Deutsche Bank
Technology, Data and Innovation

Group Technology Architecture Council

September 2025

With deep dedication.

Attendance Record

GTAC Member		2025							% Attendance
Role	Name	Jan	Feb	Mar	Apr	May	Jun	Jul	
Head of Group Architecture (Chair)	Nichola Hammerton	✓	✓	✓	✓	✓	✓	✓	100%
Chief Technology, Data and Innovation Officer	Bernd Leukert	✓	✓	✓	✓	✓	✓	✓	100%
CIO Corporate Bank	Joanne Hannaford	✓	✓	Apologies	✓	✓	✓	✓	86%
CIO Corporate Functions, Head of Technology Centres, TDI APAC-MEA & Shared Applications & Services	Stefan Schaffer	✓	Apologies	✓	Apologies	✓	✓	✓	71%
Chief Security Officer	Brent Phillips	✓	✓	✓	✓	✓	✓	✓	100%
CIO Investment Bank and AFC/Compliance	Denis Roux	✓	✓	Apologies	✓	✓	✓	Apologies	71%
Head of TDI Americas & GTI	Tony Kerrison	Apologies	✓	✓	✓	✓	✓	✓	86%
CIO Private Bank	Christian Rhino	-	✓	✓	✓	✓	✓	✓	100%
Chief Data Officer	Eugene Gilerson	-	-	-	-	-	Apologies	✓	50%
Global Head of Platforms Strategic Analytics	Paul Smith	✓	Apologies	✓	Apologies	✓	✓	✓	71%
Engineering Culture	Martin Reeves	✓	✓	Apologies	✓	✓	✓	✓	86%
Chief Strategy Officer	Christoph Rabenseifner	✓	✓	✓	Apologies	✓	×	✓	86%
Head of Technical Architecture	Miguel Capitao	✓	✓	✓	✓	✓	✓	✓	100%
Head of Data Architecture	David Ryan	✓	✓	✓	✓	✓	✓	✓	100%
Council Secretary	Jessica Malcolm	✓	✓	✓	✓	✓	✓	✓	100%

Agenda

	Time[1]	Slot	Topic	Speaker	Objective	
1	1.00-1.05	*5 min*	**GTAC Actions**	Jessica Malcolm	Summary of proposed to close and open GTAC actions	For Acknowledgement
2	1.05-1.35	*30 min*	**Observability Strategy**	Franz Plum Craig Ballingall	Approval sought for Observability Strategy	For Acknowledgement
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GTAC Actions (1/2)
Open GTAC actions

ID	Action	Action Owner	Due Date	Status	Additional Commentary
7.7	GA to table proposal for mechanism to ensure verifiable enforcement of the GTAC-approved decision trees.	**Miguel Capitao**	~~30-May-25~~ 30-Oct-25	Open	
13.1	The Manage Software Assets Working Instruction to be updated	**Tony Kerrison**	TBC	Open	
13.2	Decision criteria for OSS software ownership to be defined, The TAAP (Technical Architecture Approval Process) Rules of Procedure to be updated to reflect the approval for the use of complex OSS and Create an allowed list of OSS.	**Miguel Capitao**	30-Oct-25	Open	
13.3	Review how to ease the contribution to OSS projects.	**Stefan Schaffer**	30-Oct-25	Open	
13.4	Define how the OSS repository can be integrated into existing or target systems e.g. ServiceNow.	**Kurt Reichert**	30-Oct-25	Open	
13.5	Ensure management of EOL for vendor software is integrated into broader framework for managing end of life components.	**Holly Wishnow**	30-Oct-25	Open	SII to be raised and plan shared by Oct.
13.6	Incorporate process to ensure that OSS licencing remains within permitted use without vendor fees.	**TBC**	TBC	Open	
13.9	Definition of the target state data platform capabilities, and approach for alignment/convergence across CIO areas. Group Architecture to work with the existing implementations across IB, CB, PB and RFT identify the best of breed (including potential commercial offerings) and approach for convergence.	**David Ryan**	~~30-Aug-25~~ 24-Oct-25	Open	To be presented in Oct GTAC.
13.10	Agree ownership of the key data assets in the bank	**David Ryan**	~~30-Aug-25~~ 24-Oct-25	Open	
14.2	Seema to collaborate with Paul and other Sybase application owners to develop a detailed migration plan for approximately 200 Sybase instances, in alignment with the disinvestment directive outlined in the updated database strategy.	**Seema Puri-Mehta, Paul Smith**	30-Oct-25	Open	
14.3	The Database product strategy matrix to be updated in Q4 2025, once the private cloud 'TBD' entries have been confirmed.	**Seema Puri-Mehta**	12-Dec-25	Open	

GTAC Actions (2/2)
Proposed to close GTAC actions

ID	Action	Action Owner	Due Date	Status	Comments
7.4	Craig to work with CIO teams who are already solving locally to come together with a bank vision for Observability and present back to the GTAC.	**Craig Ballingall & CIOs**	~~30-Jun-25~~ 15-Sep-25	Propose to close	Covered in today's agenda.
7.5	Review of the 16 workflows identified outside of uFlow today. First to assess if this is latest count, what the migration path looks like with associated business case and timings (factor in EoL in incumbent).	**TBC**	TBC	Propose to close	To be presented in Shared Asset Oversight forum.
13.7	Produce an implementation view of the data strategy to specify what is complete and where action is needed by teams.	**David Ryan**	31-Jul-25	Propose to close	Communications circulated in August.
13.8	David to distribute EDM data class ownership to group.	**David Ryan**	15-Jul-25	Propose to close	Distributed with July GTAC minutes.
14.1	The Database use cases and technology matrix to be updated and re-circulated to GTAC members with the following enhancements 1. Mark Sybase as a disinvestment target – clearly indicate its planned phase-out. 2. Integrate Disaster Recovery (DR) requirements – explicitly reflect DR expectations across all strategic database products. 3. Include HANA DB – ensure HANA is represented in the product matrix and strategic considerations. The revised strategy should be shared with the group ahead of the September communications rollout	**Seema Puri-Mehta**	04-Aug-25	Propose to close	Updates circulated 4 Aug, and communications to be distributed end of Sept / early October.
14.4	Miguel to distribute current Business Intelligence product roadmap.	**Miguel Capitao**	30-Sep-25	Propose to close	Circulated with GTAC material.

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Observability Strategy
Summary of what we will cover today...

Question to solve for?

What is the overall strategy for observability in DB?

Abstract

Our Current Position

- To date our approach to observability has been **tool focused, missing key principles of observability** and does not recognise it as a **distributed challenge**, which can only be addressed by unstinted collaboration.
- There is a **culture of secrecy within the technical teams**, resulting in a **reluctance to share data** about the performance and integrity of services in general within DB
- **Sharing and publishing data is key**. There is no information reserved to small group only. Only by **making this data available** to all interested parties can the **full benefit of observability** be realised.

Observability Vision

Our aim is to provide a consistent strategy for observability in Deutsche Bank that recognizes...

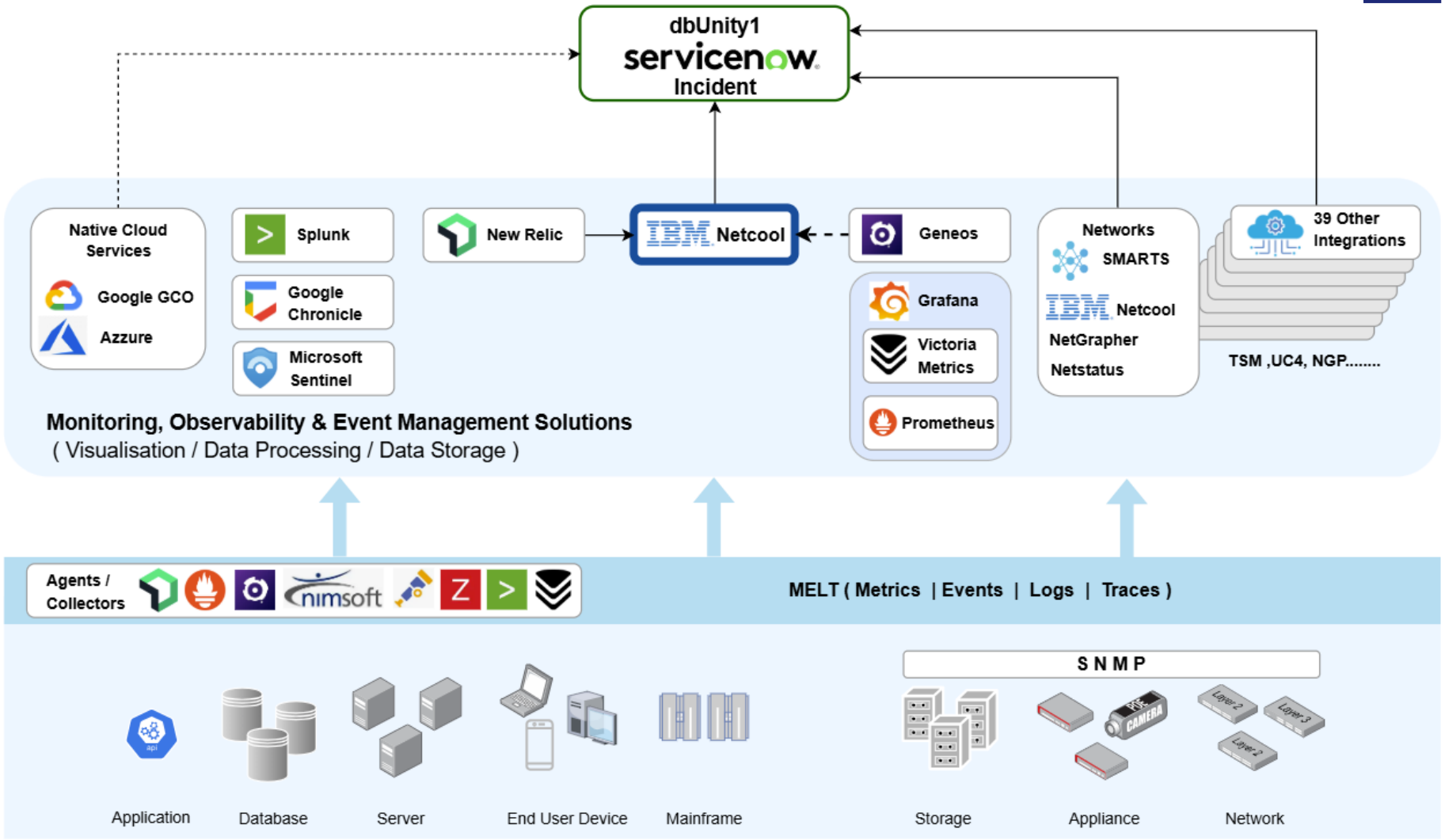
- **No one tool** is able to provide an acceptable solution to all of the use cases within DB.
- The **sharing of data** between consumer types is **vital** to meet our enterprise wide observability requirements.
- It is **not feasible to change** all of **our existing tools** to meet a tool based strategy in a reasonable timeframe for reasonable costs.
- The **lack of synchronized**, **consistent data** across the full stack impacts our ability to quickly and accurately identify the root cause in major incidents.
- Developer productivity is hampered by not being able to **monitor the impact of code changes** on underlying component performance.

We aim to deliver an overall strategy for observability in Deutsche Bank that solves for all of these demands while...

- ✓ **Not mandating** significant change at a tooling level.
- ✓ Enabling **cost optimization** of observability.
- ✓ Delivering **clear improvement** in our incident processes.
- ✓ Delivering **enhanced security** of our observability data.
- ✓ Meeting **regulator demand** for specific characteristics of observability systems.

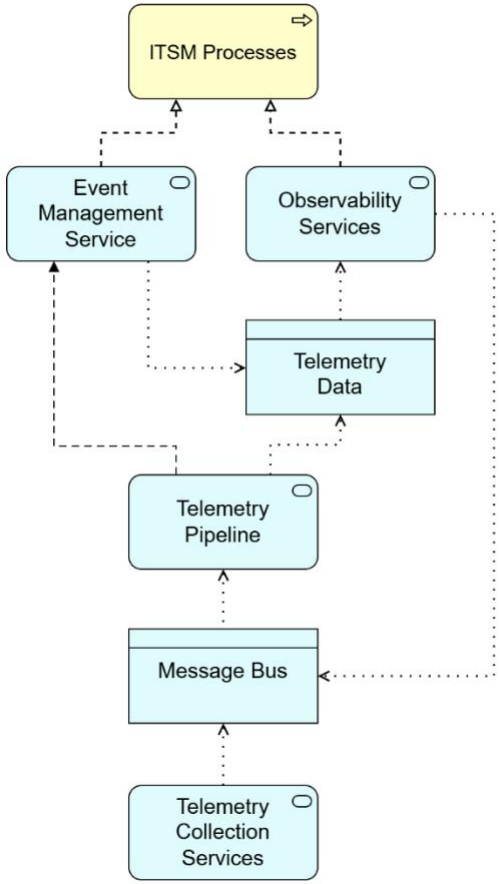
2025 - Current State

- Disparate monitoring, event management and observability solutions
- No ‘Single Pane of Glass’
- ~40 interfaces to ServiceNow incident API
- Inconsistent Event Management Process



Next, we want to introduce a Data Pipeline to reduce Data and accelerate journey to AIOps

Conceptual Architecture



The Journey Towards Benefits

Building Blocks

- Common Data Pipeline for Event and Telemetry Data
- Common Services Data Model (CSDM)

Paradigm Shift

- All Events Consolidated into Single Platform

TDI Technical Benefits

- Improved Event Correlation for Detecting Incidents
- Faster Root Cause Analysis Capability

DB Group Benefits

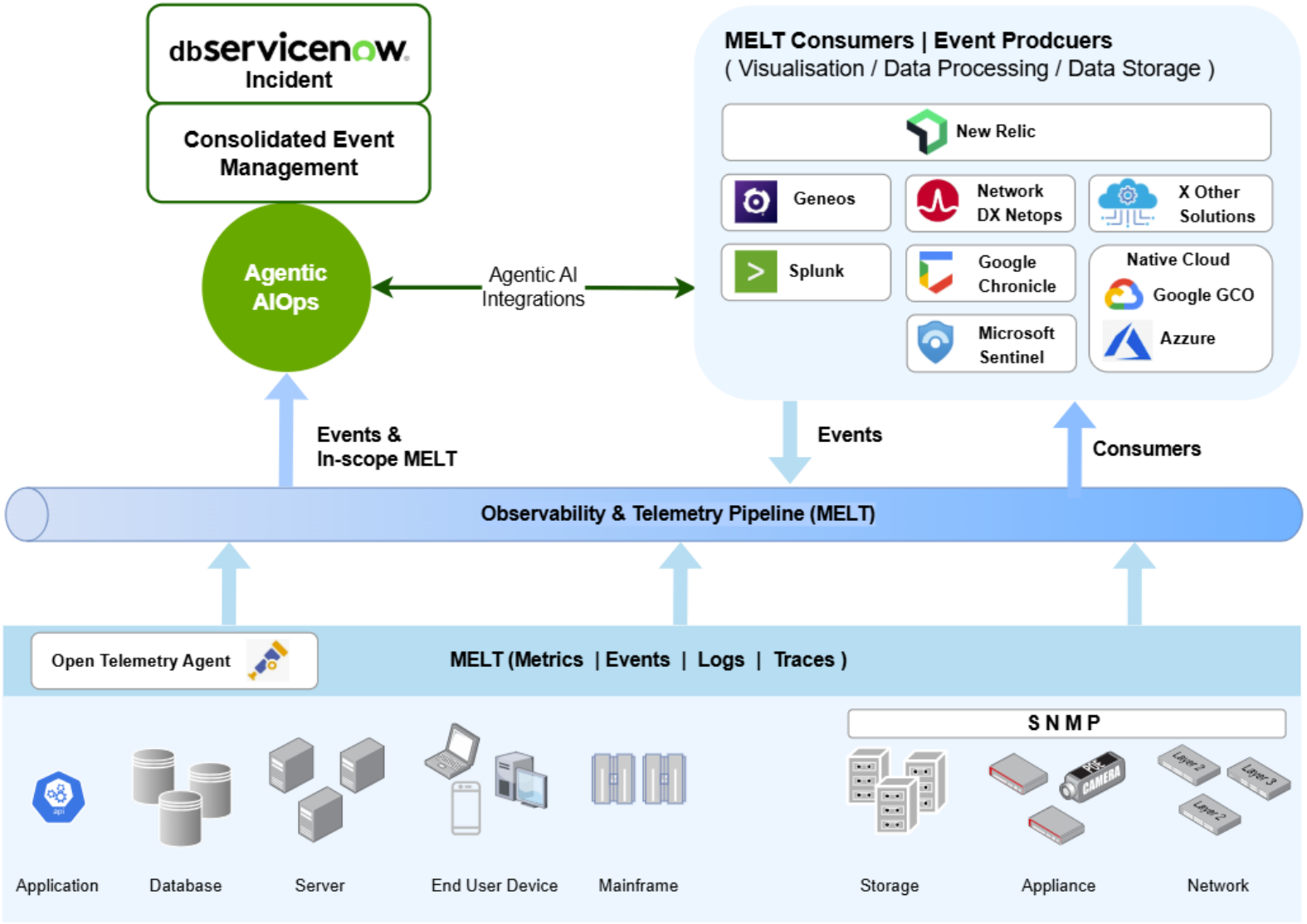
- Reduced Incidents
- Shorter Outages

Target State: Telemetry Pipeline & AIOps

- Pipeline an Enabler for AIOps
- CSDM driven topology correlation
- Agentic AI Integrations with downstream observability platforms

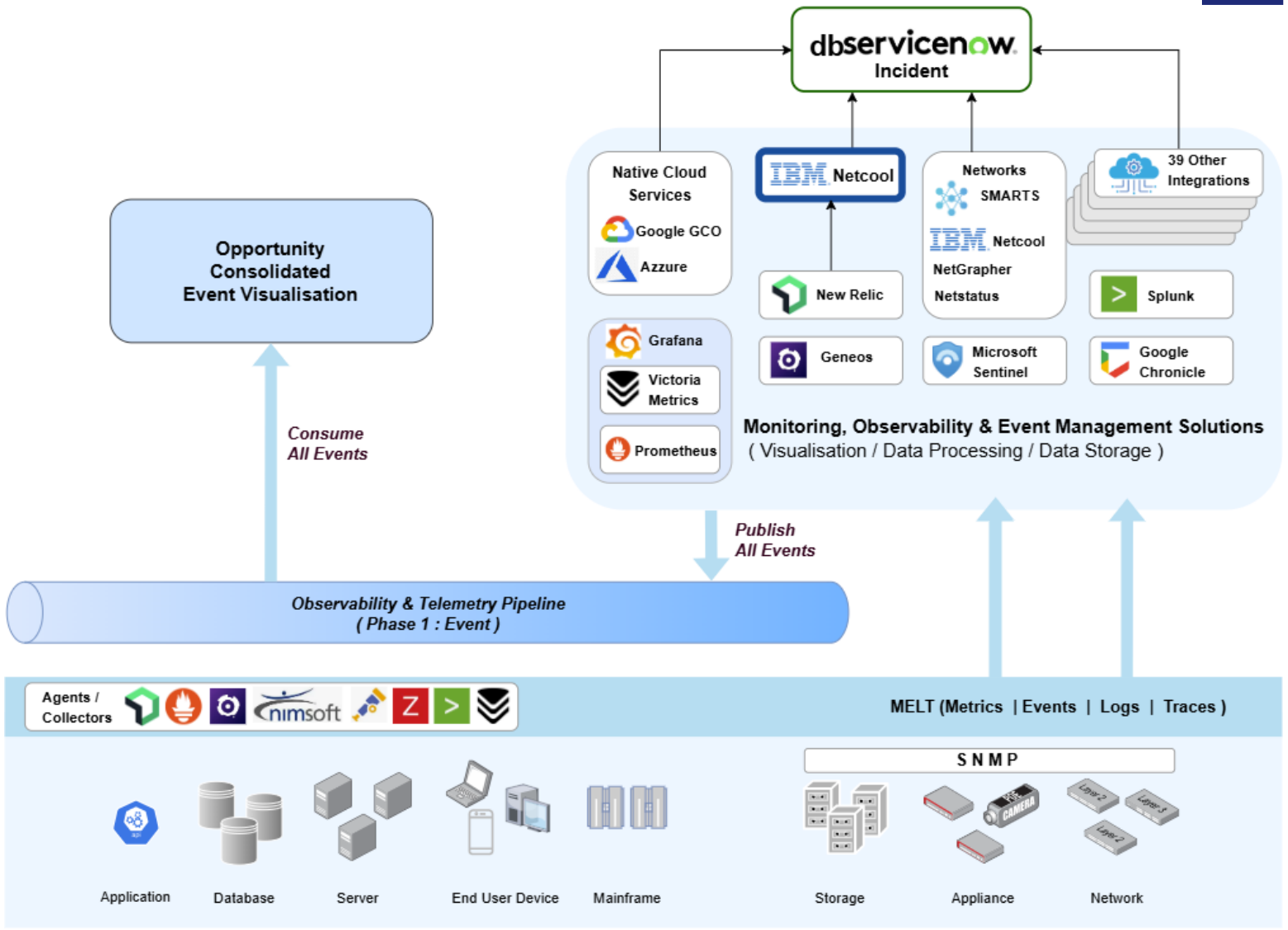
Benefits

- Single Pane of Glass for managing, diagnosing and troubleshooting Incident (Agentic AI)
- Predict & prevent Incidents
- Rapid understanding of ‘Service & Business Impact’ (Blast Radius)
- Incident reduction
- Improved MTTX
- Reduced Agent Deployment & Maintenance



2026 Interim State

- Rollout New Relic to Hybrid Cloud
- Setup the ‘Event Pipeline’
- Define Event Standards & Best Practices
- Update Event Management Process and Governance
- Integrate GTI Solutions to Event Pipeline
- TDI Apps Publish to Event Pipeline
- Integrate Events to Event Single Pane of Glass



What is needed to achieve the benefits?

	Agreement Needed	Holistic Benefits
1	CIO Agreement App Events to Data Pipeline *Agreement Events Instrumented TBC	License Cost Removal TDI Products
2	License of Pipeline Product *License Funding 2 Mill	Data Ingest Cost Reduction
3	Build and Integrate GTI to Data Pipeline *Engineering Funding 1.5 Mill	Reduced Downtime and Triage Effort
4	Central GTI Tools: Exceptions GTI owned *TDI Agreement	Reduce Overhead of Decentralised Solutions

Product Impact View

Netcool	Decommed, Integrated into Service Now	1m EUR PA
Nimsoft	Decommed, Replaced with New Relic	1.5m EUR PA
CSO SIEM Logging	Reduced Agent Management	900k EUR PA
Splunk Scribe	Cost Avoid – Contractual Commercial Risk	Cost Avoid
New Relic	Reduce Data Volume Ingest Cost	500k EUR PA
Geneos	Opportunity: Pivot Single Pane to ServiceNow	-
OEM	Oracle Offering – Integrate into Pipeline	-
vRealize	VMWare Offering – Integrate into Pipeline	-
Smarts	Networks consolidate to DX NetOps	-
Service Now	Event TDI Single Pane of Glass	-
Cloud Logging	Ability to Reduce GCP Logs – 100 Apps	1m EUR PA
		4.9m EUR PA

***Costs and Saves are estimates, to be validated prior to build phase**

Decisions for today's discussion

Key decision for GTAC consideration

Observability Strategy	Decision (Yes/No)
• GTAC to support the proposed observability target state and acknowledge funding to build the core service	☐

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1 | UK Time

Proposed Architecture for CIAM/CIDP Integrated Design

Summary of what we will cover today...

Question to solve for?

DB's approach for customer (non db-Workforce) identity that supports individual divisional requirements

Abstract

- Within DB, separate customer identity solutions have evolved – CIDP (CB) and CIAM (PB), based on the same technical software solution & contract (ForgeRock / Ping) but with significant different functional focus
- Given specific use-cases and different requirements, CIDP and CIAM are optimized for the respective use case and divisional requirements.
- It is recommended to deepen the cooperation between CIDP and CIAM. An Assessment should be conducted to identify the common technic features to be centrally managed and maintained. In addition, a federation layer needs to be built to allow CB clients usage of PB platforms with one single account.

Different Use-Cases are handled by specialized instances with common foundations

	Central standard authentication platform for high number of applications	Specialized offering for high volume customer access channels
Instance	CIDP Standard **authentication** solution for DB workforce and for CB & IB Customers.	CIAM Specialized for PB customer access channel use cases. Integrated **Authentication, Authorization, Entitlements**.
Characteristics	Standard approach for 700+ applications, moderate number of users (1.1m) Ensure global solution, supporting multiple regulatory environments	Few applications but high number of users (10m) Special features for Online, Mobile, Telephone Banking, dbAPI use-cases.

CIDP & CIAM have common foundations

- Leverage the ForgeRock authentication solution within their respective architecture , operated on GCP
- Provide key features of an authentication solution aligned with business requirements
- Joint contract, vendor engagement and procedure
- Aligned approach for MFA (move to SealOne) with significant license cost reductions*

* The final cost base of SealOne/BestSign is about 20% compared to OneSpan. During the latest license renewal of OneSpan we were able to reduce already 50% of the cost (as we had a better negotiation base with SealOne as possible competitor)

Goal: One technology ecosystem, centrally governed — tailored to divisional needs.

Vision

A technology ecosystem with unified core capabilities, enabling divisions to gradually adopt shared technical capabilities while preserving their unique functionality and pace of change.

Area of Evaluation*

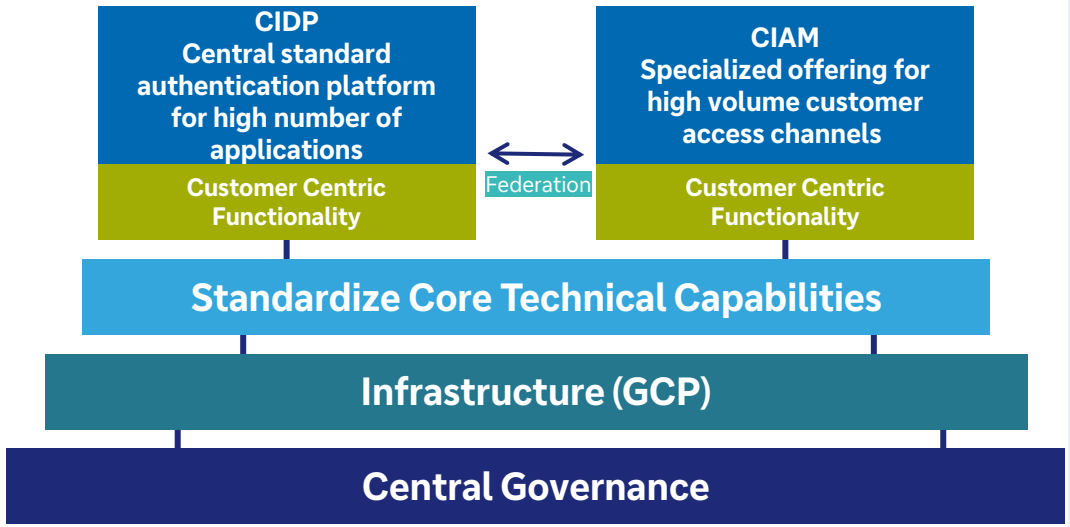
Customer Centric Functionality
Preserve division-specific use cases through customized and configurable instances

Unify Access Control and Data Protection
Implement consistent identity, Access, Data handling practices across divisions while maintaining necessary isolation.

Standardize Core Technical Capabilities*
Assess & Identify common technical features to be centrally managed and maintained

Enable Gradual Adoption Core Capabilities
Progressively leveraging common services and components following a deep assessment

Establish Central Governance
Define a unified ownership & product management model (e.g., central platform team + division-specific feature owners)



Strategic Objectives

Eliminate duplication of effort and costs (licenses, support, integration work)

Harmonize controls to streamline onboarding, reviews, and regulatory reporting

Maturing and evolving central capabilities

Creating functionally unique, modular, consumable services and components

Provide a central point of services and APIs, based on strong standards applied consistently

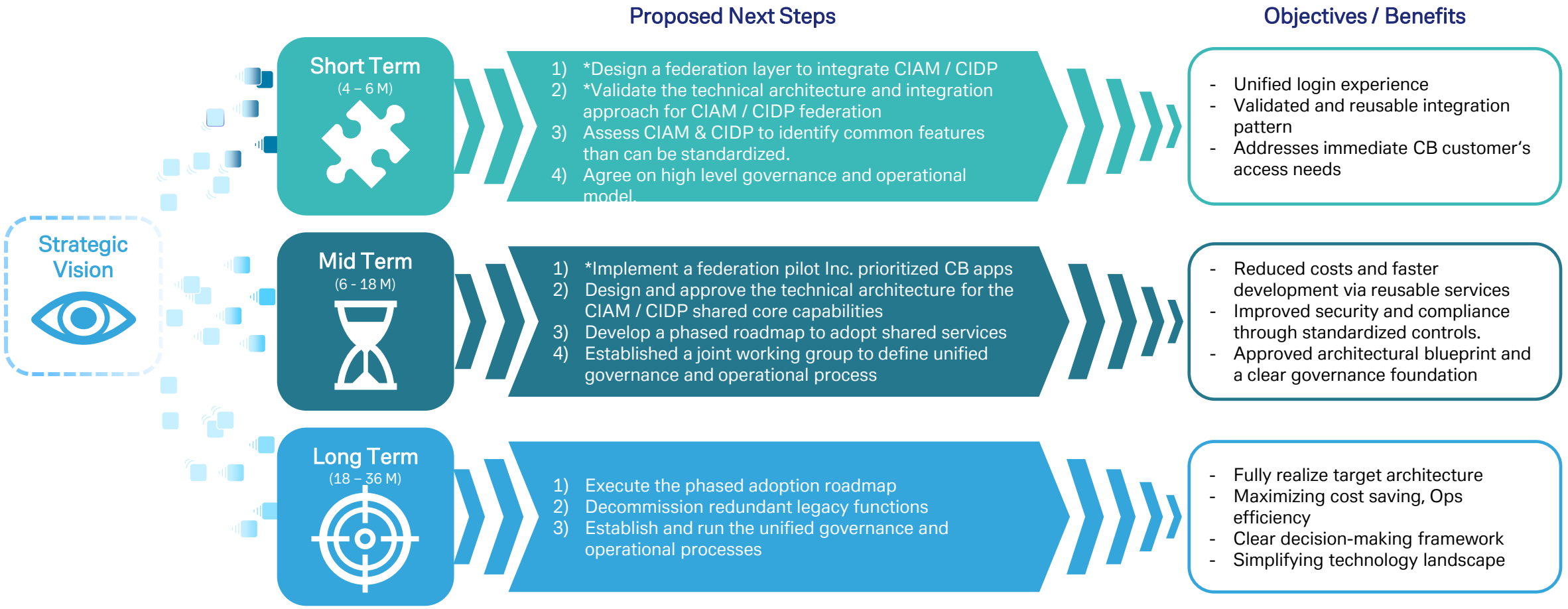
Improve reliability, support, and upgrade path consistency

Cost reduction by consolidation of vendor spends, and unified vendor communications

Move toward consistent, unified user experience across related channels

* The activities will get started in Q4 2025. The Q4 activities are under review for more transparency.

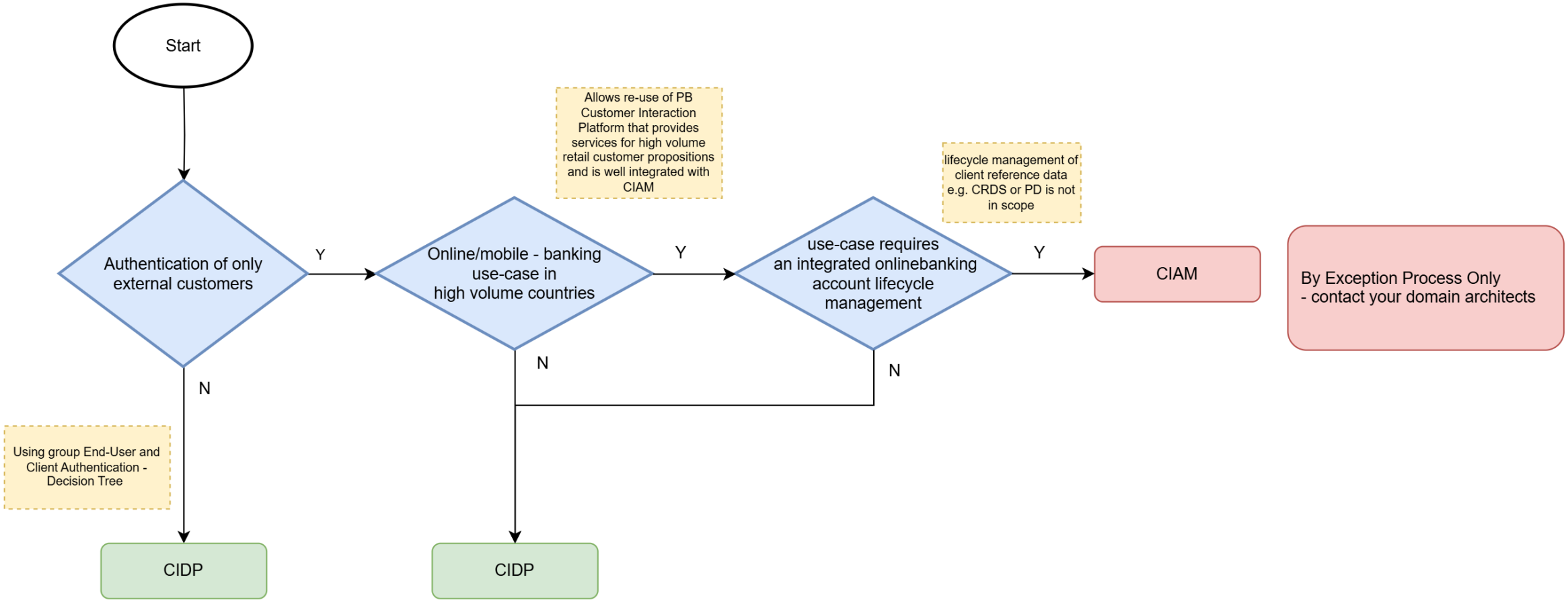
CIAM & CIDP
Proposal for Next steps



* To solve the integration challenge raised by ***CB / Phoenix, Phoenix needs to allocate 725k EUR*** to fund the federation actions (login & MFA) , Entitlements are not included

Decision Tree

For online/mobile banking customer authentication



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1 | UK Time

Shared Asset – Summary (1/2)

Shared Assets Oversight Forum agreed to move the following shared asset candidates to GTAC for final confirmation

Shared Asset Candidate	Short description	Shared Asset Owner Candidate	Decision
eBO *– elektronisches Bürger- und Organisations-Postfach (electronic Citizen and Organization Mailbox)*	***Description:*** *The electronic Citizen and Organization Mailbox (eBO is a secure, end-to-end encrypted communication channel regulated by German law, enabling Deutsche Bank (GY across all areas and its relevant subsidiaries) to exchange legally binding digital correspondence (e.g. Garnishment) with German authorities and other registered eBO users (e.g. lawyers, courts, bailiffs, etc.) It serves as a digital alternative to postal mail, ensuring proof of delivery and compliance with legal requirements. The solution addresses inefficiencies, costs (mainly high postage fees), and lead times of physical mail by enabling faster, more reliable and automated document exchange.* ***Cross divisional Usage****: PB, CB, IB tbd.* ***Rational:*** *email Gateway, adapters to db-eco system and add-ons will just be built once; operating cost for one central solution.*	**CIO CSF** Shared Application Services (Process Automation)	☐ Shared Asset ☐ Shared Asset Owner
Search	***Description:*** *Distributed Search Engine designed to provide near Real Time Search Capabilities across large volumes of structured and unstructured data for Text and Semantic/Vector search or both. Elastic search is in use for ~35 different users/projects all over TDI. Creating a Shared Asset will reduce provisioning, license and maintenance costs for consolidations on current usage and new Search related requirements* ***Cross divisional Usage****: CB, IB, PB, GTI, others* ***Rational:*** *Standardised provisioning of text and Symantec search to a strategic solution that provides simplified provisioning and architecture and reduce the operating costs. For existing implementations (> 35) and new one's fragmented community licenses can be merged to enterprise license and support model can be streamlined /strengthened.*	*Will be decided in next GTAC*	☐ Shared Asset

Shared Asset – Summary (2/2)

Shared Assets Oversight Forum agreed to move the following shared asset candidates to GTAC for final confirmation

Shared Asset Candidate	Short description	Shared Asset Owner Candidate	Decision
Contract Life Cycle Management	***Description:*** *Contract LC Management (CLM) is a cross-divisional shared asset designed to digitize and streamline the end-to-end lifecycle of legal & transactional contracts. It enables standardized contract creation, negotiation, execution, and storage across multiple business units. The platform integrates capabilities such as document generation, clause creation, review & redlining digital execution and AI enabled data extraction to reduce manual effort and improve compliance. CLM addresses key challenges like fragmented tooling, inconsistent processes, and high operational costs by offering a unified and scalable solution.* ***Cross divisional Usage****: CB, IB, others* ***Rational:*** *Navigate future demand for CLM functionalities towards two standardised platforms to* leverage the investment that have been made into *Arteria & Sirion. Reuse of functionalities, workflows and clause libraries, templates, as well as a central operating will ensure consistent architecture decisions and reduced operating efforts.*	**CIO CSF** Shared Application Services (Documents)	☐ Shared Asset ☐ Shared Asset Owner
ETL	Given the huge complexity and high effort for analyzing and implementation and the already existing platform convergence (Informatica) we would set the shared asset candidate ETL on hold.	*na*	☐ Shared Asset **on hold**

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1 | UK Time

Upcoming Topics for October GTAC…

#	Topic	Question to solve for?	Abstract i.e., short paragraph on what is to be presented to GTAC	Proposed Owner	GTAC Target Date
1	**AI Platform**	What is DB's target AI Platform? What is shared and federated?	Building on the AI Architecture Strategy, with increasing demand, understanding of controls needed and clarity provided where independence can be granted to avoid bottle necks.	Miguel Capitao Tim Mason	**Oct-25**
2	**Data Platform**	What is DB's target data platform components? What is shared and federated?	The ownership of data platform to be clarified to avoid duplication.	David Ryan	**Oct-25**
3	**RFT Interlocks**	How can we improve operational components of Data Close with a more effective 1LoD to 2LoD operating model?	To rationalise the data close layers in RFT has multiple challenges, requiring coordination across multiple teams, however, could also enable multiple benefits. The aim is to outline next steps that could be taken.	Taniem Choudhury Paul Smith	**Oct-25**
4	**Tape and Archiving Strategy**	What is the target strategy for archiving?	Confirmation required on the architecture strategy for archiving and define a set of agreed patterns that include branch countries.	Franz Plum, Miguel Capitao	**Oct-25**

For a list of all upcoming GTAC pipeline topics, see appendix A1.

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Appendix

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A1. GTAC Pipeline Topics (1/2)

List of GTAC Topics framed by a question and abstract to shape the scope

#	Topic	Question to solve for?	Abstract i.e., short paragraph on what is to be presented to GTAC	Proposed Owner	GTAC Target Date
1	**AI Platform**	What is DB's target AI Platform? What is shared and federated?	Building on the AI Architecture Strategy, with increasing demand, understanding of controls needed and clarity provided where independence can be granted to avoid bottle necks.	Miguel Capitao Tim Mason	**Oct-25**
2	**Data Platform**	What is DB's target data platform components i.e. what is shared and federated?	The ownership of data platform to be clarified to avoid duplication.	David Ryan	**Oct-25**
3	**RFT Interlocks**	How can we improve operational components of Data Close with a more effective 1LoD to 2LoD operating model?	To rationalise the data close layers in RFT has multiple challenges, requiring coordination across multiple teams, however, could also enable multiple benefits. The aim is to outline next steps that could be taken.	Taniem Choudhury, Paul Smith	**Oct-25**
4	**Tape and Archiving Strategy**	What is the target strategy for archiving?	Confirmation required on the architecture strategy for archiving and define a set of agreed patterns that include branch countries.	Franz Plum, Miguel Capitao	**Oct-25**
5	**Data Governance Tooling for End User Computing**	What is the data governance tooling strategy for end user "unstructured" data?	There has been focus on data governance tooling for business application data governance, structured data, data quality and controls. We must also define and agree the strategy for data governance tooling for end user "unstructured" data, which includes data lifecycle management (disposal/retention), Legal hold, classification, ownership, access and controls.	Marcus Jung, David Ryan	**Nov-25**
6	**Automation Strategy e.g. EUDA's, Excel**	How can we challenge ourselves to reduce the creation on EUDA/EUMAs?	TBC	Taniem Choudhury	**Nov-25**
7	**dbLending – loan book management as shared utility**	How could the capability of loan book management (aka 'lending services') be made available as a shared service for the bank leveraging foundational work done in the Loans F2B KD	Assessment of target architecture for lending services, currently being delivery by the F2B loans KD, for its utilization across all IB, CB and PB and proposal on next steps.	Christian Fraedrich	TBC
8	**OCR Optical Character Recognition and Document Management Systems**	What is our strategy for OCR and Text Intelligence?	dbTextract sees fast adoption. What is the strategic direction for DB in this area, incl. for use cases that cannot leverage a cloud solution and what is the direction for dbTextract.	Stefan Schaffer	TBC

A1. GTAC Pipeline Topics (2/2)

List of GTAC Topics framed by a question and abstract to shape the scope

#	Topic	Question to solve for?	Abstract i.e., short paragraph on what is to be presented to GTAC	Proposed Owner	GTAC Target Date
9	**Strategy of GTI Licensing rises and Key App Risk**	How do we increase our resilience to vendor prices hikes?	TDI experiences significant software price hikes from vendors which drive decisions to exit vendors in accelerated timelines. This is often unplanned work which needs to be accommodated amongst a committed book of work. (e.g. an example why didn't we know hazelcast was a problem much sooner?]	Franz Plum	TBC
10	**Minimum qualifying criteria for new SaaS tech**	How do we ensure a new SaaS tech will satisfy data security, privacy, protection and residency requirements before starting the contract process with them?	We have adhoc/non-standard non-functional assessment questionnaires raised by CIO teams during RFP which may or may not be reviewed by security, data protection SMEs. This leads to delays in SDA and VRM processes thereby either cancelling the vendor installation very late in the implementation cycle, or ends with creation of new SIIs which are often required to be risk accepted by the business	Avinav Aggarwal	TBC
11	**eTPMA NAR Consolidation Approach**	What is our strategy for eTPMA NAR IDs?	There is list of more than 100+ web upload exceptions for Compliance & AFC. Creating a separate NAR for each eTPMA website / web-based application is not an optimized and cost-effective solution. In addition to that it does not cover operational risk controls (such as user login activities etc.) Review the proposed to increase controls and reduce costs.	Puspendra Kumar	TBC
12	**Entity Resolution**	What is the direction for Entity Resolution in the bank?	There are many benefits for LLM enabled resolution as the quality increases, solving real world problems, however everyone wants to do their own thing. Decision needed to decide if we: 1 – Buy or Build, or 2 – Let everyone do their own thing or use a common approach	Tim Mason	TBC
13	**Omnichannel / Case Management**	What is our strategy and path forward for OmniChannel software and case management systems?	OmniChannel software manages customer communication across different channels (phone, email, chat, branch,…). Case Management software holds the context of such communication across channels and is in particular important, to provide case context to upcoming AI tools. Some sort of Case Management is often part of CRM systems. PB is using Genesys, an OmniChannel tool, mostly for call center routing and will need to replace it with a new solution within the next years. CB has a concrete need for OmniChannel capabilities. In both cases, a case management strategy is required and should be aligned.	Stefan Schaffer	TBC
14	**Party Reference Data Architecture**	What does our target party architecture look like?	We don't have a single party master yet have requirements to cross sell products across divisions and a requirement for control functions to have a common party view. What does the target look like and how can we transition to it?	TBC	TBC

A2. GTAC Decisions (1/3)

List of all GTAC decisions to date

ID	Date	Topic	Decision	Sponsor / Presenter
1	May-24	**UI Design System**[1]	Endorsed the following proposals: • DB to consolidate to one UI Design System • Merge of design system teams under CB • Use existing investments i.e. all current design system investments to be redirected to this central solution, avoiding extra costs.	Jo Hannaford, Petra Stolberg
2	Jun-24	**AI Principles**	• Endorsed AI Operating Principles	Christoph Rabenseifner, Tim Mason
3	Jun-24	**Container Hosting Strategy**	• Endorsed the Future Container Hosting Choice strategy for on-prem and China to be Google's Distributed Cloud (GDC) plus a basic open-source option for China.	Tony Kerrison, Nichola Hammerton
4	Jun-24	**TDI to submit questions to GTAC**	• Endorsed communication to be shared to all respective TDI divisions.	Nichola Hammerton, Jessica Malcolm
5	Jul-24	**DB Workflow Strategy**	• Endorsed uFlow as DB's default workflow solution, that will be created by consolidating the two large, modern shared workflow platforms, dbFlow and UWQ into uFlow • Endorse the decision-making factors for vendor workflow solutions where usage is part of a larger business solution	Stefan Schaffer
6	Jul-24	**Github Strategy**	• Endorsed the recommendation to proceed with Option 1, i.e. commit to GitHub as platform of choice across all environments (on-prem, Fabric, native Cloud), at minimum for primary features like VCS, CI/CD and deployment.	Martin Reeves
7	Jul-24	**AI Platform**	Endorsed core AI principles, where; - AI activity is observable to manage risks and costs - Available on-prem and hybrid cloud - Base capability to allow teams to re-use AI assets and services	Christoph Rabenseifner, Tim Mason
8	Sep-24	**Strategy for Cash Account Management**	In principle endorsed the decision to establish a Cash Account Management utility based on sDDA	Jo Hannaford, Christian Fraedrich

1 | Working group established and concluded not to proceed with GTAC decision and no communication to be shared.

A2. GTAC Decisions (2/3)

List of all GTAC decisions to date

ID	Date	Topic	Decision	Sponsor / Presenter
9	Sep-24	**Open-Source Ownership**	Endorsed pilot proposals for Camunda and Kafka.	Stefan Schaffer
10	Sep-24	**Test Data Masking and Data Generation**	1. Endorsed use of Synthesized API solution for test data generation for proposed use cases and Informatica Intelligent Data Management Cloud (IDMC) to be used as the standard tool to support data masking of personal data in non-production environments and includes the endorsement of 3 new controls to support the decision. 2. Endorsed use of Synthesized API solution for test data generation for proposed use cases.	Anabel Almagro, Nichola Hammerton, David Ryan
11	Nov-24	**SDLC Strategy**	In principle endorsed the following: 1. SDLC high level target architecture 2. The "License to Operate/Change" model 3. The Control Automation & Control Design Standards	Martin Reeves
12	Nov-24	**Data Residency and Architecture Patterns**	Endorsed the Data Architecture Patterns to accelerate Hybrid Architectures.	David Ryan
13	Jan-25	**Intelligent Email Solution and Shared Service**	Decision endorsed establishing an email shared service for owning and managing the portfolio of AI-enabled email solutions. Endorsed Intelligent Email Solution AI Builder as the preferred technology.	Tim Mason
14	Jan-25	**Target Technical Data Architecture**	Decision endorsed the target technical data architecture	David Ryan
15	Feb-25	**Data Governance Tooling Updates**	1. Target state architecture endorsed for Data Governance Tooling. 2. Collibra has been endorsed as the data governance tool 3. Enterprise Data Registry (formally CCO) to be extended to enable elements of automation to support sustainable meta data capture	Matthew Fell, David Ryan
16	Mar-25	**Hybrid Cloud Strategy**	Nichola endorsed the Hosting Transformation Private Cloud Target Architecture, as outlined on slide 12 subject to the clarification on the questions raised.	Franz Plum

A2. GTAC Decisions (3/3)

List of all GTAC decisions to date

ID	Date	Topic	Decision	Sponsor / Presenter
17	Mar-25	**AI Governance Update**	Bernd and Nichola endorsed the following: 1. Opinionated Decision Tree to mandate sharing/re-use 2. Opinionated Decision Tree to mandate preferential use of AI Platforms 3. AI Software Governance model	Tim Mason
18	Apr-25	**Private Cloud Container Strategy**	Bernd and Nichola endorsed Container as a Service ('CaaS') as the enterprise-wide strategic private cloud container which will be based on Google's reference design. CaaS will be owned and transformation led by GTI, with delivery expected by YE 2025.The existing FIC Anthos platform will be integrated into CaaS, with no migration expected for existing FIC workloads. Any new additional workloads will be built in CaaS, with a detailed cluster structure to be defined.	Tony Kerrison
19	May-25	**Shared Capabilities and Assets**	Bernd and Nichola endorsed the new approach to identify and implement shared assets.	Stefan Schaffer
20	Jun-25	**Enhanced Governance for Open-Source Software**	Bernd and Nichola endorsed the proposed enhancements to the open-source software governance model, noting follow up actions needed to further refine.	Stefan Schaffer, Miguel Capitao
21	Jun-25	**Data Architecture Strategy**	Bernd and Nichola endorsed the data architecture strategy, noting follow up actions needed to clearly articulate the status to date and where action is needed from teams.	David Ryan
22	Jul-25	**Azure Proposal**	Bernd and Nichola endorsed the approval of CSO uses in Azure, noting this is required to protect the M365 environment running in Azure.	Brent Philips
23	Jul-25	**Longterm database strategy**	Bernd and Nichola supported direction of the database strategy noting updates requested per action 3.1.	Seema Puri-Mehta
24	Jul-25	**Shared Asset Proposals**	Bernd, Nichola and Jo supportive of Corporate Bank to take ownership Intelligent Email Management as shared asset, with support from Shared Application Services to establish the overarching operating model and transition phase.	Jo Hannaford, Stefan Schaffer

A3. DB Identity Appendix (1/1)

CIAM is a customized instance, optimized for mass retail customers

User friendly features required to serve 10 mil customers authentication & authorization

- Provide Multiple login types to fulfill the business requirements and market standards (embedded login, device binding)
- Go with market standard login features (e.g. self-defined user name)
- quick adaption of new features (e.g. eID)

Specific business functions to support retail banking products/platform

- Support retail banking brand strategy with the login context architecture
- Provide an integrated online banking account lifecycle management service that covers
  - an integrated customer account opening process
  - Online banking digital Identity (OneID) Lifecycle process
  - Customer Entitlement Lifecycle
  - MFA lifecycle process
- well integrated with Online/mobile banking business services by providing flexible custom claims to support token based access control
- Additional to standard 2FA features, provide retail customer specific transaction signing features:
  - jointLegi
  - session-TAN

Provide retail customer entitlement services

- Provide a retail customer entitlement system on GCP

A4. Shared Asset Appendix - eBO - FACT sheet 1/3

eBO – elektronisches Bürger- und Organisations-Postfach (electronic Citizen and Organization Mailbox)

Shared Asset **Description**

The electronic Citizen and Organization Mailbox (eBO is a secure, end-to-end encrypted communication channel regulated by German law, enabling Deutsche Bank (GY across all corporate areas and its relevant subsidiaries) to exchange legally binding digital correspondence (e.g. Garnishment) with German authorities and other registered eBO users (e.g. lawyers, courts, bailiffs, etc.) It serves as a digital alternative to postal mail, ensuring proof of delivery and compliance with legal requirements. The solution addresses inefficiencies, high costs (mainly postage fees), and delay of physical mail by enabling faster, more reliable and automated document exchange.

How could a future provisioning model look like?

A future model could be based on a single, certified eBO gateway shared across all business areas (PB, IB, CB & relevant subsidiaries e.g. Norisbank, BHW, etc.) in Germany. The eBO gateway can only be used with a certified software. An RfP is currently ongoing to select 1 out of the 3 available certified vendor-products. The gateway would automatically retrieve and route the digital documents to ensure fast and accurate delivery to the right workflow system or Exchange Emailbox. It will also be used to send documents from DB to German authorities. Development, access and maintenance would be centrally managed for all business units.

What are the **boundaries and integration ideas** with other shared assets, platform, services, etc.?

The eBO solution will be limited to the communication with registered eBO users, such as German authorities, courts and other certified entities. There is only one eBO Mailbox for Deutsche Bank allowed and published in a central repository (SAFE) to select addresses. It will integrate with existing workflow platforms (e.g. uflow) and Exchange for Email forwarding. Further integration with systems like AB_IT, CRWnp and others are possible.

Shared Asset Criteria

Reuse and Consolidation

eBO can serve as a single shared asset for all business units replacing isolated (physical) solutions. One centrally managed platform enables reuse of infrastructure and integrations.

Architecture Simplification

An existing Appl. (COM-Vibilia) for a single use case in PB Lending (for recovery & collection by CRW) existing which will be replaced with this solution to be onboarded with separate NAR-ID.

Cost reduction/avoidance

A single eBO solution reduces costs by eliminating multiple department-specific implementations, lowering maintenance and licence expenses. Automated routing and integration with existing workflow systems cut manual processing time.

A4. Shared Asset Appendix - eBO - FACT sheet 2/3

eBO – elektronisches Bürger- und Organisationspostfach (electronic Citizen and Organization Mailbox)

Main Use Cases

	Court Communication	Communication with Authorities	Workflow routing
Short description	*Receive and send legally binding documents (e.g. HR - public servants) to and from courts, via eBO*	*Exchange official correspondence with municipalities, tax offices and other authorities, bailiffs, etc. (e.g. garnishment)*	*eBO software offers configurable internal routing mechanism based on eBO meta data to move incoming documents to the relevant system/team (uflow, Mailbox, others)*
Actors	*DB Ops, German courts*	*DB Ops and other areas, public authorities, Output Mgnt. System*	*Uflow, PB OPS, CB OPS*

Which unit are using or requesting this shared asset?

CB ☒ IB ☒ PB ☒ GTI ☒ Oth. ☒

Managed by TeLDA
(Technology Lifecycle Design Authorities)

Process management and automation TeLDA

Which products/platforms are already in place or are selected to be introduced to the bank?

Name	Self developed, Open Source, Vendor-SW or COTS*	Onboarded in NAR (Y/N)	RTB / License costs (€)
Based on RfP decision: Product from vendor a) Governikus or b) Procilon or c) FP Digital Solutions	COTS	N	~ 400k – 600k pa

Maturity Level

◔ Further investigation about usage in the bank needed. ◑ Usage in the bank clear - Consolidation plan wip ◕ Clear understanding about usage and consolidation

*Commercial off-the-shelf

A4. Shared Asset Appendix - eBO - FACT sheet 3/3

eBO – elektronisches Bürger- und Organisationspostfach (electronic Citizen and Organization Mailbox)

	Shared Application Services (Process Automation)	**<Potential Owner 2>**
Primary Advantages	• SAS Process Automation is driving the vendor selection process and knows about this topic. • eBO will be strongly integrated with workflow tools (uflow) whilst MS Outlook integration is minor necessary part. • eBO Software includes routing functionality for both above mentioned systems with mainly capabilities of workflow.	*Ownership to be presented at next GTAC*
Potential Disadvantages	• na	

A4. Shared Asset Appendix - Search - FACT sheet 1/2

Shared Asset **Description**

Distributed Search Engine designed to provide near Real Time Search Capabilities across large volumes of structured and unstructured data for Text and Semantic/Vector search or both.*

How could a future provisioning model look like?

Standard and Reusable provisioning and onboarding mechanism for on prem and cloud deployments, managed through the shared asset..

What are the **boundaries and integration ideas** with other shared assets, platform, services, etc.?

Search Engines specific to Database technologies available in the bank are out of scope. Application teams may choose to leverage these search engines if it is sufficient for their use case needs if the database technology is approved in the bank.
We will publish Decision trees as part of this implementation

Shared Asset Criteria

Reuse and Consolidation

Yes,. This will reduce multiple implementation versions and products for search capabilities. We can converge from fragmented community licenses to enterprise license

Architecture Simplification

Yes, Onboarding and provisioning of Search functionality will be standardized to the strategic solution.

Cost reduction/avoidance

Cost reduction through consolidation of support. One team instead of multiple teams supporting their own Search solutions.

** For vector search also other search solutions are accepted.*

A4. Shared Asset Appendix - Search - FACT sheet 2/2

Main Use Cases

	Static text search	Dynamic text search	Intelligent search
Short description	*Search across Static Documents or Communications*	*Search across dynamically changing dataset*	*Intelligent Search – Text/ Image/ Semantic/ Vector/ Combination Search*
Actors	*dbInvestigate ((172592-1) uses Solr open source for a many years (Contact:* Sujeet-A Hinge <sujeet-a.hinge@db.com>) DBDocsStore planning to use Solr for basic Doc search.	*At least 35 applications in the bank using Elastic Search. Uflow one of the few that use Enterprise License. UFlow uses Enterprise LIcense Contact: Gabor Herr* <gabor.herr@db.com>. 2 apps using Solr Search. 2 apps using Open Search.	*DB Docs Store (replacement of ECM) planning to use it. Contact:* karunakar.kothinti@db.com Should this use-case be part of this Shared asset? Can we offer onboarding/ provisioning standardization while embeddings are managed close to the application?

Which unit are using or requesting this shared asset?

CB ☒ IB ☒ PB ☒ GTI ☒ Oth. ☒

Managed by TeLDA
(Technology Lifecycle Design Authorities)

Part of Workflow TelDA and AI TeLDA
(may need to be consolidated)

Maturity Level

Which products/platforms are already in place or are selected to be introduced to the bank?

Name	Self developed, Open Source, Vendor-SW or COTS*	Onboarded in NAR / Tech Direct	RTB / License costs (€)
Solr Free (based of Apache Lucene)	Free OSS	**TechDirect**	
Elastic Search (based of Lucene)	Free OSS/ Enterprise	**TechDirect**	
Open Search	Free OSS	**TechDirect**	

 Further investigation about usage in the bank needed.  Usage in the bank clear - Consolidation plan wip  Clear understanding about usage and consolidation

A4. Shared Asset Appendix – Contract Lifecycle Management - FACT sheet 1/3

Shared Asset **Description**

Contract LC Management (CLM) is a cross-divisional shared asset designed to digitize and streamline the end-to-end lifecycle of legal & transactional contracts. It enables standardized contract creation, negotiation, execution, and storage across multiple business units. The platform integrates capabilities such as document generation, clause creation, review & redlining digital execution and AI enabled data extraction to reduce manual effort and improve compliance. CLM addresses key challenges like fragmented tooling, inconsistent processes, and high operational costs by offering a unified and scalable solution.

How could a future provisioning model look like?

The future provisioning model for Contract LC Management (CLM) envisions centrally governed platforms (Arteria and Sirion), enabling consistent standards and integration across divisions. A decision tree will ensure choosing the best platform for the dedicated requirement. It will support multi-tenant configurations to serve diverse business units while maintaining a unified infrastructure. Onboarding will follow standardized processes with secure, role-based access, and usage will be tracked for consumption-based cost allocation.

What are the **boundaries and integration ideas** with other shared assets, platform, services, etc.?

Contract LC Management (CLM) can integrate with several platforms and shared services to enable seamless contract processing across the organization. It can connect with shared assets like a clause library, document repository, and standardized templates to ensure consistency and reuse. CLM also can interface with core platforms such as ERP (for financial data), CRM (for client information), and HRMS (for personnel-related contracts), ensuring that contract data is synchronized with operational systems.

Shared Asset Criteria

Reuse and Consolidation

CLM consolidates multiple contract management tools and processes into two standardized platforms (Arteria & Sirion). It enables reuse of clause libraries, templates, and workflows reducing duplication and ensuring consistency in contract handling.

Architecture Simplification

By replacing fragmented, business-specific solutions with a unified platform, CLM simplifies the IT landscape. It integrates with enterprise services like SSO, compliance checks, and analytics, reducing the need for custom interfaces and siloed systems.

Cost reduction/avoidance

CLM reduces licensing and operational costs or manual processes by decommissioning legacy tools and manual processes and avoiding redundant implementations.

A4. Shared Asset Appendix – Contract Lifecycle Management - FACT sheet 2/3

Main Use Cases

	Contract Drafting Lending Agreements	AI-Assisted Clause Review and Redlining	Digital Execution / Repository Integration
Short description	*CLM enables automated generation of standardized lending contracts using pre-approved templates and clause libraries.*	*Using AI capabilities, CLM supports clause extraction and redlining during contract negotiation. This improves turnaround time and reduces legal risk by flagging deviations from standard terms.*	*CLM integrates with e-signature services and document repositories to enable seamless digital execution and centralized storage of contracts.*
Actors	*Legal Counsel, Lending Product Managers, Contract Analysts*	*Legal Review Teams, External Counsel, Risk Officers*	*Contract Managers, Procurement Officers, Compliance Teams*

Which unit are using or requesting this shared asset?

CB	IB	PB	GTI	Oth.
☒	☒	☐	☐	☒ Procurement

Managed by TeLDA
(Technology Lifecycle Design Authorities)

Documents TeLDA

Which products/platforms are already in place or are selected to be introduced to the bank?

Name	Self developed, Open Source, Vendor-SW or COTS*	Onboarded in NAR (Y/N)	RTB / License costs (€)
Arteria	Arteria's instance on Google Cloud	Yes (176430-1)	Year 1: €500k Year 2: €750k Year 3: €900k
Sirion	COTS (SAAS)	Yes (173871-1)	Year 1: €497k Year 2: €680k Year 3: €800k

Maturity Level

◔ Further investigation about usage in the bank needed. ◑ Usage in the bank clear - Consolidation plan wip ◕ Clear understanding about usage and consolidation

A4. Shared Asset Appendix – Contract Lifecycle Management - FACT sheet 3/3

	CIO CSF	<Potential Owner>
Primary Advantages	• CSF operates across multiple divisions and is in charge for both platforms (Arteria and Sirion). • CLM, being a cross-divisional solution, benefits from CSF's ability to coordinate onboarding, compliance, and lifecycle management across diverse stakeholders. • CSF has a well-established role as the **custodian of shared asset reuse** across Deutsche Bank. The team defines standards, manages funding flows, and drives governance through forums like GTAC and SAOF, ensuring that shared assets are not only technically viable but also strategically.	*Ownership to be presented at next GTAC*
Potential Disadvantages	• na	