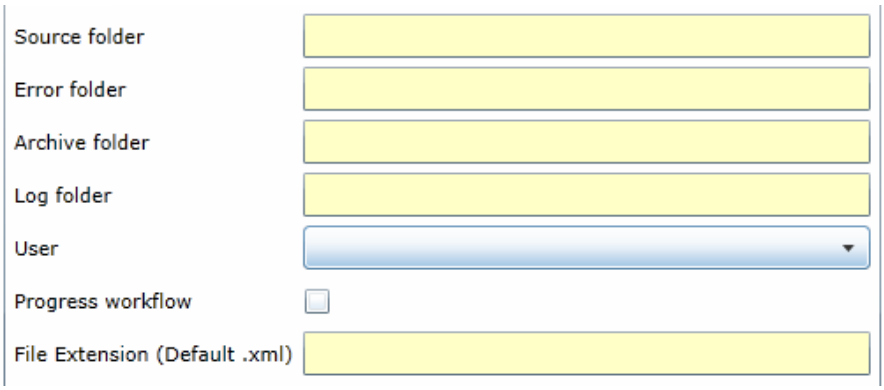
7 Register Appointments (14013)

7.1 Description

At some point during the life of a servicing job, the third party system will need to tell WorkBench that an appointment has been registered. The register appointments monitors a folder and picks up any XML files copied there, processing them as appointments against the job. This will often move the job onto the next step in the workflow and the file can use either the external job number or the WorkBench job ID.



7.2 Source folder

This is the directory that the interface monitors for input from the third party. It will pick up any XML files it finds, validate and process them.

7.3 Error folder

If the interface fails to process any of the jobs within an XML file, it will take those jobs out of that file and move them to a new XML file that is then saved to this folder. This means that job success and failure is not at an XML file level, but at a job level (i.e. partial failures).

7.4 Archive folder

Once the interface has processed a collection of jobs from a file, that file will be copied to this directory, but minus any jobs that failed and went to the error directory. Every job in the archive directory is one that has been imported successfully.

7.5 Log folder

Every time the interface runs it generates a new log file, which is stored in this directory. This log file contains as much useful information as possible and is invaluable when it comes to understanding what the interface processed and any issues it encountered.

7.6 User

Because this interface needs to inject new events into the start of the workflow, it needs to do this as a workflow user. Because different workflow users can have different levels of access, we need to configure the interface to run as a specific workflow user.

7.7 Progress workflow

In some scenarios it may be required that when the interface processes the XML files, it does not progress jobs through the workflow, but leaves them where they are. Leaving this option unchecked will do exactly that. In most cases it will be checked so that jobs move through the workflow.

7.8 File Extension

The expected file extension of the import file, by default it is ".xml".

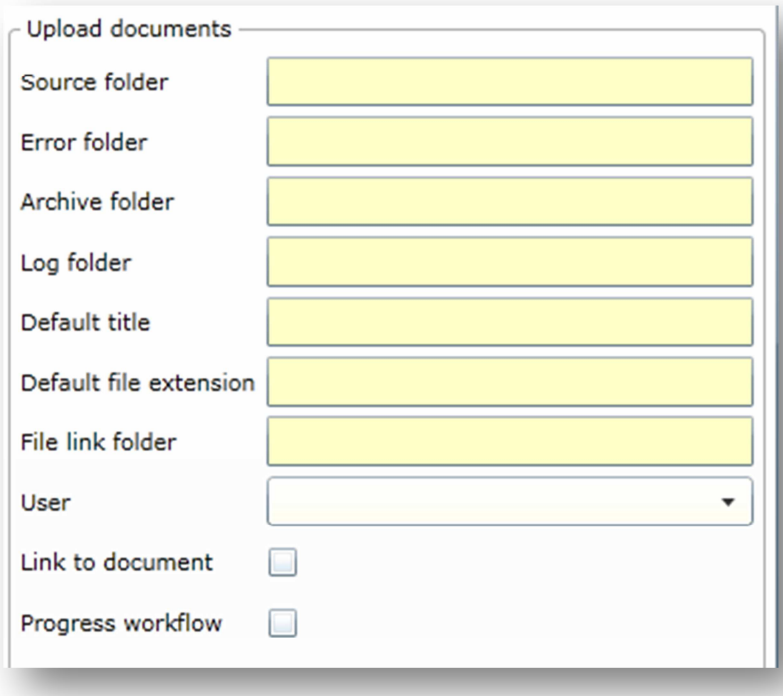
7.9 File Spec

Field	Data Type (Max length)	Description
Id (Xml Attribute)	Number	Keystone Job id.
Date	Date	The date of when the contractor tried to job the property.
Reason	String (50)	Reasons passed back to reflect whether appointment was booked as part of the standard process, or by a resident changing an existing appointment.
Comment	Text	Free text column. Used for any information that contractors wish Keystone to see for this job.
ExternalJobNumber	Text	Third Party Job Id used to get the Keystone Job Id with Workbench.

8 Upload Documents (14014)

8.1 Description

Towards the end of a job, the third party may have generated a gas safety certificate, and this document needs to be uploaded to WorkBench by this interface. In some workflows, letters sent to the tenant could also fall under this interface. In either case, XML files can be generated for the interface to pick up and process. There is some flexibility in how the files can be formed. For example, the file can include a path to the file that WorkBench should add to its document repository, or it can include the file itself in the XML document as a base 64 encoded string. Once WorkBench has a file to load, you can also dictate whether or not it should be loaded into the repository as a link to a physical file on a server, or loaded into the WorkBench database. If you need to link the file and the file is included in the XML file as a string, it can be copied to a pre-defined directory and linked there.



8.2 Source folder

This is the directory that the interface monitors for input from the third party. It will pick up any XML files it finds, validate and process them.

8.3 Error folder

If the interface fails to process any of the jobs within an XML file, it will take those jobs out of that file and move them to a new XML file that is then saved to this

folder. This means that job success and failure is not at an XML file level, but at a job level (i.e. partial failures).

8.4 Archive folder

Once the interface has processed a collection of jobs from a file, that file will be copied to this directory, but minus any jobs that failed and went to the error directory. Every job in the archive directory is one that has been imported successfully.

8.5 Log folder

Every time the interface runs it generates a new log file, which is stored in this directory. This log file contains as much useful information as possible and is invaluable when it comes to understanding what the interface processed and any issues it encountered.

8.6 Default title

If no document title is defined in the import file, the interface can use the default title that can be set here.

8.7 Default file extension

If not file extension has been defined in the import file, the interface can use the default file extension that can be set here.

8.8 File link folder

If the import file includes the document as a base 64 encoded string and you would like to link the file to the document repository (instead of loading it into the WorkBench database), the interface will write the document to this directory and link to it there.

8.9 User

Because this interface needs to inject new events into the start of the workflow, it needs to do this as a workflow user. Because different workflow users can have different levels of access, we need to configure the interface to run as a specific workflow user.

8.10 Link to document

This simply tells the interface whether you would like to link to documents, or load them into the WorkBench database instead.

8.11 Progress workflow

In some scenarios it may be required that when the interface processes the XML files, it does not progress jobs through the workflow, but leaves them where they are. Leaving this option unchecked will do exactly that. In most cases it will be checked so that jobs move through the workflow.

8.12 File Spec

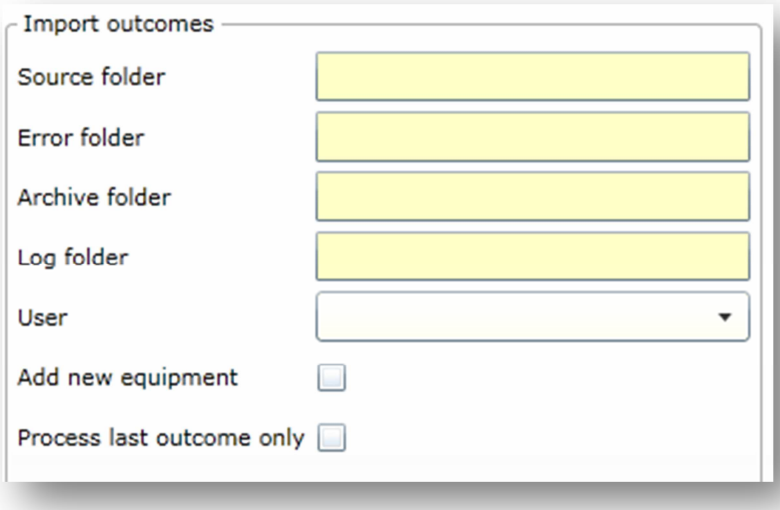
Field	Data Type (Max length)	Description

Id (Xml Attribute)	Integer	Keystone Job id.
DocumentType	String (1000)	The date of when the contractor tried to visit the property.
Description	String (1000)	The description of the document for example *LGSR for FY 2009*.
Path	Text	UNC path to the document to upload. The UNC path is a universally recognised path that can be accessed by the Keystone server.
DocumentObject	Byte Stream	Document streamed in byte array format as alternative to document path.
Title	String (50)	(Optional) File name of the document. If not specified the interface will use the default from the interface configuration.
FileExtension	String (10)	(Optional) File extension relating to the document type. If not specified the interface will use the default from the interface configuration.

9 Import Outcomes (14015)

9.1 Description

Once the third party surveyor has visited a property and performed a service or inspection, or perhaps a visit was attempted but the surveyor could not gain access, we can report an outcome for the job. The import outcomes interface monitors a folder for outcome XML files and processes them accordingly, moving the job through to the next stage in the workflow that's appropriate to the outcome of the job.



9.2 Source folder

This is the directory that the interface monitors for input from the third party. It will pick up any XML files it finds, validate and process them.

9.3 Error folder

If the interface fails to process any of the jobs within an XML file, it will take those jobs out of that file and move them to a new XML file that is then saved to this folder. This means that job success and failure is not at an XML file level, but at a job level (i.e. partial failures).

9.4 Archive folder

Once the interface has processed a collection of jobs from a file, that file will be copied to this directory, but minus any jobs that failed and went to the error directory. Every job in the archive directory is one that has been imported successfully.

9.5 Log folder

Every time the interface runs it generates a new log file, which is stored in this directory. This log file contains as much useful information as possible and is invaluable when it comes to understanding what the interface processed and any issues it encountered.

9.6 User

Because this interface needs to inject new events into the start of the workflow, it needs to do this as a workflow user. Because different workflow users can have different levels of access, we need to configure the interface to run as a specific workflow user.

9.7 Add new equipment

When processing job outcomes, any equipment that's listed that has no corresponding external equipment number is considered to be new and needs to be added to WorkBench. Checking this option will allow the interface to add the new equipment.

9.8 Process last outcome only

In situations where multiple outcomes can be returned for a job in the same file, this setting allows you to configure the interface to only take notice of the most recent outcome. If this happens, it will summarize all outcomes in the workflow history notes. Leaving this unchecked means that the interface will attempt to move the job through the workflow each time it's mentioned in the import file. This is only going to work if you have a workflow that sends the job on to a step that can accept a further outcome.

9.9 Handling Different Equipment

Below is an example of how the interface can be configured to handle the situation where equipment being returned in the XML does not match that against the asset in KSI.

Current Equipment:

Equipment Type	Make	Model	Reference Code
Gas Boiler	Baxi	Bermuda	TVHGB001
Gas Cooker	Zanussi	ZGC991	TVH00000

XML for the job contains:

Equipment Type	Make	Model	Reference Code
Gas Boiler	Baxi	Bermuda HE1	TVHGB001
Gas Fire	FireMax	Heatstar	TVHGF002
Gas Cooker	Zanussi	ZGC991	GC0001

Interface Settings:

Add New Equipment = Ticked

Disable equipment Deletion = Unticked

KSI after interface has run:

Equipment Type	Make	Model	Reference Code	*Notes*

Gas Boiler	Baxi	Bermuda **HE1**	TVHGB001	*Model updated as Reference Code is the same*
Gas Fire	**FireMax**	**Heatstar**	**TVHGF002**	*Added as Reference Code not previously present*
Gas Cooker	Zanussi	ZGC991	TVH00000	*This will be decommissioned as it the reference code was not found in the import file*
Gas Cooker	Zanussi	ZGC991	GC0001	*This has been added as the reference code was not in the original job*

9.10 File Spec

9.10.1 Job (Xml Element)

Field (XML Tag)	Data (Max length)	Type	Field Description
Id (Xml Attribute)	Integer		Keystone job id.
ExternalJobNumber	String (20)		If a WorkBench job number is not available, the third party External Job Number can be provided, as long as it is already stored within WorkBench.
Comments	Text		(Optional) Free text column. Used for any information that contractors want Keystone to see for this job.
ActualDate	Date		Actual Date of the job in the format of *yyyy-mm-dd*.
NextDueDate	Date		(Optional) Calculated next service due date generated by third party contractor system.
Outcome	String (50)		An outcome provides the result of the job i.e. did all appliances pass? Outcomes can also be specified at equipment level.
CharList	List<Char>		(Optional) User-definable characteristics relating to the job for example *Number of Access Attempts.*
EquipmentList	List<Equipment>		Equipment list for the job.

9.10.2 Equipment (Xml Element)

Field (XML Tag)	Data (Max length)	Type	Field Description

Id (Xml Attribute)	Integer	Keystone equipment id.
ExternalEquipmentId	Integer	The unique appliance reference number held in a third party system.
Equipment Type (Xml Attribute)	String (30)	Description of the equipment type for example *Boiler* or *Smoke Alarm*.
Make	String (100)	Keystone equipment make.
Model	String (100)	Keystone equipment model.
SubModel	String (100)	Keystone equipment sub model.
Location	String (500)	(Optional) Location of equipment in property.
SerialNumber	String (500)	(Optional) Serial number for piece of equipment
IsTenantOwned	Boolean	(Optional) Is the piece of equipment tenant owned?
InstallDate	Date	(Optional) Installation date of equipment in format of *yyyy-mm-dd*.
InstalledBy	String (40)	(Optional) Name of organisation or contact that installed equipment originally.
ServicedBy	String (40)	(Optional) Name of organisation or contact to service equipment.
SuppliedBy	String (40)	(Optional) Name of organisation or contact that supplied the equipment.
WarrantyExpiresDate	Date	(Optional) Date of when the warranty expires.
DecommissionedDate	Date	(Optional) Equipment decommissioned date.
Contact	String (40)	(Optional) Contact name for equipment.
DueDate	Date	Due Date of the equipment in the format of *yyyy-mm-dd*.
Outcome	String (50)	An outcome provides the result of the job i.e. did all appliances pass? Outcomes are stored at equipment level. This outcome can be taken from the job outcome if no outcome is supplied here.
Update Action	String (50)	(Optional) The name of a KAM update rule to fire on the basis of the outcome.
EquipmentChars	List<Char>	(Optional) User-definable characteristics relating to the equipment for example *Flue Type.*
EquipmentVisitChars	List<Char>	(Optional) User-definable characteristics relating to the equipment visit for example *Service Result.*

10 Managing the interfaces

The maintenance of the generic KSI interfaces can take place on different levels and may require a certain amount of from both the asset manager who's interested in the management of servicing jobs and also ICT, who are interested in whether or not the interfacing service is running correctly and has access to everything it needs.

10.1 The windows service

There may be times that you need to be sure the windows service is actually running. This is the service that, on an interval, checks for any interfaces that are scheduled to be run. If it's not running, then interfaces will not be processed at all.

To check that the interface service is running, you will need to remote to the server that the windows service is running on. From there you can either go to the start menu and then on to Administrative Tools and Services, or you can right-click on My Computer and select Manage. Once you have a list of services in front of you, scroll down to KeystoneInterfaceStatus. If it's not running, you can right-click on it and select Start.

Generally, the Startup Type should be set to Automatic.

10.2 The windows event log

When the Keystone Interface Service starts up and whenever it starts to process an interface, it will log various actions in the windows event log. If you start the service and need to make sure that it started correctly with no errors, or if you expected it to run an interface and need to see if it did, you can check the event log to see what actually happened.

To do this, you can go to the start menu, Administrative Tools and then Event Viewer, or right-click on My Computer and select Manage.

When the interface service first starts, you should see messages like this, although these may vary between different versions of the service.

- Interface service version 3.2.4197.20143
- Service started successfully.
- WorkerThread start
- KGI loaded from C:\...\Keystone Interface Service\KeystoneGenericInterface.DLL, version 3.2.4197.20126
- Interfaces loaded from C:\...\Keystone Interface Service\KeystoneInterfaces.DLL, version 3.2.4197.20137
- WorkerThread enter loop

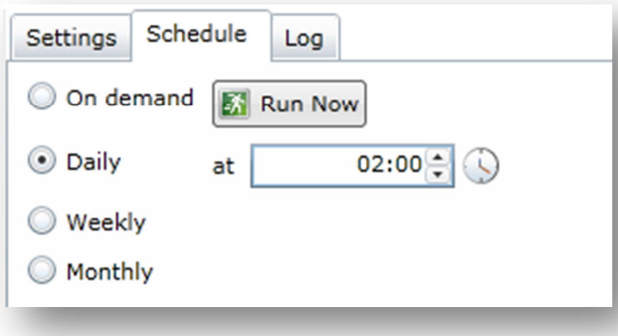
10.3 Interface files and status

The files imported by an interface will always be filed in either an Error or an Archive directory. Each time an interface runs, it will also generate a new log entry. Using a combination of these, and last modified dates, it's usually easy enough to keep an eye on what an interface is doing.

If you see in the Manage Interfaces window in WorkBench that an interface has 'failed' this may not be a major issue, but it's always worth checking. The first place to look is in the folder where the interface writes its log files. You'll need to open the file that was last generated by the interface and have a look for any errors that were raised.

Errors for these interfaces vary, but typically they may be caused when a UPRN could not be found in WorkBench, or a job could not be found in workflow, or perhaps couldn't be found using the external job number. Errors could also be caused if a file generated by the third party refers to something that has not been configured in WorkBench, such as a service type or contractor.

Typically the best approach is to fix the cause of the error and then move the import file from the Error folder to the Source folder, and then run the interface again. You can run any interface on demand by opening its Schedule tab and clicking the Run Now button.



11 Sample Files

11.1 Export Job Numbers

```
<?xml version="1.0" encoding="utf-8" ?>
-<ExportJobNumbers xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema">
<JobList>
        <Job id="1245" ExternalJobNumber="4349823ab" />
 </JobList>
 </ExportJobNumbers>
```


11.2 Export Jobs

```
<?xml version="1.0" encoding="utf-8"?>
<ExportJobs xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema">
 <JobList>
  <Job Id="1245">
   <Comments />
   <DueDate>2010-07-29</DueDate>
   <TargetDueDate>2010-07-22</TargetDueDate>
   <ServiceTypeId>9232</ServiceTypeId>
   <ServiceType>Gas Service 12 monthly</ServiceType>
   <TenantName>Mr Bond</TenantName>
   <Uprn>KS-UNS-019</Uprn>
   <HouseName>5</HouseName>
   <Block />
   <Address1>5 Acorn Street</Address1>
   <Address2>Lexden</Address2>
   <Address3>Colchester</Address3>
   <Address4>Essex</Address4>
   <Postcode>CO6 3QL</Postcode>
   <CharList>
    <Char Id="23" Type="1" ReadOnly="false" Description=”Access Attempts” Value=”2”/>
    <Char Id="48" Type="2" ReadOnly="false" Description=”Violent Tenant” Value=”No”/>
    <Char Id="88" Type="3" ReadOnly="false" Description=”Tenant Refused/>
    <Char Id="89" Type="6" ReadOnly="false" Description=”Refused Date/>
    <Char Id="90" Type="0" ReadOnly="false" Description=”Refused Reason/>
   </CharList>
   <EquipmentList>
    <Equipment Id="314443">
     <EquipmentType>Boiler</EquipmentType>
     <Make>Glow-worm</Make>
     <Model>30CXI</Model>
     <SubModel>-combi boiler- condensing</SubModel>
     <Location>Kitchen</Location>
     <SerialNumber>9349723287</SerialNumber>
     <ReferenceCode>12345</ReferenceCode>
     <IsTenantOwned>false</IsTenantOwned>
     <InstallDate>2006-06-19</InstallDate>
     <InstalledBy>Esssx Heating Suppliers</InstalledBy>
     <ServicedBy />
     <SuppliedBy>Essex Heating Suppliers</SuppliedBy>
     <WarrantyExpiresDate>2011-07-03</WarrantyExpiresDate>
      <DecommissionedDate />
     <Contact />
     <DueDate>2010-08-07</DueDate>
     <Chars>
          <Char Id="56" Type="3" ReadOnly="false" Description=”Flue type?” Value=”Unknown”/>
          <Char Id="74" Type="3" ReadOnly="true" Description=”Output Kw” Value=”60”/>
     </Chars>
    </Equipment>
    <Equipment Id="314444">
     <EquipmentType>Gas Fire</EquipmentType>
     <Make>Valor</Make>
     <Model>Visia Plasma</Model>
     <SubModel>21CX01</SubModel>
     <Location>Living Room</Location>
     <SerialNumber>23349845542</SerialNumber>
     <ReferenceCode />
     <IsTenantOwned>false</IsTenantOwned>
```


```
      <InstallDate>2002-05-11</InstallDate>
      <InstalledBy>Abbotts Housing</InstalledBy>
      <ServicedBy>Abbotts Housing</ServicedBy>
      <SuppliedBy>Wickes of Colchester</SuppliedBy>
      <WarrantyExpiresDate>2010-07-16</WarrantyExpiresDate>
      <DecommissionedDate />
      <Contact />
      <DueDate>2010-08-07</DueDate>
      <Chars>
            <Char Id="56" Type="3" ReadOnly="false" Description=”Flue type?” Value=”Unknown”/>
            <Char Id="74" Type="3" ReadOnly="true" Description=”Output Kw” Value=”45”/>
      </Chars>
     </Equipment>
   </EquipmentList>
  </Job>
 </JobList>
 <ExportDate>2010-08-01</ExportDate>
 <CharLookupList>
  <Char Id="23" Type="1">
      <Values/>
  </Char>
   <Char Id="48" Type="3">
      <Values>
            <Value>Yes</Value>
            <Value>No</Value>
      </Values>
  </Char>
   <Char Id="56" Type="4">
      <Values>
            <Value>Open</Value>
            <Value>Room Sealed</Value>
            <Value>Unknown</Value>
      </Values>
  </Char>
   <Char Id="74" Type="1">
      <Values/>
  </Char>
 </CharLookupList>
</ExportJobs>
```


11.3 Register Appointments

```
<?xml version="1.0" encoding="utf-8"?>
<RegisterAppointments xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema">
 <JobList>
  <Job id="1245">
   <Date>2010-07-25</Date>
   <Reason>No Access 1</Reason>
   <Comment>Tenant is on holiday.</Comment>
   <ExternalJobNumber />
  </Job>
  <Job id="">
   <Date>2010-07-26</Date>
   <Reason>No Access 2</Reason>
   <Comment>Tenant out at work</Comment>
   <ExternalJobNumber>123456</ExternalJobNumber>
  </Job>
  <Job id="1453">
   <Date>2010-07-25</Date>
   <Reason>No Access 1</Reason>
   <Comment>Tenant in hospital</Comment>
  </Job>
 </JobList>
</RegisterAppointments>
```


11.4 Import Outcomes Sample

```
<?xml version="1.0" encoding="utf-8"?>
<ImportOutcomes xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema">
 <JobList>
  <Job id="1245">
   <Comments>Service Completed Successfully</Comments>
   <ActualDate>2010-08-04</ActualDate>
   <NextDueDate>2011-08-04</NextDueDate>
   <Outcome>Complete</Outcome>
   <CharList>
    <Char id="23" Description=”Access Attempts” Value=”2”/>
    <Char id="48" Description=”Violent Tenant?” Value=”No”/>
    <Char id="88" Description=”Tenant Refused?” Value=”Yes”/>
    <Char id="89" Description=”Refused Date” Value=”2010-08-04”/>
    <Char id="90" Description=”Refused Reason” Value=”Refused access”/>
   </CharList>
   <EquipmentList>
    <Equipment                                                                    id="314443">
     <ExternalEquipmentId>4598934</ExternalEquipmentId>
     <EquipmentType>Boiler</EquipmentType>
     <Make>Glow-worm</Make>
     <Model>30CXI</Model>
     <SubModel>-combi boiler- condensing</SubModel>
     <Location>Kitchen</Location>
     <SerialNumber>9349723287</SerialNumber>
     <IsTenantOwned>false</IsTenantOwned>
     <InstallDate>2006-06-19</InstallDate>
     <InstalledBy>Esssx Heating Suppliers</InstalledBy>
     <ServicedBy />
     <SuppliedBy>Essex Heating Suppliers</SuppliedBy>
     <WarrantyExpiresDate>2011-07-03</WarrantyExpiresDate>
      <DecommissionedDate />
     <Contact/>
      <Outcome/>
      <UpdateAction/>
     <DueDate>2010-08-07</DueDate>
     <EquipmentChars>
       <Char id="56" Description=”Flue type?” Value=”Open”/>
       <Char id="74" Description=”Output Kw” Value=”50”/>
     </EquipmentChars>
      <EquipmentVisitChars>
       <Char id="100" Description=”Burner Pressure” Value=”6psi”/>
     </EquipmentVisitChars>
    </Equipment>
    <Equipment                                                                    id="314444">
     <ExternalEquipmentId></ExternalEquipmentId>
     <EquipmentType>Gas Fire</EquipmentType>
     <Make>Valor</Make>
     <Model>Visia Plasma</Model>
     <SubModel>21CX01</SubModel>
     <Location>Living Room</Location>
     <SerialNumber>23349845542</SerialNumber>
     <IsTenantOwned>false</IsTenantOwned>
     <InstallDate>2002-05-11</InstallDate>
     <InstalledBy>Abbotts Housing</InstalledBy>
     <ServicedBy>Abbotts Housing</ServicedBy>
     <SuppliedBy>Wickes of Colchester</SuppliedBy>
     <WarrantyExpiresDate>2010-07-16</WarrantyExpiresDate>
```


```
        <DecommissionedDate>2010-08-04</DecommissionedDate>
        <Contact/>
          <Outcome/>
          <UpdateAction/>
        <DueDate>2010-08-07</DueDate>
        <Chars>
                <Char id="56" Description=”Flue type?” Value=”Unknown”/>
                <Char id="74" Description=”Output Kw” Value=”45”/>
        </Chars>
      </Equipment>
    </EquipmentList>
  </Job>
 </JobList>
</ImportOutcomes>
```


11.5 Upload Documents Sample

```
<?xml version="1.0" encoding="utf-8"?>
<UploadDocuments xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema">
 <JobList>
  <Job id="1245">
   <Document type="Letter1">
    <Description>Letter1</Description>
    <Path>\\Keystone\Attachments\Servicing\Letters\Letter102323.doc</Path>
    <Title>Gas Safety Certificate</Title>
   </Document>
  </Job>
 </JobList>
</UploadDocuments>
```