

**A data led PMP – the possibilities are  
endless**

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Transformation

# Why change ?

- Currently, we successfully deliver projects across MP and want to be the very best.
- However, what we currently do is inefficient, highly manual with a significant level of waste in how we process, manage, maintain, ingest and share data.
- Our data and systems are often not interconnected and stand alone causing significant manual work arounds, multiple and duplicated data sets with complicated and wasteful handoffs. Consequently, we have poor quality data generating poor reporting while we often have to pay for data twice (e.g. additional surveys).
- In addition, there is no formal structure or consistency in our data requirements to our Supply Chain and how we digitally interface with them, this inhibits sharing, collaboration and further adds to “wasteful” data management practices with workarounds and manual interventions that ultimately prevent us from achieving the best project outcomes.
- Generally, construction industry has very low levels of productivity there is a big opportunity to use digital solutions and competencies to:

# Our starting point – our 9 statements of truth

- Enable us to focus on the important and interesting and not the mundane and transactional
- Make it easier to manage and control projects by having better reports and insight from our data so they can make better decisions.
- Remove wasted effort and manual data handling between project stages and different suppliers
- Save time by automating more of what we do – particularly in the development and design stages - for example designs, PCF products, cost estimates, schedules and others
- Make changes and understand the impact on scope, cost, risk and schedule quicker, more visible and therefore controllable
- Visualise our solutions, with risks and issues brought to life on our schemes
- Increase the level of innovation within the supply chain by having common data standards and approaches
- Use digital rehearsals to test designs greatly reducing design cost and level of rework in construction
- Greater use of standardised toolkits and component parts across a range of categories including drainage and paving and represent these digitally for all designers to use

# Our purpose was to **ENABLE** capital efficiency savings in Digital by Default workstream (Digital Transformation)

## Our Ambition

01

More effective use of data to improve decision making

02

Move from “report and react” to “predict and perform”

03

Enable connectivity, collaboration & innovation across HE and SC

04

Provide strong foundation for digital transformation

## This means..

- Clarify data needs for effective project delivery, define single source of truth, remove data duplication
- Improve MP’s ability to aggregate, process, interpret and simplify data across the project lifecycle
- Provide data architecture for projects to capture the right data, in the right format at the right time to make the right decisions
- Collaborate with PPA to build data-driven decision capability to improve project cost, quality & schedule performance

- Structure and evolve MP-wide data architecture to enable projects to predict future performance
- Enable PMs & PDs to apply advanced analytics - make more informed decisions earlier to better manage risk and improve delivery efficiency
- Enable use of data science to find innovative solutions to improve project outcomes

- Supply Chain are clear on HE’s data structures and protocols to drive consistent, reliable data
- Supply Chain partners see HE digital platform as safe & stable place to innovate in
- Robust digital connectivity between HE and SC drives collaboration to:
  - reduce data handling/processing
  - compress delivery timelines
  - improve output quality
- Enable productivity benchmarking for efficient delivery

- Clear data strategy, governance and management processes across MP
- Clearly defined and effective MP-IDT operating model supporting evolution of digital architecture and improved delivery of data improvements
- Clearly defined and understood digital roles, driving data ownership and quality across MP
- Provide digital foundation to support MP-wide roll out and application of BIM, REM, Digital twin and others

# Our Approach – unlock the power of data



## MINDSET

- Define and communicate a clear purpose
- Adopt a set of principles to guide our work
- Define how we'll work with ITD, other partners within HE and Supply Chain
- Focus on getting the basics right
- Make the case for change
- Engage internally and externally
- Set out a clear route map for 2021+



## SKILLSET

- Define critical user roles (personas) and digital skills required to support digital evolution
- Baseline current skillset maturity. Set out a plan to upskill and develop the capabilities required
- Identify 'Champions' within MP
- Build awareness within MP
- Learn from industry best practice



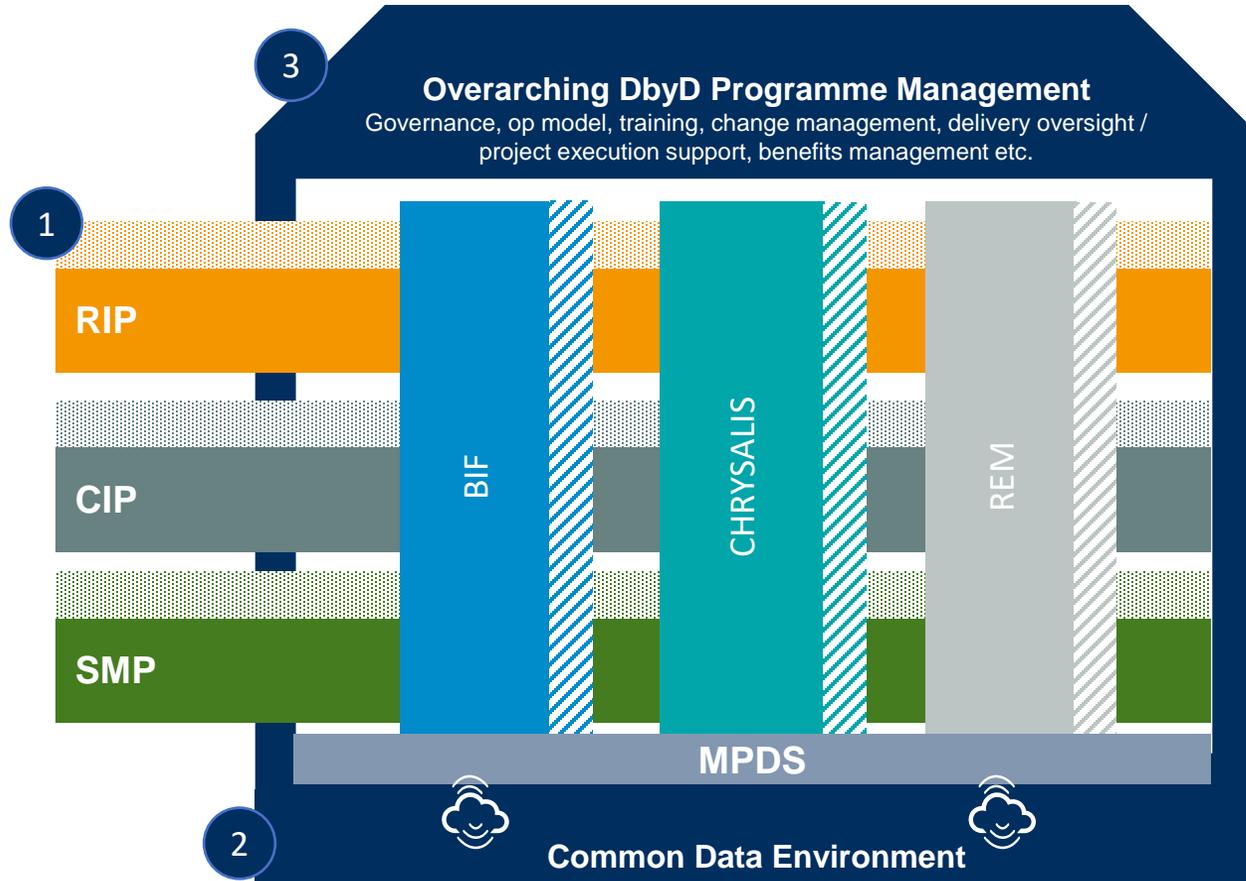
## TOOLSET

- Check and challenge as-is data architecture, platforms and tools
- Identify the pain points, current data maturity and priority use cases within MP
- Set out a roadmap to deliver proof of concept(s) against prioritised use cases linked to benefits

# Guiding Principles

Principle	Why?
<b>Focus on outcomes</b>	Everything we do should link to the wider purpose, vision and objectives of Highways England. Deliverables linked to tangible outcomes impacting quality, cost and speed of delivery across MP.
<b>Strengthen HE Digital capability</b>	Build digital capability, leaving Highways England better equipped. We will share our skills, knowledge and experience.
<b>Setting up for success</b>	Prioritised and focussed delivery plan to build strong foundations for successful RIS2 and beyond
<b>Integrated &amp; collaborative team</b>	A team that delivers best cross-functional alignment across Highways England, Supply Chain partners and external support. The right people and skills for the job.
<b>Deliver at pace</b>	We won't reinvent the wheel but identify and build on good work already done/underway. Fail fast, learn & apply.
<b>Best practice</b>	We will bring all our combined learning from other projects, clients and sectors for the benefit of Highways England.
<b>Discovery+</b>	We will <b>identify quick wins</b> and deliver early benefits to build trust and momentum.

# The DbyD programme pillars



Legend

-  Wider roll-out coverage
-  Functionality enhancement

- 1** Consistent provision, capture, exploitation and management of data across all programmes
- 2** The consumption of data from a common data platform in accordance with a common data model
- 3** Bring large digital system roll out and initiatives under one DbyD umbrella to structure change & focus on scheme-level embedment

# Digital by Default Programme

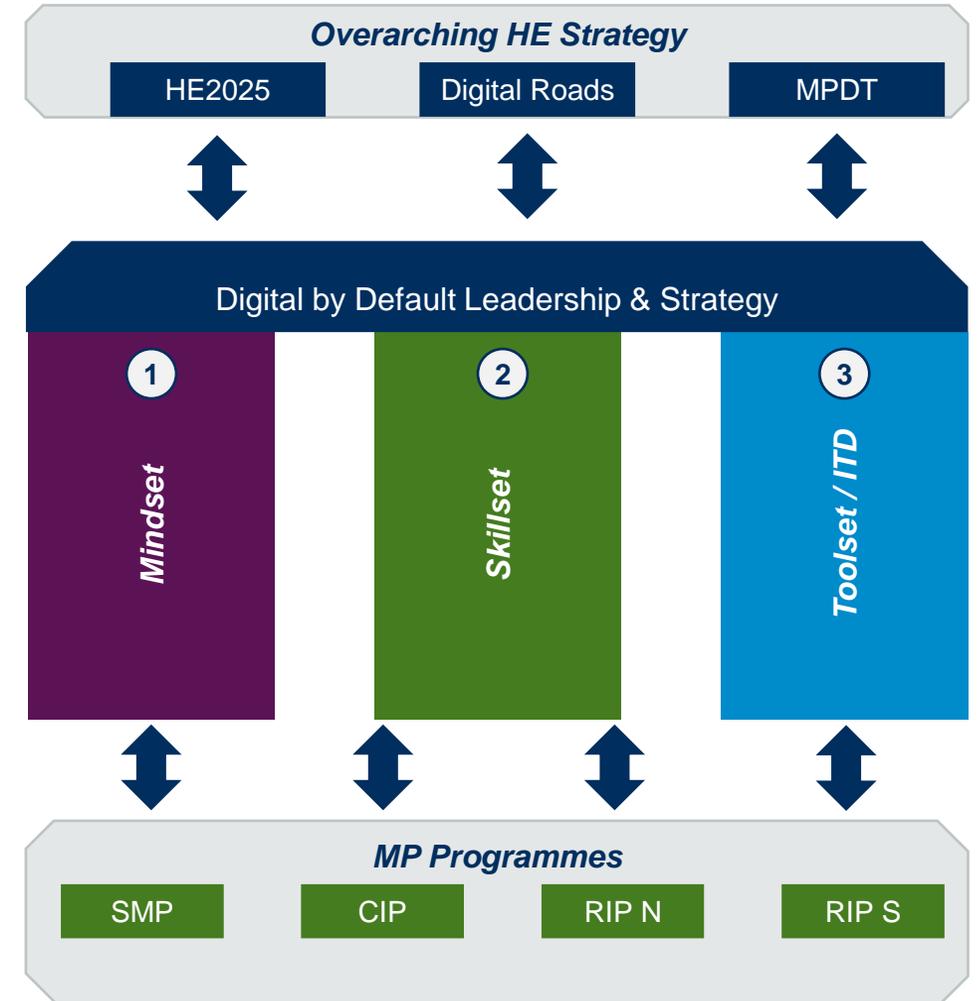
Digital by Default forms part of the Major Projects Delivery Transformation programme and is working closely with IT, Ops, SES and S&P to ensure HE delivers against it's Digital Roads and HE2025 strategy.

DbyD is delivering this through its three pillars – Mindset, Skillset, Toolset

- 1
  - The Mindset pillar will work to establish the needs and requirements of MP's digital users, establish use cases and manage programme benefits
  - This pillar will ensure the DbyD transformation is aligned to HE's broader strategic direction and Digital Roads Agenda
- 2
  - The Skillset pillar will be accountable for upskilling and improving digital competency across MP delivery personas incl. PMs, PMO, C&P & MPDS
  - This pillar will also ensure digital toolset and new ways of working are embedded across MP Programmes
- 3
  - Working with ITD, the Toolset pillar will be accountable for digitising tor project lifecycle through the rollout of the Digital by Default solution toolset and identifying solution enhancements
  - This pillar will also develop and deliver the supporting system architecture, data model and Common Data Environment

The programmatic roll out of BIF, Chrysalis and REM, will deliver £280m of benefits in RIS2 with £89m\* delivered in RIP N

\*based on OBC benefits case. To be updated over FY21/22



Digital by Default Operating Model

# Progress to date / DbyD deliverables

## 1. Stakeholders

- The DbyD programme identified a series of stakeholders from Major Projects, wider HE and Supply Chain
- This process step identified the 'as is' data pain points in project delivery across MP.

## 2. Use Cases

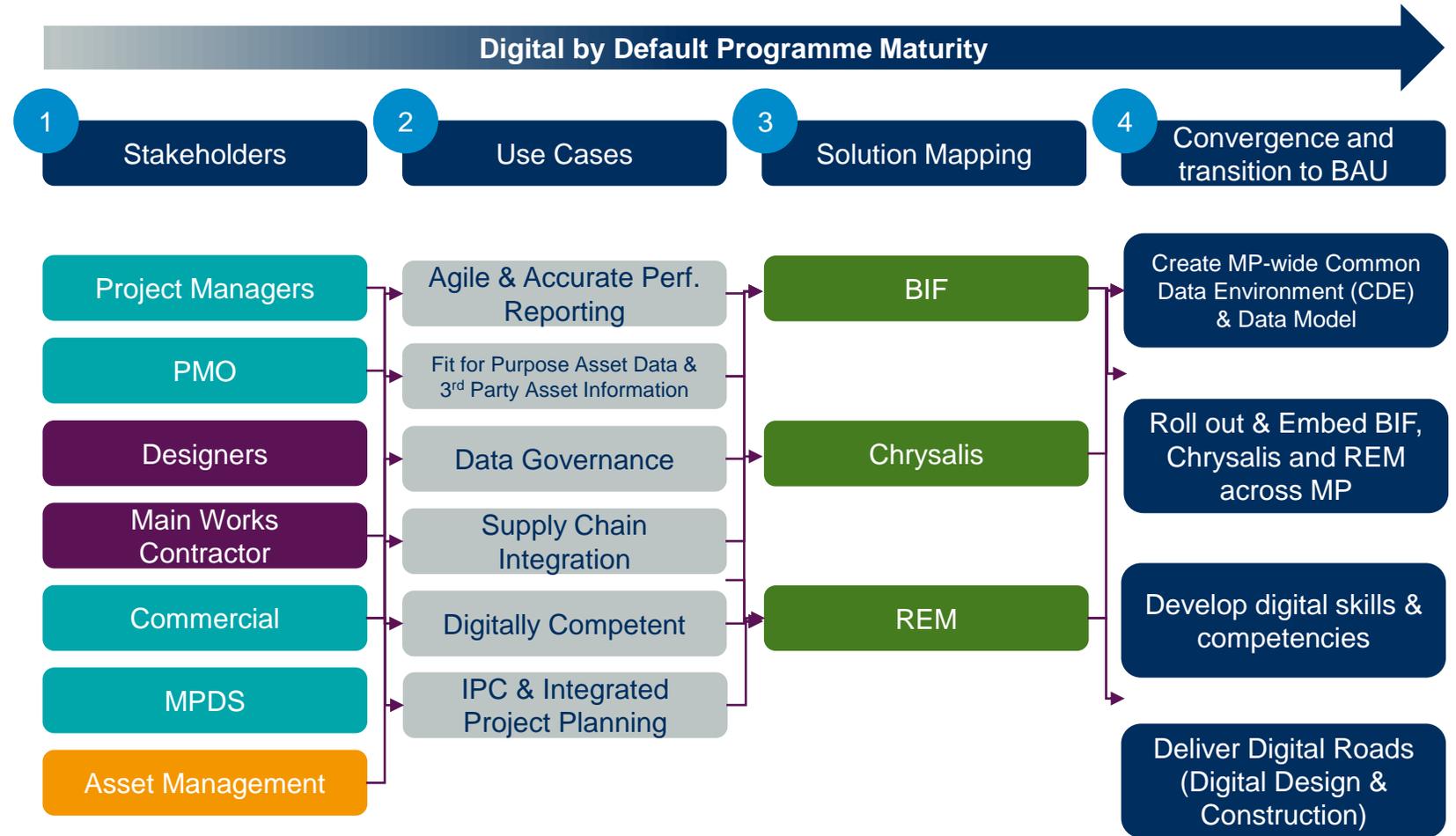
Use Cases were developed to identify the required future state ways of working in a data enabled HE Programme Delivery environment

## 3. Solution Mapping

Existing solutions were mapped Use Cases to determine whether the functionality required was already available. This validated inflight solutions and proved that the user requirements could be met by existing capability

## 4. Convergence and Transition

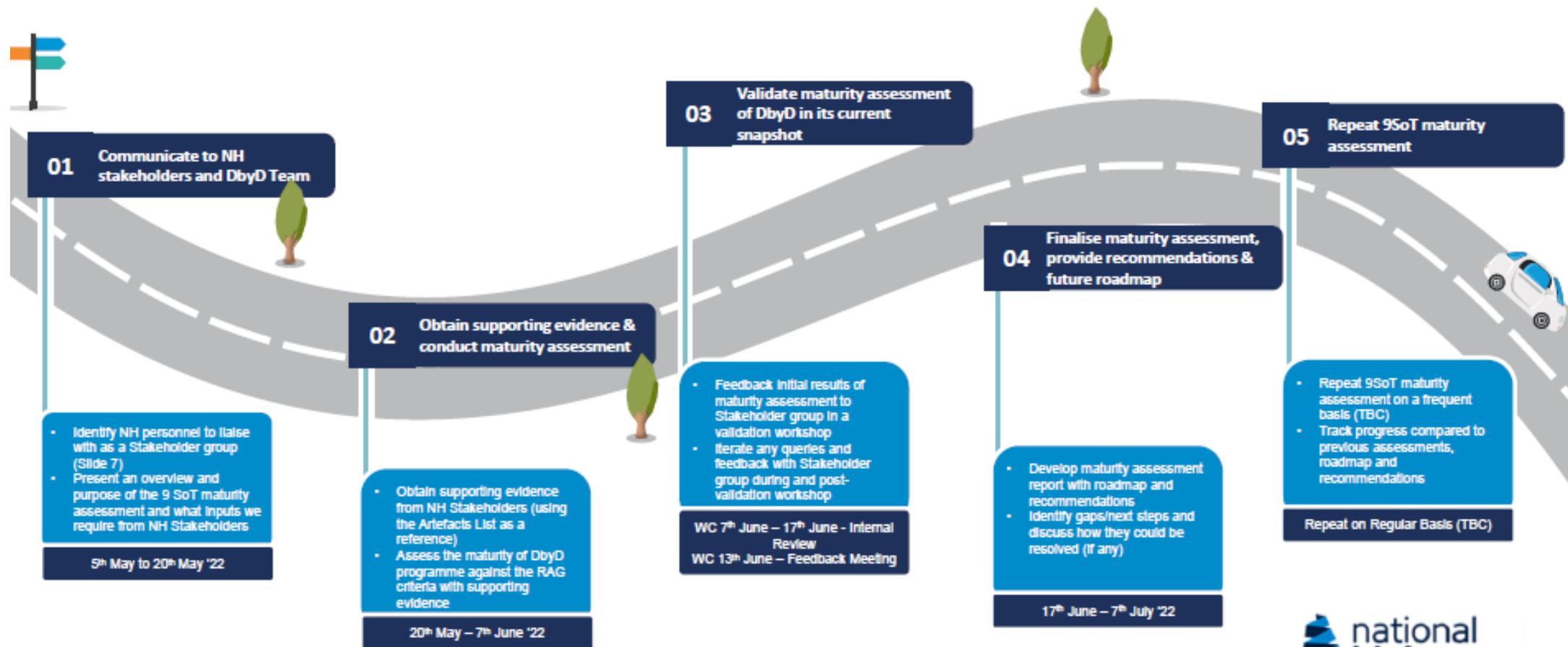
Converge and roll out existing solutions (BIF, Chrysalis and REM) across MP to meet the requirements of use cases. Develop our digital skills and competencies across MP and create consistent management and use of data across MP.



- HE Major Projects Directorate
- HE SES / Other Directorates
- External / Supply Chain

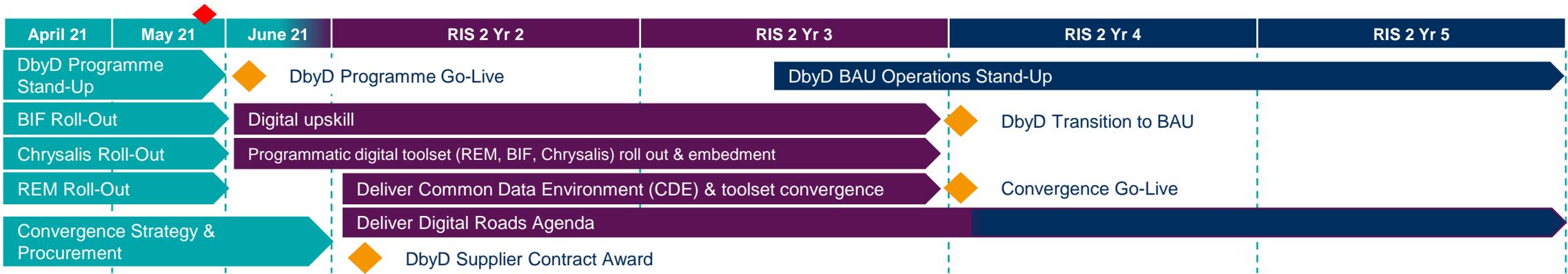
# Our next steps to assessing DbyD against the 9SoT

Below provides an outline on how we will use the developed RAG Criteria for assessing the 9 SoT going forwards with NH Stakeholders:



# Digital by Default – our plan to BAU

Last year the Digital by Default programme went through a programme stand-up phase to establish the governance, controls and ways of working for the DbyD Programme. DbyD launched as a full programme in June '21 before transitioning to a BAU function after 2 years of transformation.



Phase 1 – DbyD Mobilisation	Phase 2 – DbyD Transformation	Phase 3 – DbyD Business as Usual
<p>Objectives:</p> <ul style="list-style-type: none"> <li>• Prepare DbyD programme for stand-up in June</li> <li>• Maintain ongoing roll-out of suite of solutions</li> <li>• Develop convergence strategy and procure partners</li> </ul>	<p>Objectives</p> <ul style="list-style-type: none"> <li>• Incorporate existing solution rollout into integrated DbyD programmatic approach, transfer SMEs where appropriate</li> <li>• Deliver converged system architecture and data model</li> <li>• Digital upskill and change management</li> <li>• Delivery capital efficiency savings against plan!</li> </ul>	<p>Objectives</p> <ul style="list-style-type: none"> <li>• Go-live of the DbyD converged solution model</li> <li>• Transition DbyD transformation programme into BAU</li> <li>• On going management and delivery of DbyD solutions with DbyD as part of MP organisation</li> <li>• Delivery more advanced digital solutions as part of Digital Roads agenda</li> <li>• Deliver £280m capital efficiencies in RIS2</li> </ul>