NAIC Responses to Questions Received Regarding RFP #2053

This document contains responses to questions the NAIC received from potential bidders on RFP #2053. Certain similar questions have been combined. Question 13 references specific lettered items in RFP #2053.

1. Is it the NAIC’s intention that the vendor replicates the existing AAA scenarios, or is the intention to convert to the vendor’s model?

The intention is not to replicate the existing AAA scenarios. The NAIC is soliciting proposals from vendors to provide, maintain, and support an ESG. The expectation is that the selected vendor will work with the Life Actuarial (A) Task Force (LATF) and the Life RBC Working Group (LRBC WG) to review and customize ESG features and parameters as requested. Section III.D of the RFP asks for information on the level of customization available to regulators in specifying ESG features and parameters. For example, regulators may want to specify a certain type of mean reversion formula, the historical period used to determine parameterization, or other items.

2. Subsection O of the “Content of Proposal” section requests “…first year and ongoing ESG software licensing costs for … companies that may wish to license the software for up to five years.” Is the NAIC planning to be involved in the software licensing process for such companies? Moreover, is it being implied that the price would be frozen for five years, or should vendors simply provide pricing for license terms of up to five years?

The NAIC is not planning to be involved in the software licensing process with companies. The intent of Subsection O is to gain an understanding of the licensing costs for each stakeholder group and is not meant to imply that pricing would be frozen for five years. If multi-year licensing is offered by the vendor, license costs should be provided for up to five-year terms.

3. Is there a specific start date that the NAIC would want to be used for the comparison between the vendor’s scenarios and the academy scenarios? If so, could you please make available the VM-20/VM-21 and C3 Phase 1 scenarios as of that start date?

The date for comparison should be 3/31/2020. The generators can be found at https://www.soa.org/tables-calcs-tools/research-scenario/ and https://www.naic.org/cmte_e_lrbc.htm. Please utilize the generators to produce the scenarios for the comparison.

4. What is the timescale for implementation of the ESG solution?

Once an ESG vendor has been selected, implementation of the ESG will require additional steps such as the following: 1) consideration and adoption of any potential ESG parameter modifications desired by regulators; 2) a field study to assess the impact on reserves and capital; 3) drafting, exposure, and adoption of any Valuation Manual amendments and RBC instruction changes necessary to incorporate prescription of the new ESG; 4) documentation on the ESG methodology and parameters; and 5) training on the use of the ESG. This entire process is expected to be completed no sooner than 2022 (i.e. effective for the 2022 Valuation Manual).
Note that to be included in the 2022 Valuation Manual, the new ESG would have to adopted by the NAIC Plenary at the August 2021 Summer National NAIC Meeting.

5. Would NAIC consider a solution in which the provider takes over calibration and development of the AIRG (Academy Interest Rate Generator)?

The NAIC may consider a solution that builds on the functionality of the AIRG with enhancements determined by regulators. However, the AIIRG is under the proprietary ownership of the Academy, and it would be necessary for the NAIC to negotiate the Academy’s permission in order to make modifications to its ESGs.

6. Please can you provide more information on the equity and bond funds the NAIC expect the provider to model in the ESG other than those modelled in AIRG? For example, do you have ISINs or other references for these funds?

These specifications will be determined by LATF and LRBC WG after a vendor is chosen. In your bid, please provide a listing of the equity and bond funds currently available with your ESG as part of your response to Section III.E of the RFP.

7. Does the NAIC require modelling of US assets only in US Dollar terms only or are other currencies required?

These specifications will be determined by LATF and the LRBC WG after a vendor is chosen. In your bid, please provide a listing of the currencies that are supported for asset modeling as part of your response to Section III.E of the RFP.

8. Under Deliverables, Section II, Item L,
   a. What is the anticipated frequency of parameter updates?

   In Section III, Item K the NAIC is asking for the vendor to provide the frequency of review and consideration of updates for each ESG parameter, along with the rationale. This will be taken into consideration by LATF and the LRBC WG to determine the frequency of parameter updates after a vendor has been selected.

   b. Would it be possible to provide some more examples of the sorts of parameter changes that might typically be requested?

   Specific parameter changes are to be determined.

   c. Please can you provide more detail and examples regarding the type of the research expected under Item L1?

   The research the RFP is referring to is regarding any activity the vendor performs to make a change requested by regulators and produce technical specifications.
9. Item II.L refers to parameter updates, while Content of Proposal, Section III, Item D.3 suggests both “features” and parameters may be required. Please can you clarify if any changes and research requested would relate to setting of parameters only or would formulae or model features also be expected to be changed?

Changes and research requested may relate to setting of parameters as well as ESG model formulae, features, or functionality.

10. Would NAIC require an ESG which allows for the possibility of negative interest rates?

LATF and the LRBC WG will determine specific features of the ESG after a vendor is chosen. In your bid, please provide information on the ESG’s capability to produce negative interest rates as part of your response to Section III.C of the RFP.

11. There are two aspects to the RFP. To what extent is the NAIC willing to separate these two functions, with the possibility that the second may be picked up by the American Academy of Actuaries:
   a. Software implementation of the ESG and technical support of users, including monthly updates of scenarios based on new starting conditions.
   b. Advice regarding revision and enhancement of the ESG in the future including but not limited to:
      i. Updates of parameters
      ii. Addition of other types of invested assets
      iii. Incorporation of credit spreads
      iv. Incorporation of foreign currency exchange rates
      v. Revisions to the allowed method for selection of subsets of the 10,000 scenarios
      vi. Revisions to the underlying stochastic model, including but not limited to allowance for negative interest rates, more persistence of low rates, or use of “market consistent” expectations.

The NAIC is not planning to separate these functions. Beginning in early 2017, the Academy notified the Life Actuarial (A) Task Force (LATF) that it did not have the resources to maintain the ESGs, except in their current form until a suitable replacement can be found.

12. The NAIC seems to understand that changes in the economic environment over time should be somehow reflected in the ESG. The RFP suggests that periodic recalibration may be required. Is the NAIC willing to consider the use of market expectations along with historical data in such recalibration? This does not imply making the ESG risk-neutral, rather, the question is whether the NAIC might consider real-world re-calibration on every start date to incorporate market expectations regarding the expected path of future interest rates and the starting level of volatility, based upon analysis of market prices for long term investments. This is a fundamental question, because the current ESG is does not reflect market expectations and is not market-consistent in either a real-world or risk-neutral sense.

LATF and the LRBC WG will determine specific features of the ESG after a vendor is chosen. In your bid, please provide your current methodology for ESG parameterization as part of your response to Section III.D of the RFP.
Questions on Section II – Deliverables

Initial Deliverables (Items with One-Time Costs)

a. We understand that the NAIC intends to continue to provide scenarios free of charge per the current practice. Would the NAIC be open to proposals for a partnership based on a two-tiered (basic free NAIC branded ESG, premium paid NAIC branded ESG) approach. In this approach [The Vendor] could provide a public ESG in line with the current AAA ESG as well as a more sophisticated offering based on our commercial software with appropriate and attractive revenue sharing arrangements with NAIC.

The NAIC has made no commitment to provide scenarios free of charge. Please include proposed details regarding any potential partnership and costs in your bid. It should be noted that basic functionality should be the same between two different offerings such that the required scenarios produced by each would be the same for a given subset and valuation date.

b. Is the NAIC able to provide guidance around the expected time commitment for this effort? For example, monthly meetings for 1-2 hours per meeting?

It is anticipated that several meetings with NAIC staff and regulators will be needed to present the specific features and parameters of the ESG and answer questions.

The vendor will also be asked to attend LATF and/or LRBC WG meetings to discuss the features and parameters of the ESG along with potential customizations. The number of meetings is to be determined based on the number of customizations considered and the amount of discussion needed to address questions. LATF and LRBC WG meetings are typically scheduled for 60 to 90 minutes.

The NAIC has made no decisions regarding time and materials. In general, the NAIC prefers fixed fee contracts since they reduce the likelihood of cost overruns on the organization. The NAIC will accept bids that break out costs by time and materials although providing a bid with both options is ideal.

c. This is an R&D effort that might vary depending on the complexity of the requested changes. Will the NAIC consider undertaking some or all of such support on a Time & Materials basis rather than Fixed Cost? Or will there be some structured approach to reviewing the ESG (e.g. monthly review) for this purpose?

Please note that this is an upfront item that is expected to occur prior to the implementation of the ESG for statutory reserves and capital. Ongoing expenses are quoted in the next section.

The NAIC has made no decisions regarding time and materials. In general, the NAIC prefers fixed fee contracts since they reduce the likelihood of cost overruns on the organization. The NAIC will accept bids that break out costs by time and materials although providing a bid with both options is ideal.
d. Does the NAIC want to change the existing methodology for performing the selections, or should it just be a replica of the existing tool/methodology?

The NAIC is not specifying the methodology that the scenario reduction tool should follow. Please provide information on your proposed methodology for scenario reduction with your bid as part of your response to Section III.C of the RFP.

e. Currently the scenario picking tool just takes mid-points of percentile buckets to select the subsets. Does the NAIC wish to change this methodology?

Please refer to item d. above.

f. Constructing a tool to perform the logic of the SERT is simple enough if users supply the adjusted deterministic reserve for the 16 scenarios. Can we assume that insurers will supply this information as input to the tool?

For item f, the NAIC is only asking for a tool to produce the scenarios utilized in the calculation of the stochastic exclusion ratio test, as described in VM-20, Appendix 1.E. The vendor does not need to develop a tool that computes the ratio.

g. Similar to the SERT, in order to identify paths for the CSMP method requires various inputs that users should provide, such as reserve calculations in each path and adjusted CTE 70. Can we assume that insurers will supply this information as input to the tool? Furthermore, VM-21 has been undergoing several proposed revisions and edits recently, including around the CSMP method. Does the NAIC have a latest version of the logic to share (e.g. potentially a not yet public version)? We would also like to confirm our expectation that the NAIC would expect vendors to maintain this tool for any future changes to the CSMP method?

Vendors can assume that users will supply inputs necessary for the tool to produce the scenarios. The requirements for the CSMP tool should be based on the 2020 Valuation Manual. Should the CSMP methodology change in the future, the vendor would be asked to update the CSMP tool.

h. Which statistics does the NAIC have in mind (e.g. percentiles, moments, etc.)? Would these ideally be based on a fixed set of reports, an ad-hoc reporting tool, or both?

The tool will need to be able to produce statistics that will be delivered with the scenarios on the NAIC’s website. An ad-hoc reporting tool would be useful for end-users generating scenarios on the fly.

Potential statistics could include:

- Accumulation factors at multiple percentiles at different points in the projection
- Interest rates at different percentiles along the projection
- Frequency of interest rate inversions (and potentially other curve shapes)
- Distribution of correlations
- Correlation matrix
• Sharpe ratios
• Statistics that help demonstrate how the generated scenarios are consistent with the intended calibration (e.g. show long term rates consistent with the mean reversion parameter, volatility, skew)

LATF and the LRBC WG will determine the requirements of the statistical tool after a vendor is chosen. In your bid, please provide information on your statistical tool as part of your response to Section III.I of the RFP.

i. Is the level of detail in the documentation expected to be comparable to the existing AAA ESG documentation, more, or less detailed? Does the NAIC intend on making the documentation public (like existing documentation on the AAA ESG), or private (for NAIC eyes only)?

The documentation is expected to be robust and available to ESG end users. The quality of the documentation provided will be judged as one of the vendor selection criteria. Note that Section III.L of the RFP requires information on how end-users of the ESG will be able to generate scenarios on-the-fly through a mechanism such as software licensing, an application programming interface (API), and/or available full documentation of the technical workings of the ESG.

j. Are the training tools expected to be private or public?

Basic user training regarding the use and properties of the ESG and/or scenarios needs to be made available to the ESG end users. The level of training support provided by the vendor may vary for licensees vs. non-licensees. The quality of the training materials provided by the vendor will judged as one of the vendor selection criteria.

Ongoing Production, Maintenance and Support

k. Does the NAIC intend on distributing market data used for calibration as part of the ESG service? Does the NAIC have a preferred source of market data to be used for calibration (e.g. Bloomberg, Thomson Reuters, other)?

Whether the NAIC will distribute market data is to be determined. The NAIC does not currently have a preferred source of market data but expects the data source to be readily available and reliable. Please disclose what your sources are as part of your response to Section III.D of the RFP.

l. Parameter Updates
i. Research requirements/frequency are ambiguous. Can the NAIC provide a hypothetical example? See also the questions to (B) and (C) above.

Please see the response to questions 8a and 8b.
ii. Does the NAIC intend on making such deliberations and any associated documentation public? Would we as the vendor have an opportunity to discuss any such independent reviews with the reviewer, and respond/comment to any questions or feedback?

The NAIC conducts its meetings in open session and invites all interested parties to attend and participate. A few regulator-to-regulator meetings are held, which are not open to the public.

*It is expected that the vendor will participate in meetings regarding the ESG, providing input and responding to comments and questions.*

iii. Is there an established timeline or process for such changes in place currently? Can the NAIC provide a hypothetical example to illustrate it?

*The timeline for ESG changes and parameter updates has not been established. Timelines for routine updates and ad-hoc changes will be determined by LATF and LRBC WG.*

n. Support is included with any of our software license agreements, but special arrangements (e.g. dedicated support resources) can be made for unique situations (e.g. high number of active users) to be sure client needs are met. That said, can the NAIC clarify how many end users they expect to be utilizing the software to estimate the support load?

The ESG developed by the AAA is currently prescribed for Life PBR. The NAIC estimates that approximately 230 companies will value business according to VM-20 in 2020. The AAA ESG is also prescribed for VM-21, but there is an allowance to use non-prescribed ESGs if certain conditions are met. Approximately 130 companies are subject to VM-21. Finally, approximately 160 companies subject to C-3 Phase 1 use the AAA ESG.

*Note that these counts are not mutually exclusive. For example, some companies may be subject to VM-20, VM-21, and C-3 Phase 1.*

*It is anticipated that not all users will be licensing the software. Different levels of support may be provided to licensees of the software and non-licensees.*

o. We interpret this requirement to mean responding to queries of any of the insurers downloading the scenarios from the NAIC website. Is the NAIC able to estimate or share how many such queries are currently received each month and what the expected turn-around time is?

*The NAIC does not have an estimate of the number of monthly queries. Stakeholders that could send questions include insurers, regulators, and NAIC staff. The expected turnaround for such questions is to be determined.*
p. We interpret this requirement to mean providing sample scenario sets for any researched changes under discussion as mentioned in other requirements. Is the NAIC able to provide a rough indication of how many scenario sets are likely to be considered for each change (e.g. backtesting the last 12+ months of valuations with a model change) and the planned frequency of such changes & analysis?

Once the vendor ESG has been selected and any customizations requested by regulators have been implemented, it is anticipated that field testing will be needed to understand the reserve and capital impacts of moving from the AAA ESG to the new ESG. The vendor will be asked to provide scenarios from the new ESG for use in field testing. It can be expected that multiple valuation dates would be used for testing, but the ultimate number of scenario sets is to be determined.

On an ad-hoc basis, LATF and the LRBC WG may request changes to the functionality of the ESGs. Depending on the nature of the changes, regulators may desire testing to compare one ESG version to the next. Again, the vendor may be asked to provide ESG output at multiple valuation dates.

13. Approximately how many companies are required to report reserves and capital under the regulation?

   See question 13.n for information on the number of companies that would be required to use the ESG for reserve and capital purposes.

14. How many of these companies use the AAA solution vs their own solution?

   See question 13.n for a general discussion on the number of companies required to use the AAA solution. The NAIC does not have statistics on the number of companies that utilize proprietary ESGs.

15. How many state regulators are using the current AAA solution?

   The NAIC is aware of a limited number of state regulators that currently utilize modeling software in conjunction with the Academy ESGs for regulatory purposes but does not have an exact number. See question 19 for additional details on state regulators.

16. Can you please clarify differences between ‘help desk’ support for scenario users and ‘full support’ for software users?

   Full support refers to the vendor’s normal level of support for someone who licenses their software. For example, this may include a dedicated phone-line, live-chat support, on-site training, etc. Help desk support for non-licensees may be more limited than full support e.g. it may only include an email-based ticketing system to resolve queries.
17. Are the NAIC expecting to be providing support themselves to end users of the scenarios who have not licensed the ESG software?

It is not currently envisioned that the NAIC would provide help desk support for the ESG.

18. How many state regulators staff would require access to the software?

According to the NAIC’s 2018 Insurance Department Report, the latest available, there are 165 Life/Health actuaries that are full time employees of state insurance departments, but not all of these are expected to require access to the software. State insurance departments also utilize actuarial contractors who may need access to the software.

19. How many NAIC staff would require access to the software?

The NAIC would require access for 10 or fewer staff initially.

20. What level of data or output will be consumed outside of the NAIC by regulators or insurance companies?

Full required scenario output at each projection interval along with summary statistics will need to be made available.

21. Are there any constraints on the specific time on the first business day of each month that the scenarios need to be available to the NAIC?

The NAIC’s preference is for the scenarios to be made available by close of business on the first business day of each month.

22. Is it anticipated that scenarios posted on the NAIC website could be used for purposes beyond the calculation of reserves and capital?

Yes. They may be used for a variety of other purposes such as product pricing and ORSA.

23. Does the NAIC plan to restrict access to the scenario content it publishes on its website?

The NAIC may restrict access to the scenario content.

24. Is there a requirement for generating scenarios for multiple economies?

LATF and the LRBC WG will determine specific features of the ESG after a vendor is chosen. In your bid, please provide information on the ESG’s capability to produce scenarios for multiple economies as part of your response to Section III.C of the RFP.
25. When a provider offers multiple model choices (including AAA scenario generator implementations) can you clarify how models will be evaluated and chosen for further work including customization and calibration to NAIC requirements?

Once a vendor has been selected, LATF and the LRBC WG will evaluate any model choices. Please provide details on the benefits and limitations of these choices in the response to Section III.C of the RFP.

26. Do you have a requirement for scenarios to exhibit arbitrage free dynamics?

LATF and the LRBC WG will determine specific features of the ESG after a vendor is chosen. As part of your response to Section III.C of the RFP, please provide information on the ESG’s capability to produce scenarios that exhibit arbitrage free dynamics.

27. What yield curve should the scenarios be initialized with? It is a requirement of the models to capture negative nominal interest rate both for the starting curve and projected yield curves in the model?

LATF and the LRBC WG will determine specific features of the ESG after a vendor is chosen. In your response to Section III.C of the RFP, please provide information on the ESG’s capability to capture negative nominal interest rates in both the starting yield curve and the projected yield curves.

28. Are there any expected method changes or research to be conducted related to methodology within the “scenario reduction” tool? Is this tool to be used by all companies or just companies wishing to select subsets of scenarios from the scenario sets published at month end on the NAIC website.

The NAIC is not specifying the methodology that the scenario reduction tool should follow. The scenario reduction tool will be used to determine the subsets that are posted to the NAIC’s website. It is also anticipated that many companies will want to use the scenario reduction tool as part of their on-the-fly scenario generation.

29. Are there any expected method changes or research into the approach for the VM-20 Stochastic Exclusion Ratio Test expected as part of the implementation of the new software and service?

No. It is expected that the vendor will produce a tool to generate the scenarios as described in VM-20 Appendix 1.E.

30. Are there any expected method changes or research into the approach for the VM-21 Company-Specific Market Path method scenarios expected as part of the implementation of the new software and service?

No.
31. Should the generator be capable of being called internally via API?

   Ideally, yes. This would be a very helpful means of providing support to end users of the ESG, which is one of the vendor selection criteria. Also, note that Section III.L of the RFP asks vendors to provide information on how end-users will be able to produce scenarios on-the-fly through means such as an API.

32. Is there a requirement for the generator to support nested stochastic analysis?

   LATF and the LRBC WG will determine specific features of the ESG after a vendor is chosen. In your bid, please provide information on the ESG’s nested stochastic analysis capabilities in your response to Section III.C of the RFP.

33. Are there any runtime requirements for the generator around the production of scenarios?

   The only runtime related requirement in the RFP is the ability to produce month-end scenarios by close of business on the first business day of each month.

34. Are there any requirements in relation to the level of automation of the model calibration, scenario generation and validation for ESG software users?

   The RFP requires a sufficient level of automation such that the month-end scenarios and statistics are able to be produced by close of business on the first business day of each month. In your response to Section III.C of the RFP, please provide information on the level of automation available in your product offering for calibration, scenario generation, and validation.