

DERIVATIVES SERVICE BUREAU

TECHNOLOGY ADVISORY COMMITTEE

3 November 2021

MEMBER FINAL V01

Agenda

- **Governance**
 - Competition Law Reminder
 - Roll call
 - TAC Meetings 2022
 - Action Update
- **Existing Topics**
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 - DR Testing Update
 - ToTV Disaster Recovery
 - IC 2021 Q2 Search Only User
 - IC 2021 Q3 Snapshot & Delta
 - UAT Downtime Window
 - Dynamic Enumerations Update
 - CFI 2019 Update
- **UPI Update**
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- **CISO Update**
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Governance I of VI - Competition Law Reminder I of II

The purpose of this protocol is to remind attendees of Derivatives Service Bureau (DSB) Limited (“DSB”) Technology Advisory Committee, that all discussions at such meetings are subject to the application of EU, UK and other applicable national competition law (“Competition Law”).

Individual attendees are responsible for observing the requirements of Competition Law and should make themselves familiar with their legal obligations and their own organization policies.

The DSB is committed to compliance with Competition Law and advises that TAC participants follow the guidance set out below in order to ensure that all meetings remain in compliance with Competition Law.

1. A meeting agenda will be circulated in advance of a meeting. Any objections to, or potential concerns about, the proposed agenda in relation to Competition Law compliance should be raised prior to the meeting if practicable
2. Attendees must stick to the prepared agenda during the meeting and avoid discussion about other topics
3. Attendees must not seek, discuss, communicate or exchange any commercially or other business sensitive information about their organization or relating to competitors (whether before, during or after meetings). This includes, for example, any non-public information relating to prices, costs, revenues, business plans/marketing activities, individual terms and conditions, risk appetite or any other information which is likely to reduce strategic uncertainty in the market (i.e. which might result in less intensive competition than would normally occur)
4. Attendees must not reach any sort of agreement or understanding that is unlawful due to competition law (e.g. unlawful horizontal agreement, unlawful vertical agreement)

Governance II of VI - Competition Law Reminder II of II

5. The TAC Secretariat will take minutes of the meeting, and supply these to each attendee in due course.
6. If the Chair considers that a discussion at the meeting may be inappropriate from a Competition Law perspective, he or she shall raise an objection and promptly bring that part of the discussion to an end. If another attendee, or the DDO, is concerned about a discussion from a Competition Law perspective, he or she shall bring it to the attention of the Chair, who will promptly bring that part of the discussion to an end. If other attendees attempt to continue that discussion, the Chair shall bring the meeting to an end. Every attendee is allowed to immediately leave the meeting in such situations. All such situations must be properly recorded in the minutes.
7. The minutes of the meeting must subsequently be read and approved by the attendees. If any matter discussed is not recorded in the minutes, or is recorded incorrectly, any attendee may raise an objection in writing and request an amendment.
8. Similar principles should be observed for any group email exchanges or other online group discussions operated by DSB, including those pertaining to TAC matters.

We remind attendees that breaching Competition Law has serious potential consequences for them as individuals and their organizations. Such consequences may include heavy fines, liability to pay compensation to affected individuals and businesses and, in certain cases, the imposition of criminal penalties, director disqualification orders and disciplinary action.

Governance III of VI – Roll Call

The DDO will undertake the roll call.

Governance V of VI - TAC Meetings 2022

This is the final meeting in 2021. The proposal for the 2022 meetings is as follows:

- **Additional Meeting on Future Technical Direction**

The DSB's OTC ISIN service has been in operation for four years and while the technology has supported the operation of the service well so far, we feel it is time to undertake a review and discuss future plans. 2022 also sees the addition of the UPI Service. These plans should consider the recommendations from both the multi-cloud and multi-region analysis under the guidance of the TAC's Cloud Architecture Subcommittee (CASC). We would therefore like to propose an additional meeting to the normal schedule to discuss the DSB's future technical direction. It is proposed to hold this meeting towards the middle/end of January 2022.

- **TAC BAU Meeting**

The first of two usual meetings held toward the end of Q1/start of Q2.

- **TAC Industry Consultation Review**

A review of any technical items relating to the 2022 Industry Consultation Exercise for the 2023 Service Provision

- **TAC BAU Meeting 2**

The second of the two usual meetings held in Q4.

Governance VI of VI - Action Update

Action	Description	Update	Slide#
2003-004	TAC Secretariat to reach out to DSB users who connect with either BT Radianz or VPN to ensure these options are tested (min 2 clients)	Propose to close	
2006-004	DSB to ensure that the one-time data snapshots question is discussed further during the October TAC meeting	Update provided	19
2006-005	DSB to establish a forum to regularly review the status of the analysis related to questions 5 & 6	TAC CASC Established – close	N/A
2010-003	TAC Secretariat to arrange for the production of weekly snapshots via BAU in 2021.	Update provided	19
2010-007	TAC Secretariat to investigate alternative VPN options to the current FortiGate solution and report findings back to the TAC.	Verbal updated to be provided	N/A
2104-001	TAC Secretariat to send out invites for the two additional meetings in 2021.	Invites sent – close	N/A
2104-002	TAC Secretariat to notify industry about the proposed movement of the UAT downtime window	09/06/21 notification sent, 12/09/21 reminder sent – close	N/A
2104-003	CISO team to provide remediation plans/timeline and regular progress updates to the TAC members	CISO to provide an update	31

Existing Topics – O/S Migration & Software Upgrades I of II

Background:

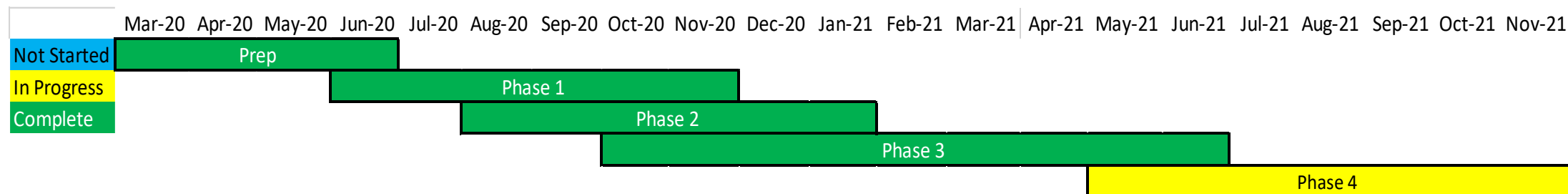
The entire DSB server estate was based on an operating system (Amazon Linux 1) that reached its end of life on 31 Dec 2020. The operating system on the vast majority of the server estate has now been replaced by the newer Ubuntu 18.04 OS. To date, all of the operating system migrations have not incurred any outages or interruptions to the DSB service.

The small minority of servers remaining (~40 out of ~700) will be fully migrated to Ubuntu by 14 Nov 2021.

Update:

- Phases 1, 2 and 3 have been completed successfully and on schedule, with no major issues encountered.
- The Phase 4 deployment is in progress but behind schedule, expected to complete 14 November 2021.

The project has been split into 4 phases (dates in brackets are for Production deployments):



- PUBLIC**
- Phase 1 – DB Servers Upgrade (15 Nov 2020 - Completed)
 - Phase 2 – DB Servers OS Migration (17 Jan 2021 – Completed)
 - Phase 3 – Core Servers Upgrade & OS Migration (09 May 2021 - Completed)
 - Phase 4 – Ancillary Servers Upgrade & OS Migration (14 November 2021*)

Existing Topics – O/S Migration & Software Upgrades II of II

Background:

To streamline the releases, software upgrades were factored into the OS migration project and were deployed in a phased manner.

The DSB completed the MongoDB upgrade as part of Phase I (November 2020).

Software	DSB Version	Released	End of Life	Implemented
MongoDB	4.2.9	21 August 2020	TBD	15 November 2020

The DSB completed the Apache family upgrades as part of the OS Migration Phase 3 (May 2021). The summary of which is shown below:

Software	DSB Version	Released	End of Life	Implemented	New Target Version	Released
Apache Kafka	2.6.0	03 August 2020	N/A	09 May 2021	3.0.0	21 September 2021
Apache Solr	8.6.3	07 October 2020	N/A	09 May 2021	8.10.1	18 October 2021
Apache Zookeeper	3.6.2	09 September 2020	N/A	09 May 2021	3.7.0	27 March 2021

Existing Topics – Disaster Recovery Testing I of VII

Recap:

- Following the October 2020 TAC meeting, TAC members agreed that the UAT-DR test should proceed as early as possible in 2021.
- The DR test was scheduled to begin 16th July 2021 and complete 10th September 2021.

Status:

Prior to the invocation activity, the DSB invited all UAT users to undertake connectivity and functionality testing. DSB users who had completed their connectivity and functionality testing were unaffected by the failover event.

The DSB began the DR (UAT) test on 16th July 2021 and successfully completed 10th September 2021.

The DSB's stated Recovery Time Objective (RTO) is 4 Hours, and the actual time observed was very close to this, at 4 hours and 5 minutes. The DSB have used this opportunity to investigate the reasons for delays, and changes have been incorporated in the run-book to ensure that the next UAT DR invocation falls within the RTO.

Existing Topics – Disaster Recovery Testing II of VII

Issues Encountered:

UAT Servers Remaining Online

During the invocation, a DSB programmatic user encountered an issue where they were unable to connect to the DR region. The cause of the problem was due to the DSB Primary environment was operational during the test and the user had configured their load balancer to select any operational IP addresses from a pool, which contained both Primary and DR DSB IP addresses.

The DSB will be looking to make future improvements to the DSB DR testing processes by disabling the Primary (Ireland) IP addresses, to avoid encountering the same issue. This issue is not expected to be encountered in a real-life DR event as it is assumed that the Primary (Ireland) region will be completely offline.

Hardcoded IP Addresses

Two DSB users reported issues trying to connect to the DSB UAT DR environment. This was as a result of their connectivity configuration where they do not use the DSB's fully qualified domain names, but instead use the underlying IP addresses of the service. The DSB provided guidance to the respective teams on how to resolve. However, some users informed the DSB that they are unable to configure their applications to use the recommended configuration (qualified domain names).

Existing Topics – Disaster Recovery Testing III of VII

Next Steps:

The DSB would like to seek the TAC's guidance on plans for future Disaster Recovery tests.

The DSB has identified four possible options for the TAC's consideration, however, the DSB would welcome any additional suggestions from the members.

The four options that have been considered are:

1. Repeat the UAT DR Test Annually
2. DSB Test in Isolation in Production
3. 8-week DR Test in Production
4. DSB Production Service switches between regions every 6 months

These options are described in further detail on the following slides.

Existing Topics – Disaster Recovery Testing IV of VII

Option I – Repeat the UAT DR Test Annually:

Description:

The DSB will repeat the recently performed UAT DR test on an annual basis.

Pros:

- Proves user connectivity to the UAT DR environment
- Proves the DSB disaster recovery runbooks are kept up-to-date
- Proves the UAT RTO

Cons:

- Does not prove user connectivity to the production DR environment
- The UAT DR environment will be unavailable for the duration of test
- Expected 4 hour down-time to users, during invocation and failback
- Users may experience latency degradation while accessing the DR environment, due to being hosted in the AWS North America region
- Does not prove that the DSB can successfully invoke DR for the production environment

Existing Topics – Disaster Recovery Testing V of VII

Option 2 – DSB Test in Isolation in Production:

Description:

The DSB will bring the Production DR environment online, however, will not enable users to connect to the environment. Instead, the DSB proposes to isolate the environment and run tests to ensure it is fully functional. The DSB will then bring the environment offline and all test data to be deleted. The DR environment will be restored to be in sync with the Primary (Ireland) region.

Pros:

- No expected impact to users of the Production (Primary) environment.
- Easier to schedule as no user involvement.

Cons:

- No DR environment for the duration of the test.
- Does not prove user connectivity to the DR environment.
- Does not test all steps within the run-book.

Existing Topics – Disaster Recovery Testing VI of VII

Option 3 – 8-week DR Test:

Description:

The DSB will perform a Production DR test for 8 weeks, like the recently completed test in the UAT environment.

Pros:

- Proves user connectivity to the Production DR environment.
- Proves DSB DR processes are valid and up-to-date.

Cons:

- No Production DR environment for the duration of the test.
- Expected 4 hour down-time to users, during invocation and fallback.
- Users may experience latency degradation while accessing the DR environment, due to being hosted in the AWS North America region.
- Manual fallback to primary environment.

Existing Topics – Disaster Recovery Testing VII of VII

Option 4 – DSB Production Service Switches Between Regions Every 6 Months:

Description:

The DSB will migrate all production services to the production DR environment and operate from there for 6 months of the year. The current Primary (Ireland) region will become the DR environment, and vice-versa.

Pros:

- Proves user connectivity to both Production regions
- Proves DSB DR processes are valid and up-to-date

Cons:

- Expected 4 hour down-time to users, during each invocation and failback
- Users may experience latency degradation while accessing the DR environment, due to being hosted in the AWS North America region
- The current configuration supports primary to secondary replication – the DSB will need to investigate the impact of enabling dual operational capability to support this option

Existing Topics – ToTV Disaster Recovery

Background:

The TAC recommended the DynamoDB Global Tables solution as a basis for the implementation of a warm standby capability for the ToTV service in the Disaster Recovery Region. This recommendation was presented to and approved by the DSB Board at the November 2020 meeting.

- The solution required the build out of the DR infrastructure (to be undertaken under BAU).
- Additional operating expenditure to cover the additional infrastructure including data storage and replication costs.

Previous Actions:

As part of the October 2020 TAC meeting, the members had requested more details on DynamoDB Global Tables. The DSB has placed additional information on the TAC bulletin board to address some queries made in the October 2020 TAC meeting.

Next Steps:

- Implementation of the DynamoDB Global Tables solution will be undertaken once OS Migration Phase 4 has been completed.
- The preparation work for implementation is expected to begin in January 2022*.
- The Global Tables solution is expected to be deployed to ToTV Production in April 2022*.

Existing Topics – IC2021 Q2 – Search Only User

Update:

- In Q1 2021 the DSB undertook the detailed analysis into the new Search Only API User
- This included reaching out to industry to gather specific requirements
- The solution design was produced which identified changes required to the vendor software
- The vendor software changes have been scheduled for release in Q2 2022 having been prioritised after the OS Migration changes
- The DSB has also reviewed and revised the DSB Access and Usage Agreement and Policies (together, the Agreement). The changes have been incorporated in the 2022 document publication

Next Steps:

- Test and release the vendor software – Q1 2022
- Complete the development and testing – Q1 2022
- Engage with potential clients for UAT testing in Q1/Q2 2022
- Release targeted for Q2 2022



Existing Topics – IC2021 Q3 One Time Data Snapshot

Background:

The DSB OTC ISIN Industry Consultation 2020 received approval for the development of a new service within the cost recovery ring-fence to provide users with an API-based method of accessing the DSB records contained in the EOD download files. The rationale for this service was that the DSB currently only creates daily files containing new or changed records. There is no mechanism for new users to download all records efficiently. Also, there is no mechanism for existing users to reconcile their internal databases with the DSB's master records. The Industry Consultation process approved a budget of €210k capex and €131k opex in relation to this service.

User feedback received by the DSB as part of its analysis for the implementation of the service, and especially with the TAC, points to a lighter touch model being more appropriate for the majority of DSB users, based on creating a snapshot file of the entire database on a regular interval and moving away from a more expensive API service.

Separately, the TAC had already recommended a weekly snapshot for such a service via BAU, on the basis that it would provide value to both new users and existing users of the service at lower cost and improve user experience:

- New users would not need to load daily snapshot files from the start of the DSB service (3+ years of daily files) in order to populate their internal databases with the relevant DSB records
- Existing users would be able to reconcile their databases with the DSB's latest snapshot database – functionality that does not currently exist

The TAC recommended that the weekly snapshot file should be made available on the same basis as the existing end of day files, so that all DSB users, including free registered users, have access to the files. This means the cost of providing this service would be via the existing cost recovery mechanism and not charged for separately.

Based on creation of a weekly snapshot file of the entire database, the cost of the service will be €90k capex and €50k opex. By merging the two requirements (one BAU and one incremental cost), we have lowered the original anticipated cost and we will pass this saving back to users once costs vs budget are reconciled next year.

Existing Topics – Dynamic Enumerations Update I of II

The Product Committee recently requested an update on Dynamic Enumerations.

Normalised Testing Consumption

- Testing was undertaken having loaded the normalised templates into the DSB's internal engine (replacing the denormalised version)
- This identified a problem with the vendor software requiring a change due to an issue with the de-referencing
- A change to the vendor software was requested but was delayed by the planned OS Migration release which also required changes to the vendor software. The OS Migration changes went live on 9th May 2021 (see earlier slide)
- The vendor has delivered the changes to support the de referencing
- These have been included as part of the next planned vendor software upgrade currently targeted for March 2022 (this carries a long testing lead time)

JavaScript

- The DSB has completed development of an alternate approach for the JavaScript changes
- These changes require QA testing which has not been possible to date due to other conflicting priorities for the QA team's time

Existing Topics – Dynamic Enumerations Update II of II

Next Steps:

- Complete testing of the JavaScript changes date to be agreed, but expected to be on/before the March release below
- Complete testing and rollout of the next vendor software release - target March 2022
- When released, initiate the 12 month notice to users that the DSB will decommission the denormalised template version
- Progress productionisation of intra week template changes (noting small risk introduced with this approach)
- *UPI Note:*
The vendor changes have been applied to the UPI development environment - only a single normalised template version will be provided for UPI

Extension to other Enumerations:

- On the 14th July 2020, the PC approved (at the discretion of the TAC) the TAC's recommended approach to extend the normalised version of the templates out to the remaining enumerations (the focus to date had been just the three most volatile enumerations).
- No further progress has been made on this; the focus has been on the progression of the two items above.

Existing Topics – UAT Downtime Window

In the April TAC meeting, the TAC discussed separating the UAT downtime window from the Production downtime window and agreed to move this from a period on Sunday to the same period on Saturday.

This change was implemented in the UAT (next release) environment during the weekend of 11th September 2021, the Production and UAT2 (as-production) environments remain as they were with the downtime taking place on Sunday. *Please note that there is an additional midweek downtime period available for UAT if required. This period is Wednesday 2:00 AM UTC to Wednesday 7:00 AM UTC.*

In summary, the downtime windows, using this coming weekend of the 6th/7th November 2021 as an example, would be as follows:

Environments	Downtime	UTC	Los Angeles	New York	London	Hong Kong
UAT	Start	06/11/2021 00:30 AM UTC	05/11/2021 17:30	05/11/2021 20:30	06/11/2021 00:30	06/11/2021 08:30
	End	06/11/2021 12:30 PM UTC	06/11/2021 05:30	06/11/2021 08:30	06/11/2021 12:30	06/11/2021 20:30
Prod/UAT2	Start	07/11/2021 00:30 AM UTC	06/11/2021 17:30	06/11/2021 20:30	07/11/2021 00:30	07/11/2021 08:30
	End	07/11/2021 12:30 PM UTC	07/11/2021 05:30	07/11/2021 08:30	07/11/2021 12:30	07/11/2021 20:30

Existing Topics – CFI 2019 I of VI

Background:

1. The DSB is required to support CFI 2019 in-line with the adoption of the standard by the industry
2. The DSB will also be required to adopt any future revisions of CFI impacting DSB ISIN and UPI
3. The DSB presented an approach to CFI 2019 implementation to PC on 19 May 2020
4. In summary the approach considered at the time was to:
 1. Implement CFI 2019 in a single (big bang) release, removing support CFI 2015 from that date (i.e.: retrieve, search, create returning CFI 2019 only)
 2. Avoid updating CFI on existing ISINs (no possibility to create/retrieve ISINs with deprecated attributes)
 3. Generate CFI Code at the time of request as opposed to creation, with CFI at creation only be available from File Download
5. The approach has been reviewed since, and the current proposal in summary:
 1. Implement CFI 2019 alongside CFI 2015 to allow industry to adopt CFI 2019 at their own pace
 2. Update existing ISINs to contain CFI 2019, with CFI 2015 codes remaining on ISIN record
 3. Continue generating CFI codes at the time of creation (both CFI 2015 and CFI 2019 to be available for retrieve, search, create and as part of File Download data)
6. The DSB shared the approach with the TAC via the Bulletin Board on 23 April 2021

Existing Topics – CFI 2019 II of VI

Key Design Principles:

- Support CFI 2019 alongside CFI 2015 to allow industry to adopt CFI 2019 at their own pace
- Minimize the impact on DSB clients and simplify the process for client adoption:
 - Existing users do not have to amend their input messages on CFI 2019 Go Live date for product templates that maintain the same granularity of CFI
 - Clients can use either CFI 2015 or CFI 2019 values when requesting an OTC ISIN/UPI for product templates that maintain the same granularity of CFI
 - Attributes and structure of existing ISINs are preserved
 - Clients can adopt CFI 2019 for product templates that maintain the same granularity of CFI at their own time, whilst DSB maintains both CFI 2015 and CFI 2019 available
 - *Users doing validation of ISIN records against the JSON schema will have to get new versions of templates*
 - Decouple the need for 3rd party services like FiRDS to upgrade their systems at the same time as the DSB
 - FiRDS (ESMA and FCA) may upgrade their systems at a time that suites them (after the DSB has been upgraded with CFI-2019)
- Ensure consistency across all templates:
 - CFI 2019 should be present on all OTC ISIN/UPIs, not just those where a difference exists
 - CFI 2015 should be present on all OTC ISIN/UPIs, not just those created before CFI 2019 is implemented
- Maintain support for ISO 20022/ RTS23 fields for compliance with Ref Data Reporting

Existing Topics – CFI 2019 III of VI

Breaking Use Cases:

The following is a proposal based on the July 2021 PC meeting:

- Breaking cases are product templates where an ISIN that was created using CFI-2015 values may be different to an ISIN that was created using CFI-2019 values; This is a result of “different granularities” of the CFI versions
- For breaking cases product templates:
 - There will be a transition date where:
 1. Until the transition date clients must use CFI-2015 values to create new ISINs
 2. After the transition date clients must use CFI-2019 values to create new ISINs
 3. users will be able to create new ISINs only by supplying CFI-2019 values
 - Users must amend their input messages on CFI 2019 at the transition date
 - Prior to the transition date, the DSB will populate all existing ISINs with their CFI-2019 code, so that all records will have both CFI-2015 and CFI-2019 (ensure consistency across all ISIN templates)

Existing Topics – CFI 2019 IV of VI

CFI-2015 vs CFI 2019 I of II

Asset Class	Instrument Type	Change CFI codes of existing instruments	Change in Granularity	Note
Commodities	Forward	No	Yes	All existing commodities instruments maintain the same CFI code (i.e. CFI-2015 = CFI-2019) New values of 'Underlying assets': Index – multi-commodity, Basket – single-commodity and Basket – multi-commodity
	Option	No	Yes	
	Swap	No	Yes	
FX	Forward	No	Yes	All existing FX Forward instruments maintain the same CFI code (i.e. CFI-2015 = CFI-2019) New values of Underlying Asset and Payout Trigger
	Option	Yes	Yes	Different enumeration values to Option Style & Type Different granularity of Option Style & Type and Underlying Asset
	Swap	Yes	No	Different enumeration in Delivery Type (code change from Non-Deliverable to Cash)
Rates	Forward	No	No	No changes to CFI of Rates Forward instruments
	Option	No	Yes	All existing Rates option instruments maintain the same CFI code (i.e. CFI-2015 = CFI-2019) New Underlying Asset value: Interest Rate Index New Valuation Method or Trigger values: cap and floor
	Swap	Yes	No	Changes to Delivery enumerations: Cash [C] -> Non-Deliverable [N]; Physical [P] -> Deliverable [D]

Existing Topics – CFI 2019 V of VI

CFI-2015 vs CFI 2019 II of II

Asset Class	Instrument Type	Change CFI codes of existing instruments	Change in Granularity	Note
Other (Cross Asset)	Forward	No	No	All existing Cross-Asset Forwards instruments maintain the same CFI code (i.e. CFI-2015 = CFI-2019)
	Option	No	Yes	All existing Cross-Asset Option instruments maintain the same CFI code (i.e. CFI-2015 = CFI-2019) New values to Option Style & Type: European, American and Bermudan
	Swap	No*	No*	CFI-2019 is less granular compared to CFI-2015. Delivery values were removed: 'Non-Deliverable' and 'Auction'. Yet the DSB does not support these Delivery values. Hence no changes are expected.
	Other		No	All existing Cross-Asset Multi-Exotic instruments maintain the same CFI code (i.e. CFI-2015 = CFI-2019)
Credit	Forward	No		No changes
	Option			
	Swap			
Equity	Forward			
	Option			
	Swap			

Existing Topics – CFI 2019 VI of VI

Use Case I – Different ISINs:

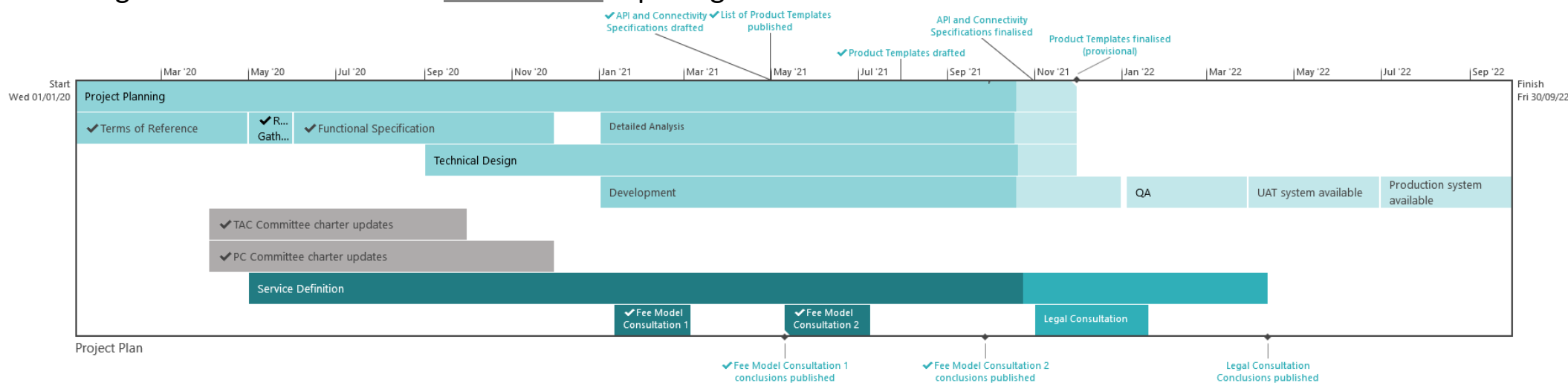
Example of Rates Option Non_Standard (Cap) ISIN created using CFI-2015 values, and an ISIN that was created using CFI-2019 values

<u>Record Section</u>	<u>Attribute name</u>	<u>Until transition date:</u>	<u>After transition date:</u>	<u>Note</u>
		Request CFI-2015	CFI-2019 attributes	
Header	TemplateVersion	1	1.1	Version update
	AssetClass	Rates	Rates	CFI Group
	InstrumentType	Options	Options	CFI Category
	UseCase	Non_Standard	Non_Standard	
ISIN	Level	InstRefDataReporting	InstRefDataReporting	
	ISIN	EZV94ZVWS5R7	EZ11SF28HG9	These are two different ISIN record
	Status	New	New	
LastUpdateDateTime	2022-04-12T03:17:19	2022-04-12T03:17:19		
ISIN Parents	CFI-2015	HRABMC	HRABMC	New attribute
	CFI-2019	HRABMC	HRABCC	New attribute
Derived	FullName	
	ClassificationType	HRABMC	HRABMC	For backward compatibility
	CommodityDerivativeIndicator	False	False	
	ShortName	NA/O Call Epn PLN 20201231	NA/O Call Epn PLN 20201231	
Attributes	NotionalCurrency	EUR	EUR	
	ExpiryDate	2028-04-20	2028-04-20	
	UnderlyingInstrumentIndex	PLN-WIBOR-WIBO	PLN-WIBOR-WIBO	
	UnderlyingInstrumentIndexTermValue	1	1	
	UnderlyingInstrumentIndexTermUnit	MNTH	MNTH	
	UnderlyingAssetType	Basis Swap (Float - Float)	Basis Swap (Float - Float)	CFI-2015
	OptionType	CALL	CALL	RTS-23 values that serve to derive CFI-2015
	OptionExerciseStyle	AMER	AMER	
	DeliveryType	CASH	CASH	CFI-2015
	Valuation method or trigger	Other	Other	
PriceMultiplier	1	1		
CFI-2019	Underlying assets	Basis Swap (Float - Float)	Basis Swap (float-float)	New attributes, match the names and enumerations of CFI-2019
	Option style and Type	American-Call	American-Call	
	Valuation method or trigger	Other	Cap	Records have different CFI-2019 Valuation method or trigger values
	Delivery	Cash	Cash	

UPI Update I of II – Baseline Progress

UPI Progress:

- 99 of 99 UPI templates developed (with simple underlier structure, CFI 2015 and assumed FISN), testing in progress
- GUI updated for UPI templates with functional improvements
- UPI ReST interface developed and tested
- WAF implemented into UPI Development environment, monitoring ongoing
- Final release received from Cordra software vendor – including pre-population and permissioning changes. Testing underway
- User Permissioning development underway – integrating UPI Core with Auth0
- Reference Data RFI concluded, data analysis, technical design, redistribution requirements, data licensing work underway
- Contract Specification Enhancements to Single Name CDS Product developed and available in UAT
- Fee Model Industry Consultation process completed - [final paper](#)¹ published 27 September 2021
- UPI Legal Terms and Conditions [consultation](#)² opening 2 November 2021



PUBLIC

¹<https://www.anna-dsb.com/download/dsb-upi-fee-model-final-report/>

²<https://www.anna-dsb.com/upi-legal-terms-and-conditions-consultation/>

UPI Update II of II – User Scalability

Vendor Selection Recommendations

- The TAC SSC made several recommendations for consideration by the TAC
- We would like to thank the TAC members for their timely input into the vendor assessment processes and for their support for the recommendations selected to underpin the Client Onboarding and Support Platform (COSP)
- Recap of the TAC’s vendor selection recommendations taken forward to the DSB Board:
 - Legal Entity Onboarding: Salesforce
 - Identity and Access Management: Auth0
 - Fix Certification: Fixspec
- The COSP is planned to launch in April 2022 at the start of the UAT phase, in order to enable users of the UPI service to register a client profile and set-up both GUI users and API connections for UAT

CISO Update I of I

2019 Consultation Paper Progress:

- Both ISO 27001 and Secure SDLC options and costs have been presented to the DSB Board at the Strategic Planning meeting held on 7th September.
- The DSB Board will return a decision at their 2022 budget approval meeting.

2021 Consultation Paper Progress:

Q2 – Security Operations Centre

Background

In 2020, the DSB was asked whether it will implement a Security Operations Centre (SoC).

The industry consensus is that a Security Operations Centre is vital to maintaining a solid security posture. Utilising Security Information and Event Management (SIEM) software, with the proper configuration, a Security Operations Centre will help monitor and protect against threats. Cybercriminals are active everywhere globally, and a fully staffed, well equipped Security Operations Centre will help prevent bad actors, both external and internal, from potentially compromising our environments.

Next Steps

With this in mind, the security team would like to carry out a detailed analysis on the implementation of a Security Operations Centre, either on-site or contracted to a third party, to understand the costs, risks and complexity of how we can better monitor, analyse, report and alert on potential forces acting on the company infrastructure

- The options and costs have been presented to the DSB Board at the Strategic Planning meeting held on 7th September.
- The DSB Board will return a decision at their 2022 budget approval meeting.

TAC Subcommittee Updates I of II – TAC SSC

Following the restart of the TAC SSC, the subcommittee has met monthly since the initial meeting in January 2021

The subcommittee's aim has been to finalise the DSB UPI Strategic Requirements Report. This remains on track to be completed before the end of 2021. The TAC SSC has also considered the following topics this year:

- New Automated User On-Boarding and User Management
- New Hierarchy Design
- Notification Protocol
- Review of changes to the Rules of Engagement (ReST & FIX)
- UPI Service Scalability
- ISIN Only Service
- Primary and Alternate Underliers
- Dynamic Enumerations & UPI
- Vendor Selection – Salesforce & Auth0
- Connectivity Requirements
- Technology SLA's
- Final UPI Fee Model

Further TAC SSC Information:

- Website: <https://www.anna-dsb.com/technology-advisory-sub-committee/>
Members: <https://www.anna-dsb.com/technology-advisory-sub-committee-members/>
Charter: <https://www.anna-dsb.com/download/technology-advisory-sub-committee-charter/>
Minutes: <https://www.anna-dsb.com/knowledge-centre/?wpdmc=tac-sc-minutes>

TAC Subcommittee Updates II of II - CASC

The Cloud Architecture Subcommittee (CASC) of the TAC was formed in 2021 to oversee the two 2021 Industry Consultation Questions:

- Q5 - *Should the DSB perform a risk assessment on the current single cloud operations, together with a cost-benefit analysis of a potential move to a multi-cloud architecture?*
- Q6 - *Should the DSB perform a risk assessment of its existing model of global connectivity from a single active geographical region, plus analysis of the costs and benefits of mitigating the identified risks?*

The DSB has completed the analysis in relation to the two questions, including undertaking an RFI in relation to multi-cloud question. The CASC has been engaged during the analysis and has met four times, most recently in October where the following three papers were reviewed with the CASC Members:

1. DSB Technical Reference Architecture*
2. DSB Multi-Cloud Report*
3. DSB Single Active Region Risk Assessment*

Next Steps:

- The DSB is consolidating the two sets of conclusions into a single recommendations paper
- This will be presented back to the CASC members for discussion at the final 2021 meeting in December.
- The recommendations will be shared with the TAC members ahead of a discussion on the content during the strategic review session in January 2022.

Further TAC CASC Information:

Website:	https://www.anna-dsb.com/cloud-architecture-sub-committee/
Members:	https://www.anna-dsb.com/cloud-architecture-sub-committee-members/
Charter:	https://www.anna-dsb.com/download/tac-casc-charter/
Minutes:	https://www.anna-dsb.com/knowledge-centre/?wpdmc=tac-casc-minutes

AOB

Reminder: TAC Charter Term ending October 2022

- TAC information: <https://www.anna-dsb.com/technology-advisory-committee/>

Appendices

- A – TAC Committee Members
- B – TAC Meeting Schedule
- C – TAC Bulletin Board Items
- D – Annual Checklists
 - D1 – Software Version Levels
 - D2 – Penetration Testing
 - D3 – Disaster Recovery Testing
- E – Actions

Appendix A - TAC Committee Members

Institution	Category	First Name	Last Name	Position / Title
Asset Control	Industry	Martijn	Groot	VP, Marketing and Strategy
Bloomberg	Industry	Chris	Pulsifer	Software Development Manager
BVI	Industry	Felix	Ertl	VP, Legal
CFETS	Industry	Yan	Hui	RMB Derivatives Research & Development Manager
CFMMC	Industry	Huang	Lu	IT & Senior Economist
China Securities Internet System	Industry	Billy	Chen	Monitoring Centre Director
Citigroup	Industry	Souvik	Deb	VP, Regulatory Reform
Deutsche Bank AG	Industry	Amit	Bairagi	Product Owner
DTCC	Industry	Warren	Rubin	Director, Repository and Derivatives Services
EFAMA	Industry	Vincent	Dessard	Senior Policy Advisor
FIX	Industry	Lisa	Taikitsadaporn	FIX Global Technical Committee
HSBC	Industry	James	Cowie	Americas Product Owner - Regulatory Reporting
Independent Expert	Industry	James	McGovern	Enterprise Architect & Security Leader
Independent Expert	Industry	Jim	Northey	ex officio as ISO TC 68 Chair Elect
ISDA	Industry	Alan	Milligan	Head of Data & Digital Solutions
JP Morgan	Industry	Nadav	Krispin	VP, Software Engineering
LSEG	Industry	Aanya	Madhani	Senior Business Development Manager, TRADEcho
Morgan Stanley	Industry	Abhishek	Jain	Vice President, Technology
Rabobank	Industry	James	Brown	Delivery Manager, IT Systems
Refinitiv	Industry	Artur	Grajek	Content Technology Design Authority
SEB	Industry	Henrik	Martensson	Markets CTO Office
SIX Group Services AG	Industry	Richard	Gee	Head of Product Provisioning and Delivery
SmartStream	Industry	Rocky	Martinez	CTO
Standard Chartered Bank	Industry	Anthony	Brennan	Data Solutions Lead
State Street Bank	Industry	William	Rodiger	MD - Business Technology Solutions
Tahoe Blue Ltd	Industry	Jefferson	Braswell	Founding Partner
UBS	Industry	James	Colquhoun	Market Regulation Domain Architect
BGC Partners	TV	Jimmy	Chen	Development Manager
Refinitiv MTF	TV	Zintis	Rullis	Senior Technical Specialist
State Street FX Connect	TV	Rajkamal	Roka	Head of FX Regulatory Reform
Tradeweb	TV	Elodie	Cany	Director, Technology Product Development

Observers

Organisation	Name	Position / Title
CFTC	Robert Stowsky	IT Specialist
ESMA	Olga Petrenko	Senior Officer, Markets
FCA	Paul Everson	Senior Associate – Market Oversight
JSDA	Eiichiro Fukase	Counsellor to the Chairman (for Fintech, Financial Products and Global Regulation)

DSB TAC Sponsor: Marc Honegger
DSB Board Member

DSB TAC Chair: Chris Pulsifer
Bloomberg

Designated DSB Officer: Andy Hughes
DSB Management Team

DSB CISO: Will Palmer
DSB Management Team

DSB TAC Secretariat: Bryle Cadavos
DSB Project Manager

Tom Smith
DSB Project Manager

Yuval Cohen
DSB Technical Architect

Appendix B - TAC Meeting Schedule

The following shows the TAC meeting dates & times:

Date	Description	Time
Wednesday 7th April 2021	2021 Meeting 1	1pm BST (12pm UTC, 2pm CET, 8am EST)
Wednesday 23rd June 2021*	2021 Industry Consultation	1pm BST (12pm UTC, 2pm CET, 8am EST)
Wednesday 3rd November 2021	2021 Meeting 2	1pm GMT (1pm UTC, 2pm CET, 8am EST)

Appendix C – TAC Bulletin Board Items

The following table details the active TAC Bulletin Board topics:

Created	Title	Posts	Link
26/10/2021	Contract Specification Enhancement to Single Name CDS Products - Release Extension Request	1	https://www.anna-dsb.com/bulletin-board/tac-forum/urgent-contract-specification-enhancement-to-single-name-cds-products-release-extension-request/#post-257
02/07/2021	DSB UAT DR Test 16 th July 2021	5	https://www.anna-dsb.com/bulletin-board/tac-forum/dsb-uat-dr-test-16th-july-2021-action-required/#post-253
23/04/2021	CFI 2019	2	https://www.anna-dsb.com/bulletin-board/tac-forum/cfi-2019/#post-244
29/03/2021	DSB TAC Cloud Architecture Subcommittee Formation	1	https://www.anna-dsb.com/bulletin-board/tac-forum/dsb-tac-cloud-architecture-subcommittee-formation/
29/03/2021	ToTV Disaster Recovery (Global Tables)	1	https://www.anna-dsb.com/bulletin-board/tac-forum/new-topics-totv-disaster-recovery-global-tables/
18/03/2021	UPI User Scalability	9	https://www.anna-dsb.com/bulletin-board/tac-forum/upi-user-scalability/#post-256
18/03/2021	UPI Underlier Data Provider Selection Process	5	https://www.anna-dsb.com/bulletin-board/tac-forum/upi-underlier-data-provider-selection-process/#post-229
12/02/2021	New GUI User Onboarding	5	https://www.anna-dsb.com/bulletin-board/tac-forum/new-gui-user-onboarding-2/#post-220
12/02/2021	New UPI Hierarchy Design	3	https://www.anna-dsb.com/bulletin-board/tac-forum/new-upi-hierarchy-design/#post-219

Appendix D – Annual Checklists

The following table details the items which will be checked on an annual basis:

Appendix	Item	Last Review	Next Review	Comments
D1	Software Version Levels	28/10/2020	Q4 2021	Items being progressed in 2021 (slide 34)
D2	Penetration Testing	28/10/2020	Q4 2021	2021 Pen Test being scheduled for Q4
D3	Disaster Recovery Testing	n/a	Q4 2021	2021 UAT DR Test completed.

Appendix D I - Software Version Levels

The DSB's software version policy is to remain within one major version of the latest version in industry. This is to ensure that we remain current particularly in relation to security updates. The key software versions are as follows:

Software	Current DSB Version	Implemented	End of Life	DSB Target Version	Upgrade Implementation	Latest Available Version	Released
Amazon Linux	AMI 2017.03	19-Jul-17	31-Dec-20	Ubuntu 18.04 LTS	Phase 4 OSM	Ubuntu 20.04.1	08-Jun-20
Apache Kafka	2.6.0	09-May-21	TBC	3.0.0	TBC	3.0.0	21-Sep-21
Apache Solr	8.6.3	09-May-21	TBC	8.10.1	TBC	8.10.1	18-Oct-21
Apache Zookeeper	3.6.2	09-May-21	TBC	3.7.0	TBC	3.7.0	27-Mar-21
Elastic Search	7.5.2	25-Apr-20	31-Jul-21	N/A	N/A	7.11.0	10-Feb-21
MongoDB	4.2.10	15-Nov-20	TBC	5.0.0	TBC	5.0.0	13-Jul-21
NGINX	1.18.0	09-May-21	TBC	1.21.3	TBC	1.21.3	07-Sep-21
OpenJDK	8u282-b08	09-May-21	30-Jun-23	TBC	TBC	8u302-b08	20-Jul-21
QuickFIXJ	2.1.1	03-Aug-18	TBC	N/A	N/A	2.3.0	26-Apr-21
Tomcat	9.0.41	15-Nov-20	TBC	10.0.4	TBC	10.1.0-M6	28-Sep-21

Note: All upgrades are anticipated to be transparent (i.e. :backwardly compatible) to the DSB user base.

Elastic Search will be upgraded following the Phase 4 implementation.

Appendix D2 – Penetration Testing Update

2019 (GDS Test Dec 2018)

- 10 items resolved
- 3 items - no action was required

2020 (AON Test Dec 2019)

- 17 items raised
- 4 items – no action required
- 6 items resolved
- 4 items pending release (1 on 1st Nov 20; 3 with the OS Migration phase 3 in 2021 (vendor deliver))
- 3 items outstanding (low priority)

2021 (Jumpsec Test Dec 2020)

- 8 items raised – remediation in flight, further update in 2nd TAC meeting

Appendix D3 – Disaster Recovery Testing

This table below details the DSB's DR testing history:

Environment	Start	End	Description	Outcome	Notes
UAT	16 July 2021	10 September 2021	Full migration of DSB service to the DR region using the UAT environment	Success	Runbook revised and optimised

Appendix E – TAC Open Actions

Ref	Action	Update	Slides	Target	Status
2003-004	TAC Secretariat to reach out to DSB users who connect with either BT Radianz or VPN to ensure these options are tested (min 2 clients)	Outreach undertaken, but no VPN or BTR clients have been able to test			Propose to close
2006-004	DSB to ensure that the one-time data snapshots question is discussed further during the October TAC meeting	Update provided during the meeting	19		Propose to close
2006-005	DSB to establish a forum to regularly review the status of the analysis related to questions 5 & 6	CASC established, close			Close
2010-003	TAC Secretariat to arrange for the production of weekly snapshots via BAU in 2021.	Update provided during the meeting	19		Open
2010-007	TAC Secretariat to investigate alternative VPN options to the current FortiGate solution and report findings back to the TAC.	Solution dependent on UPI VPN volumes, c/f			Open
2104-001	TAC Secretariat to send out invites for the two additional meetings in 2021.	Invites sent out	N/A		Close
2104-002	TAC Secretariat to notify industry about the proposed movement of the UAT downtime window	Notifications sent	N/A		Close
2104-003	CISO team to provide remediation plans/timeline and regular progress updates to the TAC members	CISO to provide an update during the meeting	31		Open