EPB Register

Landmark Service

# Background

This document is based on a three day visit to Landmark offices in May 2016. The purpose of the visit was to gain an understanding of the service Landmark provides for the management of EPB certificate lodgements on behalf of DCLG and look at the way they have designed and built the supporting technical platform.

# Service Overview

Landmark operate the EPB Register platform and service for DCLG under a concession contract. The service can be broken down into several distinct categories.

* Technology Platform
* development
* maintenance
* improvement
* DR/Service Continuity
* Service Management
* DCLG Client Management
* Use Help Desk
* User Group Co-ordination
* Revenue Management/Billing

Each of these categories is addressed in this document.

# Functional Services Supported

Landmark developed the service offered via their technical platform from the DCLG Business Process Models. See appendix A - Business Process Model for Dwellings and appendix B – Business Process Model for Non-Dwellings.

Broadly, Landmark services interface with:

* Lodgements
* Energy Assessor Registration
* Find and Instruct an Assessor
* Address and Property Searches
* Retrieve Data
* Search and Retrieve Data – Public Access
* Maintain CIP Data

# Technology Platform

## 4.1 Development

The principal component of the technical offering is the register database. Land mark developed this in Oracle. Over the life of the contract there have been several version upgrades applied. However, essentially the architecture of the register is still Oracle.

**NOTE: There is value in looking at different (newer) database products. There may be options for more efficient and/or flexibly DP environments.**

Networking is based on Cisco hardware. This is, if not industry standard, certainly a market leader and is a reliable platform. It is at the higher end of the cost spectrum.

Landmark have applied a number of major upgrades to the application over the contract. The drivers for these have been split between user requests, Directive changes and Landmark decisions of technology**. Note: of these Landmark decisions is the only troubling driver. They may have been making changes which were not actually mission critical.**

## 4.2 Maintenance

Landmark have considerable expertise in the technical platform due to a low turnover in staff. A number of their technicians have been with the company since the early days of the Register. There does not seem to be a dedicated technical support team. Rather, there is a shared resource approach with appropriate skill sets being deployed from the Landmark Technical Department as and when necessary. **Note: This is a standard approach for companies like Landmark. The problem it causes is that it is difficult for a client to know if they are paying for the resource they are being billed for because they are actually working on relevant work or just not billable to any other client during a specific period. The position view is that the client should not be paying for resource as a fixed cost.**

## 4.3 Improvement

Changes to the system are handled by an appropriate change control process. This follows change request, estimate, iterations of functional understanding, approval and source change. This is followed by a standard test and release process. **Note: Landmark have a particularly robust set of test environments. In fact any change goes through three distinct environments. This approach is good but possibly over-kill for the service DCLG needs. It might be a challenge to get another supplier to provide something as complex.**

## 4.4 DR/Service Continuity

The Register Database runs a real time full mirroring backup. This is split between their primary datacentre and a backup site in Wales See appendix C – Technical Infrastructure Schematic. The environments created by Landmark do provide the level of fail-over and continuity that would be expected for the service. The system also provides robust historic data protection. **Note: The support of historic data will need to be considered closely in the upcoming procurement and the Landmark solution is extremely resilient and we should be looking for something as good from a new supplier.**

# Service Management

## 5.1 DCLG Client Management

Landmark provides staff at appropriate levels to interface with DCLG colleagues on all matters relating to the running of the service. Typically, these resources are at the following levels and roles:

* Director
* Account Manager
* Finance
* Technical Authority

Landmark publish the billing rates for each type of resource deployed.

## 5.2 User Help Desk

Landmark runs a help desk to support users, resolve issues, answer questions and in need record and escalate faults for correction. This is not a dedicated team. The same help desk supports all Landmark customers. There are help desk staff will detailed and specific EPB Register knowledge but these resources can also deal with other customer user groups as part of their function. Landmark calculate DCLG related support on an average FTE number. **Note: Without sitting with the help desk for a long period of time it would be difficult to determine if Landmark’s FTE calculation is correct or not.**

The Landmark Helpdesk also offers a service that when users call with an addressing query, the Helpdesk will carry out an address update on the database**. Note: This seems a odd thing to do. Seems to be a historic type of assistance that got embedded over time.**

## 5.3 User Group Co-ordination

Landmark organise and run a number of user group forums. These are regular events through the year. Note: By doing this Landmark has a lot of influence over the user base. **Note: Note sure DCLG should want a future supplier to own this activity.**

## 5.4 Revenue Management/Billing

The ability to record and track lodgement fees and report on the revenue stream created by these fees.

Carry out billing activities to the client. A Landmark process rather that a Register specific requirement

# Conclusions

Landmark have a mature and service offering in the EPB Register. There is very little that can be faulted from a service offering point of view. The exceptions being around reporting on KPIs and SLAs to DCLG. I think that historically the contract was too loose and was open to interpretation. Landmark took advantage of this by interpreting in the way that gave them advantage. They are now loath to accept any re-interpretation.

Likewise, they have been provided with a financial safety net that allows them to make financial call on DCLG. Any new commercial arrangement with a supplier needs to be explicit about the financial arrangement in the contract.

My other observations are that the service offered has become bloated over the years and could, in a new supplier relationship, be streamlined. Also the basic database architecture has become tired over time, with no incentive for the current supplier to invest in new technology and skills.

Appendix A – Business Process Model for Dwellings

*Energy Performance of Buildings Directive*

*Business Process Model for Dwellings*

May 2009

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| **1 Introduction** |

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| **Important Note**  The Home Condition Report (HCR) and Energy Performance Certificate (EPC) are separate documents which are governed by Home Information Pack Regulations 2007 and The Energy Performance of Buildings (Certificates and inspections) (England and Wales) Regulations 2007 respectively. It is important to note that for the purposes of this document, the following caveats apply:  Except where explicitly indicated otherwise within the context of the business processes a ‘Scheme’ includes a Certification Scheme approved under the Home Information Pack Regulations 2007 and an Accreditation Scheme approved under The Energy Performance of Buildings (Certificates and inspections) (England and Wales) Regulations 2007.  Except where one or other report is explicitly mentioned it should be assumed that any reference to ‘the report’ or ‘a report’ includes Energy Performance Certificates and Home Condition Reports.  Except where either Home Inspectors or Domestic Energy Assessors are explicitly mentioned, it should be assumed that any reference to ‘Inspector’ or ‘Inspectors’ includes Domestic Energy Assessors as well as Home Inspectors and visa-versa.  The Report Register is the Home Condition Report Register and Domestic Energy Performance Certificate Register mentioned in the respective regulations. |

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| 1.1 Purpose of this document |

This document describes the key business process requirements that need to be provided by the Scheme or Report Register to meet the relevant Business Standards. This document has been previously referenced and archived as *‘Certification Scheme Standards Part 3: Technical Standards Business Process Model’*

The processes described by this document are:

**RAW01000** **Report Production**

This process illustrates the process an Assessor/Inspector will go through to produce a Report, excluding registration, which is shown in process maps RAW02000. The process starts from an Assessor/Inspector receiving instructions to complete a report and progresses to the Assessor/Inspector knowing whether the report has been registered.

**RAW02000 Report Registration**

As part of the Report Production process the Scheme is responsible for registering the Report on behalf of the Assessor/Inspector. This process describes the activities required to achieve that.

**RAW05000 Change HCR Status**

Where the Regulations and Technical Standards permit, the status of an HCR may change during its lifecycle to indicate the usability and reliability of the report.

**RAW06000 Change of HCR Access Restrictions Process Model**

A seller could decide after an HCR has been prepared and lodged in the Report Register that they wish change the access restrictions set on the HCR (not EPC). As a result of this decision, the Home Inspector who produced the HCR may change the access restrictions.

**RAW07000 Retrieve Report**

Access to data contained in the Report Register held by the Report Register Operator will be determined by the Regulations. This process describes the processing of a request to retrieve a Report and a number of different variations of the response.

**RAW08000 Address & Property Search**

As part of the Report Production process (RAW01000) an Assessor/Inspector needs to identify the address and Unique Property Reference Number (UPRN) of the property they are going to inspect. This Business Process describes the main steps in that activity.

**RAW10000 Register Inspector**

An Applicant Inspector may make an application for registration to one or more Scheme(s). To do this, Inspectors will be required to satisfy the Scheme that they meet the National Occupational Standards for Home Inspectors or Domestic Energy Assessors respectively and are ‘fit and proper’ persons.

**RAW11000 Inspector Change of Status**

An Assessor/Inspector may potentially be certified with more than one Scheme. When a significant change in the Assessor/Inspector status occurs due to potential disciplinary reasons then a Scheme needs to notify other Schemes of that change. This Business Process describes that activity.

**RAW12000 Search Inspector Register**

The Inspector Register is accessible by the General Public via a web-site managed by the Report Register Operator.

**RAW14000 Inspector Register Update**

To support the Search Inspector Register process (RAW12000) each Scheme will be required to provide basic details of each Inspector in order to update the central Inspector Register each day.

**RAW 18000 Status Change of EPC**

To enable the status of an EPC to be changed by a Scheme, when a report needs to be made unavailable for download. These status changes are not the same as for HCRs.

**RAW 20000 Local Authority Search by Address**

Process to support Local Authority and additional CLG approved Enforcement users. Provides a unique portal which allows these users to search for reports by RRN, by address and by Assessor/Inspector.

Within each section the business process describes the activities that are performed during the process, however message descriptions are only defined where it is important in the implementation of the Technical Standards that the data being processed is firmly established.

In addition, the process diagrams only show the natural order of the process, and decision points are only shown where the decision is of significant importance to the business process. In particular, it is assumed that each defined sub-process finishes successfully and, in the event that an undocumented error occurs, the overall process stops until the error is corrected.

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| **2 Assumptions** |

There are a number of working assumptions made throughout this document, which are summarised here:

The loading of new reports is relatively predictable. Once ‘Entered’ a Report cannot be modified, so there are no ‘modify’ transactions. Incorrect or invalid HCRs can be ‘cancelled’ (see HCR Change of Registered Status - RAW05000) and if appropriate; a corrected report is separately registered.

Production of a report does not require or establish ownership of the property identified in the report. Ownership is established with ***HM Land Registry*** not the Report Register.

The transaction volume may be affected by the transition to a new home buying process in the early period of operation. Similarly the fluctuations in the housing market may affect volumes and the extent and speed of the market-led take up of voluntary full-length Reports.

The EPCs for other than marketed non-commercial properties is out of scope.

The status of an EPC or HCR, once entered, can only be altered with an approval from the Certification Scheme. Please note that this is an alteration of the status of the report, not changes to the report data.

Any multi-language capability is restricted to the English and Welsh languages and only applies to textual strings[[1]](#footnote-1). There is no requirement to render numbers, etc. with different formatting patterns depending on the viewer. For properties in England the report is always in English, however in Wales it may be in English or Welsh at the discretion of the seller.

It is not assumed that any commercial database software is used to provide the solution to the requirements but it is assumed that the data storage solution will be a managed environment with pre-defined processes for inserting data into that managed environment. It is equally assumed that these processes can, and indeed will, fail at some inconvenient point in time.

A newly certified or accredited Assessor/Inspector will not be producing reports on the day that they become certificated or accredited as the details of their certification or accreditation will be in the post (or whatever delivery mechanism is used to courier it to them). Therefore changes to the local Inspector Registers only need to be accurate up to the previous day.

The rationale for each assumption is discussed at the point that it is relevant.

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| **3 Functional Roles** |

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| 3.1 Certification Scheme or Accreditation Scheme |

The Scheme is the ‘regulatory’ body responsible for regulating the activities of the Home Inspectors or Energy Assessors.

A Scheme will carry out certain primary functions in accordance with the standards, focused around certifying, managing and regulating Assessors/Inspectors and registering Reports.

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| 3.2 Home Inspector |

A Home Inspector is a person certified by a Certification Scheme – that is that they exist on the Home Inspector Register – as being qualified to carry out a Home Inspection and produce a Report.

The criteria for membership are laid down in the standards and it is the responsibility of the Certification Scheme to carry out sufficient checks to ensure those criteria are adhered to.

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| 3.3 Domestic Energy Assessor |

A Domestic Energy Assessor is an individual who is a member of an approved Accreditation Scheme by virtue of his/her technical and other personal skills and can produce and issue Energy Performance Certificates for dwellings in an acceptably independent manner.

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| 3.4 On Construction Domestic Energy Assessor |

An On Construction Domestic Energy Assessor is an individual who is a member of an approved Accreditation Scheme by virtue of his/her technical and other personal skills and can produce and issue SAP Energy Performance Certificates for dwellings in an acceptably independent manner.

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| 3.5 Report Register (Operator) |

The Report Register is the central repository of all Home Condition Reports and Energy Performance Certifications produced by a Home Inspector and Energy Assessor, respectively.

It also provides a central point of retrieval for any published Report.

The Report Register Operator runs the Report Register for and on behalf of the Department for Communities and Local Government (the Department) and is synonymous with the Report Register.

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| 3.6 Mortgage Lender |

A Mortgage Lender is an organisation that may lend money to the buyer for the purpose of purchasing the property.

As part of this decision-making the Mortgage Lender may use an Automated Valuation Model (AVM) to value the property and requires access to the underlying data in the Home Condition Report in order to complete this valuation.

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| 3.7 General Public |

The General Public are the set of anonymous users that may commission an Assessor/Inspector to produce a Report or retrieve a Report PDF from the Report Register using the Report Reference Number (RRN) they have been given by the Report Owner.

The General Public includes buyers, sellers and their authorised agents including HIP Providers and Estate Agents.

In different contexts within the Business Processes, any of these labels may be used to identify the General Public.

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| 3.8 Local Authority Enforcement User |

Local Authority Enforcement Users comprise Trading Standards Officers and Building Control Officers requiring access to the Report Registers in order to perform their monitoring duties. These are Registered Users who require the facility to search for HCRs and Energy Performance Certificates by property address. These users also require search functionality provided to the General Public (i.e. search property by RRN, search Inspector Register).

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| **4 Key Business Processes** |

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| 4.1 Report Production (RAW01000) |

**4.1.1 Context & Overview**

The primary purpose of an Assessor/Inspector is to produce a Report for inclusion in the Home Information Pack.

This Business Process describes the high-level work-flow carried out by the Assessor/Inspector and Scheme in producing a Report commissioned by a seller. It is provided for clarity, though no defined messages are present in the process.

**4.1.2 Functional Description**

The high-level Report Production process is:

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| Fig 01000 |

The steps in the process are:

01000 The seller commissions a report to be produced.

In this context the seller is any party marketing a property with the intention of selling it. As well as the owner of the property, this may also include any Estate Agent or Home Information Pack Provider or any other agent of the seller, acting on the seller’s instructions.

There are a number of established industry models for how the Assessor/Inspector receives the instruction, so this is outside the scope of the Standards.

01010 Prior to arranging and producing the Report, the Assessor/Inspector finds and locates the Address of the Property via the *‘Property & Addresses Lookup’* process outlined in Validate Property UPRN & Address (RAW15000).

01020 The Home Inspector carries out the inspection in line with the instructions and guidance described in the *Inspectors Reporting Requirements*. Domestic Energy Assessors carry out the inspection in line with the instructions and guidance described in the *Minimum Requirements for Energy Assessors*.

01030 Having completed the Report, the Assessor/Inspector submits the Report data to the Scheme for registration.

The Assessor/Inspector may submit just the XML ‘output’ (formatted calculated data) data for the PDF to be generated by the Scheme or both the output data and a completed PDF, depending on the services provided by the Scheme and support for third party Report Software Vendors. During lodgement, both the output data and the PDF will always be lodged together.

For New Build and other SAP reports, the lodgement will also include XML ‘input’ (formatted collected) data. The XML input data can be retrieved for dwelling re-assessment purposes; the associated business processes however are outside the scope of this document as the XML input data is retrieved via a web service available to Schemes. The lodgement for RdSAP reports may optionally include XML input (formatted or unformatted) data.

The exact interfaces provided are dependent on the Scheme but must, as a minimum, include the data required to carry out the Report Registration (step 01050).

01050 The Scheme registers the Report in the Report Register.

See Report Registration (RAW02000) for details of this process.

01060 **Decision:** The Assessor/Inspector is informed whether the Report Registration was successful or not. If not successful, then the Assessor/Inspector should correct the report, otherwise the final Report cannot be lodged into the Report Register and therefore cannot be delivered to the seller.

01070 If the Report Registration process is unsuccessful then the Assessor/Inspector should correct the Report in line with the errors that are reported back to the Assessor/Inspector by the Scheme.

Once corrected the Report is resubmitted to the Scheme for registration.

01100 **Exit:** The completed report is delivered to the seller.

The Assessor or Inspector may either deliver a copy of the actual Report or may just give the seller the RRN and the seller can retrieve the finished report from the Report Register. See Retrieve Report (RAW07000) for details of the Report Retrieval process.

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| 4.2 Report Registration (RAW02000) |

**4.2.1 Context & Overview**

The Report Registration process is one of the core services required in the Report Production process.

As defined in the Energy Performance of Buildings Regulations, Housing Act 2004 and Home Information Pack Regulations, a Register of Reports is to be maintained for all EPCs and HCRs produced by a Domestic Energy Assessor or Home Inspector. Until the Report is registered in the Report Register it cannot be regarded as a Report and it is the existence of the report in the Report Register that is the means of validating its authenticity.

In addition, with the aim of building trust in the Report, and quality of the Assessors and Inspectors that produce them, each Scheme has responsibility for validating the data collected by the Assessor or Inspector during the inspection and for generating the Report from the collected data.

**4.2.2 Functional Description**

The high-level Report Registration process is:

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| Fig 02000 |

The key steps in the process are:

02000 The Assessor or Inspector sends a request to the Scheme to register a Report that they have produced.

The exact format of the message received is at the discretion of the Scheme but will be using a standard message specification produced by each Scheme based on its own published service.

In some cases the request will just contain the underlying data used to produce the report and in other cases may also optionally include a Report PDF generated by the Assessor or Inspector using software approved by the Scheme.

In both cases the request message must be conformant to the Report XML Data message required for lodgement in the Report Register in order for the Scheme to generate that message.

02010 **Validate & Format Report**

The Scheme validates the Report data and, depending on whether the Assessor or Inspector has submitted a completed Report, generates the Report.

Validate Report criteria includes:

Check Assessor/Inspector is a member of the Scheme.

Check insurance details for the Professional Indemnity Insurance covering the Report are complete. There is a legislative requirement that the Report is covered by adequate indemnity insurance. This will be checked on individual lodgement as the details may change on a report-by-report basis.

Company name is completed on the report.

Validate that the Report data conforms to the definitions recorded in the Data Model (see *Report Data Model* and the *XML Schema Definitions* derived from it).

Validate that for New Build and other SAP reports, the Report data includes the XML input data.

Generate the RRN as defined in Appendix C – Generation of Report Reference Number

Check that the RRN is constructed correctly (i.e. the UPRN in the RRN matches the UPRN in the XML request message, and the inspection date in the RRN matches the report inspection date).

* Validate that the Report data in the XML request message matches the report type (HCR, RdSAP EPC, SAP EPC).
* Validate that lodgements for Scotland and Northern Ireland addresses are not accepted by the Report Register Operator and that UPRNs are not generated for such lodgements.
* Validate that the Assessor accreditation date precedes the EPC lodgement date
* Validate that a number of range checks are satisfied for XML input and output data in the XML request message

Generation of the Reports from the XML data is carried out using the transformations defined in the ‘Transformation Rules and Report Look and Feel’ documents for the respective reports.

In the case of correcting and resubmitting a previously lodged HCR, the previously lodged report must first be cancelled by the Certification Scheme prior to lodging the corrected report. It is the Certification Scheme’s responsibility to ensure that this cancellation takes place.

Note: EPCs cannot be cancelled – see EPC Change of Registered Status (RAW18000).

02020 **Lodge Report**

The Scheme creates a Report Create Request message (defined in ConditionReportCreateRequest\_1.xsd) which is passed to the Report Register to lodge the Report in the Report Register.

At initial lodgement a Report must have a Report-Status of ‘Entered’ (see Report State-chart) and any other status is invalid. A lodgement fee can only be charged for an ‘Entered’ report.

On completion of the Report lodgement process the Report Register provides a Report Create Response (defined in ConditionReportCreateResponse\_1.xsd).

02030 **Decision:** On receipt of the response if successful then go to 02050 else go to 02040.

If the lodgement is not successful then the Scheme will receive an ‘Exception List’ in the Report Create Response message that details what was wrong with the report.

02040 **Exit:** If Report Lodgement is unsuccessful then the Scheme sends the Assessor/Inspector a ‘Failed Registration’ message from the Scheme informing them of what is wrong with the Report and the process completes.

02050 **Exit:** If Report Lodgement is successful then the Assessor/Inspector receives a ‘Successful Registration’ message from the Scheme and the process completes.

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| 4.3  Change HCR Status (RAW16000 & RAW05000) |

**4.3.1 Context & Overview**

The status of an HCR may change during its lifecycle to indicate the usability and reliability of the HCR. Some possible scenarios for this are:

The HCR is flawed and the Home Inspector and seller mutually agree that the HCR should be cancelled and a more accurate HCR is subsequently registered.

A complaint is received by the Certification Scheme who request that the HCR is placed ‘Under Appeal’ whilst the complaint is investigated.

A complaint about the content of the HCR is rejected by the Certification Scheme Consumer Complaints process (see ‘*Certification Scheme Standards Part 1*’) and the status is amended back to ‘Registered’.

In all of these cases it is necessary to update the status of the HCR is recorded in the Report Register.

Only the Certification Scheme that lodged the HCR can change the Report Status. In the event of a merger between two Certification Schemes the resulting Certification Scheme is regarded as being the Certification Scheme that lodged all prior reports.

**4.3.2 Functional Description**

Once lodged, the status of an HCR can only be altered with approval from the Certification Scheme. Consequently all requests will be sent to the Report Register by the Certification Scheme that certified the Home Inspector who submitted the Report.

On receiving confirmation that the status of an HCR has been change the Certification Scheme is responsible for informing the Home Inspector and the HCR Supplier of the change of HCR status. The method of notification is out of scope.

The overview of the Home Condition Report Complaints process is:

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| Fig 16000 |

The steps in the process are:

16000 A complaint is received by the Certification Scheme regarding a particular HCR.

16010 **Decision:** If the complaint is contested then:

A contested complaint is where the Inspector that produced the HCR has not already agreed that the HCR is inaccurate or incomplete.

If uncontested, then go to the report is cancelled (step 16020) otherwise HCR status is changed to Under Appeal (step 16030).

16020 Certification Scheme sends Report Change Status request (see HCR Change of Registered Status - RAW05000) to update report status to ‘Cancelled’.

16030 Certification Scheme sends Report Change Status request (see HCR Change of Registered Status - RAW05000) to update report status to ‘Under Appeal’.

16040 The Certification Scheme investigates the complaint to evaluate whether the complaint is reasonable. This process is internal to the Certification Scheme and outside the scope of the Standards.

16050 **Decision:** After investigating the complaint the Certification Scheme Complaints and Disciplinary process decides whether the complaint is upheld as valid or not.

If the complaint is upheld then the HCR is cancelled (step 16060) otherwise the status is changed back to Entered (step 16070).

16060 Certification Scheme sends Report Change Status request (see HCR Change of Registered Status - RAW05000) to update report status to ‘Cancelled’.

16070 Certification Scheme sends Report Change Status request (see HCR Change of Registered Status - RAW05000) to update report status to ‘Entered’.

16100 End of process.

The HCR Change Status process requires the status of the HCR in the Report Register to be updated. The high-level process is:

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| Fig 05000 |

The steps in the process are:

05000 The change of status process is initiated by the Certification Scheme.

05010 **Decision:** The Certification Scheme evaluates the request and confirms that it is a valid Status Change request as described in the Certification Scheme Business Standards.

In order to change the HCR Status the Certification Scheme that receives the request must have been the Certification Scheme that lodged the HCR.

Only the status of HCRs can be changed. A request to change an EPC should be rejected as these cannot be modified under any circumstances.

The valid Status Codes of an HCR are the statuses in the Report State-chart (see below) within the ‘Registered’ state, namely {Entered, Under Appeal, Cancelled}.

If the Change Status request is not valid then a Notification of Failure is sent to the requestor.

05015 **Exit:** If the request is not valid – for example the HCR does not exist – then a ‘Rejection’ is returned to the requestor giving the reason for the rejection and the process terminates.

05020 The Certification Scheme submits a Condition Report Change Status Request (as defined in ConditionReportChangeStatusRequest\_1.xsd) to the Report Register.

On completion of the process the Report Register provides a response (defined in ConditionReportChangeStatusResponse\_1.xsd) describing the outcome of the request.

05030 **Decision:** The Certification Scheme receives the response from the Report Register and checks whether the update was successful. If unsuccessful then a ‘Rejection’ is sent to the requestor.

05040 If the update was successful then the Certification Scheme notifies the Home Inspector that produced the HCR that the HCR Status has changed.

The mechanism by which the Home Inspector is notified, and the information that is provided, is at the discretion of the Certification Scheme (though must be auditable for Quality Assurance purposes) and outside the scope of these Standards.

05050 **Exit:** Once the Home Inspector has been notified then a ‘Success’ notification is sent to the requestor and the process terminates.

The full state-transition chart for the HCR is:

|  |
| --- |
| Fig 2 HCR State Changes |

|  |
| --- |
| 4.4  Change of HCR Access Restrictions (RAW 06000) |

**4.4.1 Context & Overview**

A seller could decide after an HCR has been prepared and lodged in the Report Register that they wish change the access restrictions set on the HCR (not EPC). As a result of this decision, the Home Inspector who produced the HCR may change the access restrictions.

Changing the access restrictions will require a change to the [Report-Header: Restricted-Access] value recorded in the Report Register. The following restrictions may be placed on the disclosure of the HCR, the Report:

• may be disclosed to any party, however not to mortgage lenders.

• may be disclosed to mortgage lenders, however not to any other party.

• may not be disclosed to any party.

If no restriction is placed on the HCR, the Report may be disclosed to any party in possession of the RRN. If the HCR may not be disclosed to any party a copy of the report can not be retrieved from the Report Register.

**Note:** Access restrictions are not permitted on EPCs.

**4.4.2 Functional Description**

Once lodged, the access restrictions of an HCR can only be altered with approval from the Seller. Consequently all requests will be made to the Home Inspector and sent to the Report Register by the Certification Scheme that certified the Home Inspector who submitted the Report.

On receiving confirmation that the access restrictions of a Report has been change the Home Inspector is responsible for informing the seller the change of access. The method of notification is out of scope.

The HCR Change Access Restrictions requires the Restricted-Access of the report in the Report Register to be updated. The high-level process is as follows:



The steps in the process are:

**06000** The change of access restriction process is initiated by the seller.

**06010** Decision: The Home Inspector evaluates the request and confirms that it is a valid access restriction change request and that the request has been made by the seller.

In order to change the access restrictions the Home Inspector that receives the request must have been the Home Inspector that lodged the report.

Only the access restrictions of HCRs can be changed. A request to change an EPC should be rejected as access restrictions do not apply to EPCs. The valid access restrictions of a Report are:

* No restriction
* Exclude mortgage lenders
* Mortgage lenders only
* No access allowed

If the access restriction change request is not valid then a Notification of Failure is sent to the requestor.

**06020** **Exit**: If the request is not valid – e.g. the Report does not exist – then a “Rejection” is returned to the requestor giving the reason for the rejection and the process terminates.

**06030** The Home Inspector submits the Change Access Request to the Certification Scheme.

**06040** **Decision**: The Certification Scheme evaluates the request and confirms that it is a valid access restriction change request and that the request has been made by the Home Inspector who lodged the HCR.

Only the access restrictions of HCRs can be changed. A request to change an EPC should be rejected as access restrictions do not apply to EPCs.

If the access restriction change request is not valid then a Notification of Failure is sent to the Home Inspector.

**06050** The Certification Scheme submits a Condition Report Change Access Status Request (as defined in ConditionReportChangeAccessRequest\_1.xsd) to the Report Register.

On completion of the process the Report Register provides a response (defined in ConditionReportChangeAccessResponse\_1.xsd) describing the outcome of the request.

**06060 Decision**: The Certification Scheme receives the response from the Report Register and checks whether the update was successful. If unsuccessful then a “Rejection” is sent to the requestor.

**06070** If the update was successful then the Certification Scheme notifies the Home Inspector that produced the Report that the access restrictions has changed.

The mechanism by which the Home Inspector is notified and the information that is provided is at the discretion of the Certification Scheme (though must be auditable for Quality Assurance purposes) and outside the scope of the Certification Scheme Technical Standards.

**06080** The Home Inspector notifies the Seller that the access restrictions have changed.

The mechanism by which the Home Inspector notifies the seller is outside the scope of the Certification Scheme Technical Standards.

**06090** **Exit**: Once the Home Inspector sends a “Success” notification to the seller the process terminates.

|  |
| --- |
| 4.5 Retrieve Report (RAW07000) |

**4.5.1 Context and Overview**

During the life of a Report there will be many interested parties that are interested in retrieving an electronic copy of the Report from the Report Register. This could be the Home Information Pack Provider, Mortgage Lender, the buyer, the seller or any of their agents.

Scenarios in which an electronic copy of the Report or the data are required might include:

A prospective buyer wants an electronic copy of a Report to check its authenticity.

A Mortgage Lender, in the process of valuing a Property, requires access to the original data used in Sections B & C of the HCR to use in Automated Valuation Model software. The RRN given to the Mortgage Lender may not be the most recent HCR – there are a number of possible reasons for this – so given a particular RRN they want any more recent HCR returned instead.

A Home Information Pack Provider in the process of assembling a Home Information Pack is required to include the most recent EPC relating to a particular Property. So given the RRN of a completed EPC, they can check it is the most recently produced EPC.

The Report Register will be the primary means for anyone with an interest in a Report to retrieve an authentic copy of the Report.

Users may retrieve reports from the Report Register either via the public website or a peer-to-peer request from another software application where the requestor has integrated the Report Retrieval process into its own IT systems.

**4.5.2 Functional Description**

The high-level process is:

|  |
| --- |
| Fig 07000 |

Note, in the above process each of the entry or exit points may be either:

a peer-to-peer request from another software application where the requestor has integrated the Report Retrieval process into its own IT systems; for example, a Mortgage Lender integrates its lending services or a HIP Provider creates its own consumer facing website, or

an interactive request entered via a public website published and managed by the Report Register as an operational service

In both cases the information received or returned is the same and is as specified in the relevant XML Message definitions.

The steps in the process are:

07000 As part of the request the User may specify the following parameters:

| **Criteria** | **Notes** |
| --- | --- |
| Report reference Number (RRN) | The full RRN of the Report.  The User is given the RRN by the seller and is the only means by which a Report may be retrieved. |
| Security Image text | The User is required to enter alphanumeric characters displayed on the web page as a distorted image. This is a security step to prevent automated bulk downloads of reports. This step only applies to Unregistered Users. |
| Response Format | Identifies the type of response the requestor wants from the service. Valid Values are:  List – Indicates that the requestor wants a list of historic reports related to the specified report rather than just retrieving that report.  PDF – Indicates that the requestor wants the PDF version of the Report returning.  Data – Indicates that the requestor, usually a Mortgage Lender, wants the XML ‘output’ (formatted calculated) data returned rather than the PDF. This option is only allowed when retrieving an HCR. For an EPC the PDF is always returned. |
|  |
| Start Date | The earliest date of any report to be included in the retrieval list where a list of related reports is returned rather than the individual report.  For an HCR the default Start Date is the previous 25 months up to the point when the request is made.  For an EPC the default Start Date is the 10 year period up to the point when the request is made. |
| Retrieve Latest | Indicates whether the requestor wants any later report to be returned instead of the specified report. This is mainly used by Mortgage Lenders to ensure that they are always basing their lending decisions on the most recent report.  For an HCR the default is to retrieve the report identified by the RRN. For an EPC the default is to retrieve the latest report.  An appropriate warning is to be provided on screen if the report retrieved is not the most recent published report. |

07010 Locate Report in Report Index.

Initial validation will be performed to ensure that the report search and retrieval request is valid.

The Report is initially located before any other processing takes place as all the information required for subsequent processing of the request is located in the [Report-Header] part of the Report data.

The Report can only be retrieved if the Report Status is ‘Published[[2]](#footnote-2)’ – all other Report statuses should be dealt with as if the report does not exist.

07020 **Decision:** If [Response-Format] is List then go to 07040 (Send Index of Reports), else go to 07030 (Retrieve Latest?).

07030 **Decision:** If [Retrieve-Latest] is Yes then go to 07050 (Identify Most Recent), else go to 07060 (Retrieve Report)

07040 A list of Reports is returned to the requestor for selecting the individual reports that they want.

The Property that the related reports are requested for is identified from the UPRN recorded against the report whose RRN is supplied as part of the request.

The summary details provided for each related Report are:

Report Reference Number (RRN)

Inspection Date

Assessor/Inspector Name

Assessor/Inspector Certificate or Accreditation Number

Access Restriction

Report Status

The list of reports should only include the same types of reports as the report identified by the RRN. That is, if the RRN references an EPC then only EPCs are included in the list of related reports.

As mentioned above in step 07000, the reports included in the list of reports should be restricted to those that have a Completion-Date after the Start Date parameter in the retrieval request. The defaults for this are:

for an HCR the default Start Date is the previous 25 months up to the point the request is made

for an EPC the default Start Date is the 10 year period up to the point the request is made

If the Report was commissioned by the seller or their agent (i.e. [Seller-Commission-Report] = ‘Y’) then related reports can be included that were also commissioned by the seller. If the Report is not commissioned by the seller ([Seller-Commission-Report] = ‘N’) then related reports cannot be included and only the requested RRN is returned.

If a peer-to-peer request is made then the response is formatted as per the Report-List choice of the *Report Retrieve Response* message (see ConditionReportRetrieveResponse\_1.xsd)

07050 Identify most recent Report.

For the given RRN identify the UPRN for the Property and search Report Register for other Reports with the same UPRN that have an Inspection-Date later than the Inspection-Date of the given Report.

If no more recent Reports exists then the given Report is the most recent Report.

NB: It is possible that the most recently registered Report is not the most recent Home Inspection which is why the Registration-Date is not used.

07060 Retrieve Report by RRN.

07070 **Decision:** If [Retrieval-Allowed?] is Yes then go to 07080 (Mortgage Lender?) else go to 07110 (Notify Failure)

Whether Report Retrieval is allowed or not is dependent on the [Report-Header: Restricted-Access] value recorded in the Report Register and the type of User that is requesting the Report. Restricted access only applies to HCRs. The following restrictions may be placed on the disclosure of the HCR, the Report:

may be disclosed to any party, however not to mortgage lenders.

may be disclosed to mortgage lenders, however not to any other party.

may not be disclosed to any party.

If no restriction is placed on the Home Condition, the Report may be disclosed to any party.

It is defined as follows:

If [Report-Header: Report-Type] = ‘Home Condition Report’

Then

If [Report-Header: Restricted-Access] is No-Restriction or not Registered-User

Then

Retrieval-Allowed is Yes;

Else if [Report-Header: Restricted-Access] is Exclude-Mortgage-Lender and Registered-User is Mortgage-Lender

Then

Retrieval-Allowed is No;

Else if [Report-Header: Restricted-Access] is Mortgage-Lender-Only and Registered-User is Mortgage-Lender

Then

Retrieval-Allowed is Yes;

Else

Retrieval-Allowed is No;

End if;

Else (an Energy Performance Certificate)

Retrieval-Allowed is Yes;

End if;

07080 **Decision:** If [Mortgage-Lender] then go to 07130 (Return Data) else go to 07120 (Return PDF).

07100 **Exit:** The response is formatted as per the Report-List choice of the *Report Retrieve Response* message (see ConditionReportRetrieveResponse\_1.xsd).

07110 **Exit:** The response is formatted as per the Exception List choice of the *Report Retrieve Response* message (see ConditionReportRetrieveResponse\_1.xsd).

07120 **Exit:** The User receives the PDF – if the request is interactive then the PDF is displayed on the website, otherwise the PDF is returned as an electronic response for the User to process further.

The response is formatted as per the PDF choice of the *Report Retrieve Response* message (see ConditionReportRetrieveResponse\_1.xsd).

If the report is not the latest report published in the Report Register for that property a warning should be provided to the consumer.

If the request is interactive then a warning message should be displayed on the screen; else if an electronic response is required then set [Latest Retrieved] flag to ‘No’.

07130 **Exit:** If the requester is a Mortgage Lender then either the Data or the PDF choice of the ConditionReportRetrieveResponse\_1.xsd response is returned depending on the [Response-Format] parameter of the request.

Some Mortgage Lenders may not necessarily have Automatic Valuation Model software so require the HCR in PDF format rather than in XML format. All requests from Mortgage-Lenders are returned as electronic responses.

If the report is not the latest report published in the Report Register for that property a warning should be provided setting [Latest Retrieved] flag to ‘No’.

|  |
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| 4.6 Address & Property Search (RAW08000) |

**4.6.1 Context & Overview**

Due to the need to relate Reports over time it is essential that each Property is consistently identified each time it is reported on.

Some scenarios where consistency is required are:

*A property may have a number of different addresses associated with it in addition to the primary or ‘official’ address; for example the street may have more than one name or the owner may have decided to give the house a name. In order to maintain consistency it is essential that all Reports relating to an individual property consistently have the correct address shown on the report.*

*Over time the identifying characteristics of a property can change; for example a Royal Mail Postcode reorganisation may result in a postcode change for the property, therefore the address of the property is time-variant.*

*A property in Wales has both English and a Welsh address and when producing a Report in one of those languages the* Assessor/*Inspector should consistently use the correct address in the relevant language.*

For all of these cases a shared central database of property & address details is required that provides Registered Users with the ability to search for properties possibly using incomplete (for example partial postcode) or incorrect (for example Street Name misspelt) addresses and retrieve the Unique Property Reference Number and address details that need to be used in the Report.

**4.6.2 Functional Description**

The high-level process is:

|  |
| --- |
| Fig 08000 |

The steps in the process are:

08000 **Enter Search Criteria**

The Assessor/Inspector enters the search criteria for the property they are searching for. The exact details of what information is entered or how the search is matched to the address and property data is outside the scope of these Standards.

As a minimum, it is expected that the search would be by Postcode and Building Name (the most popular form of search) or by partial address details for example Post-Town and Street Name, however additional facilities may be provided depending on the application used.

08010 **Search Address Database**

The Property and Address Database is searched for any matching properties.

08020 **Decision:** If multiple matches are found then go to List Potential Matches (08030), else go to Exact Match? (08050)

08030 **List Potential Matches**

The list of properties that match the search criteria are displayed on the screen for the Assessor/Inspector to be able to scroll through and possibly select the address they are looking for.

08040 **Decision:** If property is in the list then go to Extract Property Details (08090) else go to Missing Address (08070)

08050 **Decision:** If an Exact Match is found (i.e. only one Address matches the entered criteria) then go to Extract Property Details (08090), else go to No Data Found (08060).

08060 **No Data Found**

If no matches at all are made with the search criteria then a suitable error message is displayed on the screen.

08070 **Decision:** If the address is missing then go to Add Missing Address (08080), else go to Retry (08075)

08075 **Decision:** If the Assessor/Inspector chooses to retry the search then go to Enter Search Criteria (08000), else go to Exit (08110).

At this point the Assessor/Inspector has not found the property they are looking for so would normally return to the Enter Search Criteria screen to try another search; they may however abort the process until a later date for example to go back to whoever commissioned the Report to confirm that the Address details they have been given are correct.

08080 **Add Missing Address**

The Assessor/Inspector enters the details of the property they want adding to the Address and Property Database.

The first two lines of the address will be added in the header of the e-mails sent to the Assessor / Inspector or the Certification / Accreditation Scheme, confirming receipt of the add address request. In addition the Report Register will confirm to the requestor that the address has been created or rejected.

The exact details of how requests for new addresses are added to the Property and Address Database and how those addresses are verified as new Addresses are outside the scope of these Standards.

08090 **Extract Property Details**

Once added the details of the new address are returned to the Assessor/Inspector.

The format of the returned address is the five-line Address format and the UPRN as defined in the Report UML Data Model.

08100 **Return Property Details** – the Assessor/Inspector receives the details of the Property they have located and exits the process.

08110 **Exit:** The Assessor/Inspector exits the Address and Property Search without identifying the Property to be inspected.

This means that the Assessor/Inspector will not have a UPRN for the Property and therefore the Report RRN cannot be generated and the Report cannot be submitted for registration.

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| --- |
| 4.7 Register Inspector (RAW10000) |

**4.7.1 Context & Overview**

In order to practice as a Home Inspector or Domestic Energy Assessor, a person must first become a member of a Certification Scheme or Accreditation Scheme respectively.

This Business Process describes the high-level work-flow carried out by the Inspector and their Scheme. It is provided for clarity though no defined messages are present in the process.

**4.7.2 Functional Description**

The high-level process is:

|  |
| --- |
| Fig 10000 |

The steps in the process are:

01000

10010 Gain Qualification or reach National Occupational Standard requirements– the Inspector Candidate

This is an external accreditation process and details of the content or format of the training course are outside the scope of these Standards.

10020 **Apply to Scheme**

The Candidate Assessor/Inspector submits an application supplying relevant information as required by the Scheme to ensure that the Candidate Assessor/Inspector meets the relevant ‘fit & proper’ criteria.

The format of the application and extent of the information to be supplied are prescribed by the Scheme.

The Scheme may also have additional voluntary standards that require additional information to be supplied by the Candidate Assessor/Inspector.

10030 **Undertake checks**

As part of the application processing the Scheme checks the details of the application and performs checks on the Assessor/Inspector to ensure they meet the criteria as defined in the Part 1 of these Standards.

10040 **Decision:** If Assessor/Inspector is OK then go to 10050, else go to 10100.

10050 **Add to Inspector Register**

The newly certified Assessor/Inspector is added to the Scheme’s (local) Inspector Register.

10100 **Exit:** The application is rejected. The Scheme will need to provide details and conform to any requirements laid down in the Part 1 of the Standards.

Note that this rejection may result in an appeal against the decision which will be handled by the Scheme’s internal processes.

10110 **Exit:** The Assessor/Inspector receives their membership details.

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| 4.8 Inspector Change of Status (RAW11000) |

**4.8.1 Context & Overview**

Occasionally a Scheme may receive a complaint about the conduct of an Assessor/Inspector and is required to investigate the allegation. During, or as a result of, this investigation the Scheme may be required to change the Registered-Status of the Assessor/Inspector. Possible scenarios for using the Inspector Register are:

*If the allegation is a serious breach of the Inspector Code of Conduct then the Scheme may suspend the Inspector whilst any investigation is undertaken.*

*Having undertaken its investigation the Scheme concludes that no further action is required and rescinds the* Assessor/*Inspector suspension.*

*A Certification Scheme may suspend a Home Inspector for violating its local Code of Conduct.*

However, as an Assessor/Inspector may be a member of more than one Scheme, it would be necessary for the Scheme that received the complaint to notify other Schemes that the Inspector is suspended or struck off.

**4.8.2 Functional Description**

Although the actual Complaints and Disciplinary process is at the discretion of the Scheme, a typical complaints process may look like this:

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| --- |
| Fig 11000 |

At a number of key stages in the process (i.e. steps 11020, 11060 and 11090) the Assessor/Inspector Status may change and this change needs to be broadcast to other Schemes that may be interested.

There is no defined mechanism for how the Schemes inform each other of the appropriate changes in Status (an e-mail is the likely method) or what information needs to be communicated to allow the recipient Scheme to identify whether the Assessor/Inspector is one of their members.

The minimum information that needs to be communicated is:

* + - * + Assessor/Inspector Name.
        + Assessor/Inspector Certificate or Accreditation Number.
        + Assessor/Inspector Contact Details.
        + Assessor/Inspector Status Code – both the old and new Status should be provided in order to provide the correct context to the Scheme.

Reason for Change –as each Scheme may have an enhanced code of conduct over and above the minimum standards it is necessary to indicate whether the Status change is due to violating core standards or local rules.

It has also been suggested that the Assessor’s/Inspector’s qualification certificate number, as issued by the relevant awarding body, should also be provided. This should be recorded by each Scheme but it is outside the scope of the Scheme Standards to define or control.

Due to the expected low volumes of complaints received by a Scheme and the high-degree of human intervention required in dealing with complaints no electronic interface is defined for this process.

It is at the discretion of the Schemes how they implement peer-to-peer notification.

|  |
| --- |
| 4.9 Search Inspector Register (RAW12000) |

**4.9.1 Context & Overview**

Possible scenarios for using the Inspector Register are:

*A member of the General Public wants to commission a Home Condition Report as part of a Home Information Pack that they are assembling themselves, requires a list of Home Inspectors that cover the sellers locality, and potentially needs a Home Inspector qualified to inspect a particular type of unusual property.*

*A member of the General Public has the Certificate Number/Name/E-Mail Address of a Home Inspector and, for whatever reason, wants to look up further details of the Home Inspector, such as details of the Certification Scheme they are certified by.*

*When an EPC is submitted to the Report Register for registration it is required that the Energy Assessor’s details are validated to ensure the basic authenticity of the Energy Assessor i.e. that they exist, are currently accredited to produce an EPC and are currently a member of at least one Accreditation Scheme.*

*When a Scheme processes an application from a Candidate Home Inspector or Domestic Energy Assessor for certifying or accrediting through that Scheme, the Scheme is required to check whether the Home Inspector or Domestic Energy Assessor is registered with any other Scheme and, if so, that they are not ‘Struck Off’ or otherwise barred from performing a home inspection or producing an EPC.*

However, given that there are likely to be many Schemes, it is unreasonable to expect the interested party to search all the local Inspector Registers to discover the details of the relevant Inspectors.

Consequently a central Assessor/Inspector Search is maintained in the Report Register that aggregates the public information for all Assessors/Inspectors into a single Inspector Register.

**4.9.2 Functional Description**

The high-level process is:

|  |
| --- |
| Fig 12000 |

The steps in the process are:

12000

12010 **Search for Assessors/Inspectors**

Known as ‘Find Assessor / Inspector’

The search that is performed depends on the criteria specified by the User and the search functionality selected (whereby the user can search by Assessor/Inspector or find the nearest Energy Assessor).

| Criteria | Search Type | Notes |
| --- | --- | --- |
| Report Required | Exact | A pick list of report types is presented to users. This is selected before defining the location. This ensures the correct type of Assessor or Inspector is returned for the type of report required. |
| Accreditation/Certification Number | Unique | This Number is a unique identifier for the Assessor or Inspector, so should identify at most one Assessor or Inspector. |
| Name | Partial | The Assessor or Inspector Name is recorded as a structured name consisting of Forename + Surname. The user may provide either Surname only or both Forename and Surname.  The search should allow for partial names such as the leading characters of the two Name parts and ‘sounds like’ matching on the surname e.g. ‘sounds like Smith’.  The search is not case sensitive. |
| Post Town | Exact | Match all Assessors/Inspectors whose Contact-Address: Post-Town matches the given Post Town. |
| Postcode | Partial | If searching by Assessor/Inspector:   1. Match on leading parts of a postcode areas covered by the Assessor or Inspector. This can be either the Postcode Area or the Postcode Outcode.   The user may enter a full postcode, or a fragment, and the appropriate part of the Postcode is matched against the Postcode-Coverage specified by the Inspector.  If finding the nearest Energy Assessor   1. Return the nearest Energy Assessor at the top of the list with progressively the more distant Energy Assessors located further down the list. Performs a spatial search using the base location postcode for each Energy Assessor (see Inspector Register Update - RAW14000)   For both search types:  A Postcode Area covers all of the Postcode Outcodes within that Postcode Area so, for example, if an Inspector covers ‘NN’ than a search on ‘NN1’ would also include an Assessor/Inspector that specified ‘NN‘ in the results.  The search is not case insensitive. |
| Sounds Like | Exact | Enables ‘Sounds Like’ searching of Name entered (partial name) |

The criteria that do not provide a unique match may be combined into more complex searches e.g. find Home Inspectors where Postcode is NN18.

12020 **Decision:** If [Too-Many-Matches] then go to 12030 (Randomise Results), else go to 12040 (Select Matches). Too-Many-Matches occur when either:

more than **20** Assessor/Inspector records are matched by the search criteria (the Maximum Number of Matches Allowed) or…

the number of matches exceeds the value defined in [Configuration: RecordsTo Retrieve] parameter if this is less than the [Maximum Number Of Matches Allowed]

12030 **Randomise Results**

So that the same Assessor/Inspector records are not returned if there are a large number of matches the results need to be randomised to ensure that each Assessor/Inspector has equal possibility of being included in the result set irrespective of which Scheme they belong to or the order the records are stored in the Inspector Register.

The actual details of the randomisation algorithm are outside the scope of these Standards.

12040 **List Matches** – the details of the set of matching Assessors/Inspectors are retrieved from the Inspector Register and the results formatted into the Assessor/Inspector Search Response (defined in HomeInspectorSearchResponse\_1.xsd)

The details displayed on the screen are:

Assessor/Inspector Name

Certificate or Accreditation Number

1-line Address of the Assessor/Inspector Contact Details

Telephone Number

A maximum of 20 Assessor/Inspector records are displayed on the screen.

12050 **Decision:** If the User requires More-Detail about a particular Assessor/Inspector then they select the Assessor/Inspector and go to Display Inspector Details (12060) else go to (12070).

12060 **Display Inspector Details**

The full details of the Assessor/Inspector held on the Inspector Register are displayed for the user to read.

12070 **Decision:** If Another-search then go to Enter Search Criteria (12000), else go to Exit (12100).

12100 **Exit:**

Note that the search is not context sensitive (so each search is not dependent on the results of a previous search) and not repeatable (so two identical search requests may not produce the same search results).

|  |
| --- |
| 4.10 Inspector Register Update (RAW14000) |

**4.10.1 Context & Overview**

In order to support the Search Inspector Register requirements (see above) a process is required to extract details of Assessors and Inspectors from each Scheme to produce a single index of all certified Home Inspectors or accredited Energy Assessors.

The content of the Inspector Register needs to be accurate and complete, and reflect the state of all Assessors and Inspectors as at the close of business the previous day. The assumption is that a newly certified Home Inspector or accredited Energy Assessor would not be performing home inspections or energy assessments on the day that they become certified or accredited as the details of their certification or accreditation would be in the post (or whatever delivery mechanism is used to courier it to them).

**4.10.2 Functional Description**

The high-level process is:

|  |
| --- |
| Fig 14000 |

The steps in the process are:

14000

14010 **Extract Inspector Details**

At agreed regular intervals (initially intended to be towards the end of each Operational Day) the Scheme extracts the Assessor/Inspector details from their local Inspector Register and creates the Inspector Details Update Extract file.

Only currently Registered Assessors/Inspectors are extracted i.e. those with a status of ‘Active’ or ‘Suspended’ – the status of all other Assessors/Inspectors is ignored.

The details to be extracted for each Assessor/Inspector include:

Assessor/Inspector Name (Prefix, Forename, Surname, Suffix)

Certificate or Accreditation Number

Current Status

Certification-Date

Company Name

Contact Details (Address, Website, Telephone, Fax, E-Mail Address)

Scheme Details

Contact Details (As per above)

Complaints Address

Base Location postcode

Postcode-Coverage

The format of the file is as defined in HomeInspectorRegisterUpdateRequest\_1.xsd.

There may be other information in the file that is not required on the public Inspector Register – this should be ignored if present.

14020 **File Transfer** – the Inspector Details Update Extract file is transferred from the Scheme to the Report Register.

The actual mechanism used for the file transfer can be varied (e.g. e-mail, FTP, HTTP-PUT, etc.) and is as published by the Report Register Operator. However, irrespective of how it is initiated, the response conforms to the message described in HomeInspectorRegisterUpdateRequest\_1.xsd.

14030 **Consolidate Inspector Details**

The Report Register Operator receives a file from each Scheme and refreshes the Report Register. The Inspector Register is completely over-written with the new information and no historic details of the Assessor/Inspector details are kept within the Inspector Register.

For each update file an Inspector Register Update Response is created (defined in HomeInspectorRegisterUpdateResponse\_1.xsd) when the update is processed.

This process will include matching which inspector type is able to lodge which report type (HCR, RdSAP EPC, SAP EPC), where Report Data is lodged by the Scheme.

As part of the update process any errors on the Assessor/Inspector details are identified and for each Assessor/Inspector entry containing errors an Exception List is created in the Inspector Register Update Response.

If no Assessor/Inspector record contains errors then ‘Update Successful’ flag is written to the Inspector Register Update Response file.

14040 **File Transfer**

The Inspector Register Update Response file is transferred from the Report Register Operator to the Scheme that originated the Inspector Details Update Extract. This can take place at any time after the start of the following Operational Day.

The exact mechanism for carrying out the file transfer is outside the scope of these Technical Standards and will be defined separately by the Report Register Operator, however irrespective of how it is initiated, the response conforms to the message described in HomeInspectorRegisterUpdateStatusResponse\_1.xsd.

14050 **Decision:** If there are any Exceptions reported then go to 14060, else go to 14100.

Exceptions are identified by the presence of any Exception List for an Assessor/Inspector in the Inspector Register Update Response file.

14060 **Fix Errors**

If there are Exceptions recorded in the Assessor/Inspector Details Response then these need to be looked at by the Scheme and rectified. This process is likely to be manual and will depend on the internal systems developed by the Scheme. Consequently, this is outside the scope of this business process.

14100 **Exit.**

|  |
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| 4.11 Validate Property UPRN & Address (RAW15000) |

**4.11.1 Context & Overview**

As a result of identifying the property to be inspected and producing the Report, the Unique Property Reference Number and Address details need to be verified at a number of stages through the process of producing the Report[[3]](#footnote-3).

Possible scenarios where the Property details may need verifying are:

*Prior to making an inspection, which requires travelling to site, the Inspector, or their agent, verifies that the address they have been given exists and has a known UPRN.*

*Assessor*/*Inspector submits the Report (output data) to the Scheme for registration. Prior to generating and forwarding the report, the Scheme should perform some validation of the report which includes verifying that the address on the Report is the Preferred Address, as opposed to an Alias or Vanity Address.*

In all of these cases the client has a Unique Property Reference Number and an Address for a property and needs to verify that the two actually do relate to each other and, in the case of registration, that the address is the Preferred Address.

**4.11.2 Functional Description**

The overall process is:

|  |
| --- |
| Fig 15000 |

15000 The Scheme submits a Property UPRN Validation Request (defined in PropertyUPRNValidationRequest\_1.xsd) for validation against the Address & Property Database.

15010 **Validate Property Details**

For the given UPRN the Primary Address (there may be aliases) recorded against that Property matches the five-line Address contained in the request message.

The address may be in English or Welsh (as specified by the [Language] parameter in the request) and the appropriate address should be validated.

An appropriate Property UPRN Validation Response (defined in PropertyUPRNValidationResponse\_1.xsd) is returned, depending on whether or not the details are valid.

15100 **Exit:**

The actions taken by the Scheme if a ‘Failure’ response is received is out of scope. This would generally mean that the UPRN and/or Address in the Report are not valid, so the Inspector would have to correct the details and resubmit the Report. If the UPRN is invalid then, of course, the RRN is also invalid.

|  |
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| 4.12 EPC Status Change (RAW18000) |

**4.12.1 Context & Overview**

This process is to enable the status of an EPC to be changed.

This process provides two additional status options ‘under investigation’ and ‘not for issue’. This differs from those for an HCR.

‘Under investigation is to be used when there is a contested complaint and can be changed back to ‘entered’ if the complaint is rejected. If the complaint is upheld then the Scheme should change the status to ‘not for issue’. Once a report is moved to this status it makes the report unavailable for download, and cannot be moved back to any other status. If the report is uncontested, then it can be moved directly from the ‘entered’ to ‘not for issue’ status’.



**Enabled status change to EPC**

As per the EPBD regulation, once a report is entered onto the Report Register it cannot be edited or deleted.

Possible Scenarios where problems may occur:

1. An EPC is entered against the wrong UPRN on the Report Register i.e. the correct address appears on the EPC; however it is lodged against the wrong UPRN. If the User enters the RRN for a given property an EPC for a different property may be returned. The person who retrieves the report will be able to tell by the address on the EPC.
2. An EPC is referenced to the wrong address i.e. the address on EPC is incorrect and is lodged against this address. e.g. 20 The High Street instead of 19 The High Street. There is no way of being able to know where the EPC data is for the address on the report.
3. There is a software issue and the PDF file becomes corrupted. The EPC is re-lodged, however. The Report Register could return either EPC and the date of assessment on the returned reports will be the same.
4. An Assessor/Inspector is found to be producing incorrect EPCs. Even if the problem is identified, the incorrect EPC will remain in circulation and can be retrieved from the Report Register.

Therefore, functionality has been provided to indicate incorrect EPCs, mark their online status as ‘Not for issue’ and cross reference the replacement EPC.

All requests to change the report status to invalidate the report will be sent to The Report Register via the Accreditation Scheme who lodged the report. It is the Certification Scheme’s responsibility to ensure that the status change takes place. The following requirements are pertinent:

The re-issued report will be lodged separately under a different RRN from the original lodgement.

Accreditation Schemes will maintain the audit trail of why a report status has been invalidated

It will not be possible to retrieve an EPC from the Report Register that is marked as invalid.

**Details of ‘Status’ change**

Once the Report Status change is successfully registered, the requested EPC (via its RRN) status is set to ‘Not for issue’. This is an irreversible/one way change, i.e. in the event, that the EPC was ‘incorrectly’ requested by the Accreditation Scheme to be set to ‘Not for issue’, its status can then NOT be reversed.

Cross referencing of the ‘invalid’ RRN with the ‘valid’ RRN for the ‘same’ EPC:

It is assumed that under all circumstances, a ‘fresh’ EPC will be lodged against the same property and will be assigned a new RRN. In addition, the Report Register will need to create and maintain a list of all such ‘redone’ EPCs to ensure that ONLY the valid EPC is returned as a result of RRN search, for example, the User (Registered or/and Unregistered) keys in

* The RRN of the ‘Not for issue’ EPC
* The RRN of the ‘Entered’ EPC
* The Report Register in BOTH events WILL need to return only the Valid EPC (whose status is ‘Entered’), even if the requested RRN is of the ‘Not for issue’ EPC.

**4.12.2 Functional Description**



18000: The change of report status for download and access restriction process is initiated by the Accreditation Scheme.

18010: If the request is substantiated then the request will progress.

18015: If not substantiated then it will be rejected.

18020: The Accreditation Scheme submits a Condition Report Change Status Request (as defined in ConditionReportChangeStatusRequest\_1.xsd) to the Report Register.

On completion of the process the Report Register provides a response (defined in ConditionReportChangeStatusResponse\_1.xsd) describing the outcome of the request.

18030: The Accreditation Scheme receives the response from the Report Register and checks whether the update was successful. If unsuccessful then a “Rejection” is then registered for audit trail purposes and follow-up with The Report Register Operator.

18040: If the update was successful then the Accreditation Scheme registers the RRN in the audit trail of the Report that the access status has changed. Also a “Success” notification is registered and the process terminates. The Accreditation Scheme will then notify interested parties.

18050: end of process.

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| 4.13 Local Authority Search by Address (RAW20000) |

**4.13.1 Context & Overview**

This process is to provide functionality to support Trading Standards Officers and Building Control Officers in their role of enforcing the Regulations. The functionality provides the following:

* Support for Local Authority Enforcement User (Trading Standards Officer and Building Control Officer).
* Secure access to the Report Register via a new web portal using digital certificates.
* Ability for Local Authority users to search for EPCs and HCRs by RRN, by address (property number or name, street and or post code), by inspector or assessor by using inspector ID.
* Ability for a Local Authority User to select a report and download a copy of the any chosen report in PDF format.

**4.13.2 Functional Description**



20000 Start Search

20010 Enter Search Criteria

20020 **Search By Address**

The Report Register will allow the Local Authority User to search for HCRs and EPCs by property address (property no/name, street, postcode)

20050 Search criteria validity check

20060 List of matches is presented to user

20070 If search in 20050 was invalid, then an option to redefine by carrying out another search is given.

20080 The list presented in 20060 gives the option to display details in 20080.

20090 An option to request more details is available if required by the user.

20100 If the search criteria was incorrect or inappropriate, then the user can define a new set.

20110 Gives the option to retrieve a report.

20120 User selects the appropriate report.

20130 A PDF copy of the is automatically displayed

20140 gives the option to select another report.

20210 Search complete

20030 **Search by Inspector**

The Report Register will allow the Local Authority User to search for reports produced by an Inspector or Assessor

20050 Search criteria validity check

20060 List of matches is presented to user

20070 If search in 20050 was invalid, then an option to redefine by carrying out another search is given.

20080 The list presented in 20060 gives the option to display details in 20080.

20090 An option to request more details is available if required by the user.

20100 If the search criteria was incorrect or inappropriate, then the user can define a new set.

20110 Gives the option to retrieve a report.

20120 User selects the appropriate report.

20130 A PDF copy of the is automatically displayed

20140 gives the option to select another report.

20210 Search complete

20040 **Search By Report Reference Number**

The Report Register will allow the Local Authority User to search for HCRs and EPCs by RRN

20040 Input RRN – if RRN does not match user will have option to try again.

20150 User is required to agree to Terms and Conditions before being allowed to progress.

20160 Option to select ‘Y’ or ‘N’ to whether the latest report is to be downloaded. For EPCs the default value is Y and for HCRs it is ‘N’. If ‘Y’ selected the process moves to 20130 and the report is displayed.

20170 On the same web page users also have the choice between downloading the PDF or to have a list of reports available for the property. If PDF is selected then the PDF copy of the report is displayed.

20190 If a list is required, then it is appropriate to use the optional search date function.

20120 A list of available reports is presented and user selects the appropriate report.

20130 A PDF copy of the is automatically displayed

20140 gives the option to select another report.

20210 Search complete

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| 4.14 Message Summary |

The following table summarises the Message Specifications defined in relation to the Business Process Maps described in the previous sections to which they relate, as well as the XML Schema Definition that provides the definition of that message.

The Step Transition identifies the two steps in the process between which the message is passed:

**Process Step Transition XSD File**

RAW02000 02010🡺02020 ConditionReportCreateRequest\_1.xsd

02020🡺02030 ConditionReportCreateResponse\_1.xsd

RAW05000 05010🡺05020 ConditionReportChangeStatusRequest\_1.xsd

05020🡺05030 ConditionReportChangeStatusResponse\_1.xsd

RAW06000 06010🡺06090 ConditionReportChangeStatusRequest\_1.xsd

06010🡺06090 ConditionReportChangeStatusResponse\_1.xsd

RAW07000 07000🡺07010 ConditionReportRetrieveRequest\_1.xsd

07040🡺07100 ConditionReportRetrieveResponse\_1.xsd

07070🡺07110 ConditionReportRetrieveResponse\_1.xsd

07080🡺07120 ConditionReportRetrieveResponse\_1.xsd

07080🡺07130 ConditionReportRetrieveResponse\_1.xsd

RAW08000 08090🡺08100 PropertyDetailsRetrieveResponse\_1.xsd

RAW14000 14010🡺14020 HomeInspectorRegisterUpdateRequest\_1.xsd

14030🡺14040 HomeInspectorRegisterUpdateResponse\_1.xsd

RAW15000 15000🡺15010 PropertyUPRNValidationRequest\_1.xsd

15010🡺15100 PropertyUPRNValidationResponse\_1.xsd

RAW18000 18020🡺18040 ConditionReportChangeStatusRequest\_1.xsd

18020🡺18040 ConditionReportChangeStatusResponse\_1.xsd

RAW20000 20010🡺20050 ConditionReportRetrieveRequest\_1.xsd

20060🡺20080 ConditionReportRetrieveResponse\_1.xsd

20210🡺20130

20100🡺 20130 ConditionReportRetrieveResponse\_1.xsd

20190🡺20130

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| **5 Annexes** |

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| 5.1 Annex A – Scope of Data Validation |

The environment surrounding the Report Register is a highly distributed and decoupled environment, with many different commercial organisations providing services that may be invoked – in some cases anonymously – from many other services.

Consequently the environment should be regarded as low-trust and the onus is on the recipient of any message or data to ensure that what they receive is both valid and correct.

Data validation consists of:

ensuring that the message conforms to the structural definition constraints declared in the appropriate XML Schema Definition file. That is:

– all mandatory fields are populated

– cardinality constraints are enforced

– only known data-item ‘tag names’ are present – proprietary extensions to the messages are not allowed

checking that all ‘enumerated’ fields only contain values from the appropriate domain

checking non-enumerated data-items conform to the constraints of the underlying definition, including validation data type, minimum length, maximum length, data format, decimal places, etc. where appropriate; for example, if the underlying data type is declared as a date then the value must be a valid date

ensuring that any data-items containing references (or foreign keys) are valid; for example a Report contains a reference to the Inspector who prepared the report, so checks would need to be made to ensure that the Inspector is a currently practicing and is a valid Inspector by verification against the Inspector Register

any cross-field validations declared in the data model are enforced

Other optional data validation checks could be made for example recalculating the RdSAP/SAP Energy Rating to ensure that it is correctly derived from the data collected, however this type of validation is more correctly regarded as ‘Energy Assessor Quality Assurance’ and should be carried out at the point that the Energy Assessor or Report undergoes a Quality Assurance Spot-Check by the Scheme.

It will be possible that there are multiple errors in the validation of an individual message. It is expected that multiple errors are returned in a single response (see Appendix B – Exception List) rather than the user repeatedly submitting the same request and receiving a single error each time.

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| 5.2 Annex B – Exception List |

There are two significant types of exception that can occur in any application:

Platform or infrastructure level exceptions indicate that there is something wrong with the environment itself, such as a badly formed message, a service not being available, authentication failure, etc.

Application level or business level errors indicate that there is something wrong with the individual operation being performed or the service that is being requested.

The first type of exception can be considered a ‘Fatal’ exception, that when encountered aborts any further processing. They are generally raised and processed by the infrastructure components and are outside the scope of the exceptions discussed here.

The second type of exception, however, can generally be corrected by the individual user and, more significantly, in any given request there may be multiple errors that should all be reported back to the client in a single response.

As a consequence, application exceptions are returned to the client as part of the response instead of a normal ‘Content’ block of data, so the message will look something like the following (which is a standard *‘Retrieve’* type message pattern):

|  |
| --- |
| 11330 Annex B 1 |

As shown, the response contains a choice between a ‘Content’ block and an ‘Exception List’ block and the Exception List contains one or more Exceptions. The Exceptions Handling XSD data model is defined as:

|  |
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| 11330 Annex B 2 |

An Exception List is a set of one or more Exceptions with each Exception containing an Error Code, Error Message and an optional list of Data-Items to which the error relates.

The **Error Code** is a numeric code that uniquely identifies each distinct error condition that may be raised by a particular service. It is intended that error conditions that are common across multiple services should have the same error code – for example the ‘Invalid Date’ error should have the same Error Code no matter where it is raised.

The **Error Message** is then a text string of the particular error to be reported back to the client. The same Error Code can have multiple Error Messages depending on the context.

For example, a standard message pattern for reporting an invalid date may be ‘[Data Value] is not a valid date for [Field Name] – [Reason]’ which might then be realised as ‘01-Jan-1999 is not a valid date for Reporting Date’

As well as the Error Code and Error Message the individual **Data-Items** that caused the error to be raised are also returned in the message in order to provide the context of the error.

Each Data-Item consists of the Data-Item Name, the value assigned to the Data-Item and an optional Path identifying the individual Data-Item if there is more than one occurrence of the Data-Item within the input message.

For example in the ‘invalid date’ example, the Data-Item details returned would be ‘Reporting Date’ and ‘01-Jan-1999’.

An example of an Exception List would therefore look something like this:

<ExceptionList>

<Exception>

<ErrorCode>0001</ErrorCode>

<ErrorMessage>”01-Jan-1999 is not a valid date for Home-Condition-Report Completion-Date”</ErrorMessage>

<DataItemList>

<DataItem>

<ItemName>Completion-Date</ItemName>

<Value>01-Jan-1999</Value>

<!-- path is not required because there is only one Completion-Date in the HCR -->

</DataItemList>

</Exception>

<Exception>

<ErrorCode>0002</ErrorCode>

<ErrorMessage>Completion-Date must not be earlier than Inspection-Date</ErrorMessage>

<DataItemList>

<DataItem>

<ItemName>Completion-Date</ItemName>

<Value>01-Jan-1999</Value>

</DataItem>

<DataItem>

<ItemName>Inspection-Date</ItemName>

<Value>02-Jan-2006</Value>

</DataItem>

</DataItemList>

</Exception>

</ExceptionList>

Note: The same data-item – in this case Completion-Date – can appear more than once in the Exception List as a single invalid data-item may give rise to multiple error conditions. This is a natural side-effect of continuing with validation after an error is encountered rather than simply returning a failure on the first error encountered.

|  |
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| 5.3 Annex C – Generation of Report Reference Number |

There is a need to uniquely identify every HCR and EPC registered in the Report Register. This section describes the algorithmic approach to generating the Report Reference Number (RRN) together with examples. This information is also provided in ‘*Certification Scheme Standards Part 3: Technical Standards Energy Performance Certificate Transformation Rules’*

**5.3.1 Generation Algorithm**

The simplest way to perform this function is to algorithmically generate the RRN from the information contained in the report

As a minimum this should be the Natural Key[[4]](#footnote-4) to the report which is:

* Unique Property Reference Number (UPRN) – a unique 10-digit[[5]](#footnote-5) numeric identifier for each property e.g. “0023001214”. The UPRN, along with the Address, is included in the inbound message received from the Assessor[[6]](#footnote-6) and, assuming the message is pre-validated, can be used directly.
* Inspection Date – the date that the Assessor actually visited the Property to carry out the inspection (or carried out an energy assessment); as opposed to the Registration Date or the date the report was commissioned. This can be represented as a number in the form YYMMDD e.g. 21-Oct-2005 🡺 051021
* The Report Type – this is an enumerated value recorded as part of the [Report-Header] with the following values:

1 = Home Condition Report

2 = RdSAP Energy Performance Certificate

3 = SAP Energy Performance Certificate

The number is then padded to 20-digits with the following:

* Add a randomly generated 2-digit number. This gives 100 possible RRNs for a given Property | Inspection Date | Language combination and reduces the likelihood of the RRN being guessed.
* Add a checksum into the number calculated as Modulo7[[7]](#footnote-7) of the sum of the constituent digits including the random digits.

This gives us a basic 20-digit RRN made up as follows:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| P1 | P2 | P3 | P4 | P5 | P6 | P7 | P8 | P9 | P10 | D1 | D2 | D3 | D4 | D5 | D6 | R1 | R2 | T | C |

Where:

D – Digit from the 6-digit Inspection Date

P – Digit from the 10-digit UPRN

R – Random Digit

T – Digit from 1-digit Report Type

C – Checksum

In addition, to offer some protection from a 3rd party scanning for reports by looping around the possible inspection dates for a Property on the market, the RRN uniqueness is further protected by:

* Using a decimal-complement on some digits under certain conditions e.g. odd digits are transformed but even digits are left untransformed. This helps to make two sequential numbers (such as a date) look very different e.g. 060101 & 060102 becomes 060909 & 060902 or 061031 & 061101 🡪 069079, 069909.

Only numeric data-items with a high degree of similarity benefit from this, therefore it is appropriate to apply decimal-complementing to the Inspection Date digits.

* Use a digit placement transformation rather than just concatenate the components together to provide further uniqueness. In addition a different digit placement pattern is generated depending on the generated checksum, as follows:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Digit | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| C = 0 + 4 | 5 | 19 | 11 | 7 | 8 | 17 | 15 | 13 | 9 | 4 | 18 | 16 | 6 | 12 | 1 | 3 | 2 | 14 | 10 | C |
| 1 + 5 | 2 | 4 | 12 | 10 | 18 | 14 | 7 | 3 | 9 | 6 | 13 | 16 | 1 | 11 | 15 | 8 | 19 | 17 | 5 | C |
| 2 + 6 | 3 | 13 | 11 | 10 | 17 | 6 | 14 | 9 | 5 | 1 | 18 | 4 | 12 | 8 | 19 | 16 | 15 | 2 | 7 | C |
| 3 | 17 | 4 | 9 | 14 | 2 | 6 | 10 | 8 | 16 | 1 | 12 | 19 | 3 | 18 | 15 | 7 | 5 | 13 | 11 | C |

Note: The grid shows the position that the given digit moves to and **not** the digit that occupies that position. So, for example, when C = 0 then digit 1 is mapped to position 5, digit 2 maps to position 19 etc.

This provision of uniqueness ensures that:

* Two consecutive RRNs for the same property are not sequentially numbered.
* The RRNs do not necessarily increase over time so the highest RRN generated on one day is not the start point for any RRNs generated on the following day, i.e. they can be higher or lower.
* The transformation is reversible as the key information can be unpacked - i.e. the UPRN, Inspection Date and Language Code - from the RRN in order to verify the values.

**5.3.2 Some Examples (for all Report Types)**

**Example 1** - Same Report details with three different sets of random digits:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Digit | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Source | P1 | P2 | P3 | P4 | P5 | P6 | P7 | P8 | P9 | P10 | D1 | D2 | D3 | D4 | D5 | D6 | R1 | R2 | R | C |
| Original | 5 | 0 | 2 | 3 | 0 | 0 | 1 | 2 | 1 | 4 | 0 | 5 | 1 | 0 | 3 | 0 |  |  | 1 |  |
| Complement | 5 | 0 | 2 | 3 | 0 | 0 | 1 | 2 | 1 | 4 | 0 | 5 | 9 | 0 | 7 | 0 |  |  | 1 |  |
| Complement | 5 | 0 | 2 | 3 | 0 | 0 | 1 | 2 | 1 | 4 | 0 | 5 | 9 | 0 | 7 | 0 | 0 | 2 | 1 | 0 |

Adding the random digits (02, 03, 04 & 05) and calculating checksum generates the following:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Digit | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Complement | 5 | 0 | 2 | 3 | 0 | 0 | 1 | 2 | 1 | 4 | 0 | 5 | 9 | 0 | 7 | 0 | 0 | 3 | 1 | 1 |
| Complement | 5 | 0 | 2 | 3 | 0 | 0 | 1 | 2 | 1 | 4 | 0 | 5 | 9 | 0 | 7 | 0 | 0 | 4 | 1 | 2 |
| Complement | 5 | 0 | 2 | 3 | 0 | 0 | 1 | 2 | 1 | 4 | 0 | 5 | 9 | 0 | 7 | 0 | 0 | 5 | 1 | 3 |

Digit swapped according to checksum calculated:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Digit | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| C = 0 or 4 | 7 | 0 | 0 | 4 | 5 | 9 | 3 | 0 | 1 | 1 | 2 | 0 | 2 | 2 | 1 | 5 | 0 | 0 | 0 | 0 |
| C = 1 or 5 | 9 | 5 | 2 | 0 | 1 | 4 | 1 | 0 | 1 | 3 | 0 | 2 | 0 | 0 | 7 | 5 | 3 | 0 | 0 | 1 |
| C = 2 or 6 | 4 | 4 | 5 | 5 | 1 | 0 | 1 | 0 | 2 | 3 | 2 | 9 | 0 | 1 | 0 | 0 | 0 | 0 | 7 | 2 |
| C = 3 | 4 | 0 | 9 | 0 | 0 | 0 | 0 | 2 | 2 | 1 | 1 | 0 | 5 | 3 | 7 | 1 | 5 | 0 | 5 | 3 |

Formatted with dashes these then become:

7004-5930-1120-2215-0000

9520-1410-1302-0075-3001

4455-1010-2329-0100-0072

4090-0002-2110-5371-5053

**Example 2** - Same property with three consecutive Inspection Dates

Three consecutive Inspection Dates (29-Jan-2006, 30-Jan-2006 & 31-Jan-06) for the same property where all other details remain the same:

For 29-Jan-2006 the following is generated:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Digit | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Source | P1 | P2 | P3 | P4 | P5 | P6 | P7 | P8 | P9 | P10 | D1 | D2 | D3 | D4 | D5 | D6 | R1 | R2 | L | C |
| Original | 5 | 0 | 2 | 3 | 0 | 0 | 1 | 2 | 1 | 4 | 0 | 6 | 0 | 1 | 2 | 9 | 6 | 2 | 1 |  |
| Complement | 5 | 0 | 2 | 3 | 0 | 0 | 1 | 2 | 1 | 4 | 0 | 6 | 0 | 9 | 2 | 1 | 6 | 2 | 1 | 3 |
| Digit Swap | 4 | 0 | 0 | 0 | 6 | 0 | 1 | 2 | 2 | 1 | 1 | 0 | 2 | 3 | 2 | 1 | 5 | 9 | 6 | 3 |

For 30-Jan-2006 the following is generated:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Digit | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Source | P1 | P2 | P3 | P4 | P5 | P6 | P7 | P8 | P9 | P10 | D1 | D2 | D3 | D4 | D5 | D6 | R1 | R2 | L | C |
| Original | 5 | 0 | 2 | 3 | 0 | 0 | 1 | 2 | 1 | 4 | 0 | 6 | 0 | 1 | 3 | 0 | 6 | 2 | 1 |  |
| Complement | 5 | 0 | 2 | 3 | 0 | 0 | 1 | 2 | 1 | 4 | 0 | 6 | 0 | 9 | 7 | 0 | 6 | 2 | 1 | 0 |
| Digit Swap | 7 | 0 | 0 | 4 | 5 | 0 | 3 | 0 | 1 | 1 | 2 | 9 | 2 | 2 | 1 | 6 | 0 | 0 | 0 | 0 |

For 31-Jan-2006 the following is generated:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Digit | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Source | P1 | P2 | P3 | P4 | P5 | P6 | P7 | P8 | P9 | P10 | D1 | D2 | D3 | D4 | D5 | D6 | R1 | R2 | L | C |
| Original | 5 | 0 | 2 | 3 | 0 | 0 | 1 | 2 | 1 | 4 | 0 | 6 | 0 | 1 | 3 | 1 | 6 | 2 | 1 |  |
| Complement | 5 | 0 | 2 | 3 | 0 | 0 | 1 | 2 | 1 | 4 | 0 | 6 | 0 | 9 | 7 | 9 | 6 | 2 | 1 | 2 |
| Digit Swap | 4 | 2 | 5 | 6 | 1 | 0 | 1 | 9 | 2 | 3 | 2 | 0 | 0 | 1 | 6 | 9 | 0 | 0 | 7 | 2 |

The generated RRN for each date would be:

|  |  |
| --- | --- |
| Inspection Date | RRN |
| 29-Jan-2006 | 4000-6012-2110-2321-5963 |
| 30-Jan-2006 | 7004-5030-1129-2216-0000 |
| 31-Jan-2006 | 4256-1019-2320-0169-0072 |

In both examples it can be seen that very similar input values will produce significantly different RRNs and in many cases the number generated for one day may be significantly lower than a number generated on the previous day.

**5.3.3 Other Issues**

The uniqueness of a report must be validated by looking at the Natural Key to the report rather than just the RRN. If a duplicated report is lodged then as a result of using random digits the resulting RRN may be unique.

The Natural Key consists of the data-items used to derive the RRN which are:

* UPRN
* Inspection Date
* Report Type

Note that the scenario can cause a duplication of the report and failure to lodge the second report with the same RRN in the Report Register:

* Two separate inspections (performed by different Assessors) could be scheduled for the same Property on the same day. This is a low risk issue as the cost of commissioning an inspection would generally rule this out. However if a duplication occurs then a different set of random digits can be used to generate the RRN.

An HCR can be cancelled and an amended copy re-registered. Uniqueness should only be enforced against reports that have an ‘Entered’ status. Therefore before a ‘duplicate’ Report can be entered, any previous reports must be cancelled (i.e. any of the other ‘non-active’ HCR Status Codes). It is the Scheme/Accreditation Body

Appendix B – Business Process Model for Non-Dwellings

**

*Energy Performance of Buildings Directive*

*Business Process Model for Non-Dwellings*

April 2011

Department for Communities and Local Government: London

Department for Communities and Local Government

Eland House

Bressenden Place

London

SW1E 5DU

Telephone: 020 7944 4400

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| **1 Introduction** |

This document describes the key business process requirements that need to be provided by the Accreditation Scheme or Non Domestic EPC Register Operator. The processes described by this document are:

**COM01000** **End-to-End Lodgement Process**

This process illustrates the process an Energy Assessor will go through to produce a Report. The process starts from an Assessor becoming a member of an Accreditation Scheme, through to the Assessor completing a report and it being successfully registered in the Non Domestic EPC Register.  
  
All other processes described below are sub-processes to this process.

**COM02000 Energy Assessor Registration**

An Applicant Assessor may make an application for registration to one or more Scheme(s). To do this, Assessors will be required to satisfy the Scheme that they meet the National Occupational Standards for Energy Assessors and are ‘fit and proper’ persons.

**COM03000 Find and Instruct Assessor**

The Non Domestic EPC Register is accessible by the General Public via a web-site managed by the Non Domestic EPC Register Operator. Each Scheme will be required to provide basic details of each Assessor in order to update the Non Domestic EPC Register each day.

**COM04000 Address & Property Search**

As part of the Produce Document process (COM06000) an   
Assessor needs to identify the address and Unique Property   
Reference Number (UPRN) of the property they are going to   
inspect. This Business Process describes the main steps in that   
activity.

**COM05000 Retrieve Data**

An Assessor may need to access information contained in previous reports produced for that building. This process describes the process to retrieve that information.

**COM06000** **Produce Display Energy Certificate or Advisory Report**

This processes provides details regarding how the Energy   
 Assessor will undertake the assessment and submit information about the assessment to produce a Display Energy Certificate or Advisory Report the Accreditation Scheme

**COM07000 Produce Energy Performance Certificate or Recommendation Report**

This processes provides details regarding how the Energy   
 Assessor will undertake the assessment and submit information about the assessment to produce an Energy Performance Certificate or Recommendation Report to the Accreditation Scheme

**COM08000 Register Document**

As part of the Report Production process the Scheme is responsible for registering the Report on behalf of the Energy Assessor. This process describes the activities required to achieve that.

**COM09000 Lodge Document & Data**

This process describes the way in which the Accreditation Scheme will check the information provided by the Assessor   
and send it to the Non Domestic EPC Register Operator.

**COM10000 Search and Retrieve Document**

Access to data contained in the Non Domestic EPC Register held by the Non Domestic EPC Register Operator will be determined by the Regulations. This process describes the processing of a request to retrieve a Report and a number of different variations of the response.

**COM11000 Maintain CIP Data**

The Central Information Point holds the reference information   
needed by the OR software including degree day data and   
benchmarks. The process describes the way in which the Non Domestic EPC Register Operator acquires the information and makes it available to Energy Assessors to download.

**COM12000 Complaints Process**

This describes the way in which the General Public can   
complain about the conduct of an Energy Assessor or the Report that the Assessor has produced.

**COM13000 Change Document/Inspector Status**

Where the Regulations permit, the status of a Report may change during its lifecycle to indicate the usability and reliability of the Report. The status of an Assessor reported by the Accreditation Scheme to the Non Domestic EPC Register Operator may also change over time.

**COM14000 Assessor Update**

To support the Find and Instruct Assessor process (COM3000) each Scheme will be required to provide basic details of each Assessor in order to update the Assessor records within the Non Domestic EPC Register each day.

Each section describes the activities that are performed during the process. The process diagrams only show the natural order of the process. Decision points are only shown where the decision is of significance to the business process. It is assumed that each defined sub-process finishes successfully and, in the event that an undocumented error occurs, the overall process stops until the error is corrected.

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| **2 Assumptions** |

* There are a number of working assumptions made throughout this document, which are summarised here:
* Within this document the term “EPC” refers to Energy Performance Certificate
* Within this document the term “Commercial Register” refers to the Non Domestic EPC Register
* Within this document the term “Non-dwellings” and “Non Domestic” can be used interchangeably
* This document refers to reports for non-dwellings only
* Within this document the term “Report” refers to Energy Performance Certificates, Recommendation Reports, Display Energy Certificates, Advisory Reports, Air Conditioning Inspection Certificates and Air Conditioning Inspection Reports
* Within this document the term “Report Data” refers to the input (collected) data and output (calculated) data
* Within this document the term “Scheme” refers to Accreditation Scheme
* Once “Registered” a Report cannot be modified, so there are no “modify” transactions. Incorrect or invalid reports are “cancelled” (see “Change Report Status”) and, if appropriate, a corrected report is separately registered
* Production of a Report does not require or establish ownership of the Property identified in the Report
* The transaction volumes are indicative only and are subject to change through normal market fluctuations
* Energy Performance Certificates and associated recommendations for dwellings are out of scope
* A Display Energy Certificate without an associated Advisory Report does not meet the requirements of the regulations
* An Advisory Report without an associated Display Energy Certificate does not meet the requirements of the regulations
* A Display Energy Certificate and Advisory Report can be lodged together in the Non Domestic EPC Register (combined lodgement / single message to the Register)
* There is no ‘legal’ association between a Display Energy Certificate and Advisory Report within the Non Domestic EPC Register
* The Non Domestic EPC Register will not apply the regulation rules stated within these assumptions regarding a Display Energy Certificate and associated Advisory Report
* An Air Conditioning Inspection Certificate without an associated Air Conditioning Inspection Report does not meet the requirements of the regulations
* An Air Conditioning Inspection Report without an associated Air Conditioning Inspection Certificate does not meet the requirements of the regulations
* An Air Conditioning Inspection Certificate and Air Conditioning Inspection Report must be lodged together in the Non Domestic EPC Register (combined lodgement / single message to the Register)
* There is no ‘legal’ association between an Air Conditioning Inspection Certificate and Air Conditioning Inspection Report within the Non Domestic EPC Register
* Only Degree Day Data for England, Wales and Northern Ireland is imported into the CIP XML file. Scotland data is not required.
* The status of a Report, once lodged, can only be altered with an approval from the Accreditation Scheme. Please note that it is alteration of the status of the Report, not changes to the Report Data
* Any Multi-Language capability is restricted to the English and Welsh languages and only applies to textual strings[[8]](#footnote-8). There is no requirement to render numbers etc. with different formatting patterns depending on the viewer. For Display Energy Certificates, Air Conditioning Inspection Certificates and Air Conditioning Inspection Reports for Properties in England the Report is always in English but in Wales it may be in English or Welsh at the discretion of the Occupier[[9]](#footnote-9)
* It is not assumed that any commercial database software is used to provide the solution to the requirements but it is assumed that the data storage solution will be a managed environment with pre-defined processes for inserting data into that managed environment. It is equally assumed that these processes can, and indeed will, fail at some inconvenient point in time
* A newly accredited Energy Assessor would not be performing assessments on the day that they become certified because the details of their accreditation would be in the post (or whatever delivery mechanism is used to courier it to them). Therefore changes to any Energy Assessor within the Non Domestic EPC Register only need to be accurate up to the previous day.

The rationale for each assumption is discussed at the point that it is relevant.

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| **3 Functional Roles** |

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| 3.1  Accreditation Scheme |

* The Scheme is the ‘regulatory’ body responsible for regulating the activities of Energy Assessors.
* A Scheme will carry out certain primary functions in accordance with the standards, focused around certifying, managing and regulating Assessors and registering reports.

|  |
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| 3.2 Energy Assessor |

* An Energy Assessor is an individual who is a member of an approved accreditation scheme by virtue of his/her technical and other personal skills and can produce and issue Energy Performance Certificates, Recommendation Reports, Display Energy Certificates, Advisory Reports, Air Conditioning Inspection Certificates or Air Conditioning Inspection Reports for non-dwellings in an acceptably independent manner.

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| 3.4  Non Domestic EPC Register (Operator) |

* The Non Domestic EPC Register is the central repository of all Energy Performance Certificates, Recommendation Reports, Display Energy Certificates, Advisory Reports, Air Conditioning Inspection Certificates and Air Conditioning Inspection Reports produced by Energy Assessors for non-dwellings.
* It also provides a central point of retrieval for any published Energy Performance Certificates, Recommendation Reports, Display Energy Certificates, Advisory Reports, Air Conditioning Inspection Certificates and Air Conditioning Inspection Reports for non-dwellings.
* The Non Domestic EPC Register Operator runs the Non Domestic EPC Register for and on behalf of the Department for Communities and Local Government (the Department).

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| 3.5 Enforcement Officers |

* Building Control Officers or Trading Standards Officers may wish to retrieve information from the Non Domestic EPC Register for the purpose of verifying that a building owner is complying with the duties under the Energy Performance of Buildings Directive.

|  |
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| 3.6 Registered Users |

* Registered users are those people who have been given access to restricted parts of the Non Domestic EPC Register to enable them to undertake specific functions such as retrieval of data and searching for addresses and Unique Property Reference Numbers.
* Registered users are defined in the Regulations and may include Accreditation Schemes, Energy Assessors, Trading Standards Officers, Building Control Officers and DCLG’s approved agents for quality control.

|  |
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| 3.7 General Public |

* The General Public are the set of anonymous users that may commission an Energy Assessor to produce a Report or retrieve a Report PDF from the Non Domestic EPC Register using the Report Reference Number (RRN) they have been given by the Report Owner.
* The General Public includes Buyers, Sellers and their authorised agents including Legal Advisers and Estate Agents.
* In different contexts within the Business Processes any of these labels may be used to identify the General Public.

|  |
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| **4 Key Business Processes** |

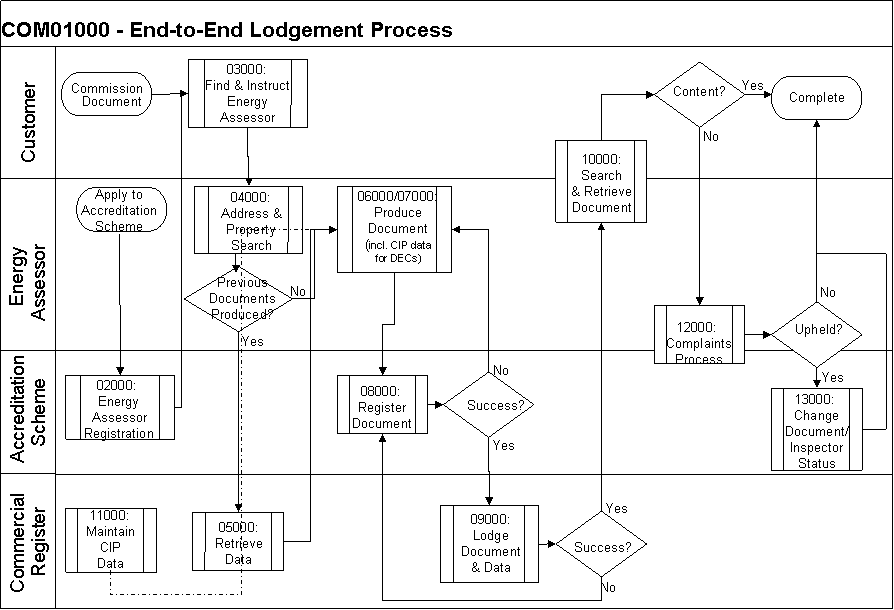
|  |
| --- |
| 4.1 End-to-End Lodgement Process (COM01000) |

**4.1.1 Context & Overview**

This process illustrates the process an Energy Assessor will go through to produce a Report. The process starts from an Assessor becoming a member of an Accreditation Scheme, through to the Assessor completing a Report and it being successfully registered in the Non Domestic EPC Register.

All other processes described in section 4 are sub-processes to this process.

**4.1.2 Functional Description**

* The high-level end-to-end lodgement process is:
* 

|  |
| --- |
| 4.2 Energy Assessor Registration (COM02000) |

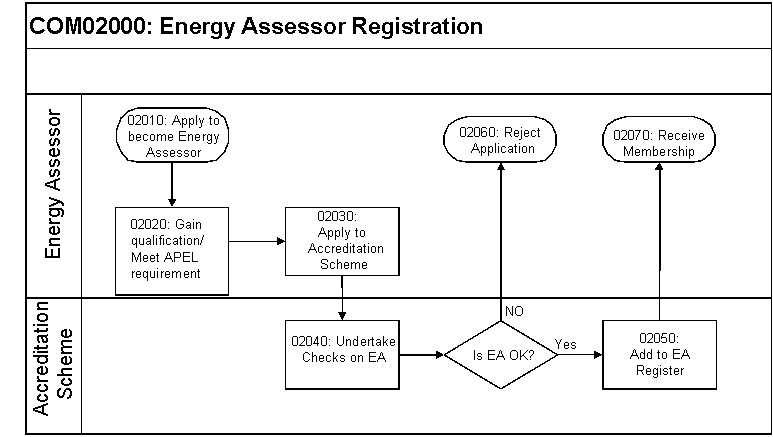
**4.2.1 Context & Overview**

In order to practice as an Energy Assessor, a person must first become a member of an Accreditation Scheme. An Applicant Assessor may make an application for registration to one or more Scheme(s). To do this, Assessors will be required to satisfy the Scheme that they meet the National Occupational Standards for Energy Assessors and are ‘fit and proper’ persons.

This Business Process describes the high-level work-flow carried out by the Assessor and their Scheme. It is provided for clarity though no defined messages are present in the process

**4.2.2 Functional Description**

The energy assessor registration process is:



* The steps in the process are:

02010 A person decides they want to apply to become an energy assessor.

02020 The person will need to assess their competencies against the required standards and identify how any gaps will be filled. Accreditation Schemes and Training Providers may provide tools to enable people to assess their competencies. The process of gaining those competencies is outside the scope of these processes.

02030 Once the person has gained the appropriate competencies, they can apply to an Accreditation Scheme for membership. Each Accreditation Scheme will have their own means of application, which is outside the scope of this document.

02040 The Accreditation Scheme will undertake checks on the person to ensure they meet the required standards for membership. These standards are explained in the Accreditation Scheme Standards.

02050 If the person passes the Accreditation Scheme checks, they are admitted to the Accreditation Scheme as an Energy Assessor and added to the register of members that the Accreditation Scheme maintains.

The Accreditation Scheme is required to submit details of their members each day to the Non Domestic EPC Register Operator to update the central repository of Energy Assessors within the Non Domestic EPC Register. See Assessor Update (COM14000) for details of this process. The mechanism used to provide this update is included in the Message Specifications document.

An Energy Assessor will be provided with a unique accreditation scheme number, which remains the same across all strands of non-domestic work.

02060 If the person fails any of the Accreditation Scheme checks, the Accreditation Scheme notifies them that they have been rejected from membership. The way in which the scheme does this is outside the scope of this document.

02070 When the person is added to the register of members that the Accreditation Scheme maintains, the Accreditation Scheme needs to inform the person of their admission. This process is outside the scope of this document.

|  |
| --- |
| 4.3 Find and Instruct Energy Assessor (COM03000) |

**4.3.1 Context & Overview**

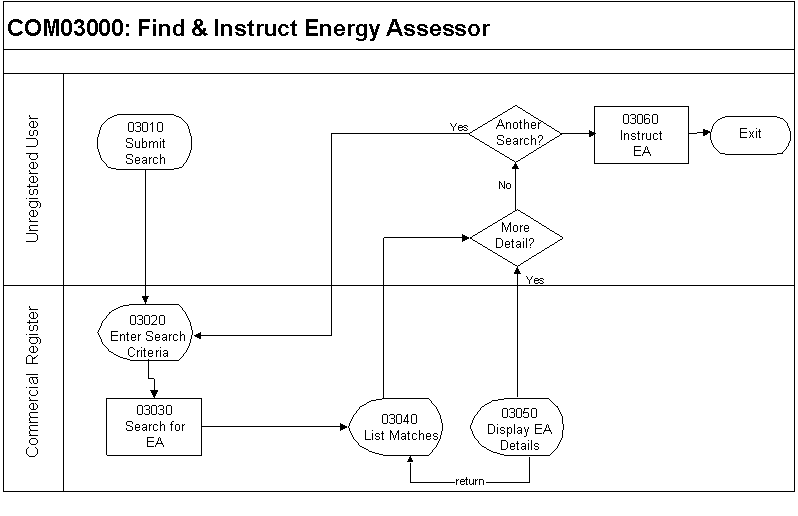
There are many ways in which an Energy Assessor can be instructed by the public and these are out of scope for this document.

The repository of Energy Assessors held by the Non Domestic EPC Register Operator will not be used by the General Public to find an assessor but will be used in the following circumstances:

* *A member of the General Public has the Accreditation Number or Name of an Energy Assessor and, for whatever reason, wants to look up further details about them, such as details of the Accreditation Scheme they are certified by.*
* *When a Report is submitted to the Non Domestic EPC* Register *it is required that the Energy Assessor’s details are validated to ensure the basic authenticity of the Energy Assessor i.e. that they exist, are currently accredited to produce reports and are currently a member of at least one Accreditation Scheme.*
* *When a Scheme processes an application from a Candidate Energy Assessor for accrediting through that Scheme, the Scheme is required to check whether the Energy Assessor is registered with any other Scheme and, if so, that they are not ‘Struck Off’ or otherwise barred from producing reports.*

**4.3.2 Functional Description**

The process to find and instruct an energy assessor is:



* 03010 The person decides to find an energy assessor and goes to   
   the appropriate page on the Non Domestic EPC Register website.

03020 The search that is performed depends on the criteria specified by the user. The search parameters are defined in Section 4.3.3.

03030 The Non Domestic EPC Register uses the search criteria entered to find matches against the information stored in the Assessor repository

03040 The details of the set of matching Energy Assessors are retrieved from the Assessor repository. The format of the results is specified in section 4.3.3.

03050 If the user requires more detail about a particular Energy Assessor then they select the Assessor and the full details of the Energy Assessor held on the Non Domestic EPC Register are displayed for the user to read.

03060 The person can now instruct the Energy Assessor. The way in which this is done is out of scope of this document.

**4.3.3 Search and Retrieval Requirements**

There is a need for members of the public to be able to check that the person producing their Report is an Energy Assessor who is accredited to perform reports for their building.

Accreditation Schemes will provide the Non Domestic EPC Register Operator with daily details of their Accredited Energy Assessors and the Non Domestic EPC Register Operator will make this available in a consolidated repository of Energy Assessors that it will use, for example, to authenticate users.

The Non Domestic EPC Register Operator will make a search facility available for the general public to check that an Energy Assessor who is accredited to perform reports for their building.

**Search Criteria**

The search options available to the general public on the Non Domestic EPC Register are be as follows:

|  |  |  |
| --- | --- | --- |
| **Criteria** | **Search Type** | **Notes** |
| * Accreditation Number | * Unique | * This number is a unique identifier allocated by the Accreditation Scheme for the Energy Assessor, so will identify at most one Energy Assessor. The format of this identifier is defined in the Non Domestic Register Data Model |
| * Name | * Partial | * The Energy Assessor Name is recorded as a structured name consisting of Forename + Surname. The user may provide either Surname only or both Forename and Surname. * The search will allow for partial names such as the leading characters of the two Name parts and ‘sounds like’ matching on the surname e.g. ‘sounds like Smith’. * The search is not case sensitive. |
| * Assessor Type | * Exact | * The type of Assessor that the user is trying to search for which will include an Energy Assessor that can do Display Energy Certificates/Advisory Reports or one which can do Non Domestic Energy Certificates/Recommendation Reports at level 3, 4 or 5. The values available for this field is defined in the Non Domestic Register Data Model – note that an assessor may be able to do multiple report types |

**Results**

The following results will be provided for each Energy Assessor that meets the criteria entered by the general public. The only Energy Assessors that are to be returned are those that currently have the status of “Active”.

Note that the two possible states for an Energy Assessor are “Active” and “Suspended”:

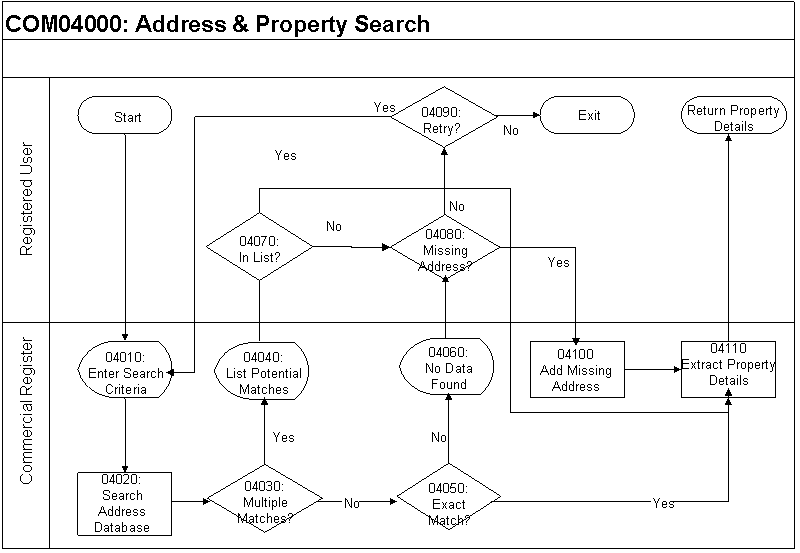
|  |  |  |
| --- | --- | --- |
| **Data Item** | **Format** | **Notes** |
| * Accreditation Number | * Unique | * This number is a unique identifier allocated by the Accreditation Scheme for the Energy Assessor, so should identify at most one Energy Assessor. The format of this identifier is defined in the Domestic Data Model |
| * Energy Assessor Name | * Text | * This is the forename and surname of the Energy Assessor that has been submitted to the Non Domestic EPC Register Operator by the Accreditation Scheme |
| * Accreditation Scheme Name | * Text | * The Accreditation Scheme with which the Energy Assessor is registered |
| * Assessor Type | * Text | * This indicates the reports that the Energy Assessor is able to conduct. The values available for this field is defined in the Non Domestic Register Data Model |

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| 4.4 Address & Property Search (COM04000) |

**4.4.1 Context & Overview**

* Energy Assessors will need to be able to retrieve reports previously undertaken for a building or part of a building, in order to complete future reports. Therefore there is a need to be able to search the Non Domestic EPC Register for reports undertaken for the Base UPRN.
* Due to the need to relate reports over time it is essential that each Property is consistently identified each time it is reported on.
* Some scenarios where consistency is required are:
* *Over time the identifying characteristics of a property can change; e.g. a Royal Mail Postcode reorganisation may result in a postcode change for the property, therefore the address of the property is time-variant.*
* *A property in Wales has both English and a Welsh address and when producing a Report in one of those languages the Inspector should consistently use the correct address in the relevant language.*
* However, Non Domestic Energy Performance Certificates are mainly done for buildings or areas of buildings of the same type (e.g. office space), whereas Display Energy Certificates and Advisory Reports may be done for buildings or sub-buildings.
* For all of these cases a shared central database of property & address details is required that provides registered users with the ability to search for properties possibly using incomplete (e.g. partial postcode) or incorrect   
  (e.g. Street Name misspelt) and retrieve the Unique Property Reference Number and address details that need to be used in the Report.

**4.4.2 Functional Description**

* The high-level process is:
* 
* The steps in the process are:

04010 The registered user enters the search criteria for the property they are searching for. What is entered or how the search is matched to the address and property data is outside the scope of this document.   
  
As a minimum, it is expected that the search would be by Postcode and Building Name (the most popular form of search) or by partial address details e.g. Post-Town and Street Name, but additional facilities may be provided depending on the application used.

04020 The Property and Address Database is searched for any matching properties.

04030 If multiple matches are found then go to List Potential Matches (04040), else go to Exact Match? (04050)

04040 The list of properties that match the search criteria are displayed on the screen for the Inspector to be able to scroll through and possibly select the address they are looking for.

04050 If an Exact Match is found (i.e. only one Address matches the entered criteria) then go to Extract Property Details (04110), else go to No Data Found (04060).

1. If no matches at all are made with the search criteria then a suitable error message is displayed on the screen.
2. At this point the registered user has not found the property they are looking for so would normally return to the Enter Search Criteria screen to try another search, but may abort the process until a later date e.g. to go back to whoever commissioned the Report to confirm that the Address details they have been given are correct.

04070 If property is in the list then go to Extract Property Details (04110) else go to Missing Address (04080)

04080 If the address is missing then go to Add Missing Address (04100), else go to Retry (04100)

04090 If the registered user chooses to retry the search then go to Enter Search Criteria (04010), else Exit. If the registered user decides to Exit, this means that they will not have a UPRN for the Property and therefore the Report RRN cannot be generated and the Report cannot be submitted for registration.

04100 The registered user decides to add a missing address and enters the details of the property they want into the Non Domestic EPC Register Address and Property Database.

If the Assessor Details Update Extract file contains an email address for the registered user (see Assessor Upload – COM14000), the Non Domestic EPC Register Operator will send a confirmation email to that address on the submission of the manual address. A further confirmation email will be subsequently sent once the address has been added or rejected. The Non Domestic EPC Register Operator will complete the process for a manually entered address within 24 operational hours from the time of user submission.

The exact details of how requests for new addresses are added to the Property and Address Database and how those addresses are verified as new Addresses is outside the scope of this document but is the responsibility of the Non Domestic EPC Register Operator.

04110 The address and Unique Property Reference Number (UPRN) are returned to the registered user. The format of the returned address and UPRN are defined in the Non Domestic Register Data Model.

It is assumed that the unregistered users make these requests directly on the Public area of the Non Domestic EPC Register website. The Non Domestic EPC Register Operator may choose to design XML messages to enable peer-to-peer retrieval, but this is outside the scope of this document.

**4.4.3 Search & Retrieval Requirements**

* The Sub-building address is defined by the user on address retrieval and there will be no verification of the sub-building address by the Non Domestic EPC Register Operator other than de-duplication. It is assumed that all other necessary verification is carried out by the relevant Scheme.
* As Energy Assessors will need to retrieve previous reports undertaken for the same building, a shared central database of property & address details is required that provides registered users with the ability to search for properties and retrieve the Unique Property Reference Number (UPRN) and address details that need to be used in the Report.
* The Non Domestic EPC Register Operator will make a search facility available for registered users to obtain the UPRN for a building or sub-building. The Non Domestic EPC Register Operator may choose to make a peer-to-peer link available, allowing Energy Assessor software to directly retrieve the UPRN. However, the minimum requirement is to provide a way of obtaining the UPRN from the Restricted area of the Non Domestic EPC Register Operator website and the Department has no plans to specify message specifications for peer-to-peer retrieval.
* The way in which the Non Domestic EPC Register Operator manages access to the Restricted area of their website is a matter for them and out of scope of this document.
* **Search Criteria**It is expected that the search options available to registered users on the Non Domestic EPC Register would include the following:

|  |  |  |
| --- | --- | --- |
| **Criteria** | **Search Type** | **Notes** |
| * Postcode | * Exact | * A search can be performed on a full postcode |
| * Address | * Partial | * A search will be able to be performed on any part of an address. The format of the address is described in the Non Domestic Register Data Model. It is anticipated that a 5 line address will be used, with an additional “Address Line 1” for the building part or site building (e.g. ‘Floor 6’ or ‘Out Patients Building’) |
| * Base UPRN | * Unique | * A search will be able to be performed using the Base UPRN. This document does not include the detailed process flow based on UPRN. This can be found in the in the Welcome Pack within the Certification Scheme and Accreditation Scheme Standards and details searches on identified address by the Base UPRN and the Sub UPRN |

Additional facilities may be provided depending at the discretion of the Non Domestic EPC Register Operator.

**Results**

If a matching address if found, the following search results will be displayed:

|  |  |  |
| --- | --- | --- |
| **Data Item** | **Format** | **Notes** |
| * UPRN | * Numeric | * All addresses that match the Base UPRN will be returned. The format of the UPRN is described in the Non Domestic Register Data Model. This document does not include the detailed process flow based on UPRN. This can be found in the Welcome Pack within the Certification Scheme and Accreditation Scheme Standards. This details results identified by the Base UPRN and the Sub UPRN |
| * Property Address | * Text | * The format of the address is described in the Non Domestic Register Data Model. It is anticipated that a 5 line address will be used, with an additional “Address Line 1” for the building part or site building (e.g. ‘Floor 6’ or ‘Out Patients Building’) |

**No Results Returned**

If no Base UPRN can be found, appropriate error handling is provided and a service to enable registered users to request UPRNs to be allocated to the new buildings or sub-buildings.

The Non Domestic EPC Register Operator will provide a means of checking and validating requests for new UPRNs to ensure integrity of the data. The way in which this is done is at the discretion of the Non Domestic EPC Register Operator and is out of scope of this document.

The exact details of how requests for new addresses are added to the Property and Address Database and how those addresses are verified as new Addresses are outside the scope of this document.

The Welcome Pack within the Certification Scheme and Accreditation Scheme Standards documents the process flow provided by the address matching service.

|  |
| --- |
| 4.5 Retrieve Data (COM05000) |

**4.5.1 Context and Overview**

* A registered user may need to access information contained in previous reports produced for a building or area of a building that they are assessing. Depending on the situation, the registered user may require the electronic copy of the Report or the data. Such scenarios include:
* An Energy Assessor has been asked to produce a Display Energy Certificate for a property and needs to access the Non Domestic EPC and Display Energy Certificates for the previous 2 years in order to obtain the Asset Rating and Operational Ratings respectively.
* An Energy Assessor has been asked to produce a Non Domestic EPC for a property and wishes to obtain the input (collected) data for the previous Non Domestic EPC for that building, upon which to base the new assessment.
* DCLG or its Agents wish to undertake quality assurance monitoring on an Accreditation Scheme and wish to look at the data underlying a Report.
* Note that access to electronic copies of the reports for unregistered users is covered in COM10000. Registered users may retrieve reports from the Non Domestic EPC Register from the Restricted area of the website.
* **4.5.2 Functional Description**
* The high-level process is:
* 
* The steps in the process are:

05010 The Non Domestic EPC Register checks that the person making the request is a registered user. It is up to the Non Domestic EPC Register Operator to determine how this is done.

If the user is not registered, they will not be allowed to undertake this process. Unregistered users have access to the Non Domestic EPC Register using process COM10000.

05020 The registered user enters the search criteria to identify a report. The search criteria are specified in Section 4.5.3.

05030 The report is initially located before any other processing takes place because all the information required for subsequent processing of the request is located in the Report Header part of the Non Domestic Data Model.  
  
The report can only be retrieved if the Report Status is ‘Published[[10]](#footnote-10)’ – all other Report statuses will be dealt with as if the Report does not exist.

05040 Where the Report retrieved is an Energy Performance Certificate, this report and the associated Recommendation Report will be returned by the retrieval process. The retrieval process will allow the registered user to view the Report Data for both reports and PDF for both reports.

Where the Report retrieved is a Recommendation Report, this report and the associated Energy Performance Certificate will be returned by the retrieval process. The retrieval process will allow the registered user to view the Report Data for both reports and PDF for both reports.

Where the Report retrieved is a Display Energy Certificate (and lodged together with an Advisory Report) this report and the associated Advisory Report will be returned by the retrieval process. The retrieval process will allow the registered user to view the Report Data for both reports and PDF for both reports.

Where the Report retrieved is an Advisory Report (and lodged together with a Display Energy Certificate), this report and the associated Display Energy Certificate will be returned by the retrieval process. The retrieval process will allow the registered user to view the Report Data for both report types and PDF for both report types.

Where the Report retrieved is an Air Conditioning Inspection Certificate, this report and the associated Air Conditioning Inspection Report will be returned by the retrieval process. The retrieval process will allow the registered user to view the Report Data for both reports and PDF for both reports.

Where the Report retrieved is an Air Conditioning Inspection Report, this report and the associated Air Conditioning Inspection Certificate will be returned by the retrieval process. The retrieval process will allow the registered user to view the Report Data for both reports and PDF for both reports.

All reports that match the search criteria field (see Section 4.5.3) will be returned to the registered user regardless of the validity date of the Report.

05050 The list of reports is displayed to the registered user for selecting the individual Report(s) that they want. The Property that the related reports are requested for is identified by the UPRN recorded against the Report whose RRN is supplied as part of the request.

The summary details provided for each Report in the search results is described in Section 4.5.3.

05060 The registered user may request either the Report Data or the PDF to be provided to them.

05070 If the registered user has elected to receive the Report data thenallthe Report data for that Report and the associated report is returned in XML format for the user to process further.

Where the registered user has elected to receive the Report data for a Display Energy Certificate or Advisory Report and the Display Energy Certificate and Advisory Report were lodged together (combined lodgement), the Report data will be retrieved as one entry (comprising collected data for one or more Display Energy Certificates and associated the Advisory Report).

05080 If the registered user has elected to receive the Report in PDF format thenthe Non Domestic EPC Register retrieves the PDF for that report.

It is assumed that the registered users make these requests directly on the Restricted area of the Non Domestic EPC Register website. The Non Domestic EPC Register Operator may choose to design XML messages to enable peer-to-peer retrieval, but this is outside the scope of this document.

* **4.5.3 Search and Retrieval Requirements**

Registered users will need to be able to retrieve PDF and Report Data lodged for previous reports of a building or sub-building, in order to complete future reports. Therefore there is a need to be able to search the Non Domestic EPC Register for reports undertaken for the UPRN.

Registered users need to be able to select whether they wish to retrieve the PDF of the Report or Report Data.

The Non Domestic EPC Register Operator could choose to make a peer-to-peer link available allowing Energy Assessor software to directly retrieve previous reports. However, the minimum requirement is to provide a way of obtaining the reports from the Restricted area of the Non Domestic EPC Register Operator website and the Department has no plans to specify message specifications for peer-to-peer retrieval.

The way in which the Non Domestic EPC Register Operator manages access to the Restricted area of their website is a matter for them and out of scope of this document.

**Search Criteria**

The search options available to registered users of the Non Domestic EPC Register is as follows:

|  |  |  |
| --- | --- | --- |
| **Criteria** | **Search Type** | **Notes** |
| * UPRN | * Exact | * This is the unique number of the building or sub-building |
| * RRN | * Unique | * This is the unique number of the Report Reference Number that was searched for by the user |
| * Report Type | * Exact | * The type of Report that the user is trying to search for will include an Energy Performance Certificate, Display Energy Certificate and Air Conditioning Inspection Report. The values available for this field are defined in the Non Domestic Register Data Model. |

It is seen as helpful for the registered user to search for reports based on UPRN as the RRN may not be known. However, there is no identified need for the registered user to be able to search for reports based on Property Address because the registered user can find the UPRN for the building or sub-building using the Address and Property Search functionality specified in COM04000.

**Results**

When a Report is searched for by a registered user, the Non Domestic EPC Register returns all reports of the same kind, related to the same building or Base UPRN which was registered at any time during the period of 10 years ending on the date of the request. The results returned will depend on the Report Type selected:

*Energy Performance Certificate*

|  |  |  |
| --- | --- | --- |
| **Data Item** | **Format** | **Notes** |
| * RRN | * Unique | * This is the unique number of the Report Reference Number |
| * Expiry Date | * Date | * The date that the Energy Performance Certificate expires |
| * UPRN | * Numeric | * 12 digits |
| * Address | * Text | * Address lines 1-6 |
| * Asset Rating | * Numeric | * The Asset Rating displayed on the Certificate |
| * Link to PDF or Data |  | * This is the means by which the registered user accesses the PDF or data stored in the Non Domestic EPC Register for that particular Report. The user can select the PDF for this report type or report data for this report type and the associated Recommendation Report. Selection of the link will open a download dialog box prompting the user to open or save the selected file. |

*Recommendation Report*

|  |  |  |
| --- | --- | --- |
| **Data Item** | **Format** | **Notes** |
| * RRN | * Unique | * This is the unique identifier of the Report on the Non Domestic EPC Register. The format of this field is defined in the Annex to this document |
| * Expiry Date | * Date | * The date that the Recommendation Report expires |
| * UPRN | * Numeric | * 12 digits |
| * Address | * Text | * Address lines 1-6 |
| * Link to PDF or Data |  | * This is the means by which the registered user accesses the PDF or data stored in the Non Domestic EPC Register for that particular Report. The user can select the PDF for this report type or report data for this report type and the associated Energy Performance Certificate. Selection of the link will open a download dialog box prompting the user to open or save the selected file. |

*Display Energy Certificate*

|  |  |  |
| --- | --- | --- |
| **Data Item** | **Format** | **Notes** |
| * RRN | * Unique | * This is the unique identifier of the Report on the Non Domestic EPC Register. The format of this field is defined in the Annex to this document |
| * Nominated Date | * Date | * The date that the Display Energy Certificate is valid from |
| * Address | * Text | * Address lines 1-6 |
| * Building Occupier | * Text | * The occupier of the building at the time the Display Energy Certificate was produced |
| * Operational Rating | * Numeric | * The operational rating displayed on the Display Energy Certificate (‘Energy Rating’ field in the Non Domestic Register Data Model) |
| * Mains electricity | * Numeric | * The amount of mains electricity in use within the building (‘Electricity-CO2’ field in the Non Domestic Register Data Model) |
| * Renewable energy | * Numeric (negative) | * The amount of renewable energy in use within the building (‘Renewables-CO2’ field in the Non Domestic Register Data Model) |
| * Link to PDF or Data |  | * This is the means by which the registered user accesses the PDF or data stored in the Non Domestic EPC Register for that particular Report. The user can select the PDF for this report type or report data for this report type and the associated Advisory Report. Selection of the link will open a download dialog box prompting the user to open or save the selected file. * All reports associated with the Base UPRN from the selected search will be returned to the registered user regardless of whether the Report was lodged independently of the associated Advisory Report or together. |

*Advisory Report*

|  |  |  |
| --- | --- | --- |
| **Data Item** | **Format** | **Notes** |
| * RRN | * Unique | * This is the unique identifier of the Report on the Non Domestic EPC Register. The format of this field is defined in the Annex to this document |
| * Issue Date | * Date | * The date that the Advisory Report is valid from |
| * Address | * Text | * Address lines 1-6 |
| * Building Occupier | * Text | * The occupier of the building at the time the Advisory Report was produced |
| * Link to PDF or Data |  | * This is the means by which the registered user accesses the PDF or data stored in the Non Domestic EPC Register for that particular Report. The user can select the PDF for this report type or report data for this report type and the associated Display Energy Certificate(s). Selection of the link will open a download dialog box prompting the user to open or save the selected file. * All reports associated with the Base UPRN from the selected search will be returned to the registered user regardless of whether the Report was lodged independently of the associated Display Energy Certificate(s) or together. |

*Air Conditioning Inspection Certificate*

|  |  |  |
| --- | --- | --- |
| **Data Item** | **Format** | **Notes** |
| * RRN | * Unique | * This is the unique identifier of the Report on the Non Domestic EPC Register. The format of this field is defined in the Annex to this document |
| * Inspection Date | * Date | * The date that the Air Conditioning Inspection Certificate is valid from |
| * Site Address | * Text | * Address lines 1-6 |
| * Equipment Owner | * Text | * The equipment owner at the time the Air Conditioning Inspection Certificate was produced |
| Total  Effective Rated   * Output | * Numeric | * The total effective rated output displayed on the Air Conditioning Inspection Certificate (‘AC-kW-Rating’ field in the Non Domestic Register Data Model) |
| Total  Estimated   * Refrigerant Charge | * Numeric | The total estimated refrigerant charge displayed on the Air Conditioning Inspection Certificate (‘Refrigerant-  Charge-Total’ field in the Non Domestic Register Data Model) |
| * Link to PDF or Data |  | * This is the means by which the registered user accesses the PDF or data stored in the Non Domestic EPC Register for that particular Report. The user can select the PDF for this report type or report data for this report type and the associated Air Conditioning Inspection Report. Selection of the link will open a download dialog box prompting the user to open or save the selected file. |

*Air Conditioning Inspection Report*

|  |  |  |
| --- | --- | --- |
| **Data Item** | **Format** | **Notes** |
| * RRN | * Unique | * This is the unique identifier of the Report on the Non Domestic EPC Register. The format of this field is defined in the Annex to this document |
| * Inspection Date | * Date | * The date that the Air Conditioning Inspection Report is valid from |
| * Site Address | * Text | * Address lines 1-6 |
| * Link to PDF or Data |  | * This is the means by which the registered user accesses the PDF or data stored in the Non Domestic EPC Register for that particular Report. The user can select the PDF for this report type or report data for this report type and the associated Air Conditioning Inspection Certificate. Selection of the link will open a download dialog box prompting the user to open or save the selected file. |

|  |
| --- |
| 4.6 Produce Display Energy Certificate or Advisory Report (COM06000) |

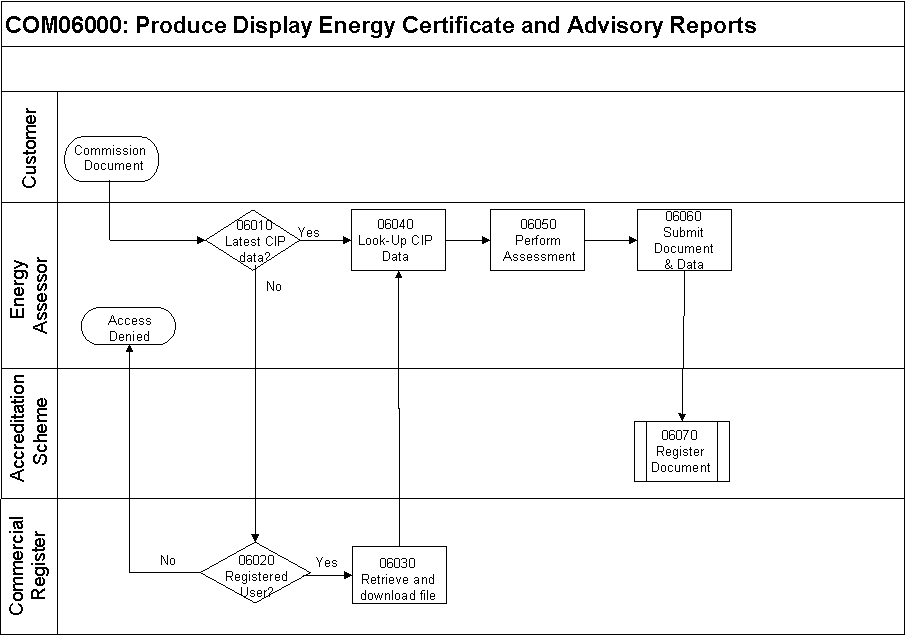
**4.6.1 Context & Overview**

This process provides details regarding how the Energy Assessor will undertake the assessment and submit information about the assessment to produce a Display Energy Certificate or Advisory Report their Accreditation Scheme.

The process assumes that the Energy Assessor has already found the UPRN for the property using COM04000 and has retrieved data from previous reports using COM05000. The process of Registering the Report with the Accreditation Scheme and lodging it onto the Non Domestic EPC Register is included within process COM08000.

There are a number of ways in which the Energy Assessor may receive the instruction, so this is outside the scope of this document.

**4.6.2 Functional Description**

* The high-level process for producing Display Energy Certificate or Advisory Reports is:
* 
* The steps in the process are:

06010 The CIP holds the reference information needed by the OR software including degree day data and benchmarks. The Energy Assessor needs to check that they are using the latest CIP data. The way in which this is done depends on the software being used by the Energy Assessor.

06020 If there is a mismatch between the assessment date (e.g. March 2007 to March 2008) and the CIP data (e.g. Degree Days Data up to January 2008 only) then the Display Energy Certificate producing OR software will return an error message prompting the Energy Assessor to download latest CIP data from the Non Domestic Register Operator web site.

The Non Domestic EPC Register checks that the person making the request is a registered user. It is up to the Non Domestic EPC Register Operator to determine how this is done. If the user is not registered, they will not be allowed to undertake this process.

06030 The process for downloading the latest CIP data is up to the Non Domestic EPC Register operator to determine. The benchmarking and conversion data is currently provided in an MS Access database format by CIBSE.

06040 The Energy Assessor needs to lookup appropriate reference information needed by the OR software for the assessment being done. The software may do this automatically using the latest CIP data that the Energy Assessor has downloaded, or the Energy Assessor may need to look it up manually. The way in which this is done depends on the software being used by the Energy Assessor.

06050 The Energy Assessor carries out the assessment in line with the instructions and guidance described in the Minimum Requirements for Energy Assessors and other publications that the Department may issue from time to time.

06060 Having completed the assessment and entered appropriate information into the software, the Energy Assessor submits the Report data to the Accreditation Scheme for registration.

Some Energy Assessors will only create and lodge Display Energy Certificates (on behalf of one Accreditation Scheme) while other Energy Assessors will only create and lodge Advisory Report (on behalf of another Accreditation Scheme).

It is the responsibility of a single Accreditation Scheme to ensure that the report set (Display Energy Certificate and Advisory Report) are lodged in the Non Domestic PEC Register.

The Energy Assessor may submit just the input (collected) data for the PDF to be generated by the Accreditation Scheme or the input (collected) data and a completed PDF, depending on the services provided by the Accreditation Scheme and third party Report Software Vendors.

The exact interfaces provided are dependent on the Scheme but must include the data required to carry out the Report Registration, which is specified in the Message Specifications document.

06070 The Accreditation Scheme registers the Report in the Non Domestic EPC Register. See Report Registration (COM08000) for details of this process.

An Accreditation Scheme may lodge an Advisory Report prior to the associated Display Energy Certificate or an Accreditation Scheme may lodge a Display Energy Certificate followed by the associated Advisory Report.

One Accreditation Scheme may lodge both a Display Energy Certificate and associated Advisory Report or one Accreditation Scheme may lodge a Display Energy Certificate while another Accreditation Scheme may lodge the associated Advisory Report.

A Display Energy Certificate and associated Advisory Report may be lodged together in a combined lodgement or both reports may be lodged independently of each other.

Subsequent Display Energy Certificates associated with the lodged Advisory Report will be lodged individually.

**Decision**: If both a Display Energy Certificate and Advisory Report lodged together in a combined lodgement then the following business rules apply:

* + - A single XML message will be sent to the Non Domestic EPC Register. These will be stored as follows:
      * PDF reports lodged as separate reports
      * Unformatted collected (input) data lodged as a single report data entry (comprising collected data for both reports)
    - A report can be lodged in any order within the XML message
    - The entire lodgement must satisfy the lodgement rules otherwise the entire message will be rejected
    - Cross-checking will be performed between the two reports to validate that the UPRN and address details match
    - The same Energy Assessor Name will be applied both reports
    - The same Inspection Date will be applied both reports

Else the following business rules apply:

* Subsequent Display Energy Certificates associated with the lodged Advisory Report will be lodged independently

A Display Energy Certificate is valid for a period of 1 year from the date that it is registered within the Non Domestic EPC Register. An Advisory Report is valid for a period of 7 years from the date that it is registered within the Non Domestic EPC Register.

All reports are retained for a period of 20 years from the date that they are registered within the Non Domestic EPC Register.

|  |
| --- |
| 4.7 Produce Energy Performance Certificate or Recommendation Report (COM07000) |

**4.7.1 Context & Overview**

This process provides details regarding how the Energy Assessor will undertake the assessment and submit information about the assessment to produce an Energy Performance Certificate or Recommendation Report to the Accreditation Scheme.

The process assumes that the Energy Assessor has already found the UPRN for the property using COM04000 and has retrieve data from previous reports using COM05000. The process of Registering the Report with the Accreditation Scheme and lodging it on the Non Domestic EPC Register is included within process COM08000.

There are a number of ways in which the Energy Assessor may receive the instruction, so this is outside the scope of this document.

**4.7.2 Functional Description**

* The high-level process for producing Energy Performance Certificate or Recommendation Report is:
* 
* The steps in the process are:

07010 The Energy Assessor carries out the assessment in line with the instructions and guidance described in the Minimum Requirements for Energy Assessors and other guidance that the Department may produce from time to time.

07020 Having completed the assessment and entered appropriate information into the software, the Energy Assessor submits the Report data to the Accreditation Scheme for registration.

The Energy Assessor may submit just the input (collected) data for the PDF to be generated by the Accreditation Scheme or the input (collected) data and a completed PDF, depending on the services provided by the Accreditation Scheme and third party Report Software Vendors.

The software to create the Report PDF and Report Data will ensure that the Report PDF and Report Data for the Energy Performance Certificate and associated Recommendation Report are created and sent together.

The exact interfaces provided are dependent on the Scheme but must include the data required to carry out the Report Registration, which is specified in the Message Specifications document.

07030 The Scheme registers the Reports in the Non Domestic EPC Register.

The scheme will ensure that the Report PDF and Report Data for the Energy Performance Certificate and associated Recommendation Report are lodged together in the Non Domestic EPC Register. See Report Registration (COM08000) for details of this process.

An Energy Performance Certificate is valid for a period of 10 years from the date that it is registered within the Non Domestic EPC Register. A Recommendation Report is valid for a period of 10 years from the date that it is registered within the Non Domestic EPC Register.

All reports are retained for a period of 20 years from the date that they are registered within the Non Domestic EPC Register.

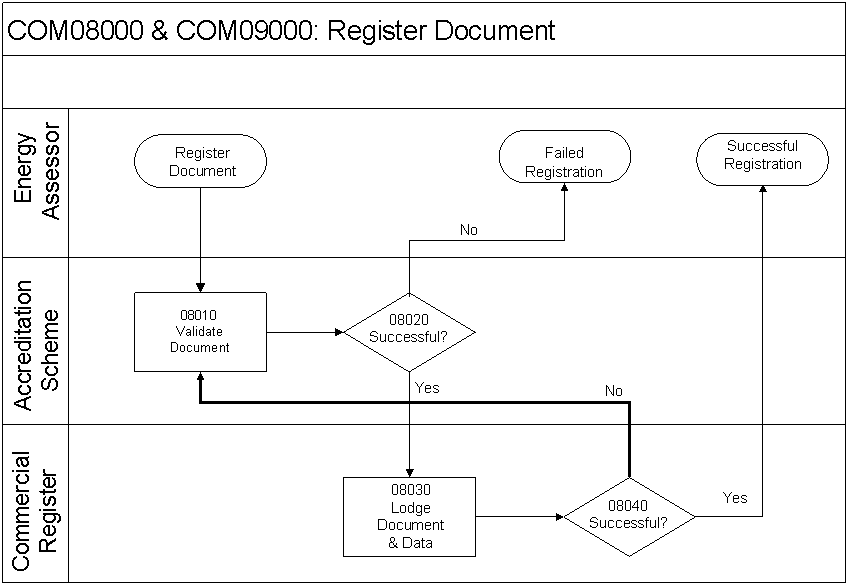
|  |
| --- |
| 4.8 Register Document (COM08000) |

**4.8.1 Context & Overview**

As part of the Document Production process the Scheme is responsible for registering the Document on behalf of the Energy Assessor. This process describes the activities required to achieve that.

* As defined in the Energy Performance of Buildings Regulations, a register of reports is to be maintained for all Energy Performance Certificates, Recommendation Reports, Display Energy Certificates and Advisory Reports produced by an Energy Assessor. Until the Report is registered in the Non Domestic EPC Register it cannot be regarded as a Report and it is the existence of the Report in the Non Domestic EPC Register that is the means of validating its authenticity.
* In addition, to build trust in the reports and quality of the Energy Assessors that produce them, each Accreditation Scheme has responsibility for quality assuring the data collected by the Energy Assessor during the assessment and the resulting Report.

**4.8.2 Functional Description**

* The high-level Register Document process is:
* 
* The key steps in the process are:

08010 The Energy Assessor sends a request to the Scheme to register a Report that they have produced. The Scheme validates the Report data and, depending on whether the Energy Assessor has submitted a completed Report, generates the Report.

Generation of the Reports from the input (collected) data is carried out using the transformations defined in the Transformation Rules and Report Look and Feel documents for non-dwellings.

The checks that the Accreditation Scheme must undertake are specified in Section 4.8.3 below.

The exact format of the message received is at the discretion of the Scheme but will be using a standard message specification produced by each Scheme based on its own published service.

In some cases the request will just contain the input (collected) data used to produce the Report and in other cases may also optionally include a Report PDF generated by the Energy Assessor using software approved by the Scheme.

Where the Report generated is an Energy Performance Certificate, the request message will comprise both the Report PDF and/or Report Data for the Energy Performance Certificate and associated Recommendation Report.

Where the Report generated is an Air Conditioning Inspection Certificate, the request message will comprise both the Report PDF and/or Report Data for the Air Conditioning Inspection Certificate and associated Air Conditioning Inspection Report.

In all cases the request message must be conformant to the Report XML Data message required for lodgement in the Non Domestic EPC Register (specified in the Message Specifications document for non-dwellings).

08020 If the Report passes the Accreditation Scheme checks, it is passed to the Non Domestic EPC Register for lodgement. To do this the Accreditation Scheme sends an appropriately formatted XML message (specified in the Message Specifications document for non-dwellings) to Non Domestic EPC Register to lodge the Report.

If it does not pass the Accreditation Scheme checks, the Energy Assessor is informed and the Report must be resubmitted to the Accreditation Scheme. The way in which the Energy Assessor is informed is up to each Accreditation Scheme.

In the case of correcting and resubmitting a previously lodged Report, the previously lodged report must first be cancelled by the Accreditation Scheme prior to lodging the corrected report. It is the Accreditation Scheme’s responsibility to ensure that this cancellation takes place.

08030 Prior to accepting a report for lodgement in the Non Domestic EPC Register, the Non Domestic EPC Register Operator must check that the format of the information provided by the Accreditation Scheme is compliant with the Standards issued by the Department.

Where the Report lodged is an Energy Performance Certificate, the request message will comprise of the Energy Performance Certificate PDF and/or input (collected) data followed by the associated Recommendation Report PDF and/or input (collected) data. Where this rule is not followed, the Report lodgement request will be rejected.

Where the Report lodged is an Air Conditioning Inspection Certificate, the request message will comprise of the Air Conditioning Inspection Certificate PDF and/or input (collected) data followed by the associated Air Conditioning Inspection Report PDF and/or input (collected) data. Where this rule is not followed, the Report lodgement request will be rejected.

At initial lodgement a Report must have a Report Status of ‘Entered’ (see COM13000) and any other status is invalid. The Non Domestic EPC Register can only charge a lodgement fee for an ‘Entered’ report.

Where the Report lodged is an Energy Performance Certificate and associated Recommendation Report, the Report Status for both the Energy Performance Certificate and the associated Recommendation Report must be ‘Entered’ and any other status is invalid. A successful lodgement of both these reports will represent a single lodgement fee.

The following rules also apply to the lodgement of an Energy Performance Certificate and associated Recommendation Report:

* The Related-RRN of the Energy Performance Certificate Report Header must match the RRN of the associated Recommendation Report
* The Related-RRN of the Recommendation Report Header must match the RRN of the associated Energy Performance Certificate
* The Report-Type for both the Energy Performance Certificate Report and associated Recommendation Report is extracted from the Header Report-Type field

The following rules also apply to the lodgement of a Display Energy Certificate and associated Advisory Report:

* The Related-RRN is only be used to associate reports where a Display Energy Certificate and associated Advisory Report have been lodged together (combined lodgement) or for retrieval purposes
* Where a Display Energy Certificate and associated Advisory Report have been lodged separately, the Related-RRN will be left blank

Where the Report lodged is an Air Conditioning Inspection Certificate and associated Air Conditioning Inspection Report, the Report Status for both the Energy Performance Certificate and the associated Recommendation Report must be ‘Entered’ and any other status is invalid. A successful lodgement of both these reports will represent a single lodgement fee.

The following rules also apply to the lodgement of an Air Conditioning Inspection Certificate and associated Air Conditioning Inspection Report:

* The Related-RRN of the Air Conditioning Inspection Certificate Header must match the RRN of the associated Air Conditioning Inspection Report
* The Related-RRN of the Air Conditioning Inspection Report Header must match the RRN of the associated Air Conditioning Inspection Certificate
* The Report-Type for both the Air Conditioning Inspection Certificate Report and associated Air Conditioning Inspection Report is extracted from the appropriate Report-Type header field

If any of the above checks are not met then the lodgement will be rejected.

08040 If the Non Domestic EPC Register checks are successful, then a ‘Successful Registration’ message is sent to the Accreditation Scheme, who then informs the Energy Assessor. The ‘Successful Registration’ message format is described in the Message Specifications for non-dwellings.

Where the Report lodged is an Energy Performance Certificate and associated Recommendation Report, the RRN returned in the successful registration message will be the RRN of the Energy Performance Certificate.

Where the both a Display Energy Certificate and associated Advisory Report are lodged together (combined lodgement), the RRN returned in the successful registration message will be the RRN of the first report within the XML message.

Where the Report lodged is an Air Conditioning Inspection Certificate and associated Air Conditioning Inspection Report, the RRN returned in the successful registration message will be the RRN of the of the first report within the XML message.

The process by which an Accreditation Scheme informs the Energy Assessor of a successful lodgement is out of scope of this document.

If the Non Domestic EPC Register checks are unsuccessful then the Accreditation Scheme will receive an ‘Unsuccessful Registration’ message that details what was wrong with the Report. The ‘Unsuccessful Registration’ message format is specified in the Message Specifications document for non-dwellings. The process by which an Accreditation Scheme informs the Energy Assessor of unsuccessful lodgement is out of scope of this document.

If the Assessor Details Update Extract file contains an email address for the registered user (see Assessor Upload – COM14000), the Non Domestic EPC Register Operator will send a confirmation email to that address on the successful or unsuccessful submission of a lodgement.

**4.8.3 Accreditation Scheme Checks**

The Accreditation Scheme must make the following checks prior to submitting a Report for lodgement on the Non Domestic EPC Register:

* Ensure the Report is completed by an Energy Assessor who is a member of the Scheme and accredited to undertake reports of that type
* Ensure that the Report is completed in the prescribed format and in accordance with the Technical Standards issued by the Department
* Ensure the Report is prepared in accordance with the scheme requirements
* Ensure that the Report is produced in accordance with Technical Standards issued by the Department
* Validate that the Report data conforms to the definitions recorded in the Non Domestic Register Data Model (see Non Domestic Register Data Model *Data Model* and the *XML Message Specifications* derived from it)
* Ensure that the Report is covered by appropriate indemnity insurance. This will be checked on individual lodgement because the details may change on a report-by-report basis
* Ensure that the Report complies with all requirements before submitting it for entry on the Department for Communities and Local Government Register of Reports
* If the Energy Assessor has not submitted the PDF version of the Report, generate the Report as defined in the *Transformation Rules*
* Inform the Non Domestic EPC Register if a Report is ‘under investigation’, usually in response to a consumer complaint or during a formal enquiry
* Instruct the Non Domestic EPC Register to ‘cancel’ a Report if, following an investigation, it is found to be incorrect.

Note that these checks do not imply the need for a 100% quality assurance check. Quality assurance monitoring is up to each Accreditation Scheme and may be on a sample basis, after the Report is lodged.

|  |
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| 4.9 Search & Retrieve Document (COM10000) |

**4.9.1 Context and Overview**

Access to report data contained in the Non Domestic EPC Register held by the Non Domestic EPC Register Operator will be determined by the Regulations. This process describes the processing of a request to retrieve a Report by an unregistered user.

* Scenarios when an unregistered user may need to access reports on the Non Domestic EPC Register include when a prospective buyer or tenant of a property wants to check the authenticity of a Report they have been given.
* The Non Domestic EPC Register will be the primary means for anyone with an interest in a Report to retrieve an authentic copy of the Report.
* Users may retrieve reports from the Non Domestic EPC Register via the public website.
* **4.9.2 Functional Description**
* The high-level process is:
* 

In the above process each of the entry or exit points will be an interactive request entered via a public website published and managed by the Non Domestic EPC Register Operator as an operational service

* The steps in the process are:

10010 The User enters the search criteria to identify a report. The search criteria are specified in Section 4.9.3.

10020 The Report is initially located before any other processing takes place because all the information required for subsequent processing of the request is located in the Report Header part of the Report Non Domestic Register Data Model.

The Report can only be retrieved if the Report Status is ‘Published[[11]](#footnote-11)’ – all other Report statuses are dealt with as if the Report does not exist.

10030 Where the Report retrieved is an Energy Performance Certificate, this report and the associated Recommendation Report will be returned by the retrieval process. The retrieval process will allow the user to view the PDF for both reports.

Where the Report retrieved is a Recommendation Report, this report and the associated Energy Performance Certificate will be returned by the retrieval process.

Where the Report retrieved is a Display Energy Certificate (and lodged together with an Advisory Report) this report and the associated Advisory Report will be returned by the retrieval process. The retrieval process will allow the user to view the Report Data for both reports and PDF for both reports

Where the Report retrieved is an Advisory Report (and lodged together with a Display Energy Certificate), this report and the associated Display Energy Certificate will be returned by the retrieval process. The retrieval process will allow the registered user to view the Report Data for both report types and PDF for both report types.

Where the Report retrieved is an Air Conditioning Inspection Certificate, this report and the associated Air Conditioning Inspection Report will be returned by the retrieval process. The retrieval process will allow the user to view the PDF for both reports.

Where the Report retrieved is an Air Conditioning Inspection Report, this report and the associated Air Conditioning Inspection Certificate will be returned by the retrieval process.

All reports that match the search criteria field (see Section 4.9.3) will be returned to the user regardless of the validity date of the Report.

10040 The list of reports is displayed to the user for selecting the individual Report that they want. The list will return all documents of the same kind, related to the same building or part building which was registered at any time during the period of 10 years ending on the date of the request.  
  
The Property that the related reports are requested for is identified from the Base UPRN recorded against the Report whose RRN is supplied as part of the request. The summary details provided for each Report in the search results is described in Section 4.9.3.

10050 Before being provided with the PDF, the user will be required to accept Terms and Conditions regarding the use of the Report, to comply with Regulations. These Terms and Conditions are specified in Section 4.9.3.

10060 The user is presented with the Report in PDF format to process further.

It is assumed that the unregistered users make these requests directly on the Public area of the Non Domestic EPC Register website. The Non Domestic EPC Register Operator may choose to design XML messages to enable peer-to-peer retrieval, but this is outside the scope of this document.

**4.9.3 Search and Retrieval Requirements**

Unregistered users will need to be able to retrieve the PDF lodged for a report that they have the RRN for.

**Search Criteria**

The search options available to the general public on the Non Domestic EPC Register are as follows:

|  |  |  |
| --- | --- | --- |
| **Criteria** | **Search Type** | **Notes** |
| * RRN | * Exact | * This is the unique identifier of the Report on the Non Domestic EPC Register. The format of this field is defined in an Annex to this document. |

**Results**

When a Report is searched for by an unregistered user using the RRN, the Non Domestic EPC Register returns all reports of the same kind, related to the same building or Base UPRN which was registered at any time during the period of 10 years ending on the date of the request.

The search results need to make clear which is the Report with the RRN searched for and which are the other reports of the same type registered at any time during the period of 10 years ending on the date of the request.

|  |  |  |
| --- | --- | --- |
| **Data Item** | **Format** | **Notes** |
| * RRN | * Unique | * This is the unique identifier of the Report on the Non Domestic EPC Register of the Report Reference Number that was searched for by the user. The format of this field is defined in an Annex to this document. |
| * Lodgement Date | * Date | * This is the date the Report was lodged on the Non Domestic EPC Register and is displayed to allow the unregistered user to select previous reports |
| * Report Type | * Exact | * Only reports of the same type as the RRN will be displayed. For clarity, the Report Type is shown to the unregistered user so they are aware of the type of Report that they have selected. The values available for this field are defined in the Non Domestic Register Data Model. |
| * Link to PDF |  | * This is the means by which the unregistered user accesses the PDF stored in the Non Domestic EPC Register for that particular Report. Selection of the link will open a download dialog box prompting the user to open or save the selected file. * If the Report is a Display Energy Certificate or Advisory Report, all reports associated with the Base UPRN from the selected search will be returned to the user regardless of whether the Report was lodged independently of the associated report or together (combined lodgement). |

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| 4.10 Maintain CIP Data (COM11000) |

**4.10.1 Context & Overview**

The Central Information Point holds the reference information needed by the OR software including degree day data and benchmarks.

The process describes the way in which the Register Operator acquires the information and makes it available to Energy Assessors to download.

The reference data required to be available for the OR calculation engine includes:

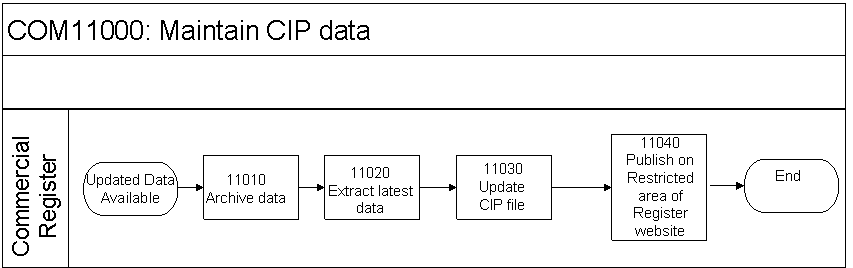
* The approved degree days. CIP operator provide degree days downloads to accredited assessors following contract with Met Office
* Table or similar allowing connection between degree days and postcodes
* The approved benchmarks
* The reference degree days data (i.e. total heating degree days) on which the benchmarks are based
* The approved conversion factors (e.g. kWh to CO2, NLA to GIA, etc.)
* Other approved adjustment factors
* The central database of standard recommendations.

It is up to the Non Domestic EPC Register Operator to put appropriate processes and agreements in place for understanding when updated data is available and obtaining the data. In summary the following processes will apply:

* Degree days data extracted on a monthly basis from the Met Office via an FTP server connection
* Met Office to inform the Non Domestic EPC Register Operator when degree day data is available or if not available by the agreed monthly cut-off date
* The Non Domestic EPC Register Operator will raise an incident ticket with the Met Office where there are issues in extracting the monthly degree day data and this will be progressed by the Met Office using existing procedures

The Non Domestic EPC Register Operator may also choose to make additional functionality available to energy assessors and their accreditation schemes, such as FAQs.

**4.10.2  Functional Description**

* The high-level process is:
* 
* The steps in the process are:

11010 Once updated data is available, the Non Domestic EPC Register Operator will archive the old data for quality assurance purposes. This will not however be available to users from the Non Domestic EPC Register website. Users requiring this information will contact the Non Domestic EPC Register Operator Customer Services for a copy of archived data.

11020 The Non Domestic EPC Register Operator obtains the latest data from appropriate sources.

11030 The Non Domestic EPC Register Operator updates the files with the new data

11040 The Non Domestic EPC Register Operator makes the new files available so that it can be accessed by registered users on the Restricted area of the Non Domestic EPC Register Operator website.

The information held on the CIP includes:

* The CIBSE benchmark tables
* The Degree Days data. Note that this is expanding information as data is added monthly
* The current CO2 emission factors

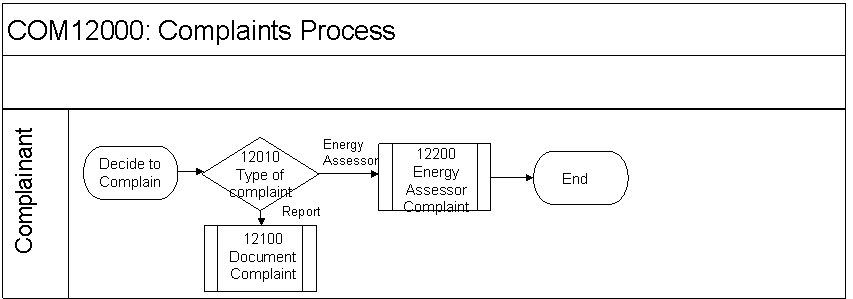
|  |
| --- |
| 4.11  Complaints Process (COM12000) |

**4.11.1 Context & Overview**

This process describes the way in which the General Public can complain about the conduct of an Energy Assessor or a Report that the Energy Assessor has produced.

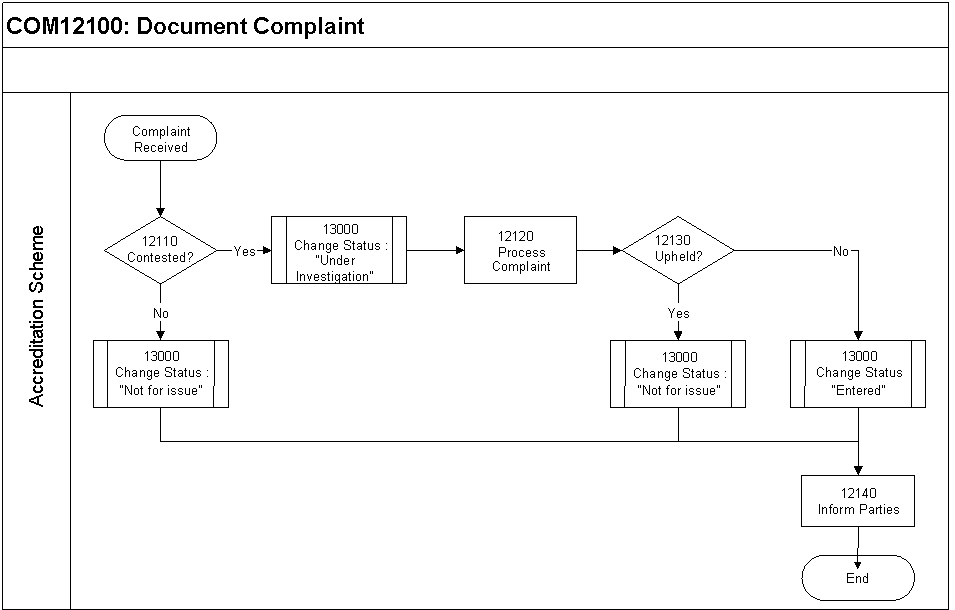
Complaints should be made to the Energy Assessor in the first instance and escalated to the Accreditation Scheme if satisfactory resolution cannot be achieved. If the Customer is not satisfied with the resolution achieved by the Accreditation Scheme then the complaint can be escalated to the court system. The Accreditation Scheme Standards describe the requirements for complaints handling.

**4.11.2 Functional Description**

* The overview of the Complaints process is:
* 
* The steps in the process are:

12010 Depending on whether the complaint is about an Energy Assessor or a specific Report determines the process that follows.

12100 The process for a complaint against a Document is as follows:



* The steps in the process are:

12110 A complaint is received by the Accreditation Scheme regarding a particular Document. The Scheme and Assessor need to review that complaint to see whether it is agreed that the Report is inaccurate or incomplete. The process to do this is out of scope of this document.  
  
If the complaint is uncontested, then the Report is cancelled and the Report status in the Non Domestic EPC Register will be changed to “not for issue”. The process to do this is described in COM13000.

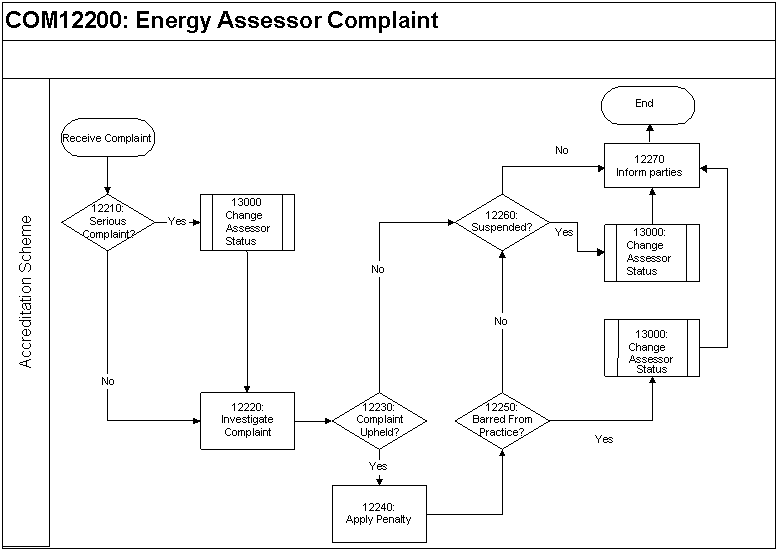
If the complaint is contested, the Report status in the Non Domestic EPC Register will be changed to “under investigation”. The process to do this is described in COM13000.

12120 The Accreditation Scheme investigates the complaint to evaluate whether the complaint is reasonable. This process is internal to the Accreditation Scheme and outside the scope of this document.

12130 After investigating the complaint the Accreditation Scheme decides whether the complaint is upheld or not. If the complaint is upheld then the Report is cancelled and the Report status in the Non Domestic EPC Register will be changed to “cancelled”. The process to do this is described in COM13000. If the complaint is not upheld then the Report status in the Non Domestic EPC Register will be changed back to “entered”. The process to do this is described in COM13000.

12140 The Accreditation Scheme needs to inform the Energy Assessor and the Complainant regarding the outcome of the complaint. This process is internal to the Accreditation Scheme and outside the scope of this document.

12200 The process for a complaint against an Energy Assessor is as follows:



* The steps in the process are:

12210 A complaint is received by the Accreditation Scheme regarding a particular Energy Assessor. If the Scheme considers the complaint to be serious, the status of the Energy Assessor on the Accreditation Scheme and Non Domestic EPC Registers will be reflected to indicate the Assessor is “suspended”. The process of determining whether the complaint is serious is internal to the Accreditation Scheme and outside the scope of this document.  
  
The process to change the status of the Energy Assessor is described in COM13000.

12220 The Accreditation Scheme investigates the complaint to evaluate whether the complaint is reasonable. This process is internal to the Accreditation Scheme and outside the scope of this document.

12230 After investigating the complaint the Accreditation Scheme decides whether the complaint is upheld or not. If the complaint is upheld then the Energy Assessor needs to be penalised.

12240 The process of determining what penalty to apply is internal to the Accreditation Scheme and outside the scope of this document. If the penalty includes cancellation of reports undertaken by that Energy Assessor, process COM13000 should be followed.

12250 The Accreditation Scheme needs to determine whether the Energy Assessor should be barred from practice. The process of determining this is internal to the Accreditation Scheme and outside the scope of this document.

12260 If the Scheme decides the Energy Assessor should be barred from practice then the status of the Energy Assessor on the Accreditation Scheme and Non Domestic EPC Registers will be reflected to indicate the Assessor is “suspended” using COM13000.

If the Scheme decides not to bar the Energy Assessor, the status of the Energy Assessor on the Accreditation Scheme and Non Domestic EPC Registers will be reflected to indicate the Assessor is “active” using COM13000.

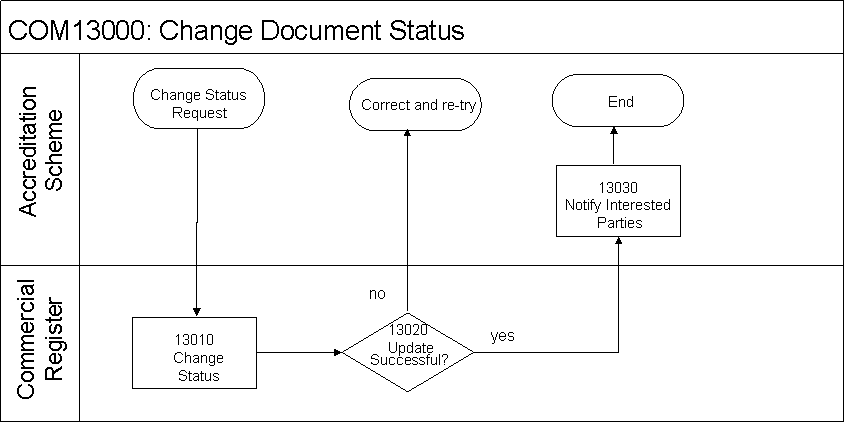
12270 The Accreditation Scheme needs to inform the Energy Assessor and the Complainant regarding the outcome of the complaint. This process is internal to the Accreditation Scheme and outside the scope of this document.

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| 4.12  Change Assessor/Document Status (COM13000) |

**4.12.1 Context & Overview**

* The status of Report in the Non Domestic EPC Register may change during its lifecycle to indicate its usability and reliability. Some possible scenarios for this are:
* The Report is flawed and the Energy Assessor and owner agree that the Report should be cancelled and an accurate Report is subsequently registered.
* A complaint is received by the Accreditation Scheme who request that a Report is placed ‘Under Appeal’ whilst the complaint is investigated.
* A complaint about the content of the Report is rejected by the Accreditation Scheme and the status is amended back to ‘Entered’.
* In all of these cases it is necessary to update the status of Report recorded in the Non Domestic EPC Register. Only the Accreditation Scheme that lodged the Report request to change its Status.
* The status of an Energy Assessor in the Accreditation Scheme and Non Domestic EPC Registers may change over time. Some possible scenarios for this are:
* The Energy Assessor’s membership of an Accreditation Scheme lapses
* An Energy Assessor has a serious complaint upheld against him and is barred from practice.
* In all of these cases it is necessary to update the status of the Energy Assessor in both the Accreditation Scheme and Non Domestic EPC Registers. The Accreditation Scheme updates its own Register and process COM02000 updates the Non Domestic EPC Register list of Energy Assessors.

**4.12.2 Functional Description**

* The process to change the status of an Energy Assessor on the Accreditation Scheme Register is a matter for the Accreditation Scheme and is outside the scope of this document. The process of updating the Non Domestic EPC Register list of Accredited Assessors is covered as part of COM02000.
* The high level process to change a Document Status is:
* 
* The steps in the process are:

13010 The Accreditation Scheme decides to change the status of a Document and sends a message to the Non Domestic EPC Register to change the status.

In order to change the Document Status the Accreditation Scheme sending the request must have been the Accreditation Scheme that lodged the Report.

The valid Status Codes of a Report are Entered, Under Appeal, and Cancelled. The format of the message to be sent to the Non Domestic EPC Register is described in the Message Specifications for non-dwellings.

Where the change of document status applies to an Energy Performance Certificate, the status change will apply to both the Energy Performance Certificate and the associated Recommendation Report.

Where the change of document status applies to a Recommendation Report, the status change will apply to both the Recommendation Report and the associated Energy Performance Certificate.

Where the change of document status applies to a Display Energy Certificate or Advisory Report and the reports were lodged together (combined lodgement), the change of document status will be automatically applied to the selected report the associated report within that lodgement. It is the responsibility of the Accreditation Scheme that lodged any subsequent associated report(s) to ensure that a change of document status is applied to all corresponding associated report(s).

Where the change of document status applies to a Display Energy Certificate or Advisory Report and the reports were lodged independently, the change of document status will only be applied to the selected report. It is the responsibility of the Accreditation Scheme that lodged the associated report(s) to ensure that a change of document status is applied to all corresponding associated report(s).

Where the change of document status applies to an Air Conditioning Inspection Certificate, the status change will apply to both the Air Conditioning Inspection Certificate and the associated Air Conditioning Inspection Report.

Where the change of document status applies to an Air Conditioning Inspection Report, the status change will apply to both the Air Conditioning Inspection Report and the associated Air Conditioning Inspection Certificate.

13020 The Accreditation Scheme receives the response from the Non Domestic EPC Register and checks whether the update was successful. If unsuccessful then the Accreditation Scheme needs to decide what corrective action to take.

13030 If the update was successful then the Accreditation Scheme needs to inform the Energy Assessor and other interested parties regarding the outcome of the change of status. The mechanism by which the Energy Assessor is notified, and the information that is provided, is at the discretion of the Accreditation Scheme (though must be auditable for Quality Assurance purposes) and outside the scope of this document.

The Non Domestic EPC Register will not accept a report that has been successfully updated as a “Cancelled” Report to be subsequently updated with a new report status (i.e. Entered, Under Appeal, Cancelled). The Non Domestic EPC Register will reject such a request from an Accreditation Scheme.

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| 4.13  Assessor Upload (COM14000) |

**4.13.1 Context & Overview**

* In order to support the Find and Instruct Energy Assessor requirements (see COM03000) a process is required to extract details of assessors from each Scheme to produce a single index of all accredited Energy Assessors.
* The content of the assessor records needs to be accurate and complete, and reflect the state of all assessors as at the close of business the previous day. The assumption is that a newly accredited Energy Assessor would not be performing energy assessments on the day that they become accredited because the details of their accreditation would be in the post (or whatever delivery mechanism is used to courier it to them).

**4.9.2 Functional Description**

* The high-level process is:
* 
* The steps in the process are:

14010 At agreed regular intervals (initially intended to be towards the end of each operational day) the Scheme extracts the Energy Assessor (EA) details from their local Assessor Register and creates the EA Details Update Extract file. Only currently Registered EAs are extracted (i.e. those with a status of ‘Active’ or ‘Suspended’) – the status of all other Inspectors is ignored.

The details to be extracted for each EA includes:

* Energy Assessor Name
* Certificate Number
* Current Status
* Accreditation Scheme Name
* Contact Details (Telephone, E-Mail Address)
* Qualifications
* The format of the file is as defined in the Message Specifications document.

14020 The Non Domestic Register Operator receives updates from each Accreditation Scheme, and responds with an XML message.   
The XML response message will indicate if there were any errors in the upload or if the message was incorrectly formatted.

14030 The EA Register Operator processes the updates from each Accreditation Scheme and consolidates all updates into the central repository. The records in the EA update message replace all the existing records in the Central EA Repository. For clarity, it should be noted that the absence of an EA record in the upload message will result in that EA record being deleted from the Central EA Repository.

Any errors identified in the consolidation process are logged for future retrieval (see 14040)

Note that this process is completed immediately on receipt of assessor details.

14040 The Certification Scheme can request the results of the last EA update process.

**Decision**: If there are any Exceptions reported then go to EA Error Log else go to 14050

Exceptions are identified by the presence of an ExceptionList for an EA in the EA Register Update Response file.

14050 If there are Exceptions recorded in the Energy Assessor Details Response then these need to be looked at by the Certification Scheme and rectified. This process is likely to be manual and will depend on the internal systems developed by the Certification Scheme.

Consequently this is outside the scope of this business process.

14100 Exit.

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| --- |
| 4.14 Produce Air Conditioning Inspection Certificate and Air Conditioning Inspection Report (COM15000) |

**4.14.1 Context & Overview**

This process provides details regarding how the Energy Assessor will undertake the assessment and submit information about the assessment to produce an Air Conditioning Inspection Certificate and Air Conditioning Inspection Report to the Accreditation Scheme.

The process of Registering the Report with the Accreditation Scheme and lodging it on the Non Domestic EPC Register is included within process COM08000.

There are a number of ways in which the Energy Assessor may receive the instruction, where this is outside the scope of this document.

**4.14.2 Functional Description**

* The high-level process for producing the Air Conditioning Inspection Certificate and Air Conditioning Inspection Report is:
* 
* The steps in the process are:

15010 The Energy Assessor carries out the assessment in line with the instructions and guidance described in the Minimum Requirements for Energy Assessors and other guidance that the Department may produce from time to time.

15020 Having completed the assessment and entered appropriate information into the software, the Energy Assessor submits the report data to the Accreditation Scheme for subsequent registration.

The exact interfaces provided are dependent on the Scheme but must include the data required to carry out the Report Registration, which is specified in the Message Specifications document.

15030 The Scheme submits the report data to the Non Domestic EPC Register.

Following the Energy Assessor submission of data, a watermarked version of the Air Conditioning Inspection Certificate and Air Conditioning Inspection Report will be generated and available to the Energy Assessor, while the XML message for lodgement will include non-watermarked versions of the same reports.

The scheme will ensure that the generated lodgement XML message includes the report data for the Air Conditioning Inspection Certificate and associated Air Conditioning Inspection Report. These are then lodged together in the Non Domestic EPC Register. See Report Registration (COM08000) for details of this process.

An Air Conditioning Inspection Certificate and Air Conditioning Inspection Report are valid for a period of 5 years from the inspection date. The inspection date may not be the same date that these reports are issued or the date that they are registered within the Non Domestic EPC Register.

All reports are retained for a period of 20 years from the date that they are registered within the Non Domestic EPC Register.

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| **5 Minimum Requirements** |

This section describes the minimum functionality required for end-to-end piloting and for day-one operations. It describes what needs to be done - not how it is implemented. This is up to Accreditation Schemes and Non Domestic EPC Register Operator to agree.

Note: Following iterations of this document, details within the Key Business Processes (sections 4.1 to 4.12) provide clarification of the Rationale within this section. This section is therefore superseded by Sections 4.1 to 4.12.

| **Process** | **Minimum (Yes/No)** | **Rationale** |
| --- | --- | --- |
| 02000 – Energy Assessor Registration | Yes | Non Domestic EPC Register needs to know which assessors are accredited to allow them to access services such as CIP and address lookup |
| 03000 – Find and instruct energy assessor | Yes | Public need to be able to check with the Non Domestic EPC Register that the assessor is accredited to do the certificate they need on their type of building |
| 04000 – Address and Property Search | Yes | This process allocates the UPRN, which is vital for search and retrieval of reports in the long-term and needs to have integrity from day-1 |
| 05000 – Retrieve previous data | No | No documents stored to begin with, so no need to retrieve data. EAs can get to PDFs via RRN |
| 06000/07000 – Produce document | Yes | Functionality does not affect the Non Domestic EPC Register, although it does produce the XML file that will be sent to the register. |
| 08000 – Register document | Yes | This functionality does not affect the Non Domestic EPC Register |
| 09000 – Lodge document with register | Yes | Lodgement of data used to produce the Report & PDF is needed to comply with regulations. Lodgement of header data will be needed to allow people to search |
| 10000 – Retrieve document | Yes | Anyone with the RRN needs to be able to retrieve the PDF, to comply with regulation |
| 11000 – Maintain CIP data | Yes | Assessors cannot use the OR software without access to latest CIP data |
| 12000 – Complaints process | Yes | This functionality does not affect the Non Domestic EPC Register |
| 13000 – Change document status | Yes | An assessor can be suspended or a report could be complained against from day 1. |
| 14000 – Assessor Upload | Yes | Non Domestic EPC Register needs up to date information on which assessors are accredited to allow them to access services such as CIP and address lookup |

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| **Appendix A – Generation of Report Reference Number** |

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| A.1 Generation Algorithm |

The report generator software developed for Non-Dwelling EPCs, Display Energy Certificates, Recommendation Reports, Advisory Reports, Air Conditioning Inspection Certificates and Air Conditioning Inspection Reports will generate the Report Reference Number.

The Report Reference Number is algorithmically generated from the information contained in the Report. This is the Natural Key[[12]](#footnote-12) to the Report as follows:

* UPRN – Unique Property Reference Number – a unique 12-digit numeric identifier for each property e.g. “23001214”. The UPRN, along with the Address, is entered by the Energy Assessor and, assuming the message is pre-validated, can be used directly
* Inspection Date – the date that the Energy Assessor actually visited the Property to carry out the inspection (as opposed to the Registration Date or the date the Report was commissioned). This can be represented as a number in the form YYMMDD e.g. 21-Oct-2010 🡺 101021Where no inspection is undertaken the report generator software will use the date that the given report (Non Domestic EPC /Advisory Report/Recommendation Report) is generated or the nominated date for the Display Energy Certificate to populate the Inspection Date
* The Report Type – this is an enumerated value recorded as part of the [Report-Header] with the following values:  
  1 = Display Energy Certificate  
  2 = Advisory Report  
  3 = Energy Performance Certificate  
  4 = Recommendation Report

5 = Air Conditioning Inspection Report

6 = Air Conditioning Inspection Certificate

* Using a decimal-complement on some digits under certain conditions e.g. odd digits are transformed but even digits are left untransformed. This helps to make two sequential numbers (such as a date) look very different e.g. 060101 & 060102 becomes 060909 & 060902 or 061031 & 061101 🡺 069079, 069909.  
    
  Only numeric data-items with a high degree of similarity benefit from this, so it would only be appropriate to apply decimal-complementing to the Inspection Date digits.
* We then pad the number to 20-digits by adding a checksum into the number calculated as Modulo7 of the sum of the constituent digits.  
    
  This gives us a basic 20-digit Report Reference Number made up as follows:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| P1 | P2 | P3 | P4 | P5 | P6 | P7 | P8 | P9 | P10 | P11 | P12 | D1 | D2 | D3 | D4 | D5 | D6 | T | C |

Where:

D – Digit from the 6-digit Inspection Date

P – Digit from the 12-digit Unique Property Reference Number (UPRN)

T – Digit from 1-digit Report Type

C – Checksum

In addition to offer some protection from a 3rd party trawling for reports by looping around the possible inspection dates for a Property on the market this is further obfuscated by:

Finally a digit placement transformation is employed rather than just a concatenation of the components together; this obfuscates the transformation used. A different digit placement pattern is finally employed depending on the generated checksum, as follows:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Digit | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| C = 0 & 4 | 5 | 19 | 11 | 7 | 8 | 17 | 15 | 13 | 9 | 4 | 18 | 16 | 6 | 12 | 1 | 3 | 2 | 14 | 10 | C |
| 1 & 5 | 2 | 4 | 12 | 10 | 18 | 14 | 7 | 3 | 9 | 6 | 13 | 16 | 1 | 11 | 15 | 8 | 19 | 17 | 5 | C |
| 2 & 6 | 3 | 13 | 11 | 10 | 17 | 6 | 14 | 9 | 5 | 1 | 18 | 4 | 12 | 8 | 19 | 16 | 15 | 2 | 7 | C |
| 3 | 17 | 4 | 9 | 14 | 2 | 6 | 10 | 8 | 16 | 1 | 12 | 19 | 3 | 18 | 15 | 7 | 5 | 13 | 11 | **C** |

Note: The grid shows the position that the given digit moves to **not** the digit that occupies that position. So, for example, when C = 0 then digit 1 is mapped to position 5, digit 2 maps to position 19 etc.

This obfuscation ensures that:

* Two Report Reference Numbers for the same Property are not sequentially numbered.
* The Report Reference Numbers do not necessarily increase over time so the highest RRN generated on one day is not the start point for any Report Reference Numbers generated on the following day. They can be lower.
* The transformation is reversible because as the key information is unpacked– i.e. the UPRN, Inspection Date and Report Type – from the Report Reference Number in order to verify the values.

|  |
| --- |
| A.2 Some Examples |

Example 1 - Same report for a Building Part with three consecutive Inspection Dates:

Three consecutive Inspection Dates (30-Oct-2010, 31-Oct-2010 & 01-Nov-2010) for the same Property (Building Part 123456789001):

For 30-Oct-2010 we have:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Digit | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Source | P1 | P2 | P3 | P4 | P5 | P6 | P7 | P8 | P9 | P10 | P11 | P12 | D1 | D2 | D3 | D4 | D5 | D6 | T | C |
| Original | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 3 | 0 | 1 |  |
| Complement | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 1 | 1 | 0 | 9 | 0 | 7 | 0 | 1 |  |
| Check-Sum(1) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 1 | 1 | 0 | 9 | 0 | 7 | 0 | 1 | 1 |
| Digit Swap | 1 | 1 | 8 | 2 | 1 | 0 | 7 | 0 | 9 | 4 | 0 | 3 | 0 | 6 | 9 | 1 | 0 | 5 | 7 | 1 |

|  |  |
| --- | --- |
| Formatted | 1182-1070-9403-0691-0571 |

(1) Sum of Digits = 64, Checksum = modulus (64, 7) = 1

For 31-Oct-2010 we have:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Digit | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Source | P1 | P2 | P3 | P4 | P5 | P6 | P7 | P8 | P9 | P10 | P11 | P12 | D1 | D2 | D3 | D4 | D5 | D6 | T | C |
| Original | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 3 | 1 | 1 |  |
| Complement | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 1 | 1 | 0 | 9 | 0 | 7 | 9 | 1 |  |
| Check-Sum(1) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 1 | 1 | 0 | 9 | 0 | 7 | 9 | 1 | 3 |
| Digit Swap | 0 | 5 | 1 | 2 | 7 | 6 | 0 | 8 | 3 | 7 | 1 | 0 | 9 | 4 | 9 | 9 | 1 | 0 | 1 | 3 |

|  |  |
| --- | --- |
| Formatted | 0512-7608-3710-9499-1013 |

(1) Sum of Digits = 73, Checksum = modulus (73, 7) = 3

For 01-Nov-2010 we have:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Digit | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Source | P1 | P2 | P3 | P4 | P5 | P6 | P7 | P8 | P9 | P10 | P11 | P12 | D1 | D2 | D3 | D4 | D5 | D6 | T | C |
| Original | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 |  |
| Complement | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 1 | 1 | 0 | 9 | 9 | 0 | 9 | 1 |  |
| Check-Sum(1) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 1 | 1 | 0 | 9 | 9 | 0 | 9 | 1 | 5 |
| Digit Swap | 1 | 1 | 8 | 2 | 1 | 0 | 7 | 9 | 9 | 4 | 0 | 3 | 0 | 6 | 9 | 1 | 9 | 5 | 0 | 5 |

|  |  |
| --- | --- |
| Formatted | 1182-1079-9403-0691-9505 |

(1) Sum of Digits = 75, Checksum = modulus (75, 7) = 5

So the generated RRN for each date would be:

|  |  |
| --- | --- |
| Inspection Date | Report Reference Number |
| 30-Oct-2010 | 1182-1070-9403-0691-0571 |
| 31-Oct-2010 | 0512-7608-3710-9499-1013 |
| 01-Nov-2010 | 1182-1079-9403-0691-9505 |

In both examples it can be seen that very similar input values will produce significantly different Report Reference Numbers and in many cases the number generated for one day may be significantly lower than a number generated on the previous day.

**Example 2 - Same report for a Building Part with three consecutive Inspection Dates:**

Different reports for the same Building Part (123456789001) inspected on the same day (30-Oct-2007):

For Display Energy Certificate (Report Type = 1) we have:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Digit | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Source | P1 | P2 | P3 | P4 | P5 | P6 | P7 | P8 | P9 | P10 | P11 | P12 | D1 | D2 | D3 | D4 | D5 | D6 | T | C |
| Original | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 1 | 0 | 7 | 1 | 0 | 3 | 0 | 1 |  |
| Complement | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 1 | 0 | 3 | 9 | 0 | 7 | 0 | 1 |  |
| Check-Sum(1) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 1 | 0 | 3 | 9 | 0 | 7 | 0 | 1 | 3 |
| Digit Swap | 0 | 5 | 0 | 2 | 7 | 6 | 0 | 8 | 3 | 7 | 1 | 0 | 0 | 4 | 9 | 9 | 1 | 3 | 1 | 3 |

|  |  |
| --- | --- |
| Formatted | 0502-7608-3710-0499-1313 |

(1) Sum of Digits = 66, Checksum = modulus (66, 7) = 3

For Advisory Report (Report Type = 2) we have:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Digit | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Source | P1 | P2 | P3 | P4 | P5 | P6 | P7 | P8 | P9 | P10 | P11 | P12 | D1 | D2 | D3 | D4 | D5 | D6 | T | C |
| Original | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 1 | 0 | 7 | 1 | 0 | 3 | 0 | 2 |  |
| Complement | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 1 | 0 | 3 | 9 | 0 | 7 | 0 | 2 |  |
| Check-Sum(1) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 1 | 0 | 3 | 9 | 0 | 7 | 0 | 2 | 4 |
| Digit Swap | 9 | 7 | 0 | 0 | 1 | 0 | 4 | 5 | 9 | 2 | 3 | 3 | 8 | 0 | 7 | 1 | 6 | 0 | 2 | 4 |

|  |  |
| --- | --- |
| Formatted | 9700-1045-9233-8071-6024 |

1. Sum of Digits = 67, Checksum = modulus (67, 7) = 4

For Energy Performance Certificate (Report Type = 3) we have:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Digit | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Source | P1 | P2 | P3 | P4 | P5 | P6 | P7 | P8 | P9 | P10 | P11 | P12 | D1 | D2 | D3 | D4 | D5 | D6 | T | C |
| Original | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 1 | 0 | 7 | 1 | 0 | 3 | 0 | 3 |  |
| Complement | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 1 | 0 | 3 | 9 | 0 | 7 | 0 | 3 |  |
| Check-Sum(1) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 1 | 0 | 3 | 9 | 0 | 7 | 0 | 3 | 5 |
| Digit Swap | 0 | 1 | 8 | 2 | 3 | 0 | 7 | 0 | 9 | 4 | 3 | 3 | 0 | 6 | 9 | 1 | 0 | 5 | 7 | 5 |

|  |  |
| --- | --- |
| Formatted | 0182-3070-9433-0691-0575 |

(1) Sum of Digits = 68, Checksum = modulus (68, 7) = 5

For Air Conditioning Inspection Report (Report Type = 5) we have:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Digit | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Source | P1 | P2 | P3 | P4 | P5 | P6 | P7 | P8 | P9 | P10 | P11 | P12 | D1 | D2 | D3 | D4 | D5 | D6 | T | C |
| Original | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 1 | 0 | 7 | 1 | 0 | 3 | 0 | 5 |  |
| Complement | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 1 | 0 | 3 | 9 | 0 | 7 | 0 | 5 |  |
| Check-Sum(1) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 1 | 0 | 3 | 9 | 0 | 7 | 0 | 5 | 0 |
| Digit Swap | 9 | 7 | 0 | 0 | 1 | 0 | 4 | 5 | 9 | 5 | 3 | 3 | 8 | 0 | 7 | 1 | 6 | 0 | 2 | 0 |

|  |  |
| --- | --- |
| Formatted | 9700-1045-9533-8071-6020 |

(1) Sum of Digits = 70, Checksum = modulus (70, 7) = 0

So the generated RRN for each report for the same Property for the same Inspection Date would be:

|  |  |
| --- | --- |
| Report Type | Report Reference Number |
| Display Energy Certificate | 0502-7608-3710-0499-1313 |
| Advisory Report | 9700-1045-9233-8071-6024 |
| Energy Performance Certificate | 0182-3070-9433-0691-0575 |
| Air Conditioning Inspection Report | 9700-1045-9533-8071-6020 |

Appendix C – Technology Infrastructure Schematic

Appendix D – Landmark Business Continuity Plan

1. ‘Textual Strings’ are string variables that carry free-form descriptive text such as ‘Comments’ and Enumerated Value Meanings. String Properties that carry enumerated values or number values are Strings but **not** Textual Strings – this is a significant distinction. [↑](#footnote-ref-1)
2. Published’ includes the ‘Entered’ and ‘Under Appeal’ statuses. [↑](#footnote-ref-2)
3. See Business Process RAW01000 – Report Production [↑](#footnote-ref-3)
4. This assumes that each property will be inspected at most once a day. It is possible that the same property may be inspected more than once a day

   however this should be regarded as extremely improbable – no likely scenario in which the Seller would arrange (and pay) for two different Assessors to duplicate inspections. [↑](#footnote-ref-4)
5. A 10-digit number provides for 10,000 million properties which starting with a base of 30 million properties and a 10% churn per annum provides for

   3200+ years before ID reuse is required. This would suit requirements. [↑](#footnote-ref-5)
6. This will be provided by the Address & Property Database provided as part of the Report Register. How the Assessors finds the UPRN for a Property is a separate business process but will probably involve some sort of interactive search facility. [↑](#footnote-ref-6)
7. Modulo11 preferred for checksums however Modulo7 is also common standard and avoids having to deal with 11 (or “X”) as a possible checksum. [↑](#footnote-ref-7)
8. “Textual Strings” are string variables that carry free-form descriptive text such as “Comments” and Enumerated Value Meanings. String Properties that carry enumerated values or number values are Strings but **not** Textual Strings – it’s a significant distinction. [↑](#footnote-ref-8)
9. Due to the free form nature of many of the responses within the Air Conditioning Report, Welsh language versions are

   at the discretion of the client. [↑](#footnote-ref-9)
10. Published’ includes the ‘Entered’ and ‘Under Appeal’ statuses. [↑](#footnote-ref-10)
11. Published’ includes the ‘Entered’ and ‘Under Appeal’ statuses. [↑](#footnote-ref-11)
12. This assumes that each property will be inspected at most once a day. It is possible that the same property may be inspected more than once a day but this should be regarded as extremely improbable. [↑](#footnote-ref-12)