

# **KAN Imagery Catalog**

Release v1.6.1

Kan Territory & IT

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QGIS plugin to get satellite images from different providers.

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**CHAPTER** 

**ONE** 

## **API REFERENCE**

This page contains auto-generated API reference documentation<sup>1</sup>.

## 1.1 src

This script initializes the plugin, making it known to QGIS.

## 1.1.1 Submodules

src.core

**Submodules** 

## src.core.catalogs

Catalogs module.

## **Functions**

$get\_custom\_query(\rightarrow dict)$	Get custom query for a specific provider.
$get\_catalog(\rightarrow dict)$	Get catalog data from a specific provider.
$get\_catalogs\_from\_collection(\rightarrow list)$	Get catalog list from a specific provider.
$get\_thumbnail(\rightarrow dict)$	Get catalog thumbnail from a specific provider.
$get\_quicklook(\rightarrow dict)$	Get catalog quicklook from a specific provider.
$get\_download(\rightarrow dict)$	Get catalog download from a specific provider.
<pre>get_download_url(**kwargs)</pre>	Get catalog download url from a specific provider.

## **Module Contents**

 $\verb|src.core.catalogs.get_custom_query|(provider: str, max\_cloud\_coverage: int)| \to \text{dict}$  Get custom query for a specific provider.

 $\label{eq:src.core.catalogs.get_catalog} set\_catalog(\textit{provider: str, host\_name: str, search\_params: dict, max\_cloud\_coverage: int, collection\_names: list)} \rightarrow \text{dict}$ 

Get catalog data from a specific provider.

 $src.core.catalogs.get\_catalogs\_from\_collection(collections: list, provider: str, search\_params: dict)$   $\rightarrow list$ 

Get catalog list from a specific provider.

<sup>&</sup>lt;sup>1</sup> Created with sphinx-autoapi

 $src.core.catalogs.get\_thumbnail(provider: str, collection\_name: str, host\_name: str, image\_id: str, feature\_data: dict) <math>\rightarrow$  dict

Get catalog thumbnail from a specific provider.

 $src.core.catalogs.get\_quicklook(provider: str, host\_name: str, image\_id: str, feature\_data: dict) \rightarrow dict$  Get catalog quicklook from a specific provider.

 $src.core.catalogs.get\_download(provider: str, host\_name: str, search\_params: dict) \rightarrow dict$  Get catalog download from a specific provider.

src.core.catalogs.get\_download\_url(\*\*kwargs)

Get catalog download url from a specific provider.

## src.core.collections

Collections module.

## **Functions**

 $get\_collections(\rightarrow dict)$ 

Get collections from a specific provider.

#### **Module Contents**

 $src.core.collections.get\_collections(provider: str, search\_params: dict = None) \rightarrow dict$  Get collections from a specific provider.

## src.core.providers

Providers module.

## **Functions**

 $check\_credentials(\rightarrow bool)$ 

Check credentials from a specific provider.

#### **Module Contents**

 $src.core.providers.check\_credentials(provider: str, credentials: dict) \rightarrow bool$  Check credentials from a specific provider.

## src.core.results

This module contains the functions to create the results layers.

#### **Functions**

<pre>create_quicklook(image_path,</pre>	image_id,	Create results layers.	
layer_name)			

```
src.core.results.create_quicklook(image_path, image_id, layer_name)
    Create results layers.
```

## src.core.settings

PluginSettings module.

#### Classes

PluginSettings

PluginSettings class.

#### **Module Contents**

```
class src.core.settings.PluginSettings
     PluginSettings class.
     language: str = 'english'
     back_days: int = 20
     cloud_coverage: int = 10
     max_catalog_results: int = 10
     max_features_results: int = 5
     download_path: str = './downloads'
     _last_cleaning_date: str | None = None
     _provider_settings: dict
     _selected_collections: list = []
     __post_init__()
         Init settings.
     save()
         Save settings.
     clean_temporary_files_if_needed()
         Checks whether temporary files need to be deleted based on the days before the last activity date and delete
         files.
     update_last_cleaning_date()
         Update last activity date.
     get_active_providers() \rightarrow list
         Get active providers.
     property provider_settings: dict
     property selected_collections: list
     property last_cleaning_date: datetime.datetime
```

## src.gui

**Submodules** 

src.gui.custom\_widgets

Custom widgets module.

#### Classes

CustomWidgetListItem

Custom widget for list item.

#### **Module Contents**

Bases: PyQt5.QtWidgets.QWidget, ui.custom\_widget\_list\_item.Ui\_CustomWidgetListItem Custom widget for list item.

```
closing_plugin = None
parent = None
thread_quicklooks
provider = ''
host = ''
feature_data = None
footprints_layer = None
image_id = None
feature_index = None
_name = '_'
_acquisition_date = ''
_incidence_angle = 0.0
_cloud_coverage = None
key = 0.0
property name
property acquisition_date
property incidence_angle
```

```
property cloud_coverage

set_thumbnail(image_bytes)
    Set thumbnail image in label.

download_images()
    Download image action.

view_details()
    View details action.

show_quicklook()
    Show quicklook action.

get_quicklook_image(provider: str, host_name: str, image_id: str, feature_data: dict)
    Get quicklook_from host.

create_quicklook_layer(params: dict)
    Create a layer with the quicklook.
```

## src.gui.form\_base

Base form module for all forms in the plugin.

## **Classes**

FormBase

Base form class for all forms in the plugin.

## **Module Contents**

```
{\bf class} \  \, {\bf src.gui.form\_base.FormBase} (parent=None, accept\_btn=False, cancel\_btn=False, close\_btn=True, \\ closing\_plugin=None)
```

Bases: PyQt5.QtWidgets.QDialog

Base form class for all forms in the plugin.

```
parent = None
```

set\_control\_buttons(accept\_btn, cancel\_btn, close\_btn)

Set control buttons for the form (Accept, Cancel, Close).

```
btn_close_click()
```

Event handler for the Close button click.

## src.gui.form\_catalog\_info

Form Catalog Info Module.

#### **Classes**

FormCatalogInfo

Form Catalog Info Class.

class src.gui.form\_catalog\_info.FormCatalogInfo(parent=None, data=None, closing\_plugin=None)

Bases: gui.form\_base.FormBase, ui.frm\_catalog\_info.Ui\_frm\_catalog\_info

Form Catalog Info Class.

normalize\_dict\_data(data)

Normalize data to be loaded in table.

load\_data(data)

Load data in table.

## src.gui.form\_default\_collections

Collection selection form module.

#### **Classes**

FormDefaultCollections

Collection selection form class.

#### **Module Contents**

Bases: gui.form\_base.FormBase, ui.frm\_default\_collections.Ui\_frm\_default\_collections Collection selection form class.

settings

selected\_collections

providers

btn\_accept\_clicked()

Event handler for accept button click.

btn\_add\_selected\_clicked()

Event handler for add selected button click.

btn\_remove\_selected\_clicked()

Event handler for remove selected button click.

btn\_filter\_results\_clicked()

Event handler for filter results button click.

load\_filtered\_collections(data)

Load filtered collections in table.

load\_selected\_collections()

Load selected collections in table.

## src.gui.form\_settings

Form settings module.

#### **Classes**

FormSettings

Form PluginSettings Class.

#### **Module Contents**

```
class src.gui.form_settings.FormSettings(parent=None, closing_plugin=None)
     Bases: gui.form_base.FormBase, ui.frm_settings.Ui_frm_settings
     Form PluginSettings Class.
     settings
     up42_settings
     sentinelhub_settings
     planet_settings
     up42_is_valid
     sentinelhub_is_valid
     planet_is_valid
     update_cloud_coverage_label()
          Update cloud coverage label text.
     btn_accept_clicked()
          Event handler for accept button click.
     txt_default_back_days_text_changed()
          Event handler for default back days text changed.
     txt_max_catalog_results_text_changed()
          Event handler for max catalog results text changed.
     txt_max_features_results_text_changed()
          Event handler for max features results text changed.
     btn_up42_check_credentials_clicked()
          Event handler for check credentials button click.
     btn_sentinelhub_check_credentials_clicked()
          Event handler for check credentials button click.
```

## src.gui.helpers

## **Submodules**

## src.gui.helpers.forms

Form helpers functions module.

## **Functions**

load_combobox(obj_combobox, key_member, value_member,)	Load a QComboBox with provided data.
<pre>set_form_stylesheet(parent)</pre>	Set stylesheet to a form.
<pre>set_elided_text_to_label(label, text)</pre>	Set elided text to a QLabel if the text is too long.
<pre>set_tooltips(form)</pre>	Set tooltips to all QLineEdit widgets in a form.
<pre>get_shadow_effect()</pre>	Get shadow effect for widgets.
<pre>init_tableview(obj_tableview, column_count. row_count,)</pre>	Initialize tableview with provided data, headers and columns.
<pre>load_table_data(obj_table, data[, headers, columns,])</pre>	Load table with provided data, headers and columns.
<pre>check_int_not_empty(txt_widget)</pre>	Check if the value is an integer and greater than 0 in a QLineEdit.

## **Module Contents**

Load a QComboBox with provided data.

```
src.gui.helpers.forms.set_form_stylesheet(parent)
```

Set stylesheet to a form.

src.gui.helpers.forms.set\_elided\_text\_to\_label(label, text)

Set elided text to a QLabel if the text is too long.

```
src.gui.helpers.forms.set_tooltips(form)
```

Set tooltips to all QLineEdit widgets in a form.

src.gui.helpers.forms.get\_shadow\_effect()

Get shadow effect for widgets.

Initialize tableview with provided data, headers and columns.

```
src.gui.helpers.forms.load_table_data(obj_table, data, headers=None, columns=[], fn_custom_items=[], cols_to_stretch=[], cols_width=[], cols_to_hide=[], add_dict_object=False, literal_values=False, default_row_height=25, default_alignment=None, checkable_columns=[], num_decimals=2)
```

Load table with provided data, headers and columns.

```
src.gui.helpers.forms.check_int_not_empty(txt_widget)
```

Check if the value is an integer and greater than 0 in a QLineEdit.

## src.gui.helpers.worker

Worker thread class.

## **Classes**

WorkerThread Worker thread class.

## **Module Contents**

```
class src.gui.helpers.worker.WorkerThread
    Bases: PyQt5.QtCore.QThread
    Worker thread class.
    finished
    progress_updated
    error_signal
    warning_signal
    info_signal
    start(process, dict_params)
        Start thread.
    run()
        Run thread.
```

## src.kan\_imagery\_catalog

KAN Imagery Catalog QGIS plugin main module.

## Classes

**KANImageryCatalog** 

QGIS Plugin Implementation.

## **Module Contents**

```
class src.kan_imagery_catalog.KANImageryCatalog(iface)
    QGIS Plugin Implementation.
    iface
    plugin_dir
    actions = []
    menu
    toolbar
    pluginIsActive = False
    dockwidget = None
    frm_settings = None
```

## frm\_collection\_settings = None

## tr(message)

Get the translation for a string using Qt translation API.

We implement this ourselves since we do not inherit QObject.

#### **Parameters**

**message** (*str*, *QString*) – String for translation.

#### Returns

Translated version of message.

## Return type

**QString** 

**add\_action**(*icon\_path*, *text*, *callback*, *enabled\_flag=True*, *add\_to\_menu=True*, *add\_to\_toolbar=True*, *status\_tip=None*, *whats\_this=None*, *parent=None*)

Add a toolbar icon to the toolbar.

#### **Parameters**

- **icon\_path** (*str*) Path to the icon for this action. Can be a resource path (e.g. ':/plug-ins/foo/bar.png') or a normal file system path.
- **text** (*str*) Text that should be shown in menu items for this action.
- callback (function) Function to be called when the action is triggered.
- **enabled\_flag** (*boo1*) A flag indicating if the action should be enabled by default. Defaults to True.
- add\_to\_menu (bool) Flag indicating whether the action should also be added to the menu. Defaults to True.
- add\_to\_toolbar (bool) Flag indicating whether the action should also be added to the toolbar. Defaults to True.
- **status\_tip** (*str*) Optional text to show in a popup when mouse pointer hovers over the action.
- parent (QWidget) Parent widget for the new action. Defaults None.
- **whats\_this** Optional text to show in the status bar when the mouse pointer hovers over the action.

#### Returns

The action that was created. Note that the action is also added to self.actions list.

## Return type

**Q**Action

#### initGui()

Create the menu entries and toolbar icons inside the QGIS GUI.

## onClosePlugin()

Cleanup necessary items here when plugin dockwidget is closed

#### unload()

Removes the plugin menu item and icon from QGIS GUI.

#### run()

Run method that loads and starts the plugin

## src.kan\_imagery\_catalog\_dock

KAN Imagery Catalog QGIS plugin dock widget module.

#### **Classes**

KANImageryCatalogDock

KANImageryCatalogDock Dockwidget class.

#### **Module Contents**

```
class src.kan_imagery_catalog_dock.KANImageryCatalogDock(parent=None)
     Bases: PyQt5.QtWidgets.QDockWidget, FORM_CLASS
     KANImageryCatalogDock Dockwidget class.
     closing_plugin
     error_signal
     warning_signal
     info_signal
     parent = None
     settings
     collections = []
     sort_ascending = True
     loading_spinner
     thread_get_catalogs
     thread_get_thumbnails
     thread_load_collections_cache
     show_ended_search_message = True
     show_info(title, message)
          Show info message.
     show_warning(title, message)
          Show warning message.
     show_error(title, message)
          Show error message.
     set_form_state(is_busy, show_spinner=False)
          Sets the form state (enabled/disabled) when the process is runnning in a separate thread.
     closeEvent(event)
          Run close plugin event.
     txt_max_catalog_results_text_changed()
          Event handler for textbox 'txt_max_catalog_results'.
```

## update\_cloud\_coverage\_label()

Event handler for slider 'slider\_cloud\_coverage'.

## chk\_search\_by\_dataframe\_update()

Event handler for checkbox 'chk\_search\_by\_dataframe'.

## btn\_update\_layers\_list\_clicked()

Event handler for button 'btn\_update\_layers\_list'.

#### btn\_settings\_clicked()

Event handler for button 'btn\_settings'.

## btn\_select\_catalogs\_clicked()

Event handler for button 'btn\_select\_catalogs'.

## load\_collections\_cache()

Load collections in caché

#### show\_collections\_form()

Show form to select collections.

#### btn\_sort\_results\_clicked()

Event handler for button 'btn\_sort\_results'.

## btn\_show\_hide\_search\_area\_clicked()

Event handler for button 'btn\_show\_hide\_search\_area'.

#### btn\_show\_hide\_catalogs\_clicked()

Event handler for button 'btn\_show\_hide\_catalogs'.

## btn\_show\_hide\_filters\_clicked()

Event handler for button 'btn\_show\_hide\_filters'.

## btn\_get\_data\_clicked()

Event handler for button 'btn\_get\_data'.

## get\_data\_finished()

Event handler for thread 'thread\_get\_catalogs' finished.

## get\_results(bounding\_box, cloud\_coverage, date\_from, date\_to, max\_catalog\_results)

Get results from selected catalogs with selected filters.

## get\_thumbnails\_in\_background(catalogs\_data: list)

## update\_progress(progress\_data)

Update thread results in Toc and DockWidget.

Add item to results list.

## add\_feature\_to\_footprints\_layer(coordinates, footprint\_id)

Add feature to footprints layer.

## src.plugin\_upload

This script uploads a plugin package to the plugin repository. Authors: A. Pasotti, V. Picavet git sha: \$TemplateVCS-Format

## **Attributes**

PROTOCOL	
SERVER	
PORT	
ENDPOINT	
VERBOSE	
parser	

## **Functions**

main(parameters, arguments)	Main entry point.
<pre>hide_password(url[, start])</pre>	Returns the http url with password part replaced with '*'.

## **Module Contents**

## **Parameters**

- parameters Command line parameters.
- **arguments** Command line arguments.

src.plugin\_upload.hide\_password(url, start=6)

Returns the http url with password part replaced with '\*'.

## **Parameters**

- **url** (*str*) URL to upload the plugin to.
- **start** (*int*) Position of start of password.

 ${\tt src.plugin\_upload.parser}$ 

#### src.resources

#### Attributes

```
qt_resource_data

qt_resource_name

qt_resource_struct_v1

qt_resource_struct_v2

qt_version

rcc_version
```

#### **Functions**

```
qInitResources()

qCleanupResources()
```

#### **Module Contents**

## src.services

#### **Submodules**

## src.services.element84

Module for Element84 API calls

## **Attributes**

DOWNLOAD\_URL

#### **Functions**

<pre>get_collections()</pre>	Get collections from Element84 API
$get\_catalog(\rightarrow dict)$	Get catalog data from Element84 API
<pre>get_thumbnail(collection_name, image_id)</pre>	Get catalog thumbnail from Element84 API
<pre>get_quicklook(image_id, feature_data)</pre>	Get catalog quicklook from Element84 API

## **Module Contents**

```
src.services.element84.DOWNLOAD_URL = 'https://element84.com/'
src.services.element84.get_collections()
Get collections from Element84 API
src.services.element84.get_catalog(search_params: dict) → dict
Get catalog data from Element84 API
src.services.element84.get_thumbnail(collection_name: str, image_id: str)
Get catalog thumbnail from Element84 API
src.services.element84.get_quicklook(image_id: str, feature_data: dict)
Get catalog quicklook from Element84 API
```

## src.services.microsoft

Module for MicrosoftPlanetary API calls

## **Attributes**

DOWNLOAD\_URL

## **Functions**

<pre>get_collections()</pre>	Get collections from MicrosoftPlanetary API
$get\_catalog(\rightarrow dict)$	Get catalog data from MicrosoftPlanetary API
<pre>get_thumbnail(collection_name, feature_data)</pre>	Get catalog thumbnail from MicrosoftPlanetary API
<pre>get_quicklook(host_name, image_id, feature_data)</pre>	Get catalog quicklook from MicrosoftPlanetary API

## **Module Contents**

src.services.microsoft.DOWNLOAD\_URL = 'https://planetarycomputer.microsoft.com/'

```
src.services.microsoft.get_collections()
```

Get collections from MicrosoftPlanetary API

 $src.services.microsoft.get\_catalog(search\_params: dict) \rightarrow dict$ 

Get catalog data from MicrosoftPlanetary API

src.services.microsoft.get\_thumbnail(collection\_name: str, feature\_data: dict)

Get catalog thumbnail from MicrosoftPlanetary API

src.services.microsoft.get\_quicklook(host\_name: str, image\_id: str, feature\_data: dict)

Get catalog quicklook from MicrosoftPlanetary API

## src.services.sentinel\_hub

Module for Sentinel Hub API calls

## Attributes

DOWNLOAD\_URL

#### **Functions**

<pre>get_token(client_id, client_secret)</pre>	Get token from Sentinel Hub API
<pre>get_collections(token)</pre>	Get collections from Sentinel Hub API
$get\_catalog(\rightarrow dict)$	Get catalog data from Sentinel Hub API
<pre>get_thumbnail(token, host_name, image_id)</pre>	Get catalog thumbnail from Sentinel Hub API
<pre>get_quicklook(token, host_name, image_id)</pre>	Get catalog quicklook from Sentinel Hub API

## **Module Contents**

```
src.services.sentinel_hub.DOWNLOAD_URL = 'https://www.sentinel-hub.com/'
```

src.services.sentinel\_hub.get\_token(client\_id, client\_secret)

Get token from Sentinel Hub API

src.services.sentinel\_hub.get\_collections(token)

Get collections from Sentinel Hub API

 $src.services.sentinel\_hub.get\_catalog(token: str, host\_name: str, search\_params: dict) \rightarrow dict$ Get catalog data from Sentinel Hub API

src.services.sentinel\_hub.get\_thumbnail(token: str, host\_name: str, image\_id: str)

Get catalog thumbnail from Sentinel Hub API

src.services.sentinel\_hub.get\_quicklook(token: str, host\_name: str, image\_id: str)

Get catalog quicklook from Sentinel Hub API

#### src.services.up42

Module for Up42 API calls

## **Attributes**

DOWNLOAD\_URL

## **Functions**

$get\_token(\rightarrow str)$	Get token from UP42 API
<pre>get_collections()</pre>	Get collections from UP42 API
$get\_catalog(\rightarrow dict)$	Get catalog data from UP42 API
<pre>get_thumbnail(token, host_name, image_id)</pre>	Get catalog thumbnail from UP42 API
<pre>get_quicklook(token, host_name, image_id)</pre>	Get catalog quicklook from UP42 API

## **Module Contents**

```
src.services.up42.DOWNLOAD_URL = 'https://console.up42.com/catalog/new-order'
src.services.up42.get_token(username: str, password: str) → str
    Get token from UP42 API
src.services.up42.get_collections()
    Get collections from UP42 API
src.services.up42.get_catalog(token: str, host_name: str, search_params: dict) → dict
    Get catalog data from UP42 API
src.services.up42.get_thumbnail(token: str, host_name: str, image_id: str)
    Get catalog thumbnail from UP42 API
src.services.up42.get_quicklook(token: str, host_name: str, image_id: str)
    Get catalog quicklook from UP42 API
```

## src.services.utils

Module for API auxiliary functions

## **Attributes**

REQUEST\_TIMEOUT

## **Functions**

```
\begin{array}{ll} \textit{encode\_base64}(\rightarrow \textit{str}) & \textit{Encode a string to Base64} \\ \textit{http\_get}(\textit{url}[, \textit{host\_name}, \textit{headers}, \textit{result\_type}, ...]) \\ \textit{http\_post}(\textit{url}[, \textit{host\_name}, \textit{headers}, \textit{payload}, ...]) \\ \end{array}
```

```
src.services.utils.REQUEST_TIMEOUT = 120
src.services.utils.encode_base64(text_to_encode: str) → str
    Encode a string to Base64
src.services.utils.http_get(url, host_name=", headers={}, result_type='json', raise_for_status=False)
src.services.utils.http_post(url, host_name=", headers={}, payload={}, result_type='json', raise_for_status=False)
```

src.ui

**Submodules** 

src.ui.custom\_widget\_list\_item

**Attributes** 

app

## **Classes**

Ui\_CustomWidgetListItem

## **Module Contents**

**Attributes** 

app

## **Classes**

Ui\_frm\_catalog\_info

## \_\_\_\_\_\_

## **Attributes**

app

## **Classes**

```
Ui_frm_default_collections
```

## **Module Contents**

```
class src.ui.frm_default_collections.Ui_frm_default_collections
    Bases: object
    setupUi(frm_default_collections)
    retranslateUi(frm_default_collections)
src.ui.frm_default_collections.app
```

## src.ui.frm\_settings

## **Attributes**

app

## **Classes**

```
Ui_frm_settings
```

```
class src.ui.frm_settings.Ui_frm_settings
    Bases: object
    setupUi(frm_settings)
    retranslateUi(frm_settings)
src.ui.frm_settings.app
```

## src.utils

## **Submodules**

## src.utils.constants

Constants module.

## **Attributes**

```
RESULTS_GROUP_NAME

RESULTS_LAYER_NAME

DEFAULT_MESSAGE_DURATION

DEFAULT_SOURCE_CRS

DEFAULT_TARGET_CRS
```

## **Classes**

CustomEnum	Custom Enum class.
StyleVariables	Style variables for qss stylesheet.
MessageType	Qgis Message types.

## **Module Contents**

```
src.utils.constants.RESULTS_GROUP_NAME = 'kan_imagery_catalog_preview'
src.utils.constants.RESULTS_LAYER_NAME = 'kan_imagery_catalog_footprints'
src.utils.constants.DEFAULT_MESSAGE_DURATION = 5
src.utils.constants.DEFAULT_SOURCE_CRS = 'EPSG:3857'
src.utils.constants.DEFAULT_TARGET_CRS = 'EPSG:4326'
class src.utils.constants.CustomEnum
    Bases: enum.Enum
    Custom Enum class.
```

```
\_repr\_() \rightarrow str
          Override the default repr behavior.
     \__{\mathbf{str}}() \rightarrow \operatorname{str}
          Override the default str behavior.
     __eq__(other)
          Override the default eq behavior.
     classmethod to_dict() \rightarrow dict
          Convert enum to dict.
class src.utils.constants.StyleVariables
     Bases: CustomEnum
     Style variables for qss stylesheet.
     FONT_SIZE_DEFAULT = '12px'
     FONT_SIZE_SMALL = '8px'
     COLOR_MAIN_DARK = '#6597AF'
     COLOR_MAIN_LIGHT = '#F5F5F5'
     COLOR_TEXT_DEFAULT = '#2D2D2D'
     COLOR_TEXT_LIGHT = '#E8E8E8'
     COLOR_BACKGROUND_DEFAULT = '#E8E8E8'
class src.utils.constants.MessageType
     Qgis Message types.
     INFO = 0
     WARNING = 1
     CRITICAL = 2
     SUCCESS = 3
```

## src.utils.debug

Debugging utilities module.

## **Functions**

<pre>pyqt_set_trace()</pre>	Set a tracepoint in the Python debugger that works with
	Qt.

#### **Module Contents**

```
src.utils.debug.pyqt_set_trace()
```

Set a tracepoint in the Python debugger that works with Qt.

## src.utils.encoders

Custom JSON encoders for the application.

## **Classes**

Custom		

Custom JSON encoder for Decimal objects.

## **Module Contents**

```
class src.utils.encoders.CustomJsonDecimalEncoder(*, skipkeys=False, ensure_ascii=True,
                                                         check_circular=True, allow_nan=True,
                                                         sort_keys=False, indent=None, separators=None,
                                                         default=None)
```

Bases: json.JSONEncoder

Custom JSON encoder for Decimal objects.

default(o)

Encode Decimal objects as float.

## src.utils.exceptions

Custom exceptions module.

## **Exceptions**

PluginError	Base class for custom exceptions.
ProviderError	Custom exception for provider related errors.
HostError	Custom exception for host related errors.
AuthorizationError	Custom exception for authorization related errors.
SettingsError	Custom exception for settings related errors.
DataNotFoundError	Custom exception for data related errors.

## **Module Contents**

```
exception src.utils.exceptions.PluginError(message=", message_type=MessageType.CRITICAL)
     Bases: Exception
     Base class for custom exceptions.
     message_type
     message = ''
exception src.utils.exceptions.ProviderError(message=tr('Error to get results from provider.'))
```

Bases: PluginError

Custom exception for provider related errors.

**exception** src.utils.exceptions.**HostError**(message=tr('Error to get results from host.'))

Bases: PluginError

Custom exception for host related errors.

**exception** src.utils.exceptions.**AuthorizationError**(*message=tr('Error to get results from authorization.')*)

Bases: PluginError

Custom exception for authorization related errors.

**exception** src.utils.exceptions.**SettingsError**(*message=tr*(*'Please check the plugin settings.')*)

Bases: PluginError

Custom exception for settings related errors.

exception src.utils.exceptions.DataNotFoundError(message=tr('No data found.'))

Bases: PluginError

Custom exception for data related errors.

## src.utils.general

General utilities for the KAN Imagery Catalog plugin.

#### **Attributes**

PLUGIN\_NAME

#### **Functions**

_get_plugin_name([missing])	Get plugin name from metadata.txt file.
<pre>get_plugin_dir()</pre>	Get plugin directory.
<pre>clean_temporary_files()</pre>	Clean temporary files

## **Module Contents**

```
src.utils.general._get_plugin_name(missing='KAN Imagery Catalog')
    Get plugin name from metadata.txt file.
src.utils.general.get_plugin_dir()
    Get plugin directory.
src.utils.general.PLUGIN_NAME = 'KAN Imagery Catalog'
src.utils.general.clean_temporary_files()
    Clean temporary files
```

## src.utils.helpers

Helper functions module.

## **Functions**

$open\_url(\rightarrow bool)$	Open a URL in the browser.
tr(message)	Get the translation for a string using Qt translation API.
normalize_text(text)	Remove accents from text.

```
src.utils.helpers.open_url(url: str, params: dict | None = None) → bool
    Open a URL in the browser.
src.utils.helpers.tr(message)
    Get the translation for a string using Qt translation API.
src.utils.helpers.normalize_text(text)
    Remove accents from text.
```

## src.utils.qgis\_helper

QGIS helper functions module.

## **Attributes**

message

## **Functions**

<pre>get_bounding_box_transformed(bbox, source_crs, target crs)</pre>	Get bounding box from canvas and transform it if necessary to the default target CRS.
<pre>get_bounding_box_canvas()</pre>	Get bounding box from canvas.
<pre>get_selected_feature_bounding_box(layer_id[,])</pre>	Get bounding box from feature. By default, the first feature in the array is used if no feature is selected.
<pre>get_valid_project_layers_to_search()</pre>	Get vector layers names from current project excluding the ones in the results group.
<pre>save_setting(setting_name, value)</pre>	Save setting.
<pre>read_setting(setting_name[, default_value])</pre>	Read setting.
<pre>save_json_setting(setting_name, value)</pre>	Save json setting.
<pre>read_json_setting(setting_name[, default_value])</pre>	Read json setting.
error_message(title, text)	Show error message.
<pre>warning_message(title, text)</pre>	Show warning message.
<pre>info_message(title, text)</pre>	Show info message.
success_message(title, text)	Show success message.
<pre>get_or_create_group(group_name)</pre>	Get or create group.
<pre>get_layer_by_name(layer_name)</pre>	Get layer by name.
<pre>get_or_create_footprints_layer(layer_name, group_name)</pre>	Get or create footprints layer.
<pre>add_feature_to_layer(coordinates, feature_id,</pre>	Add feature to layer.
layer)	
<pre>get_georeferenced_image(feature, image_path)</pre>	Get georeferenced image from feature and image path.
<pre>create_quicklook_layer(footprints_crs,</pre>	Create a layer with a quicklook image.
layer_name,)	
zoom_selected_features(layer)	Zoom to selected features in layer.

```
src.utils.qgis_helper.message
src.utils.qgis_helper.get_bounding_box_transformed(bbox, source_crs, target_crs)
     Get bounding box from canvas and transform it if necessary to the default target CRS.
src.utils.qgis_helper.get_bounding_box_canvas()
     Get bounding box from canvas.
src.utils.qgis_helper.get_selected_feature_bounding_box(layer_id, default_first=True)
     Get bounding box from feature. By default, the first feature in the array is used if no feature is selected.
src.utils.qgis_helper.get_valid_project_layers_to_search()
     Get vector layers names from current project excluding the ones in the results group.
src.utils.qgis_helper.save_setting(setting_name, value)
     Save setting.
src.utils.qgis_helper.read_setting(setting_name, default_value=None)
     Read setting.
src.utils.qgis_helper.save_json_setting(setting_name, value)
     Save json setting.
src.utils.qgis_helper.read_json_setting(setting_name, default_value=None)
     Read ison setting.
src.utils.qgis_helper.error_message(title, text)
     Show error message.
src.utils.qgis_helper.warning_message(title, text)
     Show warning message.
src.utils.qgis_helper.info_message(title, text)
     Show info message.
src.utils.qgis_helper.success_message(title, text)
     Show success message.
src.utils.qgis_helper.get_or_create_group(group_name)
     Get or create group.
src.utils.qgis_helper.get_layer_by_name(layer_name)
     Get layer by name.
src.utils.qgis_helper.get_or_create_footprints_layer(layer_name, group_name)
     Get or create footprints layer.
src.utils.qgis_helper.add_feature_to_layer(coordinates, feature_id, layer)
     Add feature to layer.
src.utils.qgis_helper.get_georeferenced_image(feature, image_path)
     Get georeferenced image from feature and image path.
src.utils.qgis_helper.create_quicklook_layer(footprints_crs, layer_name, group_name, feature,
                                                   image_path=None)
     Create a layer with a quicklook image.
```

 $\verb|src.utils.qgis_helper.zoom_selected_features| (layer)$ 

Zoom to selected features in layer.

## 1.1.2 Functions

classFactory(iface)	Load KANImageryCatalog class from file KANIm-
	ageryCatalog.

## 1.1.3 Package Contents

src.classFactory(iface)

 $Load\ KANImagery Catalog\ class\ from\ file\ KANImagery Catalog.$ 

## **Parameters**

 $\textbf{iface} \ (\textit{QgsInterface}) - A \ QGIS \ interface \ instance.$ 

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