

Stakholder	Response	Resolution of comments
<b>Q1 - What are your views on the presented stress test elements and their relations? Please elaborate on any relevant elements that have not been covered.</b>		
Actuarial Association of Europe (AAE)	We agree with the described stress test process and elements. An important issue is the scope of the stress test. With regard to macroprudential objectives, a thorough analysis should help to identify sources of risk that might have a material impact on financial stability. Focussing on microprudential objectives it is recommendable to consider the requirements already contained in the Solvency II framework. Undertakings have to identify the most relevant risks their undertaking might be exposed to. Prescribing a methodology might not be helpful in this case.	Stakeholders broadly agreed with the proposed building blocks and their interrelations. It is worth noting that the definition of assumptions, limitations and simplifications allowed in the calculation of the post stress position is a key part of the design of the technical specifications. However, a comprehensive and detailed definition of these elements can only be reached in the consultation phase of a Stress Test exercise also based on case by case discussions. EIOPA believes that a clear and open discussion with stakeholders is key to grant a level playing field and the comparability of the results among the participants. These concepts will be clarified in Chapter 2.1. EIOPA welcome the discussion on the definition of the objectives of a Stress Test exercise. The goal(s) of the exercise will be clearly stated in future exercises and any subsequent element will be related to them with specific reference to: - Framework: EIOPA designs stress test exercise according to the evolution of the risks in the market and this approach might conflict with the concept of stability of the framework. However, it should be acknowledged that the core of the ST remained stable in terms of key components (e.g. timeframe, type of market shocks). This should not prevent EIOPA to evolve the framework to pursue specific objectives. - Indicators: EIOPA will define the indicators (e.g. balance sheet based indicators and solvency related indicators) according to the objectives of future exercises. - Frequency: In order to allow proper follow-up analysis of the results and better develop the recommendation phase EIOPA agreed on the reduction of the frequency of the bottom-up Stress Test exercise. - Templates: QRTs were and will be the reference set of templates for the data collection in Stress Test exercises. However, additional information might be collected according to the objective, analysis and validation needs. Any depart for the standard QRTs will be considered in term of cost/benefits and consulted with stakeholders. - Communication: EIOPA always promoted and will keep promoting transparency in the insurance sector by many means, including Stress Test exercises. To that aim, EIOPA will consider, also in line with the ECA report, the individual disclosure of post stress information, upon consent of the participants, if relevant with the objective of the exercise.
Norwegian Actuarial Society	As an overall overview of the elements this framework looks adequate. However, it all depends on the purpose of the ST. There might be a feedback loop from "Analysis" back to "Approach", "Scope" and "Scenarios". This loop may reveal that the approach is not optimal or not within scope.	
Assuralia	<p>The sector highlights its key views on stress testing exercises.</p> <p>1. The Goal of a stress test Stress tests are an additional tool in conjunction with solvency capital requirements to assess the resilience of insurance companies in difficult circumstances. Organising stress tests strengthens confidence in the adequacy of insurance companies' reserves and capital. However, stress tests are not an exam that every company must pass per se.</p> <p>2. The calculation of the post-stress SCR is not necessary to achieve EIOPA's financial stability mandate. Stress tests are not intended to increase capital requirements either. However, calculating an SCR ratio after stress means that the company not only has to withstand the stress test scenario, but also the 1/200-year SCR scenario. As a result, there is an expectation that companies will have to comply with it. They must then hold much more capital than the assumed 99.5% value at risk. This can create confusion and result in an unrealistic and unnecessarily pessimistic view of the health of the insurance industry.</p> <p>3. Communication The results of the stress test should be published at an aggregated level. In the case of an individual disclosure, the stress test risks creating the expectation of an additional capital requirement that must be respected. It is important to illustrate the scenarios when publishing the results. It should be explained which scenarios have been included and the probability of these scenarios.</p> <p>4. The scheduling and permitted timescales of future exercise should be improved. Future exercises should be planned with sufficient foresight to provide insurers in scope of the exercise with the time to prepare for the exercise. Sufficient time should also be allowed for consultation with industry. Then, the stress test scenarios should be published in time accompanied by a final version of the instructions. These instructions should be sufficiently detailed to allow companies to carry out the necessary work in a structured manner. Adjustments or clarifications after the publication of the stress test scenarios lead to a repetition of a part of the work and should therefore be avoided. The stress test scenarios differ throughout the years and therefore require considerable modelling effort. Companies need enough time to complete a stress test, i.e. to run their calculations and complete internal validations and sign-offs. In order to focus on the stress test, it should not coincide with any other ad hoc reporting. In order not to unnecessarily increase the pressure on personnel, a stress test should not be organised in July and August.</p> <p>5. Scenarios in line with business practice The stress test scenarios should, to the extent possible, be in line with business practice. This way, the scenarios provide the most realistic possible representation of the impact of a stress situation. EIOPA proposes to exchange consistency for better comparability of the results between the companies and for the pre- and post-stress situation. For example, it is proposed to recalculate the baseline and to cut future management activities. However, these are part of the reality and removing them means that, from a risk management perspective for the companies, the scenarios lose credibility. Moreover, the proposal is difficult to implement because these assumptions are already embedded in the core of the models.</p> <p>6. The approach, scope and specifications of any exercise should be proportionate to its objectives. It is unnecessary to require insurers to run bottom-up stress tests akin to full quarterly reporting processes; greater use should be made of insurers' existing stress and scenario testing tools. Technical specifications should be clear, avoid unnecessary complexity and published with sufficient time to allow early to allow full assessment.</p> <p>7. Data collection and validation should be standardised and consistent. The volume of data collected should be kept to a minimum. Previous exercises have required highly-granular data sets which appear to provide limited marginal value. While the use of QRT templates can be helpful if they are consistent with those already used by the insurer, QRT templates which are not used by the insurer and ad-hoc templates create a high level of operational burden and should be avoided as far as possible.</p>	

Insurance Europe, CRO Forum & CFO Forum	<p>The insurance industry welcomes the opportunity to provide input on EIOPA's Discussion Paper on Methodological principles of insurance stress testing. This response has jointly been prepared by Insurance Europe, the CRO Forum and the CFO Forum. We look forward to continued engagement with EIOPA on the development of an effective and proportionate stress testing framework. Our key views on stress testing exercises are as follows.</p> <ol style="list-style-type: none"> <li>1. The objective must be clearly defined and articulated. It is important that stress testing is used for clearly defined and targeted purposes. It should not be used as a parallel to Solvency II and should not be designed or used in a manner which leads to an amplification of capital requirements. Any individual vulnerabilities beyond the Pillar I capital requirements can be assessed via the ORSA process.</li> <li>2. The calculation of the post-stress SCR is not necessary to achieve EIOPA's financial stability mandate. The calculation of the post-stress Solvency Capital Requirement (SCR) sets vastly higher levels of implied capital than the 1 in 200-year calibration level agreed for Solvency II as it results in the insurer having not only to withstand the stress test scenario, but also the post-shock 1-200-year SCR scenario. This can create confusion and result in an unrealistic and unnecessarily pessimistic view of the health of the insurance industry.</li> <li>3. Results should continue, as in previous years, to be published at aggregate level. "Voluntary" company-level disclosures change the nature of the exercise from a vulnerability test to a capital exercise. Any voluntary disclosure of results should remain at an undertaking's own volition. EIOPA should not have a role to play in the co-ordination of voluntary disclosures. Besides, from a macroprudential perspective, company-level disclosure can be counterproductive.</li> <li>4. The approach, scope and specifications of any exercise should be proportionate to its objectives. A reduction of the frequency of stress test exercises is crucial. A full exercise every three years together with follow-up analysis and proportionate sensitivity assessments in the intervening years is sufficient. The overall burden of stress testing must be reduced. It is unnecessary to require insurers to run bottom-up stress tests akin to full quarterly reporting processes. The EIOPA-stress testing approach should be comparable and leverage companies' existing stress and scenarios testing approaches and processes. It should not require companies to effectively build and develop separate process, system and procedures which are solely utilised for EIOPA's tri-annual stress testing exercises. Technical specifications should be clear, avoid unnecessary complexity and be published with sufficient time.</li> <li>5. The scheduling and permitted timescales of future exercises should be improved. Future exercises should be planned with sufficient foresight to provide insurers in scope with the time to prepare for the exercise. Sufficient time should also be allowed for consultation with industry and for insurers to run their calculations and complete internal validations/sign-offs.</li> <li>6. Data collection and validation should be standardised and consistent. The volume of data collected should be kept to a minimum. Previous exercises have required highly-granular data sets which appear to provide limited value. While the use of QRT templates can be helpful if they are consistent with those already used by the insurer, QRT templates which are not used by the insurer and ad-hoc templates create a high level of operational burden and should be avoided as far as possible. Insurer's stress and scenario testing (SST) processes are typically not designed to produce results at QRT granularity.</li> <li>7. Communication on the stress testing should ensure that the design, limitations and results of any exercise are appropriately communicated and well understood. Previous exercises have continually shown the European insurance industry to be well capitalised and resilient to financial and insurance shocks. However, EIOPA's key message has typically been to highlight perceived vulnerabilities which are instead a reflection of the balanced and calculated risks that insurers take. EIOPA has also continually described the scenarios being tested as plausible without providing any indication of the expected frequency of such events.</li> </ol>	
AMICE	<p>We support EIOPA's objective to set out common methodological and technical principles to be used for future EIOPA stress tests. Specifying a framework that remains stable over time will significantly reduce the operational burden of conducting future stress test exercises for insurance companies. An essential basis for the establishment of a stress test framework is the definition of objectives pursued by the stress test. The definition of these objectives should have been clarified by EIOPA before publication of the discussion paper.</p> <p>Stress tests should focus on macro impacts. Yet, those macro impacts need to be sourced from individual undertakings' calculations as they are better placed to conduct calculations and incorporate their management actions and going concern capacities.</p> <p>Individual vulnerabilities for micro supervision are much better identified using the ORSA that precisely fulfils this target.</p> <p>Stress Tests and sensitivities should be forward looking to be a useful exercise for both supervisors and insurance undertakings. Solvency is being challenged and scrutinized against various possible risk drivers' evolutions.</p> <p>EIOPA does not question the need to calculate a post-stress SCR in the discussion paper. In our view, the calculation of a post-stress SCR should not be part of a stress test exercise. Assessing the stress after a stress requires many hypothetical assumptions. This limits the comparability of the results. Furthermore, the costs of conducting the stress test exercise increase significantly.</p>	
Allianz SE	<p>We acknowledge and support the view that stress test elements are strongly interlinked and cannot be considered in isolation. Some general statements on specific elements:</p> <ol style="list-style-type: none"> <li>1. With respect to scenarios and shocks as key elements of stress test exercises, in order to increase comparability and relevance of results and hence improve the use of results for the industry and analyst community, we recommend to provide standardized shocks rather than very unique and unrealistic scenarios. For the same reasons, the shocks/scenarios framework should be kept reasonably constant over the years.</li> <li>2. Data collection should be based on standardized reporting tools consistent with the regular QRT reporting, but adapting data granularity to be meaningful and reflective of the calculation approach taken. On the validation part, we would like to note that to evaluate the consistency of results with the specifications, tools used by EIOPA and NCAs should be made available to undertakings to reduce delivery iterations and amendments following the submission.</li> <li>3. With respect to disclosure we do not support an individual entity disclosure neither on a mandatory nor on a voluntary basis. Especially, if stress test design still allows for very severe and complex scenarios (in contrary to 1 above) which are not in line with the Solvency II framework, we highly object to any disclosure of post-stress SCR figures at single undertaking level to avoid misinterpretation of results that are difficult to compare.</li> <li>4. In our view a missing element of the presented stress test process and elements overview is the timeline of the stress test exercise in terms of frequency, time of the year during which the ST exercise should take place and timeframe for performing the exercise. To ensure high quality of results a regular, standardized process with sufficient timeframes should be established which allows undertakings to prepare properly.</li> </ol> <p>Please also refer to our detailed comments on the properties of specific stress test elements further below.</p>	

German Insurance Association (GDV)	<p>GDV appreciates the opportunity to comment on the discussion paper on the methodology to design and implementation of future stress tests.</p> <p>We understand that this methodology and guidelines will be a key element in order to allow for scenario calculations by insurance and reinsurance undertakings in upcoming stress testing processes.</p> <p>Stress tests should be used very targeted and for clearly defined purposes only. But it should not be used as a parallel and therefore not comparable / consistent regime to Solvency II.</p> <p>A reduction of the frequency between stress tests is crucial. An exercise every 3 years would facilitate to achieve a well-reasoned stress test design and allow for a better preparation for the undertakings concerned. This could increase the data quality and the significance of the results.</p> <p>Moreover, the calculation of a post-stress SCR should be rejected. The analysis of stress after stress increases the processing effort and severely restricts the comparability of the results.</p> <p>Finally, we would like to highlight that the new methodology to design and development future stress test exercises should be sufficiently consulted with the insurance and reinsurance undertakings before they are implemented.</p>	
<b>Q2 - What are your views on the different stress test objectives and the advantages and disadvantages mentioned?</b>		
Norwegian Actuarial Society	<p>One advantage for the micro approach is that this is what the companies are accustomed to and have systems in place. They are also closer to the actual business and their own risks. In our view the most efficient way without stretching the resources within the insurance companies, is for EIOPA to utilize as far as possible the vast information already embedded in the Solvency II calculations. Possible to then add on stress tests on a micro or macro level.</p> <p>The macroprudential stress test would have to do calculations across the different companies that may have entirely different approaches, risk and management rules yet have to treat them as more or less the same. This could lead to a rerun of ST and result in the company having to do both a macro and micro stress test to capture the real underlying risk (high burden on the company). This is mentioned in the last bullet point of the disadvantages in table 2.2, but we think the complexity is higher than it is expressed.</p> <p>Another disadvantage of the micro approach is that it does not consider the macro economic effects that all insurers "think alike" and have similar management rules of behaviour in their models and risk management. This could affect the market as a whole.</p> <p>To avoid too much complexity and to let the insurers, who know their business best, do the actual stress test we think that this may be the best solution. It requires that the microprudential stress tests be set up in a way that will give this additional insight.</p>	<p>Stakeholders recognize the benefits of stress testing and highlight the complexity and resources needed for a bottom-up stress test exercise. EIOPA welcomes the support from the stakeholders and, while acknowledging the resources intensive nature of these exercises, believes that stress tests are an important tool for supervisors to identify and assess potential risks that are not captured in the regular SII reporting. Conscious of the effort needed to run a bottom-up stress test exercise at industry and supervisors level, stress tests should be used in a proportionate way and focused on relevant risks defined following a risk-based approach and taking into account the cost-benefit of such exercise. These considerations are now reflected in the paper. Stakeholders welcomed the discussion on the objective of a bottom-up exercise and signalled the need for a clear definition of the objective at inception of each exercise. EIOPA shares this need. Furthermore, it is worth to clarify that the approach to Stress Test exercises applied so far had a predominant micro- connotation and sector-wide conclusions were inferred from the aggregation of the impact of the prescribed shocks on the participating entities. This clarification is now included in the paper. EIOPA believes that the current framework provides valuable information on the vulnerability of the industry against adverse evolution of the markets and allows to identify the behaviour of the regulatory framework under severe but plausible situations.</p>
Assuralia	<p>The sector generally agrees with the proposed objectives of micro and macro stress tests.</p> <p>However, any stress testing exercise must be proportionate to its objectives and should be used to complement existing reporting.</p> <p>Future exercises should be designed to use the extensive systems and processes firms already have in place as part of Solvency II. They should also take into consideration the practicalities of companies in scope of the exercise ie if it is a group or solo exercise.</p> <p>Microprudential stress tests</p> <ul style="list-style-type: none"> <li>• As noted in the paper, the Solvency II framework is a system of stress tests which already provides a significant amount of information about the microprudential risks which insurers face.</li> <li>• Any future exercises should be designed to avoid the duplication of Solvency II information.</li> <li>• One additional advantage is that the stress tests could highlight the flaws of the SII regulation, namely the ineffectiveness of the VA in stressed conditions and the lack of recognition that insurers are long-term investors.</li> <li>• One additional disadvantage is that they could result in additional capital requirements for the same risks that are assessed under SII therefore going beyond the 1-in-200 year calibration of the SII framework.</li> </ul> <p>Macroprudential stress tests</p> <ul style="list-style-type: none"> <li>• The sector recognises the importance of obtaining information about the resilience of the whole insurance system to stressed conditions. However, the complexity of such exercises is clearly of a significantly greater magnitude than microprudential stress testing.</li> <li>• The insurance industry has shown to make a limited contribution to systemic risk and therefore the costs of any macroprudential testing must remain proportionate.</li> </ul>	
Insurance Europe, CRO Forum & CFO Forum	<p>Insurance Europe generally agrees with the proposed objectives of micro and macro stress tests.</p> <p>In future exercises, it is necessary for EIOPA to find an appropriate balance between its microprudential and macroprudential objectives. The following considerations should be taken into account when striking this balance.</p> <p>Microprudential stress tests</p> <ul style="list-style-type: none"> <li>• As noted in the paper, the Solvency II framework is a system of stress tests which already provides a significant amount of information about the microprudential risks which insurers face.</li> <li>• Any future exercises should be designed to avoid the duplication of Solvency II information. The ORSA and SFCR can further be used to assess micro-prudential issues.</li> <li>• One additional disadvantage is that they could result in additional capital requirements for the same risks that are assessed under SII therefore going beyond the 1-in-200 year calibration of the SII framework.</li> </ul> <p>Macroprudential stress tests</p> <ul style="list-style-type: none"> <li>• Insurance Europe recognises the importance of obtaining information about the resilience of the whole insurance system to stressed conditions. However, the complexity of such exercises is clearly of a significantly greater magnitude than microprudential stress testing.</li> <li>• The insurance industry has shown to make a limited contribution to systemic risk and therefore the costs of any macroprudential testing must remain proportionate.</li> </ul> <p>In addition, any stress testing exercise must be proportionate to its objectives and should be used to complement existing reporting. Future exercises should be designed to use the extensive systems and processes firms already have in place as part of Solvency II. They should also take into consideration the practicalities of companies in scope of the exercise ie if it is a group or solo exercise.</p>	
AMICE	<p>Stress Tests should focus on macroprudential issues and potential systemic interlinkages while in between two macroprudential Stress Test exercises, sensitivities could be requested with a micro prudential focus only (already done in ORSAs).</p>	

Allianz SE	We broadly agree with the explanations of objectives and (dis-) advantages, however we would like to point out that the comparability of results and hence a stress test design that fosters such comparability is a key factor for both objectives and can be more difficult to achieve when trying to overcome the disadvantages mentioned on macroprudential stress tests (c.f. our answer on Q.12).	
German Insurance Association (GDV)	In principle, micro- and macroprudential objectives are of equal importance. However, the stress test exercise should follow firstly a risk-based approach, and in light of the very limited systemic risks from the insurance industry the micro-perspective should be the central aspect in the design of the exercise. Taking this into account, we believe that the current supervision regime, Solvency II, provides sufficient evidence in order to test the resilience of insurance undertakings under certain severe scenarios and also covers potential systemic risks to a large degree. Hence, future stress test exercises would only make sense as long as an added value was obtained from them and should be subject to a comprehensive cost-benefit analysis. We agree with the advantages of a macroprudential stress test proposed by EIOPA in the current discussion paper. Assessing the resilience of an individual undertaking as well as allowing providing specific recommendation to insurers are key aspects to take into account in a consistent stress test design. Likewise, we consider important as well that the upcoming stress tests provide useful information from a macroprudential perspective. In this sense, we agree that it is crucial to obtain information about the resilience of the whole insurance system under stressed conditions. However, since the insurance industry has revealed to have a limited exposure to systemic risks, this aspect has to be taken into account when designing stress test exercises.	
<b>Q3 - What are your views on combining a macroprudential stress test with a quantitative assessment of post-stress reactions by insurers to provide additional insight in potential second-round effects?</b>		
Norwegian Actuarial Society	To avoid too much complexity and to let the insurers, who know their business best, do the actual stress test we think that this may be the best solution. It requires that the macroprudential stress tests be set up in a way that will give this additional insight.	
Assuralia	It is difficult to provide a concrete assessment of this proposal without further detail on the specific approach that would be taken. However, the sector expects that it would be challenging to incorporate second-round quantitative effects into a stress test exercise. Therefore, caution must be exercised, and a proportional approach taken to the design of any assessment of post-stress reactions. Finally, the sector notes that although previous exercises were predominantly of a micro-prudential nature, they have enabled EIOPA to draw conclusions regarding the insurance sector as a whole (eg they were regularly referred to in financial stability reports).	
Insurance Europe, CRO Forum & CFO Forum	It is difficult to provide a concrete assessment of this proposal without further detail on the specific approach that would be taken. However, the insurance industry expects that it would be challenging to incorporate second-round quantitative effects into a stress test exercise, resulting in excessively complex calculations. Therefore, caution must be exercised, and a proportional approach taken to the design of any assessment of post-stress reactions. Finally, we note that although previous exercises were predominantly of a micro-prudential nature, they have enabled EIOPA to draw conclusions regarding the insurance sector as a whole (eg they were regularly referred to in financial stability reports).	
AMICE	That could be a practical solution.	
Allianz SE	Post stress management actions should not be reflected in stress tests as there is too much latitude, hence results would not be comparable. In the light of usability of results for the public, e.g. analyst communities, comparability is a key factor. Instead, recovery planning exercises should be done by national supervisors for all material local insurers and all IAIGs (top-down).	
German Insurance Association (GDV)	In our understanding, the previous EIOPA stress tests already had an important macroprudential role, allowing conclusions regarding the insurance sector as a whole (e.g. they were regularly referred to in financial stability reports). Considering the limited systemic risk resulting from the insurance industry, we believe that stress tests with a more macroprudential nature can be very effective and sufficient for macroprudential purposes as well. Any enrichment with further macroprudential elements should be subject to a strict application of the principle of proportionality.	
<b>Q4 - What are your views on the definition and recalculation of the baseline for stress test purposes? If a recalculation of the baseline would be requested, what would be the estimated additional resources/costs for this?</b>		
Actuarial Association of Europe (AAE)	For the sake of consistency the use of the same models and perimeters for baseline and stress scenarios is preferable. However, the recalculation of the baseline scenario will inevitably result in extra burden and should be considered in line with the stress test purpose. In case of significant difference with reported figures, some high level reconciliations/explanations should be provided. We strongly recommend not to request recalculation or stress test calculation with models deviating significantly from those used for Solvency II calculations. The informative value of a stress test is not a question of the correct baseline but of scenario design.	While it was acknowledged that a recalculation of the baseline could help improve the comparability of the results and to isolate the impact of specific stresses, stakeholders raised concerns on the consistency of the baseline with the models used for regulatory purposes at the reference date and the computational burden of recalculating the baseline. In light of these stakeholder comments, EIOPA proposes to take the regulatory (Solvency II) financial position at the relevant reference date as the baseline for ST exercises and only consider a recalculation of the baseline position in exceptional circumstances. This would apply if there has been a change in the undertaking's structure and/or valuation model which would materially affect the regulatory position at the relevant reference date e.g. change
Norwegian Actuarial Society	Recalculating the base line could be used to do a "what if" analysis and to isolate single effects of the stress. For many scenarios though, it is simply not possible to isolate single effects. It depends heavily on the purpose of this exercise. When looking at a stress after an economic change it could add value. The insurers, true or not, seem to deem their base line as the true best estimate for the current situation. Changing the baseline could indicate that the base line is very uncertain.	

Assuralia	<p>The sector agrees that the comparability of pre and post stress test results is an important aspect of a stress test. However, the baseline position should always be the insurer's Solvency II position at the relevant date.</p> <p>A recalculation of the baseline is typically neither required nor reasonable.</p> <ul style="list-style-type: none"> <li>• A stress test with a recalculated baseline can only be relevant to the supervisor and will be irrelevant to the insurance undertaking, because changing the baseline means that the scenario will not be in line with reality. Such a recalculation will thus only serve to reduce interpretability of the results. For a stress test to be useful for risk management of insurers, the results of the stress test need to be well-argued, evidence-based and consistent with Solvency II.</li> <li>• Furthermore, it is very difficult to change the baseline. It is the core of the models and it is not designed to be meddled with. Changing the baseline will prove difficult and tricky and might invalidate the model.</li> <li>• Consequently, the whole endeavour will be very expensive and time-consuming, and the insurance undertaking will learn nothing from it.</li> </ul>	<p>in perimeter of entities/groups, restructuring, M&amp;A, change of the estimation of the solvency capital requirement (standard formula, USP, partial /full internal models), major model change. A potential recalculation of the baseline will be assessed and discussed on a case by case basis.</p>
Insurance Europe, CRO Forum & CFO Forum	<p>We agree that the comparability of pre and post stress test results is important. However, the reference date should always be at end of year (where SCR and Solvency position are calculated) and the baseline position should always be the insurer's Solvency II position at the relevant date.</p> <p>A recalculation of the baseline is typically neither required nor reasonable.</p> <ul style="list-style-type: none"> <li>• Baseline recalculations can be complex in terms of timing and, depending on the changes requested, also in terms of technical constraints (eg changes that affect actuarial platforms).</li> <li>• Such a recalculation only serves to reduce comparability and interpretability of the results. In order to make specific recommendations to individual insurers, the results of the stress test need to be well-argued, evidence-based and consistent with Solvency II.</li> <li>• The use of different models does not necessarily create sufficient divergences which would trigger the need for a recalculation. For example, stress impacts from one model may be overlaid on to base positions from another, with appropriate checks and controls over completeness and consistency (taking proportionality and materiality into account).</li> </ul> <p>However, we recognise that there may be exceptional cases, such as the restructuring of a group after the applicable stress test date, which would justify a recalculation of the baseline scenario when it has not already been done.</p>	
AMICE	<p>As a starter, for accuracy, transparency, consistency and comparability reasons we think it is paramount that the baseline scenario should reflect the latest published solvency ratios of contributors to the STs and/or sensitivity analysis. On the same note, STs and/or sensitivity analysis should be anchored to the baseline w/o allowing any item from the baseline to be changed under the stresses being applied. It should be clear that the latest published solvency situation is the starting point of the investigation w/o changing this starting point. Any subsequent change (such as change in perimeter, modelling and/or proxies) should be assessed against the starting point and it should be clearly delivered as a restatement of the starting point item, broken down according to the different causes.</p> <p>Recalculations should therefore be justified in individual cases and due to changes in the structure of the entity or in the estimation models. We clearly oppose a standard recalculation, especially when using simplifications. Existing requirements for simplifications already ensure that their application does not have a distorting effect on the results.</p> <p>There must be a clear link with regulatory reporting values.</p>	
Allianz SE	<p>A recalculation of the baseline will only provide added value in case material changes in the undertakings structure occur (e.g. material changes in perimeter or major model changes) and hence should be required only in case the undertaking estimates a material impact of these changes, also considering the allowed simplifications. The analysis should be in the responsibility of the undertaking, in line with its specific materiality concept.</p> <p>A general requirement for baseline recalculation would mean another burdensome additional run with implications for resources, time planning and costs that can be – depending on the scope and design of the exercise – similar to a regular closing and hence hardly fitting into already tight timelines.</p>	
German Insurance Association (GDV)	<p>No, we do not consider the proposed recalculation of the baseline for stress test purposes to be appropriate.</p> <p>Introducing such a recalculation of the baseline for the stress test purposes is neither required nor reasonable for the stress test purposes.</p> <p>We believe that the results of undertakings are calculated in line with Solvency II, the current supervision regime, and provide a meaningful starting point for the stress test.</p> <p>Besides, a new methodology to calculate would lead to a regime parallel to Solvency II. We do not consider this justified.</p> <p>Finally, it would not be feasible to interpret the post-stress results in terms of Solvency II. The comparability and interpretability of the stress test exercise should be a top priority. In order to address specific recommendations to undertaking, the results of the stress test need to be well-argued, evidence-based and consistent with Solvency II, and hence relevant, interpretable and coherent to the economic reality.</p> <p>To sum up:</p> <ul style="list-style-type: none"> <li>• The baseline scenario should correspond to the unchanged data as of 31.12.PY. A standard recalculation of the base scenario should clearly be rejected.</li> <li>• The cost of a recalculation would depend on the degree of deviation from the Solvency II framework. Since this could lead to significant changes in the standard calculation processes, the costs could become material.</li> </ul> <p>Exceptionally, recalculations may be justified. For instance, in cases of changes in the structure of an insurance group / in models, a recalculation of the baseline should only be carried out if the change would lead to fundamental deviations in the assessment of the results.</p>	

**Q5 - What are your views on the different time horizon approaches for stress tests purposes? What would be the most appropriate approach in your view in light of the different stress test objectives?**

Actuarial Association of Europe (AAE)	<p>Deriving sensible metrics for a five years' period seems very challenging. When applying a multi-period scenario, at most a three-year period seems feasible and the specifications should allow for reasonable simplifications such as implementing each year as a one-year instantaneous shock with modified perimeters at the starting point.</p>	<p>EIOPA acknowledges the preference for instantaneous shocks expressed in several stakeholder's comments and the reasoning behind it. However, EIOPA also supports the views that were reflected in the comments on the conceptual benefits of stretched stress scenario components (e.g. for specific risk drivers with a longer time horizon). EIOPA also acknowledges stakeholder feedback concerning the methodological challenges and the operational burdens linked to the specification, implementation and validation of multi-period stress tests. However, given the potential merits of multi-period stress tests reflected in the stakeholder's comments EIOPA considers that further analysis on the feasibility of such</p>
Norwegian Actuarial Society	<p>We agree with the listed advantages and disadvantages. We think that a multi-period stress test, although in theory would give valuable information, is far too complex to design, calculate and interpret. Our suggestion would be of instantaneous shocks combined with specific stretched components but based on the characteristics of the different risks. For example, equity shock is mostly instantaneous and longevity risk mostly stretched. These two risks should have a different time horizon. A risk could also have an instantaneous effect and a longer time horizon for the second order effect.</p>	

Assuralia	<p>Instantaneous stress tests are well understood by all stakeholders and sufficient to achieve the objectives of most stress testing exercises.</p> <p>The use of instantaneous stress scenarios complemented with specific scenario components stretched out over time has is a welcome simplification, but it is recognised that it can be a confusing approach due to conflicting interaction between long-term and short-term considerations.</p> <p>The sector recognises the conceptual benefits of multi-period scenarios (insofar as stressed situations are rarely instantaneous and typically escalate and propagate over a protracted period). In particular, multi-period scenarios are noted to be of most use in the when pursuing a macroprudential objective.</p> <p>However, multi-period stress tests are a heavy burden for the insurance companies to calculate. Multi-period stress tests are very complex to model. It should be noted that some insurers may not have yet developed models which enable them to perform multi-period stress tests. Therefore, multi-period stress tests should only be chosen instead of an instantaneous stress test where the multi-period stress test will be of a significant added value for the risk management.</p> <p>In practice, if multi-period approaches are to be followed, these would require acceptance of a wide range of simplifications over and above those already considered necessary, due to the additional complexity involved.</p>	<p>multi-period exercises is required. Therefore, EIOPA will continue to explore on methodological principles for multi-period approaches in the second phase of the project.</p>
Insurance Europe, CRO Forum & CFO Forum	<p>Instantaneous stress tests are well understood by all stakeholders and sufficient to achieve the objectives of most stress testing exercises.</p> <p>The use of instantaneous stress scenarios complemented with specific scenario components stretched out over time has proven to be a confusing approach previously due to conflicting interaction between long-term and short-term considerations.</p> <p>The insurance industry recognises the conceptual benefits of multi-period scenarios (insofar as stressed situations are rarely instantaneous and typically escalate and propagate over a protracted period), depending on objectives.</p> <p>However, the use of multi-period stress tests should be restricted to cases where they will create significant added value for risk management. Multi-period calculations create a heavy operational burden and design challenges as interactions, paths, order of occurrences and numbers of risk drivers need to be specified and communicated with clarity. It should also be noted that some insurers may not have yet developed models which enable them to perform multi-period stress tests.</p> <p>In practice, if multi-period approaches are to be followed, it would require acceptance of a wide range of simplifications over and above those already considered necessary, due to the additional complexity involved. The extended use of simplifications may drive a material loss of comparability in the results across undertakings</p>	
AMICE	<p>Ideally longer terms are necessary to appreciate the risk profile of insurers. Nevertheless, multi-year scenarios indeed pose huge operational and conceptional challenges as interactions, paths, order of occurrences and numbers of risk drivers increase and get more complex. There is a limit to the realistic operational calculation and reporting of multiple intertwined scenario constituents. An instantaneous stress scenario is clearly preferable to a multi-period stress scenario. Additionally, a multi-period scenario would require the harmonisation of a large number of specifications throughout Europe and the comparability of the results would be limited.</p> <p>Instantaneous shocks with specific scenario components stretched out over longer time periods appear a workable solution that should leave room for better consideration of management actions.</p> <p>The short-term bias of Solvency II driven by the 1Y time horizon approach for risk calibration and inductive of distortions of going concern and management actions dynamics is unfortunately largely exacerbated when implementing instantaneous shocks in stress testing. Allowance for management actions is key.</p>	
Allianz SE	<p>In light of the high complexity inherent in multi-period stress tests we strongly recommend to keep the stress test time horizon at the level of one period instantaneous stresses based on clearly defined shocks without consideration of post-stress management actions. Otherwise both micro- and macro-prudential objectives are jeopardised as the comparability of results, which is a key factor to meet the objectives, cannot be ensured.</p>	
German Insurance Association (GDV)	<p>We consider that one time instantaneous stress tests provide useful information on the resilience of insurers. Thus, we consider that Solvency II provides sufficient evidence for the resilience of individual undertakings, and hence this could be seen in practice as a stress test itself.</p> <p>An instantaneous stress test addresses supervisory purposes and combines micro- und macro perspectives in an appropriate and realizable way. This Stress test should be designed in accordance with the principle of proportionality.</p>	
<p><b>Q6 - What are your views on the treatment of management actions in the context of a stress test exercise?</b></p>		
Actuarial Association of Europe (AAE)	<p>Management actions as a reaction to adverse scenarios are defined within Solvency II in line with the requirements of the framework: e.g. Article 23 of the Delegated Regulation. They should also be allowed for stress test purposes.</p>	<p>Given the company-specific character of management actions EIOPA acknowledges the methodological challenges linked to the proposed classification into "embedded" and "reactive" actions. Nevertheless, EIOPA deems this distinction to be useful for providing further guidance on the treatment of management actions in a stress test exercise. EIOPA recognises the difficulties for specifying, implementing and validating any specific limitations to embedded management actions for a stress scenario. However, EIOPA considers to further develop the analysis on the model-endogenous mechanisms driven by the embedded management actions under adverse scenarios. EIOPA further acknowledges that depending on the objective of the stress test the analysis of the impact of reactive post stress management actions can enhance the explanatory power of the exercise and enable an assessment of potential second-round effects. In case an EIOPA stress test framework should include the allowance for such reactive post stress management actions EIOPA considers it of specific importance that companies are in a position to provide qualitative or quantitative information on their impact as well as reliable and clear evidence regarding their appropriateness</p>
Norwegian Actuarial Society	<p>Embedded management actions are a vital part of the risk management of an insurance company and rightly so. This should therefore be a vital part of the stress tests, but only within reason and within the reality of what a management is likely to do in "real life". Embedded or post stress, any management actions must be realistic.</p>	
Assuralia	<p>The sector supports the inclusion of management actions in stress testing exercises where these reflect stated management principles and practices and have been assessed as appropriate for inclusion as part of the insurer's Solvency II modelling.</p> <p>Management actions are inherent to Solvency II. They are agreed by the Board of Directors and have to be followed through. Discarding management actions is unrealistic, thus hampering the comparison of pre and post stress. The risk management of an insurance undertaking will not learn from it as the scenario is unrealistic. Furthermore, it is very difficult to change or discard management actions out of the models. They are part of the core of the models and are not designed to be deviated from. Changing or discarding management actions will prove difficult and tricky and might invalidate the model.</p> <p>Consequently, the whole endeavour will be very expensive and time-consuming, and not useful form a risk management perspective.</p> <p>Therefore, permitting management actions is realistic and will provide useful information about the resilience of the undertakings to severe scenarios. In this regard, their inclusion is necessary to fully understand the macroprudential as well microprudential implications of the stress scenario.</p>	

Insurance Europe, CRO Forum & CFO Forum	<p>The insurance industry supports the inclusion of management actions in stress testing exercises where these reflect stated management principles and practices and have been assessed as appropriate for inclusion as part of the insurer's Solvency II modelling.</p> <p>It is appreciated that the validation of management actions could create an additional burden. However, management actions allow insurers the possibility to manage the stress and when such adverse market stresses occur, each insurer will take management actions.</p> <p>Discarding management actions therefore creates an unrealistic scenario which hampers comparison pre and post stress and provides limited insight/benefit from a risk management perspective.</p> <p>On the other hand, permitting management actions creates a more realistic scenario and will provide useful information about the resilience of the undertakings to severe events. In this regard, their inclusion is necessary to fully understand the macroprudential implications of the stress scenario.</p>
AMICE	Management actions need to be taken into account.
Allianz SE	<p>Reactive post-stress management actions should not be reflected in stress tests as there is too much latitude, hence results would not be comparable. This does not only impair the objective to identify vulnerabilities (table 2-7) but also impacts the other objectives respectively potential consequences or conclusions drawn from the results.</p> <p>Instead, recovery planning exercises should be done by national supervisors for all material local insurers and all IAIGs.</p> <p>Hence, in order to preserve comparability of results, the ST exercise should be based on instantaneous stresses only based on clearly defined shocks without taking into considerations post-stress management actions.</p>
German Insurance Association (GDV)	<p>Management measures contained in stochastic risk and assessment models ("embedded management actions") should be applicable as used in the calculation basis (at 31.12 last year). From a content point of view, it is not realistic to limit the management measures mapped in the model to individual companies. This would lead to less meaningful results. From a technical point of view, a restriction / specification by EIOPA of the management measures contained in the model would be immensely complex.</p> <p>However, we believe that post-stress management actions could lead to results which are no more comparable. Against this background, we think they do not need to be foreseen.</p>
<b>Q7 - What are your views on requesting post-stress calculations both with and without management actions?</b>	
Actuarial Association of Europe (AAE)	<p>From a theoretical perspective It would allow comparability and could provide a more realistic view on the companies' risk profile. As companies will always react on extreme events this could also provide an idea of a potential leeway for the European economy and potential cross industry effects with additional insights for macroprudential analysis.</p> <p>However, in reality and in consideration of different portfolios it will be very difficult to design scenarios and give guidance for relevant management actions in such a way that the results will be meaningful on an aggregate level. Participating life insurance requires the use of management actions.</p>
Norwegian Actuarial Society	Any stress test scenario not taking management action into account is simply not realistic. We agree that management actions must be a part of the stress test in some shape or form. A stress test without any management actions will not give any real indication of the effect of the stress, unless the purpose is to measure the effect of the management actions itself.
Assuralia	It should be borne in mind that these additional requests can result in a considerable increase in time and resource requirements.
Insurance Europe, CRO Forum & CFO Forum	<p>It should be borne in mind that these additional requests can result in a considerable increase in time and resource requirements.</p> <p>It is also important that embedded management actions implemented for the calculation of the MVBS have to remain unchanged when performing the SCR calculation. This approach should be applied for both reference date scenario and stressed scenario.</p>
AMICE	Post-stress calculations should embed routine as well as corrective and future preventive management actions where necessary and to the extent that they are documented in the enterprise risk management system and policies and approved by the AMSB i.e. belong to the endorsed risk management tools. The timing of the implementation of the management actions should be correctly appreciated and implemented accordingly.
Allianz SE	In light of the already complex and time consuming exercise we see these additional calculations as hardly feasible and at the same time making it more difficult to understand and compare figures for target audiences (e.g. analyst community) which in consequence can decrease the value and use of the results and implications.
German Insurance Association (GDV)	<p>We consider the decision on allowing embedded management actions the more realistic approach. This measure is essential to produce adequate results about the resilience of the undertakings under server scenarios, and in this way a realistic picture will be obtained.</p> <p>Information on the impact of these management actions can be helpful, firstly, to evaluate the individual results of the participants and, secondly, to make a general evaluation of the situation of the insured industry in Europe.</p> <p>However, it should be borne in mind that the calculation of data on the impact of the embedded management actions separately results in a considerable increase in counts in terms of time and resources. The corresponding cost-benefit analysis needs to be performed when assessing the benefits of such information.</p>
<b>Q8 - Please provide your view on the distinction and different treatment of embedded management actions and reactive post-stress management actions</b>	
Actuarial Association of Europe (AAE)	<p>The embedded and reactive post-stress management actions are likely to be dependant making comparisons difficult in the absence of clear guidelines.</p> <p>Reactive post-stress management actions need further consideration:</p> <ul style="list-style-type: none"> <li>• To aggregate results, they should be implemented one by one</li> <li>• Another management action could be derisking by transferring/selling some business evidencing that some insurance coverage would not be offered anymore</li> </ul>

and plausibility. Such evidence is not limited to an adequate documentation of these actions, but also to an assessment of their consistency to entity specific policies or practises.

Norwegian Actuarial Society	Embedded management actions are a vital part of the risk management of an insurance company and must be included to give a realistic picture of the effect of the stress. Embedded management actions would have to be realistic and a part of the day-to-day written guidelines and risk management of the insurance company. With embedded management actions, there should be no doubt that when "A" occurs then the management will act with procedure "B".
Assuralia	The sector agrees that this is a meaningful distinction. Embedded management actions should always be allowed in a stress test because they are executed automatically. Reactive post-stress management actions should be allowed. This is more realistic and can provide additional insight in potential second round effects (for a macroprudential stress test, it is important to allow them). Inclusion of all management actions would give more awareness to insurers on the effectiveness of their planned management actions under different stress scenarios. The extent to which reactive management actions are recognised should be governed by the extent to which these actions are formalised (eg. in the recovery plan,
Insurance Europe, CRO Forum & CFO Forum	Embedded management actions should always be allowed in a stress test because they are executed automatically. Reactive post-stress management actions should be allowed if they are recognised within the insurer's policies and business plans. This is more realistic and can provide additional insight in potential second round effects. The possibility to recognise the effects of any reactive management action should be governed by the extent to which these actions are formalised (eg. in the recovery plan, ORSA, etc.), reflecting the insurer's ability and willingness to implement them in a stress scenario.
AMICE	"Reactive" management actions belong to the continuum of management tools available in the risk management system of the insurance undertaking through changing gears in levels/nature/design according to the situation faced. They are sourced from the approved toolbox by the insurance governance and belong to practical management. We do not think that a selection should be operated among embedded and/or reactive management actions. There is in fact no clear distinction between embedded and reactive management actions depending notably on the starting point of the so called "embedded" actions: the way some feature is or is not automatically modified in a model according to a given situation does not provide a good guidance between what is a "routine" or an "exceptional" management action. Corrective actions can belong to routine and/or exceptional management actions. A given situation and environment at closing date can differ significantly according to different time periods (ranging from "normal" to "crisis conditions") and consequently the "embedded" management actions would be significantly different although completely real. Routine or exceptional actions could have different trigger points according to the risk appetite of insurance undertakings and/or governance issues. In fact, there is a continuum that should be properly reflected in modelling risks and solvency in order to yield meaningful results. One could refer to recovery and resolution to partition between routine and exceptional. Post stress management actions do not necessarily belong to the exceptional category of the management actions of the tool box. Sometimes, the nature of a management action could be a guiding criterion to partition between routine and exceptional.
Allianz SE	Please refer to Q.6.
<b>Q9 - Which elements in your view can/should be limited in the embedded management actions to enhance the comparability of the post-stress results?</b>	
Norwegian Actuarial Society	Any extreme scenario that leads to an "unexpected" management action should not be included as this could undermine the purpose of the stress test. Any management action that is not a day-to-day risk management action should not be included in the embedded management actions.
Assuralia	None, this is embedded in the business model and strategy so limiting their use will lead to lack of accuracy.
Insurance Europe, CRO Forum & CFO Forum	None, this is embedded in the business model and strategy so limiting their use will lead to lack of accuracy.
AMICE	In some cases results could be produced with and without management actions for transparency purposes, but we should keep in mind that the nature of the management actions is often such that not involving them straight in the calculations is purely artificial and even impossible and mostly leads to confusion in interpretations of results and distortions of the true levels of risks.
Allianz SE	Embedded management actions, that are already modelled (and hence automatically considered) in the risk and valuation framework should not be limited, in particular as they are part of an approved internal model.
German Insurance Association (GDV)	Embedded management actions should not be limited. These are a core aspect in the insurers' financial and actuarial modelling and therefore should be foreseen in future stress testing exercises. Otherwise, such limitation would reduce the accuracy and comparability of the results.
<b>Q10 - Please elaborate on the key elements of the technical information that would be required in order to implement potential limitations to embedded actions (content, scope, granularity etc.).</b>	
Norwegian Actuarial Society	This will differ from company to company and as an association we do not have this overview.
Assuralia	See response to Q9. Not allowing or limiting embedded management actions would make the ST less useful for risk management purposes and therefore should not be considered.

Insurance Europe, CRO Forum & CFO Forum	Not allowing or limiting embedded management actions would make the stress test less useful for risk management purposes and therefore should not be considered. See response to Q9.	
AMICE	We do not find it appropriate to limit embedded management actions. (see answer to Q8).	
Allianz SE	Please refer to Q.6: In our view a partly limitation of embedded management actions will be quite difficult to implement throughout different models existing in the industry and technical information in this sense cannot provide sufficiently granular information applicable for all models.	
<b>Q11 - Please elaborate on the feasibility (e.g. time and effort needed for the implementation) of the potential limitation to embedded management actions to calculate post stress positions.</b>		
Norwegian Actuarial Society	This is hard to answer as we are an actuarial society and not an insurance company and this will vary a lot from company to company. But the time and effort will be high and especially for those companies running an internal model. We think that EIOPA could easily underestimate this	
Assuralia	See response to Q9. Not allowing or limiting embedded management actions would make the ST less useful for risk management purposes and therefore should not be considered. It is very difficult to change or discard management actions out of the models. They are part of the core of the models and are not designed to be changed. Changing or discarding management actions will prove difficult and tricky and might invalidate the model. Consequently, the whole endeavour will be very expensive and time-consuming.	
Insurance Europe, CRO Forum & CFO Forum	Not allowing or limiting embedded management actions would make the stress test less useful for risk management purposes and therefore should not be considered. It can also be very difficult to change or discard management actions from the models. They are a core part of the models and are not designed to be changed. See response to Q9.	
Allianz SE	Please refer to Q.6., Q.9. and Q.10.	
<b>Q12 - What are your views on the 3 possibilities for future EIOPA stress test exercises summarized in Table 2 8?</b>		
Actuarial Association of Europe (AAE)	Management actions: Instead of repeating stress test calculations with and without management actions we believe that it is useful to disclose qualitative information about the impact of management actions.	Stakeholders acknowledged that the approach for each ST exercises should be clearly linked to its objective. The recalculation of the baseline shall only be considered in exceptional circumstances (see also answer to Q4). In light of the methodological and operational challenges linked to potential limitations to embedded management actions (see also answer to Q6-Q11), EIOPA does not consider to include a discussion on such limitations in the final version of the paper. Reactive management can be allowed / not allowed depending on the specific stress test objective. When reactive management actions are allowed, these would have to be clearly documented and the impact of these will have to report separately (impact both with and without reactive managements). This applies in particular to the proposed spillover analysis/macprudential stress test where the aim is to assess potential second-round effects stemming from collective behaviour (management actions) in the context of an instantaneous stress scenario. EIOPA, even if acknowledges its complexity, will pursue the development of macro-oriented Stress Test framework focusing on the assessment of potential footprints generated by the reactions of insurers (e.g. via the enforcement of post-stress management actions) to the markets. The enforcement of management actions will be considered in line with the macro objective.
Assuralia	It is important to define the stress test in such a way that it will gain additional insights and adds value. Stress testing should not be a goal but be able to provide additional insights and vulnerabilities, not already known from previous (stress testing) exercises. The sector does not consider the recalculation of the baseline position to be necessary as part of any stress testing exercise. Neither does it support the restriction of management actions which are in line with the insurers' policies and which form part of its standard Solvency II business practice ie those which the insurers could reliably demonstrate that it would take in a stress scenario.	
Insurance Europe, CRO Forum & CFO Forum	It is important to define any stress test exercise in such a way that it will gain additional insights and add value. Stress testing should not be a goal in itself but be able to provide additional insights and vulnerabilities, not already known from previous (stress testing) exercises or from existing Solvency II data. The insurance industry does not consider the recalculation of the baseline position to be necessary as part of any stress testing exercise. Neither does it support the restriction of management actions which are in line with the insurer's policies and which form part of its standard Solvency II business practice ie those which the insurer could reliably demonstrate that it would take in a stress scenario.	
AMICE	According to our answer to Q5, we would favour the hybrid instantaneous/stretched over longer term combination (see answer to Q5 for details).	
Allianz SE	Column 1: Proposed approach is in general appropriate with the exception of the time horizon which should be limited to one period instantaneous stresses (please refer to Q.5. regarding the rationale). Column 2: Proposed approach is appropriate. Column 3: The approach including multi-period shocks and reactive post-stress management actions will result in non-comparable results and hence not be useful to achieve the objective.	
German Insurance Association (GDV)	Generally speaking, we believe that the approach selected should depend on the objectives of the stress test. Specifically, we consider appropriate the consideration of the last results at 31.12 of the previous year as appropriate for the baseline scenario, the performance of one period instantaneous stress test and the possibility to use management actions. A mixture of the first (micro/macro approach to evaluate the vulnerability of the industry) and second option (micro approach for the sensitivity of insurers to shocks) would be the preferred option for the following stress tests in our opinion.	
<b>Q13 - Do you have any further considerations regarding the potential evolution of future EIOPA stress test exercises?</b>		
Norwegian Actuarial Society	Keep it as simple as possible. The insurance companies and their actuarial resources are stretched to the limit, in the light of solvency II reporting and now the preparation for IFRS17. Adding on to this further and introducing more complexity, would probably lead to insurance companies not participating in these stress tests.	

Insurance Europe, CRO Forum & CFO Forum	<p>The stress testing regime should be proportionate to its objectives and should be used to complement existing reporting. A key question which has not been investigated as part of the consultation is the levels of precision/accuracy which are needed to achieve the objectives of the exercises.</p> <p>The 2018 exercise required calculations and requested information of a level of granularity which was significantly beyond that needed to meet EIOPA's objectives. It is unclear how the detailed information on, for example, the structure of the asset portfolio, liability characteristics and cashflows under stress will be used to assess vulnerabilities or raise awareness of threats to financial stability.</p> <p>Stress tests by their nature evaluate areas of vulnerability and exposure to highly uncertain hypothetical scenarios – the levels of precision provided by primary reporting processes are not necessary to achieve these objectives.</p> <p>However, the consultation paper still suggests, to a significant extent, that running processes akin to primary regulatory reporting models/processes is required. This is onerous, and not what primary stress and scenario testing (SST) processes are typically designed to support. SST models typically do not generate QRT levels of granular output, as this is not necessary for internal stress testing purposes.</p>	
Allianz SE	<p>In addition to our answers to Q.1. we would like to stress the importance to</p> <p>a) lower the frequency of stress test exercises and ensure proper timeframes for preparation and calculations</p> <p>b) introduce standardized parametric and combined stresses with sensible granularity of shocks instead of unrealistic, arbitrary scenarios (the latter leading to simplifications, non-standard procedures and as such low comparability across undertakings)</p> <p>c) introduce reporting templates which are consistent with standard reporting tools / QRTs – but less granular – and are kept stable in content and format over time; a high granularity of required information adding limited value should be avoided (thus increasing automation and comparability)</p> <p>This will foster comparability and high quality of data and hence increase the value and the use of information gained from stress test results for the various types of stakeholders.</p>	
German Insurance Association (GDV)	<p>It should be taken in mind that the stress test calculations are performed on top of the regular processes. It is more of an ad-hoc process applied. Results of the regular process are re-used to provide the relevant requested results. This results by nature in approximations and top down analyses.</p> <p>This holds true for the change in Own funds, and respectively for the change of balance sheet positions (the instantaneous shock) already. Thus, the basis for multi-period calculations as well as for post-stress SCR calculations might not be sufficiently granular and precise.</p> <p>As the processes for stress tests are not designed, but performed on an ad-hoc basis the results includes an entity specific bias. This leads to restrictions in comparability and reliability. Checks and controls help, but they do not avoid misunderstanding.</p> <p>We strongly recommend keeping the stress-tests as simple as possible, e.g. sensitivities and standard scenarios with flexible parameters might be a good starting point, which could be extended over time.</p>	
<b>Q14 - What is your view on the appropriate scope for a stress test exercise? Do you agree with the advantages and disadvantages of the different approaches?</b>		
Norwegian Actuarial Society	<p>Agree with the advantages and disadvantages of the different approaches. Believe this table should be considered with each stress test exercise, in order to identify the appropriate scope. Appropriate scope will vary, depending on the test.</p>	<p>There has been a general agreement on the identified link between the scope and the objective of the exercise and on the advantages and disadvantages of addressing groups or solo undertaking. The proposal of targeting only a subsample of undertakings within a group (synthetic group approach) has been seen as operationally burdensome (even more than the full group approach) and producing "artificial" results. Against the argumentations provided the synthetic group approach will be discarded in the final paper. In future exercise EIOPA will target solos or groups on a case by case basis according to the objective of the exercise. Solos will be preferred in case of country based analyses whereas large groups will be targeted for EU wide analyses. On the latter, it is worth noting that i) large groups might be selected non only based on the market coverage criteria but also taking into account the number of involved jurisdictions; ii) simplifications on the treatment of non-material entities/businesses identified on homogeneously applied risk-based approach might be granted to the selected sample. All the considerations expressed are reflected in the paper. The proposed metrics have considered as an appropriate and reasonable reference. It has also been acknowledged the possibility of considering additional metrics in case of stress test exercises focusing on specific risk factors. To avoid any misunderstanding any reference contained in Chapter 3 to "technical provisions (TPs)" have been aligned to "Gross Technical Provisions (Gross-TP)".</p>
Assuralia	<p>The sector agrees that the most appropriate scope of micro-orientated stress tests is solo undertakings.</p> <p>As noted by EIOPA, group level exercises introduce significant additional process complexities, as well as condensing the timeframes available to solo entities to carry out the exercise due to the need to build in group consolidation and governance.</p> <p>The proposal to stress test "synthetic" groups should be avoided.</p>	
Insurance Europe, CRO Forum & CFO Forum	<p>The insurance industry agrees that that the scope is a fundamental aspect of the stress testing framework and is directly related to the objective of the exercise.</p> <p>It is critical to recognise that group level exercises introduce significant additional process complexities, as well as condensing the timeframes available to solo entities to carry out the exercise due to the need to build in group consolidation and governance. Therefore, relevant proxies and proportionate reporting requirements should be permitted when running exercises at group level (nb. excessively granular reporting undermines proxies).</p> <p>The proposal to stress test "synthetic" groups should be avoided - there do not appear to be material advantages in their use since the group level aggregation procedure can more or less provide information about the contribution by node or jurisdiction.</p>	
AMICE	<p>We see stress test exercises as macro prudential tools for supervision of global net impacts reflective of actual risks for the sector and potential second round effects.</p> <p>Therefore, it appears necessary to perform them at group level where capital allocation and risk management is steered by governance and where mutualisation, diversifications, risk mitigations and intragroup nettings strike the right balance.</p> <p>Solo supervision is properly exercised at National level with the 3 pillars of Solvency 2. Sensitivities and stresses are already part of the ORSA process and report.</p>	
Allianz SE	<p>KPIs (e.g. Group target solvency ratio, interest rate sensitivities etc.) are only published for the Group. As an integrated financial services provider, we consider diversification across different business segments and regions to be a key element in managing our risks efficiently, limiting the economic impact of any single event and contributing to relatively stable results; as such the Group view is preferred from our point of view. In line with the group specific materiality concept, simplifications should be allowed e.g. to exclude immaterial solo entities within the scope of the group.</p> <p>In case synthetic groups are introduced we see the significant disadvantage that results are no longer comparable or in any case useful to audiences like analysts etc.</p>	
German Insurance Association (GDV)	<p>We consider the proposed scope for a micro-oriented stress test exercise to be appropriate.</p> <p>We agree with both the conclusions to advantages and disadvantages of targeting individual undertakings.</p> <p>However, it should be also taken into account that the results of a stress test at solo level provide useful information highly relevant for the evaluation of the resilience in the whole industry as well. More generally, whether it makes more sense to consider solo companies or groups depends on the specific scenario and the objectives of the stress test. A general limitation to one approach should therefore not be made.</p>	

<b>Q15 - What are your views on the metrics to be used for defining the scope for solos and groups, respectively?</b>	
Norwegian Actuarial Society	Metrics identified are considered key/appropriate. Recommend defining TPs as 'Gross TPs'. Also consider excluding premium components from the TP measure so timing of premium cashflows does not distort TP totals. Also recommend including examples of some of the 'additional metrics in case of a ST based on a specific Risk factor in the table. We believe the option to use additional metrics is very important and often more appropriate.
Assuralia	The proposed metrics are reasonable.
Insurance Europe, CRO Forum & CFO Forum	The proposed metrics are reasonable.
AMICE	Metrics are fine.
<b>Q16 - What are the main challenges (if any) to assess the post-stress position of a synthetic group?</b>	
Actuarial Association of Europe (AAE)	We deem processing Stress Test results for a synthetic group to be more difficult than those for the whole group given that simplifications can be applied.
Norwegian Actuarial Society	We believe the main challenges are captured in the disadvantages identified in table 3-1.
Assuralia	The sector does not support the use of "synthetic groups", these are likely to significantly reduce comparability and interpretability of the results of the exercise.
Insurance Europe, CRO Forum & CFO Forum	The insurance industry does not support the use of "synthetic groups", these are likely to significantly reduce comparability and interpretability of the results of the exercise.
AMICE	We do not support the concept of a synthetic group. Such an approach would be highly artificial (internal capital and risk management are not exercised at this level and no policies or management actions would be applicable at this level). Additionally, it would be particularly onerous: a brand-new operational process would be required and already the numbers in the baseline would need to be recalculated.
Allianz SE	Please refer to Q.14.: In case synthetic groups are introduced we see the significant disadvantage that results are no longer comparable or in any case useful to audiences like analysts etc. From an operational point of view, in case clear and pragmatic specifications are provided for the aggregation (also e.g. with respect to the treatment of interlinkages between entities in scope and entities not in scope of the synthetic group regarding intra-group transactions, participation values and stresses etc.), the calculation could be feasible but excessively burdensome.
German Insurance Association (GDV)	We disagree with the option to assess the post-stress position of a synthetic group. This proposal relies in assumptions related to diversification effects in the post-stress results that do not reflect reality neither at entity nor at group level. Besides, this option would lead to unnecessary and undesirable consequences such as a reduction in terms of comparability and interpretability of results.
<b>Q17 - What are your views on the historical versus forward looking approach? Do you envisage additional advantages / disadvantages on top of the ones listed?</b>	
Norwegian Actuarial Society	Strongly support the view that the most appropriate approach for a ST exercise remains the hybrid approach. Without some reference to the past, it is difficult for the business to define a future scenario (and estimate plausible return periods and impacts). However, the uncertain future state of the market (financial and insurance risks, climate risk) is such that a purely hindsight view would be inappropriate. Emerging risks in particular would not be captured.
Assuralia	The sector agrees that a hybrid approach is the most appropriate. However, it is important to ensure that forward looking considerations are justified, plausible and in conformity with economic theory and scientific literature. Additional advantages of the historical approach are: it is less volatile, provides evidence across many economic cycles and seems to be more reliable since this relies on observed data instead of strong assumptions.
Insurance Europe, CRO Forum & CFO Forum	The insurance industry agrees that a hybrid approach is the most appropriate. However, it is important to ensure that forward looking considerations are justified, plausible and in conformity with economic theory and scientific literature and, as such, do not lead to extremely prudent assumptions and/or excessively conservative scenarios. Additional advantages of the historical approach are: it is less volatile, provides evidence across many economic cycles and seems to be more reliable since it relies on observed data instead of strong assumptions.
AMICE	See answer to Q1

EIOPA agrees with the stakeholder's comments that the most appropriate approach to the design of a Stress Tests scenarios would be a hybrid approach. EIOPA will keep developing scenarios and calibrating the shocks combining historical time series with expert judgment to include a forward looking perspective. Any assumptions will be plausible and in line with the economic theory or supported by other scientific expertise on specific aspects (e.g. climate science). The latter qualification to the assumptions will be reflected in the paper. On the consistency of the scenarios with the regulatory framework, EIOPA shares the opinion that Solvency II should be the reference framework, however it believes that Solvency II may contain elements that are not in line with the objective of the exercise and with the prescribed scenarios. Specifically, any change in the RFR parameters in a stress test exercise should be considered in line with the scenario and the objective of the ST. With regard to the discussion on single risk factor / single scenario / combined scenario EIOPA, in line with the comments received, sees merit in all the approaches. For future stress tests, the choice will be made according to the

Allianz SE	To increase relevance and use of the information gained from stress test results for industry stakeholders including analyst community, we strongly encourage a) to define historical stresses which are capital market relevant; b) to define standardized, reasonably consistent parametric stresses which are constant over time instead of unrealistic, arbitrary scenarios; c) to set up forward looking scenarios, if potentially defined under a "hybrid approach", only in line with b)	objective of the exercise. Stakeholders expressed slight preference for combined scenarios with the following remarks: - Likelihood and possible over-calibration of the shocks. EIOPA is of the view that the relevant point in a stress test exercise is to design severe but plausible scenarios that are in line with the objective of the exercise but not to focus on the estimation of any concrete likelihood. Furthermore, there is no commonly accepted methodology to derive the probability of a scenario that combines a change in market rates with a change in a set of parameters defined in the regulation (e.g. UFR). - Impossibility of disentangle the marginal effects of the prescribed shocks or group of shocks (e.g. market shocks and insurance specific shocks). EIOPA acknowledge the operational burden and the methodological challenges of estimating the marginal impacts of single shocks or of a subset of the shocks in a combined scenario. The consideration on the scenarios are reported in the paper. Specific reactions were asked on the potential reduction in the granularity of the shocks (e.g. bucketing of the shocks according to selected criteria). The insurance industry supports the bucketing approach for specifying market shocks in light of the reduction of the operational burden and. EIOPA will devote due consideration to this option for future stress tests design taking into account the specific objective of the exercise (e.g. country based analyses). Independently by the approach followed for the prescription of the market shocks, the post stress volatility adjustment will be calculated according to EIOPA methodology. This consideration are now included in the paper.
German Insurance Association (GDV)	We consider that historic data provide clear and consistent evidence that allow estimating evidence-based scenarios. We believe that the historical approach is less volatile, provides evidence along many economic circles and seems to be more reliable since this relies on observed data instead of strong assumptions. What is more, the historical approach contains valuable insights on systemic risk under real-word conditions. Even before Solvency II, systemic risk from the insurance industry has proved to be low. This should be taken into account when designing future scenarios under the forward looking approach.	
<b>Q18 - What is your view on the consistency of the scenarios with the Solvency II framework versus market compatible scenarios for the purpose of a stress test, in particular for the treatment of the RFR parameters?</b>		
Norwegian Actuarial Society	Preferable to use the SII framework (for consistency) and only depart under specific circumstances or if the intention of the scenario is to challenge the SII framework. Proposed basis for choosing between option 1 and 2 seems reasonable (should be considered in light of the objective of the exercise).	
Assuralia	Stress tests which aim to assess the vulnerability of the European insurance sector to specific adverse scenarios should be fully consistent with Solvency II. The sector does not agree that consistency may limit the evaluation of the impact of scenarios. On the contrary, consistency provides a solid basis that allows assessing vulnerabilities. Fundamental parts of the Solvency II framework, including the UFR, LLP and other RFR parameters, should not be subject to stress as part of the exercise. Likewise, other standard features of Solvency II, such as the recalibration of TMTP, should not be restricted. The suggestion that changes to the UFR are needed to reflect the stress test narrative is counterintuitive to the existence of a UFR and a short-term stress test. However, within a stress test, the UFR could be recalibrated - in that case the UFR could decrease by 15 bp per annum. Any specific considerations with regard to dependency on long-term guarantee measures should be addressed through supplementary information.	
Insurance Europe, CRO Forum & CFO Forum	Stress tests which aim to assess the vulnerability of the European insurance sector to specific adverse scenarios should be fully consistent with Solvency II. The insurance industry does not agree that consistency may limit the evaluation of the impact of scenarios. On the contrary, consistency provides a solid basis that allows assessing vulnerabilities. Fundamental parts of the Solvency II framework, including the UFR, LLP and other RFR parameters, should not be subject to stress as part of the exercise. Likewise, other standard features of Solvency II, such as the recalibration of TMTP, should not be restricted. The suggestion that changes to the UFR are needed to reflect the stress test narrative is counterintuitive to the existence of a UFR and a short-term stress test. However, within a stress test, the UFR could be recalibrated - in that case the UFR could decrease by 15 bp per annum. Any specific considerations regarding dependency on long-term guarantee measures should be addressed through supplementary information.	
AMICE	UFR should remain as it is defined in SII; it is a key item of the framework for a stable anchor to the fair value discounting. It represents a very long-term level of the behaviour of interest rates. A methodology of the review of UFR has been defined by EIOPA in SII after exchanges with the industry and we support it.	
Allianz SE	Scenarios should be standardized and aligned with the Solvency II framework to increase relevance and comparability of results for industry stakeholders including analyst community. This way misinterpretations of results can be avoided. With respect to RFR parameters, for example a decrease in the UFR to 2.05% as in the stress test 2018 in addition to a non-allowance of management actions (and no recalculation of transitional measures for effected entities) does not reflect economic or regulatory reality and hence contradicts the objective to implement plausible scenarios.	
German Insurance Association (GDV)	The main objective of an insurance stress test is to assess the vulnerability of the European insurance sector to specific adverse scenarios. But to achieve that, the results of the stress test need to be comparable and consistent to the Solvency II framework to allow the comparability and usefulness of the results. This is essential to identify vulnerabilities in the industry. - Besides, the consistency of the scenarios with the Solvency II framework increases the quality and the significance of the results. Changes of Solvency II should not be subject to stress tests. Against this background, significant changes in the RFR parameters should not be part of a stress test (for instance modifications of the UFR).	
<b>Q19 - What are your views on using single risk factors, single scenarios or combined scenarios for the purpose of a stress test?</b>		
Norwegian Actuarial Society	Strongly support the preference for combined scenarios, provided effects can be isolated and interdependencies are understood, as noted in line 97. Careful definition of these combined scenarios is required, therefore more upfront consideration, however this should be less onerous than running numerous single scenarios and shocks, which usually provide limited insight (more valuable for model validation.)	
Assuralia	The sector considers that single risk factors, single scenarios and combined scenarios can all be useful. Specific choices will depend on the objectives of any particular exercise but as a general rule, scenarios should be kept as simple as possible. Combined scenarios can potentially provide additional explanatory power, but caution must be exercised when these scenarios as they require many assumptions about how individual companies and regulation interact. There is a risk that stems from this approach as flawed assumption can lead to wrong conclusions.	

Insurance Europe, CRO Forum & CFO Forum	<p>The insurance industry considers that single risk factors, single scenarios and combined scenarios can all be useful. Specific choices will depend on the objectives of any particular exercise. As a general rule, scenarios should be kept as simple as possible.</p> <p>Combined scenarios can potentially provide additional explanatory power, but caution must be exercised when using these scenarios as they require many assumptions about how individual companies and regulations interact. There is a risk that stems from this approach as flawed assumptions can lead to wrong conclusions.</p> <p>As shown in the past, combined scenarios can also easily be over-calibrated and beyond the 1/200 year events in SII. Finally, combined scenarios that are too complex or too granular may cause issues for available systems to apply simultaneously all the components. Therefore, this might require further assumptions and flexibility on the calculation.</p>
AMICE	<p>The selection of the scenario type (single risk factor vs. single scenario vs. combined scenario) mainly depends on the objective of the stress test and the design of the scenario. It should not be subject to a general restriction. Combined scenarios are appropriate in a ST exercise to capture in one glance the interactions and get a holistic view. Conversely, single factors and scenarios should be suited to sensitivity analysis. However, if choosing a combined scenario this must not lead to a duplication of effort by having to show the impact of separate shocks. The downside of combined scenarios (results show effect of combined shocks, but not the effect of separate shocks) must be put up with in this case.</p>
Allianz SE	<p>Please refer to Q.17.</p> <p>Scenarios can be setup of single and combined stresses but should be constant as well as capital market relevant instead of changing over time, unrealistic and arbitrary. Risk metrics in general should reflect sensitivities and measures that are part of the standard disclosure package across the industry to grant overall comparability. Very extreme shocks combinations will lead to simplifications, non-standard procedures and as such low comparability.</p>
German Insurance Association (GDV)	<p>Designing combined scenarios requires many assumptions about how individual companies and regulation interact. The risk that stems from this approach is that flawed assumption can lead to wrong conclusions.</p> <p>The choice of scenario type depends mainly on the objective of the stress test and the precise design of the scenario. Thus, it may be more appropriate to consider a combined scenario for some aspect (for example a yield shock combined with longevity stress). On the contrary, it may be more appropriate to consider individual risk factors in isolation for others, for instance to measure the impact of movements in interest rate risk and equity risk.</p> <p>It needs to be taken into account that combining stresses implies that different risks occur at one instance. This could lead to scenarios which are extremely improbable and thus no more plausible. This needs to be taken into account when calibrating risk factors for combined scenarios.</p> <p>All in all, there should be a substantive justification for the (non-) combination and a clear definition of the stress test framework.</p>
<b>Q20 - What are your views on having combined scenarios, but allowing the identification of the single shocks in isolation (for instance impact of market and insurance shocks shown separately)?</b>	
Actuarial Association of Europe (AAE)	<p>This should be the preferred approach to combine advantages of both methods.</p> <p>The consultation does not provide detailed information on how to calibrate the dependence between shocks in a combined scenario approach. The AAE would be happy to support the further analysis.</p>
Norwegian Actuarial Society	<p>Strongly support the preference for combined scenarios, provided effects can be isolated and interdependencies are understood, as noted in line 97. Careful definition of these combined scenarios is required, therefore more upfront consideration, however this should be less onerous than running numerous single scenarios and shocks, which usually provide limited insight (more valuable for model validation.)</p>
Assuralia	<p>The sector does not support this approach to stress test exercises due to the significant operational challenges and additional burden that it entails.</p> <p>In principle, the sector recognises the potential value gained by identifying and reporting the impact of single shocks in isolation in combined scenarios. However, there could be significant practical and systems-based challenges in reporting and apportioning at this level of granularity in a consistent manner across the industry, in particular for scenarios where there are material interactions between market and insurance risks.</p> <p>Therefore, if the use of a combined scenario is considered meaningful for the achievement of the objective, it should also be accepted that the results allow conclusions to be drawn about the combined shocks but not (or only to a small extent) about the individual shocks.</p>
Insurance Europe, CRO Forum & CFO Forum	<p>The insurance industry does not support this approach due to the significant operational challenges and additional burden that it entails.</p> <p>In principle, we recognise the potential value gained by identifying and reporting the impact of single shocks in isolation in combined scenarios. However, there could be significant practical and systems-based challenges in reporting and apportioning at this level of granularity in a consistent manner across the industry, in particular for scenarios where there are material interactions between market and insurance risks.</p> <p>Furthermore, it would create issues in reallocating impacts of the combined scenarios to the single shocks which could undermine a combined approach.</p> <p>Therefore, if the use of a combined scenario is considered meaningful for the achievement of the objective, it should also be accepted that the results allow conclusions to be drawn about the combined shocks but not (or only to a small extent) about the individual shocks.</p>
AMICE	<p>Not very relevant where interactions happen in reality. Where interactions are unavoidable and indeed reflect what happens in reality, any disentanglement is purely artificial and hence does not produce useful results.</p>
Allianz SE	<p>It should be noted that depending on the design of scenarios and combination of stresses the additional requirement to isolate single shocks can mean a significant increase of calculation efforts if models and validation processes need to be run several additional times.</p> <p>For that purpose an early consultation process on scenario definitions with the industry's involvement is important. Furthermore, it is of particular importance that scenarios and stresses stay stable over time to establish stable processes.</p>
German Insurance Association (GDV)	<p>It is only possible to show the effects of individual shocks of combined scenarios on outcome variables by means of additional calculations. This doubled effort should be avoided. If the use of a combined scenario is considered meaningful for the achievement of the objective, it should also be accepted that the results allow conclusions to be drawn about the combined shocks but not (or only to a small extent) about the individual shocks.</p>

<b>Q21 - What is your view on the bucketing approach for market shocks? Does a bucketing approach reduce the operational burden for the application of the shocks?</b>	
Actuarial Association of Europe (AAE)	We are in favour of bucketing as it may reduce operational burden significantly.
Norwegian Actuarial Society	May not reduce the operational burden, however bucketing approach is considered appropriate and likely to provide more meaningful insight for a given narrative.
Assuralia	The sector supports a more simplified bucketing approach for specifying market shocks. A very granular approach results in additional operational burden and spurious accuracy. It is also not clear why the use of buckets would result in approximations in the calculation of the VA. The VA should be calculated in accordance with the prescribed shocks.
Insurance Europe, CRO Forum & CFO Forum	The insurance industry supports a more simplified bucketing approach for specifying market shocks. The operational burden depends on whether the bucketing approach proposed in the exercise coincides or not with the reporting/modelling approach already used by the relevant undertakings. Typically, a very granular approach results in additional operational burden and spurious accuracy. It is also not clear why the use of buckets would result in approximations in the calculation of the VA. The VA should be calculated in accordance with the prescribed shocks.
AMICE	We agree with EIOPA's remarks about the additional and sometimes not meaningful complexity added by the granular approach. Having said that, the bucketing approach would soften the operational burden if it is aligned with the current structure of the Solvency II framework. For instance, a bucketing based on ratings remains close to shocks currently applied while volatility bucketing would create the need for tracking additional information.
Allianz SE	A high granularity of market risk shocks (e.g. shocks across currencies, countries, debt types and ratings as in stress test 2018) is most probably not adding qualitative and quantitative insight on the components of the post-stress results but makes the application and implementation of the shocks cumbersome and difficult to compare across the industry. Moreover, as the granularity of market data processing/mapping is different across undertakings, the application of shocks could vary from the specification across undertakings. Simplified and less granular shocks (i.e. bucketing) would lead to an easier and more comparable implementation (less operational burden), validation and interpretation of results (e.g. parallel shocks instead of term specific, avoidance of country specific shocks for real assets, etc.).
German Insurance Association (GDV)	We consider the bucketing approach for market shocks to be appropriate. The granular approach used so far leads to fake accuracies. Stressing individual countries can be useful (e.g. Brexit scenario), but in most cases large differences can hardly be justified. A bucket approach seems much more reasonable as standard. The framework conditions for the stress test should be clearly defined. A bucket approach would also be possible in a two-part frame
<b>Q22 - What is your view on the possible approaches to climate stress testing?</b>	
Norwegian Actuarial Society	A combination of the short-term and long-term approaches should be undertaken. Consider it appropriate for EIOPA to be leading/assisting insurers in defining agreed scenarios and accepted methodology. Before collecting quantitative scenario results, would collecting qualitative responses on the internal approaches to assessing climate risk to underpin a report on best practice.
Assuralia	Short-term climate stresses (ie a period of one year as established in Solvency II) are easier to apply, interpret and validate. Therefore, they should be easier to implement in practice and could be a starting point for developing a process over time to conduct long-term scenarios. The sector considers long term stress tests to be relevant, but for the reasons described under "disadvantages", they are not compatible with EU-wide stress testing. Presently, the sector advises to refrain from establishing uniform requirements for long-term-scenario analysis until there is significantly more agreement on scenarios and methodologies. Undertakings should be free to establish tailored approaches with regard to long-term climate risk, eg as part of ORSA.
Insurance Europe, CRO Forum & CFO Forum	Short-term climate stresses (ie a period of one year as established in Solvency II) are easier to apply, interpret and validate. Therefore, they should be easier to implement in practice and could be a starting point for developing a process over time to conduct long-term scenarios. The insurance industry considers long term stress tests to be relevant, but for the reasons described under "disadvantages", they are not compatible with EU-wide stress testing. The insurance industry advises to refrain from establishing uniform requirements for long-term-scenario analysis until there is significantly more agreement on scenarios and methodologies. Undertakings should be free to establish tailored approaches with regard to long-term climate risk, eg as part of the ORSA.
AMICE	Given the complexity for dealing appropriately with the long-term climate risk, we favour to keep a scope limited to short term risk for Stress Test Exercises, as it has always been done in the past with previous Stress Tests. The Stress Tests design may not be adequate in order to evaluate such long-term patterns. A separate and deeper study would be more helpful. It is likely that such a study on long term trends is not deemed to be repeated every two years as it is the case for the stress tests.
	EIOPA will further develop the topic and engage with stakeholders with a second consultation paper.

Allianz SE	<p>Climate scenarios should be kept as high-level as possible. In particular, we do not see value in detailed, extensive quantitative analysis over a long time horizon with limited predictability.</p> <p>Instead, we recommend:</p> <ul style="list-style-type: none"> <li>a) To cover these risks qualitatively within the ORSA</li> <li>b) Not to introduce a quantitative "climate risk measure" such as a "Climate" Value at Risk</li> <li>c) To avoid too granular (e.g. on technology or asset level) definition of sectors for the purpose of sector exposure analysis (sectors should be high level and predefined),</li> <li>d) To allow for the use of public ESG rating services for asset side.</li> </ul> <p>For a climate stress test it could be considered to use the CO2 price as a key indicator and as the basis to construct a sound stress test framework regarding CO2 emissions and CO2 pricing, with meaningful stresses applied to the CO2 price.</p>
German Insurance Association (GDV)	<p>We welcome the joint understanding that no commonly agreed methodology to calibrate climate-related shocks is yet available. Therefore we are of the opinion that a methodology first has to be agreed as we consider this as a mandatory prerequisite. All assumptions for instance on the impact of transition risk are highly speculative. Hence the application of such scenarios would currently not lead to viable results.</p> <p>Said that, short term climate stresses are to be preferred over long-term stresses. We agree with the disadvantages of long term stresses mentioned by EIOPA. The uncertainty is high and thus the value of the results might be questionable.</p> <p>We would refrain from establishing uniform requirements for long-term-scenario analysis as undertakings should be free to establish suitable approaches with regard to climate risk. Furthermore, there should be no obligation to implement such long-term scenario analysis. Depending on the risk situation, the company itself should decide whether such analyses are helpful or not.</p> <p>With regard to proportionality, it should be possible for low-risk insurers not to prepare complex stress tests. A qualitative assessment should suffice here. Furthermore, if climate risks are of very low relevance for an entity, there should not be an additional request for a forward-looking stress test.</p>
<b>Q23 - What would be appropriate metrics to assess transition risk in assets?</b>	
Norwegian Actuarial Society	A shock to the investment returns per annum, which varies depending on the nature of the underlying asset. Consideration required of the appropriate granularity of the asset sub-groups, for applying such shocks. Requires a measure of sensitivity to climate risk impacts (or at least a high/medium/low).
Assuralia	The sector considers transition risk to be a component of market risk. Therefore, the transition risk metrics should be consistent with market risk metrics.
Insurance Europe, CRO Forum & CFO Forum	The insurance industry considers transition risk to be a component of market risk. Therefore, the transition risk metrics should be consistent with market risk metrics.
AMICE	Transition risk is one of the risks that would decrease market value if it happens (and part of it according to current consensus on climate change may already somehow be factored in current market values). Therefore, transition risk is captured in the more general shocks tested in the exercise and suited to multiple origins (financial markets, economic downturn, geopolitical events, ...). If the transition risk was to be more specifically measured it would concern only the most exposed part of the portfolio and for shocks less important than the general market shocks. Given the additional operational burden of splitting the assets along their transition exposure and the fact that more severe risks are measured differently, the need to specifically target transition risk is highly questionable.
Allianz SE	Please refer to Q.22.
German Insurance Association (GDV)	<p>For our general view on possible approaches to climate stress testing see our answer / general remarks to Q.22. With respect to transition risk in assets we do not consider transition risk as an own risk class but as a part of the credit or market risk. The impact of transition risk is reflected in the market value of the assets. Therefore, with the transition risk already reflected in the market value, we do not see the necessity of separate metrics for transition risk.</p> <ul style="list-style-type: none"> <li>- Bucket - Detail</li> <li>- Developed countries Europe - Germany, France, Italy...</li> <li>- Developed Countries America - ...</li> <li>- Developed Countries Asia/ rest - ...</li> <li>- Emerging Markets - ...</li> </ul>
<b>Q24 - What level of granularity would be needed in your view (i.e. industry level, underlying technology level, asset level)? Please distinguish between different asset categories if possible (i.e. equities, government bonds, corporate bonds, real estate)</b>	
Norwegian Actuarial Society	Industry level for physical risks, by SII geographical zone. Asset level, with a high/medium/low for each asset category, for transition risks.
Assuralia	In general, an industry level of granularity should at least serve as a starting point. However, the more granular the specification of the stress test, the easier and more unambiguous it is to apply and therefore there will be consistency among insurers on how the stress was applied. However, if the scenario states that "equities related to the oil industry fall by 80%" there will be a large number of different interpretations likely across the industry.

Insurance Europe, CRO Forum & CFO Forum	In general, an industry level of granularity should at least serve as a starting point. However, the more granular the specification of the stress test, the easier and more unambiguous it is to apply and therefore there will be consistency among insurers on how the stress is applied. However, if (for example) the scenario states that "equities related to the oil industry fall by 80%" there will be a large number of different interpretations likely across the industry. Granularity should remain consistent with already existing asset categories within the Solvency II framework.
AMICE	In our opinion, equities are the most sensitive to transition risk and they should be split by industry. However, we underline that this sectoral identification will be burdensome and will not add much information about the risks taken by undertakings.
Allianz SE	Please refer to Q.22. We highly recommend to avoid too granular (e.g. on technology or asset level) definition of sectors for the purpose of sector exposure analysis (sectors should be high level and predefined). Especially the long-term observance period makes (especially quantitative) assessments very burdensome while at the same time providing limited use as the predictability will be low.
German Insurance Association (GDV)	We are of the opinion, that to give a reliable answer to this question a commonly agreed methodology to calibrate the climate-related shocks is a mandatory prerequisite (see answer to Q.22). Only with the knowledge of the methodology it is possible to deduce on the necessary level of granularity.
<b>Q25 - How could climate related shocks be calibrated (please distinguish between physical risks and transition risks in your answer)? What data sources could be considered?</b>	
Norwegian Actuarial Society	See answer to 22. Requires an initial qualitative survey of market to define a best practice. Agree with comment in the paper that 'No broadly accepted methodology yet available'.
Assuralia	Calibration of climate shocks/stress should be developed by climate experts and be based on relevant research. For example, physical risks could be calibrated by working with experts and national meteorologist agencies, combining "weather" and "insurance" data. Also making use of the experiences from catastrophic models like AIR/RMS/EQECAT will help. Transition risks could be calibrated by qualitative assessment of government policies or disruptive technologies.
Insurance Europe, CRO Forum & CFO Forum	Calibration of climate shocks/stress should be developed by climate experts and be based on relevant research. For example, physical risks could be calibrated by working with experts and national meteorological agencies, combining "weather" and "insurance" data. Transition risks could be calibrated by qualitative assessment of government policies or disruptive technologies.
AMICE	Physical risks are the core matter of P&C insurers and are therefore long dated continuously monitored information. One cannot elaborate on evolutions that have not been observed yet as erroneous conclusions could easily be drawn. Additionally, contracts are almost always annual and new tariffs are calculated based on updated knowledge of risks. Both physical and transitional risks related to climate are very long-term potential risks that do not fit the stress test exercise. See also answer to Q22.
Allianz SE	Please refer to Q.22. We strongly recommend not to assess climate risks quantitatively.
German Insurance Association (GDV)	It is challenging to calibrate shocks of short term stresses. However, it is more difficult to calibrate the shocks of long term stresses. This is another reason for preferring short term climate stresses (see Q22).
<b>Q26 - Do you have any further considerations on the inclusion of climate related risks in EIOPA's stress testing framework?</b>	
Actuarial Association of Europe (AAE)	We believe that care should be taken when undertaking stress tests on climate change - The understanding of climate related risk is an on-going journey and the details of the scenario (in terms of narrative, level, time horizon, etc) will evolve over time. The physical risk of climate change can be an extension of existing risk categories such as catastrophe risk (e.g. flood risk) and this should be taken into account when measuring this risk. A climate-related single scenario or even a single risk factor stress test which are in some way driven by climate change could be performed, like the NatCat scenario of EIOPA's 2018 Insurance Stress Test exercise - Climate risk manifest themselves in risk categories already considered and adding a climate risk scenario could give the wrong impression that the resulting risks are different from those already considered If necessary, a climate-related single scenario or even a single risk factor stress test which are in some way driven by climate change could be performed, like the NatCat scenario of EIOPA's 2018 Insurance Stress Test exercise.
Norwegian Actuarial Society	Very important to include. Some feasible combined scenarios of physical risk and transition risk could be presented to the market initially. However, believe a market qualitative survey and some establishment of best practice is required before a framework can be established.
Assuralia	The sector welcomes that climate-related risks are included in the stress tests, as it gives insurance companies opportunity to develop their internal processes around these risks as well as increase the knowledge on this important subject.

Insurance Europe, CRO Forum & CFO Forum	Despite the complexity of these risks, the industry welcomes that climate-related risks are included in the stress tests, as it gives insurance companies the opportunity to develop their internal processes around these risks as well as increase their knowledge on this important subject. The construction and use of internal models should be encouraged. These are based on detailed claims experience with a longer time horizon than current vendor models (typically 1 year, which is not enough for climate risk assessment). It should be noted that many insurers do not currently have the tools or data to undertake climate-related stress testing.	
AMICE	see Q25 and Q22	
Allianz SE	Climate scenarios should be kept at an high and qualitative level.	
German Insurance Association (GDV)	With a Europe-wide stress test that includes imperfectly captured climate-related risk, there is the danger of distortions of investment decisions throughout Europe: The shocks will be divided into 'good' and 'bad' companies. If, for example, investments in certain sectors are particularly stressed in the stress test, this tends to lead to disinvestment from the sector and thus to a relocation or relocation of financing to countries outside Europe. If a distinction is made between 'good' and 'bad' companies within the sectors, this will also have an impact. For undertakings with only short-term business (contracts with at most one year duration) and claims with a short settlement period (a few months) the high cost of implementing climate stress tests might not be worthwhile. For the financial position of these undertakings only the development of the next year is relevant. The uncertainty regarding climate risks for this time span is rather small. Furthermore, the undertaking may have extensive reinsurance cover for the duration of the contracts. Furthermore, this reduces the remaining uncertainty and relevance of future developments such as climate risks.	
<b>Q27 - What are your views on the calibration and application of the shocks to fixed income assets? Do you think that the proposed specifications are sufficiently detailed? If not please provide suggestion on how to improve the guidance.</b>		
Actuarial Association of Europe (AAE)	We would expect a shock on sovereign bonds: fluctuations in these spreads are observed on a daily basis, so a stress scenario should capture extreme variations in these spreads. We also note that in the internal stress testing exercises for banks, these spreads are shocked. The proposed specifications seem suitable and sufficiently detailed. With regard to point 120: "Bond issued by supra-national or multi-national organizations [...] are not subject to specific shocks to yields.": As a simplification this is suitable, considering the effort necessary to determine (usually low) shocks for all kind of multi-national organisations.	Stakeholders overall expressed positive remarks on the approach to the definition of the market shocks and on the guidance on their application. Most of the respondents agreed that the granularity of the market shocks proposed in the discussion paper is adequate. In addition, the proposed alternative, the "bucketing approach", for market shocks was considered as a reasonable proposal. In details: - Fixed income assets: Regarding the calibration and application of the shocks to fixed income assets, EIOPA considers to provide the shocks in terms of credit spread in addition to the shock to yields in the technical information. EIOPA will keep the proposal to derive the shocks to different maturities via interpolation (e.g. spline) for maturities that are not explicitly provided or by keeping the shock constant for all maturities exceeding the last maturity provided with an explicit shock. A concrete example on the interpolation approach is provide in the paper. - Equities listed: EIOPA considers to preserve the proposed methodology regarding the listed equities. Potential reduction in the granularity will be considered. Participations will be treated as other equities.- Equity unlisted: EIOPA considers to preserve the proposed methodology regarding shocks to unlisted equities. - Property plant and Equipment: EIOPA will considers to preserve the current proposed methodology regarding shocks to real estate and the treatment of property, plant and equipment held for own use. - Loans and Mortgages: EIOPA considers not to shock the exposure to "loans on policies", hence the balance sheet sub-item might be kept constant with respect to the baseline. EIOPA agrees with the methodology proposed regarding mortgages and loans. In this respect, shocks to loans and mortgages to individuals and other loans and mortgages can be proxied with shocks to RMBS or with shocks to covered bonds. - Type 1 exposures: EIOPA will preserve the proposed methodology as most of the respondents agreed that these shocks are sufficiently well specified. - Look-through approach: EIOPA will preserve the proposed methodology regarding the look-through approachThe above consideration are now part of the paper.
Norwegian Actuarial Society	The calibration is sufficient for most fixed income assets. Question: What will be charges for Danish covered bonds? The Danish covered bond are residential mortgage-backed securities. The standard formula gives lower charge for this type bonds. The RMBS under category loans and receivables also has a different stress.	
Assuralia	The sector considers the specifications sufficiently detailed.	
Insurance Europe, CRO Forum & CFO Forum	We consider the specifications sufficiently detailed. It would also be helpful if the shocks were provided in terms of credit spread rather than bond yield.	
AMICE	The proposed application remains close to the standard formula and we favour such an approach. The bucketing approach for market shocks is a reasonable proposal. Stresses at country level can be appropriate in some cases (e.g. Brexit scenario), but in most cases huge differences between stresses at country level cannot be justified.	
Allianz SE	We support the advanced granularity of specifications especially with respect to the application of shocks for missing geographical areas, maturities etc. provided in the discussion paper. However we would like to mention that simplified and less granular shocks would lead to easier and more comparable implementation (considering the various models throughout the industry), validation and interpretation of results (e.g. parallel shocks instead of term specific).	
German Insurance Association (GDV)	Specifically to "121 Bonds issued by corporations based in non-covered geographical areas shall be shocked according to the average shocks provided for larger geographical areas (e.g. EU, US, Asia)": When providing a general framework for stress testing, care should be taken to ensure that all classes are covered and that the stress test requirements are complete, e.g. for geographical areas: - Germany - France - Ireland Rest - EU Rest Europe ----- - USA - Canada - Rest America ----- - Rest of the world	
<b>Q28 - With regard to the derivation of the shocks to different maturities do you have different solutions to propose?</b>		
Norwegian Actuarial Society	We assume the proposal is the shock for yield curve is homogeneous. For bond price, the shock needs to be multiplied with maturity.	
Assuralia	No.	

Insurance Europe, CRO Forum & CFO Forum	No.
AMICE	The proposed application remains close to the standard formula and we favour such an approach.
Allianz SE	Given the already extreme shocks applied in the stress test, we recommend to consider parallel shocks for the government spread shocks; considering slightly different shocks across maturities would not add material/valuable information to the ST results.
<b>Q29 - What are your views on the shocks to equities?</b>	
Actuarial Association of Europe (AAE)	Equity shocks seem reasonable. One potential issue could arise in case of large single-name equity positions. Then the risk might be more than the "aggregated" regional index shock. Potentially a concentration correction could be applied The specifications as relative shocks by country is generally suitable. "124 In case of equities listed in more than one stock exchange...": Specifications should not be too granular. Using the country of the main stock exchange should be sufficient. It is not reasonable to examine every single equity before being able to start with the stress test, just to decide which country is relevant. Companies should be allowed to rely on the country-code used in their system.
Norwegian Actuarial Society	Participations should have lower shock.
Assuralia	The level of granularity should be as low as possible to meet the objectives of the exercise. For example, where the objective of the exercise is to assess the impact of changes in longevity, standard formula levels of granularity (eg. Type 1 and Type 2 equities) should be used. However, where the objective is to assess potential spill-overs during a period of market stress, country-level granularity may be justified.
Insurance Europe, CRO Forum & CFO Forum	The level of granularity should be as low as possible to meet the objectives of the exercise. For example, where the objective of the exercise is to assess the impact of changes in longevity, standard formula levels of granularity (eg. Type 1 and Type 2 equities) should be used. However, where the objective is to assess potential spill-overs during a period of market stress, country-level granularity may be justified.
AMICE	Shocks to equity should be aligned to the granularity of data already available for undertakings in order to lighten the operational burden and to avoid proxies for companies unable to add a new level of information in due time.
German Insurance Association (GDV)	The shocks should be based on the categories provided under Solvency II. It should not be stipulated that manual evaluations must be introduced before the stress test is carried out and that shocks should be applied individually to individual shares wherever possible at the end of the test.
<b>Q30 - What are your views on treating Equity unlisted [R0120] according to the shocks prescribed to listed equities? Do you consider the approximation reasonable?</b>	
Actuarial Association of Europe (AAE)	This simplifications seems reasonable, probably overestimating risks.
Assuralia	The sector considers this to be a reasonable approximation.
Insurance Europe, CRO Forum & CFO Forum	The insurance industry considers this to be a reasonable approximation especially in light of the limited availability of data series for unlisted equities.
AMICE	Yes
German Insurance Association (GDV)	The application of shocks prescribed for listed equities to unlisted equities may result in an overestimation of potential losses. As losses of unlisted equities in general occur with a time-lap in comparison to listed equities, the application of the shock may result in higher losses of unlisted equities. But we consider the approximation as reasonable.
<b>Q31 - What are your views on the shocks to real estate?</b>	
Actuarial Association of Europe (AAE)	The specification seems suitable.
Assuralia	The sector considers these to be reasonable.

Insurance Europe, CRO Forum & CFO Forum	We consider these to be reasonable.
German Insurance Association (GDV)	The framework for stress tests should be defined as conclusively as possible. It may be possible to distinguish between commercial, office, logistics and other. The country assignment should be clear and conclusive.

**Q32 - What are your views on the treatment of property, plant and equipment held for own use?**

Norwegian Actuarial Society	Property for own use should have lower shock.
Assuralia	The sector considers it reasonable to shock property for own use in line with the shocks for investment property. However, all other items should remain constant under stress.

Insurance Europe, CRO Forum & CFO Forum	We consider it reasonable to shock property for own use in line with the shocks for investment property. However, all other items should remain constant under stress.
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**Q33 - Are RMBS yields the proper index to treat Loans and mortgages ([R0230])? Is an additional granularity needed to treat the sub-items of the loan and mortgages category (i.e. Loans on policies, Loans and mortgages to individuals, Other loans and mortgages)? If yes, please provide suggestions for fitting indices.**

**Actuarial Association of Europe (AAE)**

**Mortgage loans**

It should be noted that mortgage loan yields have remained relatively stable over past crises periods. Applying RMBS shocks will most likely overestimate the risks for mortgage loans. We argue that **covered bonds constitute a better proxy for mortgage loans**.

The graph below provides the yields of mortgage loans and covered bonds over the past crisis periods, including the 2007-2008 financial crisis and the 2011-2012 sovereign debt crisis. Both yield series are highly correlated and present relatively stable yields.

The tail dependence statistics presented in the table below demonstrate a high dependence in the upper tails of yields and  $\Delta$ yields for mortgage loans vs. covered bonds:

Mortgage loan - covered bond yield tail dependence		Mortgage loan - covered bond $\Delta$ yield tail dependence	
$u$	$\hat{t}(u)$	$u$	$\hat{t}(u)$
95%	66.7%	80%	73.0%
90%	68.4%	75%	74.5%

The relationship between the yields of mortgage loans and covered bonds can be quantified through the Pearson correlation and Spearman's rho. The table below displays dependence statistics for:

- yield levels of mortgage loans and covered bonds
- $\Delta$ yields: the first difference of yields at a 1 year interval
- $\Delta$ spreads: the first difference of spreads at a 1 year interval, with spreads measured as the difference between yields and the interest rate swaps of the corresponding maturity. Spread statistics are displayed for the years 2007-2013, i.e. periods with higher spread volatility.

	yield	$\Delta$ yield	$\Delta$ spread
Pearson correlation	95.0%	72.1%	60.2%
Spearman's rho	88.8%	73.7%	63.5%

The high correlation of  $\Delta$ yields indicates that yield shocks of mortgage loans may indeed be **exposed** by covered bonds. The tables below provide the upper quantiles of yield and spread shocks for mortgage loans and covered bonds. Yield and spread shocks for mortgage loans and covered bonds are of comparable size. Covered bond yield and spread shocks appear to be a prudent estimate for mortgage loans.

Quantile	Mortgage loan $\Delta$ yield	Covered bond $\Delta$ yield	Quantile	Mortgage loan $\Delta$ spread	Covered bond $\Delta$ spread
99.5%	0.65%	1.16%	99.5%	1.34%	1.55%
99.0%	0.64%	1.06%	99.0%	1.24%	1.52%
95.0%	0.51%	0.89%	95.0%	0.81%	0.91%
90.0%	0.45%	0.70%	90.0%	0.59%	0.57%

The scatterplots presented below seem to indicate that high yields ( $\Delta$ yields) of mortgage loans are paired with high yields ( $\Delta$ yields) of covered bonds. This can be quantified through the estimator of upper tail dependence:

$$\hat{t}(u) = \frac{\sum_{i=1}^n \mathbf{1}(X_i > F_X^{-1}(u), Y_i > F_Y^{-1}(u))}{\sum_{i=1}^n \mathbf{1}(X_i > F_X^{-1}(u))}$$

**Loans on policies**

A loan on policy is a contract whereby an insurance undertaking issues a loan and retains the reserves of the policyholder's life insurance as collateral. Hence, **loans on policies are essentially risk-free**, as the loans are fully covered by collateral managed by the insurance undertaking. RMBS spread or yield shocks would significantly overestimate the risk of loans on policies. A zero spread shock appears to be the only meaningful spread calibration for loans on policies. Alternatively, a AAA (covered) bond shock could be used as a conservative proxy.

Norwegian Actuarial Society	No objection to this simplification.
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Mortgage loans

We note that EIOPA Stress Test 2018 applied RMBS shocks as a proxy for mortgage loans, where the Yield Curve up shocks for RMBS were very similar to the corporate (non-financial) yield shocks:

Yield Curve EU yield shocks (bps)				
Type	AAA	AA	A	BBB
Corp non-financial	138	178	218	258
Corp financial	147	199	250	301
RMBS	156	176	196	240

A different approach was chosen in the EIOPA Stress Test 2016, where covered bonds were used as a proxy for mortgage loans. These covered bond yield shocks, in the double hit scenario, were reasonably lower compared to the other corporate bond yield shocks:

Double Hit yield shocks (bps)				
Type	AAA	AA	A	BBB
Corp non-financial	24	120	135	214
Corp financial	16	116	198	372
Financial covered	20	72	115	162

It should be noted that mortgage loan yields have remained relatively stable over past crises periods. Applying RMBS shocks will most likely overestimate the risks for mortgage loans. We argue that covered bonds constitute a better proxy for mortgage loans

The graph below provides the yields of mortgage loans and covered bonds over the past crisis periods, including the 2007-2008 financial crisis and the 2011-2012 sovereign debt crisis. Both yield series are highly correlated and present relatively stable yields.

- The mortgage loan yields are obtained from the [ECB Statistical Data Warehouse](#), Lending for house purchase excluding revolving loans and overdrafts, convenience and extended credit card debt, Over 10 years. Key MIR.M.U2.B.AZC.P.R.A.2250.EUR.N. Monthly data from January 2003 up to June 2019.
- Covered bond yields are obtained from [Markit](#), index [iBoxx](#) € Covered annual yield, ISIN DE0007670119, monthly data from January 2003 up to June 2019.



The relationship between the yields of mortgage loans and covered bonds can be quantified through the Pearson correlation and Spearman's rho. The table below displays dependence statistics for:

- yield levels of mortgage loans and covered bonds
- yields: the first difference of yields at a 1-year interval
- spreads: the first difference of spreads at a 1-year interval, with spreads measured as the difference between yields and the interest rate swaps of the corresponding maturity. Spread statistics are displayed for the years 2007-2013 i.e. periods with higher spread volatility.

	yield	Δyield	Δspread
Pearson correlation	98.0%	72.1%	60.2%
Spearman's rho	88.8%	78.7%	63.5%

The high correlation of Δyields indicates that yield shocks of mortgage loans may indeed be proxied by covered bonds. The tables below provide the upper quantiles of yield and spread shocks for mortgage loans and covered bonds. Yield and spread shocks for mortgage loans and covered bonds are of comparable size. Covered bond yield and spread shocks appear to be a prudent estimate for mortgage loans.

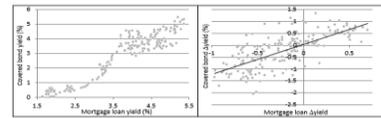
Quantile	Mortgage loan	Covered bond	Quantile	Mortgage loan	Covered bond
	Δyield	Δyield		Δspread	Δspread
99.5%	0.63%	1.16%	99.5%	3.30%	1.93%
99.0%	0.64%	1.06%	99.0%	1.24%	1.52%
95.0%	0.51%	0.89%	95.0%	0.81%	0.91%
50.0%	0.45%	0.70%	50.0%	0.69%	0.57%

The scatterplots presented below seem to indicate that high yields (Δyields) of mortgage loans are paired with high yields (Δyields) of covered bonds. This can be quantified through the estimator of upper tail dependence:

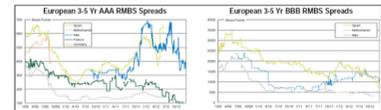
$$\hat{\lambda}(u) = \frac{\sum_{i=1}^n \mathbb{1}(X_i > \hat{F}_X^{-1}(u), Y_i > \hat{F}_Y^{-1}(u))}{\sum_{i=1}^n \mathbb{1}(X_i > \hat{F}_X^{-1}(u))}$$

The tail dependence statistics presented in the table below demonstrate a high dependence in the upper tails of yields and Δyields for mortgage loans vs. covered bonds:

Mortgage loan - covered bond yield tail dependence			Mortgage loan - covered bond Δyield tail dependence		
u	$\hat{\lambda}(u)$		u	$\hat{\lambda}(u)$	
95%	66.7%		95%	73.0%	
90%	68.4%		90%	74.5%	



RMBS yields and spreads have historically shown a very important volatility, both during the financial crisis as well as the sovereign debt crisis, as displayed in the figures below. Hence, RMBS yields may not be an appropriate proxy for mortgage loans. Data in the graph below is obtained from [Markit iBoxx](#) and the [AFM's securitisation Data Report](#).



Loans on policies

A loan on policy is a contract whereby an insurance undertaking issues a loan and retains the reserves of the policyholder's life insurance as collateral. Hence, loans on policies are essentially risk-free, as the loans are fully covered by collateral managed by the insurance undertaking. RMBS spread or yield shocks would significantly overestimate the risk of loans on policies. A zero spread shock appears to be the only meaningful spread calibration for loans on policies. Alternatively, a AAA (covered) bond shock could be used as a conservative proxy.

Insurance Europe, CRO Forum & CFO Forum

We consider that covered bonds constitute a better proxy for mortgage loans. Applying RMBS shocks for Loans and Mortgages will overestimate the risks for mortgage loans.

The graph below provides the yields of mortgage loans and covered bonds over the past crisis periods, including the 2007-2008 financial crisis and the 2011-2012 sovereign debt crisis. Both yield series are highly correlated and present relatively stable yields.

- The mortgage loan yields are obtained from the [ECB Statistical Data Warehouse](#), Lending for house purchase excluding revolving loans and overdrafts, convenience and extended credit card debt, Over 10 years. Key MIR.M.U2.B.A2C.P.R.A.2250.EUR.N. Monthly data from January 2003 up to June 2019.
- Covered bond yields are obtained from [Markit](#), index [iBoxx € Covered annual yield](#), ISIN DE0007670119, monthly data from January 2003 up to June 2019.



The relationship between the yields of mortgage loans and covered bonds can be quantified through the Pearson correlation and Spearman's rho. The table below displays dependence statistics for:

- yield levels of mortgage loans and covered bonds
- Dyields**: the first difference of yields at a 1 year interval
- Dspreads**: the first difference of spreads at a 1 year interval, with spreads measured as the difference between yields and the interest rate swaps of the corresponding maturity. Spread statistics are displayed for the years 2007-2013 i.e. periods with higher spread volatility.

	yield	Dyield	Dspread
Pearson correlation	95.0%	72.1%	60.2%
Spearman's rho	88.8%	73.7%	63.5%

The high correlation of **Dyields** indicates that yield shocks of mortgage loans may indeed be **proxied** by covered bonds.

**Loans on policies**

A loan on policy is a contract whereby an insurance undertaking issues a loan and retains the reserves of the policyholder's life insurance as collateral. Hence, **loans on policies are essentially risk-free**, as the loans are fully covered by collateral managed by the insurance undertaking. RMBS spread or yield shocks would significantly overestimate the risk of loans on policies. A zero spread shock appears to be the only meaningful spread calibration for loans on policies. Alternatively, a AAA (covered) bond shock could be used as a conservative proxy.

German Insurance Association (GDV)

We believe that one index is sufficient.

**Q34 - Do you envisage potential constraints in the application of a look-through approach?**

Actuarial Association of Europe (AAE) For collective investment undertakings investing in bonds where a full look-through is not possible, approximations have to be made, based on available data.

Norwegian Actuarial Society For some hedge funds, data for look-through may not be available. Some simplification should be allowed.

Assuralia The look-through approach could be more challenging to use in a multi-period stress test because this would require several assumptions which might impact comparability and interpretability of results.

Insurance Europe, CRO Forum & CFO Forum The look-through approach could be more challenging to use in a multi-period stress test because this would require several assumptions which might impact comparability and interpretability of results.

Q35 - What is your view on the shocks to type 1 Exposures? Do you consider the shocks to counterparties sufficiently specified? If not please provide indication on how to improve the specification.		
Norwegian Actuarial Society	No comments.	
Assuralia	Yes, they appear to be sufficiently specified.	
Insurance Europe, CRO Forum & CFO Forum	They appear to be sufficiently specified. In any case, the shocks are expected to be expressed as percentage losses of the Type1 exposures, and the loss coefficient to be linked exclusively to the CQS of the counterparty.	
AMICE	The insurance industry regularly explains that the approach retained in the standard formula for counterparty default risk (type 1 exposure) is too complex given its relative final impact on all risks faced by insurers (and as shown by its low proportion in the total SCR). This approach of stressing both the probability of default and the LGD would be very burdensome and would require a process even more complex than under the full annual SCR computation. Hence, we prefer a simplified approach such as a stress directly applicable to the level of the type 1 SCR total capital charge.	
Q36 - What are your views on the calibration and application of the mortality/longevity shocks?		
Actuarial Association of Europe (AAE)	General remark on life insurance shock: para 151 refers to clustering portfolio to avoid compensation in own funds directions across portfolio. We believe that it should be more explicit whether a "cap approach" (i.e. only own funds decrease and which level) would apply for life shocks but also for stress testing purposes in general. Some of the discussed calibration models seem to be relevant more from an academic perspective, e.g. separation concerning remaining term of maturity. Stochastic modelling could be interesting but for stress scenarios an average stress factor for the whole mortality table seems to be sufficient and also in line with the risk approach in the Solvency II context. Additionally, more granular approaches would create high expenditures with regard to projection tool adjustments which are not necessary. Levels for stress scenarios should be determined for whole markets (countries). This should be calibrated by EIOPA to get a common base for the stress calculations.	With regard to the design of mortality / longevity shocks EIOPA acknowledges the operational burdens linked to multi-dimensional shock factors for mortality rates and the preference reflected in the stakeholder's comments for uniform single factor stresses. EIOPA recognises the rather heterogeneous stakeholder feedback on the proposed methodological alternatives for the design of potential lapse stress components. Against this background, EIOPA considers to further analyse for the calibration proper bucketing approaches that may represent an adequate compromise between the operationally demanding clustering techniques based on the concept of a surrender strain and the plain uniform approach. EIOPA acknowledges the fact that such a bucketing may reduce but not necessarily exclude the potential for a positive marginal impact of a lapse stress component, however artificial limitations of such impacts will be considered in the context of future ST exercise only after exploring the operationalization of the other approaches presented in the paper. With regard to the potential inclusion of other life risks in future stress test exercises EIOPA acknowledges the preference reflected in stakeholder's comments for a proportionate approaches depending on the materiality of the respective risk drivers.
Norwegian Actuarial Society	We agree with the calibration and application set out in the table 5-2. Especially the method of different stresses dependent on maturity and age. In Norway, however, most policies have both longevity and mortality risk for the same policy and therefore we would also need some correlation matrix.	
Assuralia	The complexity should be kept low. The specification of two-dimensional shock factors $h(x,n)$ for mortality rates is not standard in many projection models. Such an approach would therefore require a great deal of implementation effort. The specification of a uniform stress factor (as in the standard formula) has already been implemented and should also lead to useful results with a conservative choice - with considerably less effort. A shock factor of 20% for longevity and mortality appears to be a suitable conservative choice (cf. EIOPA-BoS-18/075 p. 69/70).	
Insurance Europe, CRO Forum & CFO Forum	The complexity should be kept low. The specification of two-dimensional shock factors $h(x,n)$ for mortality rates is not standard in many projection models. The proposed modelling, introducing a new dimension, being the (remaining) term of the product/policy, is not present in current modelling practices and as such cannot be done. As an alternative, the specification of a uniform stress factor (as in the standard formula) has already been implemented and should also lead to useful results with a conservative choice - with considerably less effort.	
German Insurance Association (GDV)	The complexity should be kept low. The specification of two-dimensional shock factors $h(x,n)$ for mortality rates is not standard in many projection models. Such an approach would therefore require a great deal of implementation effort. The specification of a uniform stress factor (as in the standard formula) has already been implemented and should also lead to useful results with a conservative choice - with considerably less effort. The EIOPA considers a shock factor of 20 % for longevity and mortality. According to own calculations, this factor seems to be too high, since this is calibrated considering the 99.5% quantile in line with the risk calibration under Solvency II. This is in our opinion extremely severe and less plausible. A risk factor of 10 % is the most suitable option.	

<b>Q37 - Can you suggest any time-series to be used to calibrate the shock to lapse?</b>	
Actuarial Association of Europe (AAE)	<p>General remark on life insurance shock: para 151 refers to clustering portfolio to avoid compensation in own funds directions across portfolio. We believe that it should be more explicit whether a "cap approach" (i.e. only own funds decrease and which level) would apply for life shocks but also for stress testing purposes in general. Some of the discussed calibration models seem to be relevant more from an academic perspective, e.g. separation concerning remaining term of maturity. Stochastic modelling could be interesting but for stress scenarios an average stress factor for the whole mortality table seems to be sufficient and also in line with the risk approach in the Solvency II context. Additionally, more granular approaches would create high expenditures with regard to projection tool adjustments which are not necessary. Levels for stress scenarios should be determined for whole markets (countries). This should be calibrated by EIOPA to get a common base for the stress calculations. In the German market lapse rates are published within the local GAAP reporting. The history is available for many years (lapse data via BaFin since 1987 for life and health companies and by the association of German private healthcare insurers since 1995). The lapse rate available is the overall lapse rate on company level without further segmentation.</p>
Insurance Europe, CRO Forum & CFO Forum	<p>Lapse data have been collected by supervisors during the financial crisis. Supervisors could leverage on the data already gathered to calibrate the shocks. It is noted that such a review of available data is highly appropriate and would give the opportunity to challenge the mass lapse risk the level of which has been overestimated in the original setup of Solvency II and set to a 40% level that is completely inappropriate.</p>
AMICE	<p>Lapse data were collected by supervisors during the financial crisis. Supervisors could leverage the data already gathered to calibrate the shocks. We note that such a review of available data is very appropriate and would give the opportunity to challenge the mass lapse risk, the level of which has been overestimated in the original setup of Solvency 2 and set to a 40% level that seems completely out of range.</p>
<b>Q38 - What are your views on the described approaches to the application of the lapse shocks?</b>	
Actuarial Association of Europe (AAE)	<p>Combining "standard formula" and "classification" could result in a bucketing approach taking into account product features. The right granularity level on classification with respect to product type/fiscality/penalty/level of guarantee should be defined in order to keep the allocation simple. The mass lapse scenario should also include a liquidity assessment. All approaches are basically appropriate to use for stress test scenarios. The standard formula approach is in line with the SII guidelines, however has extensive calculation needs. The classification approach option 1 can be seen as a qualitative approximation on product level of the standard formula and should be possible to be implemented in a reasonable timeframe within stress test calculations. The classification approach option 2 and the uniform approach introduce rational investment behavior, and therefore will add a new criteria and perspective which is currently not used.</p>
Assuralia	<p>The sector does not agree that an adjustment is required to mitigate the impact of a positive marginal impact from a lapse event in the context of a stress test. Policyholders' decision to lapse a contract is independent of the impact on the insurer's financial position. Therefore, it is unrealistic to assume that only those policies which would be detrimental to the insurer's financial position would materialise. As a main principle an approach to the application of the lapse shocks should be easy to implement and calibrate. Highly sophisticated models should be avoided. The sector asks for a definition of "surrender strain". It is an unexplored concept and therefore needs to be clarified. In §189, "the ability and willingness continue to pay premium" and lapse rates are linked to each other. Though there is truth in that concept, please note that not paying premium does not necessarily mean that the policy will lapse. This is especially true for unit- and index-linked insurance where the amount and timing of premium can be freely chosen by the policyholder.</p>
Insurance Europe, CRO Forum & CFO Forum	<p>The insurance industry does not agree that an adjustment is required to mitigate the impact of a positive marginal impact from a lapse event in the context of a stress test. Policyholders' decisions to lapse a contract are independent of the impact on the insurer's financial position. Therefore, it is unrealistic to assume that only those policies which would be detrimental to the insurer's financial position would materialise. As a main principle, an approach to the application of the lapse shocks should be easy to implement and calibrate. Highly sophisticated models should be avoided. The most feasible option to be adopted for the application of lapse shocks, in the context of a stress test exercise, seems to be the uniform approach. This provides some solid and experience-based results. Therefore, lapse shocks should be calibrated on the basis of the empirical evidences of the sensitivity of policyholder lapse behaviour to movement in capital markets. In case an historical economic scenario is considered for a stress test exercise (ie 2008 financial crisis), the level of lapse to be applied in the context of the stress test should be derived from the same historical point in time.</p>

AMICE	Any deviation from the standard formula is likely to demand extra work on the databases, the models and the reporting and will require proxies in the calculation or deviation from the industrialized process. These deviations should be carefully considered taking into account the expected advantages in the light of the likely downgraded process.
German Insurance Association (GDV)	As described by EIOPA there is limited information about lapse behaviour in specific scenarios. Therefore, as a main principle an approach to the application of the lapse shocks should be easy to implement and calibrate. Highly sophisticated models should be avoided. Specifically, the uniform provides solid and experience-based results. Moreover, in comparison with the other three methodologies, the uniform method represents a good trade-off between the resources used and the result obtained. Since the other options seem to be too demanding, the value added from them is unknown. Besides, the uniform method is mostly consistent with the economic perspective since this is based on the empirical evidence on lapse behaviour after the financial crisis in 2008 in some countries.
<b>Q39 - What are the main theoretical and operational issues you envisage in the application of the "standard formula" approach?</b>	
Actuarial Association of Europe (AAE)	Operational issue: The standard formula approach seems to be as too ambitious (too much calculation and implementation needs) to be used within the EIOPA stress tests scenarios.
Assuralia	The standard formula approach is not consistent with the real policyholder behaviour; see comments above.
Insurance Europe, CRO Forum & CFO Forum	The standard formula approach is not consistent with real policyholder behaviour; see comments above.
AMICE	The Standard formula is a good starting point; its design was well thought out and is well understood and shared in the market by undertakings as well as supervisors. Yet we had a strong reservation towards the calibration of the mass lapse risk which has been largely overstated due to the lack of available data when Solvency II was first implemented.
German Insurance Association (GDV)	The application of the standard formula implies a reduction of complexity.
<b>Q40 - What are the main theoretical and operational issues you envisage in the application of the classification approach based on product characteristics (option 1 in the classification approach)?</b>	
Actuarial Association of Europe (AAE)	Operational issue: This approach could be implemented with less calculation needs compared to the standard formula approach. If the product has biometric riders for e.g. disability the sensitivity should always be one notch lower.
Assuralia	The main issue is the difficulty in achieving a consistent application across all stress test participants. This approach could also be challenging to implement from an operational perspective.
Insurance Europe, CRO Forum & CFO Forum	The main issue is the difficulty in achieving a consistent application across all stress test participants. This approach could also be challenging to implement from an operational perspective. No artificial segmentation of the ways risks are managed should be induced. Where it exists diversification and mutualisation should be properly reflected in stress tests and/or sensitivity analysis in order to avoid creating a distorted view of the level of risk.
AMICE	No artificial segmentation of the ways risks are managed should be induced. Diversification and mutualisation where they exist should be properly reflected in STs and/or sensitivity analysis in order to avoid distortions of appreciations of true levels of risks and to avoid wrong incentives in business models where those issues are profoundly embedded and underly the whole concept of insurance.
German Insurance Association (GDV)	Please refer to Q.38
<b>Q41 - Does the proposed classification approach based on product characteristics fits your liability portfolio? If not please suggest a different classification.</b>	
Actuarial Association of Europe (AAE)	Outstanding balance insurance should be added in the mapping with a high sensitivity to interest rate levels. For Germany the segmentations fits to the portfolio. There is value in splitting Health products into "Health with life insurance characteristics" and "Health with non-life insurance characteristics".
AMICE	For undertakings with pooled assets, the bucketing should not be applicable as it is not reflective of the way the ALM is exercised and produces results which do not reflect experience. In such a case, an ill-suited approach will only produce erroneous risk assessments.

<b>Q42 - What are the main theoretical and operational issues you envisage in the application of the classification approach based on guaranteed rate / penalties (option 2 in the classification approach)?</b>	
Actuarial Association of Europe (AAE)	It might be challenging to define a level of rational investment behavior of policyholder. Given the current financial environment, it is difficult to observe rational investment behavior e.g. in the German market.
Assuralia	This approach would be very challenging and complicated to implement from an operational perspective and should be avoided. It is also worth noting that fiscal rules are an important consideration for policyholders on whether they lapse.
Insurance Europe, CRO Forum & CFO Forum	This approach would be very challenging and complicated to implement from an operational perspective and should be avoided. It is also worth noting that fiscal rules are an important consideration for policyholders on whether they lapse. Option 2 is far too simplistic to account for the variety of situations and behaviours encountered along various product types. Also, as noted in paragraph 189, there is no empirical evidence about rational economic behaviour. No, the technical rate is not necessarily representative of the minimum guarantee. For some contracts, it is possible that the minimum guarantee changes over time.
AMICE	As pointed out in paragraph 189, we do not see empirical evidence for pure rationale economic behaviour and the option 2 is far too simplistic to account for the variety of situations and behaviours encountered in various product types. We are strongly opposed to this option.
German Insurance Association (GDV)	Please refer to Q.38
<b>Q43 - Is the technical rate a proper reference to assess the level of the guarantee? If not do you have other suggestions?</b>	
Actuarial Association of Europe (AAE)	For with-profit exposure in the portfolio of life insurers the technical interest can serve as a proper criterion to assess the level of the guarantee. However, potential rational investment behavior depends on the overall interest level paid to the policyholder, which can include significant bonus payments. Therefore, the criteria to determine the lapse behavior should be the overall return for the policyholders. As the overall interest level is time- and path-dependent a bucketing is hardly feasible.
Assuralia	No, the technical rate is not necessarily representative of the minimum guarantee. Anyway, the minimum guarantee could change over the time on the same contract accordingly to contractual clauses.
AMICE	The technical interest rate is one component that may switch from the ultimate biting item among options and guarantees depending on market, legal and contract conditions.
<b>Q44 - What are proper thresholds to be applied to the technical rate?</b>	
Actuarial Association of Europe (AAE)	As stated in Q43 the technical rate is not an appropriate driver in order to determine lapse sensitivity.
AMICE	The RFR at 5 years maturity is very debatable. For very liquid products, one could argue that the 1-year maturity is the best comparison and the one used by policyholders as a benchmark.
<b>Q45 - What is in your view a proper criteria to classify the penalties?</b>	
Actuarial Association of Europe (AAE)	The analysis of contract or fiscal penalties seems to be an appropriate criterion to determine policyholder behavior. However, we would suggest not to differentiate between the two categories, but to evaluate the total penalties. This opinion is based on the fact, that if policyholders act in a rational way, they would look at the overall penalties and would not distinguish between the source of penalty, taking also possible tax disadvantages into account.
<b>Q46 - Do you have other suggestion to classify the life portfolio in the light of a lapse shock?</b>	
AMICE	The life portfolio should remain classified according to homogeneous risk groups.

<b>Q47 - What are your views on the calibration and application of the life expense shock? What data sources could be used to calibrate the shocks?</b>		
Actuarial Association of Europe (AAE)	We agree that some costs are affected by exogenous factors and others by internal factors. An important external factor is – as described in the consultation paper – certainly inflation as one indicator of the current state of the economy. Costs that are sensitive to inflation rates should be stressed with a single inflation factor. This factor should be calculated and provided by EIOPA on the basis of historical economic data. Non-inflationary expenses should not be subject to inflation stress. However, separate stress factors should not be defined for all types of costs, as this increases the calculation effort disproportionately. In addition, the gain in knowledge for many different stress factors would be comparatively small, so that a reduction to as few global stress factors as possible seems appropriate to us.	
Assuralia	A proportionate and easily implementable approach should be followed. Highly sophisticated models should be avoided. In addition, to the factors mentioned, considering a distinction between “going concern” company and “run-off” company may be useful as the expense profile between these two types of company are different.	
Insurance Europe, CRO Forum & CFO Forum	A proportionate and easily implementable approach should be followed. Highly sophisticated models should be avoided. As specified in the paper, administrative expenses are influenced by a series of factors, some exogenous and some internal to the company. Given the nature of administrative expenses, the internal component is generally manageable and controllable by the company, therefore the stress test should focus on the expense inflation stress rather than the expense unit level stress.	
German Insurance Association (GDV)	There is limited information about life expense shocks. Therefore, as a main principle an approach to the application of life expense shocks should be easy to implemented and calibrated. Highly sophisticated models should be avoided.	
<b>Q48 - What are your views on other life risk shocks, in particular regarding morbidity and disability shocks, revision shocks and/or pandemic shocks in a stress test? What data sources could be used to calibrate the shocks?</b>		
Actuarial Association of Europe (AAE)	In our opinion, disability shocks could be modelled and calibrated in general similarly to mortality shocks calibrated in line with the Solvency II approach. Pandemic shocks: The risk of pandemics is closely related to the mortality risk (albeit to a much lesser extent) and can only be modelled, if at all, by drawing conclusions from events such as regional flu epidemics or the American opioid crisis. In our opinion, however, a separate pandemic shock should not have a particularly large impact on the outcome of a stress test and we recommend the inclusion of pandemic risks solely in the calibration of the mortality shock.	
Assuralia	A proportionate and easily implementable approach should be followed. Highly sophisticated models should be avoided.	
Insurance Europe, CRO Forum & CFO Forum	A proportionate and easily implementable approach should be followed. Highly sophisticated models should be avoided. These life risks should be considered to be immaterial in the context of stress testing exercises as they are not expected to have any significant impact on an insurer's solvency position.	
<b>Q49 - What is your view on the Scenario based approach versus the Standard formula based approach?</b>		
Actuarial Association of Europe (AAE)	This depends heavily on the exposure of the respective company. For example, the exposure of an international established reinsurer with US hurricane exposure will be very different to a small retail insurer in Germany, exposed to windstorm Germany. This should be taken into account for the calculation, in the context of materiality.	
Norwegian Actuarial Society	Preference for Scenario based approach - agree that the Standard formula approach has limited value.	
Assuralia	The default approach should be the standard formula approach given its accessibility by all insurers. It would also be easier to implement and wouldn't require an expensive internal model or a vendor model. The use of a scenario-based approach should be restricted to exercises where the scope of the exercise justifies the additional complexity (ie where most insurers in scope use internal models).	
Insurance Europe, CRO Forum & CFO Forum	Standard formula Given the choices provided, for practical reasons the default approach should be the standard formula approach given its accessibility by all insurers as it wouldn't require an expensive internal model or a vendor model. This approach would also limit the burden on insurers, as it should require only minor additional inputs from companies. Scenario-based The use of a scenario-based approach should be restricted to exercises where the scope of the exercise justifies the additional complexity. Where it is used, the scenario must be independent of third-party model providers. As such an approach will inevitably be limited in scope, it will inevitably penalise some companies vs others randomly, depending on the specific scenarios being considered.	
		EIOPA recognises that a number of options might be considered for the calibration of natural and man-made catastrophe stress tests and pros and cons of each should be assessed in turn. There were no common views among stakeholders which option should be used: scenario based approach or the standard formula based approach. In EIOPA's opinion each option should be careful thought and considered. Finally, decision should be driven by undertakings' exposure. IUs should be able to decide which option is adequate to properly reflect the characteristic of catastrophe risk in their portfolio. Event scenario is a preferable option but the final decision should be made based on the scope and aim of the exercise. EIOPA agrees with the stakeholders that the approach (method) for claims management and reinsurance recoverables should depend on the goal set for the stress tests exercise.

AMICE	We view the standard formula as a very good starting point to calibrate stress tests and derive a return period providing information on the severity of the stress tests undertaken. This is necessary to achieve credibility in the communication of the results. An infinite number of stresses and scenarios could be generated and it does not help to propagate output results of such exercises with no link to a known context of the drivers of risks as conceived in the standard formula. Under new designs, one could easily create strong bias and heterogeneity among the participants or the markets.
German Insurance Association (GDV)	The current Solvency II requirements related to catastrophe risk scenarios (Nat-cat und man-made) allow for the well-argued recognition of the impact of such events on the industry. Since the parameters in the Standard Formula under Solvency II were recalculated in the EIOPA's second set of advice to the European Commission on specific items in the Solvency II Delegated Regulation, there is no evidence for a new recalculation. If necessary, in our opinion a modification of the current framework should be applied.
<b>Q50 - What is your view on the approach to the application of the Shocks: A) claim disbursement; B) full reserve presented on the claim disbursement?</b>	
Actuarial Association of Europe (AAE)	Under the one-year SII point of view, most of the damage should still be paid out of the reserve. Therefore, we would prefer the variant B.
Norwegian Actuarial Society	Gross impact - Claim disbursement is much more straightforward to compute, therefore less onerous on the business as a scenario and more consistent as a scenario. If anything, should be more conservative than a full reserve, as a shock to the business. However, does require definition of assets to be utilised and consideration of liquidity of assets. For those companies with complex reinsurance recoveries and potential bad debt risk, option A may not capture the risk sufficiently. Therefore, would suggest option B if net losses are the focus of the test or scope is 'businesses with high reinsurance levels'.
Assuralia	The choice of approach to claim disbursement should be related to the objective of each exercise and whether it is an instantaneous or multi-year exercise. For an instantaneous stress test, a full reserve approach seems to be the more suitable approach because in the case of a severe catastrophe, it is more likely that it will take some time to evaluate, investigate, estimate and pay the claims.
Insurance Europe, CRO Forum & CFO Forum	The choice of approach to claim disbursement should be related to the objective of each exercise and whether it is an instantaneous or multi-year exercise. For an instantaneous stress test, a full reserve approach seems to be the more suitable approach because in the case of a severe catastrophe, it is more likely that it will take some time to evaluate, investigate, estimate and pay the claims. The technical specification should clearly define the requirements as a consequence of the increase in technical provisions.
AMICE	The choice in the approach depends on the goal set for the ST Exercise. Approach A) can produce interesting indications about the insurer's ability to rapidly pay claims with an impact on the P&L (losses or gains when selling assets). Approach B) will provide more information on the impact on the insurer's solvency position with a post stress SCR recalculation
Allianz SE	A) is considered more appropriate.
German Insurance Association (GDV)	This depends on the scenario under consideration.
<b>Q51 - What is your view on the options presented on the treatment of the reinsurance recoverables?</b>	
Actuarial Association of Europe (AAE)	a) analogous to Q.50 b) reinsurance default could be possible, however we have a scenario consisting of natural catastrophe and reinsurance default risk jointly.
Norwegian Actuarial Society	Delay to receipt of reinsurance recoverables should be factored into the scenario. For option B, this can be factored in, consistent with assumed TP payment patterns. For option A, a factor should be required for potential delay in receipt of funds (in addition to bad debt) where material.
Assuralia	If the shock is instantaneous, it is more plausible that recoverables are accounted as credit to be received from reinsurers.
Insurance Europe, CRO Forum & CFO Forum	If the shock is instantaneous, it is more plausible that recoverables are accounted as credit to be received from reinsurers. The stress test specifications should make clear the requirements regarding the calculation of the counterparty default risk, reinsurance availability and the effect of any reinstatements. The stress test scenarios should, to the greatest extent possible, be in line with business practice. Therefore, DTA and DTL should be recalculated. The rules introduced in the new Solvency II Delegated Acts should be used to calculate DTA/DTL and to explain the evolution of the post-stress DTA/DTL.
AMICE	see Q50
Allianz SE	<ul style="list-style-type: none"> <li>• Reinstatements should be considered.</li> <li>• Consideration of reinsurer creditworthiness would add increased complexity without significant value added.</li> </ul>

<b>Q52 - Do you have suggestions on the treatment of the post-stress DTA/DTL and on potential controls to be applied?</b>		
Norwegian Actuarial Society	Full re-valuation is considered ok, as long as the shocks are realistic for both asset and liabilities, and the valuation for tax regime is consistent. Where there is a large difference in valuation, some of the results will be unreasonable.	According to the feedback received, any alternative proposal to a full recalculation of the deferred tax assets and deferred tax liabilities post stress was not deemed as appropriate. EIOPA agrees to the full recalculation of the DTA and DTL under stressed situation and disregards the alternative proposed in the Discussion paper, e.g. Keeping their value unchanged with respect to the baseline. On the LACDT, in case of full recalculation EIOPA consider to request information on the approach followed to recalculate the LACDT post stress and its appropriateness. In case the participant would not pursue a full recalculation it is allowed to approximate the post stress LACDT with the value of their post stress net-DTL.
Assuralia	The stress test scenarios should, to the extent possible, be in line with business practice. Therefore, DTA and DTL should be recalculated. The rules introduced in the new Solvency II delegated act should be used to calculate DTA/DTL and to explain the evolution of the post-stress DTA/DTL.	
Insurance Europe, CRO Forum & CFO Forum	The stress test scenarios should, to the greatest extent possible, be in line with business practice. Therefore, DTA and DTL should be recalculated. The rules introduced in the new Solvency II Delegated Acts should be used to calculate DTA/DTL and to explain the evolution of the post-stress DTA/DTL.	
AMICE	We think it is paramount that the stress test results produce meaningful and economic results consistent with the starting point. Tax represents an economic item embedded in the prudential balance sheet valuation. Be it before or after stress, the approach must remain economic and bring about relevant net impacts. Depending on local jurisdictions and/or insurers' situations, this item can be moderate or stronger, but it must be taken into account if material according to the rules defined in Solvency II for LAC DT.	
<b>Q53 - Do you consider the information provided sufficient for a revaluation of the post stress position on derivatives? If not please provide indications on the missing information.</b>		
Actuarial Association of Europe (AAE)	The information seems sufficient.	EIOPA will preserve the proposed methodology with regard to the Derivatives
Norwegian Actuarial Society	Questions: Must we reprice all derivatives? Can we use the delta?	
Assuralia	Yes.	
Insurance Europe, CRO Forum & CFO Forum	Yes.	
German Insurance Association (GDV)	The information is considered sufficient.	
<b>Q54 - What are your views on the general approach to simplifications and the materiality criteria?</b>		
Actuarial Association of Europe (AAE)	We welcome proposals for simplifications. Additionally we agree to materiality criteria. But the list in the document with the criteria should not be understand as a final one.	Stress test exercises are usually run in constrained time-frames which may not allow for a full recalculation of all the post stress elements. Simplifications are therefore included in the framework according to materiality and comparability criteria. In order to grant a full understanding of the impacts of the applied simplifications and to ensure an homogeneous treatment of the participants, EIOPA will keep requesting supporting material on the applied simplifications.
Norwegian Actuarial Society	For companies with internal models, simplification must be allowed. Re-parametrisation of the model for the stress parameters is very time consuming and may not provide any more accurate results. Many assumptions are required for a new run of the model.	
Assuralia	The sector supports the general approach to simplifications. However, the use of simplifications should not trigger significant additional requirements (eg. documentation, quantitative justifications). The materiality criteria should be indicative to allow suitable discretion from NSAs in its application.	
Insurance Europe, CRO Forum & CFO Forum	We support the general approach to simplifications but highlights that the use of simplifications should not trigger significant additional requirements (eg. documentation, quantitative justifications). The materiality criteria should also be indicative to allow suitable discretion from NSAs in its application. See also response to Q1, section 4.	
AMICE	We welcome the fact that EIOPA takes into account the challenges in ST exercises and recognizes the need for simplifications. However, the use of simplifications should not result in a large number of additional requirements, eventually involving an increase of the operational burden. Materiality should always remain a meaningful guide for proper prioritisation of focus and efforts to trigger any work and communication. In order to avoid inconsistent views in Europe, we would favour a clear stance from EIOPA with precise thresholds shared among NSAs.	

German Insurance Association (GDV)	<p>We welcome the proposal on the use of simplifications. As stated, undertakings have to use the same models they apply for the calculation of the annual QRT to compute the impact of the scenarios. Hence, the allowance of simplifications in the implementation of the stress test exercise is a key aspect for German insurers.</p> <p>Besides, simplifications should be determined on a company-specific basis in consultation with the supervisor. However, the application of simplification should not be accompanied by a large number of additional requirements (quantitative deviation, excessive documentation, etc.), so that the use of simplification will ultimately result in more effort.</p> <p>When setting the timeframe, care should be taken to ensure that insurance undertakings are given sufficient time to implement simplifications agreed and approved with the supervisor before the start of the stress test calculations.</p>	
<b>Q55 - What are your views on the proposed simplifications for the post-stress LACDT? Do you agree with the rough assessment of the post-stress LACDT with the pre-stress net DTL? If not please provide different approach to identify potential miscalculations of the LACDT</b>		
Assuralia	<p>Capping LAC DT with the amount of net DTL from the base case balance sheet could be penalizing for those undertakings that already substantiate LAC DT, in addition to the net DTL, on the basis of future profitability. The proposed simplification could turn out to be a strong restriction to the degree of allowance for LAC DT, of future taxable profits after the shock event.</p> <p>The stress test scenarios should, to the extent possible, be in line with business practice. Therefore, the rules introduced in the new Solvency II delegated act should be used to calculate LAC DT and to explain the evolution of the post-stress LAC DT.</p>	<p>According to the feedback received, any alternative proposal to a full recalculation of the deferred tax assets and deferred tax liabilities post stress was not deemed as appropriate. EIOPA agrees to the full recalculation of the DTA and DTL under stressed situation and disregards the alternative proposed in the Discussion paper, e.g. Keeping their value unchanged with respect to the baseline.</p> <p>On the LACDT, in case of full recalculation EIOPA consider to request information on the approach followed to recalculate the LACDT post stress and its appropriateness. In case the participant would not pursue a full recalculation it is allowed to approximate the post stress LACDT with the value of their post stress net-DTL.</p>
Insurance Europe, CRO Forum & CFO Forum	<p>Capping LAC DT with the amount of net DTL from the baseline balance sheet could penalise those undertakings that already substantiate LAC DT, in addition to the net DTL, on the basis of future profitability. The proposed simplification could turn out to be a strong restriction on the degree of allowance for post-shock LAC DT substantiated by future taxable profits.</p> <p>The stress test scenarios should, to the greatest extent possible, be in line with business practice. Therefore, DTA and DTL should be recalculated. The rules introduced in the new Solvency II delegated act should be used to calculate DTA/DTL and to explain the evolution of the post-stress DTA/DTL.</p>	
AMICE	Please see Q52	
German Insurance Association (GDV)	For non-life undertakings in particular, it is questionable whether the profitability of future business will be impaired in a stress case resulting from a single event, so that the simplification cited by EIOPA would be justified.	
<b>Q56 - What are your views on the possible simplifications for the use of regression techniques post-stress? In your answer please clearly distinguish between theoretical principles and the viable (in terms of feasibility) solutions in the context of a Stress Test exercise.</b>		
Actuarial Association of Europe (AAE)	<p>We support the additional considerations on the use of regression techniques included in the discussion paper.</p> <p>It needs to be noted that the use of regression techniques such as replicating portfolios without recalibration might potentially not be optimal in cases where severe shifted market levels compared to the base case are prescribed as part of a stress test (same holds for e.g. sensitivity instruments used to approximate the behaviour of specific assets or liability categories). For entities using fitting techniques like LSMC it should be also noted that in case the stress scenario is near the fitting range of the training scenarios possible simplifications might fail. In these cases both timeline and specifications need to consider the possibility for undertakings to make a full bottom-up recalculation, especially to improve reliability and comparability of results.</p>	<p>Recalibration of so-called regression techniques such as replicating portfolios or Least Square Monte Carlo can be a difficult task both theoretically and operationally. However, depending on the severity of the market stress component, there is a common understanding that a full recalibration may better reflect the risk exposure of a company. Against this background, expert judgement is recognized as a second-best option to alleviate the challenging timeline companies might be confronted by it because of their validation internal process or any other constraints.</p> <p>In order to improve the recalibration of their portfolio for future exercises, EIOPA will engage with participants to better understand the level and nature of the applied expert judgement and how to characterize the leeway here allowed. Furthermore, starting from the input received in this consultation, additional work is already scheduled to identify the bottom line in terms of necessary extra hypotheses to alleviate the burden of those recalibration features. As a starting point, implicit volatility surfaces both for equity and interest rates will be investigated.</p>
Insurance Europe, CRO Forum & CFO Forum	A full and complete recalibration of proxy functions would not be a viable solution for the time frame of the stress test.	
Allianz SE	<p>We support the additional considerations on the use of regression techniques included in the discussion paper.</p> <p>It needs to be noted that the use of regression techniques such as replicating portfolios without recalibration might potentially not be optimal in cases where severe shifted market levels compared to the base case are prescribed as part of a stress test (same holds for e.g. sensitivity instruments used to approximate the behaviour of specific assets or liability categories). In these cases both timeline and specifications need to consider the possibility for undertakings to make a full bottom-up recalculation, especially to improve reliability and comparability of results.</p>	
German Insurance Association (GDV)	<p>We support the additional considerations on the use of regression techniques included in the discussion paper.</p> <p>Approximations are indispensable, since a "simple" evaluation of the RPF on a new strongly bent economy would not be appropriate and a new replication in the context of a stress test would not be feasible.</p> <p>The possibility of full bottom-up recalculation should be allowed in cases where severe shifted market levels compared to the base case are prescribed in the stress test specifications. This would improve reliability and comparability of results.</p>	
<b>Q57 - In case of a scaling approach what are the proper parameters to estimate the post-stress loss distributions?</b>		
Actuarial Association of Europe (AAE)	The proper parameters depend on the structure of the portfolio (e.g. business mix, guarantee mix) and the inherent nature of the business. For that reason there are no common parameters which hold for all types of business.	

Insurance Europe, CRO Forum & CFO Forum	<p>From a pure asset perspective, a thorough calibration of a scaling approach would require the determination of the stressed value of all the underlying market data used to inform the calibration of the distribution of market and credit risk factors.</p> <p>Considering that each Internal Model is characterised by its own specific choice of risk factor granularity and market data, a suitable compromise could be providing stressed values for the most relevant market indicators such as:</p> <ul style="list-style-type: none"> <li>• Stressed IR curves for the most relevant currencies</li> <li>• Stressed FX rates</li> <li>• Stressed values of EQ markets split by geographical region AND sector.</li> <li>• Stressed values of spread split by sector (e.g. Sovereign, Financials, Non-Financials).</li> <li>• Stressed IR Volatility surfaces for the most relevant currencies.</li> <li>• Stressed EQ volatility surfaces for the most relevant markets.</li> </ul> <p>It should be taken into account that the use of a scaling approach produces sensible results insofar as the underlying polynomials supporting regression techniques are not pushed beyond their range of validity.</p> <p>For the recalculation of the liabilities, a scaling approach could consist of factorising just the changes in the financial or underwriting variables subject to shock under the stress test into the valuation model, subject to the following assumptions:</p> <ul style="list-style-type: none"> <li>• The same/unchanged MVBS at the reference date is considered as a baseline for the stress test (without taking into account measures, actions or risk mitigating strategies that rely on taking future actions after the reference date),</li> </ul> <p>The same/unchanged SCR framework is used to calculate the SCR post stress (without recalibrating risk factors, without re-fitting proxies, etc...).</p>
German Insurance Association (GDV)	Market variables in the economy need to be tested. In particular, interest rates (start curve and volatility, if applicable), spread (for all rating classes, start curve and volatility, if applicable), equities and real estate assumptions. If technical provisions are also stressed, corresponding assumptions should be made there.
<b>Q58 - In case of a full recalibration of the regression techniques against stressed conditions what are the parameters you may need as an input? Would the addition of other price categories in the list of asset shocks and the volatility surface reassessment under stressed situation be enough to re-calibrate your different tools?</b>	
Norwegian Actuarial Society	No comments. This will be specific for each internal model.
Insurance Europe, CRO Forum & CFO Forum	<p>From an asset perspective, a full recalibration would require a revaluation of the whole asset portfolio in the new stressed base case.</p> <p>The set of required information to perform such a repricing is the same as described in Q.57.</p> <p>In terms of liabilities proxy functions, such inputs could potentially not be sufficient to perform a full recalibration of the regression techniques against stressed conditions. In fact, the same set of input collected at the reference date in the context of the official internal methodologies and processes would be needed to perform a full recalibration.</p>
German Insurance Association (GDV)	Basically all assumptions that we need for a year-end calculation. In addition to those from Q57, this applies in particular to the volatility for interest rate/spread, but also to any further assumptions required regarding the more detailed valuations of market value changes of the assets under this economy.
<b>Q59 - What are your views on the extra resources required to achieve a full and complete recalibration? Please quantify the amount of days involved and how important the expert judgement is.</b>	
Actuarial Association of Europe (AAE)	<p>A full bottom-up recalibration will impact IT and personnel resources and the timelines need to be properly planned especially with respect to parallel activities (closing runs, model change testing activities).</p> <p>Expert judgement is an integrated element of the application of each regression techniques This application of expert judgement is subject to a strict governance process including definition of quality criteria in line with internal model standards. In cases of very severe market shocks one might observe that the replication quality will be lower with respect to these quality criteria.</p>
Norwegian Actuarial Society	At least 2 months. Heavily depend on expert judgment.
Insurance Europe, CRO Forum & CFO Forum	A full and complete recalibration of proxy functions would not be a viable solution for the time frame of the stress test.
Allianz SE	<p>A full bottom-up recalibration will impact IT and personnel resources and the timelines need to be properly planned especially with respect to parallel activities (closing runs, model change testing activities). In terms of personnel resources, we estimate an additional need of two weeks only at Group level, but similar efforts would need to be accounted for at operating entity level.</p> <p>Expert judgement is an integrated element of the application of (in our case) the replicating portfolio technique and especially relevant in the selection of the replicating portfolio. This selection of the replicating portfolio is subject to a strict governance process including definition of quality criteria which will be followed also in a full recalibration for stress test purposes. In cases of very severe market shocks we might observe that the replication quality will be lower with respect to these quality criteria.</p>
German Insurance Association (GDV)	<p>In comparison to the simplification procedure, the full recalibration would be an immense effort. A full and complete recalibration need to be properly planned. Clear specifications would have to be established very early in the procedure. Likewise, parallel activities must be taken into account eg. closing dates.</p> <p>In terms of resources, we estimate the use of 10 man days for the full recalibration. Expert judgement is a key part of the process in the selection and application of the replication portfolio.</p>

<b>Q60 - What are your views on the proposed simplifications for the use of LTG and transitional measures post-stress?</b>		
Actuarial Association of Europe (AAE)	With regard to Long Term Guarantees and Transitional measures, we have no further comments. Simplifications seem useful.	Noted
Assuralia	The long-term guarantee (LTG) and transitional measures should be allowed for, in line with the Solvency II regime. This includes re-calculation of the TMTP, which reflects how this would be treated in practice under stress. A requirement to hold the TMTP at pre-stress levels would give a misleading indication of its impact on solvency.	
Insurance Europe, CRO Forum & CFO Forum	The long-term guarantee (LTG) and transitional measures should be allowed for, in line with the Solvency II regime. This includes re-calculation of the TMTP, which reflects how this would be treated in practice under stress. A requirement to hold the TMTP at pre-stress levels would give a misleading indication of its impact on solvency. Additionally, the VA has to be recalculated and used in a consistent manner with the stress scenarios.	
German Insurance Association (GDV)	The allowance in the stress test of the proposed simplifications for the use of LTG and transitional measures post-stress is an essential aspect for German insurers. This is crucial to guarantee the comparability and interpretability of the post-stress results with the baseline model based on the results under Solvency II.	
<b>Q61 - What are your views on the proposed simplifications for the calculation of the post-stress risk margin?</b>		
Actuarial Association of Europe (AAE)	The proposed simplification of using the RM simplification one level below in the hierarchy might not make sense, especially if methods 3 or 4 would be used not capturing properly the discount impact next to the SCR projection. The balance between time saved and loss of accuracy might not be respected especially if the RM is an important validation check as indicated under 6.2.3. No comments on the proposed simplifications for the calculation of the post-stress risk margin. However in addition to the mentioned simplification in para. 258 it should also be allowed to calculate the post-stress RM by multiplying the baseline RM with the ratio of the relevant post-stress SCR and baseline SCR.	The full recalculation of the post-stress risk margin using the same method applied for the year-end balance sheet remains the preferred option. Conscious of the complexity of such calculation EIOPA will allow participants to estimate their post stress RM using one of the four methods included in the SII regulation independently by the one applied in the standard reporting. Independently of the approach applied, negative risk margins are not accepted.
Norwegian Actuarial Society	Reasonable.	
Assuralia	Given the high level of complexity involved in the calculation of the post-stress risk-margin, the insurer should be able choose the appropriate approximation method for their company. This should not be prescribed by EIOPA.	
Insurance Europe, CRO Forum & CFO Forum	Given the high level of complexity involved in the calculation of the post-stress risk-margin, the insurer should be able choose an appropriate approximation method for their company. This should not be prescribed by EIOPA.	
AMICE	We welcome any proposal to simplify the calculation of the post-stress risk margin. Nevertheless, given that the impacts are of a secondary nature, we prefer to use simplification No. 4 based on the ratio "Risk margin / Technical provisions" before stress.	
German Insurance Association (GDV)	We strongly believe that simplifications (allowance of all levels) should be allowed calculating the post-stress risk margin. We are of the opinion that the participating undertakings can calculate their risk margin using any of the four options available in the current regulatory framework. This does not interfere in any way with the interpretation of the results, since any of the simplifications are consistent with Solvency II. Likewise, especially in cases where shocks affect risk modules that are not included in the standard risk margin calculation, any of the four possibilities would return very similar results.	
<b>Q62 - What are your views on the group consolidated based approach? Do you agree with the drawbacks presented on the group consolidated based approach? If not can you provide ideas on how to allow a proper validation of the results?</b>		
Assuralia	The sector agrees with EIOPA's articulation of the problems associated with the model points group consolidated approach – we do not consider this approach to be viable. It is important that EIOPA recognises that it is not feasible or practical to run stress tests of this nature, which replicate full actual reporting valuation and consolidation processes. As noted in response to Q14, the sector supports the use of solo-entity based exercises, which avoid the very significant additional complexities of group consolidations. Should group exercises be specified, there needs to be recognition that the use of simplifications and approximations will be required. This complexity is significantly increased where group results are required at high levels of reporting granularity, such as was the case for EIOPA's 2018 stress testing exercise. Internal stress and scenario testing (SST) models are typically not designed, and do not need to be designed, to generate this level of granularity of output.	Noted

Insurance Europe, CRO Forum & CFO Forum	<p>The insurance industry agrees with EIOPA's articulation of the problems associated with the model points group consolidated approach.</p> <p>It is important that EIOPA recognises that it is not feasible or practical to run stress tests of this nature, which replicate full actual reporting valuation and consolidation processes. The complexity of group exercises is significantly increased where group results are required at high levels of reporting granularity, such as was the case for EIOPA's 2018 stress testing exercise. Internal stress and scenario testing (SST) models are typically not designed, and do not need to be designed, to generate this level of granularity of output.</p> <p>As noted in the response to Q14, should group exercises be specified, there needs to be recognition that the use of simplifications and approximations will be required. The granularity of any reporting requirements should also be restricted facilitate the use of existing SST models.</p>	
<b>Q65 - Do you envisage any other approach to simplify the consolidation at group level?</b>		
Assuralia	<p>Any change in underwriting shocks that deviates from the SII framework requires a model change of the core actuarial model. Manually changing these models takes a considerable amount of effort and manpower, further delaying the recalculation of the cash flows. Because such a deviation from the SII framework will thus significantly increase the lead time of the stress test, it would be difficult to perform within the strict deadlines of the past stress test exercises.</p>	
<b>Q66 - What is your view on the overall approach of validation and the different types of validations?</b>		
Actuarial Association of Europe (AAE)	<p>Para 268 rightly mentions that information requested in the ST may be quantitative and/or qualitative. We believe that some guidelines on methodologies underlying qualitative assessment would also be useful.</p> <p>We agree with the different levels of validation. Yet, the higher the level the more information of the undertakings is required. This ought not to lead to excessive data collection.</p>	<p>On the data collection, the main remarks pointed in the direction of the excessive qualitative information requested and on the lack of guidance on the qualitative information that were requested in previous exercises.</p> <p>EIOPA is striving to streamline the data collection for future stress test exercises.</p>
Assuralia	<p>The proposed four-level validation framework appears reasonable. However, the following points should be considered in the development of a validation framework.</p> <ul style="list-style-type: none"> <li>• It would be helpful if EIOPA published the Level 0 and Level 1 validations should be made available to companies as completely as possible when the stress test specifications are published.</li> <li>• Mistakes in the calculations and reporting of numbers can be avoided by well written and clear technical specifications.</li> <li>• Early publication of the technical specifications and reporting templates would facilitate better planning of the exercise which would improve clarity. Adjustments or clarifications after the publication of the stress test scenarios lead to a repetition of a part of the work and should therefore be avoided.</li> <li>• Requests for additional information relating to validation should not lead to an unjustified level of additional burden. For instance, in the EIOPA 2018 Stress Test undertakings needed to provide very detailed information on the cash flows values. Taking into account that this exercise allowed the implementation of a top-down approach, the sending of such information was a highly time- and resource-consuming exercise.</li> </ul> <p>The sector would appreciate if EIOPA could make a sufficient consideration as to whether the significantly increased effort of some validation templates justifies the benefit. In some cases, for example, EIOPA could dispense with a detailed recalculation of the results.</p>	<p>The quantity of data point collected will be kept at its lowest to allow a proper analysis and validation of the information provided. QRTs will remain the reference set of templates for the data collection; however, additional information might be collected according to the objective, analysis and validation needs. Any depart from the standard QRTs will be considered in term of cost/benefits and consulted with stakeholders. Templates will be kept as stable as possible, however, as explained in para. 267, the basis for the analysis will always be the standard QRT templates. Notwithstanding this principle reinforced in section 6.1.2, EIOPA cannot commit to design a stress test framework that would never change for all the upcoming years. Indeed, different risk to assess might demand new template to inspect, even if they are part of the regular QRTs but not usually requested for stress test purposes. Furthermore, new risk could emerge as source of vulnerability and not even covered by neither regular QRTs nor ST validation QRTs. In this sort of context, new templates could be designed. As a general principle and explicitly recalled in para. 281, those kind of spreadsheet would be justified and introduced to stakeholder and participant sufficiently long time before the launch of the exercise.</p>
Insurance Europe, CRO Forum & CFO Forum	<p>The proposed four-level validation framework appears reasonable. However, the following points should be considered in the development of a validation framework.</p> <ul style="list-style-type: none"> <li>• It would be helpful if the Level 0 and Level 1 validations are made available to companies as completely as possible when the stress test specifications are published.</li> <li>• Mistakes in the calculations and reporting of numbers can be avoided by well written and clear technical specifications.</li> <li>• Early publication of the technical specifications and reporting templates would facilitate better planning of the exercise which would improve clarity. Adjustments or clarifications after the publication of the stress test scenarios lead to a repetition of a part of the work and should be avoided.</li> <li>• Requests for additional information relating to validation should not lead to an unjustified level of additional burden. For instance, in the EIOPA 2018 Stress Test undertakings needed to provide very detailed information on the cash flows values, which is a highly time- and resource-consuming exercise with significant practical issues and obstacles.</li> </ul> <p>We ask EIOPA to consider whether the significantly increased effort of some validation templates justifies the benefit. In some cases, for example, EIOPA could dispense with a detailed recalculation of the results.</p>	<p>Particular emphasis was devoted to the collection of cash flows. EIOPA recognizes the complexity of the cash flow production and analysis which strongly depends on the nature of the liabilities' portfolio (e.g. presence of optionalsities). However, so far, no concrete and viable suggestion to assess the proper application of the shocks to the Best Estimate has been envisaged. It is also worth noting that in previous exercises cash flow based remarks stemming from the validation process did not automatically triggered request for resubmissions but simple requests for clarification. On the request of qualitative information, EIOPA commits to improve the guidance. This applies in particular when simplifications and approximations are used in the recalculation of the post stress positions (e.g. Risk margin). EIOPA welcomes the proposal of sharing the automatic validation rules with participants in order to reduce the request for resubmission triggered by formal errors. EIOPA is considering how to operationalise this proposal (e.g. share of a simplified version of the validation tool or embedding rules directly into the templates).</p>
AMICE	<p>To the extent possible, validations (in particular: Level 0, Level 1) used by EIOPA should be provided to insurance companies. Insurance companies can identify and adjust potential inconsistencies within the stress test specification or results before submission. Thus, it is possible to avoid resubmissions within a short time span.</p>	
Allianz SE	<p>Regarding "Level 0 and Level 1" validation: The validation tools used by EIOPA and NCAs to evaluate the consistency of results with the stresses specification should be made available to undertakings to reduce the various iterations and amendments following the submission.</p>	
German Insurance Association (GDV)	<p>We recognise that the validation process is a key element in the correct development of the stress test exercise. However, we think that this should not lead to an unjustified additional burden.</p> <p>For instance, in the EIOPA 2018 Stress Test undertakings needed to provide very detailed information on the cash flows values. Taking into account that this exercise allowed the implementation of a top-down approach, the sending of such information was a highly time- and resource-consuming exercise.</p>	
<b>Q67 - What is your view on the approach used for the validation of the Best Estimate under stressed situation using cash flow values and their evolution under stressed situation? Which additional parameters would you suggest to improve the framework?</b>		
Assuralia	<p>The change in the cash flows from the baseline to the stressed situation is a highly non-linear process that depends on many factors eg the precise terms of the underlying contracts. The suggested approach is a reasonable validation method but probably prone to judgement errors on the part of the validator (EIOPA) that potentially leads to many mistaken requests for resubmission.</p>	

Insurance Europe, CRO Forum & CFO Forum	The change in cash flows from the baseline to the stressed situation is a highly non-linear process that depends on many factors, eg the precise terms of the underlying contracts. The suggested approach is a reasonable validation method but probably prone to judgement errors on the part of the validator (EIOPA) that potentially leads to many mistaken requests for resubmission. See also general comments to chapter 2.	
German Insurance Association (GDV)	In particular, Level 0 and Level 1 validations should be made available to companies as completely as possible when the stress test specifications are published. Potential inconsistencies or misunderstandings in the interpretation of the Technical Specification / Information can thus be identified and resolved by the insurance companies before the stress test is submitted, thus avoiding renewed submissions under great time pressure. Example: In EIOPA ST 2018, BaFin and EIOPA sent us comments regarding the submitted templates based on automated validation rules. If these validation rules had been known in advance, some inconsistencies could have been resolved in advance. In addition, a sufficient consideration should be made as to whether the significantly increased effort of some validation templates justifies the benefit. In some cases, for example, EIOPA could dispense with a de-tailed recalculation of the results.	
<b>Q68 - What is your view on a common approach for the Risk Margin estimation even used in Baseline calculations? Which drawback would you envisage if a "Base RM" is used as a control variable?</b>		
Assuralia	The proposed Base RM should not be used in the baseline calculations. As detailed in the response to Q4, the baseline position should always be the insurer's Solvency II position at the relevant date. The additional work created from running a dual-calculation of the RM, pre and post-stress does not appear to be justified if EIOPA has previously made suitable validations of the change in the RM without this additional information.	
Insurance Europe, CRO Forum & CFO Forum	The proposed Base RM should not be used in the baseline calculations. As detailed in the response to Q4, the baseline position should always be the insurer's Solvency II position at the relevant date. The additional work created from running a dual-calculation of the RM, pre and post-stress does not appear to be justified if EIOPA has previously made suitable validations of the change in the RM without this additional information.	
<b>Q69 - Do you have any further considerations on validations which could improve the level playing field?</b>		
AMICE	Clear starting point (baseline, see answer to Q4) with restatements for initial changes (perimeter, modelling, proxies). Documentation of management actions.	
Allianz SE	Reporting templates that are consistent with standard reporting tools / QRTs - but less granular consistent with calculation approaches - and kept stable in content and format over time will also improve and simplify validation processes (please also refer to Q.13.).	
<b>Do you have general comments, remarks, suggestion on Chapter 2?</b>		
Assuralia	The stress testing regime should be proportionate to its objectives and should be used to complement existing reporting. A key question which has not been investigated as part of the consultation is levels of precision/accuracy which are needed to achieve the objectives of the exercises. The 2018 exercise required calculations and requested information of a level of granularity which was significantly beyond that needed to meet EIOPA's objectives. It is unclear how the detailed information on, for example, the structure of the asset portfolio, liability characteristics and cashflows under stress will be used to assess vulnerabilities or raise awareness of threats to financial stability. Stress tests by their nature evaluate areas of vulnerability and exposure to highly uncertain hypothetical scenarios - the levels of precision provided by primary reporting processes are necessary to achieve these objectives. However, the consultation paper still suggests, to a significant extent, that running processes akin to primary regulatory reporting models/processes is required. This is onerous, and not what primary stress and scenario testing (SST) processes are typically designed to support. SST models typically do not generate QRT levels of granular output, as this is not necessary for internal stress testing purposes	Noted
AMICE	We see stress test exercises as macro prudential tools for supervision of global net impacts reflective of actual risks for the sector and potential second round effects. Therefore, it appears necessary to perform them at group level where capital allocation and risk management is steered by governance and where mutualisations, diversifications, risk mitigations and intragroup nettings strike the right balance.	
<b>Do you have general comments, remarks, suggestion on Chapter 4?</b>		
Assuralia	A realistic view of the vulnerability of the insurance sector can only be achieved if the specifications underlying the exercise are consistent with economic reality. To properly assess the potential systemic impact of the adverse economic events, the extreme scenarios being tested must remain plausible, economically justifiable and should be internally consistent. The technical specifications for the 2018 exercise contained several significant inconsistencies which are contrary to Solvency II regulation and standard market practice. This inhibits the usefulness of the exercise in assessing what the true potential risk drivers of systemic risk are. To highlight the extreme nature of these events and inconsistencies within the specifications, any public reporting of the results should contain appropriate referencing and caveating. EIOPA's estimated return period for each scenario should also be disclosed.	

Insurance Europe, CRO Forum & CFO Forum	<p>A realistic view of the vulnerability of the insurance sector can only be achieved if the specifications underlying the exercise are consistent with economic reality. To properly assess the potential systemic impact of the adverse economic events, the extreme scenarios being tested must remain plausible, economically justifiable and should be internally consistent.</p> <p>As a general principle, stress test exercises should not only assess the negative implications of a scenario but should also recognise any positive offsetting effects which may arise in a stress situation. For example, while there are clearly risks associated with future climate change, there will also be opportunities for insurers. To gain a credible picture of the likely impact of certain events, both the positive and negative implications of an event need to be considered.</p> <p>The technical specifications for the 2018 exercise contained several significant inconsistencies which are contrary to Solvency II regulation and standard market practice. This inhibits the usefulness of the exercise in assessing what the true potential drivers of systemic risk are.</p> <p>To highlight the extreme nature of these events and inconsistencies within the specifications, any public reporting of the results should contain appropriate referencing and caveating. EIOPA's estimated return period for each scenario should also be disclosed.</p>	
<b>Do you have general comments, remarks, suggestion on Chapter 5?</b>		
German Insurance Association (GDV)	Regarding the „Insurance Stress Test 2018“: The size of the shocks, EIOPA deduced from the scenarios, is rather extreme, particular with reference to the market shocks. Analysing shock levels for individual market risks resulted in values that are historically within a quantile range of over 90%. The combination of these shock levels leads to a very unlikely stress scenario. As a result, only small findings can be derived from the results of such extreme scenarios.	
Norwegian Actuarial Society	We ran a bit out of time in the working group and did not have time for all the questions. We have therefore left 37-48 and 66-69 open.	
<b>Do you have general comments, remarks, suggestion on Chapter 6?</b>		
Assuralia	The results of the stress test exercise should be restricted to any required supervisory assessment and any public disclosure should remain at an aggregate level. Early engagement with industry and appropriate timelines should be foreseen to ensure a smooth execution of the process. This would help to reduce errors and improve consistent understanding and interpretation.	
Insurance Europe, CRO Forum & CFO Forum	<p>The results of the stress test exercise should be restricted to any required supervisory assessment and any public disclosure should remain at an aggregate level. It is necessary to clarify the context of the exercise on whether the objective to assess the industry's resilience at micro or macro level has been met, in order to facilitate the correct interpretation of any results by the relevant stakeholders.</p> <p>Early engagement with industry and appropriate timelines are necessary to ensure a smooth execution of the process. This would help to reduce errors and improve consistent understanding and interpretation.</p> <p>Technical specifications and templates for the relevant stress scenarios should be circulated to companies well in advance of the delivery date. This would help to safeguard greater quality and meaningfulness of the output, as well as allowing development of the tools and processes needed to perform the exercise.</p>	