|  |  |
| --- | --- |
| Functional Specification: Interface |  |

Functional Specification – Interface

|  |  |
| --- | --- |
| **Object Id** | CMR-I-006 |
| **Object Name** | Identify whether a property is within an active incident area, IDN/RDN, IGT, Work Centre |
| **Project Name** | CRM Replacement Project |

|  |
| --- |
| **Confidentiality**  All material contained in this document is confidential information. The confidential information may not be disclosed to third parties other than employees and authorised contractors of Cadent Gas except with the express written authorisation of Cadent Gas. The confidential information must be kept safe and it must not be reproduced or used for purposes other than those which Cadent Gas has authorised.  Cadent Gas operates in the UK  Copyright reserved Cadent Gas confidential. |

**Document Control**

**Document Information**

|  |  |
| --- | --- |
| **Document RICEFW Id** | CMR-I-006 |
| **Deliverable Name** | Identify whether a property is within an active incident area, IDN/RDN, IGT, Work Centre |
| **Functional Contact** | Ashish Verma |
| **Email Address** | Ashish.ve@hcl.com |
| **Contact Details** | 9953615093 |
| **Technical Contact** | <provide the technical contact details of this project, names would suffice here> |
| **Owner** | <provide the owner of these documents potentially from Cadent Gas> |
| **Document Status** | <insert the version number of the document> |
| **Requirement Reference Number (RTM)** | <insert any requirements links like SharePoint or Jira links etc> |
| **Process** | Customer |
| **Sub-Process** | <provide the sub-process details of this interface> |
| **Document Location** | <Provide the SharePoint link or Jira link of this document> |
| **Application** | SAP CX and GISaaS |

**Document Revision History <add the revision history of this document >**

| Version No. | Status | Date | Author | Change Log |
| --- | --- | --- | --- | --- |
| V 0.1 | Draft | 15/05/25 | Ashish Verma | Draft , first version |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

**External Review <mention the reviewers outside the project>**

| Date | Reviewed By | Role | Signature |
| --- | --- | --- | --- |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

**Final sign off <mention the final sign off from, e.g. Cadent Gas and HCL leads, architects and management>**

|  |  |  |  |
| --- | --- | --- | --- |
| Date | Approved By | Role | Signature |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

**Distribution in addition to Reviewers & Authorisers <mention the additional reviewers and the details >**

|  |  |
| --- | --- |
| Name | Role |
|  |  |
|  |  |
|  |  |

**Note:** Documents are approved via an email clearly stating approval of document with reference to the version.

**Reference Documents <mention all the reference documents location, like SharePoint or Jira>**

|  |  |
| --- | --- |
| **Document** | **Location** |
| Scope Document reference |  |
|  |  |
|  |  |
|  |  |
|  |  |

**General Instructions**

***Before submitting for approval, make sure that***

* ***the document is complete and accurate and all information is updated (i.e. status)***
* ***the document has been spell checked and grammar checked***
* ***the document meets the requirements as indicated in the template***
* ***the Functional Consultant (Author) completes the Checklist on the last page.***

***General Comments:***

* ***Define acronyms and abbreviations.***
* ***Use consistent terminology.***
* ***Focus on Functionality in this document.***

Table of Contents

[1. Interface – Overview and Scope 6](#_Toc195201643)

[1.1 Functional Description 6](#_Toc195201644)

[1.2 Dependencies & Constraints 10](#_Toc195201645)

[1.3 Assumptions 10](#_Toc195201646)

[1.4 Performance Considerations 10](#_Toc195201647)

[1.5 Detailed Process Description with Processing Logic 10](#_Toc195201648)

[2. Testing Requirements 25](#_Toc195201665)

[2.1 Business Test Conditions 25](#_Toc195201666)

[3. Appendices 28](#_Toc195201814)

[4. Abbreviations/Glossary 29](#_Toc195201815)

# Interface – Overview and Scope

## Functional Description

As part of the contact centre process, it is necessary to determine geographic attributes of a caller’s location. This information is stored and managed in ESRI SaaS.

This determination from SAP CX will have an integration using the SAP CPI integration layer to a Cloud version of ESRI, calling a API.

Once the call location has been established in SAP CX by means of an address search, temporary address creation or a coordinate selection from a map, the associated XY coordinate will be passed to the API – Location Information Service, to identify additional information associated with that location.

There are two main business processes that are supported by this integration:

* Emergency Work Order Creation by Contact Centre Agent

Below Additional information along with work centre is returned as part of this integration as follows: - Need to check the data stored in CRM.

* IDN
* RDN
* IGT
* HUP
* DHA
* SSSI
* SAM
* MOB
* Postcode
* Incident

All of the required information will be requested from SAP CX in a single call to the ESRI SaaS application.

The integration will utilize existing BTP and SAP Cloud Platform Integration.

The diagram below shows the end-to-end process flow, detailing how the request data will be send to the target application and the response information is returned to the calling SAP application.

SAP CX

SAP Cloud Platform Integration/BTP

IDOX

Identify Property Feature Attribute



Identify Property Feature Attribute

Figure: Identify Property Feature Attributes High Level Process Flow

|  |  |
| --- | --- |
| **Priority:** | Must Have  Should Have  Nice to Have |
| **Complexity**: | Very Complex  Complex  Medium  Simple |

## Dependencies & Constraints

* CMR-I-006 – The identification Process Must be quick with Minimal Strokes. The Property will be Identified Using a Link to the ESRI GIS SAAS. CMR-I-006 will trigger based on the location identified by passing the location XY coordinates when the location is confirmed (in case more than one location is returned in the search) or one result is matched in the search or when click on ‘Submit’ (in case creation of a temporary address or picking XY on map). The information returned by CMR-I-006 that will be shown on the interface (as well as placeholders to be input when CMR-I-006 is down).
* The information returned via CMR-I-006 will not be stored on CX Database; some of them will be visible in SAP CX Contact Centre Screen.
* CMR-I-002 – Creation of emergency work orders in SAP PM based on a request in CRM. The information to be passed via CMR-I-002 will be made available by CMR-I-006.
* The Work Order created through CMR-I-002 (and has already queried GISaaS via CMR-I-006) will not request ESRI GISaas via CMR-I-022. This is realized through the check before CMR-I-022 is invoked by a logical check on SAP PM that the request for information will not be triggered if the work order already contains the necessary information.

## Assumptions

* Scope of this interface does not include anything related to creation of Temporary Address & Temporary Location, Address Reconciliation and are covered in separate interface document CMR-I-004a, CMR-I-008 and CMR-I-004b.
* This interface is called after XY coordinates have been made available on SAP CX during the Location Identification Process.

* The GISaaS web service accepts an XY coordinate. The XY represents the location of the contact.
* SAP BTP/CPI uses as an integration solution for ESRI GIS SAAS and CX.
* It is assumed that ESRI Polygon can return 4 sets of Work Centre according to the Processes: Electrical & Instrumentation, Pressure Management, Maintenance, and Emergency. - **This is only for the Emergency Work Order Process.**
* Postcodes may not always be returned for a picked XY location. This can happen if the location falls outside the coverage of Postcode.
* It is assumed that in case more than one Postcodes are associated with a location (e.g. in case of a high building), only the primary Postcode will be returned by GISaaS (e.g. the Postcode for the ground floor of the building).
* Postcode and IGT ID returned by CMR-I-006 will be used only in the case this information is not yet available through other means. In case of creating a temporary address or finding matches of addresses in IDOX, the Postcode entered by the users or returned by IDOX will be used and the Postcode returned by CMR-I-006 will be ignored. IGT ID returned by CMR-I-006 will be ignored if it is already available from IDOX via CMR-I-004.

## Performance Considerations

The interface should return the majority of responses (containing detail / data of features found) to SAP CX within 3 seconds.

## 

|  |  |  |  |
| --- | --- | --- | --- |
| **Description** | **Type** | **Volume** | **Notes** |
| **Identify Property Feature Attributes** | Daily | 15000 | Volume data sourced from April 2023  Peak volume 70 per minute |

## 

## Detailed Process Description with Processing Logic

This interface meets the requirement to return additional information specific to an address or location that has been identified during a call. This information is not address specific and is derived from spatial datasets (map layers) that reside in the GIS database.

Layers can be queried using text-based search (where clause) and spatially (geometry).

In this interface a point in polygon query will be used, meaning that a point representing the call location will act as the input geometry into the spatial query against polygon features.

In SAP CX, the agent will identify the caller’s location in terms of an XY coordinate which can be derived either from a known address, from the embedded GIS map (either with or without temporary address creation).

Once the location XY has been identified, it is necessary to identify additional geographic attributes relating to the caller’s location. For example, it is necessary for the call centre operative (for purposes of 1st call resolution) to understand if the call’s location originates from within an IDN area.

In the scenario that an Emergency Work Order needs be created from SAP CX (through CMR-I-002), it is also necessary to identify whether a call location is:

* IDN
* RDN
* IGT
* HUP
* DHA
* SSSI
* SAM
* MOB
* Postcode
* Incident

Currently, the interface uses the concept of an API calls for the purpose of integration.

The point in polygon webservice that is made available by GISaaS consume in SAP CPI. In turn SAP CPI generates an API structure that will be imported into SAP CX.

Whenever SAP CX will request a GIS lookup for location related attributes it would call the API which would in turn call make a SOAP query to GISaaS to fetch the data.

**Work Centre Determination**

The Work Centre Determination (WCD) interface is a map service web service published by ArcGIS Server. Spatial data layers will be sourced from local FGDB except for Incident which will be sourced directly from the PostgreSQL GISMasterDB.

WCD presents an Esri map service containing the following layers and fields.

The Incident layer will have the following definition query applied to return “Active” Incidents only:

STATUS = 1

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Layer Name** | **Layer ID** | | **Field Name** | | **Field Type** | | **Mandatory** | | **Allowed Values** | |
| WorkCentre | 0 | | OBJECTID | | Long | | Yes | | n/a | |
| WorkCentre | | 0 | wc\_type | Text (30) | | No | | Main Work Centre  Operational Work Centre | |
| WorkCentre | | 0 | arbpl\_d | Text (8) | | No | | n/a | |
| WorkCentre | | 0 | process | Text (3) | | No | | n/a | |
| WorkCentre | | 0 | workcentre | Text (10) | | No | | n/a | |
| WorkCentre | | 0 | plant | Long | | No | | n/a | |
| IDN | | 1 | OBJECTID | Long | | Yes | | n/a | |
| IDN | | 1 | ldz | Text (3) | | No | | n/a | |
| RDN | | 2 | OBJECTID | Long | | Yes | | n/a | |
| RDN | | 2 | owned\_by | Text (4) | | No | | n/a | |
| IGT | | 3 | OBJECTID | Long | | Yes | | n/a | |
| IGT | | 3 | igt\_name | Text (50) | | No | | n/a | |
| IGT | | 3 | igt\_short\_code | Text (10) | | No | | n/a | |
| IGT | | 3 | contact\_details | Text (50) | | No | | n/a | |
| IGT | | 3 | imageid | Text (254) | | No | | n/a | |
| IGT | | 3 | revision | Short | | No | | n/a | |
| IGT | | 3 | gtid | Long | | No | | n/a | |
| IGT | | 3 | rel\_path | Text (254) | | No | | n/a | |
| IGT | | 3 | date\_in | Long | | No | | n/a | |
| IGT | | 3 | time\_in | Long | | No | | n/a | |
| IGT | | 3 | status | Text (4) | | No | | n/a | |
| IGT | | 3 | batch\_num | Long | | No | | n/a | |
| IGT | | 3 | polygonname | Text (50) | | No | | n/a | |
| HUP | | 4 | OBJECTID | Long | | Yes | | n/a | |
| DHA | | 5 | OBJECTID | Long | | Yes | | n/a | |
| DHA | | 5 | locationarea | Text (50) | | No | | n/a | |
| SSSI | | 6 | OBJECTID | Long | | Yes | | n/a | |
| SAM | | 7 | OBJECTID | Long | | Yes | | n/a | |
| MOB | | 8 | OBJECTID | Long | | Yes | | n/a | |
| MOB | | 8 | sapid | Text (30) | | No | | n/a | |
| MOB | | 8 | subtype | Text (30) | | No | | High-rise Building  Medium-rise Building  Low Rise - Less than 3 Floors  Complex Distribution Systems | |
| Postcode | | 9 | OBJECTID | Long | | Yes | | n/a | |
| Postcode | | 9 | postcode | Text (8) | | No | | n/a | |
| Postcode | | 9 | postcode\_f | Text (8) | | No | | n/a | |
| Postcode | | 9 | centroid\_x | Double | | Yes | | n/a | |
| Postcode | | 9 | centroid\_y | Double | | Yes | | n/a | |
| Incident | | 10 | objectid | Long | | Yes | | n/a | |
| Incident | | 10 | incident\_id | GUID | | Yes | | n/a | |
| Incident | | 10 | incident\_type | Text (20) | | No | | Loss of Gas Supply  Gas Cloud  Explosion  Locational Event | |
| Incident | | 10 | status | Text (10) | | No | | Active  Closed | |
| Incident | | 10 | other\_instructions | Text (255) | | No | | n/a | |
| Incident | | 10 | incident\_date\_time | Date | | No | | n/a | |
| Incident | | 10 | work\_centre | Text (20) | | No | | n/a | |
| Incident | | 10 | incident\_name | Text (40) | | No | | n/a | |

The sources of the WCD map services layers described in the table below. The column Feature Data Maintenance

indicates who maintains the content records in each feature class.

|  |  |  |
| --- | --- | --- |
| Layer Name | Map Service Data Source | Feature Data Maintenance |
| WorkCentre | Local FGDB | Maintained by Cadent in GISMasterDB |
| IDN | Local FGDB | Maintained by Cadent in GISMasterDB |
| RDN | Local FGDB | Maintained by Cadent in GISMasterDB |
| IGT | Local FGDB | Maintained by Cadent in GISMasterDB |
| HUP | Local FGDB | Maintained by Cadent in GISMasterDB |
| DHA | Local FGDB | Maintained by Cadent in GISMasterDB |
| SSSI | Local FGDB | Maintained by Cadent in GISMasterDB |
| SAM | Local FGDB | Maintained by Cadent in GISMasterDB |
| MOB | Local FGDB | Maintained by Cadent in GISMasterDB |
| Postcode | Local FGDB | Maintained by ESRI UK content team in GISMasterDB |
| Incident | GISMasterDB | Maintained by Cadent in GISMasterDB |

**Requesting Location Information**

The interface will be queried by calling the REST “identify” method against the WCD map service.

The URL will be of similar form to the following

<https://cadentgas-ags-prod.cloud.esriuk.com/server/rest/services/WorkCentreDetermination/WorkCentreDetermination/MapServer/identify>

This request must be made over HTTPS and using POST. The token must be passed in the body of the POST request for security. –

The following parameters are required.

|  |  |
| --- | --- |
| **Parameter** | **Value** |
| layers | “all:” followed by a comma separate list of the layer IDs to query e.g.  all:0,3  to query features in layer IDs 0 (WorkCentre) and 3 (IGT)  Or  all  to query features in all layers. |
| geometry | e.g.  487499,285589 |
| geometryType | esriGeometryPoint |
| tolerance | The distance in screen pixels from the specified geometry within which the identify operation should be performed. The value for the tolerance is an integer.  This is mandatory when querying a map service but should always be set as follows.  0 |

|  |  |
| --- | --- |
|  | to only return features that the point is exactly on. |
| mapExtent | The extent or bounding box of the map is currently being viewed. The map Extent and the image Display parameters are used by the server to determine the layers visible in the current extent.  This is mandatory when querying a map service and should be set as follows,  <X-coord>,<Y-coord>,<X-coord>,<Y-coord>  to specify a map extent that is exactly on the input point.  E.g. if the point being queried is 487499,285589, the mapExtent should be set as follows.  487499,285589,487499,285589 |
| imageDisplay | The screen image display parameters (width, height, and DPI). This is mandatory when querying a map service but should always be set as follows.  1,1,96 |
| returnGeometry | false |
| returnFieldName | true |
| f | json |
| token | Generated by the generateToken call. An access token that identifies the authenticated user and controls access to restricted resources and operations. |

|  |  |
| --- | --- |
| parameter | Value |
|  | For security, this parameter should be passed in the request body rather than in the query string, as described in  https://enterprise.arcgis.com/en/server/latest/administer/windows/accessing-arcgis-token-secured-web-services.htm  Example  sRLRIZKu6JxQRC2XVLwgbHMGLsRIFrpA1yEhgUX36\_tGpKmtk4fNSrYxleaWxHPJ |

See https://developers.arcgis.com/rest/services-reference/enterprise/identify-map-service-.htm for more information.

**Sample Request message**



**Sample responses for REST Identify method**

WCD features found

If features are found in any of the WCD layers, the response will be a JSON string with a format similar to the following.

{

"results": [

{

"layerId": 0,

"layerName": "WorkCentre",

"displayFieldName": "workcentre",

"value": "EMWMSO04",

"attributes": {

"OBJECTID": "255",

"wc\_type": "Main Work Centre",

"arbpl\_d": "DUMMYEGN",

"process": "EMW",

"workcentre": "EMWMSO04",

"plant": "1005"

}

},

{

"layerId": 0,

"layerName": "WorkCentre",

"displayFieldName": "workcentre",

"value": "EMWMSO04",

"attributes": {

"OBJECTID": "307",

"wc\_type": "Operational Work Centre",

"arbpl\_d": "DUMMYEGN",

"process": "EMW",

"workcentre": "EMWMSO04",

"plant": "1005"

}

},

{

"layerId": 1,

"layerName": "IDN",

"displayFieldName": "ldz",

"value": "NGN",

"attributes": {

"OBJECTID": "2",

"ldz": "NGN"

}

},

{

"layerId": 2,

"layerName": "RDN",

"displayFieldName": "owned\_by",

"value": "1005",

"attributes": {

"OBJECTID": "5",

"owned\_by": "1005"

}

},

{

"layerId": 3,

"layerName": "IGT",

"displayFieldName": "gtid",

"value": "10001716",

"attributes": {

"OBJECTID": "1",

"igt\_name": "Global Utility Connections",

"igt\_short\_code": "GUC",

"contact\_details": "01698 404646",

"imageid": "phoenix1barea1lowerantleystreetaccringtonv1",

"revision": "1",

"gtid": "10001716",

"rel\_path": "\\10001716\\ImageDir1\\phoenix1barea1lowerantleystreetaccringtonv1\_160058\_30042014.png",

"date\_in": "20140430",

"time\_in": "160058",

"status": "N",

"batch\_num": "200",

"polygonname": "10001716\_phoenix1barea1lowerantleystreetaccrington"

}

},

{

"layerId": 4,

"layerName": "HUP",

"displayFieldName": "objectid",

"value": "20724",

"attributes": {

"OBJECTID": "20724"

}

},

{

"layerId": 5,

"layerName": "DHA",

"displayFieldName": "locationarea",

"value": "Birmingham",

"attributes": {

"OBJECTID": "1",

"locationarea": "Birmingham"

}

},

{

"layerId": 6,

"layerName": "SSSI",

"displayFieldName": "objectid",

"value": "1",

"attributes": {

"OBJECTID": "1"

}

},

{

"layerId": 7,

"layerName": "SAM",

"displayFieldName": "objectid",

"value": "1",

"attributes": {

"OBJECTID": "1"

}

},

{

"layerId": 8,

"layerName": "MOB",

"displayFieldName": "sapid",

"value": "100000500002",

"attributes": {

"OBJECTID": "3",

"sapid": "100000500002",

"subtype": "High-rise Building"

}

},

{

"layerId": 9,

"layerName": "Postcode",

"displayFieldName": "POSTCODE",

"value": "LE100JT",

"attributes": {

"OBJECTID": "764066",

"postcode": "LE100JT",

"postcode\_f": "LE10 0JT",

"centroid\_x": "442246.109162",

"centroid\_y": "293647.848618"

}

},

{

"layerId": 10,

"layerName": "Incident",

"displayFieldName": "incident\_name",

"value": "3",

"attributes": {

"objectid": "3",

"incident\_id": "{6A2F9475-40EB-4B8E-9BD2-28745D98272A}",

"incident\_type": "Loss of Gas Supply",

"status": "Active",

"other\_instructions": "Null",

"incident\_date\_time": "12/07/2012",

"work\_centre": "INCWMN11/1005",

"incident\_name": "Null"

}

}

]

**WCD features not found**

If no WCD polygons are found at the point specified, the JSON response string will be of the following form.

{

"results": [

]

}

Sample response message –



**Requesting Postcode Coordinates:**

Address details sourced from Idox can contain X/Y coordinates, these should be stored in SAP with the address record and can then be used to query the WCD interface.

If the X/Y coordinates are not available in SAP then the coordinates for a postcode can be queried by calling the REST “query” method against the Postcode layer (layer ID 9) in the WCD map service, and rather than specifying a point geometry, instead passing the postcode query as the “where” parameter. Note that the POSTCODE field has no space between the parts of the postcode, whereas the POSTCODE\_F field has the formatted postcode with a space in the middle.

The URL will be of similar form to the following.

<https://cadentgas-ags-prod.cloud.esriuk.com/server/rest/services/WorkCentreDetermination/WorkCentreDetermination/MapServer/9/query>

This request must be made over HTTPS and using POST. The token must be passed in the body of the POST request for security

The following parameters are required.

|  |  |  |
| --- | --- | --- |
| **Parameter** | | **Value** |
| where | | Postcode query  e.g. |
|  | | POSTCODE='LA177UA' |
| outFields | The Postcode centroid coordinates fields to return,  i.e.  CENTROID\_X,CENTROID\_Y | |
| returnGeometry | false | |
| f | json | |
| token | Generated by the generateToken call described in section 4.  An access token that identifies the authenticated user and controls access to restricted resources and operations.  For security, this parameter should be passed in the request body rather than in the query string, as described in  https://enterprise.arcgis.com/en/server/latest/administer/windows/accessing-arcgis-token-secured-web-services.htm  Example  sRLRIZKu6JxQRC2XVLwgbHMGLsRIFrpA1yEhgUX36\_tGpKmtk4fNSrYxleaWxHPJ | |

See https://developers.arcgis.com/rest/services-reference/enterprise/query-feature-service-layer-.htm for more information.

**Sample responses for REST Query method**

**Postcode found**

If the specified postcode is found in the database, the JSON response string will be of the following form.

{

"displayFieldName": "POSTCODE",

"fieldAliases": {

"centroid\_x": "CENTROID\_X",

"centroid\_y": "CENTROID\_Y"

},

"fields": [

{

"name": "centroid\_x",

"type": "esriFieldTypeDouble",

"alias": "CENTROID\_X"

},

{

"name": "centroid\_y",

"type": "esriFieldTypeDouble",

"alias": "CENTROID\_Y"

}

],

"features": [

{

"attributes": {

"centroid\_x": 322227.79303366999,

"centroid\_y": 482437.72783827002

}

}

]

}

**Postcode not found**

If the specified postcode is not found, the JSON response string will be of the following form.

{

"displayFieldName": "POSTCODE",

"fieldAliases": {

"centroid\_x": "CENTROID\_X",

"centroid\_y": "CENTROID\_Y"

},

"fields": [

{

"name": "centroid\_x",

"type": "esriFieldTypeDouble",

"alias": "CENTROID\_X"

},

{

"name": "centroid\_y",

"type": "esriFieldTypeDouble",

"alias": "CENTROID\_Y"

}

],

"features": [

]

}

**Error responses for REST methods**

The following error responses may be returned by the interface.

Error responses for REST Identify method

The following error responses may be returned by the Identify method.

Missing mandatory attribute

If the geometry, tolerance, mapExtent or imageDisplay attribute is missing, the HTTP Status Code will be 200, and the following response error json will be returned.

{

"error": {

"code": 400,

"message": "Missing '<attribute-name>' for identify operation.",

"details":

#### 

### Identify Property Feature Attributes Request Data

The following table shows all fields that will be sent from SAP CX:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **FIELD** | **SOURCE** | **TYPE** | **FORMAT** | **REQ** | **LENGTH** | **NOTES** |
| POSTCODE | IP\_POSTCODE | CHAR |  | No | 9 |  |
| XCOORD | IP\_XCOORD | ZDE\_XCOORD | nnnnnnn.nn | Yes | 10 |  |
| YCOORD | IP\_YCOORD | ZDE\_YCOORD | nnnnnnn.nn | Yes | 10 |  |
| MAP\_LAYER\_WC | ZTT\_CCW\_GIS\_TOK-WC\_IND | CHAR | ‘X’ | Yes | 1 | Work Centre Map Layer |
| MAP\_LAYER\_IGT | ZTT\_CCW\_GIS\_TOK-IGT\_FLAG | CHAR | ‘X’ | Yes | 1 | IGT Map Layer |
| MAP\_LAYER\_IDN\_RDN | ZTT\_CCW\_GIS\_TOK-IDN\_RDN\_IND | CHAR | ‘X’ | Yes | 1 | IDN / RDN Map Layer |
| MAP\_LAYER\_HUP | ZTT\_CCW\_GIS\_TOK-HUP\_IND | CHAR | ‘X’ | Yes | 1 | HUP Map Layer |
| MAP\_LAYER\_SSSI | ZTT\_CCW\_GIS\_TOK-SSSI\_IND | CHAR | ‘X’ | Yes | 1 | SSSI Map Layer |
| MAP\_LAYER\_DH | ZTT\_CCW\_GIS\_TOK-DOUBHAN\_IND | CHAR | ‘X’ | Yes | 1 | DHA Map Layer |
| MAP\_LAYER\_INCIDENT | ZTT\_CCW\_GIS\_TOK-INC\_IND | CHAR | ‘X’ | Yes | 1 | Incident Map Layer |
| MAP\_LAYER\_POSTCODE | ZTT\_CCW\_GIS\_TOK-POSTCODE | CHAR | ‘X’ | Yes | 1 | Postcode Map Layer |
| MAP\_LAYER\_SAM | ZTT\_CCW\_GIS\_TOK-SAM\_IND | CHAR | ‘X’ | Yes | 1 | SAM Map Layer |

#### **1.5.2 - Identify Property Feature Attributes Response Processing**

The following table shows the existing response mapping:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **FIELD** | **TARGET** | **TYPE** | **FORMAT** | **REQ** | **LENGTH** | **NOTES** |
| RESULT\_LAYER-LAYER\_NAME = ‘WORK\_CENTRES’  RESULT\_FEATURE (TABLE)  RESULT\_ATTRIBUTE (TABLE) | LT\_WORKCENTRE | Table | Not applicable | No | 0…n | Work Centre information |
| RESULT\_LAYER-LAYER\_NAME = ‘RDN’  RESULT\_FEATURE (TABLE)  RESULT\_ATTRIBUTE (TABLE)  ATTRIBUTE = ‘OBJECTID’ | EP\_OUTPUT-RDN\_INDICATOR | STRING |  | No | STRING | RDN Indicator |
| RESULT\_LAYER-LAYER\_NAME = ‘RDN’  RESULT\_FEATURE (TABLE)  RESULT\_ATTRIBUTE (TABLE)  ATTRIBUTE = ‘OWNED\_BY’ | EP\_OUTPUT-OWNED\_BY | STRING |  | No | STRING | RDN Owned By |
| RESULT\_LAYER-LAYER\_NAME = ‘IDN’  RESULT\_FEATURE (TABLE)  RESULT\_ATTRIBUTE (TABLE)  ATTRIBUTE = ‘OBJECTID’ | EP\_OUTPUT-IDN\_ID | STRING |  | No | STRING | IDN ID |
| RESULT\_LAYER-LAYER\_NAME = ‘IDN’  RESULT\_FEATURE (TABLE)  RESULT\_ATTRIBUTE (TABLE)  ATTRIBUTE = ‘LDZ’ | EP\_OUTPUT-IDN\_NAME | STRING |  | No | STRING | ION Name |
| RESULT\_LAYER-LAYER\_NAME = ‘HUP’  RESULT\_FEATURE (TABLE)  RESULT\_ATTRIBUTE (TABLE)  ATTRIBUTE = ‘OBJECTID’ | EP\_OUTPUT-HUP | STRING |  | No | STRING | HUP ID |
| RESULT\_LAYER-LAYER\_NAME = ‘SSSI’  RESULT\_FEATURE (TABLE)  RESULT\_ATTRIBUTE (TABLE)  ATTRIBUTE = ‘OBJECTID’ | EP\_OUTPUT-SSSI | STRING |  | No | STRING | SSSI ID |
| RESULT\_LAYER-LAYER\_NAME = ‘DHA’  RESULT\_FEATURE (TABLE)  RESULT\_ATTRIBUTE (TABLE)  ATTRIBUTE = ‘OBJECTID’ | EP\_OUTPUT-DOUBLE\_HANDED\_AREA | STRING |  | No | STRING | Double Handed Area |
| RESULT\_LAYER-LAYER\_NAME = ‘IGT’  RESULT\_FEATURE (TABLE)  RESULT\_ATTRIBUTE (TABLE)  ATTRIBUTE = ‘GTID’ | EP\_OUTPUT-IGT\_ID[] | Table | Not applicable | No |  | IGT information |
| RESULT\_LAYER-LAYER\_NAME = ‘IGT’  RESULT\_FEATURE (TABLE)  RESULT\_ATTRIBUTE (TABLE)  ATTRIBUTE = ‘IGT\_NAME’ | EP\_OUTPUT-IGT\_NAME | STRING |  | No | STRING | IGT Name |
| RESULT\_LAYER-LAYER\_NAME = INCIDENT’’  RESULT\_FEATURE (TABLE)  RESULT\_ATTRIBUTE (TABLE)  ATTRIBUTE = ‘INC\_REF\_NO’ | EP\_OUTPUT-INC\_REF\_NO | STRING |  | No | STRING | Incident Reference Number |
| RESULT\_LAYER-LAYER\_NAME = INCIDENT’’  RESULT\_FEATURE (TABLE)  RESULT\_ATTRIBUTE (TABLE)  ATTRIBUTE = ‘INCIDENT\_ID’ | EP\_OUTPUT-INCIDENT\_ID | STRING |  | No | STRING | Incident ID |
| RESULT\_LAYER-LAYER\_NAME = ‘POSTCODE’  RESULT\_FEATURE (TABLE)  RESULT\_ATTRIBUTE (TABLE)  ATTRIBUTE = ‘POSTCODE\_NOSPACE’ | EP\_OUTPUT-POSTCODE | STRING |  | No | STRING | Postcode |
| RESULT\_LAYER-LAYER\_NAME = ‘SSSI’RESULT\_FEATURE (TABLE)  RESULT\_ATTRIBUTE (TABLE)  ATTRIBUTE = ‘OBJECTID’ | EP\_OUTPUT-SAM | STRING |  | No | STRING | SAM ID |
| **ERROR** | **Only populated when an error has occurred** | | | | | |
| ERROR\_CODE | EP\_ERROR\_TAB-MESSAGE+0(3) | String | String | Yes | 3 | Error code |
| `ERROR\_MESSAGE | EP\_ERROR\_TAB-MESSAGE+4 | String | String | Yes |  | Error message |
| ERROR\_DETAILS |  | String | String | Yes |  | Error details |

#### **Identify Property Feature Attributes Errors**

The existing integration returns a number of business errors currently. These business errors will also be returned from the integration being implemented to SAP CX.

The following table shows the list of these business errors:

|  |  |  |
| --- | --- | --- |
| **Item** | **Error Description** | **Action taken** |
| **BE1** | Invalid Co-Ordinates provided | Existing BAU processing – Work Order is not created  (No changes required) |
| **BE2** | Job belongs to IDN | Existing BAU processing – Work Order is not created  (No changes required) |

#### **Synchronous Outbound Web Service**

This integration relates to sending a single transaction per message, API’s are used to send the data outbound from the source SAP CX/BTP applications to SAP Cloud Platform Integration and receive a response.

**2. Testing Requirements**

Business Test Conditions

Testing is required to ensure that the correct SAP CX data is transferred to GIS SAAS as specified.

| ID | Condition | Expected results |
| --- | --- | --- |
| 1 | Test if the data is transferred successfully to SAP CX, in case of a location is identified, i.e. the property is found directly when searching via Post code. | The data documented in the mapping sheet is transferred successfully to the right destination the information is returned to SAP CX screen once clicking on confirm  Check that in case the postcode/IGT ID returned by CMR-I-006 are different from the ones returned by CMR-I-004, the Postcode/IGT from CMR-I-004 are used. |
| 2 | Test if the data is transferred successfully to SAP CX, in case of a temporary address is created, i.e. the property is not found from search, but a temporary address is created. | The data documented in the mapping sheet is transferred successfully to the right destination the information is returned to SAP CX screen once clicking on confirm  Check that in case the postcode returned by CMR-I-006 is different from the one manually entered by the user, the Postcode manually entered by the user is used. If Postcode is not manually entered during temporary address creation, the Postcode returned via CMR-I-006 will be used. |
| 3 | Test if the data is transferred successfully to SAP CX, in case of picking a location XY direction on GIS Map. | The data documented in the mapping sheet is transferred successfully to the right destination the information is returned to SAP CX screen once clicking on confirm  Check that Postcode/IGT ID returned by CMR-I-006 that is associated with the XY location picked from the map will be used. |
| 4 | Check if the expected error handling process is correctly followed when invalid coordinate is identified. This can be tested in conjunction with CMR-I-008 by manually overriding the XY with an invalid coordinate (e.g. not matching the expected length or wrong data format) | The error message “Invalid coordinate” will be shown on the SAP CX. |
| 5 | Check if the expected error handling process is correctly followed when there is an error querying map layers. This can be tested in conjunction with CMR-I-008 by selecting or manually overriding the XY with an out-scope coordinate (e.g. non-UK coordinate) | The error message “Error Querying Map Layers” is shown on the SAP CX. |
| 6 | Test that CMR-I-022 will not be triggered by SAP PM if the work order has previously gathered the information from CX via CMR-I-006. This has to be tested in conjunction with CMR-I-002. | Check that a work order is not triggering the CMR-I-022 in SAP PM for the location that CMR-I-06 has already returned the information. |
| 7 | WCD in CX for a WM address | Emergency work centre EMWMSO04 Plant 1005 are determined information" message should be displayed. |
| 9 | WCD in CX for a NW address | "Emergency work centre EMNWMA02 Plant 1004 are determined" message should be displayed. |
| 10 | WCD in CX for a EA address | Emergency work centre EMEANO01 Plant 1001 are determined" message should be displayed. |
| 11 | WCD in CX for a EM address | "Emergency work centre EMEMSO01 Plant 1002 are determined" message should be displayed. |
| 12 | WCD in CX for a NL address | Emergency work centre EMLOCE02 Plant 1003 are determined" message should be displayed. |

**3. Appendices**

NA

**4. Abbreviations/Glossary**

**Glossary of Terms**

The following acronyms and abbreviations are used in this document.

|  |  |
| --- | --- |
| **Abbreviation** | **Description** |
| API-M | API Management, part of SAP BTP Integration Suite |
| BAU | Business As Usual |
| DHA | Double Handed Area |
| HP | High Pressure |
| HTTPS | Hypertext Transfer Protocol Secure.  It is the protocol where encrypted HTTP data is transferred over a secure connection |
| HUP | Hazardous Underground Plant |
| IDN | Independent Distribution Network |
| IGT | Independent Gas Transporters |
| JSON | JavaScript Object Notation |
| JWT | JSON Web Token |
| OCPM | Opus Cost and Penalty Manager |
| OOTB | Out of the Box |
| REST | Representational State Transfer |
| RDN | Retained Distribution Network |
| SAM | Scheduled Ancient Monument |
| SAP CRM | SAP Front Office system |
| SAP S/4 HANA | SAP Back Office Production system |
| SCPI | SAP Cloud Platform Integration, part of SAP BTP Integration Suite |
| SOLMAN | SAP Solution Manager |
| SSSI | Sites Of Special Scientific Interest |
| XML | Extensible Markup Language |