

- the firm's overall Solvency II implementation plans;
- the firm's plans to iteratively develop its internal model;
- the firm's documentation plans; and
- the firm's participation in previous QIS exercises

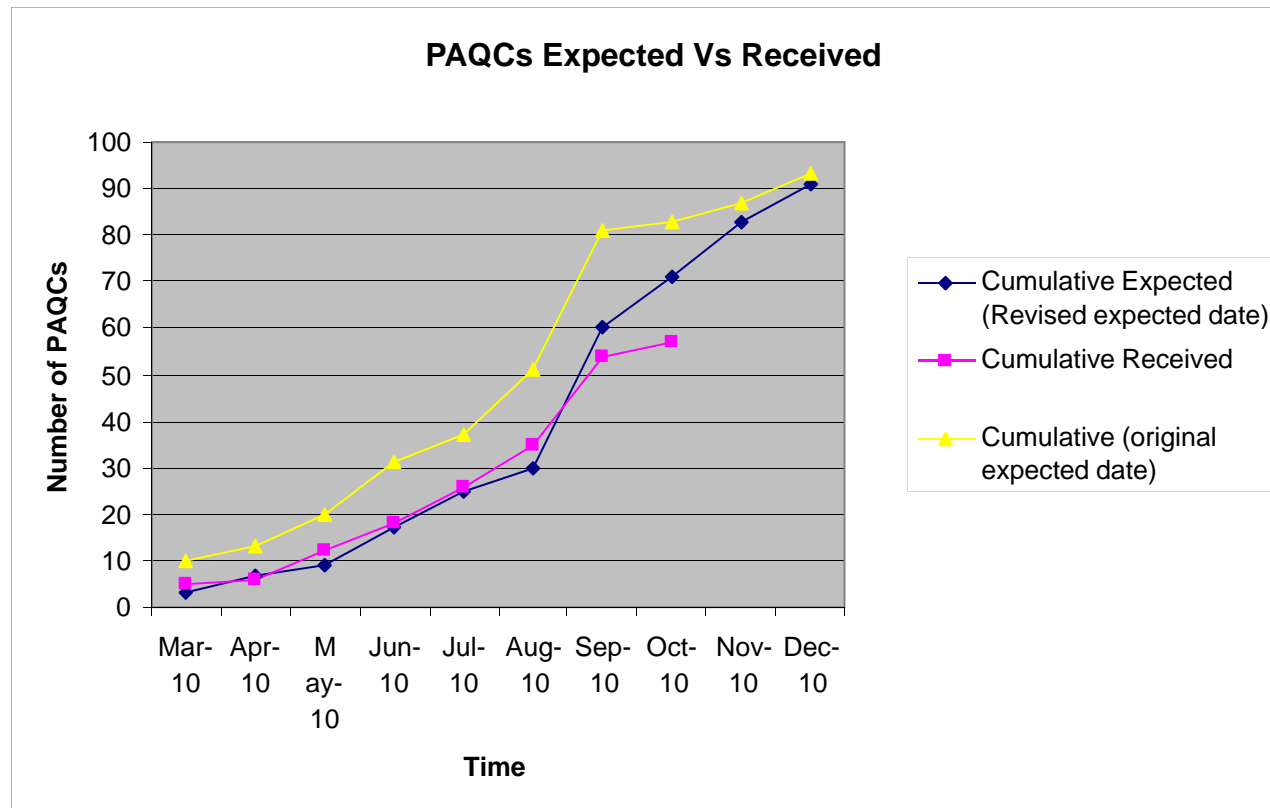
It is available at:

<http://www.fsa.gov.uk/Pages/About/What/International/solvency/imap/index.shtml>

The template enables the FSA to assess the firm against the pre-application qualifying criteria (PAQC). The criteria are consistent with those for resource allocation set out in the CEIOPS advice on the pre-application process. The complete PAQC should be around 35 pages long in total.

PAQC - Progress to date

54 PAQCs received to date - 25 accepted into pre-application



Around 50 new PAQC submissions are still expected

PAQC – Key messages

- Implementation plans
 - include progress against plan
- Resourcing / Budget split by
 - 2010, 2011, 2012
 - internal and external
 - workstream
- Budget used to date + confirmed in place
- Resourcing to include plans to meet any future gaps
- Include QIS5 if submitting PAQC after October 2010
- Include groups considerations:
 - if you are part of a group, you must explain how and at what level the group and each solo SCR will be calculated
- Answers should be specific to firm

Contents of application - CEIOPS

- CEIOPS have proposed the minimum contents of the application that firms should submit in their final internal model application to their supervisor/regulator in CEIOPS Doc 28-09 (former CP37).
- Firms are expected to have read the Contents of Application (CoA) and to have **tailored their project plan** so that they have the deliverables to complete the CoA.

Contents of application – Minimum content

- A) Covering letter
- B) Declaration re clarifications and omissions
- C) Application approval from management
- D) ORSA
- E) Scope of application
- F) Risk management process and profile
- G) Tests and standards
- H) Technical characteristics of internal model
- I) External models and data
- J) Model governance, systems and controls, organisational chart
- K) Independent review/ validation report
- L) Change policy
- M) Plan for future improvement
- N) Capital requirement

Contents of application – FSA template

The FSA's CoA template unpacks the E - N using mainly:

- The Solvency II Directive, (the ultimate reference document)
 - System of Governance (Ceiops-Doc-29/09 former CP33)
 - Articles 120 to 126 Tests and Standards for Internal Model - Approval (Ceiops-Doc-48/09, former CP56);
 - Supervisory Reporting and Public Disclosure Requirements (Ceiops-Doc-50/09 former CP58)
 - Partial internal models (Ceiops-Doc-61/10, former CP65)

Solvency II Internal Model Approval Process Contents of Application Template (For use in Pre-Application Process Only)		Solvency II Internal Model Approval Process Contents of Application Template (For use in Pre-Application Process Only)	
Model structure and processes			
Solvency II balance sheet			
H.1	Solvency II balance sheet – Please describe how the value of all assets and liabilities (including technical provisions) are calculated for the purposes of determining the Solvency II balance sheet and amounts.	H.10	Modelling detail (expert judgement) – Please explain and provide evidence of your policy on expert judgement and the key areas where expert judgement is used in your assumptions, data and parameters. Please explain how expert judgement forms part of your validation policy.
H.2	Solvency II balance sheet (technical provisions; other elements) – Please describe how your internal model allows for expenses that will be incurred in settling reinsurance obligations; initiation of payment to policyholders and beneficiaries; and the values of financial guarantees and contractual options (as referred to in Articles 78 to 79 of the Directive).	H.11	Modelling detail (outputs) – Please explain and provide summary of the outputs for the key variables driven modelled. This should include some percentiles in order to give an indication of the distribution of the outputs.
H.3	Recognition of assets in the internal model – Please provide details of any asset on the Solvency II balance sheet which are not included in your internal model or conversely any asset that are included in the internal model but do not appear on the Solvency II balance sheet.	Aggregation, dependencies and diversification	
H.4	Recognition of liabilities in the internal model – Please provide details of any liabilities on the Solvency II balance sheet which are not included in your internal model or conversely any liability that are included in the internal model but do not appear on the Solvency II balance sheet.	H.12	Aggregation, dependencies and diversification (aggregation methodology for the group SCR) – Please explain how the results of the individual legal entities have been aggregated to derive the results of the group SCR. Please also provide a measure of the total diversification present within the calculated SCR for each legal entity as well as for the group SCR (i.e. the difference between the unidentifiable and the diversifiable SCR).
H.5	Asset valuation in the internal model – Please describe any differences in the way your internal model calculates the value of assets compared to that for the Solvency II balance sheet and the determination of amounts.	H.13	Aggregation, dependencies and diversification (integrating the partial internal model with the standard formula results) – Where you have used a partial internal model, please describe the integration technique used for aggregating the result with the standard formula result.
H.6	Liability valuation in the internal model – Please describe any differences in the way your internal model calculates the value of liabilities compared to that for the Solvency II balance sheet and the determination of amounts.	H.14	Aggregation, dependencies and diversification analysis of input versus output dependency (assumption) – Please explain and provide evidence that you understand the impact of the dependency structure and assumptions used in your internal model and that the implied dependencies (i.e., output dependencies within and between risks) are consistent with the input dependencies across the entire range of the distribution.
Modelling detail		Model results	
H.7	Modelling detail (variable drivers) – For each risk type, please explain and provide evidence of the underlying variables/drivers that determine the risk characteristics for your business. To what extent have these variables/drivers been captured within your internal model framework? Please detail any differences between these variables/drivers and those used to value assets and liabilities for the purposes of determining the Solvency II balance sheet and amounts.	H.15	Model results (analysis of simulation outputs) – For parts of the model where a stochastic simulation is used, please explain and provide evidence of how you have identified and interrogated the range of output that lead to capital requirements at and around the critical percentiles, the results of this analysis and how these results have been used.
H.8	Modelling detail (assumptions) – For each of the risk variables/drivers modelled, please explain and provide evidence of the key assumptions used. This should include details of how the assumptions were selected; underlying source data; the significance of the assumptions; the sensitivity of the results to changes to the assumptions and possible alternative assumptions and their implications.	H.16	Model results (sensitivity testing) – Please explain and provide evidence of the sensitivity test you have carried out to ascertain the impact from the key model (sensitivity) assumptions. How often are the results of the sensitivity test reviewed? Please describe how the results of your sensitivity test are used (for example, have the results been used to establish or refine decisions on model architecture, structure, formulae definition, operational procedures or parameters, risk and capital strategy).
H.9	Modelling detail (capital tangibility) – Please explain, to the extent that it is relevant, how you have explicitly modelled or otherwise appropriately considered the impact of tangibility and the quality of capital within the group in your internal model.	H.17	Model results (stress scenarios) – Please explain and provide evidence of the stress test you have performed to validate the SCR. This should include justification of the appropriateness of the stress and scenarios being tested based on the characteristics of your business and risk profile. Please describe how the results of your stress scenarios test are used (for example, have the results been used to establish or refine decisions on model architecture).
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Self assessment template

- Firms will be asked to complete a self assessment template in the early stages of Pre-application based on FSA's Contents of Application template
- Firms find this very structured.
- FSA would view this structure as necessary when processing so many internal model applications.
- For some firms this template creates awareness of the level of detail and the degree to which the FSA is serious about reviewing models.

Sample worksheet from self assessment template

	A	B	C	D	E	F	G	H	I	
1	E. Scope of application for full and partial internal models and model coverage									
2										
3	E.1	Model coverage (legal entities, business units and risk categories covered)								
4	E.2	Justification of your partial internal model								
5	E.3	Period of use prior to the application								
6										
7	Any other comments									
8										
9										
10										
11	Evidence	Description	Status	Included in application	how	Workstream responsi	Date available for FSA review	E.1	E.2	E.3
12	FSA Group structure spreadsheet	List of all legal entities covered by the internal model	4	In full	A		01/09/2010	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	Evidence E2	Something	2	Supporting evidence	B		01/04/2011	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
14	Evidence E3	Something	4	Executive summary	A		15/09/2010	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	Evidence E4	Something	3	In full	D		01/09/2010	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
16								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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34								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Contents / Instructions / A-D / E / F / G / H / I / J / K / L / M / N /

Example from Contents of Application

F.5	Risk management process and risk profile (internal model development) – Please explain and provide evidence to demonstrate the extent to which the risk management function has been and continues to be involved in designing, implementing, testing, analysing performance, validating and documenting the internal model.
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- The question is about your risk management function. It requires you to demonstrate how the risk management function owns responsibility for the internal model
- You need to show for how the risk management function (a) has been involved in and (b) continues to be involved in:
 - Designing;
 - Implementing;
 - Testing;
 - Analysing performance;
 - Validating; and
 - Documentingthe internal model

Example from Contents of Application (cont.)

F.5	Risk management process and risk profile (internal model development) – Please explain and provide evidence to demonstrate the extent to which the risk management function has been and continues to be involved in designing, implementing, testing, analysing performance, validating and documenting the internal model.
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- Explain – the application must be a coherent document, set out with chapters and subchapters per CoA
- Evidence – the supporting information / proof that sits behind the application itself
 - Evidence is a mix of documents, systems, processes and people
 - FSA intend to carry out most of the review of detailed evidence during pre-app, by desk-based review, interview and on-site investigation
 - Some final assessment work will still need to be carried out post-application, especially to ensure processes are being followed

Work plan

- At first firms are not expected to be near the standard they will be required to meet to gain approval – the purpose is to identify firms' progress to date and benchmark their model development plans.
- Following receipt of the completed self assessment, FSA will review the firm's self assessment and work plan and agree a schedule of work with the firm, including areas suitable for early review and assessment
- This plan is impacting SII projects as those responsible for each IMAP deliverable manage to IMAP delivery dates
- Allows FSA to manage its resources and best use its risk specialists.
- The self-assessment must be maintained and re-submitted to FSA via the Supervisor according to an agreed schedule.
- Firms progress will be monitored and communicated internally within FSA to management

Achieving Consistency

- Challenge to achieve consistency across 100+ firms
- Consistent <> identical
- The role of the IMAP Team

Preparations for the review and assessment phase

- FSA is currently designing and developing high quality material for supervisors, actuaries and risk specialists across the FSA to assist the model review activity and ensure consistent implementation.
- This is being developed by teams working across the organisation to deliver fit-for-purpose and cost effective implementation of IMAP as part of SII programme for FSA and Firms.
- Working groups have been set up looking at: 1) risk management and use test; 2) model infra-structure; and 3) model methodology, assumptions and validation

FSA resources

- IMAP actuaries
 - Actuaries specialised in SII and leading the Internal Model review work.
 - 100% of their time is focussed on IMAP.
 - Each IMAP actuary has their own portfolio of firms
 - IMAP actuaries will draw on other risk specialists for some of the review work.
- Life/GI actuaries
 - Traditional 'Line actuaries' who will become increasingly involved in SII and Internal Model approvals
 - Their time will be split between BAU on the current regime, and SII.
- Non-insurance risk specialists
 - Derivative, credit, interest rate, liquidity risk, operational risk specialists
 - Typically from a banking background and applying their skills to insurance.
- Supervisors
 - Governance and Risk management reviews
 - Drawing on ARROW experience, supervisors will lead the SII Governance and Risk management reviews

Key themes

- **Use and Embedding**

- Firms need to demonstrate a build up of Use between now and final model application.
- Firms should be using their Internal Model at least at the time they submit their final model application.
- Meeting the Use test in each solo entity and at group level is seen as a big challenge for some large global insurers.

- **Responsibility of Risk Management function with respect to Internal Models**

- Article 44(5)
 - For insurance or reinsurance undertakings using a partial or full internal model...
The risk-management function shall cover the following additional tasks:
 - a) To design and implement the internal model;
 - b) To test and validate the internal model;
 - c) To document the internal model and any subsequent changes made to it;
 - d) To analyse the performance of the internal model and to produce summary reports thereof;
 - e) To inform the administrative, management or supervisory body about the performance of the internal model, suggesting areas needing improvement, and up-dating that body on the status of efforts to improve previously identified weaknesses.

Key themes

- **Data**
 - As per Directive requirements (Article 121), firms should take appropriate steps to ensure that the data used for the Internal Model is accurate, complete and appropriate.
- **What should firms be doing as part of the IMAP process on groups?**
 - Show they understand the structure of the group. By this we mean, where are their holding companies, subsidiaries, branches, other mixed activity entities, other financial entities, participations etc?
 - Analyse the group structure in line with the articles of the Directive and provide us with their understanding of where group supervision applies and reflect this in the pre-application process and meetings with FSA.
 - Think about the scope of their model and which SCRs will be calculated and reflect this in the pre-application process and meetings with FSA.
 - Ensure that subsidiaries are engaging with the relevant supervisory authorities.
 - Consider any risks of being part of the group, for example intra group transactions.
 - Factor potential impact of equivalence or non equivalence.
 - Plan how information needs to be presented to College of supervisors.

Questions or comments?

Expressions of individual views by members of The Actuarial Profession and its staff are encouraged.

The views expressed in this presentation are those of the presenter.

