Consultation

On the revised delivery plan for the Communications Hubs and Networks Programme

Date: 23/11/2022
Classification: DCC Public

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1.   Executive Summary

Context

Telecommunications technology evolves continuously and in response to this DCC's Communications Hubs and Networks Programme (CH&N) aims to deliver future-proof Communications Hubs & Networks with an efficient supply chain and a targeted longevity of at least 15 years, introducing new Communications Hubs (CHs) which use the newer 4G network. DCC set out its delivery plan for CH&N on 11 June 2021, proposing two technical delivery options and building on an outline business case. It included a Control Point at the point where contracts were signed with new Service Providers to review and, if necessary, propose refinements to the plan.

The outcome of DCC's procurement process is that we will proceed with a Dual-Band only 4G CH solution, working with a range of service partners under a disaggregated model. DCC has now signed contracts with service partners to deliver this capability and reached its first Control Point. We stated in our initial delivery plan that we would ensure that customers are involved in our review of the plan at our Control Points, and we consider it necessary to undertake a replanning exercise at this time. Following discussions with BEIS, DCC was Directed by the Secretary of State on 10 October 2022 (under Condition 13B of its Licence) to undertake a replanning exercise for CH&N.

Headlines changes to the plan

The move to a capability delivered solely through Dual-Band 4G CHs means the programme will complete later than set out in our initial plan, but becomes significantly less complex, with the delivery of one type of technology solution over a single programme timeline. We have not made any significant changes to the sequencing of our delivery plan for CH&N set out in our initial plan, which will follow standard design, build and test activity ahead of a user testing window in User Interface Testing (UIT) and an early live trialling phase called Initial Pallet Validation (IPV). UIT and IPV will be followed by governance milestones (Live-Services Criteria submissions) which provide externally assured go-live governance points.

We have made changes to the dates in the plan, which means that DCC customers will receive initial 4G CHs for use in IPV in November 2024 (whereas these were previously expected in July 2023), and the point at which 4G CHs will start to comprise standard customer deliveries will be June 2025 (versus April 2024 as initially planned).

DCC has included its proposals for amended Order Management and Logistics arrangements in its plan. These have not yet been procured and DCC will be engaging with its customers over the next few months to develop the requirements for these services, so they best meet customers' needs. We also set out our future plans in connection with financing CHs and other related arrangements.

In terms of the plan timetable, the key change to activity lengths is the elongation of the PIT phase of testing, so that it best meets our ambition to identify all critical defects prior to the SIT phase. Beyond this change, and with the exception of the newly added OMS, Logistics, and CH financing arrangements, the duration and sequence of programme phases are broadly consistent with the initial plan.

Dependencies and Assumptions, Risks and Opportunities

We have reviewed and updated our programme dependencies and assumptions as part of the revised plan. Some key external dependencies remain – for example the certification of CHs by external bodies – with others passing since the last plan (e.g. the requirement for the Secretary of State to not object to the DCC's proposed procurement). We have updated our assumptions along the same lines. Some have been realised (for example relating to the assumed use of a WAN module proven in the marketplace), others remain (our use of Enduring Change of Supplier (ECoS) Certificates on the 4G CHs), whilst other are now

invalid (e.g. that new chipsets would not be required for the 4G CH). We present these for stakeholder review.

We have also revised our risks and opportunities. Some external risks have materialised (e.g. the need to incorporate a change in Zigbee stack as part of the programme) and others remain (e.g. the potential for significant and as yet unforeseen SEC changes taking place which impact programme testing). Our management approach for these is included in this consultation. We set out updated internal threats and opportunities for the programme, which are largely unchanged. Again, we welcome stakeholder review and feedback on these updated lists.

Other Industry Change

DCC has updated its assessment of other industry change that will be taking place during the delivery of the CH&N Programme. Whilst the revised timetable for the plan reduces risk in some areas (e.g. with the completion of the Faster Switching Programme), it introduces risk in others (e.g. potential contention with SEC Releases, including deployment of Market-wide Half-Hourly Settlement changes to DCC systems). We would particularly welcome stakeholder review and comment on this assessment.

Customer Journey and Engagement

Finally, recognising that the plan must still be built around DCC's customers' own plans and obligations, in particular around finishing the smart meter roll-out, we summarise the engagement we have undertaken since our initial plan was approved, the engagement we will undertake during the delivery of the plan, and set out the revised sequential key points in the delivery of the plan which will impact or require action from customers.

The consultation closes at 17:00 on Thursday 22 December 2022

A summary of key milestones in the new plans is set out in the table below.

Milestone	Previous Date	Proposed Date
OMS and Logistics – initial engagement complete	–	15/03/2023
Conclusions on scope of enduring regulatory changes for the programme	*08/11/2021*	31/03/2023
Low Level Design complete	*01/05/2022*	08/05/2023
Conclusions on enduring and transitional legal text regulatory changes for the programme	–	31/10/2023
Test CH Orders	*15/03/2022*	01/04/2024
Suppliers are able to place Initial Pallet Orders	*15/01/2023*	07/06/2024
UIT Start	*01/04/2023*	05/08/2024
UIT Complete	*01/06/2023*	07/10/2024
LSC: Go-Live submission	*09/06/2023*	21/10/2024
LSC: Go-Live decision	*01/07/2023*	29/11/2024
Initial Pallet Validation Start	*01/07/2023*	02/12/2024
Initial Pallet Validation End	*01/10/2023*	07/02/2025
LSC: Volume M/f submission	*09/10/2023*	17/02/2025
LSC: Volume M/f decision	*01/11/2023*	07/04/2025
Start of enduring 4G CH supply	*01/04/2024*	30/06/2025

2. Introduction and Context

2.1. The Communications Hubs and Networks Programme

1. The Communications Hubs and Networks Programme (CH&N) is a Data Communications Company (DCC) initiative geared towards defining and delivering future-proof Communications Hubs & Networks with an efficient supply chain and a targeted longevity of at least 15 years. Maintaining Smart functionality over the longer term will require the introduction of new Communications Hubs (CHs) which use the 4G network. Therefore, DCC established the CH&N Programme to assess development and implementation options for a 4G solution.

2.2. Development of the CH&N Delivery Plan

2. On 29 January 2021 DCC was Directed by BEIS to produce an implementation plan for CH&N and on 6 April 2021 DCC published a draft consultation for review and comment, based on the Outline Business Case for the programme. This consultation closed on 7 May 2021, with DCC setting out its conclusions and delivery plan on 11 June 2021.

3. The programme included two distinct Lots which would comprise two distinct elements of the programme delivery, as follows:

   - Lot 1 – covering an aggregated solution to provide a Single Band 4G CH Service including devices, a WAN and supporting services; and

   - Lot 2 – covering a disaggregated solution to provide a service for Dual-Band 4G CHs, including sub-lots for CH device provision, WAN provision and supporting services.

4. Approximately 30 milestones were proposed for the plan across the lifetime of the programme, covering the finalisation of DCC's Business Case and the completion of its commercial negotiations up to the signing of contracts with Service Providers, through to the testing, transition and go-live for the programme overall. Supporting milestones covering the development of regulatory change and detailed technical design were also included.

5. Our initial consultation acknowledged the lack of certainty in the plan, built as it was on Outline Business Cases (one for each of Lots 1 and 2) and ahead of the signing of contracts with service providers. For this reason, DCC included two Control Points in the plan (one at the point of contract signature and another at the point at which low-level design was complete) and committed at these points to review and, if necessary, propose refinements to the plan.

2.3. Completion and submission of the Full Business Cases for CH&N

6. DCC is required under its Licence[1] to ensure that the Secretary of State does not object to the procurement of Relevant Service Capability before entering into arrangements for its provision. To enable a decision to be made, DCC has followed the HM Treasury Green Book[2] guidance to develop its Outline and Full Business Cases for the CH&N Programme.

7. The completion of the Full Business Cases for the CH&N Programme has taken longer to complete than was set out in our initial CH&N Programme delivery plan. This is in part because, during the procurement process, our economic analysis indicated a significant saving could be achieved by considering an amendment to our approach. We took additional time to conclude our Full Business Cases to confirm this before proceeding.

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[1] In accordance with Conditions 16.6A – 16.6C of DCC's Licence.
[2] The Green Book is guidance issued by HM Treasury on how to appraise policies, programmes and projects, and the use of monitoring and evaluation before, during and after implementation.

8. Our amended approach was reflected in our submission of a Lot 2-only Full Business Case to BEIS. This demonstrated that a Lot 2-only approach was superior from a cost vs benefit perspective when compared to all other options available.

9. The draft of the Full Business Case for Lot 2 was submitted to BEIS for review on 29 July 2022 (as opposed to the 31 October 2021 date set out in the initial Delivery Plan), setting out the option for a 4G Dual-Band Communications Hub solution for the entirety of the Central & South Region.

10. DCC received notice on 5 September 2022 that the Secretary of State did not object to this approach, enabling DCC to sign contracts with the Lot 2 Service Providers, which took place on 7 October 2022. This included the award of contracts for a 4G Wide Area Network (Vodaphone Ltd), a 4G Communications Hub (Toshiba Europe Ltd), a Device Manager (Accenture (UK) Ltd), a Component Integrator (Accenture (UK) Ltd) and Component Integration and System Integration Assurance (Critical Software Ltd).

2.4. Replanning and the Secretary of State's Direction for the CH&N Plan

11. Having concluded our Full Business Case and signed contracts with our Service Providers on 7 October 2022, DCC has now reached Control Point 1 in its Delivery Plan. We stated in our initial delivery plan that we would ensure that customers are involved in our review of the plan at our Control Points. Given the length of time required to conclude our commercial negotiations and economic analysis, coupled with the fact that the programme no-longer incorporates two concurrent delivery plans covering two technical solutions, we consider it necessary to undertake a replanning exercise and are consulting on our updated plan with customers.

12. Following discussions with BEIS, DCC was Directed by the Secretary of State (under Condition 13B of its Licence) to undertake a replanning exercise on 10 October 2022, and to submit a revised plan for approval to BEIS by 13 January 2023.

13. This document constitutes DCC's consultation on its re-plan for the delivery of the CH&N Programme to provide a 4G based solution. We are seeking customers' and stakeholders' views on our amended delivery timeline and key milestones, and where applicable, any changes to our delivery approach. The consultation closes at 17:00 on Thursday 22 December 2022.

14. DCC's current LC13B plan milestones are included on the Joint Industry Plan (JIP) that is governed by BEIS and combines delivery plans from DCC, energy suppliers and others in relation to the smart metering roll-out. As such, DCC intends to use the outcome of the replanning process, and the conclusion document arising from the LC13B consultation to update the existing 4G delivery plan milestones on the JIP. We expect that, following submission to BEIS, if the re-plan is approved by the Secretary of State, the JIP milestones will be amended accordingly based on the consultation outcome. This is targeted for the February 2023 IMF (23 February 2023), with baselining approval proposed for March 2023 SMDG (9 March 2023).

Date	Activity
24November 2022	Consultation Opens
07 December 2022	Customer Webinar
22 December 2022	Consultation Closes
23 February 2023	JIP Milestones presented at IMF

Table 1 – Expected Consultation Timetable

3. Headline Changes to the CH&N Plan Activities and Deliverables

15. The move to a Dual-Band only solution has meant that our CH&N delivery plan has had to change. The key, and fundamental change to the plan is this move to a single technical solution, which will deliver Dual-Band 4G CHs. Whilst this means the programme will complete later than originally planned, it is our view that it becomes significantly less technically complex, with the delivery of one type of CH technology solution over a single programme timeline.

16. We have not made any significant changes to the sequencing of our delivery plan for Dual-Band CHs. They will follow standard design, build and test activity ahead of a user testing window in User Interface Testing (UIT) and early live trialling phases (UIT and Initial Pallet Validation (IPV) respectively). UIT and IPV will precede Live-Services Criteria submissions which will provide externally assured go-live governance points. The adoption of the Initial Pallet Validation period reflects lessons learnt from the delivery of previous CHs and changes associated with firmware upgrades.

17. Whilst the nature of the overall delivery approach remains unchanged, the milestone dates associated with activities have changed since previously consulted upon. Additionally, we have continued to work with our delivery partners to drive efficiencies and value for money for our customers during our commercial negotiations. This has meant that there have been some changes to the timings between the milestones in the plan. We summarise the revised plan in its entirety in Section 4 below.

18. In BEIS's Direction to DCC to re-plan its delivery of the programme, DCC was instructed to explicitly set out the key, customers impacting milestones relating to our delivery of aspects of the plan which have not yet been procured. These are:

   a. DCC's Order Management capability, which will need to change to support the ordering of 4G CHs;

   b. Changes to our Logistics arrangements for CH deliveries and returns; and

   c. DCC's arrangements for the financing and warranty/insurance arrangements of 4G CHs.

   DCC was also instructed to show the critical path to delivery of 4G CH supply at volume.

19. Accordingly, DCC has now added milestones setting out our planned engagement on OMS and Logistics, the latest date capability needs to be in place for CH Financing and warranty/insurance arrangements, and the user testing and go-live milestones for any changed capability. Whilst outside of the scope of the CH&N Programme and this plan, DCC will also continue to engage with industry on the longer-term considerations relating to the sunsetting of 2G/3G networks and how industry transitions away from these networks. DCC recognises that these are important dependencies for industry parties to enable their own transition planning assumptions to be progressed. DCC is separately progressing work on the implications of sunsetting for the 2G/3G services and will continue to engage with industry parties on this.

In DCC's draft delivery plan, set out in the milestone table in **Appendix B**, we have set out which of the proposed milestones we consider should be added to the Joint Industry Plan (JIP). We would welcome stakeholders' views on whether these are the right ones to add, or whether any are missing that should be included.

Question 1	Please provide feedback on the milestones DCC proposes to include in the Joint Industry Plan

4.   The revised Delivery Plan

4.1.   Timing

20.   A view of the revised delivery plan is set out below. This builds on detailed submissions from DCC's new Service Providers which have been subjected to an end-to-end integration and assurance process overseen by DCC's System Integrator and Programme Assurance Functions. The new milestones that comprise the plan (described in this section and detailed in Appendix B) are based on the delivery dates now contractually agreed with our Service Providers. Detailed commentary setting out the changes to the plan versus the original plan approved by BEIS in 2021 is set out, phase by phase, in the rest of this section.

4.2.   The Programme Critical Path

21.   The Critical Path for the programme whereby if milestones were to not be met, it would mean that the date of mass supply of 4G CHs would be delayed, is set out below:

- The completion of Low-Level Design in May 2023. This provides the complete and detailed set of requirements against which PIT can be complete (as well as the baseline against which regulatory change can be confirmed);

- The successful exit of PIT in January 2024, which allows system integration testing to commence;

- The successful exit of SIT in June 2024, which enables UIT to start;

- The successful completion of the UIT window in October 2024, which enables the Go-live readiness process to commence;

- The approval of the first Live Services Criteria Submission prior to technical and operational go-live, in November 2024, which enables IPV to start;

- Sufficient Participation in IPV within a 9 week window allowing the second Live Services Criteria Submission which evidences readiness for mass manufacture of 4G CHs in April 2025; and

- The approval of the second Live Services Criteria Submission in April 2025; prior to

- The supply in volume of 4G CHs in June 2025.

It is possible that the critical path will be added to with milestones which need to support the transitional activities that we will be undertaking in conjunction with customers as we introduce 4G CH installations, as well as potentially with milestones to support other parts of the solution that have not yet been procured. We describe this in more detail in Section 4.8.

4.3.   Design and Build Activity

22.   The duration of design and build activities remain largely the same compared to the original plan. There have been changes to the timing of milestones covering CPA, as well as the confirmation of Signal Noise Limits for devices being used with the 4G CHs. The movement of these milestones will have limited impact on subsequent phases of programme delivery or on stakeholders.

23.   DCC plans for the build phase to run concurrently with the design phase, allowing for Service Providers to design and build incrementally. DCC will manage risks during these phases through a robust risk reporting process, with a structure in place to ensure all risks, assumptions, issues and dependents are managed and that any escalations are dealt with in a timely manner. Risks will be categorised as operational, covering people and delivery; and Programmatic, covering cost, quality

and schedule risks. DCC will also use its Cross Functional Design Authority (CFDA) to iteratively approve designs throughout this phase.

24. During this phase of the programme DCC will also be refining its view of any necessary SEC changes to support the final solution. Where changes to Subsidiary Documents are required, DCC will consult with stakeholders on proposed SEC changes following the completion of Low-Level Design, but will manage the risk of requiring further design changes by consulting on the scope and possible impact on DCC Users ahead of this milestone (we describe this approach in further detail in Section 4.8).

25. For the 4G CHs, the original LC13B plan assumed that two iterations of CH hardware would be required, and that no Zigbee change would be needed. Working with our newly appointed Service Providers, we have now identified that there will be three iterations of CH hardware to deliver the 4G CHs, and that a Zigbee change is required. For the hardware change, the 3-iteration process is in line with the standard hardware development process followed by our 4G CH manufacturer (Toshiba). Only the 3rd hardware iteration is being delivered into the Pre-Integration Testing (PIT) environment before the start of PIT, with the earlier two iterations completing before PIT. Consequently, we do not expect this increase in the number of hardware iterations to have any impact on testing.

26. The Zigbee change, to the new ZigBee Stack version 7.0.2.0 has already completed SiLabs General Availability (GA) testing, and started the Connectivity Standards Alliance (formerly, ZigBee Alliance) Certification process. Whilst the SiLabs ZigBee Stack version 7.0.2.0 has not been used to date in any of the existing UK 'in-life' 2G/3G production Communications Hub variants, it is now available for commercial product development. The availability of the Connectivity Standards Alliance Certification for this stack version is planned as one of the PIT exit criteria. We therefore currently consider the likelihood of unforeseen non-compliance with GBCS/CHTS requirements to be very low.

27. Low-Level Design documentation for the core solution will take the same time as initially planned, completing in May 2023. Achieving CPA certification for 4G CHs is expected to take 5 months longer than initially planned, and we now expect this to be achieved in July 2024. This is a result of the CH provider having to certify the 4G enabled Dual-Band CH to CPA 1.4 and the chipset required within this CH. The extended duration is based on our CH provider's experience in obtaining previous CPA certification.

28. The milestone whereby DCC confirms Noise Limits for devices used alongside 4G CHs will now be completed for the start of PIT (as opposed to the end of PIT in the previous plan), with the ability for stakeholders to undertake noise limit testing running concurrently with the PIT stage. Stakeholders wishing to undertake noise limit testing will be able to utilise the DCC testing environment and equipment (e.g. the Communications Hub Antenna Structure (CHAS)) from 28 April 2023.

4.4. Pre-Integration Testing:

29. In our new plan the duration of PIT will be 5 months longer than originally planned. This will have an impact on subsequent phases of testing as SIT and User Integration Testing (UIT) can only complete once PIT has been successfully completed. PIT is expected to commence in March 2023, although Service Providers will enter PIT at different times based on their readiness. Service Providers will complete their own unit tests individually before coming together for a Component Integration Test (CIT) Phase led by the Component Integrator (CI).

30. PIT activity (with the exception of PIT for OMS and Logistics capability, which we set out in Section 4.10) is expected to complete within 10 months, ending in January 2024. This timeframe includes the Service Providers' individual unit testing, link testing, and integration testing led by the Component Integrator. PIT will include non-functional testing including capacity testing. The underlying rationale for the additional time taken in this phase is to best meet the ambition to

identify critical defects prior to the SIT phase. DCC will be using up to 10 device models per device type, as set out in documentation shared with the SEC Panel Testing Advisory Group (TAG) in Q2 2022. Device models to be tested against have been finalised in accordance with the Device Selection Methodology for the programme, which has been approved by the TAG.

31. The earliest point as which CIT can start will be when the necessary pre-CIT testing of sub-systems in PIT is complete. Preparatory work for CIT will start as per the original consultation timeline.

32. The duration of PIT is inclusive of DCC test governance and approval from DCC's Test Assurance Board (TAB) and TAG. As part of previous SMETS2 CH delivery, TAB and TAG approval were not obtained as part of the PIT phase, and we consider this additional independent assurance to be an important component of the overall testing plan.

33. Finally, Communications Hub Test Device ordering by Test Participants is scheduled to start in April 2024 and will be 4 months ahead of the start of User-Integration Testing.

4.5. System Integration Testing

34. No major changes are anticipated to the execution of the SIT phase, beyond its later start date in January 2024. The duration of the SIT phase remains the same at five months. This timeframe includes the integration testing and test governance including approval by TAG. Like PIT, SIT will include non-functional testing including soak testing.

35. It should be noted that, while no formal SIT execution can take place until TAB and TAG have approved PIT exit, the SIT environment can accommodate activity prior to the formal SIT phase beginning, and we will look to make use of this informal testing opportunity if it is suitable to do so. Finally, on SIT, our expectation is that no high-severity defects will be identified during the phase. based on the significantly increased testing undertaken in PIT.

4.6. The User Integration Testing (UIT) Window and Transition-to-Operations Testing:

36. The UIT window is planned to start in August 2024 and will run for two months (as per our original plan), concluding in October 2024. In order to stabilise and prepare for testing with DCC Users, we will continue to have a pre-UIT phase ahead of DCC User testing.

37. DCC will be undertaking 'Transition to Operations Testing (TTOT) concurrently with the PIT, SIT and UIT phases. TTOT includes Operational Acceptance Testing and Business Acceptance Testing. In the earlier stages of testing, TTOT will include elements of BAT, for example the hand-offs and hand-backs between different DCC delivery partners as set out in the Service Design, testing communications methods agreed in ways-of-working documents. BAT will also take defects found during SIT and test to check what actions DCC and delivery partners' teams would take to resolve the issue if it occurred in live. Elements of TTOT which impact the provision of services required by DCC Users during the UIT Window will be executed concurrently with the pre-UIT phase in order to provide assurance that users will be able to successfully undertake activities during the User Test Window.

Question 2	Please provide views on DCC's proposed changes to the design, build and testing arrangements in the revised plan. Please provide a rationale for your views.

4.7. Governance and Initial Pallet Validation (IPV)

38. As a result of the elongated PIT phase, DCC's initial Live Services Criteria (LSC) submission, and the following IPV phase move to the right in the plan by 6 months in relation to the start of testing.

39. The LSC 1 submission is anticipated to take place following the successful closure of the UIT window in October 2024. As per the original plan, we have allocated four weeks for the completion of this important governance step.

40. CH orders for IPV will be placed by customers at the end of the SIT phase in June 2024. It will take approximately six months for initial pallets to be delivered. We expect customers to then take receipt of hubs ordered for IPV three weeks in advance of IPV start (as opposed to the one month initially planned).

41. IPV will formally start 2 weeks after the Initial Pallet Supply milestone has been achieved, with an anticipated duration of 9 weeks, which will include the Christmas period. The period between IPV supply and IPV start is shorter than the initially planned 1 month.

42. In our initial CH&N plan DCC proposed not to introduce an obligation for Large Supplier Parties to participate in IPV and that instead we will use the second Control Point we added into the plan, at the completion of low-level design, to assess whether mandatory participation would be necessary. Whilst our plan currently assumes that customer participation will take place, a consultation is planned in due course on regulatory powers which would allow participation to be mandated if it was felt necessary. Introducing a back-stop obligation like this would guarantee that DCC, and industry as a whole, will have the best opportunity to assess the performance of CHs in the live environment in a timely manner, and will minimise the risk of incidents related to CHs not being picked up until after mass manufacture.

43. Upon completion of IPV in February 2025, the LSC 2 governance process will commence. The manufacture of 4G CHs at volume will commence as soon as the LSC 2 criteria have been reviewed and agreed with BEIS. Ultimately, this will mean that 4G CHs will be supplied from June 2025. It is currently DCC's expectation that all orders will be satisfied by 4G CHs from this point, this expectation will be further validated through the DCC's transition strategy work due for consultation in June 2023 (we describe this approach in further detail in Section 4.8).

Question 3	Please provide comments on DCC's proposed approach for Initial Pallet Validation by customers. Please provide a rationale for your views.

4.8. Regulatory Change

44. Whilst DCC's approach to delivery has been simplified, with a single technical solution, DCC anticipates that regulatory changes will be necessary. These include transitional and enduring arrangements (including for testing – some of which have already been made), possible amendments relating to CH ordering, forecasting and maintenance, possible changes to Service and Incident Management arrangements, CH financing arrangements, and lower level operational and process changes, including changes to reflect updates to the SM WAN Coverage Database.

45. As with previous plans implemented by DCC through a Direction from Government, we expect that BEIS will use its Secretary of State powers to direct changes to the SEC, and DCC will manage consultations on some of these changes in the same way we have done for other programmes under transitional governance. Specifically, any changes to the DCC Licence or the main body of the SEC that are to be made by the Secretary of State, will be consulted upon by BEIS. Any

changes to subsidiary documents that are to be made by the Secretary of State will be consulted upon by DCC. We have continued our analysis of potential regulatory change during the finalisation of our procurement approach, and, with contracts now signed, we are preparing to consult with industry on possible changes. We will be slightly revising our plans in terms of engagement on regulatory change, as follows.

46. We plan to first consult with stakeholders on the scope of enduring regulatory changes in January 2023. DCC will follow up its scope consultation with a detailed consultation on red-line changes to other SEC Subsidiary Documents, including any necessary transitional subsidiary document. We are planning to carry out this consultation no later than September 2023.

47. To support transition to the new 4G requirements, including aspects such as IPV and any transitional rules around CH forecasting and ordering, changes to the SEC may be required. We are expecting BEIS to consult shortly on proposed changes to the main body of the SEC to enable the introduction of a new SEC Subsidiary Document, the 'Network Evolution Transition and Migration Approach Document (NETMAD), where such transitional provisions could be located.

48. If implemented, DCC will use the NETMAD to set out the transitional arrangements for the programme. We will continue to engage with stakeholders on our approach for managing transitional arrangements, including requirements to enact the transition to the mass supply of 4G CHs, and will conclude this engagement by consulting on proposals for how this transition would work, which we would complete by June 2023. There may be additions to the programme Critical Path which we identify in relation to CH Orders and installs (we describe these in Section 4.10). We would then consult with stakeholders on regulatory requirements in the NETMAD, before obligations and requirements come into force. We expect to align this with our consultation on enduring changes, no later than September 2023.

4.9. Financing and insurance/warranty arrangements for 4G CHs

49. For the CH&N Programme, DCC considers that best value for the energy consumer is likely to be secured by DCC obtaining financing for CHs directly with financial institutions, as opposed to through its Service Providers.

50. DCC expects that, under this arrangement, financing of the purchase of the CHs from the manufacturer will effectively require the chosen lender to buy the 4G CHs from the CH provider for onward provision to DCC to provide CHs to energy suppliers over a 15-year period. Under this arrangement, if adopted, the finance partner would become responsible for passing through any warranty/replacement terms already within the negotiated agreements, and we would explore opportunities to extending key replacement services for the full 15-year life of a CH

51. We are currently in the process of engaging with the financial marketplace to ensure that we have the best deal for these financing arrangements. Our intent at this stage is that we will ask financial institutions to bid for an initial tranche of units, following which we plan to institute a regular process which will allow us to go back to the market each time to ensure DCC is securing the best available price for one of a number of financial providers, and delivering the best value for its customers. With expected interest fluctuations over the coming years, it is DCC's view that locking into one provider over the full term is not advantageous.

52. DCC has been working with advisors Deloitte, identifying the key information that financial providers would want to know as part of this process – and socialisation of this opportunity with the markets. Early indication has been positive, with many institutions acknowledging the key part DCC will play in achieving UK carbon reduction goals and how its purpose aligns with their own desire to encourage green technology and investments.

53. Whist this process will be on-going during the lifetime of the CH&N service, BEIS has requested in its Direction that we include milestones for any elements not thus far contracted for, and whilst at

this stage we do not have a firm view of when we will enter into contracts for CH Financing, in this plan we have set out the latest date at which this financing capability needs to be available, setting it as Q4 2023. This aligns with when DCC would expect to start receiving 4G CH forecasts from industry.

4.10. Delivery of the CH Order Management and Logistics capabilities

54.   DCC is in the process of considering the best way to deliver order management arrangements in support of the delivery of 4G CHs. This will need to enable customers to forecast, order and return CHs in line with DCC's regulatory obligations. DCC will be engaging with Parties at SEC Panel subcommittees and through other forums over the next few months, with the aim of having a high-level design that meets customer requirements by March 2023, and we have a milestone in the plan to reflect this. Our current planning assumptions, which we may refine following customer engagement, are that user-testing of any new or amended enduring capability (to be implemented during IPV) will occur no later than Q4 2024, with an expected go-live date of 2 December 2024.

55.   DCC will ensure that, irrespective of the timetable for the implementation, customers will always have access to an ordering management capability that allows the roll-out to continue, including any special, transitional arrangements that are required for IPV. Considerations for IPV include aspects which are required before the IPV phase starts, including the capability to enable customers to validate WAN coverage for IPV installs, and Device Manager Capability ahead of the first IPV installations.

56.   DCC intends to provide a logistics process that is in line with the current process and customers can expect orders and deliveries to continue smoothly through the transition period. DCC anticipates that the only change that may be seen by Users is a new logistics supplier. DCC will be providing updates on the progress of the logistical element of the 4G roll out through IMF, the DCC Supply Chain Working Group, the SEC Panel, and its associated sub-committees.

5. Dependencies and assumptions

57. With the change of approach to DCC's delivery of its CH&N Programme to a Dual-Band only solution, we have reviewed and where necessary revised the external dependencies and assumptions – i.e, those over which DCC does not have direct control – that underpin the plan. Two dependencies (the Secretary of State confirming no objection to our procurement, and the provision of meter configuration details) have passed and no longer apply. In the case of the assumptions, some of these which we had initially included within the plan, have either been realised, or were incorrect. We have provided updated tables for dependencies and assumptions below.

5.1. Updated Dependencies

Ref	Title	Who	Date/Duration	Description
D2	DEPENDENCY – Connectivity Standards Alliance (formerly Zigbee Alliance) certification in January 2024	Connectivity Standards Alliance	During PIT.	We require certification for Communications Hubs to be provided by the Connectivity Standards Alliance ahead of CPA certification.
D3	DEPENDENCY – CPA Certification in July 2024	National Cyber Security Centre	ahead of UIT start.	We require CPA certification from NCSC to be able to make Communications Hubs available for use in the production environment.
D5	DEPENDENCY – Meter Manufacturer support for HAN device testing	Meter Manufacturers	Agreement in place prior to testing.	In order to test with real devices in PIT and SIT we require support from meter manufacturers so any technical testing issues we encounter that stop or delay testing are minimised. DCC now has commercial arrangements in place with meter manufacturers, so whilst this remains a dependency, there is now more certainty that this will be provided.

5.2. Updated Assumptions

Ref	Title	Description
A4	ASSUMPTION – Testing Governance provides certainty within allotted window	The involvement of TAG and/or their representatives in Testing Completion Decision adds additional contributors to testing decision points. We assume that the governance windows allow for a clear decision to be made with no impasse.
A5	ASSUMPTION – Use of ECoS Certificates on CH&N CHs	The plan assumes that the delivery of the ECoS Programme will conclude as planned and that 4G CHs will use new ECoS certificates and not have to rely on TCoS certificates. DCC will validate this assumption at the start of CH&N SIT.

A7	ASSUMPTION – No significant unplanned GBCS or CHTS changes	The plan assumes that there are no newly identified, significant changes to the GBCS or the CHTS during the delivery of the plan. DCC has an assumption in its plan to baseline its technical design of the CH on GBCS version 4.1, whilst maintaining the option of reverting to an earlier version of GBCS if version 4.1 is not ready in time. This is set out in more detail in Section 7.6 of this document.
A10	ASSUMPTION – Back-stop obligations in place to mandate participation in IPV if required	We expect DCC Users to willingly participate in UIT and at this stage are not obliging participation. We also expect DCC Users' participation in IPV and consider this to be critical to programme delivery. We plan to consult on a back-stop obligation, to be used, if necessary, to ensure the necessary supplier participation in IPV.

5.3. Assumptions which have been met or are no longer valid

58. In our initial plan we assumed that high-level design work would commence ahead of contract signature, and this has happened as assumed. We also assumed, based on our market engagement, that 4G coverage would not require the use of mesh variants and had not planned for a mesh variant under the programme. This assumption is now confirmed, along with our assumption that we would be using a WAN module in our CH which has been proven in the marketplace.

59. Our initial assumptions also included that post-manufacture flashing would be available as one of a suite of tools to manage risks around volume manufacture. Whilst this will be available, this will only be in a limited capability, that will be only be used as a last resort in case of any issues with the install and commission (I&C) process. If I&C works, DCC expect customers to install these CHs and to fix any other issues via OTA. DCC considers it crucial that customers use the UIT and IPV windows to do as much live-like testing as possible to help ensure that critical processes are tested with the widest variety of device and customer solutions as possible. It is also DCC's view that, implementing a longer and more rigorous testing approach (with PIT increasing to ten months from five months as initially planned) will mitigate the need for post-manufacture flashing.

60. Finally, we had initially assumed that new chipsets would not be needed for the new CH hardware that DCC was procuring. This assumption was not correct, and we have removed this from our assumptions and included a new risk in relation to the fact that new chipsets will be required.

Question 4	Do you agree with DCC's updated dependencies and assumptions? Are there any that have not been included, or any which have been included incorrectly or inaccurately?

6. Risks and Opportunities

61. In this section we set out the risks and opportunities which could impact or be impacted by the plan. We have presented this in two sections. The first considers external risks and external opportunities. The second focusses specifically on the opportunities to deliver our plans more quickly, as well as the inherent threats to programme delivery where the programme exercises significant control.

62. As with our Assumptions, there are cases where risks have either materialised, and are being managed; or opportunities are being built into our plan or are no longer available. Where those that we initially set out are no longer live, we have explained these below each of the tables.

6.1. Updated External Risks and opportunities

6.1.1. External Risks

Ref	Description	Impact	Mgt Strategy
R1	**Dependencies are delayed;** There are a number of external dependencies in the plan where DCC does not have contractual levers to drive activity in accordance with the plan.	Any delay in meeting these dependencies will have an impact on the plan and subsequent milestones which will delay delivery.	DCC has procured a strategic plan assurance capability to support the programme in assessing and managing risk. DCC will engage with all external parties we are dependent on to ensure that dependencies are understood, quality criteria are set and met by DCC, and that risks to dates are identified early.
R2A	The finalisation of hardware has identified that **Zigbee changes <u>are</u> required** for new CHs	The new Zigbee Stack has not yet been proven in a 2G/3G CH in production, which could mean increased testing is needed and/or more time is required to resolve testing issues.	The availability of the **Connectivity Standards Alliance** Certification for this stack version is planned as one of the PIT exit criteria. As an additional risk mitigation measure, an early assurance activity is planned during the Design Phase, using prototype 4G CH hardware, to verify the correct functionality of the new ZigBee Stack version.
R3	**Lack of customer testing in UIT** fails to identify issues outside of DCC's testing scope. This may impact individual customer's transition plans.	Whilst DCC will test against a broad set of meters and a scope that is agreed with industry through TAG, it will not be exhaustive. Issues may be identified by individual users which could impact their transition to new devices.	The CH&N Programme will work with customers ahead of UIT to ensure as broad a set of devices are tested as possible. We expect customers who participate in UIT will also participate in IPV. DCC will ensure close collaboration with those customers participating in testing and IPV to ensure outcomes meet customer needs.
R4	**Urgent SEC Modification releases** or unplanned additional change are required to be implemented at short notice (especially for changes to Communications Hubs)	Additional scope will likely impact the planned delivery timelines possibly requiring previously completed steps to be executed again. This could prove the timeline to completion unachievable.	Should any urgent or unplanned change arise, the DCC will impact assess accordingly and manage through a robust change management process.

R5	**Contentions with other programmes** outside of DCC's direct control may impact CH&N delivery	Resource and environment contention could be caused by changes to scope or timings of externally governed programmes (e.g. Managed Half-Hourly Settlement) which could impact the project timeline and/or costs.	DCC to impact assess scope and delivery plans of other programmes within and outside its portfolio on an ongoing basis (as further described in Section 7 of this document).
R7	**Design, Build & Test timelines are informed by** previous programme lessons and the implementation of a new 'shift-left' approach may impact programme timing.	The utilisation of the 'shift-left' approach should improve testing outcomes but could lead to small changes to the delivery timetable for the plan.	DCC will evaluate this risk continuously, managing any change through agreed governance routes and through engaging with customers where change impacts them.
R8	**Test Devices Released too late from Device Manufacturers**	This will delay the Testing undertaken in PIT and SIT as planned and will impact associated timelines.	The CH&N Programme will work with energy suppliers and has contracted with Device Manufacturers to ensure delivery within the required timescales.

63. We have amended our risk on Zigbee change, updating it to reflect how we will manage the risk of the Zigbee change impacting design and test, versus the potential risk of a change being needed. We have removed the risk posed by additional Test Governance during PIT, and the risk that we do not have time for the breadth and depth of testing required, based on the work we have undertaken with the TAG to date and the elongated timetables for the testing phases. Finally, we have also removed the risk relating to contention with the June 2023 SEC Release, due to the programme's amended delivery timetable.

6.1.2. External Opportunities

Ref	Description	Impact	Mgt Strategy
EO1	**Improve operational services within programme scope**	Operating Processes (e.g. Incident, Problem, and Release Management times link to CH and network provision) that sit within the scope of the programme have been procured on the basis of alignment with existing processes and SLAs in the SEC; but there may be opportunities to improve services for DCC customers. DCC will be shortly consulting on its scope of regulatory change for the programme where we will set out the SEC changes we plan to make for the programme.	DCC will consult with customers on the proposed amendments to the SEC, including in cases where changes could benefit customers – e.g. amending requirements for forecasting, ordering and installing auxiliary CH equipment. Based on feedback we will consider whether and when to implement these.
EO2	**Test Automation Framework**	Testing for the CH&N plan is assumed against an as-is testing framework. DCC's Test Automation Framework may provide opportunities for shortened test cycles and phases.	DCC will assess Testing Automation Framework programme delivery plan and monitor whether there is scope to utilise the automation provision in the programme.
EO3	**POA improvements**	DCC will not be seeking to improve Power Outage and Power Restore Alert message times as part of the programme, but there may be opportunities to drive improvements in this area	DCC will share insight and ensure that opportunities are presented to stakeholders for consideration.

Question 5	Do you agree with DCC's updated assessment of the key external risks and opportunities? Are there any that have not been included, or any which have been included incorrectly or inaccurately?

6.2. Updated Programme opportunities and threats

64.   In DCC's initial plan we identified opportunities that the programme could make use of to bring forward milestone dates or increase user testing confidence. We have utilised one of these opportunities we initially identified by undertaking BAT during the UIT window. Others are no longer relevant as we have amended our testing approach, or have proven infeasible as we have completed the procurement process. The remainder are included in the table below. We have not factored these into our plans, but instead proposed to keep them under review during delivery.

Ref	Opportunity and description
O5	**IPV installations can start as soon as live deployment completes without any settle period / checks for early life support from production deployment – 2 WEEKS**
	After production deployments the DCC operations team invoke a period of caution where the smart metering production systems are monitored against adverse impact of change. This period is called Early Life Support (ELS). Currently the CH&N plans allow for two weeks since a new core WAN is being introduced along with new DCC Service Providers. This time can be reduced or completely removed as a precursor to the IPV phase starting. Customers risk installing or swapping out 4G CHs should the production deployment be identified later as faulty.
O6	**Live services criteria for a volume manufacturing decision could start in parallel to IPV – 2 WEEKS**
	All governance periods in the plan are scheduled for four weeks, which we consider prudent based on evidence of delivery to date. This includes for Live Services Criteria. There is opportunity in the IPV phase to start governance of the volume manufacturing decision ahead of the IPV window closing, which we could realise where there were high numbers of installs completed without any incidents. This will expediate the decision making for Volume Manufacturing.
O8	**Informal use of UIT environment by DCC Users following SIT exit – increased user testing confidence**
	The DCC testing environment will be accessible for DCC Users immediately after SIT exit. Whilst testing in this environment will not be formally supported by DCC and its Service Providers until the formal start of the UIT phase, it will be available for use and may provide the opportunity for DCC Users to gain early insight into testing and improve the quality and speed of testing in the formal UIT window. Whilst this Opportunity would not lead to saved time during the plan, it could provide increased test confidence.

65.   We have removed a threat describing how PIT, which contains increased tasks for DCC Service Providers to complete before the stage is complete, may take longer than we have planned. In our revised plan, we have updated the duration of PIT, which has been extend to 10 months. Because of these changes we consider that this threat no longer applies. We have also removed a threat relating to PIT governance timing because of our extended PIT timeline. We have removed a threat that issues in BAT would impact UIT starting, as these phases will now run concurrently.

Finally, we have removed a threat relating to our assumption that no Zigbee change is needed, given that this assumption is invalid. Instead, we are now managing this through a newly created Risk (R2A)

Ref	Threat and description
T1	**Design of hardware integration of 4G modem is longer than planned and prevents PIT starting on time – 4 WEEKS**
	As we complete the low-level designs and associated hardware applications, we may discover unknown issues to integrate the 4G modem. This would extend the time to final hardware signoff and delay the execution of the PIT phase.
T4	**PIT approach changes do not remove as many later issues found in SIT as hoped and increased time is required for defect fix and retesting – 4-8 WEEKS**
	As part of our lessons learned, we will apply an improved PIT approach with the aim of resolving more errors in PIT, thus reducing issues that are leaked through to the SIT phase. It is not likely that this approach can be an instant fix to all issues and some continued lessons will need to be learned and applied to future revisions. This approach aims to mitigate but may not entirely remove the risk that defects impact the execution of SIT. This does mean that there may still be additional time required in the SIT phase, impacting the exit completion and start of Customer testing phases.
T6	**Testing Participants identify high severity issues in User Testing Window – 4-8 WEEKS**
	Due to the vast number of CH to Device configurations that are possible, it is not economic or efficient for DCC to exhaustively test all combinations, before users' involvement. Whilst PIT will select a suitable sample that is representative of production, it will remain possible that an issue may remain with another combination, which require additional testing to resolve before deployment.
	We have seen previous issues that have been raised due to the varying order and sequence of the Service Requests sent by customers across the 'motorway' to the DSP. There would remain the chance that this type of issue continues from customers' changes even in the situation where we are not changing or adding any Service Requests and that plan introduces changes to the WAN interface only.
	Either of these points would require investigation and possibly a fix from DCC or Meter Manufacturers. There remains the risk of delay during the User Testing Window due to additional fixes and re-testing.
T8	**CH supplier agreed in contract cannot honour lead times for supply – 4-8 WEEKS**
	We have planned for an expedited lead time to volume supply of 4G CHs from the LSC approval for volume manufacturing. The fastest supply experienced to date is c. 3 months, which we have included in the plan. Whilst we have contracted for this timetable, a threat remains that, due to possible supply chain issues such as silicone chip accessibility, there may be a delay that may affect customers.

Question 6	Do you agree with DCC's updated assessment of programme opportunities and threats? Are there any that have not been included, or any which have been included incorrectly or inaccurately?

7. Interactions with other DCC and industry change

66. When devising the plan for CH&N, it is important to consider the potential impacts of its delivery alongside other industry change, given the potential contention that may arise in, for example, testing environments and resource, as well as changes to technical specifications. DCC has assessed its delivery of CH&N against other change currently being undertaken by DCC, and more broadly across the energy sector. As part of our replanning, we have re-evaluated possible contention, risks and opportunities against other industry change, and have included it here for comment.

7.1. Smart Energy Code Releases

67. DCC is planning to deliver system-impacting changes to the Smart Energy Code (SEC) in June and November in 2023 and 2024 as part of its regular programme of work to implement SEC Modifications. We also expect system impacting SEC change in 2025, although we expect that system changes for the CH&N Programme will have completed at this point. However, the start of mass supply of 4G CHs, most likely through a new Order Management System, will potentially interact with 2025 SEC Releases.

68. The scope of the June 2023 SEC release is yet to be finalised, with the target scope agreed, but not yet formally confirmed. Our current assessment of modifications which are proposed for inclusion in the release is that there is no cross-cutting impact with the CH&N Programme. We will review progress of these modifications and engage with stakeholders as the scope is locked down, ensuring that any potential risks are discussed and managed. There are no SEC Modifications currently targeted for the November 2023.

69. For the June 2024 SEC Release, we currently expect that the whole scope of the release will be limited to the changes necessary to implement the transition to Market Wide Half Hourly Settlements (MHHS). This is described in more detail in section 7.3. The scope of changes in the rest of 2024 (February and November releases) is not yet clear, but as previously stated, DCC will monitor approved SEC modifications scheduled for this release and add, remove and/or manage risks as they arise.

70. It is possible that based on our current plans, the November 2024 SEC Release and the CH&N plan could involve a need for User System Testing in parallel. It will be necessary for DCC and testing participants to consider this impact against their test plans and resources. We also expect the go-live dates for both the November 2024 SEC Release and the deployment of new code to support 4G CHs to be very close. We will continue to engage with the SEC Panel to consider the most appropriate way to manage any conflict that might arise here.

7.2. Faster Switching Programme and Retail Energy Code changes

71. Ofgem's Faster Switching Programme is progressing as planned and has delivered the Central Switching Service during the summer of 2022. On this basis we are confident there will be no contention on DCC resource. We will continue to contribute to the assessment and development of any changes to the Retail Energy Code (REC), under which DCC's switching obligations are governed, and as part of this process will consider the impacts on any proposed REC changes on delivery of the CH&N Programme, highlighting risks and opportunities as we do so.

7.3. Market-Wide Half-Hourly Settlement

72. Ofgem is current overseeing Electricity Settlement Reform which will see the introduction of a new User Role (Meter Data Retriever) in the SEC for parties carrying out this service. These changes to the SEC will be delivered by SEC Modification 162,[3] with an implementation date of June 2024. The additional capacity requirements for MHHS will be managed and implemented within DCC's existing systems as a separate exercise and engaging with Stakeholders.

73. The proposed release date for SEC Modification 162 (in June 2024) will coincide with CH&N SIT. However, DCC currently considers that the functional cross-over between the scope of MHHS and CH&N will be small, and our assumption is therefore that risks to CH&N delivery caused by any overlap of testing of SEC Modification 162 during SIT are also low. Confirmation of the precise extent of functional crossover will be known when the detailed design of SEC Modification 162 is complete, expected in early 2023, after its approval by Ofgem. DCC will continue engagement with the SEC Panel, relevant sub committees to ensure any emerging risks are clearly understood.

7.4. Enduring Change of Supplier (ECoS)

74. DCC is continuing its delivery of a programme of work to replace the existing Transitional Change of Supplier (TCoS) arrangements with a more robust set of enduring arrangements – the Enduring Change of Supplier (ECoS) arrangements. The ECoS Programme will define and implement the enduring arrangements for the changing of security credentials on SMETS devices.

75. In 2021 we concluded the ECoS Service Provider procurement and, as set out in the original ECoS delivery plan, reviewed the initial delivery plan. The conclusion of this review exercise led to DCC proposing to move the Go Live date for ECoS from June 2022 to June 2023. This move to the right means that impacts of overlap with the revised CH&N Programme remain as initially identified. We consequently expect ECoS SIT to have concluded before SIT for CH&N delivery, and a period of ECoS migration activity well before the initial validation of new 4G CHs developed under the CH&N Programme.

7.5. The broader Network Evolution Programme

76. The CH&N Programme forms one of a broader set of changes delivered as part of the Network Evolution Programme. Other Network Evolution changes and interdependencies with the CH&N Programme are set out below.

7.5.1. Data Service Provider (Data) Programme

77. The DSP Data Programme will deliver the enduring data services provision (but not the System Integration and Service Managements currently provided by the DSP – which are set out below) beyond the current contractual arrangements with DCC's incumbent DSP. DCC is currently developing its Outline Business Case (OBC) for the programme, which it expects to share with stakeholders shortly, along with our plan for the delivery of the programme. Like the CH&N Programme, the DSP Programme requires confirmation from the Secretary of State that they do not object to new procurements (following submission of a Full Business Case to BEIS). DCC will

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[3] SEC Modification 162 will introduce the changes needed to allow Electricity Supplier Agents to be able to collect half-hourly meter readings from electricity meters

need new contractual arrangements in place from October 2024, which will coincide with Initial Pallet Validation under the CH&N Programme.

78.   The DSP plan continues to develop and carries uncertainty following the present OBC stage, including whether and to what extent the capability and data systems will change and over what timescale. As we manage this uncertainty it will be important that we seek continued input from DCC customers on the impacts of this overlap as the DSP data plan, and the timings of any changes to systems and processes, are refined.

7.5.2.   Data Service Provider (System Integration)

79.   The second DSP Programme is the re-procurement of the System Integration (SI) function that is currently carried out by the incumbent DSP service provider CGI. The scope of this programme includes a scalable capability to provide SI services across the DCC Ecosystem, SI activities that relate to operational activities and support of an enduring testing service. The overarching Total System and Service Integrator (TSSI) will manage SI Technology across all the SI providers, driven by goals of fault tolerance, security, agility, scalability and resiliency, that is cost transparent across the contracted Service Providers.

80.   Stakeholders and SEC Sub-Committees will be engaged on relevant topics as the programme develops.

7.5.3.   Data Service Provider (Service Management)

81.   DCC has decoupled the Service Management element from other parts of the overall DSP Programme due to the ending of technical support for the platform on which it currently operates (Remedy). DCC has prioritised the delivery of this activity and is currently engaging with the marketplace on an enduring Service Management solution, which could include the continued use of the Remedy platform for a period of time with limited support. This sub-programme will take place over a shorter timetable than CH&N and DCC expects that an enduring Service Management solution will be in place by the end of 2023, with CH&N providers using this new capability.

7.5.4.   Trusted Service Provider Programme

82.   DCC is ensuring continued provision of Trusted Service Provider (TSP) services for the Public Key Infrastructure (PKI) that underpins the smart metering security model. TSP service continuity is critical and DCC is currently procuring the service beyond its contracted expiry in 2022, through to 2025. We expect minimal impact on users of the TSP service and no impact on the delivery of the CH&N Programme, although it will be necessary for the post-2025 TSP to align with the CH&N Programme solution.

### 7.5.5.   Test Automation Framework

83.   DCC is currently planning changes to its approach to testing to enable greater automation. The Test Automation Framework (TAF) is a platform agnostic tool which has the ability to be used 24/7 across multiple environments executing tests concurrently in multiple meter sets, whilst capturing device information and logs using robotics.

84.   The Design, Build and Test plan for TAF is still in development, and for the purposes of this programme we have placed no dependency on the TAF tool for testing to proceed.

7.6. Uplifting of GBCS to version 4.1

85.   Concurrent with the delivery of the CH&N plan, DCC is managing a programme (the GBCS 4.1 Programme) alongside industry participants to enable to transition to a newer version of the Great Britain Companion Specification (GBCS). GBCS specifies the way in which devices on the HAN

interact. Changes to GBCS have the potential to impact the interoperability of those devices, a risk that is mitigated through the testing of devices on the new version of GBCS. The risk further falls once devices on the updated specification begin to be installed in the operational environment.

86.　The use of a previously untested/not deployed version of GBCS increases the likelihood that defects will be found in each phase of testing. This in turn increases the likelihood that defects will be found that need addressing before DCC can progress beyond each test phase. It is therefore important that DCC considers and carefully plans for the interactions between the GBCS 4.1 and CH&N Programmes. DCC's current plan of record for GBCS 4.1 delivery is set out below.
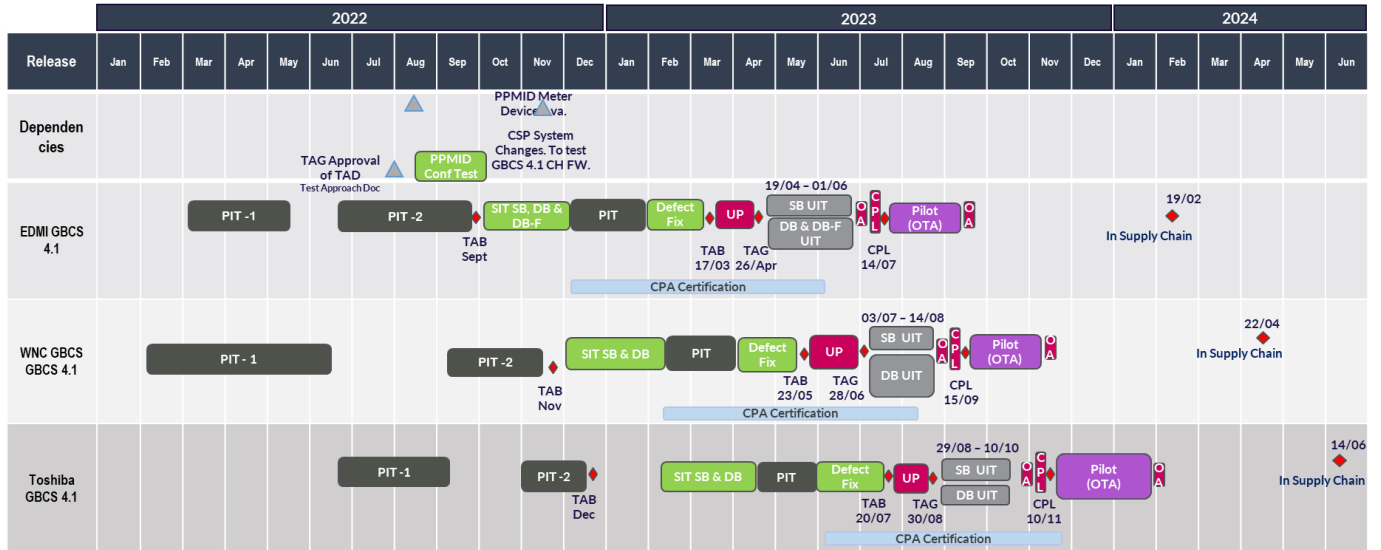
87.　Whilst the plans do not currently align, we are in the process of reviewing opportunities in the phasing of the GBCS 4.1 plan and will shortly be engaging with the SEC Panel on possible changes that would bring forward testing of 2G/3G CHs used in the Central/South Region. If these changes are implemented, it would increase the likelihood that confidence in GBCS 4.1 enough that DCC would consider the risk of commencing testing its 4G CH on GBCS 4.1 acceptable, and we have currently included an assumption in our plan (which is included in the table in Section 5.2 of this document) that all 4G CHs will enter PIT testing on GBCS version 4.1.

88.　However, because of the lack of certainty, DCC has included a decision point ahead of CH&N PIT to determine if we can take GBCS 4.1 into PIT. If we do take GBCS 4.1 into PIT it may include using emulators, and before all planned GBCS 4.1 testing (including UIT) is complete and before it has been deployed in production either in pilot OTA or mass manufacture form. This means there will be a risk that defects are subsequently found that will cause delays in the CH&N Programme (which we estimate would be around 3-12 months subject to the defect severity and resolution approach). The only way to avoid this risk is to not take GBCS 4.1 in and move to GBCS 4.1 post mass-manufacture.

89.　We will continue to engage with customers on our plans for GBCS 4.1 and as part of this consultation we are seeking customers' views on our assumption, and whether they prefer to accept the risk of delay to the CH&N Programme which may arise if we test with GBCS 4.1, or to test and manufacture with an earlier version of GBCS before moving to the latest GBCS version at a later date. If DCC does test using an earlier version of GBCS, we propose using version 2.1. We have discounted testing and manufacture of 4G CH with the GBCS 3.2 firmware as default at this stage, based on negative impacts to the install and commission process raised by some customers regarding its use in the production environment. As a result of these concerns, GBCS v3.2 is not currently the default manufacturing firmware for all Communications Hub types (but remains for a small proportion). Therefore, DCC has factored this into the proposal to use GBCS version 2.1 as the primary back up.

Question 7	Do you support DCC's proposed approach to testing with GBCS versions? Please provide a rationale for your views.

7.7. Summary

90. DCC's replanned CH&N Programme reduces some risks of contention with other programmes being delivered across the energy retail sector. For example, there is a larger gap between the start of the new, Faster Switching arrangements. Other programmes have also required replanning, for example the MHHS Programmes, with varying impacts on the CH&N Programme. MHHS is being deployed later than initially planned, but the 3-month change, compared to the c. 12 month change to the CH&N Programme means that the likelihood of contention remains low.

91. However, there are some newer risks that DCC will need to manage carefully, with support from industry. These include the deployment of GBCS version 4.1, which will need to be carefully planned, and the increased potential for changes to the DSP under the DSP Programmes. As before, we will monitor these continually and seek input from stakeholders through SEC Governance and BEIS transitional forums.

Question 8	Do you agree with DCC's updated assessment of the CH&N Programme's interaction with other change programmes, and whether our approach to managing them is appropriate?

8.   Customer Journey and engagement

92.   As we set out in our initial consultation, delivery of the CH&N Plan will not meet its intended outcomes without DCC customers' support. As before, we consider the plan to be necessary: the do-nothing option is not tenable because of the impending switch off of 2G/3G networks; leads to unnecessary industry costs and lost benefits, and our business case offers the most cost-effective means to address this. But, the plan must still be built around DCC's customers' own plans and obligations, in particular around the target based framework for driving the smart meter roll-out up to and including 2025.

93.   In this section we summarise the engagement we have undertaken since our initial plan was approved, the engagement we will undertake during the delivery of the plan and set out the revised sequential key points in the delivery of the plan which will impact or require action from customers.

8.1.   Engagement during plan delivery

94.   This first table sets out customer journey milestones in our initial plan which DCC has completed (in some cases notifying delay as opposed to confirming completion as initially planned).

Activity	Description	Date
LC13B Conclusions and ITT Update	DCC reported to the TABASC on the outcomes of the LC13B consultation and advised of any changes to information previously provided to the Committees	Summer 21
ITT Update	DCC provided SEC Sub-Committees with an update on the ongoing ITT process, including details on the bids and notifying there would be a delay	Aug - Sep 2021
Test Approach	DCC will work with TAG on the Communications Hub Testing intentions	Q2 2021
ITT Outcomes	DCC will instead provide an update on the Final Business Case agreed with BEIS following contract award	Q3 2022

95.   The second table (overleaf) sets out initially planned engagement, which has not yet been carried out (where necessary amended as part of the re-plan), and additional engagement steps that are planned. The scope of this engagement relates to the implementation of the new 4G capability delivered as part of this programme, as opposed to engagement on the eventual upgrading of 2G/3G equipment in light of the sunsetting of these networks, which is being managed outside of this programme.

Activity	Description	Date
Design Options	DCC will work up detailed design with the successful bidders and will engage with the TABASC and the SSC on these following contract award and ahead of detailed design finalisation	Q4 2022 – Q2 2023
Test Approach Documents	DCC will continue to liaise with the TAG and testing stakeholders on any revised requirements to support testing for the programme (for example OMS testing obligations which have not yet been defined)	Q1 2023
PIT Testing	Feedback on progress with Testing to the TAG	Q1 2023 – Q1 2024
SIT Testing	Feedback on progress with Testing to the TAG	Q1-Q2 2024
Go-live and Operational Updates	DCC to engage regularly with the Operations Group on operational readiness and transitional arrangements to support the role of the SEC Panel in Go-Live decision making	From Q1 2023
Live Service Criteria 1	Seeking Industry input that the change is suitable for deployment into production systems	From Q4 2024
Live Service Criteria 2	Securing BEIS approval and Industry input on the decision for mass manufacturing	From Q1-Q2 2025
Lessons Learned	Identify and share lessons learned with industry.	Q3 2025

8.2. Customer Journey and key milestones

Activity	Description	Date
Ordering of Test CHs from DCC	Testing new CHs against customers' systems and devices will support DCC User readiness for 4G CH deployment	Q2 2024
Provision of Test CHs	It is from this point that test Communications Hubs will be made available to customers for use in DUST	Q3 2024
Initial orders for IPV	Programme engages with DCC Customers to confirm CH volumes required for Initial Pallet Validation activity	Q2 2024
Stock and installation engagement	DCC engages with DCC Customers to manage 2G/3G stock levels in relation to installation rates. Primary objective to ensure required stock available for industry.	From Q1 2023
Participation in UIT	Customers encouraged to participate in UIT	Q3 2024

IPV Go-Live	Customer feedback through the SEC Panel will support BEIS to make the go-live decision for IPV	Q4 2024
IPV	Customers to install initial 4G CHs in the production environment ahead of mass manufacture	Q4 2024 to Q1 2025
IPV ELS and feedback	Customer engagement with DCC on IPV will ensure DCC has a clear view on its outcomes	Q4 2024
IPV completion and mass manufacture go-live	Customer feedback through the SEC Panel will support BEIS to make the go-live decision for mass-manufacture	Q1-Q2 2025

96.   We have removed several milestones from the Customer Journey table above that were listed in the original table. These cover:

- Consultation on the SVTAD, which has now taken place;

- milestones relating to engagement on the final provision of, and any end to installs of 2G/3G CHs. DCC will be consulting with customers on ongoing 2G/3G proposals as part of its transition planning, which will impact whether and when we undertake ongoing engagement with customers; and

- milestones relating to our engagement with customers on CH transition. Some of this engagement has already taken place, and we will be engaging further with our customers through the consultations on potential SEC change in 2023.

Question 9	**Do you agree with DCC's overall engagement approach? Is there any activity which you consider necessary which has not been included?**

Question 10	**Please provide any additional comments you have on the revised plan Where relevant please include a rationale for your views.**

9.   Next Steps

This consultation closes at **17:00 on** Thursday **22 December 2022**. Please email your response to consultations@smartdcc.co.uk.

DCC reserves the right not to publish, or to delay publication of, referenced material or documents and/or respondent feedback for confidentiality, commercial, compliance and/or legal reasons.

Consultation responses may be published on our website www.smartdcc.co.uk. Please state clearly in writing whether you want all or any part, of your consultation to be treated as confidential. It would be helpful if you could explain to us why you regard the information you have provided as confidential.

Please note that responses in their entirety (including any text marked confidential) may be made available to the Department of Business, Energy and Industrial Strategy (BEIS) and the Gas and Electricity Markets Authority (the Authority), who are subject to public law duties and obligations as regards such information and its publication, entirely separate to DCC.

If you have any questions in relation to this consultation, please contact DCC via consultations@smartdcc.co.uk

10. List of Consultation Questions

1	Please provide feedback on the milestones DCC proposes to include in the Joint Industry Plan.
2	Please provide views on DCC's proposed changes to the design, build and testing arrangements in the revised plan. Please provide a rationale for your views
3	Please provide comments on DCC's proposed approach for Initial Pallet Validation by customers. Please provide a rationale for your views
4	Do you agree with DCC's updated dependencies and assumptions? Are there any that have not been included, or any which have been included incorrectly or inaccurately?
5	Do you agree with DCC's updated assessment of the key external risks and opportunities? Are there any that have not been included, or any which have been included incorrectly or inaccurately?
6	Do you agree with DCC's updated assessment of programme opportunities and threats? Are there any that have not been included, or any which have been included incorrectly or inaccurately?
7	Do you support DCC's proposed approach to testing with GBCS versions? Please provide a rationale for your views.
8	Do you agree with DCC's updated assessment of the CH&N Programme's interaction with other change programmes, and whether our approach to managing them is appropriate?
9	Do you agree with DCC's overall engagement approach? Is there any activity which you consider necessary which has not been included?
10	Please provide any additional comments you have on the revised plan? Where relevant please include a rationale for your views.

Appendix A – Plan on a Page
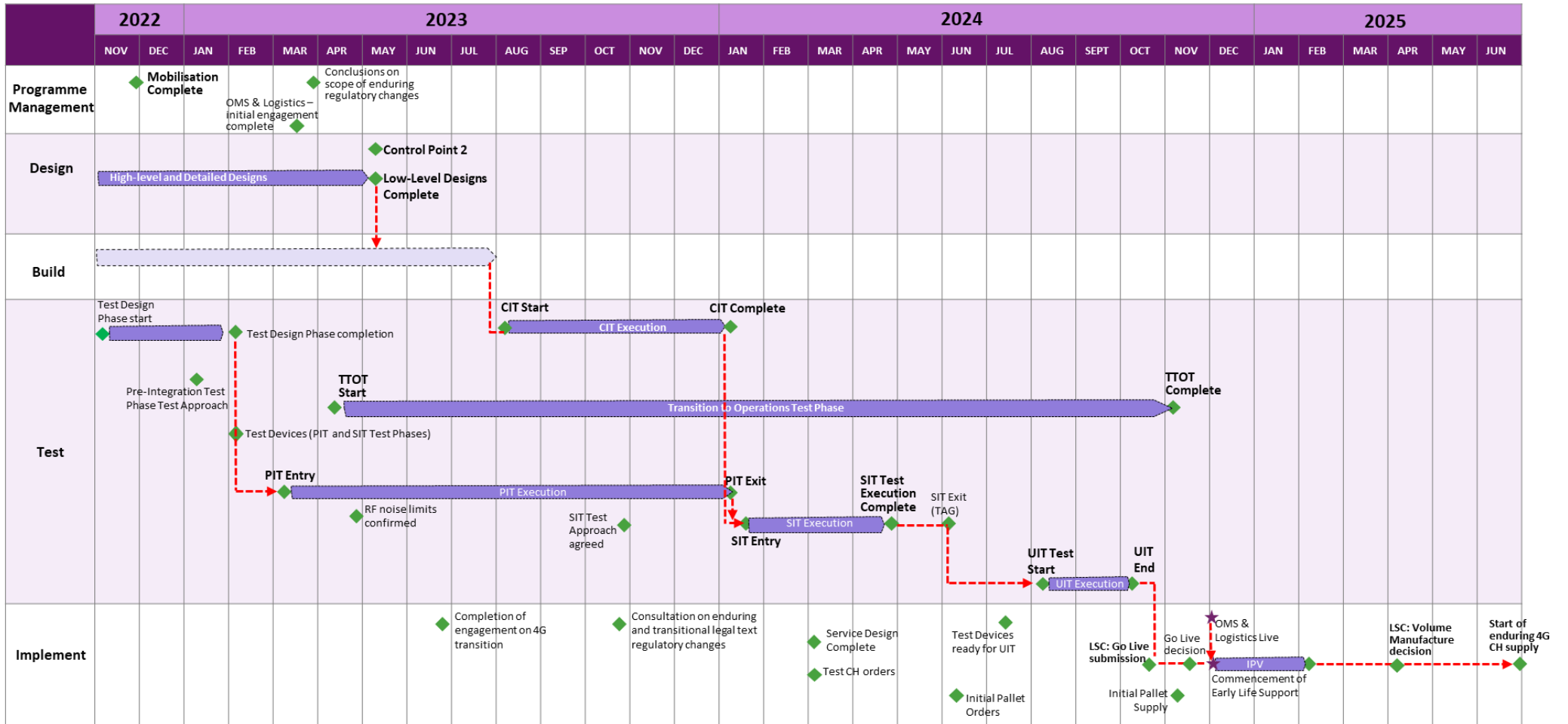
Appendix B – Licence Condition 13B Milestone Table

#	Milestone	*Previous* (where applicable)	Proposed dates	Description
1*	PIT Start	*15/03/2022*	07/03/2023	Start of PIT phase for CH, DM, WAN, subject to earlier TAG approval of the corresponding Testing Approach Documents.
2	Transition to Operations Testing (TTOT) Phase Start	*15/03/2022*	07/03/2023	Start of DCC's Transition to Operations test phase (TTOT), which includes Operational Acceptance Testing and Business Acceptance Testing stages.
3*	OMS and Logistics – initial engagement complete	–	15/03/2023	Initial engagement with stakeholders complete: DCC has captured SEC Party business needs relating to the OMS and Logistics capability. DCC has an understanding of the impacts on Users of the options available including its proposed approach
4*	Conclusions on scope of enduring regulatory changes for the programme	*08/11/2021*	31/03/2023	Latest date by which DCC will issue a conclusions document on the scope of regulatory changes required to deliver the CH&N programme
5*	RF Noise Limits confirmed	*15/08/2022*	28/04/2023	Updated ICHIS published including RF noise limits for 4G CHs following DCC consultation, with requisite testing environments and equipment made available.
6	Low Level Design complete	*01/05/2022*	08/05/2023	Completion of Service Provider low level designs for the WAN, CH and Device Manager approved with DCC's Design Authority
*	*Control Point 2*	*01/05 2022*	08/05/2023	*Following the completion of Low-Level Design, DCC will use a control point to evaluate its detailed plan, submitting changes to the JIP if necessary.*
7*	Conclusions of engagement on 4G Transition	–	30/06/2023	Latest date by which DCC will issue a conclusions document on proposals for how to manage transition from 2G/3G CHs to mass supply of 4G CHs
8*	Conclusions on enduring and transitional legal text regulatory changes for the programme	–	31/10/2023	Latest date by which DCC will issue a conclusions document on tracked changes it proposes are made to the SEC to reflect the enduring and transitional requirements for the 4G Communications Hubs & Networks Programme.
9	CH Financing, Insurance and Warranties – capability in place	–	29/12/2023	Point at which capability to finance, insure and warrant CHs will be put in place
10*	PIT Exit	*15/08/2022*	10/01/2024	DCC gets Panel approval of Completion of PIT phase for DSP, CH, DM and WAN

* Milestones/Control Points are proposed for inclusion in the JIP

#	Milestone	Previous (where applicable)	Proposed dates	Description
11*	SIT Start	15/08/2022	15/01/2024	Start of SIT phase after successfully meeting entry gate criteria
12*	Test CH Orders	15/05/2022	01/04/2024	Test 4G CHs available for ordering by Testing Participants.
13*	SIT Exit	15/01/2023	07/06/2024	DCC gets Panel approval of Completion of SIT phase
14*	Initial Pallet Orders	15/01/2023	07/06/2024	CHs required for IPV are available for ordering by Suppliers
15*	UIT Start	01/04/2023	05/08/2024	Start of the UIT, including testing of changes to the Order Management and Logistics capabilities based on agreed set of entry criteria
16*	UIT Complete	01/06/2023	07/10/2024	End of the UIT window based on an agreed set of exit criteria
17*	LSC: Go-Live submission	09/06/2023	21/10/2024	Live Services Criteria submission to BEIS and SEC Panel for consideration prior to start of IPV and prior to DCC's deployment of changes to Live Systems
18	TTOT End	01/06/2023	07/11/2024	Completion of DCC's Transition to Operations test phase (TTOT), which includes Business Acceptance Testing
19*	Initial Pallet Supply	01/07/2023	18/11/2024	CHs ordered for IPV phase are delivered to Suppliers
20*	LSC: Go-Live decision	01/07/2023	29/11/2024	Response from BEIS for approval prior deploying changes to Live systems, following SEC Panel recommendation
21*	OMS and Logistics – Live	–	02/12/2024	New OMS and logistics capabilities will be operational.
22*	Initial Pallet Validation Start	01/08/2023	02/12/2024	Start of Initial Pallet Verification pilot window in production
23*	Initial Pallet Validation End	01/10/2023	07/02/2025	Completion of the Initial Pallet Verification pilot window in production
24*	LSC: Volume M/f submission	09/10/2023	17/02/2025	Live Services Criteria submission to BEIS and the SEC Panel for consideration prior to DCC's Volume Manufacturing Decision
25*	LSC: Volume M/f decision	01/11/2023	07/04/2025	Decision from BEIS prior to Volume Manufacturing, following receipt of SEC Panel advice
26*	Start of enduring 4G CH supply	01/04/2024	30/06/2025	Start of Volume Supply of 4G Communications Hubs

* Milestones/Control Points are proposed for inclusion in the JIP