

**ELECTRICITY INDUSTRY PARTICIPATION CODE  
METERING EQUIPMENT PROVIDER AUDIT REPORT**

For

**INTELLIHUB NZ LTD (IHUB)**

Prepared by: Brett Piskulic, Veritek Limited

Date audit commenced: 16 June 2021

Date audit report completed: 5 August 2021

Audit report due date: 08-Aug-21

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## EXECUTIVE SUMMARY

**Intellihub NZ Ltd (IHUB)** is a Metering Equipment Provider (MEP) and is required to undergo an audit by 8 August 2021, in accordance with clause 16A.14

This audit found 13 non-compliances and makes three recommendations. Overall compliance continues to be high considering the increase in the number of meters installed.

Changes to the Code that were announced on 15<sup>th</sup> December 2020 and implemented on 1st February 2021 have impacted on compliance in four sections of this report. The changes have added new requirements for ATHs in the areas of testing, certification of measuring transformers and recording of each available services access interface. The ATHs have not all been able to implement new processes to meet the new requirements which has caused non-compliance for the Intellihub MEP.

Intellihub has implemented new processes and reporting to meet the new requirements as they relate to data collection, particularly the maximum interrogation cycle and sum-check requirements, but these changes were not able to be implemented by 1<sup>st</sup> February 2021.

My checks of a sample of 49 certification reports found they contained a high number of errors. I have made two recommendations to improve controls in relation to the monitoring of ATH practices and records.

The other main areas of non-compliance related to late updating of registry information and ICPs with cancelled certification.

The date of the next audit is determined by the Electricity Authority and is dependent on the level of compliance during this audit. The audit risk rating of 23 indicates that the next audit be undertaken in six months. I recommend an audit period of 12 months to reflect the changes made to the data collection processes which now meet the new code requirements.

## AUDIT SUMMARY

### NON-COMPLIANCES

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Services access interface	2.1	10.9(2)	Each services access interface not identified for 25 metering installations.	Weak	Low	3	Investigating
Provision of accurate information	2.5	11.2 and 10.6	All practicable steps not taken to ensure data is correct and that incorrect data is corrected as soon as practicable.	Moderate	Low	2	Investigating
Registry changes	3.2	2 of Schedule 11.4	179 registry updates late.	Strong	Low	1	Investigating
Registry updates	4.10	Clause 3 of Schedule 11.4	Some records updated on the registry later than 10 business days.	Moderate	Low	2	Investigating
Accurate and complete records	5.1	4(1)(a) and (b) of Schedule 10.6, and Table 1, Schedule 11.4	A high number of fields not accurate and complete in a sample of 49 certification records.	Weak	Low	3	Investigating
Error correction	6.3	6 of Schedule 11.4	Discrepancies not always resolved within 5 business days.	Moderate	Low	2	Investigating
Cancellation of Certification	6.4	20 of Schedule 10.7	Certification cancelled, and registry not updated within 10 business days for: - one ICP with low burden, - 35 ICPs not interrogated during the maximum	Strong	Low	1	Investigating

			interrogation cycle, and - 863 ICPs with failed sum-checks.				
Certification	7.1	10.38 (a)	76 ICPs with cancelled certification.  Certification cancelled, and registry not updated within 10 business days for:  - one ICP with low burden,  - 35 ICPs not interrogated during the maximum interrogation cycle, and  - 863 ICPs with failed sum-checks.	Moderate	Low	2	Investigating
Certification Tests	7.2	10.38(b)	Prevailing load test not conducted for one category 1 metering installation.	Moderate	Low	2	Investigating
Max interrogation cycle	10.5	8(2)(a) of Schedule 10.6	Maximum interrogation cycle exceeded for 35 ICPs.	Strong	Low	1	Cleared
Time errors for metering installations	10.7	8(4) of Schedule 10.6	136 examples of clock errors outside the allowable thresholds in the most recent reports.	Strong	Low	1	Identified
Sum-check validation	10.9	8(9) of Schedule 10.6	863 meters failed sum-check.	Moderate	Low	2	Identified
Investigation of AMI interrogation failures	10.12	8(11), 8(12) and 8(13) of Schedule 10.6	Reporting and processes not in place to resolve interrogation issues or change the AMI flag to "N" at 25% of the MIC or 30 days.	Strong	Low	1	Cleared

<b>Future Risk Rating</b>	<b>23</b>
<b>Indicative Audit Frequency</b>	<b>6 months</b>

Future risk rating	1-2	3-6	7-9	10-19	20-24	25+
Indicative audit frequency	36 months	24 months	18 months	12 months	6 months	3 months

## RECOMMENDATIONS

Subject	Section	Description	
Accurate and complete records	5.1	Check metering installation certification reports to ensure compliance and improve controls to ensure certification records are complete and accurate.	Investigating
Certification Tests	7.2	Require ATHs to include details and results of all testing completed in the metering installation certification reports provided.	Identified
Timekeeping Requirements	7.10	Develop a process to identify meters which become subject to the timekeeping requirements of Clause 23 of Schedule 10.7 and ensure the time is monitored and corrected as required.	Identified

## ISSUES

Subject	Section	Recommendation	Description
		Nil	



## 1. ADMINISTRATIVE

### 1.1. Exemptions from Obligations to Comply with Code (Section 11)

#### Code reference

*Section 11 of Electricity Industry Act 2010.*

#### Code related audit information

*Section 11 of the Electricity Industry Act provides for the Electricity Authority to exempt any participant from compliance with all or any of the clauses.*

#### Audit observation

I checked the Electricity Authority website and I confirm there are no exemptions in place.

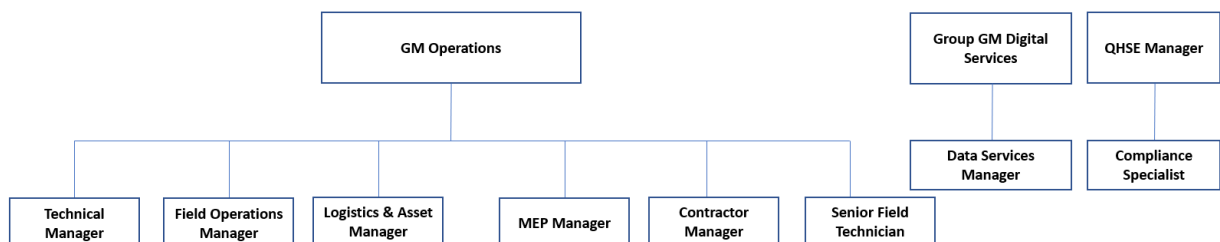
#### Audit commentary

I checked the Electricity Authority website and I confirm there are no exemptions in place.

### 1.2. Structure of Organisation

Intellihub's organisation structure is shown below.

#### Team Members involved in MEP Audit



### 1.3. Persons involved in this audit

Auditor: Brett Piskulic

**Veritek Limited**

**Electricity Authority Approved Auditor**

Intellihub personnel assisting in this audit were:

Name	Title
David Boyle	General Manager Operations
Niu Nelson	MEP Manager
Hitesh Asarpota	Field Operations Manager
Paul Thornton	Technical Manager
Paul Wilson	Contractor Manager
Chris Chambers	Compliance Officer NZ
Gus Wolfgramm	Asset Engineer
Shane Broome	Logistics and Asset Manager
Daniel Pinny	Delivery Manager NZ
Hamish Sukha	Data Services Manager (AMI)
George Diederer	Technical Specialist

### 1.4. Use of Agents (Clause 10.3)

#### Code reference

Clause 10.3

#### Code related audit information

*A participant who uses a contractor*

- *remains responsible for the contractor's fulfillment of the participants Code obligations*
- *cannot assert that it is not responsible or liable for the obligation due to the action of a contractor,*
- *must ensure that the contractor has at least the specified level of skill, expertise, experience, or qualification that the participant would be required to have if it were performing the obligation itself.*

### Audit observation

I checked whether there were any agents or contractors involved in the performance of functions within the scope of the audit.

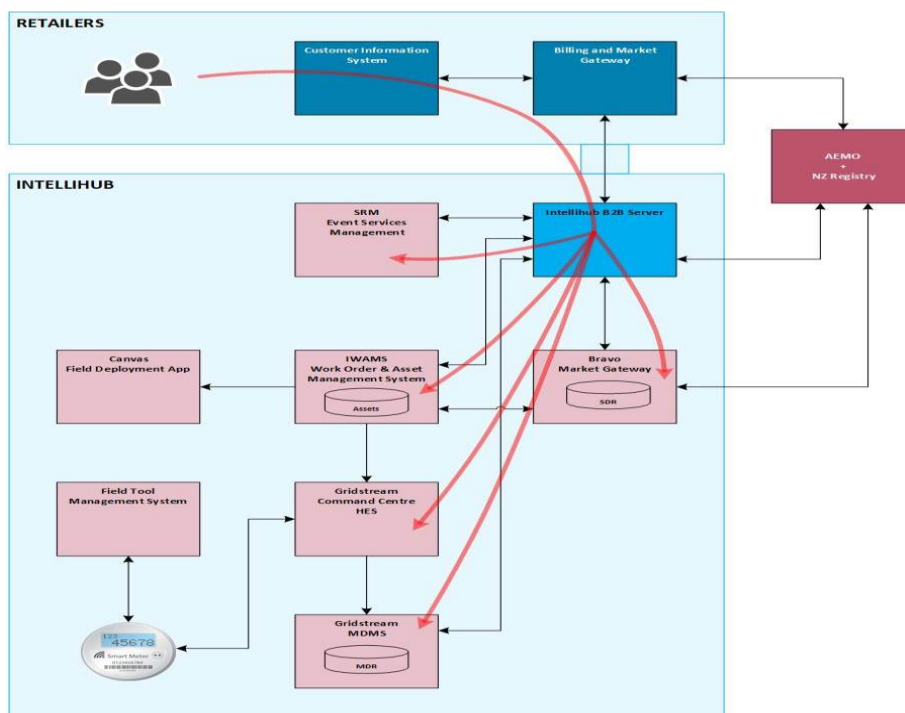
### Audit commentary

Intellihub engages ATHs to conduct certification activities, but they do not engage them to store certification records.

## 1.5. Hardware and Software

I checked whether there were any systems used in the performance of functions relevant to the scope of the audit.

The relevant systems are shown in the diagram below.



Intellihub provided a “Data Backup and Retention” work instruction, which is reviewed annually. The document contains the following summary of backup arrangements:

On each Database VM (SQL and Oracle) backups are saved to a separate locally attached disk. Copies of the Database Backup files are then replicated to an Azure Cloud Storage account every hour. This Storage account is Geo-Replicated and has four copies.

The current Backup schedule is as follows:

- full database monthly backup (kept for 13 months, then a yearly copy taken),
- full database weekly backup (kept for five weeks),
- incremental backup is taken on a daily basis (kept for eight days), and
- hourly Database log backup (kept for two days)

To verify the validity of the backup processes a sample of VM and DB backups are to 'test restored' at least quarterly.

A material change audit was completed in June 2021 for the planned implementation of an additional headend called PolicyNet. The audit found compliance with all relevant areas of the code. Intellihub confirmed that the PolicyNet headend is not in use yet and that testing is still in progress as identified in the material change audit.

#### 1.6. Breaches or Breach Allegations

There are no breach allegations relevant to the scope of the audit.

#### 1.7. ICP Data

The table below shows active ICPs of 16 June 2021.

Metering Category	Number of ICPs 2021	Number of ICP 2020s	Number of ICPs 2019
1	94,411	56,429	14,647
2	12	12	10
3	0	0	0
4	0	0	0
5	0	0	0
9	0	1	0

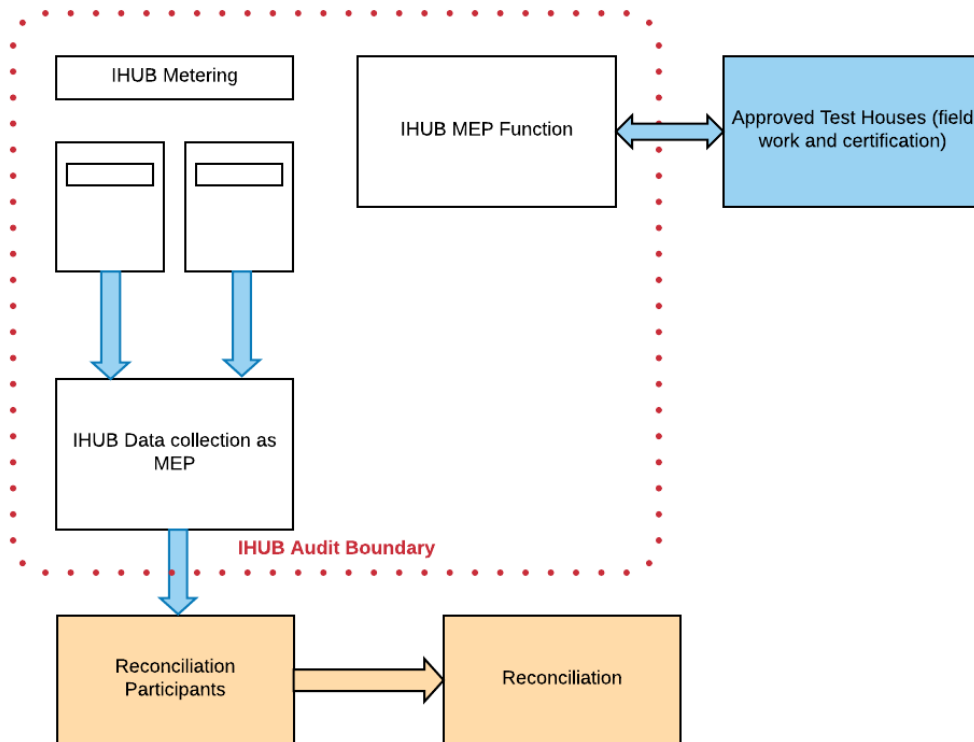
#### 1.8. Authorisation Received

An email of authorisation was provided.

### 1.9. Scope of Audit

This audit was conducted in accordance with the Guideline for Metering Equipment Provider Audits V2.2, which was published by the Electricity Authority.

The diagram below shows the audit boundary.



### 1.10. Summary of previous audit

The previous audit was conducted by Rebecca Elliot of Veritek in August 2020. The status of the issues raised is recorded in the tables below.

#### NON-COMPLIANCES

Subject	Section	Clause	Non- Compliance	Status
Registry changes	3.2	2 of Schedule 11.4	724 registry updates late.	Still existing
Design and accuracy	4.3	4(1) of Schedule 10.7	Error and uncertainty calculations incorrect in eight Wells certification reports.	Cleared
Registry updates	4.10	Clause 3 of Schedule 11.4	Some late updates to registry for both new connections and a small number of corrections.	Still existing
Accurate and complete records	5.1	4(1)(a) and (b) of Schedule 10.6, and Table 1, Schedule 11.4	MIC is zero for nine Delta certification reports. Several errors in Wells Category 2 certification report.	Still existing
Registry accuracy	6.2	Clause 1(1) of Schedule 11.4	Small number of registry discrepancies.	Cleared
Cancellation of Certification	6.4	20 of Schedule 10.7	Certification not cancelled for one ICP with no burden results recorded. Certification cancelled, and registry not updated within 10 business days for six ICPs with low burden. Certification not cancelled for 2 ICPs with faulty metering.	Cleared Still existing for one ICP Cleared
Certification	7.1	10.38 (a)	70 ICPs with cancelled certification due the load control device being bridged. Certification cancelled for ICP 0000026334EAF3D due to an error greater than 2.5%. Certification cancelled for six ICPs with low burden. Certification cancelled for ICP 0000508302CE1A7 due to no burden results.	Still existing
Max interrogation cycle	10.5	8(2)(a) of Schedule 10.6	Maximum interrogation cycle exceeded for 96 ICPs.	Cleared

#### RECOMMENDATIONS

Subject	Section	Clause	Description	Status
			Nil	

## 2. OPERATIONAL INFRASTRUCTURE

### 2.1. MEP responsibility for services access interface (Clause 10.9(2))

#### Code reference

*Clause 10.9(2)*

#### Code related audit information

*The MEP is responsible for providing and maintaining the services access interface.*

#### Audit observation

I checked certification records for 49 metering installations, covering all relevant ATHs.

#### Audit commentary

The Code places responsibility for maintaining the services access interface on the MEP and places responsibility for determining and recording it with ATHs. The code was changed from 1st February 2021 to require the ATH to record each services access interface and the conditions under which each services access interface may be used. The code change was announced on 15th December 2021. Prior to this change the ATH was required to determine and record a single services access interface. 47 of the 49 certification records checked were completed after 1<sup>st</sup> February 2021. The two certification records completed prior to 1<sup>st</sup> of February 2021 had the services access interface recorded correctly.

Three of the 47 certification records were for non-AMI metering installations and the services access interface was correctly recorded as local in all three certification reports.

The remaining 44 certification records were for category 1 AMI metering installations. 19 of the 44 certification records identified all services access interfaces.

25 of the 44 certification records identified the services access interface as remote only. It is also possible that the services access interface may be local for these metering installations if there are problems communicating with the meters. Due to the short timeframe of the implementation of the code change the ATHs were not able to meet the requirement from 1st February. However, the Intellihub and Wells ATHs have since made changes to their processes to record each services access interface. The Delta ATH has not made any changes to its processes and did not include each services access interface on the reports checked. A breakdown of each ATH is shown in the table below,

ATH	Each SAI recorded	Each SAI not recorded
Delta	0	10
Intellihub	0	4
Wells	19	11

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.1 With: Clause 10.9(2)  From: 01-Feb-21 To: 27-May-21	Each services access interface not identified for 25 metering installations. Potential impact: None Actual impact: None Audit history: None Controls: Weak Breach risk rating: 3		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	I have recorded the controls as weak as they are not sufficient to identify errors in certification reports.  There is no impact because the MEP normally determines the location of the services access interface; therefore, the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
A new Intellihub Metering Installation Certification Report template has been created which includes the mandatory fields for recording these attributes. Some existing certification reports (low volume) used by a small number of contactors still require amendment in order to comply.  Discussions are currently in progress with the Delta Approved Test House to ensure that the Services Access Interface is included on both Category 1 and Category 2 Metering Installation Certification Reports.		1/9/21	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
See above for both Intellihub and Delta		1/9/21	

## 2.2. Dispute Resolution (Clause 10.50(1) to (3))

### Code reference

*Clause 10.50(1) to (3)*

### Code related audit information

*Participants must in good faith use its best endeavours to resolve any disputes related to Part 10 of the Code.*

*Disputes that are unable to be resolved may be referred to the Authority for determination.*

*Complaints that are not resolved by the parties or the Authority may be referred to the Rulings Panel by the Authority or participant.*

### Audit observation

I checked whether any disputes had been dealt with in relation to this audit.

### Audit commentary



Intellihub has not been required to resolve any disputes in accordance with this clause.

#### **Audit outcome**

Compliant

### **2.3. MEP Identifier (Clause 7(1) of Schedule 10.6)**

#### **Code reference**

*Clause 7(1) of Schedule 10.6*

#### **Code related audit information**

*The MEP must ensure it has a unique participant identifier and must use this participant identifier (if required) to correctly identify its information.*

#### **Audit observation**

Intellihub uses the IHUB code for all information.

#### **Audit commentary**

Intellihub uses the IHUB code for all information.

#### **Audit outcome**

Compliant

### **2.4. Communication Equipment Compatibility (Clause 40 Schedule 10.7)**

#### **Code reference**

*Clause 40 Schedule 10.7*

#### **Code related audit information**

*The MEP must ensure that the use of its communication equipment complies with the compatibility and connection requirements of any communication network operator the MEP has equipment connected to.*

#### **Audit observation**

I checked that the ATHs have a process to check the relevant type test certificates to ensure compliance with this clause.

#### **Audit commentary**

Intellihub ensures all communication equipment is appropriately certified with the relevant telecommunications standards. This is recorded in type test certificates and other approval documents.

#### **Audit outcome**

Compliant

### **2.5. Participants to Provide Accurate Information (Clause 11.2 and Clause 10.6)**

#### **Code reference**

*Clause 11.2 and Clause 10.6*

#### **Code related audit information**

*The MEP must take all practicable steps to ensure that information that the MEP is required to provide to any person under Parts 10 and 11 is complete and accurate, not misleading or deceptive and not likely to mislead or deceive.*

*If the MEP becomes aware that in providing information under Parts 10 and 11, the MEP has not complied with that obligation, the MEP must, as soon as practicable, provide such further information as is necessary to ensure that the MEP does comply.*

#### Audit observation

The content of this audit report was reviewed to determine whether all practicable steps had been taken to provide accurate information.

#### Audit commentary

As recorded in **sections 5 and 6** there are some registry and certification records which are not complete and accurate. Intellihub is attempting to correct information as soon as practicable. There are some metering installations with cancelled certification and the registry has not been updated as soon as practicable.

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.5 With: Clause 11.2 and Clause 10.6  From: 01-Jun-20 To: 27-May-21	All practicable steps not taken to ensure data is correct and that incorrect data is corrected as soon as practicable. Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	I have recorded the controls as moderate in this area because there are still a small number of areas where improvements can be made. Very few of the registry related discrepancies have an impact on participants, customers or settlement. The only relevant ones in this regard are tariff related and there were only a small number. The audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
Intellihub will continue to work to identify areas for improvement, with a focus to resolve tariff related updates as a priority.		Ongoing	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
Intellihub is investigating full B2B implementation with contracted ATH's which will improve data integrity and reduce the reliance on manual intervention.		30/09/2021	

### 3. PROCESS FOR A CHANGE OF MEP

#### 3.1. Change of metering equipment provider (Clause 10.22)

##### Code reference

Clause 10.22

##### Code related audit information

*The MEP for a metering installation may change only if the responsible participant enters into an arrangement with another person to become the MEP for the metering installation, and if certain requirements are met in relation to updating the registry and advising the reconciliation manager.*

*The losing MEP must notify the gaining MEP of the proportion of the costs within 40 business days of the gaining MEP assuming responsibility. The gaining MEP must pay the losing MEP within 20 business days of receiving notification from the losing MEP.*

*The costs are those directly and solely attributable to the certification and calibration tests of the metering installation or its components from the date of switch until the end of the current certification period.*

*The gaining MEP is not required to pay costs if the losing MEP has agreed in writing that the gaming MEP is not required to pay costs, or the losing MEP has failed to provide notice within 40 business days.*

##### Audit observation

Intellihub has not sent or received any invoices in relation to this clause.

##### Audit commentary

Intellihub has not sent or received any invoices in relation to this clause.

##### Audit outcome

Compliant

#### 3.2. Registry Notification of Metering Records (Clause 2 of Schedule 11.4)

##### Code reference

Clause 2 of Schedule 11.4

##### Code related audit information

*The gaining MEP must advise the registry of the registry metering records for the metering installation within 15 days of becoming the MEP for the metering installation.*

##### Audit observation

I checked the audit compliance report for the audit period to ensure updates were within 15 business days.

##### Audit commentary

The table below shows that 99.4% of updates were within 15 business days. 179 late updates occurred from a total of 29,833 updates. 38 of the 179 late updates were due to the trader's nomination being later than five business days. Intellihub provided details of the causes of the late updates for a sample of 16 records which are listed below:

- late field notification or exceptions found in information from the ATH requiring follow-up for five examples, and
- correction of historical data identified for 11 examples.

Year	Late notifications	Percentage compliant
2018	0	100%
2019	10	99.92%
2020	724	98.11%
<b>2021</b>	<b>179</b>	<b>99.40%</b>

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.2 With: Clause 2 of Schedule 11.4 From: 01-Aug-20 To: 16-Jun-21	179 registry updates late. Potential impact: Low Actual impact: Low Audit history: Twice Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	The controls are recorded as strong as the process is robust and accuracy of records is required before updates occur. The impact on settlement and participants is minor, therefore the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
Intellihub will continue to maintain a high level of compliance for this clause as we have strong controls in place to ensure the quality of data is checked, validated or corrected at source. Intellihub has commissioned almost 40,000 metering installations over the past 12 months; our view is that this represents a very low percentage of exceptions.		Ongoing	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
Intellihub will continue to provide feedback on exceptions to ATH's where appropriate, and remind them of their obligations to promptly return paperwork.		Ongoing	

### 3.3. Provision of Metering Records to Gaining MEP (Clause 5 of Schedule 10.6)

#### Code reference

*Clause 5 of Schedule 10.6*

#### Code related audit information

*During an MEP switch, a gaining MEP may request access to the losing MEP's metering records.*

*On receipt of a request from the gaining MEP, the losing MEP has 10 business days to provide the gaining MEP with the metering records or the facilities to enable the gaining MEP to access the metering records.*

*The losing MEP must ensure that the metering records are only received by the gaining MEP or its contractor, the security of the metering records is maintained, and only the specific metering records required for the purposes of the gaining MEP exercising its rights and performing its obligations are provided.*

#### Audit observation

I checked with Intellihub to confirm whether there had been any requests from other MEPs.

#### Audit commentary

No requests have been made. Intellihub confirmed metering records will be provided as required.

#### Audit outcome

Compliant

### 3.4. Termination of MEP Responsibility (Clause 10.23)

#### Code reference

*Clause 10.23*

#### Code related audit information

*Even if the MEP ceases to be responsible for an installation, the MEP must either comply with its continuing obligations; or before its continuing obligations terminate, enter into an arrangement with a participant to assume those obligations.*

*The MEP is responsible if it:*

- *is identified in the registry as the primary metering contact or*
- *is the participant who owns the meter for the POC or to the grid or*
- *has accepted responsibility under clause 1(1)(a)(ii) of schedule 11.4 or*
- *has contracted with a participant responsible for providing the metering installation.*

*MEPs obligations come into effect on the date recorded in the registry as being the date on which the metering installation equipment is installed or, for an NSP the effective date set out in the NSP table on the Authority's website.*

*An MEP's obligations terminate only when:*

- *the ICP changes under clause 10.22(1)(a);*
- *the NSP changes under clause 10.22(1)(b), in which case the MEPs obligations terminate from the date on which the gaining MEP assumes responsibility,*
- *the metering installation is no longer required for the purposes of Part 15; or*
- *the load associated with an ICP is converted to be used solely for unmetered load.*

**Audit observation**

Intellihub intends to retain records indefinitely.

**Audit commentary**

Intellihub intends to retain records indefinitely. This is an automated process. I sighted paperwork from the earliest meters installed.

**Audit outcome**

Compliant

## 4. INSTALLATION AND MODIFICATION OF METERING INSTALLATIONS

### 4.1. Design Reports for Metering Installations (Clause 2 of Schedule 10.7)

#### Code reference

*Clause 2 of Schedule 10.7*

#### Code related audit information

*The MEP must obtain a design report for each proposed new metering installation or a modification to an existing metering installation, before it installs the new metering installation or before the modification commences.*

*Clause 2(2) and (3)—The design report must be prepared by a person with the appropriate level of skills, expertise, experience and qualifications and must include a schematic drawing, details of the configuration scheme that programmable metering components are to include, confirmation that the configuration scheme has been approved by an approved test laboratory, maximum interrogation cycle for each services access interface, any compensation factor arrangements, method of certification required, and name and signature of the person who prepared the report and the date it was signed.*

*Clause 2(4)—The MEP must provide the design report to the certifying ATH before the ATH installs or modifies the metering installation (or a metering component in the metering installation).*

#### Audit observation

Intellihub have their own design reports, which I checked during the audit.

#### Audit commentary

The design reports were reviewed and confirmed as compliant. There was one new design report created for a day/night configuration.

#### Audit outcome

Compliant

### 4.2. Contracting with ATH (Clause 9 of Schedule 10.6)

#### Code reference

*Clause 9 of Schedule 10.6*

#### Code related audit information

*The MEP must, when contracting with an ATH in relation to the certification of a metering installation, ensure that the ATH has the appropriate scope of approval for the required certification activities.*

#### Audit observation

Intellihub has used Wells, Intellihub, and Delta ATHs and all have appropriate scopes of approval.

#### Audit commentary

Intellihub has used Wells, Intellihub, and Delta ATHs and all have appropriate scopes of approval.

#### Audit outcome

Compliant

#### 4.3. Metering Installation Design & Accuracy (Clause 4(1) of Schedule 10.7)

##### Code reference

*Clause 4(1) of Schedule 10.7*

##### Code related audit information

*The MEP must ensure:*

- *that the sum of the measured error and uncertainty does not exceed the maximum permitted error set out in Table 1 of Schedule 10.1 for the category of the metering installation*
- *the design of the metering installation (including data storage device and interrogation system) will ensure the sum of the measured error and the smallest possible increment of the energy value of the raw meter data does not exceed the maximum permitted error set out in Table 1 of Schedule 10.1 for the category of installation,*
- *the metering installation complies with the design report and the requirements of Part 10.*

##### Audit observation

I checked the processes used by Intellihub to ensure compliance with the design and with the error thresholds stipulated in Table 1. I also checked the certification records for 49 metering installations.

##### Audit commentary

Intellihub ensures the metering installation complies with the design report and the requirements of Part 10 by requiring ATH's to confirm the installation matches the design, or by requiring updates to be provided if the installation does not match the design. The design report was correctly recorded in the certification records for the 49 installations I checked.

It was recorded in the previous audit report that eight category 2 metering installations were certified with incorrect error and uncertainty calculations by the Wells ATH. Intellihub has not completed certification of any metering installations at or above category 2 during the audit period. Intellihub has updated the registry with the cancellation of the eight metering installations.

##### Audit outcome

Compliant

#### 4.4. Net Metering metering and Subtractive Metering (Clause 10.13A and 4(2)(a) of Schedule 10.7)

##### Code reference

*Clause 10.13A and Clause 4(2)(a) of Schedule 10.7*

##### Code related audit information

*MEPs must ensure that the metering installation records imported electricity separately from exported electricity. For category 1 and 2 installations the MEP must ensure the metering installation records imported and exported electricity separately for each phase.*

*For metering installations for ICPs that are not also NSPs, the MEP must ensure that the metering installation does not use subtraction to determine submission information used for the purposes of Part 15.*

##### Audit observation

I asked Intellihub to confirm whether subtraction was used for any metering installations where they were the MEP and checked the configuration of meters used for recording import and export electricity.



#### **Audit commentary**

Intellihub will not deal with higher category metering, and it is unlikely they will deal with any installations with subtraction. None were identified.

Intellihub meters are correctly configured to record import and export electricity separately.

#### **Audit outcome**

Compliant

### **4.5. HHR Metering (Clause 4(2)(b) of Schedule 10.7)**

#### **Code reference**

*Clause 4(2)(b) of Schedule 10.7*

#### **Code related audit information**

*For metering installations for ICPs that are not also NSPs, the MEP must ensure that all category 3 or higher metering installations must be half-hour metering installations.*

#### **Audit observation**

Intellihub is not responsible for any metering installations at or above category 3.

#### **Audit commentary**

Intellihub is not responsible for any metering installations at or above category 3.

#### **Audit outcome**

Not applicable

### **4.6. NSP Metering (Clause 4(3) of Schedule 10.7)**

#### **Code reference**

*Clause 4(3) of Schedule 10.7*

#### **Code related audit information**

*The MEP must ensure that the metering installation for each NSP that is not connected to the grid does not use subtraction to determine submission information used for the purposes of Part 15 and is a half-hour metering installation.*

#### **Audit observation**

Intellihub is not responsible for any NSP metering.

#### **Audit commentary**

Intellihub is not responsible for any NSP metering.

#### **Audit outcome**

Not applicable

#### 4.7. Responsibility for Metering Installations (Clause 10.26(10))

##### Code reference

Clause 10.26(10)

##### Code related audit information

*The MEP must ensure that each point of connection to the grid for which there is a metering installation that it is responsible for has a half hour metering installation.*

##### Audit observation

Intellihub is not responsible for any Grid metering.

##### Audit commentary

Intellihub is not responsible for any Grid metering.

##### Audit outcome

Not applicable

#### 4.8. Suitability of Metering Installations (Clause 4(4) of Schedule 10.7)

##### Code reference

Clause 4(4) of Schedule 10.7

##### Code related audit information

*The MEP must, for each metering installation for which it is responsible, ensure that it is appropriate having regard to the physical and electrical characteristics of the POC.*

##### Audit observation

I checked the certification records for all ATHs to confirm this point is being considered at the time of certification.

##### Audit commentary

The certification records for all ATHs contain a field or a statement in relation to this clause and the technician is required to confirm that installations are compliant and safe.

##### Audit outcome

Compliant

#### 4.9. Installation & Modification of Metering Installations (Clauses 10.34(2), (2A), (2D) and (3))

##### Code reference

Clauses 10.34(2), (2A), (2D) and (3)

##### Code related audit information

*If a metering installation is proposed to be installed or modified at a POC, other than a POC to the grid, the MEP must consult with and use its best endeavours, to agree with the distributor and the trader for that POC, before the design is finalised, on the metering installation's:*

- *required functionality,*
- *terms of use,*
- *required interface format,*
- *integration of the ripple receiver and the meter,*

- *functionality for controllable load.*

*This includes where the MEP is proposing to replace a metering component or metering installations with the same or similar design and functionality but excludes where the MEP has already consulted on the design with the distributor and trader.*

*Each participant involved in the consultations must use its best endeavours to reach agreement and act reasonably and in good faith.*

#### **Audit observation**

I checked previous communication regarding metering designs, and I checked whether there were any new or modified designs during the audit period.

#### **Audit commentary**

Intellihub has communicated with all Distributors and Traders in relation to this requirement. There was one new design report created for a day/night configuration, consultation was completed for this new design as required.

At the time of the audit Intellihub were working on updating all of its design reports and were in the process of consulting with the distributors and traders.

#### **Audit outcome**

Compliant

### **4.10. Changes to Registry Records (Clause 3 of Schedule 11.4)**

#### **Code reference**

*Clause 3 of Schedule 11.4*

#### **Code related audit information**

*If the MEP has an arrangement with the trader the MEP must advise the registry manager of the registry metering records, or any change to the registry metering records, for each metering installation for which it is responsible at the ICP, no later than 10 business days following:*

- a) the electrical connection of the metering installation at the ICP*
- b) any subsequent change to the metering installation's metering records*

*If the MEP is update the registry in accordance with 8(11)(b) of Schedule 10.6, 10 business days after the most recent unsuccessful interrogation.*

*If update the registry in accordance with clause 8(13) of Schedule 10.6, 3 business days following the expiry of the time period or date from which the MEP determines it cannot restore communications.*

#### **Audit observation**

I examined the audit compliance report for the audit period to to evaluate the timeliness of registry updates.

#### **Audit commentary**

The table below shows that registry updates were on time for 92.47% of the 3,347 new connections completed in the audit period. 59 of the 252 late updates had trader nominations later than five business days. Intellihub provided details of the causes of the late updates for a sample of 24 records which are listed below:

- late field notification or generation of certification report for 13 examples,
- exceptions found in information from ATH requiring follow-up for 10 examples, and

- a processing error by Intellihub for one example.

The audit compliance report identified a total of 524 late updates after recertification. Further analysis determined that this incorrectly included 190 new MEP updates that are reported in **section 3.1**. The actual number of late recertification updates is 334 and I am unable to determine the total number of updates and percentage completed on time. Intellihub provided details of the causes of the late updates for a sample of 28 records which are listed below:

- late field notification or generation of certification report for eight examples,
- exceptions found in information from ATH requiring follow-up for 11 examples,
- update of billable registers to include EG for one example, and
- a processing issue leading to late updating for eight examples.

Event type	Year	Updated Late	% Compliant
New connection	2019	0	N/A
	2020	675	43.32%
	<b>2021</b>	<b>252</b>	<b>92.47%</b>
Recertification	2019	30	80.26%
	2020	15	97.26%
	<b>2021</b>	<b>334</b>	<b>unavailable</b>

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.10 With: Clause 3 of Schedule 11.4 From: 01-Aug-20 To: 16-Jun-21	Some records updated on the registry later than 10 business days. Potential impact: Low Actual impact: Low Audit history: Twice Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement. The impact on settlement and participants is minor; therefore, the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
Intellihub is investigating all opportunities to improve speed and accuracy of end-to-end data transfer.		31 Aug 2021	Investigating
All AMCs reminded to return complete and accurate paperwork within two working days of meter installation. Improvements made to AMC's tools.		29 July 2021	

Preventative actions taken to ensure no further issues will occur	Completion date	
As above	12 July 2021	

#### 4.11. Metering Infrastructure (Clause 10.39(1))

##### Code reference

Clause 10.39(1)

##### Code related audit information

*The MEP must ensure that for each metering installation:*

- *an appropriately designed metering infrastructure is in place,*
- *each metering component is compatible with, and will not interfere with any other component in the installation,*
- *collectively, all metering components integrate to provide a functioning system,*
- *each metering installation is correctly and accurately integrated within the associated metering infrastructure.*

##### Audit observation

The AMI metering and data collection system is considered “metering infrastructure”. The design report and type test report were checked to confirm compliance.

##### Audit commentary

The type test report, design report and this audit report confirm that the system will operate in a compliant manner.

A material change audit was completed in June 2021 for the planned implementation of an additional headend called PolicyNet. The audit confirmed that the Intelli-ConX modem is compatible and has appropriate approval which is confirmed by the “Regulatory Compliance Mark (RCM)” which is included on the modem nameplate.

##### Audit outcome

Compliant

#### 4.12. Decommissioning of an ICP (Clause 10.23A)

##### Code reference

Clause 10.23A

##### Code related audit information

*If a metering installation at an ICP is to be decommissioned, but the ICP is not being decommissioned, the MEP that is responsible for decommissioning the metering installation must:*

- *if the MEP is responsible for interrogating the metering installation, arrange for a final interrogation to take place before the metering installation is decommissioned, and provide the raw meter data from the interrogation to the responsible trader,*

- *if another participant is responsible for interrogating the metering installation, advise the other participant not less than 3 business days before the decommissioning of the time and date of the decommissioning, and that the participant must carry out a final interrogation.*

*To avoid doubt, if a metering installation at an ICP is to be decommissioned because the ICP is being decommissioned:*

- *the trader, not the MEP, is responsible for arranging a final interrogation of the metering installation,*
- *the responsible trader must arrange for a final interrogation of the metering installation.*

#### **Audit observation**

I checked whether Intellihub was the MEP at any decommissioned metering installations and whether notification had been provided to relevant traders.

#### **Audit commentary**

There were no examples of decommissioned metering installations where the ICP was not also decommissioned.

#### **Audit outcome**

Compliant

### **4.13. Measuring Transformer Burden and Compensation Requirements (Clause 31(4) and (5) of Schedule 10.7)**

#### **Code reference**

*Clause 31(4) and (5) of Schedule 10.7*

#### **Code related audit information**

*The MEP must, before approving the addition of, or change to, the burden or compensation factor of a measuring transformer in a metering installation, consult with the ATH who certified the metering installation.*

*If the MEP approves the addition of, or change to, the burden or compensation factor, it must ensure the metering installation is recertified by an ATH before the addition or change becomes effective.*

#### **Audit observation**

It is unlikely that Intellihub will be required to approve and burden changes. This is normally limited to HV installations.

#### **Audit commentary**

It is unlikely that Intellihub will be required to approve and burden changes. This is normally limited to HV installations.

#### **Audit outcome**

Not applicable

### **4.14. Changes to Software ROM or Firmware (Clause 39(1) and 39(2) of Schedule 10.7)**

#### **Code reference**

*Clause 39(1) and 39(2) of Schedule 10.7*

#### **Code related audit information**

*The MEP must, if it proposes to change the software, ROM or firmware of a data storage device installed in a metering installation, ensure that, before the change is carried out, an approved test laboratory:*

- *tests and confirms that the integrity of the measurement and logging of the data storage device would be unaffected,*
- *documents the methodology and conditions necessary to implement the change,*
- *advises the ATH that certified the metering installation of any change that might affect the accuracy of the data storage device.*

*The MEP must, when implementing a change to the software, ROM or firmware of a data storage device installed in a metering installation:*

- *carry out the change in accordance with the methodology and conditions identified by the approved test laboratory under clause 39(1)(b)*
- *keep a list of the data storage devices that were changed,*
- *update the metering records for each installation affected with the details of the change and the methodology used.*

#### **Audit observation**

I checked if there any examples of changes in accordance with these clauses.

#### **Audit commentary**

Intellihub advised that there were no firmware or software changes during the audit period.

#### **Audit outcome**

Compliant

### **4.15. Temporary Electrical Connection (Clauses 10.29A)**

#### **Code reference**

*Clause 10.29A*

#### **Code related audit information**

*An MEP must not request that a grid owner temporarily electrically connect a POC to the grid unless the MEP is authorised to do so by the grid owner responsible for that POC and the MEP has an arrangement with that grid owner to provide metering services.*

#### **Audit observation**

Intellihub is not responsible for any grid metering.

#### **Audit commentary**

Intellihub is not responsible for any grid metering.

#### **Audit outcome**

Not applicable

### **4.16. Temporary Electrical Connection (Clause 10.30A)**

#### **Code reference**

*Clause 10.30A*

#### **Code related audit information**

*An MEP must not request that a distributor temporarily electrically connect an NSP that is not a POC to the grid unless the MEP is authorised to do so by the reconciliation participant responsible for that NSP and the MEP has an arrangement with that reconciliation participant to provide metering services.*

#### **Audit observation**

Intellihub is not responsible for any NSP metering.

#### **Audit commentary**

Intellihub is not responsible for any NSP metering.

#### **Audit outcome**

Not applicable

### **4.17. Temporary Electrical Connection (Clause 10.31A)**

#### **Code reference**

*Clause 10.31A*

#### **Code related audit information**

*Only a distributor may, on its network, temporarily electrically connect an ICP that is not an NSP. A MEP may only request the temporary electrical connection of the ICP if it is for the purpose of certifying a metering installation, or for maintaining, repairing, testing, or commissioning a metering installation at the ICP.*

#### **Audit observation**

I checked for examples where the metering installation certification date was prior to the initial electrical energisation date of the ICP, to determine whether there were any examples of temporary electrical connection for the purpose of testing and certification.

#### **Audit commentary**

There were no temporary connections of ICPs where Intellihub is the MEP during the audit period.

#### **Audit outcome**

Compliant



## 5. METERING RECORDS

### 5.1. Accurate and Complete Records (Clause 4(1)(a) and (b) of Schedule 10.6, and Table 1, Schedule 11.4)

#### Code reference

*Clause 4(1)(a) and (b) of Schedule 10.6, and Table 1, Schedule 11.4*

#### Code related audit information

*The MEP must, for each metering installation for which it is responsible, keep accurate and complete records of the attributes set out in Table 1 of Schedule 11.4. These include:*

- a) the certification expiry date of each metering component in the metering installation*
- b) all equipment used in relation to the metering installation, including serial numbers and details of the equipment's manufacturer,*
- c) the manufacturer's or (if different) most recent test certificate for each metering component in the metering installation*
- d) the metering installation category and any metering installations certified at a lower category,*
- e) all certification reports and calibration reports showing dates tested, tests carried out, and test results for all metering components in the metering installation,*
- f) the contractor who installed each metering component in the metering installation*
- g) the certification sticker, or equivalent details, for each metering component that is certified under Schedule 10.8 in the metering installation:*
- h) any variations or use of the 'alternate certification' process,*
- i) seal identification information*
- j) any applicable compensation factors,*
- k) the owner of each metering component within the metering installation*
- l) any applications installed within each metering component,*
- m) the signed inspection report confirming that the metering installation complies with the requirements of Part 10.*

#### Audit observation

I checked 49 certification records to confirm compliance.

#### Audit commentary

All 49 certification reports were available. I also requested meter calibration reports for all 49 certifications, which were provided. I found a number of errors in the metering installation certification reports. The table below shows a breakdown of the number of records checked for each ATH.

ATH	Total reports checked
Intellihub	7
Wells	31
Delta	11
Total	49

The errors identified are shown in the table below.

Error	Intellihub	Wells	Delta
Each Services access interface and both HHR + NHH not recorded	4	11	10
Incorrect maximum interrogation cycle	3	1	1
Test results missing	2	-	11
Comparative certification with CTs recorded as certified	-	1	-
Incorrect certification method	-	1	-

I recommend that Intellihub checks all certification reports from relevant ATHs to ensure they are compliant and fit for purpose and improve controls to ensure certification records are complete and accurate.

Recommendation	Description	Audited party comment	Remedial action
Regarding Clause 4(1)(a) and (b) of Schedule 10.6	Check metering installation certification reports to ensure compliance and improve controls to ensure certification records are complete and accurate.	Intellihub commits to implementing sample checks of certification reports from all ATH's performing certification activity for both the IHUB and MTRX MEP's.	Investigating

#### Audit outcome

##### Non-compliant

Non-compliance	Description
<p>Audit Ref: 5.1</p> <p>With: Clause 4(1)(a) and (b) of Schedule 10.6, and Table 1, Schedule 11.4</p> <p>From: 01-Aug-20</p> <p>To: 16-Jun-21</p>	<p>A high number of fields not accurate and complete in a sample of 49 certification records.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Once</p> <p>Controls: Weak</p> <p>Breach risk rating: 3</p>
Audit risk rating	Rationale for audit risk rating
<b>Low</b>	<p>The controls are recorded as weak as they are not sufficient to ensure accuracy of records from ATHs.</p> <p>The impact on settlement and participants is minor; therefore, the audit risk rating is low.</p>
Actions taken to resolve the issue	
Completion date	Remedial action status

Intellihub has implemented dedicated compliance-focused operational meetings with contracted external ATH's, to focus on regulatory-related activity. These commenced effective June 2021 to monitor and track areas for EIPC Code-related improvement. These meetings are in addition to regularly scheduled governance meetings.	On-Going	Investigating
<b>Preventative actions taken to ensure no further issues will occur</b>	<b>Completion date</b>	
Intellihub is investigating opportunities to enhance its current systems to identify opportunities for further automation checks with the objective of ensuring greater data accuracy and customer satisfaction.  As mentioned in the recommendation, above, Intellihub commits to implementing sample checks of certification reports from all ATH's performing certification activity for both the IHUB and MTRX MEP's.	September 2021  30/08/2021	

## 5.2. Inspection Reports (Clause 4(2) of Schedule 10.6)

### Code reference

*Clause 4(2) of Schedule 10.6*

### Code related audit information

*The MEP must, within 10 business days of receiving a request from a participant for a signed inspection report prepared under clause 44 of Schedule 10.7, make a copy of the report available to the participant.*

### Audit observation

Intellihub will not need to conduct inspections for several years.

### Audit commentary

Intellihub will not need to conduct inspections for several years.

### Audit outcome

Not applicable

## 5.3. Retention of Metering Records (Clause 4(3) of Schedule 10.6)

### Code reference

*Clause 4(3) of Schedule 10.6*

### Code related audit information

*The MEP must keep metering installation records for 48 months after any metering component is removed, or any metering installation is decommissioned.*

### Audit observation

Intellihub intends to keep records indefinitely.

### Audit commentary

Intellihub intends to keep records indefinitely. All records are available from the time Intellihub commenced operating as an MEP.

#### **Audit outcome**

Compliant

#### **5.4. Provision of Records to ATH (Clause 6 Schedule 10.6)**

#### **Code reference**

*Clause 6 Schedule 10.6*

#### **Code related audit information**

*If the MEP contracts with an ATH to recertify a metering installation and the ATH did not previously certify the metering installation, the MEP must provide the ATH with a copy of all relevant metering records not later than 10 business days after the contract comes into effect.*

#### **Audit observation**

Intellihub will supply records as required. There were no examples to examine.

#### **Audit commentary**

Intellihub will supply records as required. There were no examples to examine.

#### **Audit outcome**

Compliant

## 6. MAINTENANCE OF REGISTRY INFORMATION

### 6.1. MEP Response to Switch Notification (Clause 1(1) of Schedule 11.4)

#### Code reference

*Clause 1(1) of Schedule 11.4*

#### Code related audit information

*Within 10 business days of being advised by the registry that it is the gaining MEP for the metering installation for the ICP, the MEP must enter into an arrangement with the trader and advise the registry it accepts responsibility for the ICP and of the proposed date on which it will assume responsibility.*

#### Audit observation

I checked the event detail report for the period 1 August 2020 to 16 June 2021 to check for any late acceptances.

#### Audit commentary

All responses were sent on time.

#### Audit outcome

Compliant

### 6.2. Provision of Registry Information (Clause 7 (1), (1A), (2) and (3) of Schedule 11.4)

#### Code reference

*Clause 7 (1), (1A) (2) and (3) of Schedule 11.4*

#### Code related audit information

*The MEP must provide the information indicated as being 'required' in Table 1 of clause 7 of Schedule 11.4 to the registry manager, in the prescribed form for each metering installation for which the MEP is responsible.*

*The MEP does not need to provide 'required' information if the information is only for the purpose of a distributor direct billing consumers on its network.*

*From 1 April 2015, a MEP is required to ensure that all the registry metering records of its category 1 metering installations are complete, accurate, not misleading or deceptive, and not likely to mislead or deceive.*

*The information the MEP provides to the registry manager must derive from the metering equipment provider's records or the metering records contained within the current trader's system.*

#### Audit observation

I checked the audit compliance report and list file for 100% of records to identify discrepancies.

#### Audit commentary

I have recorded compliance as the audit compliance report did not identify any discrepancies in the registry information.

#### Audit outcome

Compliant

### 6.3. Correction of Errors in Registry (Clause 6 of Schedule 11.4)

#### Code reference

Clause 6 of Schedule 11.4

#### Code related audit information

By 0900 hours on the 13th business day of each reconciliation period, the MEP must obtain from the registry:

- a list of ICPs for the metering installations the MEP is responsible for
- the registry metering records for each ICP on that list.

No later than five business days following collection of data from the registry, the MEP must compare the information obtained from the registry with the MEP's own records.

Within five business days of becoming aware of any discrepancy between the MEP's records and the information obtained from the registry, the MEP must correct the records that are in error and advise the registry of any necessary changes to the registry metering records.

#### Audit observation

I checked the data validation processes and results to ensure compliance.

#### Audit commentary

Intellihub uses its DCN-Rec process to compare check for any differences between Intellihub's records and the registry. A check on the reports confirmed that the requirement to complete the comparison each month is met. The report is checked on the same day it is run but corrections are not always able to be made within five business days.

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 6.3 With: Clause 6 of Schedule 11.4  From: 01-Jun-20 To: 27-May-21	Discrepancies not always resolved within 5 business days.  Potential impact: Medium  Actual impact: Low  Audit history: None  Controls: Moderate  Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	I have recorded the controls as moderate in this area because there is room for improvement.  Very few of the discrepancies have an impact on participants, customers or settlement. The audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
Intellihub will work towards resolving discrepancies which have the highest impact on participants.		Ongoing	Investigating

Preventative actions taken to ensure no further issues will occur	Completion date	
Intellihub will continue to focus on resolving exceptions identified within 5 business days.	Ongoing	

#### 6.4. Cancellation of Certification (Clause 20 of Schedule 10.7)

##### Code reference

*Clause 20 of Schedule 10.7*

##### Code related audit information

*The certification of a metering installation is automatically cancelled on the date on which one of the following events takes place:*

- a) the metering installation is modified otherwise than under sub clause 19(3), 19(3A) or 19(3C)*
- b) the metering installation is classed as outside the applicable accuracy tolerances set out in Table 1 of Schedule 10.1, defective or not fit for purpose under this Part or any audit,*
- c) an ATH advises the metering equipment provider responsible for the metering installation of a reference standard or working standard used to certify the metering installation not being compliant with this Part at the time it was used to certify the metering installation, or the failure of a group of meters in the statistical sampling recertification process for the metering installation, or the failure of a certification test for the metering installation,*
- d) the manufacturer of a metering component in the metering installation determines that the metering component does not comply with the standards to which the metering component was tested,*
- e) an inspection of the metering installation, that is required under this Part, is not carried out in accordance with the relevant clauses of this Part,*
- f) if the metering installation has been determined to be a lower category under clause 6 and:*
  - (i) the MEP has not received the report under 6(2A)(a) or 6(2A)(b); or*
  - (ii) the report demonstrates the maximum current is higher than permitted; or*
  - (iii) the report demonstrates the electricity conveyed exceeds the amount permitted,*
- g) the metering installation is certified under clause 14 and sufficient load is available for full certification testing and has not been retested under clause 14(4)*
- h) a control device in the metering installation certification is, and remains for a period of at least 10 business days, bridged out under clause 35(1)*
- i) the metering equipment provider responsible for the metering installation is advised by an ATH under clause 48(6)(b) that a seal has been removed or broken and the accuracy and continued integrity of the metering installation has been affected.*
- j) the installation is an HHR AMI installation certified after 29 August 2013 and*
  - (i) the metering installation is not interrogated within the maximum interrogation cycle; or*
  - (ii) the HHR and NHH register comparison is not performed; or*
  - (iii) the HHR and NHH register comparison for the same period finds a difference of greater than 1 kWh and the issue is not remediated within three business days.*

*A metering equipment provider must (unless the installation has been recertified within the 10 business days) within 10 business days of becoming aware that one of the events above has occurred in relation to a metering installation for which it is responsible, update the metering installation's certification expiry date in the registry.*

*If any of the events in Clause 20(1)(j) of Schedule 10.7 have occurred, update the AMI flag in the registry to 'N'.*

#### Audit observation

I checked all the points above to determine whether certification was cancelled for any installations.

#### Audit commentary

I checked all of the points mentioned above as follows,

##### Bridged meters

I checked two examples of bridged meters and confirmed that they were both recertified correctly. Certification was cancelled as soon as Intellihub was advised of the bridging. Compliance is confirmed.

##### Bridged control devices

I checked 20 examples of bridged control devices. In all 20 examples the metering installation certification was cancelled at the time of bridging and recertified at the time of unbridging. Compliance is confirmed.

##### Current transformer in-service burden

The last audit identified six metering installations where low burden was not addressed. Certification has been cancelled for all of these with the exception of the one ICP shown in the table below.

ICP	ATH	Cert date	Burden (VA)	Error percentage
0000484460CE119	Wells	20/05/2019	1.02	0.3871

ICP 0000026334EAF3D was recertified during the audit period after having previously being certified with error greater than 2.5% and certification being cancelled. The new certification was completed with low in-service burden and no burden resistors installed. Intellihub has cancelled the certification of this ICP.

##### Maximum interrogation cycle

I checked for examples where meters were not interrogated within the maximum interrogation and the AMI flag is still "Y" and certification was not cancelled. As recorded in **section 10.5** there were 35 ICPs not interrogated within the maximum interrogation cycle that did not have the AMI flag changed to "N". Certification was not cancelled for these ICPs.

##### Comparison of HHR Data with Register Data (Sum-check)

I checked for examples where certification was not cancelled after meters had failed a sum-check, or a sum-check was not performed within 30 days or 25% of the maximum interrogation cycle and the AMI flag is still "Y". As recorded in **section 10.9** there were 863 ICPs identified with sum-check failures prior to the implementing of new processes to meet the new code requirements. Certification was not cancelled for these ICPs.

#### Audit outcome

Non-compliant

Non-compliance	Description
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<p>Audit Ref: 6.4</p> <p>With: Clause 20 of Schedule 10.7</p> <p>From: 20-May-19</p> <p>To: 08-Jul-21</p>	<p>Certification cancelled, and registry not updated within 10 business days for:</p> <ul style="list-style-type: none"><li>- one ICP with low burden,</li><li>- 35 ICPs not interrogated during the maximum interrogation cycle, and</li><li>- 863 ICPs with failed sum-checks.</li></ul> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Twice</p> <p>Controls: Strong</p> <p>Breach risk rating: 1</p>		
Audit risk rating	Rationale for audit risk rating		
Low	<p>I have recorded the controls as strong in this area as Intellihub has now implemented processes to manage the requirements for interrogation of meters to avoid cancellation of certification. The controls have improved with regard to installations with low burden as ATHs are adopting new processes in line with the February 1<sup>st</sup> code change.</p> <p>The impact on settlement and participants is minor; therefore, the audit risk rating is low.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>Intellihub has updated the AMI Flag to “N” and cancelled certification for the 35 ICP’s identified to have not been interrogated during the maximum interrogation cycle.</p> <p>Intellihub now has a daily sum-check process in place that is compliant with the 1 February rule changes. There was insufficient time for this change to be implemented between the rule changes being announced 15 December 2020 and them taking effect on 1 February 2021. As a result, sum check failures arising from 1 February 2021 to 4 July 2021 for 863 ICP’s were not investigated within the required 3 business days. Given that any genuine meter faults will be picked up and rectified through our compliant sum check process going forward, and in most cases field work is not beneficial to the consumer, Intellihub does not intend to take any retrospective action with regards to these failures and will instead be submitting a self-breach.</p> <p>Certification cancelled for ICP 0000484460CE119.</p>		<p>Completed</p> <p>30/09/2021</p> <p>29/07/2021</p>	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	

<p>Intellihub has created a weekly report that identifies meters that have not read within 60% of their MIC and still have the AMI Flag set to Yes. This is a “Safety Net” report which will identify meters that were not captured in the daily (25% or 30 days) AMI Flag process.</p> <p>Intellihub will also run the full MIC (100% of MIC) report on a weekly basis to confirm there are no meters that have reached their full MIC with the AMI still set to No (which would require certification to be cancelled).</p>	Completed	
<p>Intellihub has implemented a fully compliant and audited daily sum-check process from 5 July 2021 to manage sum check failures in accordance with 1 February EA Code changes.</p>	Completed	
<p>Before Intellihub certify Category 2+ installations, Intellihub will provide a copy of our updated CT burdening procedure which clearly includes instructions on the burdening of very low burden rated CTs. The solution is to check measured values against calculated burden values from cable lengths and characteristics, then ensuring that the final recorded burden values are within the required limits. This process is validated by repeating the tests for different primary current values or adding one or two meters of standard copper wire.</p> <p>For ICP 0000484460CE119 (Where certification has been cancelled), Intellihub will organize a site visit to address burden and re-certify.</p>	30/09/2021	

## 6.5. Registry Metering Records (Clause 11.8A)

### Code reference

Clause 11.8A

### Code related audit information

*The MEP must provide the registry with the required metering information for each metering installation the MEP is responsible for and update the registry metering records in accordance with Schedule 11.4.*

### Audit observation

This clause refers to schedule 11.4 which is discussed in **section 6.2**, apart from the requirement to provide information in the “prescribed form”. I checked for examples of Intellihub not using the prescribed form.

### Audit commentary

This clause refers to schedule 11.4 which is discussed in **section 6.2**, apart from the requirement to provide information in the “prescribed form”. I checked for examples of Intellihub not using the prescribed form and did not find any exceptions.

### Audit outcome

Compliant

## 7. CERTIFICATION OF METERING INSTALLATIONS

### 7.1. Certification and Maintenance (Clause 10.38 (a), clause 1 and clause 15 of Schedule 10.7)

#### Code reference

*Clause 10.38 (a), clause 1 and clause 15 of Schedule 10.7*

#### Code related audit information

*The MEP must obtain and maintain certifications for all installations and metering components for which it is responsible. The MEP must ensure it:*

- *performs regular maintenance, battery replacement, repair/replacement of components of the metering installations,*
- *updates the metering records at the time of the maintenance,*
- *has a recertification programme that will ensure that all installations are recertified prior to expiry.*

#### Audit observation

I checked the audit compliance report for the audit period to ensure all ICPs had current certification and I checked **section 6.4** for ICPs with cancelled certification.

#### Audit commentary

Intellihub monitor meter certification expiry as part of BAU.

The audit compliance report identified 89 ICPs with cancelled certification. These were all examined:

- 81 related to bridged load control devices, 13 of these have since been recertified,
- seven category 2 ICPs have had certification cancelled due to low burden, and
- one category 2 ICP has had certification cancelled due to burden testing not being conducted during certification.

As recorded in **section 6.4** there are 899 ICPs that should have had certification cancelled as follows,

- one ICP with low burden,
- 35 ICPs not interrogated during the maximum interrogation cycle, and
- 863 ICPs with failed sum-checks.

#### Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 7.1</p> <p>With: Clause 10.38 (a)</p> <p>From: 27-Jul-19</p> <p>To: 25-Jun-20</p>	<p>76 ICPs with cancelled certification.</p> <p>Certification cancelled, and registry not updated within 10 business days for:</p> <ul style="list-style-type: none"> <li>- one ICP with low burden,</li> <li>- 35 ICPs not interrogated during the maximum interrogation cycle, and</li> <li>- 863 ICPs with failed sum-checks.</li> </ul> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Once</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	<p>The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement.</p> <p>The impact on settlement and participants is minor, therefore the audit risk rating is low.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>Intellihub has updated the AMI Flag to “N” and cancelled certification for the 35 ICP’s identified to have not been interrogated during the maximum interrogation cycle.</p> <p>Intellihub now has a daily sum-check process in place that is compliant with the 1 February rule changes. There was insufficient time for this change to be implemented between the rule changes being announced 15 December 2020 and them taking effect on 1 February 2021. As a result, sum check failures arising from 1 February 2021 to 4 July 2021 for 863 ICP’s were not investigated within the required 3 business days. Given that any genuine meter faults will be picked up and rectified through our compliant sum check process going forward, and in most cases field work is not beneficial to the consumer, Intellihub does not intend to take any retrospective action with regards to these failures and will instead be submitting a self-breach.</p> <p>As mentioned in section 6.4, above; certification has been cancelled for ICP 0000484460CE119.</p>		<p>Completed</p> <p>30/09/2021</p> <p>29/07/2021</p>	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	

<p>Intellihub has created a weekly report that identifies meters that have not read within 60% of their MIC and still have the AMI Flag set to Yes. This is a “Safety Net” report which will identify meters that were not captured in the daily (25% or 30 days) AMI Flag process.</p> <p>Intellihub will also run the full MIC (100% of MIC) report on a weekly basis to confirm there are no meters that have reached their full MIC with the AMI still set to No (which would require certification to be cancelled).</p>	Completed	
<p>Intellihub has implemented a fully compliant and audited daily sum-check process from 5 July 2021 to manage sum check failures in accordance with 1 February EA Code changes.</p>	Completed	
<p>The solution to address Category 2 sites where certification has been cancelled due to burden will be rolled out to all ATH’s who will perform Intellihub CT work. Intellihub will instruct ATH’s to use our solution to address low burden where there is any doubt about the accuracy of the CT’s at burdens below the manufacturer’s stated tolerances.</p>	Ongoing	
<p>Intellihub will continue to meet our obligations to cancel certification and remedy as required in accordance to the Code.</p> <p>For ICP 0000484460CE119 (Where certification has been cancelled), Intellihub will organize a site visit to address burden and re-certify.</p>	Ongoing	

## 7.2. Certification Tests (Clause 10.38(b) and clause 9 of Schedule 10.6)

### Code reference

*Clause 10.38(b) and clause 9 of Schedule 10.6*

### Code related audit information

*For each metering component and metering installation an MEP is responsible for, the MEP must ensure that:*

- *an ATH performs the appropriate certification and recertification tests,*
- *the ATH has the appropriate scope of approval to certify and recertify the metering installation.*

### Audit observation

I checked the certification records for 49 metering installations to confirm compliance.

### Audit commentary

I checked a sample of 49 certification reports for metering installation certifications conducted after 1<sup>st</sup> February 2021 to confirm if all required testing had been completed. All 49 certification reports contained a statement confirming testing had been completed. All 32 of the certification reports from the Wells ATH and seven of the nine certification reports from the Intellihub ATH included the results of the tests conducted. I recommend that Intellihub requires ATHs to include details and results of all testing completed in the metering installation certification reports provided.

A breakdown of the certification reports checked and recording of test results is detailed in the table below:

ATH	Total certification reports checked	Reports with test results not recorded
Intellihub	7	2
Wells	32	0
Delta	11	11
Total	49	13

Recommendation	Description	Audited party comment	Remedial action
Regarding Clause 10.38(b)	Require ATHs to include details and results of all testing completed in the metering installation certification reports provided.	Initial regulatory / compliance meetings with contracted ATH's have commenced, with a focus on addressing areas for improvement.	Identified

There was one example, ICP 0000000307CEC3B, where a category 1 metering installation was recertified by the Delta ATH after a control device was unbridged. Table 3 of Schedule 10.1 requires that a prevailing load test is conducted when a category 1 metering installation is recertified without the meter being changed. Clause 9(1)(a) requires that prevailing load tests must be conducted using a working standard connected to the metering installation. I have recorded non-compliance as the ATH did not conduct a prevailing load test using a working standard.

I checked the certification report for the one category 2 metering installation certified during the audit period. The certification report confirmed that all testing had been completed and the results recorded. As recorded in **section 6.4** the certification was completed with low in-service burden and no burden resistors installed. Intellihub has cancelled the certification of this ICP.

#### Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 7.2 With: Clause 10.38(b)  From: 23-Oct-20 To: 27-May-21	Prevailing load test not conducted for one category 1 metering installation.  Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2
<b>Audit risk rating</b>	<b>Rationale for audit risk rating</b>

<b>Low</b>	<p>The controls are recorded as moderate as Intellihub has confirmed that tests are normally conducted by the ATHs, though further checking is required to ensure all required testing is conducted by ATHs.</p> <p>The impact is low as the accuracy of the metering installation is unlikely to have been impacted by the prevailing load test not being completed, the audit risk rating is low.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>Intellihub intends to seek further clarification the Authority as to whether or not a prevailing load test is required when recertifying a metering installation (and no meter is replaced) and the installation certification expiry date remains unchanged. Table 3 of Part 10 refers.</p> <p>Some additional training in checking documentation to ensure all required tests have been completed, followed by feedback to the individual technician or ATH as required</p>		31/08/2021	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
As above		Date	

### 7.3. Active and Reactive Capability (Clause 10.37(1) and 10.37(2)(a))

#### Code reference

*Clause 10.37(1) and 10.37(2)(a)*

#### Code related audit information

*For any category 2 or higher half-hour metering installation that is certified after 29 August 2013, the MEP must ensure that the installation has active and reactive measuring and recording capability.*

*Consumption only installations that is a category 3 metering installation or above must measure and separately record:*

- a) import active energy,*
- b) import reactive energy,*
- c) export reactive energy.*

*Consumption only installations that are a category 2 metering installation must measure and separately record import active energy.*

*All other installations must measure and separately record:*

- a) import active energy,*
- b) export active energy,*
- c) import reactive energy,*
- d) export reactive energy.*

*All grid connected POCs with metering installations which are certified after 29 August 2013 should measure and separately record:*

- a) import active energy,*

- b) export active energy,
- c) import reactive energy,
- d) export reactive energy.

#### **Audit observation**

I checked the type test reports to confirm compliance.

#### **Audit commentary**

The type test reports confirm compliance.

#### **Audit outcome**

Compliant

### **7.4. Local Service Metering (Clause 10.37(2)(b))**

#### **Code reference**

*Clause 10.37(2)(b)*

#### **Code related audit information**

*The accuracy of each local service metering installation in grid substations must be within the tolerances set out in Table 1 of Schedule 10.1.*

#### **Audit observation**

This clause relates to Transpower as an MEP.

#### **Audit commentary**

This clause relates to Transpower as an MEP.

#### **Audit outcome**

Not applicable

### **7.5. Measuring Transformer Burden (Clause 30(1) and 31(2) of Schedule 10.7)**

#### **Code reference**

*Clause 30(1) and 31(2) of Schedule 10.7*

#### **Code related audit information**

*The MEP must not permit a measuring transformer to be connected to equipment used for a purpose other than metering, unless it is not practical for the equipment to have a separate measuring transformer.*

*The MEP must ensure that a change to, or addition of, a measuring transformer burden or a compensation factor related to a measuring transformer is carried out only by:*

- a) the ATH who most recently certified the metering installation,
- b) for a POC to the grid, by a suitably qualified person approved by both the MEP and the ATH who most recently certified the metering installation.

#### **Audit observation**

It is unlikely that burden will change for any Category 2 metering installations without recertification occurring.

#### **Audit commentary**



It is unlikely that burden will change for any Category 2 metering installations without recertification occurring.

#### Audit outcome

Compliant

### 7.6. Certification as a Lower Category (Clauses 6(1)(b) and (d), and 6(2)(b) of Schedule 10.7)

#### Code reference

*Clauses 6(1)(b) and (d), and 6(2)(b) of Schedule 10.7*

#### Code related audit information

*A category 2 or higher metering installation may be certified by an ATH at a lower category than would be indicated solely on the primary rating of the current if the MEP, based on historical metering data, reasonably believes that:*

- *the maximum current will at all times during the intended certification period be lower than the current setting of the protection device for the category for which the metering installation is certified, or is required to be certified by the Code; or*
- *the metering installation will use less than 0.5 GWh in any 12-month period.*

*If a metering installation is categorised under clause 6(1)(b), the ATH may, if it considers appropriate, and, at the MEP's request, determine the metering installation's category according to the metering installation's expected maximum current.*

*If a meter is certified in this manner:*

- *the MEP must, each month, obtain a report from the participant interrogating the metering installation, which details the maximum current from raw meter data from the metering installation by either calculation from the kVA by trading period, if available, or from a maximum current indicator if fitted in the metering installation conveyed through the point of connection for the prior month; and*
- *if the MEP does not receive a report, or the report demonstrates that the maximum current conveyed through the POC was higher than permitted for the metering installation category it is certified for, then the certification for the metering installation is automatically cancelled.*

#### Audit observation

I checked whether there were any installations certified as a lower category.

#### Audit commentary

There were no examples of ICPs certified as a lower category.

#### Audit outcome

Compliant

### 7.7. Insufficient Load for Certification Tests (Clauses 14(3) and (4) of Schedule 10.7)

#### Code reference

*Clauses 14(3) and (4) of Schedule 10.7*

#### Code related audit information

*If there is insufficient electricity conveyed through a POC to allow the ATH to complete a prevailing load test for a metering installation that is being certified as a half hour meter and the ATH certifies the metering installation the MEP must:*

- *obtain and monitor raw meter data from the metering installation at least once each calendar month to determine if load during the month is sufficient for a prevailing load test to be completed:*
- *if there is sufficient load, arrange for an ATH to complete the tests (within 20 business days).*

#### **Audit observation**

I checked for examples of insufficient load certification.

#### **Audit commentary**

There were no examples of insufficient load certification. It is intended that ATHs will carry sufficient load to carry out certification testing at the time of certification.

#### **Audit outcome**

Compliant

### **7.8. Insufficient Load for Certification – Cancellation of Certification (Clause 14(6) of Schedule 10.7)**

#### **Code reference**

*Clause 14(6) of Schedule 10.7*

#### **Code related audit information**

*If the tests conducted under clause 14(4) of Schedule 10.7 demonstrate that the metering installation is not within the relevant maximum permitted error:*

- *the metering installation certification is automatically revoked:*
- *the certifying ATH must advise the MEP of the cancellation within 1 business day:*
- *the MEP must follow the procedure for handling faulty metering installations (clause 10.43 - 10.48).*

#### **Audit observation**

I checked for examples of insufficient load certification.

#### **Audit commentary**

There were no examples of insufficient load certification. It is intended that ATHs will carry sufficient load to carry out certification testing at the time of certification.

#### **Audit outcome**

Compliant

### **7.9. Alternative Certification Requirements (Clauses 32(2), (3) and (4) of Schedule 10.7)**

#### **Code reference**

*Clauses 32(2), (3) and (4) of Schedule 10.7*

#### **Code related audit information**

*If an ATH cannot comply with the requirements to certify a metering installation due to measuring transformer access issues, and therefore certifies the metering installation in accordance with clause 32(1) of Schedule 10.7, the MEP must:*

- *advise the market administrator, by no later than 10 business days after the date of certification of the metering installation, of the details in clause 32(2)(a) of Schedule 10.7,*
- *respond, within five business days, to any requests from the market administrator for additional information,*
- *ensure that all of the details are recorded in the metering installation certification report,*
- *take all steps to ensure that the metering installation is certified before the certification expiry date.*

*If the market administrator determines the ATH could have obtained access the metering installation is deemed to be defective, and the MEP must follow the process of handling faults metering installations in clauses 10.43 to 10.48.*

#### **Audit observation**

I checked the registry records to confirm whether alternative certification had been applied.

#### **Audit commentary**

Alternative certification has not been applied to any metering installations.

#### **Audit outcome**

Compliant

### **7.10. Timekeeping Requirements (Clause 23 of Schedule 10.7)**

#### **Code reference**

*Clause 23 of Schedule 10.7*

#### **Code related audit information**

*If a time keeping device that is not remotely monitored and corrected controls the switching of a meter register in a metering installation, the MEP must ensure that the time keeping device:*

- has a time keeping error of not greater than an average of 2 seconds per day over a period of 12 months,*
- is monitored and corrected at least once every 12 months.*

#### **Audit observation**

I checked if Intellihub has any metering installations with time keeping devices that are not remotely monitored relevant to this clause.

#### **Audit commentary**

Intellihub has AMI meters with configurations using multiple registers that are remotely monitored to meet the requirements of Clause 8(4) of Schedule 10.6. In cases where AMI meters fail to communicate the MEP switches the AMI flag in the registry to “N” to avoid cancellation of certification. When the meter is not communicating its time is no longer monitored and it becomes subject to the requirements of this clause if there are registers switched by the time of meter. The audit compliance report identified 37 ICPs with register content codes of D/N and DIN/NIN where the AMI flag had been changed to “N” indicating that the meters were not communicating. Intellihub provided details of the length of time that the meters had been unable to communicate. The period of non-communication has not exceeded 12 months for any of the meters. The requirement to monitor and correct time within 12 months has been met. I recommend that Intellihub develops a process to identify meters which become subject to the timekeeping Requirements of Clause 23 of Schedule 10.7 and ensure the time is monitored and corrected as required.

Recommendation	Description	Audited party comment	Remedial action
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Regarding Clause 10.38(b)	Develop a process to identify meters which become subject to the timekeeping Requirements of Clause 23 of Schedule 10.7 and ensure the time is monitored and corrected as required.	Intellihub recognizes the need to develop a process accordingly	Identified
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#### Audit outcome

Compliant

### 7.11. Control Device Bridged Out (Clause 35 of Schedule 10.7)

#### Code reference

*Clause 35 of Schedule 10.7*

#### Code related audit information

*The participant must, within 10 business days of bridging out a control device or becoming aware of a control device being bridged out, notify the following parties:*

- *the relevant reconciliation participant*
- *the relevant metering equipment provider*

*If the control device is used for reconciliation, the metering installation is considered defective in accordance with 10.43.*

#### Audit observation

Intellihub provided process documentation which is compliant with this clause. I also checked 20 recent examples of bridged relays.

#### Audit commentary

Intellihub provided process documentation which is compliant with this clause.

I checked 20 examples of bridged control devices. In all 20 examples the metering installation certification was cancelled at the time of bridging and recertified at the time of unbridging. Notification was provided to the traders in each case. Compliance is confirmed.

As recorded in **section 7.1** there are 68 ICPs with cancelled certification where control devices have been and remain bridged.

#### Audit outcome

Compliant

### 7.12. Control Device Reliability Requirements (Clause 34(5) of Schedule 10.7)

#### Code reference

*Clause 34(5) of Schedule 10.7*

#### Code related audit information

*If the MEP is advised by an ATH that the likelihood of a control device not receiving signals would affect the accuracy or completeness of the information for the purposes of Part 15, the MEP must, within 3 business days inform the following parties of the ATH's determination (including all relevant details):*

- a) the reconciliation participant for the POC for the metering installation*
- b) the control signal provider.*

#### **Audit observation**

I checked whether any notification had been provided.

#### **Audit commentary**

Intellihub has not received notification in relation to this clause.

#### **Audit outcome**

Compliant

### **7.13. Statistical Sampling (Clauses 16(1) and (5) of Schedule 10.7)**

#### **Code reference**

*Clauses 16(1) and (5) of Schedule 10.7*

#### **Code related audit information**

*The MEP may arrange for an ATH to recertify a group of category 1 metering installations for which the MEP is responsible using a statistical sampling process.*

*The MEP must update the registry in accordance with Part 11 on the advice of an ATH as to whether the group meets the recertification requirements.*

#### **Audit observation**

I checked whether recertification by statistical sampling had occurred during the audit period.

#### **Audit commentary**

No recertification by statistical sampling has taken place in the audit period.

#### **Audit outcome**

Not applicable

### **7.14. Compensation Factors (Clause 24(3) of Schedule 10.7)**

#### **Code reference**

*Clause 24(3) of Schedule 10.7*

#### **Code related audit information**

*If a compensation factor must be applied to a metering installation that is an NSP, the MEP must advise the reconciliation participant responsible for the metering installation of the compensation factor within 10 days of certification of the installation.*

*In all other cases the MEP must advise the registry of the compensation factor.*

#### **Audit observation**

I checked the records for 49 metering installations to confirm that compensation factors were correct.

#### **Audit commentary**

The compensation factors were correct for all 49 metering installations.

#### **Audit outcome**

Compliant

### **7.15. Metering Installations Incorporating a Meter (Clause 26(1) of Schedule 10.7)**

#### **Code reference**

*Clause 26(1) of Schedule 10.7*

#### **Code related audit information**

*The MEP must ensure that each meter in a metering installation it is responsible for is certified.*

#### **Audit observation**

I checked the certification records for 49 metering installations to confirm compliance.

#### **Audit commentary**

All meters were certified in accordance with this clause.

#### **Audit outcome**

Compliant

### **7.16. Metering Installations Incorporating a Measuring Transformer (Clause 28(1) of Schedule 10.7)**

#### **Code reference**

*Clause 28(1) of Schedule 10.7*

#### **Code related audit information**

*The MEP must ensure that each measuring transformer in a metering installation it is responsible for is certified.*

#### **Audit observation**

I checked Intellihub's approach to CT certification.

#### **Audit commentary**

Intellihub intends to purchase pre-certified CTs from TWS for any installations where CTs need to be installed or replaced. No selected component certification occurred during the audit period.

#### **Audit outcome**

Compliant

### **7.17. Metering Installations Incorporating a Data Storage Device (Clause 36(1) of Schedule 10.7)**

#### **Code reference**

*Clause 36(1) of Schedule 10.7*

#### **Code related audit information**

*The MEP must ensure that each data storage device in a metering installation it is responsible for is certified.*

#### **Audit observation**

I checked the certification records for 49 metering installations to confirm compliance.

**Audit commentary**

All data storage devices were certified in accordance with this clause.

**Audit outcome**

Compliant

**7.18. Notification of ATH Approval (Clause 7 (3) Schedule 10.3)**

**Code reference**

*Clause 7 (3) Schedule 10.3*

**Code related audit information**

*If the MEP is notified by the Authority that an ATH's approval has expired, been cancelled or been revised, the MEP must treat all metering installations certified by the ATH during the period where the ATH was not approved to perform the activities as being defective and follow the procedures set out in 10.43 to 10.48.*

**Audit observation**

Intellihub is aware of this clause and monitors the ATH approval details on the website.

**Audit commentary**

Intellihub is aware of this clause and monitors the ATH approval details on the website. All relevant ATHs have current approval.

**Audit outcome**

Compliant

**7.19. Interim Certification (Clause 18 of Schedule 10.7)**

**Code reference**

*Clause 18 of Schedule 10.7*

**Code related audit information**

*The MEP must ensure that each interim certified metering installation on 28 August 2013 is certified by no later than 1 April 2015.*

**Audit observation**

This clause is not relevant to Intellihub.

**Audit commentary**

This clause is not relevant to Intellihub.

**Audit outcome**

Not applicable

## 8. INSPECTION OF METERING INSTALLATIONS

### 8.1. Category 1 Inspections (Clause 45 of Schedule 10.7)

#### Code reference

*Clause 45 of Schedule 10.7*

#### Code related audit information

*The MEP must ensure that category 1 metering installations (other than interim certified metering installations):*

- *have been inspected by an ATH within 126 months from the date of the metering installation's most recent certification or*
- *for each 12-month period, commencing 1 January and ending 31 December, ensure an ATH has completed inspections of a sample of the category 1 metering installations selected under clause 45(2) of Schedule 10.7.*

*Before a sample inspection process can be carried out, the MEP must submit a documented process for selecting the sample to the Electricity Authority, at least 2 months prior to first date on which the inspections are to be carried out, for approval (and promptly provide any other information the Authority may request).*

*The MEP must not inspect a sample unless the Authority has approved the documented process.*

*The MEP must, for each inspection conducted under clause 45(1)(b), keep records detailing:*

- *any defects identified that have affected the accuracy or integrity of the raw meter data recorded by the metering installation,*
- *any discrepancies identified under clause 44(5)(b)*
- *relevant characteristics, sufficient to enable reporting of correlations or relationships between inaccuracy and characteristics,*
- *the procedure used, and the lists generated, to select the sample under clause 45(2).*

*The MEP must, if it believes a metering installation that has been inspected is or could be inaccurate, defective or not fit for purpose:*

- *comply with clause 10.43,*
- *arrange for an ATH to recertify the metering installation if the metering is found to be inaccurate under Table 1 of Schedule 10.1, or defective or not fit for purpose.*

*The MEP must by 1 April in each year, provide the Authority with a report that states whether the MEP has, for the previous 1 January to 31 December period, arranged for an ATH to inspect each category 1 metering installation for which it is responsible under clause 45(1)(a) or 45(1)(b).*

*This report must include the matters specified in clauses 45(8)(a) and (b).*

*If the MEP is advised by the Authority that the tests do not meet the requirements under clause 45(9) of Schedule 10.7, the MEP must select the additional sample under that clause, carry out the required inspections, and report to the Authority, within 40 business days of being advised by the Authority.*

#### Audit observation

Inspections will not be required for many years.

#### Audit commentary

Inspections will not be required for many years.

#### Audit outcome

Not applicable



## 8.2. Category 2 to 5 Inspections (Clause 46(1) of Schedule 10.7)

### Code reference

*Clause 46(1) of Schedule 10.7*

### Code related audit information

*The MEP must ensure that each category 2 or higher metering installation is inspected by an ATH at least once within the applicable period. The applicable period begins from the date of the metering installation's most recent certification and extends to:*

- *120 months for Category 2*
- *60 months for Category 3*
- *30 months for Category 4*
- *18 months for Category 5.*

### Audit observation

Inspections will not be required for many years.

### Audit commentary

Inspections will not be required for many years.

### Audit outcome

Not applicable

## 8.3. Inspection Reports (Clause 44(5) of Schedule 10.7)

### Code reference

*Clause 44(5) of Schedule 10.7*

### Code related audit information

*The MEP must, within 20 business days of receiving an inspection report from an ATH:*

- *undertake a comparison of the information received with its own records,*
- *investigate and correct any discrepancies,*
- *update the metering records in the registry.*

### Audit observation

Inspections will not be required for many years.

### Audit commentary

Inspections will not be required for many years.

### Audit outcome

Not applicable

#### 8.4. Broken or removed seals (Clause 48(4) and (5) of Schedule 10.7)

##### Code reference

*Clause 48(4) and (5) of Schedule 10.7*

##### Code related audit information

*If the MEP is advised of a broken or removed seal it must use reasonable endeavours to determine:*

- a) who removed or broke the seal,*
- b) the reason for the removal or breakage.*

*and arrange for an ATH to carry out an inspection of the removal or breakage and determine any work required to remedy the removal or breakage.*

*The MEP must make the above arrangements within:*

- a) three business days, if the metering installation is category 3 or higher,*
- b) 10 business days if the metering installation is category 2,*
- c) 20 business days if the metering installation is category 1.*

##### Audit observation

I checked the Intellihub processes and I whether there were any examples of broken or missing seals during the audit period.

##### Audit commentary

The Intellihub processes are compliant with this clause. There were no examples available during the audit period.

##### Audit outcome

Compliant

## 9. PROCESS FOR HANDLING FAULTY METERING INSTALLATIONS

### 9.1. Investigation of Faulty Metering Installations (Clause 10.43(4) and (5))

#### Code reference

*Clause 10.43(4) and (5)*

#### Code related audit information

*If the MEP is advised or becomes aware that a metering installation may be inaccurate, defective, or not fit for purpose, it must investigate and report on the situation to all affected participants as soon as reasonably practicable after becoming aware of the information, but no later than:*

- (a) 20 business days for Category 1,*
- (b) 10 business days for Category 2 and*
- (c) 5 business days for Category 3 or higher.*

#### Audit observation

I checked the Intellihub processes and an example of a metering installation where the meter had been bridged.

#### Audit commentary

The Intellihub processes are compliant with this clause. I checked an example where the meter had been bridged during the audit period. The bridge was removed, and the installation was recertified two days after the bridging took place therefore cancelling the previous certification. Appropriate notification was provided to the trader.

#### Audit outcome

Compliant

### 9.2. Testing of Faulty Metering Installations (Clause 10.44)

#### Code reference

*Clause 10.44*

#### Code related audit information

*If a report prepared under clause 10.43(4)(c) demonstrates that a metering installation is inaccurate, defective, or not fit for purpose, the MEP must arrange for an ATH to test the metering installation and provide a 'statement of situation'.*

*If the MEP is advised by a participant under clause 10.44(2)(a) that the participant disagrees with the report that demonstrates that the metering installation is accurate, not defective and fit for purpose, the MEP must arrange for an ATH to:*

- (a) test the metering installation,*
- (b) provide the MEP with a statement of situation within 5 business days of:*
- (c) becoming aware that the metering installation may be inaccurate, defective or not fit for purpose; or*
- (d) reaching an agreement with the participant.*

*The MEP is responsible for ensuring the ATH carries out testing as soon as practicable and provides a statement of situation.*

#### Audit observation

I checked the Intellihub processes and an example of a metering installation where the meter had been bridged.

### Audit commentary

The Intellihub processes are compliant with this clause. I checked an example where the meter had been bridged during the audit period. The bridge was removed, and the installation was recertified two days after the bridging took place. The information returned by the ATH met the requirement for the provision of a statement of situation.

### Audit outcome

Compliant

## 9.3. Statement of Situation (Clause10.46(2))

### Code reference

*Clause10.46(2)*

### Code related audit information

*Within three business days of receiving the statement from the ATH, the MEP must provide copies of the statement to:*

- *the relevant affected participants*
- *the market administrator (for all category 3 and above metering installations and any category 1 and category 2 metering installations) on request.*

### Audit observation

I checked the Intellihub processes. I checked an example where Intellihub had become aware of a faulty metering installation, where the meter had been bridged.

### Audit commentary

The Intellihub processes are compliant with this clause. The information returned by the ATH met the requirement for the provision of a statement of situation. Intellihub provided this information to the trader.

### Audit outcome

Compliant

## 9.4. Timeframe for correct defects and inaccuracies (Clause10.46A)

### Code reference

*Clause 10.46A*

### Code related audit information

*When the metering equipment provider is advised under 10.43 or becomes aware a metering installation it is responsible for is inaccurate, defective or not fit for purpose the metering equipment provider must undertake remedial actions to address the issue.*

*The metering equipment provider must use its best endeavours to complete the remedial action within 10 business days of the date it is required to provide a report to participants under 10.43(4)(c).*

### Audit observation

I checked the Intellihub processes. I checked an example where Intellihub had become aware of a faulty metering installation, where the meter had been bridged.

#### **Audit commentary**

The Intellihub processes are compliant with this clause. I checked an example where the meter had been bridged during the audit period. The bridge was removed, and the installation was recertified two days after the bridging took place therefore cancelling the previous certification. Appropriate notification was provided to the trader.

#### **Audit outcome**

Compliant

## 10. ACCESS TO AND PROVISION OF RAW METER DATA AND METERING INSTALLATIONS

### 10.1. Access to Raw Meter Data (Clause 1 of Schedule 10.6)

#### Code reference

*Clause 1 of Schedule 10.6*

#### Code related audit information

*The MEP must give authorised parties access to raw meter data within 10 business days of receiving the authorised party making a request.*

*The MEP must only give access to raw meter data to a trader or person, if that trader or person has entered into a contract to collect, obtain, and use the raw meter data with the end customer.*

*The MEP must provide the following when giving a party access to information:*

- a) the raw meter data; or*
- b) the means (codes, keys etc.) to enable the party to access the raw meter data.*

*The MEP must, when providing raw meter data or access to an authorised person use appropriate procedures to ensure that:*

- the raw meter data is received only by that authorised person or a contractor to the person,*
- the security of the raw meter data and the metering installation is maintained,*
- access to the raw meter data is limited to only the specific raw meter data under clause 1(7)(c) of Schedule 10.6.*

#### Audit observation

Intellihub will provide data as required by this clause.

#### Audit commentary

Intellihub will provide data as required by this clause. There were no examples of data requests.

#### Audit outcome

Compliant

### 10.2. Restrictions on Use of Raw Meter Data (Clause 2 of Schedule 10.6)

#### Code reference

*Clause 2 of Schedule 10.6*

#### Code related audit information

*The MEP must not give an authorised person access to raw meter data if to do so would breach clause 2(1) of Schedule 10.6.*

#### Audit observation

Intellihub will provide data in compliance with this clause.

#### Audit commentary

Intellihub will provide data as required by this clause. There were no examples of data requests.

#### Audit outcome

Compliant

### 10.3. Access to Metering Installations (Clause 3(1), (3) and (4) of Schedule 10.6)

#### Code reference

*Clause 3(1), (3) and (4) of Schedule 10.6*

#### Code related audit information

*The MEP must within 10 business days of receiving a request from one of the following parties, arrange physical access to each component in a metering installation:*

- *a relevant reconciliation participant with whom it has an arrangement (other than a trader)*
- *the Authority*
- *an ATH*
- *an auditor*
- *a gaining MEP.*

*This access must include all necessary means to enable the party to access the metering components.*

*When providing access, the MEP must ensure that the security of the metering installation is maintained, and physical access is limited to only the access required for the purposes of the Code, regulations in connection with the party's administration, audit and testing functions.*

#### Audit observation

Intellihub will provide access as required.

#### Audit commentary

Intellihub will provide access as required. There were no examples of requests for access to metering installations.

#### Audit outcome

Compliant

### 10.4. Urgent Access to Metering Installations (Clause 3(5) of Schedule 10.6)

#### Code reference

*Clause 3(5) of Schedule 10.6*

#### Code related audit information

*If the party requires urgent physical access to a metering installation, the MEP must use its best endeavours to arrange physical access.*

#### Audit observation

Intellihub will provide access as required.

#### Audit commentary

Intellihub will provide access as required. There were no examples of requests for access to metering installations.

#### Audit outcome

Compliant

## 10.5. Electronic Interrogation of Metering Installations (Clause 8(2), 8(3), 8(5) and 8(6) of Schedule 10.6)

### Code reference

*Clause 8(2), 8(3), 8(5) and 8(6) of Schedule 10.6*

### Code related audit information

*When raw meter data can only be obtained from an MEP's back office, the MEP must:*

- *ensure that the interrogation cycle does not exceed the maximum interrogation cycle shown in the registry,*
- *interrogate the metering installation at least once within each maximum interrogation cycle.*

*When raw meter data can only be obtained from an MEP's back office, the MEP must ensure that the internal clock is accurate, to within  $\pm 5$  seconds of:*

- *New Zealand standard time; or*
- *New Zealand daylight time.*

*When raw meter data can only be obtained from an MEP's back office, the MEP must record in the interrogation and processing system logs, the time, the date, and the extent of any change in the internal clock setting in the metering installation.*

*The MEP must compare the time on the internal clock of the data storage device with the time on the interrogation and processing system clock, calculate and correct (if required by this provision) any time error, and advise the affected reconciliation participant.*

*When raw meter data can only be obtained from an MEP's back office, the MEP must, when interrogating a metering installation, download the event log, check the event log for evidence of an events that may affect the integrity or operation of the metering installation, such as malfunctioning or tampering.*

*The MEP must investigate and remediate any events and advise the reconciliation participant.*

*The MEP must ensure that all raw meter data that can only be obtained from the MEPs back office, that is downloaded as part of an interrogation, and that is used for submitting information for the purpose of Part 15 is archived:*

- *for no less than 48 months after the interrogation date*
- *in a form that cannot be modified without creating an audit trail*
- *in a form that is secure and prevents access by any unauthorised person*
- *in a form that is accessible to authorised personnel.*

### Audit observation

I conducted a walk-through of the process and I checked reporting of meters not read during the maximum interrogation cycle.

### Audit commentary

#### Interrogation cycle

I conducted a walk-through of the process and I checked reporting of meters not read during the maximum interrogation cycle.

#### Clock synchronisation

Clock synchronisation is discussed in **section 10.7**.

#### Event logs

Event logs are discussed in **section 10.8**.



### Security of raw meter data

I checked the security and storage of data by looking at examples of data and by checking security protocols.

### Audit commentary

#### Interrogation cycle

Intellihub provided reporting of ICPs where interrogation had not occurred within the maximum interrogation cycle of the meter. 35 ICPs were identified in the report. The Intellihub process has been updated to ensure the AMI Comm flag is changed to “N” for any meter that has not read for 30 or more consecutive days. The 35 ICPs are the result of the previously used process where the flag was not changed at the request of the trader. All 35 of the meters identified in the report have since had the AMI Comm flag changed to “N” after the maximum interrogation cycle of 60 days had been exceeded. I have recorded non-compliance as these meters were not read within the maximum interrogation cycle and the flag was not changed to “N”. The new clauses in the Code, effective 1 February 2021, require certification to be cancelled for ICPs not interrogated or changed to AMI Comm “N” inside the maximum interrogation cycle. As recorded in **section 6.4** all 35 ICPs subject to this clause and certification have not been cancelled by Intellihub.

### Security of raw meter data

All users have login and password to access working data and only certain IT experts can access raw data. There are no business processes that allow data to be edited. Event data is archived along with consumption data. This part of the process is compliant.

Event logs and clock synchronisation processes are discussed in **sections 10.7** and **10.8**.

### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 10.5 With: Clause 8(2)(a) of Schedule 10.6  From: 01-Aug-20 To: 08-Jul-21	Maximum interrogation cycle exceeded for 35 ICPs.  Potential impact: Low  Actual impact: Low  Audit history: Twice  Controls: Strong  Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	Strong controls are now in place to change the AMI flag to “N” if data cannot be collected.  The impact on settlement and participants is minor; therefore, the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
Intellihub has updated the AMI Flag to “N” and cancelled certification for the 35 ICP’s identified to have not been interrogated during the maximum interrogation cycle.		Completed	Cleared

Preventative actions taken to ensure no further issues will occur	Completion date	
<p>Intellihub has created a weekly report that identifies meters that have not read within 60% of their MIC and still have the AMI Flag set to Yes. This is a "Safety Net" report which will identify meters that were not captured in the daily (25% or 30 days) AMI Flag process.</p> <p>Intellihub will also run the full MIC (100% of MIC) report on a weekly basis to confirm there are no meters that have reached their full MIC with the AMI still set to No (which would require certification to be cancelled).</p>	Completed	

## 10.6. Security of Metering Data (Clause 10.15(2))

### Code reference

*Clause 10.15(2)*

### Code related audit information

*The MEP must take reasonable security measures to prevent loss or unauthorised access, use, modification or disclosure of the metering data.*

### Audit observation

I conducted a walkthrough of the data security processes.

### Audit commentary

Data is transmitted securely by SFTP and is only accessible to authorised persons with appropriate passwords.

### Audit outcome

Compliant

## 10.7. Time Errors for Metering Installations (Clause 8(4) of Schedule 10.6)

### Code reference

*Clause 8(4) of Schedule 10.6*

### Code related audit information

*When raw meter data can only be obtained from the MEPs back office, the MEP must ensure that the data storage device it interrogates does not exceed the maximum time error set out in Table 1 of clause 8(5) of Schedule 10.6.*

### Audit observation

I checked Intellihub's time synchronisation processes and reporting.

### Audit commentary

The clock synchronisation setting is 5 seconds to 10 seconds.

Any clock errors between these times are adjusted automatically. Any errors outside these times are adjusted by a separate schedule. Clock errors over 10 seconds are reported to retailers.

Intellihub advises affected reconciliation participants of time error adjustments or any potential effect on raw meter data. Examples of email notifications were examined. Intellihub monitors devices with multiple clock errors to ensure the meters are replaced.

This clause is slightly different to the clause in Part 15 for reconciliation participants. This clause requires MEPs to ensure the time is not outside the allowable thresholds, therefore non-compliance exists for those examples where time has drifted outside the allowable threshold.

I checked a time synchronisation report for the period 21 to 27 June 2021. There were a total of 1,693 devices corrected of which 141 had exceeded the limit of 30 seconds for category 1 HHR metering installations. Seven of the 141 meters were synchronised at the time of installation.

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 10.7 With: Clause 8(4) of Schedule 10.6 From: 01-Aug-20 To: 08-Jul-21	136 examples of clock errors outside the allowable thresholds in the most recent reports. Potential impact: Medium Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	I have recorded the controls as strong because clocks are synchronised during every successful interrogation.  The impact is considered minor because most clock errors are small and are corrected within one half hour. The audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
There are no further preventative actions identified that we can reasonably implement.		Completed	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
As per above		Completed	

#### 10.8. Event Logs (Clause 8(7) of Schedule 10.6)

##### Code reference

*Clause 8(7) of Schedule 10.6*

##### Code related audit information

*When raw meter data can only be obtained from the MEP's back office, the MEP must, when interrogating a metering installation:*

- a) *ensure an interrogation log is generated,*
- b) *review the event log and:*
  - i. *take appropriate action,*
  - ii. *pass the relevant entries to the reconciliation participant.*
- c) *ensure the log forms part of an audit trail which includes:*
  - i. *the date and*
  - ii. *time of the interrogation*
  - iii. *operator (where available)*
  - iv. *unique ID of the data storage device*
  - v. *any clock errors outside specified limits,*
  - vi. *method of interrogation*
  - vii. *identifier of the reading device used (if applicable).*

#### **Audit observation**

I checked the interrogation logs and event logs to ensure the items above are managed in a compliant manner.

#### **Audit commentary**

Intellihub downloads the event log as required by this clause. All critical events are evaluated, and appropriate action is taken. Relevant events are sent to reconciliation participants. The relevant events can be summarised as follows:

- *tamper (initially filtered by Intellihub to remove false records),*
- *phase failure,*
- *memory failure,*
- *temperature alarm,*
- *reverse power (detecting unexpected generation flow),*
- *load side voltage detection (to detect bridging of remotely disconnected devices),*
- *clock synchronisation,*
- *time synchronisation failure (because outside the threshold),*
- *re-programming, and*
- *manual download.*

I checked an example of the event reporting sent to reconciliation participants, the report includes a “Job Notes” field which provides advice on the cause and follow actions required for each event.

#### **Audit outcome**

Compliant

### **10.9. Comparison of HHR Data with Register Data (Clause 8(9) of Schedule 10.6)**

#### **Code reference**

*Clause 8(9) of Schedule 10.6*

#### **Code related audit information**

*When raw meter data can only be obtained from the MEP’s back office, the MEP must ensure that each electronic interrogation that retrieves half-hour metering information compares the information against the increment of the metering installations accumulating meter registers for the same period.*

#### **Audit observation**

The sum-check process and associated reporting was examined.

#### **Audit commentary**

Sum-check validation occurs daily and is based on midnight-to-midnight NZST. The “fail” setting is 1 kWh, and all trading periods must be present for a pass to occur.

The Code requires additional practices and reporting from 1 February 2021, specifically: If an electronic interrogation is incomplete (missing register or missing intervals), Clause 8(11) of Schedule 10.6 applies, which is the requirement to complete an interrogation within the lesser of 30 days or 25% of the maximum interrogation cycle. If the interrogation is successful before 30 days or 25% of the maximum interrogation cycle, sum-check can be performed for the period the data had been incomplete. For example, if there is a successful interrogation on day 1 but the next successful interrogation (100% complete data including the register reading), is on day 5, sum-check can occur for a 5-day period. It also seems that if a sum-check is not performed for 30 days or 25% of the maximum interrogation cycle, the AMI flag must be changed to “N”. With the flag set to “N”, certification is not cancelled, because the services access interface changes from remote to local once the flag changes from “Y” to “N”, and this clause only relates to installations where the services access interface is remote.

Intellihub implemented new processes and reporting on the 5<sup>th</sup> of July to meet the new code requirements with regard to managing the AMI flag within the lesser of 30 days or 25% of the maximum interrogation cycle and investigating interrogation failures. The most recent reporting identified 863 meters which had failed sum-checks, these were all prior to the implementation of the new processes on the 5<sup>th</sup> of July. Intellihub advised that there are approximately 10 failures per day, some are investigated and resolved, and the remainder have certification cancelled.

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 10.9 With: Clause 8(9) of Schedule 10.6  From: 01-Aug-20 To: 08-Jul-21	863 meters failed sum-check.  Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement.  The impact on settlement and participants is minor; therefore, the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status

Intellihub now has a daily sum-check process in place that is compliant with the 1 February rule changes. There was insufficient time for this change to be implemented between the rule changes being announced 15 December 2020 and them taking effect on 1 February 2021. As a result, sum check failures arising from 1 February 2021 to 4 July 2021 for 863 ICP's were not investigated within the required 3 business days. Given that any genuine meter faults will be picked up and rectified through our compliant sum check process going forward, and in most cases field work is not beneficial to the consumer, Intellihub does not intend to take any retrospective action with regards to these failures and will instead be submitting a self-breach.	30/09/2021	Identified
<b>Preventative actions taken to ensure no further issues will occur</b>	<b>Completion date</b>	
Intellihub has implemented a fully compliant and audited daily sum-check process from 5 July 2021 to manage sum check failures in accordance with 1 February EA Code changes.	Completed	

#### 10.10. Correction of Raw Meter Data (Clause 10.48(2),(3))

##### Code reference

*Clause 10.48(2),(3)*

##### Code related audit information

*If the MEP is notified of a question or request for clarification in accordance with clause 10.48(1), the MEP must, within 10 business days:*

- *respond in detail to the questions or requests for clarification,*
- *advise the reconciliation participant responsible for providing submission information for the POC of the correction factors to apply and period the factors should apply to.*

##### Audit observation

Intellihub has a process in place to achieve compliance with this requirement. No specific examples were available to examine.

##### Audit commentary

Intellihub has a process in place to achieve compliance with this requirement. No specific examples were available to examine.

##### Audit outcome

Compliant

#### 10.11. Raw meter data and compensation factors (Clause 8(10) of Schedule 10.6)

##### Code reference

*Clause 8(10) of Schedule 10.6*

##### Code related audit information

*The MEP must not apply the compensation factor recorded in the registry to raw meter data downloaded as part of the interrogation of the metering installation.*

#### **Audit observation**

I checked whether Intellihub was applying compensation factors to raw meter data.

#### **Audit commentary**

Intellihub is not applying compensation factors to raw meter data.

#### **Audit outcome**

Compliant

### **10.12. Investigation of AMI interrogation failures (Clause 8(11), 8(12) and 8(13) of Schedule 10.6)**

#### **Code reference**

*Clause 8(11), 8(12) and 8(13) of Schedule 10.6*

#### **Code related audit information**

*If an interrogation does not download all raw meter data, the MEP must investigate the registry why or update the registry to show the meter is no longer AMI.*

*If the MEP chooses to investigate the reasons for the failure the MEP has no more than 30 days or 25% of the maximum interrogation cycle, from the date of the last successful interrogation (whichever is shorter).*

*If the MEP does not restore communications within this time or determines they will be unable to meet this timeframe they must update the registry to show the meter is no longer AMI.*

#### **Audit observation**

I checked whether Intellihub had reporting in place for installations not interrogated within 30 days or 25% of the maximum interrogation cycle.

#### **Audit commentary**

I observed the process implemented by Intellihub to meet the new code requirements which require that a successful interrogation must occur within the lesser of 30 days or 25% of the maximum interrogation cycle. A “missing data export” report identifies meters where there are gaps in either the interval or register data. These are followed up to attempt to retrieve the missing data from the meter or update the AMI flag to “N” on the registry or certification is cancelled and a recertification job is created. Whilst the current processes achieve compliance, Intellihub was not able to put the reporting required to achieve compliance in place prior to the 1 February 2021 code changes. I have recorded non-compliance for the period prior to reporting being put in place as Intellihub were unable to identify meters requiring a change of the AMI flag to “N” or cancellation of certification. I was unable to identify the number of meters affected.

#### **Audit outcome**

Non-compliant

Non-compliance	Description
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<p>Audit Ref: 10.12</p> <p>With: Clause 8(11), 8(12) and 8(13) of Schedule 10.6</p> <p>From: 01-Feb-21</p> <p>To: 20-May-21</p>	<p>Reporting and processes not in place to resolve interrogation issues or change the AMI flag to "N" at 25% of the MIC or 30 days.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: None</p> <p>Controls: Strong</p> <p>Breach risk rating: 1</p>		
<b>Audit risk rating</b>	<b>Rationale for audit risk rating</b>		
<b>Low</b>	<p>The controls are recorded as strong as reporting had been put in place at the time of the audit.</p> <p>The impact on settlement and participants is minor; therefore, the audit risk rating is low.</p>		
<b>Actions taken to resolve the issue</b>		<b>Completion date</b>	<b>Remedial action status</b>
Code changes regarding AMI interrogation failures came into effect 1 February 2021. Intellihub had to carry out significant changes to our processes and systems to achieve compliance, and there was not sufficient time available to complete this work before the code changes came into effect. As a result, Intellihub was unable to comply with the 1 February 2021 rule changes for AMI interrogation failures until our implementation of the change was complete.		Completed	Cleared
<b>Preventative actions taken to ensure no further issues will occur</b>		<b>Completion date</b>	
Intellihub implemented fully compliant and audited daily process from 21 June 2021 to manage AMI Flag updates in accordance with 1st February EA Code changes.		Completed	



## CONCLUSION

This audit found 13 non-compliances and makes three recommendations. Overall compliance continues to be high considering the increase in the number of meters installed.

Changes to the Code that were announced on 15<sup>th</sup> December 2020 and implemented on 1st February 2021 have impacted on compliance in four sections of this report. The changes have added new requirements for ATHs in the areas of testing, certification of measuring transformers and recording of each available services access interface. The ATHs have not all been able to implement new processes to meet the new requirements which has caused non-compliance for the Intellihub MEP.

Intellihub has implemented new processes and reporting to meet the new requirements as they relate to data collection, particularly the maximum interrogation cycle and sum-check requirements, but these changes were not able to be implemented by 1<sup>st</sup> February 2021.

My checks of a sample of 49 certification reports found they contained a high number of errors. I have made two recommendations to improve controls in relation to the monitoring of ATH practices and records.

The other main areas of non-compliance related to late updating of registry information and ICPs with cancelled certification.

The date of the next audit is determined by the Electricity Authority and is dependent on the level of compliance during this audit. The audit risk rating of 23 indicates that the next audit be undertaken in six months. I recommend an audit period of 12 months to reflect the changes made to the data collection processes which now meet the new code requirements.

## PARTICIPANT RESPONSE

### Participant Comments

28 Changes to Part 10 of the Code were announced by the Electricity Authority on 15th December 2020, with an expected implementation date of 1st February 2021. These changes introduced significant impacts on Intellihub and our customers. In the past the Authority has provided advance warning where code changes impact participants significantly. In this instance code changes which had a significant impact on participants were announced with only 27 working days' notice (excluding the Christmas-New Year period). In effect this left insufficient time for Intellihub and ATH's providing services to achieve full compliance prior to code changes taking effect.

Intellihub has responded by taking a pragmatic approach, assigning specific resources and working systematically through the Code changes with the objective of complying in full with all of the new clauses.

The Intellihub NZ Ltd (IHUB) MEP is taking steps to ensure that ATHs providing services to Intellihub will correctly record all available services access interfaces within Metering Installation Certification Reports. Intellihub has successfully implemented reporting to identify exceptions to the check sum tolerance limits, as well as ensuring that Metering Installations which reach 25% of their Maximum Interrogation cycle are updated to AMI = N.

The Intellihub ATH successfully developed and implemented a burden installation procedure, which is now in use by the majority of ATH's certifying metering installations for the Intellihub MEP. Intellihub agrees with the finding that one ICP requires additional burden and recertification. The Intellihub MEP, as well as the applicable ATH has taken away important learnings from this exception and has updated their work instruction documentation and practices accordingly.

The Intellihub ATH and the Intellihub MEP have jointly implemented a new process for the creation and checking of Metering Installation Certification reports. The objective of this change is to improve efficiency, accuracy and completeness of information.

In addition, Intellihub commits to implementing sample checks of certification reports from all ATH's performing certification activity for both the IHUB and MTRX MEP's.

Intellihub intends to seek further clarification from the Authority as to whether a prevailing load test is required when recertifying a metering installation (and no meter is replaced) and the installation certification expiry date remains unchanged.

Intellihub is acutely aware of the requirement to ensure timely updates of Registry information and has several initiatives underway to improve performance in this area over coming months.