

DERIVATIVES SERVICE BUREAU

TECHNOLOGY ADVISORY COMMITTEE

7 April 2021

MEMBER FINAL V02

Agenda

- **Governance**
 - Competition Law Reminder
 - Roll call
 - Membership update
 - TAC Meetings 2021
 - Action Update
- **Existing Topics**
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 - OS Migration / Software Version Updates
 - DR Testing Update
 - ToTV Disaster Recovery
 - File Download – Snapshot & Delta
- **UPI Update**
- **New Topics**
 - UAT Downtime Window
- **Industry Consultation**
 - **2020**
 - CISO Secure SDLC & ISO27001
 - **2021**
 - Q1 – Structured Communications
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 - Q3 – One time data snapshots
 - Q5 - Multi-Cloud
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- **AOB**
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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 IV of VI - TAC Membership Update

We would like to welcome two new members to the TAC:

- Warren Rubin has joined the TAC as an additional member. Warren is the Director of Repository and Derivatives Services at the DTCC.
- Alan Milligan has replaced Karel Engelen as the TAC representative from ISDA on both the TAC and the TAC SSC. Alan is the head of Data and Digital Solutions.

We would also like to take this opportunity to thank:

- Karel Engelen for his contribution to both the TAC and TAC SSC over the last few years.
- David Broadway joins us today for the last time. We would like to thank David for his Chairmanship of both the TAC and TAC SSC forums in their first charter terms and for his overall contribution to the TAC. We would like to wish David all the very best for his retirement.

Please note: Both membership changes have already been reviewed and approved by the DSB Board.

Governance V of VI - TAC Meetings 2021

There are two remaining TAC meetings to be scheduled in 2021, the Industry Consultation review meeting and the Q4 TAC meeting.

- **Industry Consultation**

The [consultation timeline](#)¹ opposite was published on the 17th March 2021.

The proposal is to schedule the additional TAC meeting for Wednesday 23rd June 2021. This avoids the TAC SSC meeting on Wednesday 16th June 2021 but still allows time for the TAC's feedback to be incorporated into the Final Consultation Report.

- **2nd 2021 TAC Meeting**

The proposal is to hold the 2nd 2021 TAC meeting on Wednesday 3rd November 2021.

This is slightly later than normal (28th October in 2020) but is necessary to avoid the TAC SSC meeting on Wednesday 20th October 2021 and the DSB Board meeting on Wednesday 27th October 2021.

Consultation Timeline

Milestone	Date
Publication of DSB Consultation Paper (CP)	Fri 30 Apr 2021
Webinar ** Link to Register **	Thu 13 May 2021
Industry feedback on the CP	Fri 30 Apr - Mon 31 May 2021
Final Consultation Report publication	Thu 1 Jul 2021
DSB 2022 draft Access & Usage Agreement (UA) publication	Tue 10 Aug 2021
Deadline for industry feedback on proposed UA changes	Fri 3 Sep 2021
DSB 2022 final UA publication	Fri 17 Sep 2021
User termination deadline	Fri 1 Oct 2021
Annual User fees for 2022 calculated	Mon 4 Oct 2021
2022 User fees published	Wed 6 Oct 2021

TAC Question: Are the TAC Members happy with the proposed meeting dates?

Governance VI of VI - Action Update

Action	Description	Update	Slide#
1910-001	DSB to provide plans for software version changes	Closed	N/A
1910-005	TAC Members to provide feedback on the level of detail provided re: Penetration Testing	Closed - <i>BB topic & email sent</i>	N/A
2010-001	TAC Secretariat to correct the first bullet and to ensure this is reflected on the DSB website.	Closed	N/A
2010-002	TAC Secretariat to undertake a further outreach for membership of the TAC SSC as well as any nominations for the role of Chair	Closed	N/A
2010-005	TAC Secretariat to review the wording in the Charters with respect to members being outside of the main committee.	Closed - <i>Delegate permitted</i>	N/A
2010-006	TAC Secretariat to ensure the questions raised via the chat window are recorded for review by the subcommittee when established.	Closed - <i>Details captured</i>	N/A
2010-009	CISO to send the TAC members the two analysis papers for Secure SDLC and ISO27001.	Closed	N/A
2010-004	TAC Secretariat to share further updates on the Dynamo DB Global Tables with the members via the TAC bulletin board.	Closed – BB update provided	N/A
2010-003	TAC Secretariat to arrange for the production of weekly snapshots via BAU in 2021.	Update provided	14/15
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
2010-008	TAC Secretariat to identify a suitable UAT testing window in 2021 to run the DR failover test.	Update provided	12

Existing Topics – Strike Price Update

Progress Update

The TAC discussed the Strike Price issue during the October 2020 TAC meeting when a timeline was presented. The update since the last meeting is as follows:

- Testing completed successfully
- The UAT deployment occurred on 21st November 2020 as planned, the notification can be seen [here](#)²
- TAC members approved a 2-week delay to the production release on the 14th December 2021 after user feedback
- The Production deployment occurred on 14th February 2021; the notification can be seen [here](#)³

This change has updated the core system to provide the capability of greater numeric precision. However, as agreed with the TAC, the changes have not been made to the product templates for the Price Multiplier field. This field is used in all templates and would have further delayed the Strike price release. The TAC felt this would be better aligned with another release which requires changes to all templates. This remains an item of work to be scheduled.

²<https://www.anna-dsb.com/download/2020-11-22-update-notification-dsb-release-january-2021/>

³<https://www.anna-dsb.com/download/2021-02-14-update-notification-dsb-release-february-2021/>

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

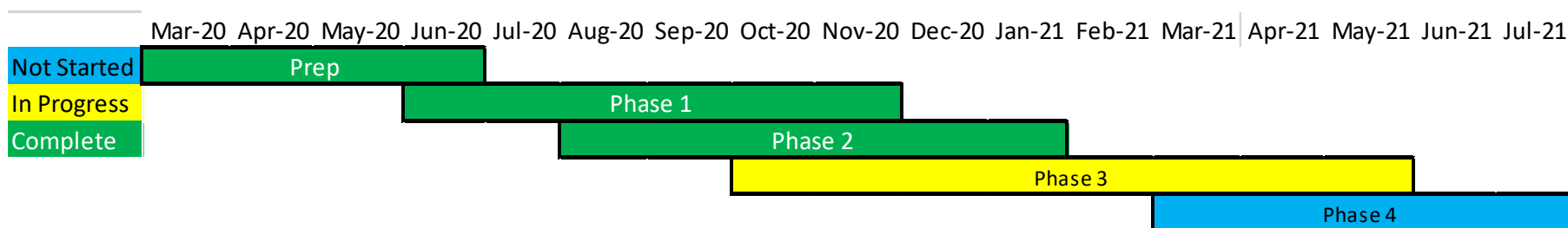
Background

The DSB servers' current operating system is Amazon Linux 1, which reached end of life on 31st December 2020. Following this, no further security patches will be released for this version of the operating system. The issue impacts the entire DSB server estate across all environments covering around 500 virtual servers.

Update

- Phase 1 and 2 have been completed successfully and on schedule, with no major issues encountered.
- The Phase 3 deployment is currently tracking ahead of schedule and the Production deployment is expected to be completed in May 2021.

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



- 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)
- Phase 4 – Ancillary Servers Upgrade & OS Migration (July 2021*)

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

Recap

To streamline the releases, software upgrades have been factored into the OS migration project.

Progress Update

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

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

The Apache family upgrades are addressed together, as part of the OS Migration Phase 3 deployment, which is expected to be implemented ahead of schedule in May 2021. The summary of which is shown below:

Software	DSB Version	Released	End of Life	Target Version	Released	DSB Target Implementation
Apache Kafka	0.10.1.1	22 December 2016	Past	2.6.0	03 August 2020	09 May 2021
Apache Solr	6.4.2	07 March 2017	Past	8.6.3	07 October 2020	09 May 2021
Apache Zookeeper	3.4.9	03 September 2016	N/A	3.6.2	09 September 2020	09 May 2021

Note: Since the previous TAC meeting, the target versions for the Apache software family have been amended to reflect a later target version of the respective applications.

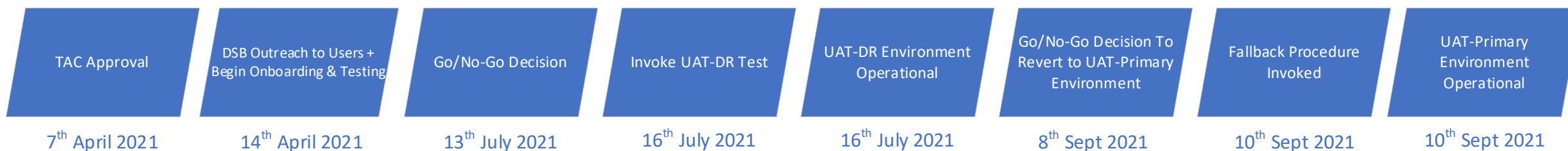
Existing Topics – DR Testing Update

Recap:

- Following the October 2020 TAC meeting, TAC members agreed that the UAT-DR test should proceed as early as possible in 2021.
- The DSB will reach out to all UAT users to undertake their connectivity testing to the DSB UAT-DR environment.
- This will include the VPN clients were approached previously but were unable to assist then due to other commitments (e.g.: Brexit).

Next Steps:

- The DSB is targeting the UAT-DR test to begin at 12PM UTC Friday 16th July 2021 and complete on 12PM UTC Friday 10th September 2021. The DSB will operate the UAT environment from the AWS North Virginia Region for 8 weeks, as previously agreed.
- The UAT ToTV functionality will not be available in the UAT environment during the period mentioned above. For Users that require to test ToTV functionality in UAT, they will need to be onboarded onto the UAT2 environment.



- Notifications containing more details on the approach will be sent to users on the 14th April 2021, following the TAC’s approval.
- Product changes scheduled to be implemented during the UAT-DR window:
 - ISDA 2021
 - Tentative Production Date: 15th August 2021
 - Tentative UAT Date: 3rd July 2021

Note: As ISDA have not published the finalised documentation regarding the new FROs, the scheduled dates may be subject to change.

TAC Question: Does the TAC agree with the approach being proposed?

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 August 2021*.
- The Global Tables solution is expected to be deployed to ToTV Production in October 2021*.

Existing Topics – File Download Snapshot & Delta I of II

Background

In October 2020 the TAC discussed the introduction of weekly snapshot files as part of BAU in 2021, these would:

- Complement the daily delta files produced today
- Contain the latest state of all ISIN records
- Be available by Sunday 16:00 (UTC) representing all ISIN records up until the end of the day before (Saturday)
- Not impact the current daily delta files

Update

Prior to scheduling this work, the DSB is seeking the TAC's confirmation of the proposed approach, which is:

- To create two new folders, “delta” and “snapshots” as shown below:

[/file-download/isin/delta](#)

[/file-download/isin/snapshots](#)

- The current “year” folders, which all contain delta files, will all be moved into the delta folder
- To preserve backward compatibility, symbolic links will be created for the "year" folders e.g.:

[/file-download/isin/2020 -> /file-download/isin/delta/2020](#)

- A new symbolic link will be created to point to the most recently available snapshot

Existing Topics – File Download Snapshot & Delta II of II

Snapshots

This section provides more details on the proposed approach to introduce the new Snapshots:

- Periodic snapshots will be created in: [/file-download/isin/snapshots/created.<yyyymmdd>](#)
- A new symbolic link will be created to point to the most recent snapshot files as soon as they are available:
`/file-download/isin/snapshot -> /file-download/isin/snapshots/created.<YYYYMMDD>/`
- A new process will be added to generate the weekly snapshot files
- The snapshots folder structure will be very similar to the delta folders i.e.: contain multiple “years” and in each year, multiple “date” directories
- The files written within each “date” directory will represent the ISIN records which were last modified on that date
- The format of the individual snapshot files will be the same as the delta format
- A snapshot file will have the path of:
`/file-download/isin/snapshots/created.<yyyymmdd>/<YYYY>/<YYYYMMDD>/<AssetClass><YYYYMMDD>.records`

Where:

`<yyyymmdd>` – represents the date of the snapshot

`<YYYYMMDD>` – represents the last date that the ISIN records were updated

- The previous snapshot versions will be removed once a later snapshot is available
- The DSB’s [File Download document](#)⁴ will be updated to reflect these changes

TAC Question: Do the TAC recommend the DSB to proceed with the implementation based on the proposed approach?

⁴<https://www.anna-dsb.com/download/dsb-end-day-file-download/>

UPI Update I of V – TAC SSC

Following the TAC meeting in October, the TAC Strategy Subcommittee forum has been restarted. A monthly meeting schedule has been drawn up with the objective of addressing any technical matters relating to the implementation of the new UPI service and any impact on the existing OTC ISIN Service.

A key deliverable will be the finalised version of the report which was moved to an interim state in September 2019.

The meetings that have taken place since the TAC meeting in October are as follows:

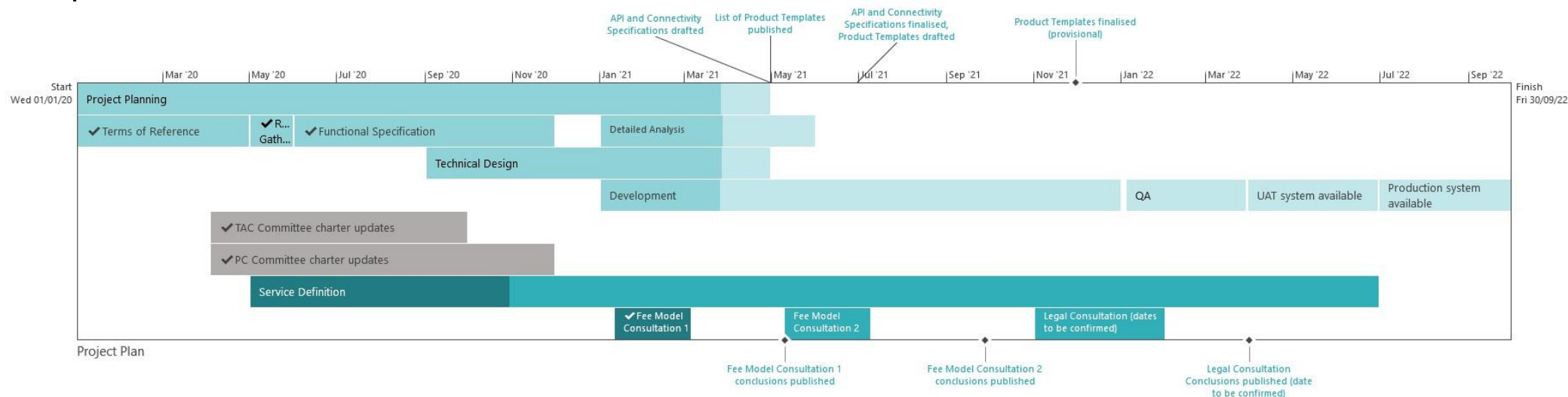
Meeting Date	Topics
16/12/2020	Refresher meeting, Interim Report Review
20/01/2021	Start of new charter term, review of UPI workflow and ISIN/UPI structures
17/02/2021	ReST Rules of Engagement Review
17/03/2021	User scalability topic review

The draft agenda for the next meeting in April is to review the revised FIX Rules of Engagement document.

UPI Update II of V – UPI Progress

UPI Progress:

- UPI Development and Test environments created
- XML Master repository reviewed against latest orchestra standards and remedial work completed
- Changes to support different identifier minting for UPI completed and tested (subject to ISO standard)
- Technical design period extended to cover additional requirements
- First phase of the Fee Model Industry Consultation process completed. Responses currently being analysed
- Rates Swap Fixed Float template for UPI added
- Test UPI created both UPI-only and via ISIN creation
- BA's are working with the Product Committee to define the product templates
- ReST RoE drafted and reviewed by the TAC SSC
- FIX representation of UPI raised with the FIX Global Technical Committee – awaiting industry feedback
- RFI process for underlier reference data initiated



UPI Update III of V – User Scalability I of III

Background

This topic was first presented to the TAC Strategy Subcommittee (SSC) on Wednesday 17th March 2021. The recommendation from the SSC was to share the information with the TAC ahead of the TAC meeting on Wednesday 7th April 2021. On Thursday 18th March 2021, the information was shared via the TAC Bulletin Board (BB), Members were asked to provide any feedback via the BB by cob Tuesday 30th March 2021.

Further Information

Since the materials presented to the TAC SCC and TAC members, there have been two key developments:

1. Updated guidance on projected number of fee-paying entities
2. Estimated incremental Opex to support manual process & exception handling on an automated UPI Service platform

These two items will be described in more detail on the following slides.

UPI Update IV of V – User Scalability II of III

I. Updated Guidance on Projected Number of Fee-Paying Entities

- Based on the initial ROC survey responses in December 2020, the MSP has to date used the projection of **20,000 fee-paying entities as a realistic worst-case scenario** for its scalability planning purposes
- We have now received feedback from the market in response to the first of two UPI fee model related consultations (industry consultation), and on 16th March 2021 a revised set of consolidated survey responses from the ROC, which have led to amended projections:
 - 83% of respondents to the industry consultation stated that they expect access to free-to-use UPI files on the same timeline as that currently made available for the OTC ISIN, as opposed to T+2 as proposed by the DSB. Whilst the DSB has not yet decided on the solution based on this feedback, this would lower the number of fee-paying entities
 - The revised survey responses from the regulatory community provided further clarity on the demand for UPIs, and data points on concentration of demand (e.g.: 86% of UPI demand is expected to come from 200 entities in the EU)
- Whilst there is further analysis and clarity expected from regulators, based on this updated guidance, **the revised reasonable estimate is that there could be 3,000 fee-paying entities** using the UPI service

UPI Update V of V – User Scalability III of III

2. Incremental Opex to support manual process & exception handling on automated platform

- Top-down Opex estimates for H2 2022 onwards have now been made for the provision of an operational support team to manage residual manual processes and exceptions on the automated platform
- Incremental Opex of **€1.25m to €2.5m** will be required to fund additional resources to support this manual effort. The range of costs depends on user numbers; reflects the lack of clarity at this stage on the location of the resources, specifically between high-cost and low-cost regions; and skill mix required
- This relates only to Opex for additional support following Go Live, once the service is generating revenue
- This increases the Opex p.a. from €4,020k to €5,562k-€7,062k and the breakeven from 680 to 850 entities
- These top-down estimates will be validated for the 30 June 2021 Board Meeting, prior to the 2022 Budget process

TAC Question: Does the TAC support the proposed approach to address the user scalability concerns raised?

New Topics – UAT Downtime Window

The UAT (next release environment) main downtime window is currently aligned with Production and UAT2 (as-prod environment). The period is 12 hours and runs from 00:30:00 AM UTC Sunday to 12:30:00 PM UTC Sunday.

Full details of the DSB's operating hours can be found [here](#)⁵.

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.

The DSB would like to explore separating the weekend downtime window for UAT from Production/UAT2. The same team undertakes these releases and while we aim to avoid UAT and Production releases falling on the same weekend, the UAT requirements will still compete with routine BAU maintenance activities for Production.

Hence, the DSB is looking to move the UAT downtime window from Sunday to Saturday and seeks the TAC's guidance on identifying an alternative window. Some of the key local times relating to the downtime UTC times can be seen in the table below:

Downtime	UTC	Los Angeles	New York	London	Hong Kong
Start	10/04/2021 00:30 AM UTC	09/04/2021 17:30	09/04/2021 20:30	10/04/2021 01:30	10/04/2021 08:30
End	10/04/2021 12:30 PM UTC	10/04/2021 05:30	10/04/2021 08:30	10/04/2021 13:30	10/04/2021 20:30

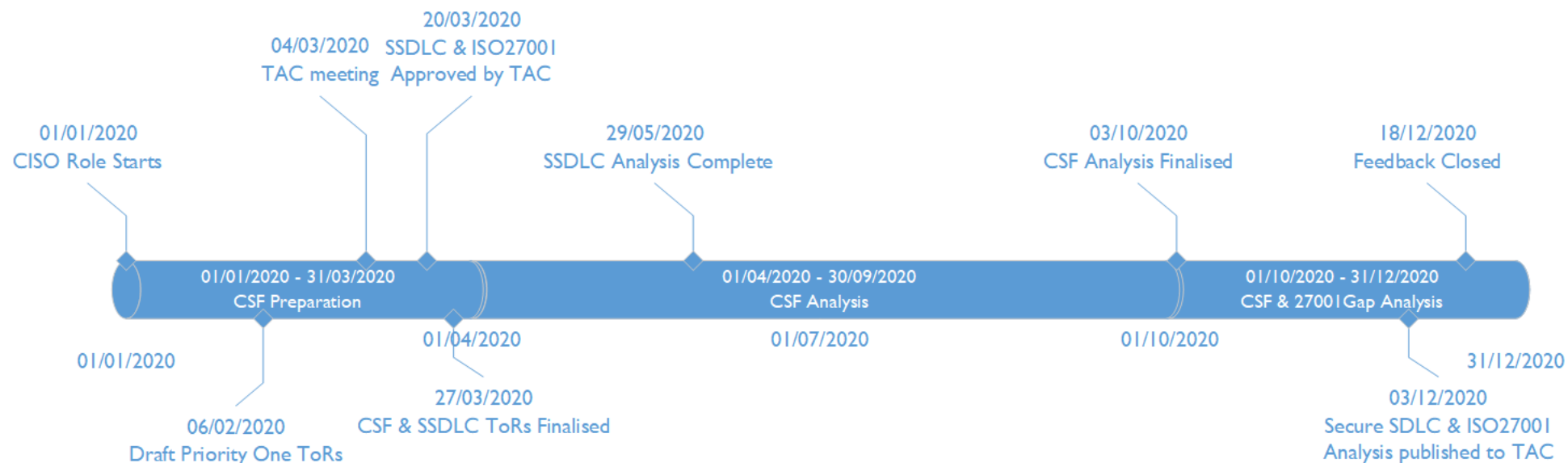
TAC Question: Would 00:30:00 AM UTC Saturday to 12:30:00 UTC Saturday be a viable alternative suggestion?

⁵<https://www.anna-dsb.com/operating-hours-and-holidays/>

2020 Industry Consultation

Background

- The Terms of Reference documents for both Secure SDLC and ISO27001 were reviewed and approved by the TAC on the 20th March 2020
- The Office of the CISO worked on the analysis which was published to the TAC via email on the 3rd December 2020
- The TAC were requested to provide feedback by Friday 18th December 2020
- This has been reflected in an updated version of the timeline below:



Next Steps:

- The DSB is seeking the TAC's questions or approval of the provided analysis and guidance on how next to proceed.

2021 Industry Consultation I of V

Background

The DSB's Industry Consultation process ran in 2020 for the 2021 service provision. User feedback relating to five questions which had an impact on technology were discussed with the TAC at a special meeting on the 23rd June 2020. The five questions are listed below for reference:

- Q1 – Structured Communications
- Q2 – Search only User
- Q3 – One time data snapshots
- Q5 - Multi-Cloud
- Q6 - Single Active Region

The TAC's recommendations were presented to the DSB Board. The full details, including the final consultation report can be found on the DSB [website](#)⁶.

Update

- The analysis for questions 1, 2 and 3 commenced in Q1. Further details on questions 1 & 3 will be provided to the TAC members via the bulletin board on completion of the analysis.
- Further details regarding question 2 are provided on slide 24.
- Questions 5 & 6 require the creation of a further subcommittee, this will be discussed further from slide 25.

⁶<https://www.anna-dsb.com/industry-consultation/>

2021 Industry Consultation II of V – Q2 – Search Only User

Update

In Q1 2021 the DSB has reached out to industry to gather requirements of the Search Only User Type. The solution is now ready for Technical Design and Scheduling. The solution also requires updates to the legal documentation and will be operational as a new user type from 2022. The proposed timeline can be seen below:



The TAC asked the DSB to identify the number of users required to recover the build cost of the service.

- The €78k build cost will be amortized over years 2022-2025 (€19.5k pa).
- The Search Only user fees would be charged at half the cost of a Standard User, using 2021 as a base, this equates to €22k per user.
- This implies that the build cost would be:
 - *Recovered by 2025 if there was one additional Search Only user using the service from 2022-2025*
 - *Recovered within a year if four users take up the Search Only service*

2021 Industry Consultation III of V - Cloud & Multi Region I of III

Background & Governance

At the October 2020 TAC meeting, the TAC discussed two items (Q5 & Q6) resulting from the 2020 Industry Consultation process. The TAC members requested greater clarity about the proposed subcommittee which will be established to oversee the analysis relating to both consultation questions.

Subcommittee Name

The DSB has announced the creation of the Cloud Architecture Sub Committee (CASC).

Membership

An initial outreach to the TAC members for expressions of interest to join the CASC has taken place:

- 23rd March 2020 - Email sent to TAC members
- 29th March 2020 - Bulletin Board entry submitted

A review of the [TAC charter](#)⁷ has confirmed that it is possible to admit delegate members to a committee, typically where specialist domain expertise is required outside the skillsets of existing TAC members. Members will be required to conform to the Competition Law Protocol as detailed in the Charter.

Initial Meeting

The proposed date for the initial kick-off meeting has been proposed for the 29th April 2021

A Terms of Reference (ToR) document for multi-cloud will be shared with the members ahead of this first meeting

⁷<https://www.anna-dsb.com/download/technology-advisory-committee-charter/>

2021 Industry Consultation IV of V - Cloud & Multi Region II of III

The DSB will approach key vendors identified across its technology spectrum, to participate in an industry Request For Information (RFI) process. Existing DSB vendors will also have an opportunity to participate.

- Interested vendors will sign an NDA with the DSB
- The DSB will produce a structured set of questions to which vendors will respond to by a common deadline
- Vendors will be offered the opportunity to present to key DSB stakeholders
- Additional questions returned to Vendors in writing
- Vendor responses will be weighted and collated
- Final analysis derived across all market segments

DSB RFI Process outputs:

- Survey documents
- Vendor presentations
- Documented responses
- Additional questions
- Final analysis

Multi/Hybrid Cloud Platform

Multi-Cloud Support & Billing aggregators

Key DSB resources:

- Senior DSB stakeholder
- Technical Lead
- Senior Project Manager (CASC)
- Junior Project Manager (Vendors)

Cloud Service Provider

Cloud Connectivity

2021 Industry Consultation V of V - Cloud & Multi Region III of III

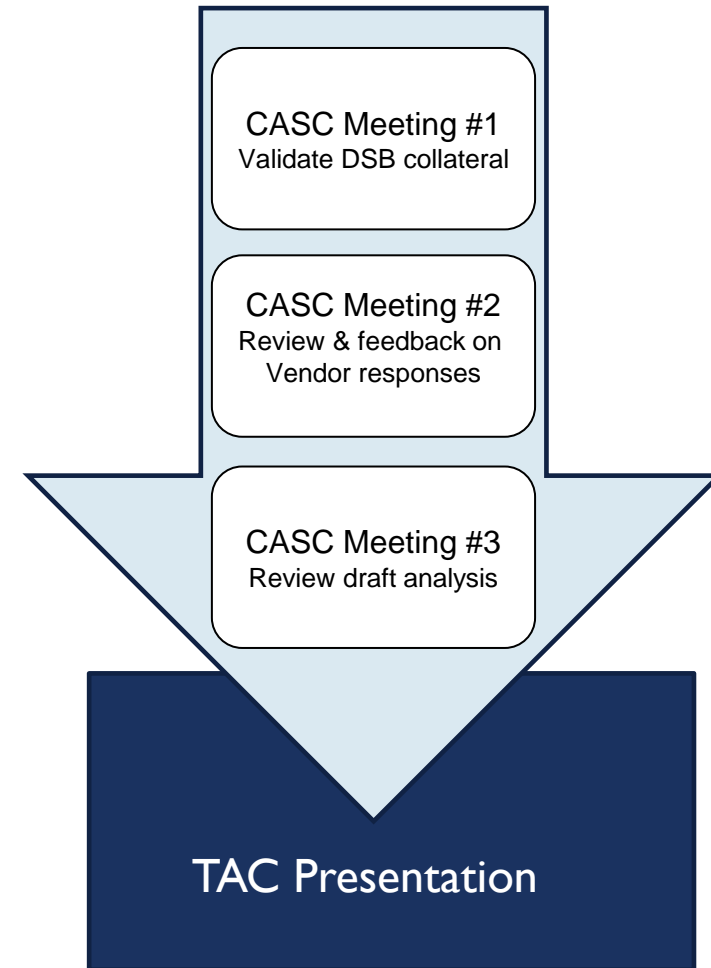
Scheduling

- Consultation question topics should take a total 12 weeks each
- 3 CASC meetings bookend the DSB activities with vendors
- As per existing procedures, key questions between meetings will be posted to BB with CASC members being notified by email
- Shortened break between Consultation questions of only 4 weeks
- CASC meeting #2 is key opportunity for CASC members to pose queries that the DSB can take back to Vendors
- Final analysis & recommendations to be presented to the TAC
- Following TAC review, the full analysis (commercially sensitive) document will be presented to DSB Board

Proposed CASC dates:

Multi-Cloud: 29th April / 10th June / 22nd July

Multi-Region: Dates to be discussed in the above CASC meetings



AOB

- 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
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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
Investment Association	Industry	David	Broadway	Investment Operations Lead
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	Abhinav	Koul	Financial Instrument Reference Data Architect
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	Kamel	Singh	Senior Architect
SmartStream	Industry	Rocky	Martinez	CTO
Standard Chartered Bank	Industry	Anthony	Brennan	Data Solutions Lead
State Street Bank	Industry	Kimberly	Cohen	MD - Business Technology Solutions
Tahoe Blue Ltd	Industry	Jefferson	Braswell	Founding Partner
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 TAC Secretariat: Will Braithwaite
DSB Infrastructure Architect

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)

**To be confirmed at the April 7th TAC meeting*

Appendix C – TAC Bulletin Board Items

The following table details the active TAC Bulletin Board topics:

Created	Title	Posts	Link
29/03/2021	DSB TAC Cloud Architecture Subcommittee Formation	1	https://www.anna-dsb.com/bulletin-board/tac-forum/dsb-tac-cloud-architecture-sub-committee-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/
15/10/2020	One-Time Data Snapshots for File Download (IC 2021 Q3)	1	https://www.anna-dsb.com/bulletin-board/tac-forum/one-time-data-snapshots-for-download-ic-2021-q3/#post-206
16/09/2019	Dynamic Enumerations – Alternative Product Template Formats	19	https://www.anna-dsb.com/bulletin-board/tac-forum/dynamic-enumerations-alternative-product-template-formats/paged/2/#post-205

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	2020 Pen Test completed; report received
D3	Disaster Recovery Testing	n/a	Q4 2021	UAT DR Test Q3 2021 subject to TAC approval

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 July 2017	31 December 2020	Ubuntu 18.04 LTS	Phase 4 OSM	Ubuntu 20.04.1	08 June 2020
Apache Kafka	0.10.1.1	22 December 2016	Past	2.6.0	Phase 3 OSM	2.7.0	21 December 2020
Apache Solr	6.4.2	07 March 2017	Past	8.6.3	Phase 3 OSM	8.8.1	22 February 2021
Apache Zookeeper	3.4.9	03 September 2016	TBC	3.6.2	Phase 3 OSM	3.6.2	09 September 2020
Elastic Search	7.5.2	25 April 2020	31 July 2021	N/A	N/A	7.11.0	10 February 2021
MongoDB	4.2.9	15 November 2020	TBD	TBD	Phase 1 OSM	4.4.4	16 February 2021
NGINX	1.12.1	11 July 2017	TBC	1.18.0	Phase 3 OSM	1.20.0	08 October 2020
OpenJDK	1.8 181-b13	17 July 2018	30 June 2023	1.8.0_282	Phase 3 OSM	1.8.272-b00	01 June 2020
QuickFIXJ	2.1.0	03 August 2018	TBC	N/A	N/A	2.2.0	16 June 2020
Tomcat	8.5.37	01 December 2018	TBC	9.0.41	Phase 3 OSM	10.0.4	10 March 2021

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

Since the previous TAC meeting, the target versions for the Apache software family has been amended to target newer application versions.

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 slide is intended to reflect the DSB's DR testing history
- However, at the moment, the DSB is working with the TAC to schedule a production DR test
- The test will:
 - Ratify the DSB's:
 - Recovery Time Objective
 - Recovery Point Objectives
 - Confirm that all DSB users can access the Disaster Recovery site
- The TAC have requested that prior to undertaking a Production DR test, the DSB should undertake a test the UAT environment
- Subject to TAC approval, the DSB has proposed a date of Q3 2021 for the UAT-DR test

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	12	Q1 2021	Open
2006-004	DSB to ensure that the one-time data snapshots question is discussed further during the October TAC meeting	Propose to provide further updates when available via the existing BB item (see slide 31)	23	Q3 2021	Open
2006-005	DSB to establish a forum to regularly review the status of the analysis related to questions 5 & 6	To be discussed during the meeting	25	Q4 2020	Open
2010-003	TAC Secretariat to arrange for the production of weekly snapshots via BAU in 2021.	Update in April meeting	14/15	Q3 2021	Open
2010-007	TAC Secretariat to investigate alternative VPN options to the current FortiGate solution and report findings back to the TAC.	Update in April meeting	N/A	Q3 2021	Open
2010-008	TAC Secretariat to identify a suitable UAT testing window in 2021 to run the DR failover test.	Update in April meeting	12	Q3 2021	Open