

Admission criteria for the various pre-application levels

As stated under Internal Models in Open Book Supervision, DNB distinguishes three different pre-application levels. These levels are described in the table below, including the documents required by DNB to be able to assess whether the criteria for transition to the next level are met.

Level	Interviews	Documents to be submitted	Criteria for admission to next level
0	<ul style="list-style-type: none"> ➤ Kick-off meeting 	n/a	<ul style="list-style-type: none"> ➤ The insurer has a good case for use of an internal model. ➤ The insurer has set a clear scope for the internal model.
1	<ul style="list-style-type: none"> ➤ Low-frequency progress meetings (twice yearly) ➤ Meetings to discuss the documents submitted 	<ul style="list-style-type: none"> ➤ Requirements analysis ➤ Implementation plan ➤ Substantiation of scope (in case of a partial internal model) 	<ul style="list-style-type: none"> ➤ The insurer has performed a detailed requirements analysis. ➤ The insurer has drawn up a realistic implementation plan.
2	<ul style="list-style-type: none"> ➤ Progress meetings with a higher frequency (quarterly) ➤ Meetings to discuss the documents submitted 	<ul style="list-style-type: none"> ➤ Validation policy ➤ Validation planning schedule ➤ Model governance policy ➤ Description of model structure ➤ Figure-based comparison between IM <-> SF ➤ Example of model documentation ➤ Example of validation report 	<ul style="list-style-type: none"> ➤ The assessed documents meet the quality criteria. ➤ The description of the model structure is complete and sufficiently detailed to permit planning of the reviews. ➤ The insurer has modules that meet the criteria for a review.
3	<ul style="list-style-type: none"> ➤ High-frequency progress meetings (monthly) ➤ On-site reviews of modules, governance and data/ICT 	<ul style="list-style-type: none"> ➤ Documents required for on-site reviews ➤ Periodical updates of requirements analysis ➤ Contents of application template 	n/a

Table 1: overview of the various pre-application levels

The criteria to be met by the documents required are set out in detail in the next sections of this document.

General comments

The step-by-step plan is designed for the average insurance group subject to DNB's group supervision. If it acts as host supervisor, DNB will basically follow the approach and timelines observed by the group supervisor. This implies that, for a proper insight into the local situation, in most cases it suffices to submit only part of the documents. DNB reserves the right to set additional criteria if circumstances should require so.

If DNB establishes that an insurer has made less progress than initially assumed, DNB may choose to move this insurer one or several levels back.

Requirements analysis

The requirements analysis must provide insight into the extent to which the institution satisfies the Solvency II requirements for internal models. As every institution is unique, DNB employs no uniform format for the requirements analysis. DNB does, however, expect every institution to submit a requirements analysis that contains at least the following information:

- A reference to the relevant regulations
- The institution's score, including a substantiation
- A summary description of the actions taken to solve the shortcomings and the data on which these actions will be completed

The requirements analysis must cover all Solvency II requirement relevant for Internal Models. DNB expects the requirements analysis to be performed at a detailed level, i.e. not at the level of sections in the Solvency II Directive, but at the level of the former CP56.

The requirements for internal models apply for all internal model components, for all risk types and for all countries / business units / entities. Some criteria are best assessed in one go for the entire Group, while other criteria are more suitable for an assessment per risk type or per entity. The insurer is free to choose what he considers the best method, as long as the requirements analysis provides a sufficiently detailed and accurate picture.

The following four colours must be used for scoring the requirements:

- Green - requirement met
- Yellow - requirement not (fully) met, but no showstopper for approval of internal model for intended implementation date
- Orange - requirement not met; needs to be resolved before internal model can be approved
- Red - requirement not met; it is impossible or very unlikely that this can be resolved before the intended implementation date

The requirements analysis shall be compiled or verified independently. DNB expects the institutions to update their requirements analyses regularly to ensure that it reflects the current situation. A requirements analysis has proved helpful to give DNB and the institution a shared view about what actions the institution still needs to undertake in order for its internal model to be approved.

Implementation plan

The insurer must have an implementation plan for the internal model, which contains at least the following components:

- An overview of the project organisation, incl. those bearing final responsibility, steering groups, those responsible on the BoM etc.
- An overview of all deliverables

- The planning schedule
- An overview of the available and requisite FTEs specified by activity and department/position
- The approved Solvency II budget

There must be a clearly visible link between the requirements analysis and the implementation plan. The implementation plan should also comprise all solo entities.

Substantiation of the scope in case of an partial Internal Model

Solvency II sets additional requirements for use of partial internal models. The insurer must substantiate that the partial internal model is better suited to the institution's risk profile than the standard formula, and that the standard formula adequately reflects the risks not covered by the partial internal model. In addition, the institution must make clear how the outcomes of the partial internal model and the standard formula are combined into the SCR. DNB favours discussing the substantiation with the insurer at an early stage.

Validation policy

Solvency II sets various requirements for the validation policy. At level 2 of the pre-application, DNB does not yet expect a validation policy that fully meets all Solvency II requirements. However, the validation policy must provide a sound basis for the validations to be performed by the institution. To this end, at least the following aspects should be sufficiently detailed: validation cycle, responsibilities, independence, reporting requirements, validation tools and standards.

Validation planning schedule

As indicated above, in level 3 DNB will only assess modules that have been adequately validated by the institution. It is therefore important for DNB to gain insight into the institution's validation planning schedule, in order that DNB can properly adjust its module review plan thereto. If the validation of a model component consists of several steps (e.g. an initial validation and an implementation validation), this must be clearly visible from the validation planning schedule.

Model governance policy

DNB expects that insurers with an internal model have clearly worked out the governance surrounding the development, validation, implementation and use of the internal models, and laid all this down in policy documents. The policy should name those responsible, the reporting lines, the main decision-making committees and the way how the Board of Management is involved.

Model structure

A sound understanding of the structure of the insurer's internal model is a prerequisite for a satisfactory progress of the pre-application phase. DNB would therefore like to be afforded insight into the internal model concerned, for example, by means of a document describing its architecture. It may also prove quite helpful if, during this phase, the insurer organises a presentation or workshop on behalf of the supervisor to explain the highlights of the internal model.

Figure-based comparison between IM <-> SF

DNB will base the choice and depth of the (sub-)risk categories to be assessed on such aspects as the materiality of the (sub-)risk category and the extent to which the outcomes of the internal model deviate from the standard formula. DNB therefore requests insurers to submit the most recent possible comparison between the outcomes of the internal model and those of the standard formula (broken down by sub risk and entity), including explanatory notes to the main differences.

Example of model documentation

Sound and detailed model documentation is essential for model reviews in level 3. The model documentation should therefore contain a detailed description of the data, assumptions, methods and techniques used, the way how risk-mitigation techniques and future management actions are taken into account, the model's deficiencies, the model's outcomes and the results of tests performed to assess the quality of the model. Besides a description of the above elements, the documentation must also provide for a substantiation of the choices made.

To verify if the model documentation satisfies DNB's expectations, DNB would like to receive an example of documentation on one of the internal model's components, i.e. an example that is representative of the documentation available on, or being developed for, other model components.

Example of validation report

DNB sets much store by insurers subjecting their own internal models to a critical test via their validation process before putting the internal model into use. In level 3, DNB will therefore only assess modules that have been adequately validated by the institution. Such validation should meet the following requirements:

- It must be independently executed.
- It must provide for at least the following checks, which must be described in the validation report:
 - A check for accuracy, completeness and appropriateness of data
 - A check for accuracy and suitability of other sources, like expert judgement and external models or data
 - A check for accuracy and suitability of methods, probability distributions and assumptions
 - A check for accuracy of and correct follow-up to tests performed during the development phase, such as sensitivity analysis
- The report must specify:
 - The scope of the validation performed
 - Who performed the validation activities (group/subsidiary, model developer/independent validator)
 - Findings and recommendations
 - The conclusion, i.e. whether or not the model is Solvency II-compliant and ready for application

To verify the quality of the validation, DNB would like to receive an example of a representative validation report, preferably one about the same model component as the model used as in the sample model documentation. It is important to note that validation must not only focus on shocks but also on the translation thereof into the SCR.