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| ETF_logo_large | STATE OF WISCONSIN **Department of Employee Trust Funds**  **Robert J. Conlin**  SECRETARY | 4822 Madison Yards Way  Madison, WI 53705-9100  P. O. Box 7931  Madison, WI 53707-7931  http://etf.wi.gov |

Date: May 29, 2020

To: All Potential Responders to ETF RFI ETJ0059

RE: **Request for Information (RFI) ETJ0059 – Application Programming Interface (API) and Event Management (EM)**

Vendor Questions and Department Answers

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| Q # | Question | Department Answer |
| Q1 | It seems ETF wants assistance with software licensing, hosting, and implementation services. The API and Event Questionnaire and it’s asking a lot about our ‘solutions’. We don’t have an in-house solution but we do have experience within API and EM. I’m curious if ETF is looking for an existing solution, services, or a combination of both? | ETF is looking for a combination of both. Any vendors who have experience with implementing API and EM solutions, but no actual product, should partner with a vendor with a solution to respond to the RFI. |
| Q2 | Regarding Question FC6, typically this is done at the integration level. Is there a reason why this functionality is asked for directly at the gateway level For example, you would set up connections to these different applications / create an API on top of it and then apply policies. Is that your understanding too? | Within your response please indicate how your solution enables the ability to add connections using standard protocols. If this is done somewhere other than the API Gateway, please indicate as such. |
| Q3 | Regarding Question FC15, for GraphQL, are we just consuming GraphQL API's or exposing or both ? | We may consume, expose, and build GraphQL APIs within the solution. |
| Q4 | Regarding Question FC21, could you please elaborate on specific functions inside of API's? Is it an example of "able to access GET vs POST or able to read data vs write data into DB " i.e. role based access with in the same API | We are looking to be able to authorize users to specific activities such as GET vs. POST. If your solution can provide role based access to functions inside of the API or field level access for GraphQL please indicate as such and describe how it does so. |
| Q5 | Regarding FC29, does ETF have a standard messaging broker that they use today? What is ETF's targeted architecture? Would every integration involve a broker to get a pub/sub architecture or is a broker only needed for true messaging use cases. | ETF uses Rabbit MQ today but is open to any messaging solution going forward. Every integration would not necessarily involve a broker over a messaging architecture. Only those integrations with a need for event messaging would use a pub/sub or other messaging model. |
| Q6 | Regarding FC59, is this question being asked in the context of IP address access restriction? | IP address access restriction is one possible way this could be accomplished. If your solution can do this, please indicate as such and describe how it does (IP address restrictions or otherwise). |
| Q7 | Regarding FC60, could you please elaborate on "How does the solution ensure that only approved data is accessed through machine-to-machine communications". | We want the solution to be able to authorize access from non-ETF systems to approved ETF data sets or functions within ETF APIs. |
| Q8 | Regarding FC71, could you please give a high-level overview of your current landscape including what application you are using for Batch/Real-time etc.. | We use Rabbit MQ for messaging and Control-M for batch scheduling currently. There is not a standard real-time workflow management system in use currently, but we are implementing Hyland OnBase for document management and workflow. |
| Q9 | Regarding FC6, can you provide additional use case details for SFTP transport protocol support in API Management? Are you looking SFTP support for managed file transfer? Is yes then we have support for SFTP in our Integration platform. | SFTP support could be used for managed file transfer or other use cases to support secure data exchange. Please indicate which transport protocols are supported in your answer and any limitations to how they can be used within your solution. |
| Q10 | Regarding FC11, can you provide more details on this question? Are you looking for a feature to enforce rules on API Naming? | Yes, ETF seeks to enforce consistent naming standards for APIs it develops. If your solution provides any capability to enforce consistent naming standards, please describe this feature. |
| Q11 | Event Messaging: What is the context for Even Messaging theme questions in this RFI? | We plan to use Event Messaging capabilities to enable asynchronous system to system interaction in near real-time and in more of a batch type scenario, as well as multiple system workflows with a high need for reliability and delivery guarantees |
| Q12 | Is Wisconsin EFT looking for a new messaging platform along with an API management platform? | ETF currently uses RabbitMQ for messaging, and is open to either continuing with this for event messaging or migrating to a new messaging platform along with an API management platform. |
| Q13 | Regarding NF18, what are the batch systems does Wisconsin EFT use? Is WI EFT looking for batch process capabilities in API Gateway? | We currently use Control-M for batch management and processing. If the API Gateway has batch processing capabilities, please indicate as such. Please also indicate if the solution can integrate with other batch scheduling solutions such as Control-M in your response. |
| Q14 | How many people will require training and what are their roles? Developers/Administrations, etc? | We will have approximately 15-20 people who will need training and they will include Developers, System Administrators, Security Analysts, and potentially others. |
| Q15 | NF17 What BI and Reporting tools does ETF currently use? | We currently use Tableau as our main BI Reporting tool. |
| Q16 | NF18 Describe your batch system integration capabilities including which batch systems the solution integrates with, out of the box.  Please provide more information regarding this feature request and use a case example. | We would like to integrate the API and EM solutions with a batch job scheduling engine. We currently use Control-M for this. In terms of a use case we may have times where we want to kick off a batch job from the API or EM solutions or have the batch jobs running in Control-M use capabilities from the API or EM solutions. |
| Q17 | What, if any, ETL solution is currently deployed at ETF? | We use Alteryx for ETL currently. |
| Q18 | What is the timeline for selecting and procuring the API and Messaging solutions? | We will evaluate the responses of the RFIs and then determine a path forward. We hope to procure a solution or solutions in Q3 of 2020. |
| Q19 | **Re API Management**  **1. A.** Please let us know if you are already leveraging API Management& Event Messaging products/solutions  **1. B.** If yes for 1A, please share us the technology and version details of the products/solutions & pain points. | We currently use a GraphQL server for some lite API Management functions. We also currently use Rabbit MQ for event messaging. The GraphQL solution is an API runtime and not a full API management solution. Our Rabbit MQ implementation is minimal and we have not implemented robust management and monitoring with it. GraphQL is version 11.0 and RabbitMQ is version 3.4.1. |
| Q20 | **Re API Management**  Who are the consumers of API i.e Internal applications, partners/ Benadmins, app developers, Sponsors / state agencies | The consumers of APIs will include internal and external applications. The external applications could be vendors, business partners, or other state agencies. |
| Q21 | **Re API Management**  What assets/applications/services could be made available through an API?  Please provide the list of those with brief functional description of them | We could make available a variety of business functionality through the APIs. This could include business logic to perform calculations, data lookups, document lookups, and other capabilities. Exact functions will be determined based on project needs. |
| Q22 | **Re API Management**  How many APIs are expected to be hosted on API platform. Please share the distribution (by count) of APIs between - Proxy APIs, Process APIs , data API etc | We expect to have dozens of APIs. It is unknown at this time what the distribution between different types of APIs will be. |
| Q23 | **Re API Management**  Please share overall transaction volume expected per day, per month, per year. | Transaction volume will fluctuate throughout the year and will be in the thousands per day during peak times. Overall transaction volume will most likely be in the hundreds of thousands through the year but that is still a relatively unknown number due to the significant expected changes in the systems that will be used going forward to execute our business functions. |
| Q24 | **Re API Management**  Please let us know the consumption patterns of APIs across 24 hours.   And will there be any a sesonal spike in the API consumption. If so - please share.  Please share the year on year growth of API consumption | The APIs will mainly be used during the business day. There may be some usage off hours by batch jobs as well including payment related activities. There will be seasonal spikes in API usage when our business functions are leveraged more by members than what is typical on a day-to-day basis. This happens about 3 times per year. Initially year over year growth will be very high as new APIs are put in place but will level out after a few years but then most likely go up again after about 5 years as the last of a set of new systems is put in place. |
| Q25 | **Re API Management**  Do you have any requirements specifications for API Portal/ Developer Portal. If so - please share the requirements. If so - what is the spike level? | We do not have specific portal requirements. Features for spike control, rate throttling, and other traffic control techniques should be described in your response. Traffic patterns are not known and expected to be variable throughout our systems modernization process, so we do not have specific policies or SLAs defined yet. |
| Q26 | **Re API Management**  What's the typical message/payload size? | Message sizes will be variable, and will be a design decision as we define our specific integrations and workflows. For example, current file-based integrations are batched and process hundreds of records at once; we may move to a web service approach with regular, smaller messages in the future. There is the potential for images or documents in the 200K and over \_ range. |
| Q27 | **Re API Management**  Do you have any predefined standards for logging events/information about API transactions? If so - please share the details | We do not have any predefined standards for logging events/information about API transactions. We would be looking to define and implement standards both at a global and individual level as part of the implementation of the API management solution. |
| Q28 | **Re API Management**  Please let us know if you have an API Strategy already defined. If so - please share. If not - is defining API strategy one of the requirements? | We do not have a formal API Strategy defined. At a very high level we plan to use APIs as the main solution for system to system integration. We would be looking to build an API strategy as part of the implementation of the API Management solution. |
| Q29 | **Re API Management**  Please let us know the automation that expected to archive through metadata (reference FC18) | How we may use metadata for automation is not completely known at this time and will depend on what metadata exists within the solution and how the vendor is defining metadata within the solution. As an example, we may use information about how frequently an API is being updated to report on change volume. |
| Q30 | **Re API Management**  Please let us know the different environments you want the API platform to have e.g. Dev, Test, UAT, preprod, DR, Prod etc. | We expect to have at least 3 environments (Dev, Test, and Prod) and the ability to do DR. Environments beyond that will be evaluated based on value proposition depending on the solution. |
| Q31 | **Re API Management**  Please let us know if there are any suggestions for the deployment topologies for each of the environments. Or you suggest us to recommend. | Please provide the deployment topologies that you would recommend us to use for your solution. |
| Q32 | **Architecture**  Is there a high level architecture diagram available for us to understand the overall integration landscape?  Please share the current middleware architecture & architecture style adopted, corresponding product stacks, their run time-platforms etc. | We will be integrating custom built Java applications running on WebSphere with a DB2 back-end as well as COTS solutions. WebSphere is running on Linux servers and DB2 is on the mainframe. |
| Q33 | **Architecture**  Please share the technical challenges / issues faced currently from the integration standpoint (if any). | The current environment has point to point based integrations mainly at the database layer. There is limited reusability and no central place to manage the integration. We also do not have the ability to secure external access at the level needed for some of the applications we will be deploying in the future. |
| Q34 | **Architecture**  Our understand is the ask is for API solution alone. But referring to NF1, looks like the ask is end to end solution covering presentation, application, middleware, DB etc. IF that is the case - please provide clear requirements about the solution ask. | NF1 is asking about the technologies used by the solution at the different layers. For example, what database does the solution use; not a request for a database solution in general. Depending on the deployment model (cloud or on-premise) this could have a significant impact on us. |
| Q35 | **Architecture**  Do you have any existing deployment automation in place. If so - please share the details | We use Hudson/Jenkins for some automated deployment activities. We also use some in house developed deployment automation for monitoring WebSphere Application Server and deploying applications to it. |
| Q36 | **Audit**  Are there any requirements on the duration for which storing the audit data is expected? | We have different types of Records Disposal Authorities (RDA) for different types of records. Many are 1-3 years, but others can be 7 years or longer. Most transactional audit information can be removed after 3 years. |
| Q37 | **Audit**  Referring to NF9 - what is the purpose of the archiving and do you have any existing archiving mechanism? If not - should we propose a solution for the same | The archiving will mainly be around transactional records associated with the solution. We do not have an existing archiving solution and the vendors should indicate an archiving approach within their response. |
| Q38 | **Authentication and Authorization**  Please share details about your current implementation on enterprise and customer user/credential management | We utilize an Active Directory environment for internal authentication. External authentication is handled through both Active Directory as well as Novell directory. We plan to use external identity providers to support external authentication in the future and we are looking for vendors who can partner with them for this purpose. |
| Q39 | **Availability**  Please elaborate your expectation on the target state for HA and DR. | We expect the system to be available 99.9% of the time. The HA capabilities of the solution should accommodate that. From a DR perspective please see the RTO and RPO information in answer to question 40. We also expect users to not need to do anything unique to use the solution in a DR situation. |
| Q40 | **Availability**  Please let us know the if there are any expected SLAs for the availability requirements like RTO/RPO? | We are targeting 4 hours for RTO and 24 hours for RPO. |
| Q41 | **Availability**  Please let us know the type of data/information you would like to take backup? What is the backup latency expectation? | We would need the data associated with the solution (API configuration, logged data, etc.) backed up. Please see the response to question 40 regarding the RTO and RPO. |
| Q42 | **Availability**  Referring to NF14 - please let us know the use cases that demands this requirement | This can occur when the system fails in the middle of a write activity that hasn’t fully completed. We would like to know how the solution handles fixing the partial write that was done to the database. |
| Q43 | **Availability**  Please let us know the specific system availability requirements | Please see the answer to question 39. |
| Q44 | **Batch Processing**  Please let us know the details of the current batch processing solution and the technology stack | We currently use Control-M for batch processing. It runs on both Linux and the mainframe and executes both Java and COBOL batch jobs. |
| Q45 | **Cost**  For us to determine the implementation cost, please help us understand the monthly volume of Integration related development work? Please provide a breakup of the number of integrations to be developed based on their complexity level for a given month. (for example, number of APIs that needs to be developed, their complexity levels, number of integrating applications, non functional requirements, etc.) | The monthly volume of API development work is not exactly known at this time but will most likely be in the 2-3 integrations actively underway in any given month. To be clear, we are not looking to have the vendors perform the buildout of APIs on an ongoing basis. This will be done by ETF after the initial implementation is complete. We are looking for vendors to assist with the creation of the first few initial APIs built within the solution so we can learn how to do it effectively. |
| Q46 | **Cost Breakdown**  What is the duration of the deal contract - 3 Years, 5 Years, 7 Years, etc? | We have no set deal duration. Please propose a deal duration that you recommend for your solution. |
| Q47 | **Deployment**  Do you have plan to consider hybrid cloud deployment for your applications? | Yes, we would consider hybrid cloud deployment for applications. |
| Q48 | **Deployment**  What is the frequency in which API deployments is expected? In reference F24 | It is expected that API deployments will initially be happening a few times per month. Over time we expect that volume to increase and could grow to a few times per week. |
| Q49 | **Deployment**  Do you have a standard release management that is defined at enterprise level and to be extended to API platform as well? | We currently have a manual release management approach in place that is associated with a weekly change management process. We are currently working on a DevOps project that will put in place a Continuous Integration/Continuous Deployment approach. |
| Q50 | **Development and Configuration**  Please share any currently identified usecases that demands the need of AI, RPA, ML by the solution | We have a number of manual business processes that utilize Microsoft Office technologies that could leverage RPA capabilities to further automate them. Those solutions may benefit from leveraging APIs. The AI portion of this question is from the standpoint of how the solution uses AI to learn how users are using the system and automate repetitive tasks behind the scenes (this could also apply to RPA if the solution has an RPA integration or capability). |
| Q51 | **Event Messaging**  Is there a requirement to enrich the messages? If yes, please elaborate with examples. | We may want to add custom tags to messages for additional downstream interpretation or logging. |
| Q52 | **Event Messaging**  Do you have any requirement for event retention? If yes, what is the retention period? | Please describe your ability to set retention periods for events, including both successfully processed messages and any dead letter queues. Please indicate in your response if message TTL can be set on an individual queue and/or global basis. |
| Q53 | **Event Messaging**  Please share your current monitoring solution in place across the middleware and its coverage? Please share the technology stack | Our current solution is monitored using What’s up Gold by our service provider. In addition to this, ETF has limited implementations of AppDynamics to assist with identifying performance concerns. We also have home grown scripts to monitor our URLs. We will be looking to review monitoring and alerting tools within the next 12 months that will be used to fully monitor our environments. Current technology stack is WebSphere 8.5.5 on RedHat Linux. |
| Q54 | **Event Messaging**  Please let us know the different integration scenarios and patterns does your functional implementation need demands. i.e Synchronous, Asynch, Event Drive, Pub-Sub, Store & forward, Batch, Sequencing | We anticipate using multiple integration scenarios including near real-time, real-time, and batch. These will use synchronous, asynchronous, event driven, pub-sub, store and forward, and sequenced integration approaches. |
| Q55 | **Event Messaging**  Please share the details of retry or reprocess solution you may currently implemented and the technology stack for the same. If not - please share the functional needs of this requirement | We need the ability to retry/reprocess and potentially modify messages that fail. We need the ability to configure the number of retry/reprocess attempts automatically and then alert if that number is exhausted so a system admin can go in and attempt to do so manually. We also require the ability to set TTL on message queues to automatically route messages to dead letter queues. |
| Q56 | **Hosting**  Does the State have a plan for hosting the solution on Cloud? If yes, is there a preferred Cloud Provider? | We are open to hosting the solution in the cloud. No preferred cloud vendor has been identified. |
| Q57 | **Hosting**  Is State planning to consider multiple cloud vendors [like AWS, Azure etc] if they are planning for cloud based solution | Please see the response to question 56. |
| Q58 | **Hosting**  In case of IaaS, can the infrastructure be hosted within ETF's current datacenters? Where are the primary and secondary DC located? | Yes, the infrastructure can be hosted in our state datacenter which is primarily located in Madison, WI with a secondary data center in Milwaukee, WI. |
| Q59 | **Hosting**  If the solution is based on the IaaS / Private Cloud, what are the components that supplier has to consider as part of Bill of Material -  A. DC/DR Hosting Services  B. Computer Hardware  C. Network (Top of the Rack Switches)  D. Network (Firewalls, VPN if hosted in Supplier DC)  E. Operating Systems (Non Microsoft)  F. Database (Non Microsoft) | The vendor should include all components necessary to provide the solution. If we need to purchase any of the components (vs. having them included in the cost of the solution) please indicate that in your response. |
| Q60 | **Hosting**  What are the typical requirements for backup and retention -  A. Assume Cloud Solution  B. Assume On-Premise Solution | Please see the response to question 40 for RTO and RPO information. We expect backups will be kept for a minimum of 30 days. |
| Q61 | **Hosting**  If infrastructure is hosted within ETF's data centers, supplier assumes existing underlying network infrastructure can be leveraged and no additional network equipment is to be considered as part of solution | Yes, that is a reasonable assumption. |
| Q62 | **Integration**  Referring to NF42 - please share the usecases that demands this requirement | We will be processing data files from vendors which could have tens of thousands of records. |
| Q63 | **Logging and Monitoring**  As part of logging and monitoring, please mention the applications that needs to be monitored. Is infrastructure monitoring also part of the scope? | The logging and monitoring requirements are around the API and EM solutions themselves and the components deployed within them, not the monitoring of other applications. Infrastructure monitoring is not part of the scope. |
| Q64 | **Logging and Monitoring**  Are you looking for any custom built monitoring dashboards in the solution or you are okay with native dashboards. If custom build - share the details for the same | The need for custom built monitoring dashboards will be dependent on what the solution comes with natively. |
| Q65 | **System Administration**  Please share your existing test methodology and approach of your middleware platform. Please share the list of testing tools or solution that is currently in use | We currently execute manual testing processes as we go through the development process. We will be looking to put in automated testing within the next 12 months that will be used to test APIs and event processing components. Current testing tools include JUnit, Postman and Zephyr. |
| Q66 | **System Administration**  Please share your existing test methodology and approach of your middleware platform. Please share the list of testing tools or solution that is currently in use | Please see the answer to question 65. |
| Q67 | **Cloud Architecture, Design, and Performance**  Is there a preferred Cloud Landing Zone or can supplier propose based on the solution? | Please see the answer to question 56. |
| Q68 | **Cloud Architecture, Design, and Performance**  Is there an existing network connection between ETF and Public Cloud providers? | There is an existing connection between us and Microsoft. |
| Q69 | **Cloud Architecture, Design, and Performance**  Should the solution be hosted in Government Cloud if Public Cloud (Like Azure, AWS, GCP) is to be leveraged? | Government cloud or equivalent capability/security is preferred. |
| Q70 | **Architecture, Design and Performance**  Is there any offsite vaulting requirement as part of on-premise hosting? What is the duration for such vaulting? | For on-premise hosting, the State of Wisconsin has a secondary data center ETF uses for our off-site and disaster recover needs. We will need to have the ability to keep DR systems in sync at that site as well as redirect/failover to the DR site when needed. As such, we do not have an offsite vaulting requirement. |
| Q71 | **Implementation**  If solution is to be hosted in ETF's datacenters, will DC service provider install the hardware or is the supplier expected to install? | Either option could potentially be leveraged. Please indicate your recommended approach within your response. |
| Q72 | **Support**  If existing tools at ETF are to be leveraged, supplier assumes ETF provide the tools agent rollout, configuration and other integrations | Yes, if existing tools would be leveraged, we would do this. |
| Q73 | Support  Is ETF expecting a Help Desk function as part of this solution?   1. What is the coverage Window for the Help Desk 2. What are the channels for receiving the contacts? 3. What are the average monthly contact volumes? 4. Will ETF provide the Toll Free Number and other Service Desk Infrastructure (like ACD, IVR)? 5. If supplier is to provide, is there a location constraint? 6. What are the languages of support? | No, we are not expecting a help desk function within the solution. We are looking for information on the vendor’s Help Desk support capabilities to interact with our technology staff to resolve issues with the solution. |
| Q74 | **Support**  What is the support window for the infrastructure support? | We expect the infrastructure to be supported 24/7/365. |
| Q75 | **Support**  As part of the solution, is ETF expecting the supplier to provide ongoing support for the infrastructure (either public cloud or on-premise hosting)? | We are open to multiple options. Please indicate your recommended approach within your response. |
| Q76 | **Support**  What is the ITSM tool available at ETF? Supplier assumes same can be leveraged to deliver the services. | We are currently implementing Ivanti and also use Jira. |
| Q77 | **Cloud Security**  (1) What data will be moved on to cloud? Please specify the data classification (Public, Sensitive, PHI/PII,Confidential etc.) or criticality.  (2) Is it Business Critical Data or Business Support Data? This will help understand security control requirement to be considered.  (3) Is there any specific infrastructure security requirement or compliance requirement to be considered? | We don’t anticipate storing sensitive or PHI/PII data in the cloud but that type of data will be going through the solution. The data will be both business critical and business support. Refer to question NF41 for potential security frameworks we will be referencing as we evaluate the responses. |
| Q78 | **Cloud Security**  What are the existing security products/services deployed for the protection of Infra, applications and data in current environment? Like, Anti-malware, Perimeter firewall, OS vulnerability scanner, SIEM, Web App FW etc. | We have multiple products in place to do so currently but for security reasons we do not disclose them. |
| Q79 | **Cloud Security**  Will the State of Wisconsin be interested to leverage their existing security products/solutions for (Firewall, Web App FW, SIEM, Antivirus, any IAM system) for Authentication/Authorization in the cloud environment?  Please share with us the list of current products leveraged by the state to check the feasibility of extending to the cloud environment. | We expect to use new solutions for authentication and authorization that are part of the solution and/or provided by partners of the vendor. Our existing infrastructure security components (firewalls, A/V, etc.) would be used as part of an on-premise or hybrid solution but we would not expect a purely cloud based solution to use them (please clarify if/how the vendor cloud based solution would use them other than for typical firewall rules associated with inbound and outbound traffic management). We will continue to use our SIEM under any deployment model and expect the vendor to be able to ship information to it. For security reasons we do not share the products we use for these things publicly, but will share this information with vendors during implementation as needed. |
| Q80 | **Cloud Security**  Perimeter Protection (a) Are there any specific high availability requirements; Are all the firewalls required in High Availability mode? Please provide the details of how many in HA and standalone mode? (b) Number of VPN Devices and users ( IP Sec, Site to Site etc.). We understand AWS VPG or native VPN Connectivity will be leveraged if any. Please clarify. (c) How many user remote access VPN (SSL VPN) expected? | We expect 99.9% uptime for the solution. The firewalls should be configured to support this. Please indicate in your response if VPN connectivity is recommended between the two entities. We expect this would be a site to site VPN if one is needed rather than a user level VPN. |
| Q81 | **Cloud Security**  Is there any existing end point security solution/license available which is fit for cloud? If not, can Cognizant propose an industry leading Cloud end point protection solution for Cloud Environment? | We do have an existing end point security solution in place today to provide anti-malware and host firewall protection. This solution monitors activity on the device, but would not be integrated into the cloud. At this point, we do not have it on the roadmap to replace our endpoint security solution. |
| Q82 | **Quality Assurance and Engineering**  Please confirm whether consumption of services from the new platform is part of the scope. | If this referring to consuming other APIs, yes, it is in scope. |
| Q83 | **Quality Assurance and Engineering**  What is the test management tool currently being used? | Please see the answer to question 65. |
| Q84 | **Quality Assurance and Engineering**  Do you use any of the licensed or open source test automation tools? | No, not at this time. Please see the answer to question 65. |
| Q85 | **Quality Assurance and Engineering**  Please confirm, if ETF has any automation test solutions that can be leveraged or expected to get integrated with the new platform’s automation regression solution. | Please see the answer to question 65. |
| Q86 | **Quality Assurance and Engineering**  Please confirm, if there are any existing test artifacts available for the existing functionalities. E.g., What level of test automation coverage exist for APIs. | Please see the answer to question 65. |
| Q87 | **Quality Assurance and Engineering**  Please confirm on DevOps strategy envisaged, so that testing can be strategized accordingly (e.g., early API performance testing). | Please see the answer to question 65. |
| Q88 | **Quality Assurance and Engineering**  For performance testing, please provide the expected benchmarks (e.g., no of max concurrent users, no of different user groups, response benchmark etc.). | The access will primarily be coming from other systems. We expect no more than 100 concurrent users max and frequently less than 50. The number of concurrent users will be largely dependent on how the APIs are designed. At times there will be bulk activities occurring, but they will most likely be single-threaded from the requesting system. |
| Q89 | **Quality Assurance and Engineering**  Please confirm if we need to follow any accessibility guideline for the newly built API platform and/or end to end solution. | We use section 508 compliance as the basis for accessibility requirements. |
| Q90 | **Quality Assurance and Engineering**  Do you have any tools (with licenses or open source) and existing guidelines for security testing? | We do have existing licensed tools to perform vulnerability scanning, secured configuration and web application testing. |
| Q91 | **Quality Assurance and Engineering**  Are there existing API test automation and Microservice contract testing frameworks defined for current stack | Please see the answer to question 65. |
| Q92 | **Quality Assurance and Engineering**  What volume or scope of End to End tests you envision for existing distributed systems that will interface with APIs | We expect the number of end-to-end tests to eventually be in the dozens and will be done in an automated manner. |
| Q93 | **Quality Assurance and Engineering**  Are current systems and components expected to communicate and inter-operate asynchronously with APIs | Yes, there will be some systems and components that interact with APIs asynchronously. |
| Q94 | IS ETF looking for an ESB (Enterprise Service Bus)? | We are looking for an integration platform oriented around APIs and message queues. An ESB could be a part of the solution dependent on the vendor’s capabilities and solution set. |

This Addendum is available on ETF’s Website at <https://etf.wi.gov/node/16036> .