

DCC Response to the Wider changes to the Intimate Communications Hub Interface Specification Consultation

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1 Introduction

On 3 May 2019, DCC issued a consultation to invite views on amendments to the Intimate Communications Hub Interface Specification (ICHIS), which is a specification required under Section H12 of the Smart Energy Code (SEC).

SEC Section H12.5 requires the DCC to keep the ICHIS under review to ascertain whether the specification remains fit for purpose envisaged by the SEC. At its discretion the DCC may consult with Parties as to whether they consider the specification to be fit for purpose.

DCC completed its review and sought views on several amendments to the specification. These amendments were mainly focussed on:

- Removing the Bit Error Rate (BER) test requirement;
- Moving the Radio Frequency Noise Limits from the Communications Hub (Comms Hub) datasheets to ICHIS into a new Appendix B;
- Replacing current test content in ICHIS with a new ICHIS Test Specification;
- Adding requirements to test multiple meters;
- Adding a new Appendix A for Communication Hub Antenna Structure (CHAS) information; and
- Making other minor changes to the specification such as amending references to standards and adding definitions to the glossary.

The consultation closed on 24 May 2019 and in total 12 organisations responded. Respondents included energy suppliers, meter manufacturers and other smart metering market participants.

1.1 Structure of this document

This document comprises of the following sections:

- Section 2.1 sets out the questions that were asked, together with a summary of views of respondents and DCC's responses to these;
- Section 2.2 summarises additional comments received and DCC responses to these; and
- Section 3 sets out DCC's conclusions and next steps.

2 Feedback on Wider Changes to the ICHIS

2.1 Responses to the consultation questions

Q1

Do you agree with the proposed changes to ICHIS Part A? Please provide your rationale.

DCC proposed a number of changes to the introduction in Part A of the ICHIS. These included

- Adding references to definitions of Intimate Comms Hubs (and similar Devices) and Electricity Smart Metering Equipment (ESME) in A2.1 and updating the section to reference section A4.0 'Detail of Products';
- Updating the standards listed in Section A3.0;
- Updating the glossary and revision history.

Stakeholders' response

The majority of respondents agreed with the proposed changes to ICHIS Part A. However, a number of respondents requested clarity on the enduring governance arrangements of the ICHIS Working Group (WG). Respondents noted that the specification implies that the DCC chaired ICHIS WG will be an enduring group supporting DCC. The respondent asked for clarification on whether the WG would be an advisory group to DCC or a decision-making group. Respondents believed that this should be supported by a clear published Terms of Reference and suggested that this should include an Energy Supplier feedback loop. Respondents also questioned the WG's relationship with the Technical Business Design Group (TBDG) and the Technical and Business Architecture Sub-Committee (TABASC).

Respondents also suggested that DCC consider whether there is a need to refer to any other ancillary equipment in the ICHIS. For example, potential future Alternative Home Area Network (Alt HAN) solutions and particularly if BS EN 50561-1:2013 ("Power line communication apparatus used in low-voltage installations") has relevance for future Alt-HAN installations. If so, it was questioned whether these also need to be compliant with any noise limits and/or testing regime. One respondent suggested that the ICHIS should be more adaptable to such future developments, perhaps through adopting a more flexible approach to listing products in Section A4.0.

One respondent questioned the circumstances in which Gas Smart Metering Equipment (GSME) could become an ICHI Host. In particular, the respondent would like to understand the way in which the significant power drain to operate a 24/7 operational Smart Metering

Wide Area Network (SM WAN)/HAN Communications Hub (Comms Hub) could be support by a GSME.

A respondent also noted that changes are required to Part B of the ICHIS. They noted that section B3.3 has been added to forbid the use of the alternating current (AC) connections for the Comms Hub and as there is no requirement for the AC connector within Smart Metering GB, section B3.0 should be deleted. The respondent also noted that there is a knock-on effect to this as the pins in the AC connection are shown in the drawing in B1.2 and B1.3.

Finally, respondents also noted a number of inconsistencies with references to the international standards.

DCC's response

DCC can confirm that the ICHIS WG is an enduring technical forum that is chaired by DCC and is attended by meter manufacturers and Communication Service Providers (CSPs). Suppliers and other relevant experts can also attend meetings if requested and at DCC's discretion. DCC can also confirm that the group is an advisory group to DCC rather than a decision-making group. DCC will develop formal Terms of Reference for the ICHIS WG and publish these on the DCC website. The ICHIS WG does not formally report to TBDG and TABASC but will update both forums via the group's respective chairs as required.

With regard to referring to any other ancillary equipment in the ICHIS, future requirements, such as to facilitate Alt HAN solutions, would need to manage as a change to ICHIS which would be subject to industry consultation. In order to aid the raising of issues/ clarifications/ and changes, DCC will establish an issues log, similar to that used by the Department for Business, Energy and Industrial Strategy (BEIS) to track issues submitted against SMETS, CHTS and GBCS. The log and the process for raising issues against it will be hosted on the ICHIS section of the DCC Website.

SMETS allows for a mains powered GSME, as well as a GSME with an ICHIS interface. As such ICHIS needs to reflect GSME as a Host. If SMETS did not allow for these GSME features it may stifle innovation and leave SMETS open to challenge on that basis.

The ICHIS WG have reviewed Section B3.0 (Optional Features and Information) including B3.3 which had been added to ICHIS. Whilst noting that manufacturers are not using these pins for production purposes, BEAMA¹ confirmed that they may be used for testing and development. Therefore, DCC has decided to keep Section B3.0 for the time being but will keep this under review.

DCC has amended the references to the international standards following discussion at the ICHIS WG which are summarised in Table 1 below:

¹ British Electrotechnical and Allied Manufacturers Association

Table 1: International standards

4.	BS EN 55032:2015	ICHIS updated
5.	BS EN 60529: 2015	Proposed reference change is correct, ICHIS updated
7.	BS EN IEC 612043:20018 Part 3	Needs to be retained for cradle/hot-shoe reference (but remove "Part 3" text)
8.	BS EN 7856:2017	Reference to be removed. Section B2.4 and B2.3 will be updated as its not correctly referred
9.	ETSI EN 301 489-1	Comment accepted
10.	IEC EN 60060	ICHIS updated as per comment BS EN 60060:2010
12.	BS7671:2018	ICHIS updated
13.	BS7540-1:2005	ICHIS updated
14.	ETSI EN 300 220-1 v3.1.1(2017-02)	Removed from ICHIS
15.	ETSI EG 203 367 (2016-4)	Removed from ICHIS

Q2

Do you agree with the proposed changes to ICHIS Part C? Please provide your rationale.

DCC proposed changes to Part C to remove the 'EMC requirements on DC Power supply' (section C1.3).

Stakeholders' response

The majority of respondents agreed with the changes to ICHIS Part C. One respondent requested that the DCC confirm that the combination of E2.2 and C2.1 provide material protection for the operation of the radio control, transmit & receive behaviour and Gas Proxy Function (GPF)/Communication Hub Function (CHF) logic/processing/storage that had been provided in this section of the document.

DCC's response

DCC can confirm that the combination of E2.2 and C2.1 provide material protection for the operation of the radio control, transmit & receive behaviour and GPF/CHF logic/processing/storage. Additional protections are also provided by the CE marking.

Q3**Do you agree with the proposed changes to ICHIS Part D? Please provide your rationale.**

DCC proposed to remove the requirements for an optional Alternating Current (AC) signalling provision in Part D of the ICHIS as it was of the view that it was no longer applicable as no Hosts support this version.

Stakeholders' response

The majority of respondents agreed with the proposed changes to ICHIS Part D. However, one respondent noted that Energy Suppliers views were needed given they were responsible for the procurement of meters. Another respondent raised concerns about the impact of removing the set of requirements on Alt HAN.

DCC's response

The ICHIS WG reviewed the applicability of this section and following confirmation from BEAMA and ESME manufacturers that very few ESME currently support this provision, DCC decided the section was no longer applicable and therefore has removed this section.

Through discussions with BEIS and representatives of the Alt HAN Forum, DCC can confirm that Alt HAN does not currently use this functionality as it is optional in ESME and as such cannot be relied upon. If this functionality is required in the future, a party can raise this for consideration through the ICHIS WG and if necessary, an industry consultation can be issued to determine whether the functionality should be introduced to the ICHIS.

Q4**Do you agree with the proposed changes to ICHIS Part E? Please provide your rationale.**

DCC proposed changes to Part E to remove the "Pin Definitions" table (E1.3) and the "Specific requirements for Digital Signalling Pins" tables (E3.0) Pin definitions table. These have been replaced with one table which provides specific requirements for Hosts and Comms Hubs. New requirements were also added on the use of optional pins which stated that manufacturers must declare their use to the ICHIS Working Group.

Stakeholders' response

The majority of respondents agreed with the proposed changes to ICHIS Part E. However, two of the respondents noted concerns that the governance arrangements are not robust

enough to allow full notification and assessment by impacted stakeholders, for example, where a manufacturer may miss an update at the ICHIS WG.

The consultation on “Wider changes to the Intimate Communications Hub Interface Specification” (section 5) states that “This new Pin connectivity will be presented to the ICHIS WG during the Comms Hub/meter design process and the ICHIS WG will evaluate whether the Pin can be used.” One respondent highlighted that the ‘notes’ after the table on page 47 of the ICHIS, regarding pins that are optional, does not state that there is an evaluation as to whether the pin can be used. They suggested that it may be more appropriate, given the possible importance when a manufacturer chooses to use a pin, for this to be a specific clause rather than a note to the table.

Another respondent noted that they expect that any future changes in respect to pin configuration/specification will be governed via TBDG and/or TABASC.

Whilst supporting the simplification of the ICHIS by adopting a single table setting out the functions, purposes and requirements for each Pin in each potential Host type and Device type, a respondent noted that the table that was presented in the consultation is extremely difficult to read. They proposed that DCC circulates the final format of this table as soon as possible, to demonstrate that it will actually serve its intended purpose in a final/clean format. The respondent also noted that the proposed editing of this section of ICHIS will also invalidate section G1.2.

Finally, one respondent noted that E2.2 refers to BS EN 55022, and this should be replaced by BS EN 55032. BS EN 55022 is no longer recognised as a CE standard for presumption of conformity.

DCC’s response

The ICHIS states that pins are optimal for both ESME and Comms Hub as described in the ICHIS. DCC recognises that previously there was no clear process for the manufacturer to declare use of optional pins for both ESME and Comms Hub. This could lead to issues where the ESME or Comms Hubs were unaware of the use of the optional pins and these pins could disrupt the normal operation. DCC has therefore introduced governance arrangements for any future changes in respect to pin configuration/specification, this will continue to be overseen by the DCC using its ICHIS WG. TBDG and TABASC will be kept informed via the groups’ respective chairs as required.

In light of comments on the readability of the new table which provides specific requirements for Hosts and Comms Hub, DCC has amended the table to ensure a suitable format.

DCC referred the comments in relation to the amendments invalidating section G1.2 to the ICHIS WG and they supported the respondent’s comments. DCC have therefore amended the ICHIS Specification with regards to change the reference to Section E1.3. The ICHIS WG also considered the comments regarding BS EN 55022 and agreed it should be BD EN 55032. DCC has therefore amended the reference.

Q5

Do you agree with the proposed changes to ICHIS Part F? Please provide your rationale.

DCC proposed a number of changes to Part F on the Radio Frequency (RF) Implementation.

Stakeholders' response

Respondents provided comments on the following areas.

Bit Error Rate (BER) Testing

The majority of respondents agreed with the removal of references to BER testing. However, one respondent noted that they understood that, through consultation between the ICHIS WG and the DCC, it has been determined that BER testing cannot be conducted at an independent facility and only at CSP premises.

The respondent questioned whether the DCC and key stakeholders are satisfied that the proposed testing methodology can cover the attributes which would be missed by not undertaking BER testing.

The respondent also noted that it has been stated that noise testing provides similar information to that of BER testing, as another reason as to why it is being removed, but stated that this result is inferred due to the mathematical relationship between the noise floor and the Bit error rate. The respondent questioned whether DCC are confident that a high degree of confidence in ICH performance can be gained without direct measurement of the bit error rate.

Frequency Bands

There was general support on the inclusion of the table setting out the frequency bands in Part F of the ICHIS.

One respondent was supportive that references to any potential future frequency bands etc. have been removed. This not only removes ambiguity but also eliminates any potential short-term unknown risks that would be attributed with supporting the Fylingdales frequency band. The respondent noted that any future CSP Hubs, CHAS devices, frequency bands etc. must be incorporated via consultation and evidence provided by the CSP's that the new devices have no operational impact on ESME's currently deployed.

Another respondent supported the introduction of a table in section F2.0 setting out the frequency band, start frequency, stop frequency, mid frequency and whether it is related to the Home Area Network (HAN) or Wide Area Network (WAN). They noted that they can now be confident that all ranges of frequencies to be tested going forward have been covered.

A respondent also noted that in the current version of ICHIS, there is a specific reference to the Fylingdales WAN frequency of 455MHz which has now been removed as part of the proposed re-drafting. The respondent noted that it was essential to ensure that the Fylingdales DBCHs have all remaining uncertainty resolved as soon as possible.

Two respondents asked why the Fylingdales frequency has not been included in the specification and expressed concerns that no plan has been forthcoming from DCC (either via the ICHIS activity or Release 2.0 Dual Band Comms Hubs programme) that showed the need for further testing, and a further ICHIS consultation has been considered. They encouraged DCC to provide this to give reassurance to Users over a credible date for availability of Fylingdales Comms Hubs for installations.

One respondent noted that the 2400MHz bands start and stop frequencies are incorrect. The ZigBee top / bottom channels centre frequencies are 2405 to 2480MHz with a 5MHz channel bandwidth. The Band edges should therefore be 2402.5 to 2482.5MHz. The document currently has 2400 to 2485 MHz which should be corrected to 2402.5 to 2482.5MHz. This would then align to the methodology used for the other bands.

Test Specification and Methodology

The majority of respondents in principle supported the changes to the ICHIS test specification and methodology. However, the following points for DCC's consideration were raised:

- In section F2.1 it should refer to Meter Noise Test Specification V10 and not ICHIS Test Specification V10. This also applies in other places.
- Section F.2.4 should be retained in some capacity on the basis that this has always been present in the DCC ICHIS Specifications and it can take time for the ESME to settle.
- F2.0 states that the relevant CHAS variants are included in Appendix A. However, the CHAS variants in Appendix A do not include Mesh-WAN and F4.0 does not include pass criteria for Mesh-WAN.
- In section F3.0 this should only apply to Sub-GHz HAN frequencies and not to 2.4GHz ZigBee where transmission power levels cannot be dynamically controlled. It was questioned whether this section is still appropriate? The ESME has a direct connection with other devices, not just the communication hub (such as PPMID, HCALCS etc) and would need to be able to communicate at the maximum power levels to establish a connection.
- Section F4.0 is titled as informative, but under Appendix B a 'may' has been changed to 'shall'. This is not appropriate for an informative section.
- The frequency of 869 in the table should be deleted as there is no testing required at this frequency. There is reference to Appendix A for these tests, and it clearly shows there is no CHAS variant that supports 869MHz.
- In section F4.0 the text in points 2 and 3 should be the same with regard to the sum of the SDs and the mean of the noise level. Point 2 should align with point 3 where it states 'the sum of 3SD PLUS Mean of Noise Result' Point 2 uses AND.
- The ICHIS should clarify why the pass criteria for 2.1 GHz and 2.4GHz are presented separately to other frequencies in F4.0.
- In sections F5.0 to F8.0 there is reference to F2.0 but not to the actual noise limits which are defined in Appendix B. It should be clear these noise limits apply.

- In section G1.1 there is a reference to Tamper Evident labels, it would be appropriate to state that these should not be metallised as these may cause RF issues.

Respondents highlighted that it is important that DCC provides a formal statement (e.g. within ICHIS or via other means) to provide certainty and regulatory cover that results for ESMEs previously gone through Plextek testing using the previous test method will be honoured, i.e. if they were compliant then, then they will remain compliant given the new multi meter test approach in place. There needs to be recognition from DCC that not every ESME to be deployed in the field will have gone through testing – consideration of this is needed in relation to the enduring test approach and sampling, and so a statement from DCC would be welcomed on this point.

Two respondents noted that DCC were responsible for ICHIS and meeting relevant WAN Service Level Agreements. They requested clarification from DCC that, if the specification is followed, there would be no impact on the ability of the DCC's CSPs to meet their coverage requirements.

A number of respondents also requested clarity from the DCC on the ease in which the test specification can be replicated by parties other than Plextek. The respondents also requested clarity on how the DCC will assure that results obtained from any test house or manufacturer following the test specification would be consistent with those obtained from Plextek. One respondent noted that while manufacturers carry out testing themselves using DCC provided CHAS units to build their evidence base, it must remain true that the formal confirmation of compliance comes from a verifiable and undisputed source, whether that remains Plextek, a DCC lab, or other party.

The same respondent also requested that the DCC provide clarity on the re-use of previously installed devices (e.g. when removed, triaged, refurbished and installed in a new location) and that this clarity is included within the ICHIS. In particular, the respondent is looking to confirm that DCC Users can re-use devices where they conform to the RF Noise limits stated in the derogation, but then exceed the respective limits after the expiry of the derogation. Preventing the re-use of these assets would impact energy suppliers and mean that they would incur further costs to scrap and replace these SMETS2 assets.

DCC's response

BER Testing

DCC is unaware of any capability being available for BER testing of the WAN at any independent testing facility and it is only possible at CSP premises. DCC is also satisfied that the proposed testing methodology can cover the attributes that BER testing would provide. BER testing is more complicated and costlier to perform, which was concluded after an initial feasibility study completed by CSPs, and noise testing provides similar information compared to BER testing. DCC is therefore confident that a high degree of confidence in

ICH performance can be gained without direct measurement of the BER and be delivered in a cost-effective manner.

Frequency Bands

With regard to the Fylingdales, the CHAS for the Fylingdales frequency was delayed and therefore not included in the ICHIS. DCC can confirm that it is currently working with its CSP to fully analyse the impact of ESMEs that will be deployed on the Fylingdales frequency band. DCC will give consideration to the impact on the RF testing results for existing meters when introducing any new WAN frequency. If a decision is made to introduce a new CHAS device and frequency, the proposed RF noise limit for the new frequency and any change to the CHAS units in scope of testing will be introduced into ICHIS through consultation after analysis by the DCC's ICHIS WG. The CHAS will also be provided to meter manufacturer for testing.

Regarding the note that the 2400MHz band start and stop frequencies are incorrect, this was referred to the ICHIS WG. The ICHIS WG and HAN/WAN WG agreed the proposed changes for start and stop frequency as it did not impact HAN performance and had no implications for already tested meters or ICHIS testing.

Test Specification and Methodology

DCC can confirm that any changes to the test specification will be subject to industry consultation. DCC also recognises the importance of maintaining the traceability of historical versions of this document in a public area on the website.

DCC can provide the following clarifications:

- DCC will amend the name of the Test Specification published on the DCC website as “Meter Noise Test Specification v10” to “ICHIS Test Specification v10” as it is wider than meters.
- DCC can confirm that the reference in Section F2.4 of v1.2 of the ICHIS on the HUT being powered on and left to warm up and settle on the HUT (ESME) has been included in the Test Specification and therefore it is not included in the ICHIS.
- Mesh-WAN is not currently proposed to be part of ICHIS testing as the CSP for the South and Central has confirmed that a “pass” on 868MHz HAN frequency provides adequate assurance for 869MHz mesh. Wording has been added to ICHIS to reflect this.
- The ICHIS WG considered whether section F3.0 should only apply to Sub-GHz HAN frequencies and not to 2.4GHz ZigBee where transmission power levels cannot be dynamically controlled. The ICHIS WG agreed with the comments raised in the consultation. They acknowledged that this is not supported as a certifiable feature on ZigBee 2.4GHz and is mandatory on ZigBee 868MHz. As such it is difficult to implement power control at 2.4GHz. There is also little evidence to date that this requirement offers additional protection to meeting noise limits. DCC therefore plan to amend the ICHIS to remove section F3.0.
- DCC have amended the wording in Section F4.0 to ‘should be used as a minimum’.

- DCC can confirm that the pass criteria for 2.1 and 2.4 in F4.0 has been changed as it was incorrect.
- DCC can confirm that any Host that has passed the HAN 868MHz enduring limit (as per Appendix B) is also considered to have passed the WAN 869MHz (Mesh Frequency) enduring limit (which therefore is not included in Appendix B).
- DCC can confirm that the SD in points 2 and 3 of the amended section F4.0 are correct.
- DCC has amended the pass criteria for 2.1GHz and 2.4GHz as agreed by the ICHIS WG. They are presented separately to other frequencies in F4.0 because DCC has seen a more stable result in those higher frequencies.
- DCC has amended sections F5.0 to F8.0 to refer to the noise limits which are defined in Appendix B.
- The ICHIS WG considered and agreed with the comments in relation to the reference to Tamper Evident labels in section G.1.1. DCC therefore has removed the sentence '(Tamper Evident labels may also be applied to the interface between the Host and ICH, and ESME and Device, if desired.) as the first part of the paragraph provides the main mechanical security (sealing screw). In addition, suppliers need to be conscious of anything they add at install that should be part of ICHIS testing.

The test methodology for testing multiple ESME is a new approach that has been introduced into version 2.0 of ICHIS. Energy Suppliers are ultimately responsible for taking final decisions on whether a meter that has been previously tested with single meter (or other) test method needs to be tested with 8-meter test method. However, DCC recognises that, prior to the testing methodology in ICHIS v2.0, testing was conducted using a single ESME to provide assurance for that model (firmware/hardware version) as a whole. DCC similarly recognises that energy suppliers and other industry participants, including DCC itself, have placed reliance on this testing to provide assurance as to the compliance of ESME units installed to date. It is DCC's view that where this testing has been conducted using Plextek there is no reason for those ESME models to be retested using the current multi meter approach, this is on the assumption that the installation of these ESME models will in due course conclude and updated ESME models, which will have been through the updated methodology, will be utilised. Where this is not the case then the 8- meter test approach in ICHIS 2.0 must be used.

Currently DCC is providing testing services via Plextek to enable testing against the ICHIS test specification. DCC recognises that energy suppliers and their device manufacturers may wish to test RF performance using their own test house or internal facility. DCC consider that, if followed by a competent organisation with access to the right equipment, the test specification published within ICHIS can be used to provide reliable and consistent results. Hence there is no reason to change ICHIS to accommodate testing outside of Plextek. However, a range of views were submitted on this topic and DCC considers that a further workshop with industry is required to consider and develop the enduring test approach including the ongoing need for a central testing capability.

DCC can clarify that following the end of the derogation period, previously installed devices that are removed but do not conform with the enduring RF noise limits should not be re-installed. DCC's view is that the current drafting in the ICHIS on the end date for the derogation period and the enduring RF noise limits make clear this position and therefore have not included this in the ICHIS.

Q6

Do you agree that the test specification provides specific detail to allow testing to be conducted to provide consistent and reliable results? Please provide your rationale.

The ICHIS will also specify that a minimum of 8 meters are to be tested which are to be selected from a deployable set of meters (with the same hardware and firmware).

Stakeholders' response

A number of respondents were supportive of the work completed by the ICHIS WG and believed the test specification has sufficient detail to allow testing to be conducted. They highlighted that once a variant has passed these tests all future meters built to that design should be accepted as compliant. Manufacturers do not want to have to continually test existing proven hardware/firmware variants that have passed enduring limits.

The majority of respondents requested that DCC provides an indication of its confidence that any party or independent test house can take the test specification as set out and carry out the relevant RF Noise testing in a consistent and reliable way to that carried out by DCC (via Plextek). One respondent also believed that the ICHIS WG should monitor Plextek's, meter manufacturers' and their test houses' experience of using the proposed method and identify whether any further changes need to be proposed. Another respondent said it is not clear on what the retest process and options are if the meter/firmware doesn't meet the required standard.

DCC's response

Regarding retesting of meters, DCC believes the supplier/meter manufacturer should investigate the reasons for failure prior to retesting another 8 meters.

As mentioned earlier DCC is currently providing testing services via Plextek to enable testing against the ICHIS test specification. DCC recognises that energy suppliers and their device manufacturers may wish to test RF performance using their own test house or internal facility. DCC consider that, if followed by a competent organisation with access to the right equipment, the test specification published within ICHIS can be used to provide reliable and consistent results. A range of views were submitted on this topic and DCC considers that a further workshop with industry is required to consider and develop the enduring test

approach including the ongoing need for a central testing capability. DCC will continue to assure that the ICHIS test specification is fit for purpose.

Q7

Do you agree with the proposed additions to the new appendix for information on CHAS? Please provide your rationale.

DCC has added a new appendix for information on CHAS. This includes information on CHAS devices used for testing; antenna placement; noise limits; and power Consumption.

Stakeholders' response

The majority of respondents support the proposed additions to the new appendix for information on CHAS. However, two respondents noted that it is unclear what DCC's plans are for the other non-noise related data items in the datasheets. They requested clarity on whether the datasheets will continue to exist to cover other non-Noise related data items and if so, under what governance. They also requested clarity on whether there are any other data items in the datasheets that have regulatory implications or relate to regulatory requirements or are all other data items just there for informative purposes.

To aid clarity, one respondent suggested that the 4 CHAS types to be used for testing the frequencies should be added to the table to show what each one will support for testing.

Another respondent noted that the consultation document indicated there will be changes with respect to the power consumption, notably the requirement of less than 6W which was previously 1W. The respondent questioned why this had changed.

One respondent believed that other methodologies could be considered going forward such as testing without a reliance on the CHAS devices so that near field noise measurement could be recorded using noise measurement analysers directly on the meter circuit board.

DCC's response

DCC can confirm that the datasheets will be updated following the publication of the ICHIS and maintained on the DCC Website. The Comms Hub Data sheet would contain product information which would not be subjected to consultation but would be shared with customer and other stakeholders through DCC regular customer and stakeholder engagement.

Regarding the power consumption, this has been discussed in the HAN WAN WG / ICHIS WG. Putting a resistor that would draw 6W (maximum limit) continuously would not represent the true operational situation. Therefore, it was agreed that a value would be picked that would be closer to the average power consumption of a Comms Hub.

DCC can therefore confirm that the CHASs have a fixed value resistor that simulates the typical average load for the related Comms Hub. It is not our intention to change the current

drawn by the CHAS units however this is currently tested and monitored by the Plextek CHAS QA process.

DCC suggests that other methodologies such as testing directly on the meter circuit board, should be raised via the new issue log and considered by the ICHIS WG.

Q8

Do you agree with the proposed method for testing new Comms Hub Variants and changes to Meter (firmware/hardware)? Please provide your rationale.

DCC proposed new testing methods for Comms Hub Variants and changes to meter (firmware/hardware).

Stakeholders' response

The majority of respondent agreed with the proposed method in principle. Two respondents supported the proposed changes, however, noted that DCC needs to provide a formal statement (e.g. within ICHIS or via other means) to provide parties with certainty and regulatory cover that introducing any new variant of CHs (existing or new WAN / HAN frequency) will not invalidate results for ESMEs previously gone through testing using the previous CHAS variants, i.e. these ESMEs will remain compliant.

For changes in meters, the respondents believed the requirements as set out need to be clearer and strengthened to ensure certainty, especially given the compliance and commercial implications for Suppliers. It is important that the assurance process is robust and is supported by appropriate governance underpinning it. It was suggested that either the DCC or a DCC appointed organisation should assess new and amended Comms Hub and Meters to decide on any need for further testing.

A question of who should assure and validate testing was also highlight and it was suggested that a mandated decision-making and assurance process must be introduced (e.g. RF Noise equivalent of AMP / AMMR routes for CPA, Test Exemption Process for SMDA).

Another respondent stated that there could be a significant impact on timescales and costs of meter firmware development of blindly requiring each new firmware to be tested at Plextek (or DCC if they develop this capability in their test lab) before putting it into service. They proposed that Meter Manufacturers should risk assess firmware changes and document these in release notes – identifying higher risk changes that need to be formally tested at DCC/Plextek and lower risk changes that can be proven to be benign via the In-Life testing.

DCC's response

DCC can clarify that a meter that has been previously tested against a CHAS and is compliant will not be non-compliant with the new version of CHAS. This is as the new version of the CHAS will go through the quality process which will include testing against previously installed/compliant meters.

For any changes in meter hardware/firmware, DCC's view is that this is the responsibility of energy suppliers to ensure that it remains compliant with RF Noise Limits. DCC has added a new section in Part F on retesting of meter to add clarity on what factors can influence the performance of a meter. These factors may impact the ability of the meters to meet the RF implementation requirements and therefore there may be a need to retest and validate that the meter remains compliant with the Noise Limits.

DCC notes the points of assurance and validation of testing and a mandated decision-making and assurance process and who should do this. These points were also made in response to question 9. DCC can confirm that these points will be considered as part of a future DCC led workshop on an enduring testing approach which will be held in Q3 2019.

Q9

Do you agree with the proposed enduring test approach? Please provide your views on DCC providing this service.

DCC proposed to offer an enduring test service at its facility and is considering how best to recover these costs. DCC have developed an open Specification for RF noise testing of devices and therefore other test laboratories could provide RF noise testing.

Stakeholders' response

The majority of respondents welcomed the direction of travel provided by the DCC on the enduring test approach. Many of the respondents highlighted the need for the DCC to include details on the costs benefits case for establishing the enduring service (e.g. whether within the DCC central lab or other) and a proposed approach for costs recovery (e.g. DCC charges or via Elective Services, or other).

One respondent noted that meter manufacturers are developing in house testing processes and they would prefer that the DCC support the approval of their own in-house testing. The results obtained should be acceptable for a self-certification process. The respondent also noted that the important consideration has to be the consistency of measurements and the process to ensure that has to be paramount. Whatever approaches are adopted laboratory results should be validated with reference products.

One respondent believed that a formal confirmation of compliance must come from a verifiable and undisputed source. The respondent holds no preference, at a principle level, as to whether this service should be provided by DCC or by a third party. The respondent

expects to see a business case justifying why an enduring test service within the DCC facility offers value for money. This should consider the cost savings against using an external central service such as Plextek, and the likely future demand. DCC has committed to provide cost benefit analysis as part of new proposals within its recent response to the Stakeholder Engagement Consultation. As no such evidence has been provided within the consultation, the respondent cannot provide a view as to whether it would support the provision of a DCC RF testing facility.

Another respondent believes that DCC should remain independent and should have no direct involvement or responsibility for testing RF noise generated by ESME. As DCC have recently released CHAS devices that are somewhat reminiscent of the golden samples used in Plextek, the respondent's belief is that post September 2019, ESME manufacturers should have the flexibility to test at an alternative laboratory of choice or provide internal test evidence to confirm compliant ESME. This is on the provision that measurements are recorded with DCC approved and supplied CHAS devices, to confirm a compliant ESME.

Finally, a respondent stated that they hope DCC is using this consultation to actively canvass views on their new test methodology, from existing Meter Manufacturers and Test Houses, to confirm that it is truly open and consistent. Once DCC publishes those views as part of their response to this consultation, Meter Manufacturers and Energy Suppliers will be better able to assess a more structured and costed proposal than is set out here.

DCC's response

DCC will prepare proposals for an enduring testing approach which will be considered by a future DCC led workshop that will be held in Q3 2019. These proposals will include aspects such as accreditation of test labs.

2.2 Additional comments to consultation

In addition to the comments received in response to the nine consultation questions, general comments were provided by a number of respondents. This section summarises those comments, not already covered elsewhere, and provides the DCC's response to them.

ICHIS Part B

One respondent noted that the drawings in Part B should be updated to move the datum point in the drawings to a more stable place on the moulding.

DCC's response

DCC has referred this to the ICHIS WG who noted that this would be a major change to the drawings and present a high risk of new errors for little additional benefit. They recommended that a comment is added to ICHIS Specification which says, 'For QA purposes the datum location may need to be changed to a more stable part of the moulding.' DCC confirms that this has been added.

CSP Enhancements

One respondent noted that they still await an update/view from DCC on whether any work is being undertaken to make the existing Comms Hubs less sensitive to noise, or on enhancements to the CSP networks themselves. They highlighted that their concern is that progress to date has been focused on the ESME side, and so a more holistic approach should have been considered. The respondent noted that DCC made clear, on more than one occasion, at TBDG that it is awaiting BEAMA proposals on this issue. However, given DCC's key central position, the respondent believed DCC itself should be leading on this or at least looking to collaborate with BEAMA to develop appropriate proposals.

DCC's response

DCC will continue to work with BEAMA and its members to evaluate any proposals put to the ICHIS WG.

ICHIS WG Forward Look

One respondent would welcome a view from DCC on the forward-look/programme of work for the DCC chaired ICHIS WG to ensure parties are clear on what key areas still require resolution, and therefore what further support needs to be provided. In addition, it would be helpful for DCC to consider the following suggested areas at the DCC chaired ICHIS WG:

- BEIS is now addressing (via its issues management process) the SMETS2 inconsistency where Part B and C of SMETS2 do not align with Part A in referring out to the provisions of SEC H12 and compliance with the ICHIS. This is something the respondent has raised previously with DCC and followed up with BEIS. It is likely there are potential technical aspects to be considered by the WG around testing of Twin Element and Polyphase ESMEs.
- There may be a need for potential guidance to support a second Supplier installing an ESME in a gas first premises, for example there is a "hotshoe" / CH on the meter tails below the legacy electricity meter. The DCC chaired ICHIS WG could consider if there is merit in having any potential guidance around this area and potential suggestions (e.g. positioning of hotshoes).

DCC's response

DCC will publish a forward look/programme of work for the ICHIS WG in August on the DCC website.

Derogation end date

A number of respondents questioned whether DCC would be reconsidering the derogation date in relation to supply chain management issues with older stock.

The respondent also requested further updates from DCC (on the BEIS TBDG action) on its work with SECAS on providing the Plextek "Declaration of Successful Test Results" onto the

SECAS website – this would clearly cover the current testing but there will also be a need to consider the enduring approach, e.g. post Plextek.

DCC's response

DCC has not currently seen any evidence that the 30 September 2019 derogation should be extended. However, DCC will continue to work with Suppliers and Manufacturers to keep this under review.

The ICHIS WG has approved the process for publishing the Plextek “Declaration of Successful Test Results” onto the SECAS website. SECAS is planning to start the publishing of results from the end of July.

3 DCC Conclusions

3.1 Changes in the ICHIS

Following consultation, DCC can confirm the following changes to ICHIS v1.2 which are identified in Table 2.

Table 2: Changes in the ICHIS

Section	Changes in ICHIS v2.0
Part A	<ul style="list-style-type: none"> ▪ Included the reference to Intimate Comms Hub and ESME in A2.1. ▪ ICHIS reflects GSME as a Host ▪ Reference to standards definitions changed and consequential changes throughout ICHIS. ▪ Update to glossary
Part B	<p>Note added in Part 1.1 on 'Details of mechanical dimensions' to provide clarification.</p> <p>New section B3.3 added clarifying that the AC connection pin are forbidden on the Comms Hub.</p>
Part C	<p>Removal of section C1.3 on 'EMC requirements on DC Power supply' and consequential amendment to reference in C1.2.1 as it is no longer applicable.</p>
Part D	<p>This Part on 'Optional AC Signalling Provision has been removed'.</p>
Part E	<p>Table on 'Pin definition' in E1.3 removed and replaced with new table on 'Specific Requirements for Host and Hubs'</p> <p>Part E3.0 on 'Specific Requirements for Digital Signalling Pins' removed.</p>
Part F	<p>Clarification in F1.1 on the purpose of the Noise Limits and removal of the Bit Error Rate (BER) test requirement.</p> <p>Removal of F1.3 on 'Future Considerations'.</p>

	<p>Amendments to the 'Testing Methodology for Hosts' in F2.0 including removal of F2.2, F2.3 and F2.4.</p> <p>F3.0 on 'Recommendations for ESME transmission on the HAN' removed.</p> <p>New Part F4.0 on 'Methodology for Testing Multiple ESME'.</p> <p>Consequential changes to Part F5.0 – F8.0 to make the references to Part F rather than F2.0 given the wider changes to this section.</p>
Part G	<p>Removal of reference to 'Tamper Evident Label'.</p> <p>Reference clarification.</p>
Appendix A	New Appendix added on CHAS and CHAS Antenna Placement.
Appendix B	New Appendix added on Noise Limits.

3.2 Next steps

DCC has updated and published the ICHIS V2.0. DCC will also hold a workshop on the enduring test approach in Q3 2019.

If you have any questions about this conclusion document, please email Regulation@smartdcc.co.uk.