Responses to questions are as follows;

No.	Question	CP Ref	Response
1	*The DSB proposes to allow the creation of ISINs for OTC Derivatives through the website. Do you think that ISIN generation should be possible over the web? If not, please describe your reasoning and provide evidence to support your points. the business use case to support your need.*	3	From a technical perspective "over the web" could refer to any number of methodologies. The ability to request the creation of ISINs and the downloading of ISINs should be offered via a dedicated website, maintaining industry standard levels of security and authentication. However, this should not preclude other "web-based" protocols and mechanisms for communication and interaction. This question also does not address manual vs automated interaction via 'the website'.
2	*The DSB proposes to use 0500 UTC to define the start of a new day. Do you think that this time is correct as the starting point for the new subscriptions for ISINs? If not, please explain your reasoning with evidence.*	3	ISIN creation should really be an ongoing process, and there is no requirement to have what seems an arbitrary daily starting point.
3	*The DSB will roll at the end of each day to perform housekeeping tasks etc. This means that all subscriptions and connections will need to be re-established each day. Does this model affect any key business requirements from the industry? If so, please explain including business use cases and any other evidence.*	3	Depending on the downtime this could impact firms operating globally, who may need connectivity at during projected downtimes. Without better understanding of the expected communication requirements and infrastructure, we can't answer any questions regarding re-establishing connections or subscriptions, as this is a vague statement. A restful API would not rely on this kind of communication methodology, for example. The need to re-establish connections would therefore imply some sort of client-server environment that is not stateless.
4	*The file download service permits users to retrieve all the ISINs created to-date. This data is split by asset class (as defined above in the 'file download' process description) and by date. Is this*	3	It would be helpful to have the facility to request by product type within the broad asset class categories which are being offered. As there could be some ISINs requested from the DSB that do not relate to MiFID reporting

	categorization sufficient to meet the industry's needs? If not, please explain, including business use cases and any other evidence.		requirements, some method of relating the ISINs held in the DSB to the reporting obligations of MiFID would be helpful.

As mentioned previously, the use of a 'start of day' in regards to data retrieval seems arbitrary.

Less clear is the implementation methodology that would underpin any 'file download'. Would these only be static batch-created files or would more modern data management tools be utilized to deliver a more dynamic and future proof service?

The use of FIX as a transport protocol to carry a JSON packed would seem to be over engineered, as opposed to utilizing standard JSON-related protocols typically in use. |
| 5 | *Are there processes / use-cases that the DSB has not proposed above but are important to allow the industry to meet the regulatory requirements for ISINs for OTC derivatives? If so, please describe the business use case and explain and evidence why it is necessary.* | 3 | Not at this time, but subject to revision. |
| 6 | *Do you know any products that cannot be represent using a JSON record? If so, please provide evidence to support your point.* | 3 | JSON, as a simple text based, flat, data interchange format, should be able to accommodate what is described, dependent upon a properly defined JSON Schema that defines each JSON object. This schema must be shared and open for use by the industry.

Note that the reference json-schema.org is a draft document of IETF (Internet Engineering Task Force), due to expire on April 16, 2017 (as of this note).

FIX is mentioned repeatedly; the question is will the JSON schema, at an element level, be based purely upon FIX elements and definitions, and if so, what version of FIX?

It is understood that a FIX Protocol Working Group was only recently created (Nov 2016) to investigate a FIX – based JSON solution, akin to FIXML. It is unclear when that work will be completed. Even if completed prior to end Q2 for testing, utilizing such a new (potentially draft) specification could |

			introduce significant risk, and many firms may not be ready to use a new FIX format.
			One concern using JSON may be where complex instruments require referencing of other JSON objects, as JSON, in and of itself, does not handle this gracefully.
7	*As stated above, the DSB will provide access to the set of JSON templates through the File Download service. Will you require access to the templates via FIX or any other method? If so, please describe your requirement and provide evidence as to why it is necessary.*	3	At this point this is not clear, but potentially standard file download procedures (similar to those to be adopted by ESMA for FIRDS downloads) would be useful generally for access to the DSB.
			It is unclear from this question if the FIX question refers to being able to request the set of JSON templates via FIX request, or if the interaction with the DSB will be via a FIX-based protocol that carries a JSON package.
			Regardless, use of a FIX interface to carry JSON packages, as mentioned in the answer to question 4, would seem to be out of place as opposed to using more purpose-specific protocols, assuming these will be static files suited to standard SFTP or web services.
8	*The DSB will send out connection details for the Demo by 24th January 2017 to those organizations who are ready and sequenced to connect. Will your organization wish to connect to the DSB Demo using FIX between February and April 2017? If so, can you indicate when you will be ready to do so?*	4	Not determined at this point.
9	*What functions / processes from those above would you want to test and in what order of priority?*	4	Unclear at this point
10	*When do you think your institution will be ready to connect to the DSB UAT platform (If you wish to do so)? Please note that answers to this question will NOT be published and will be used to understand the size of the requirement for on-boarding support and to identify peak periods.*	5	During Q2 2017, provided DSB publishes connectivity details and clear technical specifications with sufficient lead time.

11	*Do you think the above approach for on-boarding stakeholders onto the UAT platform allows the industry sufficient scope to test and validate their connectivity and functionality before the regulatory deadline? If not, please suggest an alternative approach and why you consider it more suitable.*	5	It is not possible to answer this definitively for the industry, but in general the timeframes are tight. It is not clear what the potential impact of changes/developments to the DSB arising from this and other consultation responses will be. This is not just about the industry being ready but the DSB being ready as well. Without understanding the underlying infrastructure requirements for connectivity, complexity of data templates, alignment of defined schema elements and objects with existing standards and datasets, it is difficult to estimate.
12	*How many FIX connections / COMPIDs does your organization expect to establish with the DSB?*	5	Is this question referring only to UAT? Is there some expected limit to be placed per connection point? Is there going to be the functionality within the DSB to send On Behalf Of requests via COMPID?
13	*Currently, the DSB is not planning to conduct a coordinated UAT with multiple market participants interacting with the system simultaneously. Do you think a coordinated test would have value? If so, would you consider being part of such a test? Please explain your reasoning and what combination of tests you think would be important to conduct in such a scenario.*	5	It is common system development practice to conduct stress tests, and given the critical nature of this system, it would be expected that this would be a priority.
14	*Do you agree with the assumptions made to infer the total number of messages sent by the DSB? If not, please explain your reasoning and provide evidence where possible.*	6	Based on data provided, the expected instrument requests would appear to be underestimated by anywhere between a factor of 10-100, at a minimum, based calculations performed by ISDA. Additionally, it seems erroneous to assume only one connection per firm within the calculations.
15	*Do you agree that the cloud is the most appropriate approach for infrastructure implementation for the DSB? If not, please detail your objections and provide evidence where possible.*	7	We are unable to comment in regards to an ambiguous term such as "the cloud." We note that the DSB plans to select a service partner by February 2017, and this service partner will be expected to provide a 'cloud-based' solution for the DSB (assumed to be purely hosting services). The proven experience and reliability of the partner will be as important as any specific details underlying the infrastructure proposed.

			We cannot comment any further until greater detail is provided on the infrastructure the chosen service partner will maintain, regardless of being 'cloud.'
			Key questions would begin with such topics as public, private or hybrid cloud, sandboxing options, shared or dedicated rack space, and so on.
16	*As stated above, the DSB is initially planning to use two or more datacentres located in different countries in Europe. Do you have any specific objections or concerns with this approach? If so, please detail your points and provide evidence where possible.*	7	This question is somewhat confusing. Is it referring to data-centers provided by the service provider or are these centres in addition to the service provider's facilities? It would have been helpful for the consultation to include a schematic to illustrate the planned infrastructure. Also would these duplicate data centres operate as hot standbys, for failover, or as independent access points to conquer latency issues?
17	*Is there a scenario where 1000ms is not a low enough latency threshold for the DSB to respond with an ISIN? If so, please provide the detail, including the business use case and the process steps to highlight the point at which the latency affects events.*	8	This will depend on the ESMA requirements in regards to when an ISIN will be required to be available. If an ISIN must be obtained prior to trading, implying the need for real-time as opposed to batch creation, then this will imply the need for ultra-low latency. Typical trading latency is measured in microseconds, not milliseconds.
18	*Is there a scenario where a maximum time-lag of 1 minute to respond to a burst affects the ability of the market participant to proceed with its trading activity? If so, please provide the scenario detail.*	8	As per Q17, trading activity is measured in microseconds. We assume that the time-lag relates to requests for ISIN creation coming in large bursts into the DSB. Given the pace of trading activity, a time-lag of 1 minute could impact trading activities if the ISIN is needed before the trade can take place (as the MiFID RTS texts currently state).
19	*Are there other performance and throughput variables that you feel aren't listed here and that will have a significant impact on cost or the service quality? If so, please list and describe them and their effect.*	8	Performance will be a function of the processes which the DSB is performing. Presumably if the DSB provides data validation this will have an impact on performance. It would be useful to know what variables the DSB is working on to allow for data quality checking by the DSB prior to ISIN issuance. Additionally, as mentioned in Q15, there are a significant amount of technical variables that have direct and indirect effects on 'performance and throughput' and have different cost/benefit trade offs.

20	*Are there market participants who must access the DSB outside of the hours specified above to meet the industry's immediate requirement? If so, please explain for what purpose and why this must take place outside those hours.*	9	Firms operating globally have different methodologies for handling activities over time zones that could require access outside of the stated hours, especially in regards to any Far East support. (See answers to questions 2 & 3 already provided)
21	*If the view is to extend the availability hours to allow global access, we may need to extend the system hours to 24 x 5.5. This will increase the support cost of the utility. Please specify and demonstrate any business use cases that require the DSB, in this first phase, to be running and supported for 24 x 5.5.*	9	See answer to Q20.
22	*Are there other availability variables that you feel aren't listed here and that will have a significant impact on cost or the service quality? If so, please list and describe them and their effect.*	9	Unknown at this time.
23	*Do you think the DSB being implemented in the cloud will prevent your ability and/or willingness to connect to the service? If so, please explain and evidence your reasoning.*	10	Without a clear understanding of the 'cloud' service provider and accompanying infrastructure and methodology, we are unable to provide a definitive answer, but the fact that the service would be cloud based does not in and of itself prevent us from connecting.
24	*The DSB intends to execute 1,2 and 5 before launch and then conduct 3 on an annual basis. Do the you think this provides a sufficient test of the system's defences against penetration? If not, please explain your reasoning and provide references to industry standards or best practices to support your response.*	10	The PCI Security Standard does not have applicability to the services DSB is expected to deliver, as that standard speaks specifically to the payment industry and payment transactions security and integrity. The data security concerns for the DSB are related to data storage integrity, DoS protection, and other issues associated with data services versus transaction services. SSAE 16 SOC 1 & 2 and ISAE 3402 accreditations would seem to be more appropriate starting points.
25	*In addition, the DSB will execute a quarterly vulnerability scan or after any significant change. Do you think this frequency provides a*	10	Please refer to the accreditation standards mentioned in the previous question (Q24) that should drive the security and operational approach of the DSB.

	sufficient test of the system's defences against penetration? If not, please explain your reasoning and provide references to industry standards or best practices to support your response.		
26	*Are there other security variables that you feel aren't listed here and that will have a significant impact on cost or the service quality? If so, please list and describe them and their effect.*	10	See Q24.

27	*The DSB is also investigating alternative connection types:*
	   • *Leased line*
	   • *Access via third party networks*
	   • *Direct Cross-connect*
	Please indicate if any of these other options would be preferable to your institutions.
		11	All of these could be considered; at this point we don't have sufficient information to provide any preference here. Service levels will be a crucial determinant.

28	*If you are considering a third-party network, which vendors are you considering? Please note that answers to this question will NOT be published – this question is to inform the DSB regarding any possible prioritization of third-party network connectivity.*	11	Unclear at this time, as it depends upon the offering. Typically, industry participants will prefer to utilize current networking solutions to which they already connected.
29	*Are there other connectivity variables that you feel aren't listed here and that will have a significant impact on cost or the service quality? If so, please list and describe them and their effect.*	11	There are too many open questions regarding scope to determine key variables. For example, real-time low latency needs over batch process will have vastly different variables.
30	*Is 7 years' audit log retention sufficient to meet your company data retention policy needs? If not, please explain why they should be stored for longer and provide evidence to your reply.*	12	Whilst conceptually this would appear adequate it is not clear what this log will capture and be used for.
31	*Is 7 years' audit log retention too long and therefore incurring unnecessary costs? If so, please explain why a shorter period is sufficient and provide evidence to*	12	See previous answer

	your reply.		
32	*Currently, ISINs will be retained permanently and be available in the same way as a brand new ISIN. Is there an age at which an ISIN can be archived away from the main data set? If so, please explain your reasoning and the access requirement for such an archive.*	12	We don't see a particular age as being applicable here.
33	*Are there other aspects of storage requirements that you feel aren't listed here and that will have a significant impact on cost or the service quality? If so, please list and describe them and their effect.*	12	Backup, archiving, archive access, replication.
34	*Is a recovery time of 4 hours sufficiently fast enough for you to meet your requirements for obtaining OTC Derivative ISINs? If not, please detail the business cases that evidence this.*	13	This would appear to be a significant amount of downtime, particularly if it came at a part of the day when there was heavy demand and a short timeframe to assemble and report the reference data. If as was stated earlier multiple data centres are being considered would it not be possible to have a hot standby failover available? Surely this 4 hour timeframe represents a worst case scenario whereby services need to be picked up from a standing start?
35	*There will be an annual internal system failover test. Should there be a separate failover test with the industry to enable participants to test their failover procedures? If so, please indicate how often this should occur.*	13	A testing facility would be useful and dependent upon the role the DSB plays within a firm's critical path such testing is likely to be part of the way in which a firm meets supervisory resilience requirements.
36	*Are there other disaster recovery aspects that you feel aren't listed here and that will have a significant impact on cost or the service quality? If so, please list and describe them and their effect.*	13	See Q34
37	*Is the additional cost (at most double) appropriate, considering the risks of not providing this level of resiliency?*	13	Difficult to gauge without more information about the current cost projections for the DSB.

It is unclear how the 'at most double' cost determination has been made. |

38	*Given the objective to use at least two geographical locations for the system, do you have any specific locations that should not be considered? If so, please explain why and provide evidence where possible.*	13	As mentioned earlier a more detailed description of the operational configuration of the DSB is needed along with the redundancy planning and expected service levels. Questions of location of unspecified data centers are less important than ensuring the system is resilient.
39	*What other key technical milestones does your organization need to know regarding the implementation of the DSB? Please explain your reasoning and also indicate the date by when you would need that information.*	14	We need finalized connectivity options, confirmed service levels and clarity about the range of services and associated service and commercial terms provided by the DSB. Without more clarity on technology and infrastructure beyond the high level concepts of cloud, web-based services, JSON and FIX, we are unable to comment.
40	*The DSB production service will run in parallel to the UAT and only certified users will be permissioned to connect to the DSB production. The DSB is planning to utilize the UAT environment to complete certification. Do you agree to this approach? If not, please explain your reasoning and provide evidence where possible.*	14	More information is needed on the UAT and certification procedures. Will there be multiple UAT environments to account for development and production-mirror?