

I-SIMPA Scripting Guide

1.1.4

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Chapter 1

I-SIMPA scripting guide

There are two main ways to make script for I-SIMPA. The first way is aiming at append fonctionnality via the right-click on tree elements. The goal of the second way is to append element data to projects tree.

- [I-SIMPA adding fonctionnality](#)
- [Add data in projects tree](#)

Chapter 2

I-SIMPA adding fonctionnality

Adding popup menu fonctionnality need 4 steps :

- Make module sub-folder in UserScript folder and add `__ui_startup.py` file that import this module.
- [Register events](#) in menu manager constructor.
- [Register a new menu manager](#) object in `__init__.py` file.
- [Define getmenu method](#) that will append items in menu list structure.

2.1 Register events

Each python implemented function had an integer index called event type. Register the function give this new event type index. This index will be used later in the menu structure at the last step.

To register new event type call the method `uictrl::application::register_event`

Sample

```
class manager:
    """
    This class make the user able to enable or disable a group of emitters wi
    th one click only
    """
    def __init__(self):
        """
        Constructor. Register the two new menu functions
        """
        self.enable_grp_sourcesid=uictrl.application.register_event(self.enable_g
        rp_sources)
        self.disable_grp_sourcesid=uictrl.application.register_event(self.disable
        _grp_sources)
    def set_grp_src_activation(self, idgrp, newstate):
        grpsrc=uictrl.element(idgrp)
        all_property=grpsrc.getallelementbytype(uictrl.element_type.ELEMENT_TYPE_
        SCENE_SOURCES_SOURCE_PROPRIETES)
        for prop in all_property:
            uictrl.element(prop).updateboolconfig("enable", newstate)
    def enable_grp_sources(self, idgrp):
        """
        Called by user interface when the user click on the enable menu item
        """
        self.set_grp_src_activation(idgrp, True)
    def disable_grp_sources(self, idgrp):
        """
        Called by user interface when the user click on the disable menu item
        """
        self.set_grp_src_activation(idgrp, False)
```

2.2 Register a new menu manager

To register a new menu manager call the function `uictrl::application::register_menu_manager`

Sample

```
uictrl.application.register_menu_manager(uictrl.element_type.ELEMENT_TYPE_SCENE_S
    OURCES, manager())
```

- The first parameter `uictrl::element_type` indicate the associated element type with the manager.
- The second parameter is the instance of the manager.

2.3 Define getmenu method

When the user right click on an items I-SIMPA will call the getmenu function of all menu manager registered with the item element type.

This method must return true if you have modified the menu list data, false otherwise.

Sample

```
def getmenu(self, typeel, idel, menu) :
    """
        Called by the user interface
        The list menu structure contains the current implemented functions.
    """
    submenu=[(uictrl._("Enable"), self.enable_grp_sourceid), (uictrl._("Disabl
e"), self.disable_grp_sourceid)]
    menu.insert(2, (uictrl._("All emitters"), submenu))
    menu.insert(2, ())
    return True
```

2.4 Run python code on element update

You can link python method with any application element, this method is call when this element will be updated by I-SIMPA or the user. The method parameters must be an element id.

Warning:

Do not call `ui::element::Update` due to infinite loop. The `uictrl::element::register_update_manager` do this operation

Chapter 3

Add data in projects tree

Adding fields to projects is not sufficient.

You must take control of these fields to implement constraint and to adding more functionality.

Step to add data in trees :

- Append a folder in UserScript/
- [Creation of the new element type](#) in the UserScript/yourmod/___init___py
- [Register the new module](#) in ___project_loading___py

3.1 Creation of the new element type

The sample in this guide is aiming at linking projet with a new calculation core. First of all, you need to build the python class inherit from `uictrl::element` class and with the `uictrl::element_type::ELEMENT_TYPE_CORE_CORE` base id.

Sample

```
class mdf(uictrl.element):
    """
    Diffusion model calculation core.
    """
    def __init__(self, idel):
        uictrl.element.__init__(self, idel)

        if not self.hasproperty("exeName"): #Test if this is a new project initialisation
            #If this is a new project then we add properties
            #Add tetgen parameters
            self.appendfilsbytype(uictrl.element_type.ELEMENT_TYPE_CORE_CORE_CONF
            MAILLAGE)
            #Add frequencies selection
            self.appendfilsbytype(uictrl.element_type.ELEMENT_TYPE_CORE_CORE_BFRE
            QSELECTION)
            #Add configuration core
            coreconf=uictrl.element(self.appendfilsbytype(uictrl.element_type.ELE
            MENT_TYPE_CORE_CORE_CONFIG))
            #Append hidden config, used by I-SIMPA to find the core files and bin
            aries
            uictrl.element(self.appendpropertytext("modelName", "", "mesh.cbin", Tru
            e, True)).hide()
            uictrl.element(self.appendpropertytext("tetrameshFileName", "", "tetram
            esh.mbin", True, True)).hide()
            uictrl.element(self.appendpropertytext("exeName", "", "md.py")).hide()
            uictrl.element(self.appendpropertytext("corePath", "", "md\\")).hide()

            #User options
            coreconf.appendpropertylist("solver_mode", "Calculation mode", [{"Time"
            , "Static"}, [0,1]], 0, False, 1, True)
            coreconf.appendpropertybool("with_direct_sound", "Use direct sound", Tr
            ue, True)
            _("Calculation mode")
            _("Use direct sound")
            _("Time")
            _("Static")

        else:
            pass #Here in case of loading an existing project
```

In the `__init__` constructor you can add your mod's properties . But you have to test their existence because this constructor is also called when loading a project.

3.1.1 Tree label

By default the name shown in the tree is the class name. To set another label you must override the `gettree-label` function.

Sample

```
def gettreelabel(self):
    """
        Return label
    """
    return "Mdf"
```

3.1.2 Icon

There are two kind of icon :

- Built-in icon referenced by the `uictrl::graph` enumeration and declared by `element::geticonid(self)` that return graph id.
- Local declaration of icon. Declared by `element::geticonpath(self)` that return the icon path.

Sample

```
def geticonid(self, state_open):
    """
        Return tree icon Id
    """
    if state_open:
        return uictrl.graph.GRAPH_FOLDER_OPEN
```

3.1.3 Modification event

From the property itself to the highest parent the method `uictrl::element::modified` is automatically called when the user change the value of a property.

This is a usefull method to implement properties constraints.

In our sample, we use this method to disable time dependant properties when the user choose the static resolution method.

Sample

```
def modified(self, idelmodified):
    #In case of sub element modification this func is call by ui
    #We disable the time dependant parameters in case of static solver mode
    if uictrl.element(idelmodified).getinfos()["name"]=="solver_mode":
        elconf=uictrl.element(self).getelementbytype(uictrl.element_type.ELEMENT_TYPE_CORE_CORE_CONFIG)
        is_temporal=(elconf.getlistconfig("solver_mode")==0)
        elconf.setreadonlyconfig("duree_simulation",not is_temporal)
        elconf.setreadonlyconfig("pasdetemps",not is_temporal)
        uictrl.element.modified(self, idelmodified)
```

3.2 Register the new module

All files named "__project_loading__.py" in the UserScript/ folder and sub folder is executed when the user create or load a project.

You need to create this file in your module folder to register your new module in new projects and in existing projects that doesn't contain your module.

In the source code check first if your module was not already inserted in the project. Then insert your module thanks to the `uictrl::element::appenduserelement` method.

You can use the already imported library `uictrl` under the name "ui"

Sample

```
rootcore=ui.element(ui.application.getrootcore())
#Check if our mod has been already inserted
if rootcore.getelementbylibelle("mdf")==-1: #Then append our mod
    rootcore.appenduserelement(ui.element_type.ELEMENT_TYPE_CORE_CORE,"mdf","mdf"
    )
```


Chapter 4

Namespace Index

4.1 Namespace List

Here is a list of all documented namespaces with brief descriptions:

uictrl (Python embedding of c++ class)	17
-------------------------------------------------------------------	----

Chapter 5

Class Index

5.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

uictrl::application	27
uictrl::Element	33
uictrl::element	34
uictrl::e_file	32

Chapter 6

Class Index

6.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

uictl::application (Python application control class)	27
uictl::e_file	32
uictl::Element (Alias)	33
uictl::element (Give control on a built-in(c++) or python implemented element)	34

Chapter 7

Namespace Documentation

7.1 uictrl Namespace Reference

Python embedding of c++ class.

Classes

- class [application](#)
Python [application](#) control class.
- class [e_file](#)
- struct [Element](#)
Alias.
- class [element](#)
Give control on a built-in(c++) or python implemented [element](#).

Enumerations

- enum [element_type](#) {
ELEMENT_TYPE_CORE_ROOT, ELEMENT_TYPE_RESULT_ROOT, ELEMENT_TYPE_-
SCENE_ROOT, ELEMENT_TYPE_SCENE_PROJET_CONFIGURATION,
ELEMENT_TYPE_SCENE_GROUPESURFACES, ELEMENT_TYPE_SCENE_-
GROUPESURFACES_GROUPE, ELEMENT_TYPE_SCENE_GROUPESURFACES_GROUPE_-
VERTEX, ELEMENT_TYPE_SCENE_RECEPTEURSP,
ELEMENT_TYPE_SCENE_RECEPTEURSP_RECEPTEUR, ELEMENT_TYPE_SCENE_-
RECEPTEURSP_RECEPTEUR_PROPRIETES, ELEMENT_TYPE_SCENE_RECEPTEURSP_-
RECEPTEUR_RENDU, ELEMENT_TYPE_SCENE_RECEPTEURSS,
ELEMENT_TYPE_SCENE_RECEPTEURSS_RECEPTEUR, ELEMENT_TYPE_SCENE_-
RECEPTEURSS_RECEPTEUR_PROPRIETES, ELEMENT_TYPE_SCENE_RECEPTEURSS_-
RECEPTEUR_RENDU, ELEMENT_TYPE_SCENE_SOURCES,
ELEMENT_TYPE_SCENE_SOURCES_SOURCE, ELEMENT_TYPE_SCENE_SOURCES_-
SOURCE_PROPRIETES, ELEMENT_TYPE_SCENE_SOURCES_SOURCE_PUISSANCE,
ELEMENT_TYPE_SCENE_SOURCES_SOURCE_RENDU,

ELEMENT_TYPE_TEXT, ELEMENT_TYPE_COLOR, ELEMENT_TYPE_POSITION,
 ELEMENT_TYPE_LIST,
 ELEMENT_TYPE_INTEGER, ELEMENT_TYPE_FLOAT, ELEMENT_TYPE_BOOL,
 ELEMENT_TYPE_SCENE_PROJET_RENDU,
 ELEMENT_TYPE_SCENE_PROJET_RENDU_ORIGINE, ELEMENT_TYPE_SCENE_-
 PROJET_RENDU_MODEL, ELEMENT_TYPE_SCENE_BDD, ELEMENT_TYPE_SCENE_-
 BDD_SPECTRUMS,
 ELEMENT_TYPE_SCENE_BDD_SPECTRUMS_USER, ELEMENT_TYPE_SCENE_BDD_-
 SPECTRUMS_APP, ELEMENT_TYPE_SCENE_BDD_MATERIAUX, ELEMENT_TYPE_-
 SCENE_BDD_MATERIAUX_APP,
 ELEMENT_TYPE_SCENE_BDD_MATERIAUX_APP_GROUP, ELEMENT_TYPE_SCENE_-
 BDD_MATERIAUX_APP_MATERIAU, ELEMENT_TYPE_SCENE_BDD_MATERIAUX_-
 USER, ELEMENT_TYPE_SCENE_BDD_MATERIAUX_USER_GROUP,
 ELEMENT_TYPE_SCENE_BDD_MATERIAUX_USER_MATERIAU, ELEMENT_TYPE_-
 SCENE_BDD_MATERIAUX_PROPMATERIAU, ELEMENT_TYPE_SCENE_BDD_-
 CATMATERIAL, ELEMENT_TYPE_MATERIAU_APP,
 ELEMENT_TYPE_MATERIAU_USER, ELEMENT_TYPE_GAMMEFREQ_APP, ELEMENT_-
 TYPE_GAMMEFREQ_USER, ELEMENT_TYPE_PROPERTY_FREQ,
 ELEMENT_TYPE_ROW, ELEMENT_TYPE_ROW_BFREQ, ELEMENT_TYPE_ROW_-
 MATERIAU, ELEMENT_TYPE_SCENE_ENCOMBREMENTS,
 ELEMENT_TYPE_SCENE_ENCOMBREMENTS_ENCOMBREMENT, ELEMENT_-
 TYPE_SCENE_ENCOMBREMENTS_ENCOMBREMENT_PROPRIETES, ELEMENT_-
 TYPE_SCENE_ENCOMBREMENTS_ENCOMBREMENT_CUBOIDE, ELEMENT_TYPE_-
 GAMMEABSORPTION,
 ELEMENT_TYPE_CORE_SPPS, ELEMENT_TYPE_CORE_CORE_CONFIG, ELEMENT_-
 TYPE_CORE_CORE_CONFMAILLAGE, ELEMENT_TYPE_SCENE_PROJET,
 ELEMENT_TYPE_SCENE_PROJET_USERCONFIGURATION, ELEMENT_TYPE_SCENE_-
 PROJET_RENDU_PARTICULES, ELEMENT_TYPE_SCENE_DONNEES, ELEMENT_TYPE_-
 SCENE_ENCOMBREMENTS_ENCOMBREMENT_RENDU,
 ELEMENT_TYPE_SCENE_PROJET_ENVIRONNEMENTCONF, ELEMENT_TYPE_-
 DRAWABLE, ELEMENT_TYPE_CORE_CORE_BFREQSELECTION, ELEMENT_TYPE_-
 BOOL_BFREQ,
 ELEMENT_TYPE_REPORT_FOLDER, ELEMENT_TYPE_REPORT_PARTVISUALISATION,
 ELEMENT_TYPE_REPORT_RECEPTEURSSVISUALISATION, ELEMENT_TYPE_-
 REPORT_GABE,
 ELEMENT_TYPE_REPORT_GABE_RECIP, ELEMENT_TYPE_TREE_LIST, ELEMENT_-
 TYPE_CORE_TC, ELEMENT_TYPE_SCENE_PROJET_INFORMATION,
 ELEMENT_TYPE_SCENE_BDD_MATERIAUX_MATERIAU_RENDER, ELEMENT_TYPE_-
 FONT, ELEMENT_TYPE_CORE_TLM, ELEMENT_TYPE_REPORT_GABE_GAP,
 ELEMENT_TYPE_REPORT_UNKNOWN, ELEMENT_TYPE_CORE_SPPS_OCTREE,
 ELEMENT_TYPE_REPORT_RPI, ELEMENT_TYPE_SCENE_VOLUMES,
 ELEMENT_TYPE_SCENE_VOLUMES_VOLUME, ELEMENT_TYPE_SCENE_VOLUMES_-
 VOLUME_RENDU, ELEMENT_TYPE_SCENE_VOLUMES_VOLUME_PROPRIETES,
 ELEMENT_TYPE_PYTHON_EXTENSION,
 ELEMENT_TYPE_ELEMENT, ELEMENT_TYPE_CORE_CORE, ELEMENT_TYPE_-
 REPORT_FILE, ELEMENT_TYPE_REPORT_RECEPTEURSSVISUALISATION_STANDART,


```

ELEMENT_TYPE_REPORT_RECEPTEURSSVISUALISATION_GAIN,      ELEMENT_
TYPE_REPORT_RECEPTEURSSVISUALISATION_TR,      ELEMENT_TYPE_REPORT_
RECEPTEURSSVISUALISATION_EDT,      ELEMENT_TYPE_SCENE_RECEPTEURSS_
RECEPTEURCOUPE,

ELEMENT_TYPE_SCENE_RECEPTEURSS_RECEPTEURCOUPE_PROPRIETES,
ELEMENT_TYPE_SCENE_RECEPTEURSS_RECEPTEURCOUPE_RENDU,      ELEMENT_
TYPE_USER_PREFERENCE_NODE, ELEMENT_TYPE_USER_PREFERENCE_ITEM,
ELEMENT_TYPE_USER_PREFERENCE_ITEM_ISOTEMPLATE }
• enum graph {
GRAPH_FOLDER, GRAPH_ITEM, GRAPH_FOLDER_OPEN, GRAPH_FITTINGS_OPEN,
GRAPH_FITTINGS_CLOSE, GRAPH_FITTING_OPEN, GRAPH_FITTING_CLOSE, GRAPH_
PUNCTUAL_RECEIVERS_OPEN,
GRAPH_PUNCTUAL_RECEIVERS_CLOSE,      GRAPH_SURFACE_RECEIVERS_OPEN,
GRAPH_SURFACE_RECEIVERS_CLOSE, GRAPH_SOUND_SOURCES_OPEN,
GRAPH_SOUND_SOURCES_CLOSE, GRAPH_SURFACES_OPEN, GRAPH_SURFACES_
CLOSE, GRAPH_VOLUMES_CLOSE,
GRAPH_VOLUMES_OPEN, GRAPH_PROJECT_OPEN, GRAPH_PROJECT_CLOSE,
GRAPH_DATA_CLOSE,
GRAPH_DATA_OPEN,      GRAPH_USER_MATERIALS_CLOSE,      GRAPH_USER_
MATERIALS_OPEN, GRAPH_APPLICATION_MATERIALS_CLOSE,
GRAPH_APPLICATION_MATERIALS_OPEN, GRAPH_DATABASE_CLOSE, GRAPH_
DATABASE_OPEN, GRAPH_USER_SPECTRUMS_CLOSE,
GRAPH_USER_SPECTRUMS_OPEN, GRAPH_APPLICATION_SPECTRUMS_CLOSE,
GRAPH_APPLICATION_SPECTRUMS_OPEN, GRAPH_MATERIAL_CLOSE,
GRAPH_MATERIAL_OPEN,      GRAPH_STANDARTCORE_CLOSE,      GRAPH_
STANDARTCORE_OPEN, GRAPH_CORES_CLOSE,
GRAPH_CORES_OPEN, GRAPH_SPPSCORE_CLOSE, GRAPH_SPPSCORE_OPEN,
GRAPH_DISK_FOLDER_OPEN,
GRAPH_DISK_FOLDER_CLOSE, GRAPH_ENVIRONMENT, GRAPH_PROJECT_
AUTHOR, GRAPH_INFORMATION,
GRAPH_DISK_DEFAULT_FILE, GRAPH_DISK_GABE, GRAPH_DISK_RS, GRAPH_
DISK_PARTICLE,
GRAPH_EL_CONFIGURATION, GRAPH_EL_3D_DISPLAY, GRAPH_EL_POSITION,
GRAPH_EL_TRIANGLE,
GRAPH_SPECTRUM, GRAPH_ORIGIN, GRAPH_TETMESH_PARAMETERS, GRAPH_
RENDERING_FOLDER_CLOSE,
GRAPH_RENDERING_FOLDER_OPEN,      GRAPH_ROOT_MATERIALS_OPEN,
GRAPH_ROOT_MATERIALS_CLOSE, GRAPH_ROOT_SPECTRUMS_OPEN,
GRAPH_ROOT_SPECTRUMS_CLOSE,      GRAPH_PUNCTUAL_RECEIVER_OPEN,
GRAPH_PUNCTUAL_RECEIVER_CLOSE, GRAPH_SURFACE_RECEIVER_OPEN,
GRAPH_SURFACE_RECEIVER_CLOSE, GRAPH_SOUND_SOURCE_OPEN, GRAPH_
SOUND_SOURCE_CLOSE, GRAPH_VOLUME_OPEN,
GRAPH_VOLUME_CLOSE, GRAPH_PREF_ANIMATION, GRAPH_PREF_GENERAL,
GRAPH_PREF_LEGEND,
GRAPH_PREF_NOISE_MAP, GRAPH_PREF_PARTICLES, GRAPH_USER_PREF_
ROOT_CLOSE, GRAPH_USER_PREF_ROOT_OPEN,
GRAPH_LAST_STATIC_GRAPH }

```

- enum `idevent` {
 - `IDEVENT_DELETE_ELEMENT`, `IDEVENT_RENAME_ELEMENT`, `IDEVENT_COPIER`,
`IDEVENT_COLLER`,
 - `IDEVENT_NEW_SURFACE_GROUP`, `IDEVENT_GETPROPERTIES`, `IDEVENT_SELECT_-`
`TREE_ITEM`, `IDEVENT_NEW_RECEPTEUR_P`,
 - `IDEVENT_SELECT_POSITION`, `IDEVENT_NEW_SOURCE`, `IDEVENT_NEW_-`
`RECEPTEUR_S`, `IDEVENT_NEW_USERFREQ`,
 - `IDEVENT_NEW_ENCOMBREMENT`, `IDEVENT_NEW_ENCOMBREMENT_CUBOIDE`,
`IDEVENT_NEW_USERMAT`, `IDEVENT_NEW_MATERIAL_GROUP`,
 - `IDEVENT_RUN_CALCULATION`, `IDEVENT_IMPORT_MATERIAL`, `IDEVENT_LOAD_-`
`PARTICLE_SIMULATION`, `IDEVENT_LOAD_PARTICLE_SIMULATION_PATH`,
 - `IDEVENT_RELOAD_FOLDER`, `IDEVENT_DELETE_FOLDER`, `IDEVENT_LOAD_-`
`RECEPTEURSS_SIMULATION_BY_TIMESTEP`, `IDEVENT_LOAD_RECEPTEURSS_-`
`SIMULATION_BY_TIMESTEP_SUM`,
 - `IDEVENT_LOAD_RECEPTEURSS_SIMULATION_SUM`, `IDEVENT_INVERT_FACE_-`
`ORIENTATION`, `IDEVENT_EMPTY_POINTER_VERTEX_GROUP`, `IDEVENT_REC_-`
`COMPUTE_ACOUSTIC_PARAMETERS`,
 - `IDEVENT_RECEPTEURS_COMPUTE_TR`, `IDEVENT_RECEPTEURS_COMPUTE_EDT`,
`IDEVENT_REPORT_PARTICULES_MAKE_GABE`, `IDEVENT_BFREQ_PRESELECTION_-`
`NONE`,
 - `IDEVENT_BFREQ_PRESELECTION_THIRD_BAND`, `IDEVENT_BFREQ_PRESELECTION_-`
`BAND`, `IDEVENT_BFREQ_PRESELECTION_BUILDING_THIRD_BAND`, `IDEVENT_-`
`BFREQ_PRESELECTION_BUILDING_BAND`,
 - `IDEVENT_REC_-COMPUTE_ADVANCED_ACOUSTIC_PARAMETERS`, `IDEVENT_NEW_-`
`RECEPTEURP_GROUP`, `IDEVENT_NEW_SOURCE_GROUP`, `IDEVENT_NEW_SURFACE_-`
`GROUP_FROM_SELECTION`,
 - `IDEVENT_LOAD_RECEPTEURSP_SIMULATION`, `IDEVENT_BUILD_VOLUMES_FROM_-`
`TRIMESH`, `IDEVENT_NEW_VOLUME`, `IDEVENT_OPEN_FOLDER`,
 - `IDEVENT_CONVERT_VOL_TO_FITTING`, `IDEVENT_NEW_RECEPTEUR_S_COUPE`,
`IDEVENT_LAST_FIXED` }

7.1.1 Detailed Description

Python embedding of c++ class.

7.1.2 Enumeration Type Documentation

7.1.2.1 enum `uictrl::element_type`

Available built-in `element` types

Enumerator:

- `ELEMENT_TYPE_CORE_ROOT` Built-in `element` type
- `ELEMENT_TYPE_RESULT_ROOT` Built-in `element` type
- `ELEMENT_TYPE_SCENE_ROOT` Built-in `element` type
- `ELEMENT_TYPE_SCENE_PROJET_CONFIGURATION` Built-in `element` type

ELEMENT_TYPE_SCENE_GROUPESURFACES Built-in [element](#) type
ELEMENT_TYPE_SCENE_GROUPESURFACES_GROUPE Built-in [element](#) type
ELEMENT_TYPE_SCENE_GROUPESURFACES_GROUPE_VERTEX Built-in [element](#) type
ELEMENT_TYPE_SCENE_RECEPTEURSP Built-in [element](#) type
ELEMENT_TYPE_SCENE_RECEPTEURSP_RECEPTEUR Built-in [element](#) type
ELEMENT_TYPE_SCENE_RECEPTEURSP_RECEPTEUR_PROPRIETES Built-in [element](#) type
ELEMENT_TYPE_SCENE_RECEPTEURSP_RECEPTEUR_RENDU Built-in [element](#) type
ELEMENT_TYPE_SCENE_RECEPTEURSS Built-in [element](#) type
ELEMENT_TYPE_SCENE_RECEPTEURSS_RECEPTEUR Built-in [element](#) type
ELEMENT_TYPE_SCENE_RECEPTEURSS_RECEPTEUR_PROPRIETES Built-in [element](#) type
ELEMENT_TYPE_SCENE_RECEPTEURSS_RECEPTEUR_RENDU Built-in [element](#) type
ELEMENT_TYPE_SCENE_SOURCES Built-in [element](#) type
ELEMENT_TYPE_SCENE_SOURCES_SOURCE Built-in [element](#) type
ELEMENT_TYPE_SCENE_SOURCES_SOURCE_PROPRIETES Built-in [element](#) type
ELEMENT_TYPE_SCENE_SOURCES_SOURCE_PUISSANCE Built-in [element](#) type
ELEMENT_TYPE_SCENE_SOURCES_SOURCE_RENDU Built-in [element](#) type
ELEMENT_TYPE_TEXT Built-in [element](#) type
ELEMENT_TYPE_COLOR Built-in [element](#) type
ELEMENT_TYPE_POSITION Built-in [element](#) type
ELEMENT_TYPE_LIST Built-in [element](#) type
ELEMENT_TYPE_INTEGER Built-in [element](#) type
ELEMENT_TYPE_FLOAT Built-in [element](#) type
ELEMENT_TYPE_BOOL Built-in [element](#) type
ELEMENT_TYPE_SCENE_PROJET_RENDU Built-in [element](#) type
ELEMENT_TYPE_SCENE_PROJET_RENDU_ORIGINE Built-in [element](#) type
ELEMENT_TYPE_SCENE_PROJET_RENDU_MODEL Built-in [element](#) type
ELEMENT_TYPE_SCENE_BDD Built-in [element](#) type
ELEMENT_TYPE_SCENE_BDD_SPECTRUMS Built-in [element](#) type
ELEMENT_TYPE_SCENE_BDD_SPECTRUMS_USER Built-in [element](#) type
ELEMENT_TYPE_SCENE_BDD_SPECTRUMS_APP Built-in [element](#) type
ELEMENT_TYPE_SCENE_BDD_MATERIAUX Built-in [element](#) type
ELEMENT_TYPE_SCENE_BDD_MATERIAUX_APP Built-in [element](#) type
ELEMENT_TYPE_SCENE_BDD_MATERIAUX_APP_GROUP Built-in [element](#) type
ELEMENT_TYPE_SCENE_BDD_MATERIAUX_APP_MATERIAU Built-in [element](#) type
ELEMENT_TYPE_SCENE_BDD_MATERIAUX_USER Built-in [element](#) type
ELEMENT_TYPE_SCENE_BDD_MATERIAUX_USER_GROUP Built-in [element](#) type
ELEMENT_TYPE_SCENE_BDD_MATERIAUX_USER_MATERIAU Built-in [element](#) type
ELEMENT_TYPE_SCENE_BDD_MATERIAUX_PROPMATERIAU Built-in [element](#) type
ELEMENT_TYPE_SCENE_BDD_CATMATERIAL Built-in [element](#) type
ELEMENT_TYPE_MATERIAU_APP Built-in [element](#) type

ELEMENT_TYPE_MATERIAU_USER Built-in [element](#) type
ELEMENT_TYPE_GAMMEFREQ_APP Built-in [element](#) type
ELEMENT_TYPE_GAMMEFREQ_USER Built-in [element](#) type
ELEMENT_TYPE_PROPERTY_FREQ Built-in [element](#) type
ELEMENT_TYPE_ROW Built-in [element](#) type
ELEMENT_TYPE_ROW_BFREQ Built-in [element](#) type
ELEMENT_TYPE_ROW_MATERIAU Built-in [element](#) type
ELEMENT_TYPE_SCENE_ENCOMBREMENTS Built-in [element](#) type
ELEMENT_TYPE_SCENE_ENCOMBREMENTS_ENCOMBREMENT Built-in [element](#) type
ELEMENT_TYPE_SCENE_ENCOMBREMENTS_ENCOMBREMENT_PROPRIETES Built-in [element](#) type
ELEMENT_TYPE_SCENE_ENCOMBREMENTS_ENCOMBREMENT_CUBOIDE Built-in [element](#) type
ELEMENT_TYPE_GAMMEABSORPTION Built-in [element](#) type
ELEMENT_TYPE_CORE_SPPS Built-in [element](#) type
ELEMENT_TYPE_CORE_CORE_CONFIG Built-in [element](#) type
ELEMENT_TYPE_CORE_CORE_CONFMAILLAGE Built-in [element](#) type
ELEMENT_TYPE_SCENE_PROJET Built-in [element](#) type
ELEMENT_TYPE_SCENE_PROJET_USERCONFIGURATION Built-in [element](#) type
ELEMENT_TYPE_SCENE_PROJET_RENDU_PARTICULES Built-in [element](#) type
ELEMENT_TYPE_SCENE_DONNEES Built-in [element](#) type
ELEMENT_TYPE_SCENE_ENCOMBREMENTS_ENCOMBREMENT_RENDU Built-in [element](#) type
ELEMENT_TYPE_SCENE_PROJET_ENVIRONNEMENTCONF Built-in [element](#) type
ELEMENT_TYPE_DRAWABLE 3D object [element](#)
ELEMENT_TYPE_CORE_CORE_BFREQSELECTION Built-in [element](#) type
ELEMENT_TYPE_BOOL_BFREQ Built-in [element](#) type
ELEMENT_TYPE_REPORT_FOLDER Built-in [element](#) type
ELEMENT_TYPE_REPORT_PARTVISUALISATION Built-in [element](#) type
ELEMENT_TYPE_REPORT_RECEPTEURSSVISUALISATION Built-in [element](#) type
ELEMENT_TYPE_REPORT_GABE Built-in [element](#) type
ELEMENT_TYPE_REPORT_GABE_RECP Built-in [element](#) type
ELEMENT_TYPE_TREE_LIST Built-in [element](#) type
ELEMENT_TYPE_CORE_TC Built-in [element](#) type
ELEMENT_TYPE_SCENE_PROJET_INFORMATION Built-in [element](#) type
ELEMENT_TYPE_SCENE_BDD_MATERIAUX_MATERIAU_RENDER Built-in [element](#) type
ELEMENT_TYPE_FONT Built-in [element](#) type
ELEMENT_TYPE_CORE_TLM Built-in [element](#) type
ELEMENT_TYPE_REPORT_GABE_GAP Built-in [element](#) type
ELEMENT_TYPE_REPORT_UNKNOWN Fichier inconnu par PSPS mais connu par le système d'exploitation
ELEMENT_TYPE_CORE_SPPS_OCTREE Built-in [element](#) type

ELEMENT_TYPE_REPORT_RPI Built-in [element](#) type

ELEMENT_TYPE_SCENE_VOLUMES Built-in [element](#) type

ELEMENT_TYPE_SCENE_VOLUMES_VOLUME Built-in [element](#) type

ELEMENT_TYPE_SCENE_VOLUMES_VOLUME_RENDU Built-in [element](#) type

ELEMENT_TYPE_SCENE_VOLUMES_VOLUME_PROPRIETES Built-in [element](#) type

ELEMENT_TYPE_PYTHON_EXTENSION Built-in [element](#) type

ELEMENT_TYPE_ELEMENT Lors de la déclaration d'un élément utilisateur, ce type permet d'exprimer le fait que l'élément hérite directement de l'élément de base

ELEMENT_TYPE_CORE_CORE Built-in [element](#) type

ELEMENT_TYPE_REPORT_FILE Built-in [element](#) type

ELEMENT_TYPE_REPORT_RECEPTEURSSVISUALISATION_STANDART Built-in [element](#) type

ELEMENT_TYPE_REPORT_RECEPTEURSSVISUALISATION_GAIN Built-in [element](#) type

ELEMENT_TYPE_REPORT_RECEPTEURSSVISUALISATION_TR Built-in [element](#) type

ELEMENT_TYPE_REPORT_RECEPTEURSSVISUALISATION_EDT Built-in [element](#) type

ELEMENT_TYPE_SCENE_RECEPTEURSS_RECEPTEURCOUPE Built-in [element](#) type

ELEMENT_TYPE_SCENE_RECEPTEURSS_RECEPTEURCOUPE_PROPRIETES Built-in [element](#) type

ELEMENT_TYPE_SCENE_RECEPTEURSS_RECEPTEURCOUPE_RENDU Built-in [element](#) type

ELEMENT_TYPE_USER_PREFERENCE_NODE User preference node, in the user preference tree

ELEMENT_TYPE_USER_PREFERENCE_ITEM User preference item, in the user preference tree

ELEMENT_TYPE_USER_PREFERENCE_ITEM_ISOTEMPLATE User preference item, in the user preference tree where user can choose iso palette.

7.1.2.2 enum uictrl::graph

Application tree icons

Enumerator:

GRAPH_FOLDER Built-in picture declaration

GRAPH_ITEM Built-in picture declaration

GRAPH_FOLDER_OPEN Built-in picture declaration

GRAPH_FITTINGS_OPEN Built-in picture declaration

GRAPH_FITTINGS_CLOSE Built-in picture declaration

GRAPH_FITTING_OPEN Built-in picture declaration

GRAPH_FITTING_CLOSE Built-in picture declaration

GRAPH_PUNCTUAL_RECEIVERS_OPEN Built-in picture declaration

GRAPH_PUNCTUAL_RECEIVERS_CLOSE Built-in picture declaration

GRAPH_SURFACE_RECEIVERS_OPEN Built-in picture declaration

GRAPH_SURFACE_RECEIVERS_CLOSE Built-in picture declaration

GRAPH_SOUND_SOURCES_OPEN Built-in picture declaration
GRAPH_SOUND_SOURCES_CLOSE Built-in picture declaration
GRAPH_SURFACES_OPEN Built-in picture declaration
GRAPH_SURFACES_CLOSE Built-in picture declaration
GRAPH_LAST_STATIC_GRAPH Last graph id

7.1.2.3 enum uictrl:idevent

Available built-in events

Enumerator:

IDEVENT_DELETE_ELEMENT [Element](#) delete
Parameters:

IDEVENT_RENAME_ELEMENT {"name",: "new label"} [Element](#) rename
IDEVENT_COPIER built-in event
IDEVENT_COLLER built-in event
IDEVENT_NEW_SURFACE_GROUP built-in event
IDEVENT_GETPROPERTIES built-in event
IDEVENT_SELECT_TREE_ITEM built-in event
IDEVENT_NEW_RECEPTEUR_P built-in event
IDEVENT_SELECT_POSITION built-in event
IDEVENT_NEW_SOURCE built-in event
IDEVENT_NEW_RECEPTEUR_S built-in event
IDEVENT_NEW_USERFREQ built-in event
IDEVENT_NEW_ENCOMBREMENT built-in event
IDEVENT_NEW_ENCOMBREMENT_CUBOIDE built-in event
IDEVENT_NEW_USERMAT built-in event
IDEVENT_NEW_MATERIAL_GROUP built-in event
IDEVENT_RUN_CALCULATION built-in event
Parameters:

IDEVENT_IMPORT_MATERIAL {"path",: "material file path"} Import material file from odeon or Catt
IDEVENT_LOAD_PARTICLE_SIMULATION built-in event
IDEVENT_LOAD_PARTICLE_SIMULATION_PATH built-in event
IDEVENT_RELOAD_FOLDER built-in event
IDEVENT_DELETE_FOLDER built-in event
IDEVENT_LOAD_RECEPTEURSS_SIMULATION_BY_TIMESTEP built-in event
IDEVENT_LOAD_RECEPTEURSS_SIMULATION_BY_TIMESTEP_SUM built-in event
IDEVENT_LOAD_RECEPTEURSS_SIMULATION_SUM built-in event
IDEVENT_INVERT_FACE_ORIENTATION built-in event
IDEVENT_EMPTY_POINTER_VERTEX_GROUP built-in event
IDEVENT_RECPCOMPUTE_ACOUSTIC_PARAMETERS built-in event

IDEVENT_RECEPTEURS_COMPUTE_TR built-in event
IDEVENT_RECEPTEURS_COMPUTE_EDT built-in event
IDEVENT_REPORT_PARTICULES_MAKE_GABE built-in event
IDEVENT_BFREQ_PRESELECTION_NONE built-in event
IDEVENT_BFREQ_PRESELECTION_THIRD_BAND built-in event
IDEVENT_BFREQ_PRESELECTION_BAND built-in event
IDEVENT_BFREQ_PRESELECTION_BUILDING_THIRD_BAND built-in event
IDEVENT_BFREQ_PRESELECTION_BUILDING_BAND built-in event
IDEVENT_RECP_COMPUTE_ADVANCED_ACOUSTIC_PARAMETERS built-in event
IDEVENT_NEW_RECEPTEURP_GROUP built-in event
IDEVENT_NEW_SOURCE_GROUP built-in event
IDEVENT_NEW_SURFACE_GROUP_FROM_SELECTION built-in event
IDEVENT_LOAD_RECEPTEURSP_SIMULATION built-in event
IDEVENT_BUILD_VOLUMES_FROM_TRIMESH built-in event
IDEVENT_NEW_VOLUME built-in event
IDEVENT_OPEN_FOLDER built-in event
IDEVENT_CONVERT_VOL_TO_FITTING built-in event
IDEVENT_NEW_RECEPTEUR_S_COUPE Add a cutting plan receiver event

Chapter 8

Class Documentation

8.1 uictrl::application Class Reference

Python [application](#) control class.

Static Public Member Functions

- static void [clearlogdata](#) ()
- static void [clearshellhisto](#) ()
- static std::string [getcachedir](#) ()
- static boost::python::list [getdataarray](#) (const [element](#) &pyel)
- static std::string [getlastcalculationpath](#) ()
- static std::string [getlocale](#) ()
- static int [getrootcore](#) ()
- static int [getrootpreference](#) ()
- static int [getrootreport](#) ()
- static int [getrootscene](#) ()
- static boost::python::tuple [getuserinput](#) (const std::string &title, const std::string &msg, boost::python::dict rows)
- static bool [importscene](#) (const std::string &path, bool keepexistingfacegroup=true, bool docorrection=true, bool domeshsurface=false, const std::string ¶mTetgen="")
- static void [loadproject](#) (const std::string &path)
- static void [newproject](#) ()
- static int [register_event](#) (boost::python::object &func)
- static void [register_menu_manager](#) (const int &element_typeid, boost::python::object &manager)
- static void [reloadgroupsfrommodel](#) ()
- static void [saveelog](#) (const std::string &path)
- static void [saveproject](#) (const std::string &path="")
- static void [saveshell](#) (const std::string &path)
- static void [sendevent](#) (const [element](#) &pyel, const int &idevent, boost::python::dict parameters=boost::python::dict())

8.1.1 Detailed Description

Python [application](#) control class.

8.1.2 Member Function Documentation

8.1.2.1 `static void uictrl::application::clearlogdata () [static]`

Clear the log window history

8.1.2.2 `static void uictrl::application::clearshellhisto () [static]`

Clear the python log window history

8.1.2.3 `static std::string uictrl::application::getcachedir () [static]`

Return the projet cache directory

8.1.2.4 `static boost::python::list uictrl::application::getdataarray (const element & pyel) [static]`

Return the associated data array with the [element](#). For scene and core elements, the returned array is the property tab. For report [element](#) that herits from gabe [element](#), this method return the post-processed array.

Parameters:

pyel The data array will be extracted from this parameter.

8.1.2.5 `static std::string uictrl::application::getlastcalculationpath () [static]`

Return the last computation result folder.

8.1.2.6 `static std::string uictrl::application::getlocale () [static]`

Return the user selected language corresponding to the canonical form of current locale name. Canonical form is the one that is used on UNIX systems: it is a two- or five-letter string in `xx` or `xx_YY` format, where `xx` is ISO 639 code of language and `YY` is ISO 3166 code of the country. Examples are "en", "en_GB", "en_US" or "fr_FR".

8.1.2.7 `static int uictrl::application::getrootcore () [static]`

Give the access to the root node of a projet tree

Returns:

The [element](#) id of the root core node

8.1.2.8 `static int uictrl::application::getrootpreference () [static]`

Give the access to the user preference root node of the [application](#) tree

Returns:

The [element](#) id of the root user preference

8.1.2.9 static int uictrl::application::getrootreport () [static]

Give the access to the root node of a projet tree

Returns:

The [element](#) id of the root report node

8.1.2.10 static int uictrl::application::getrootscene () [static]

Give the access to the root node of a projet tree

Returns:

The [element](#) id of the root scene node

8.1.2.11 static boost::python::tuple uictrl::application::getuserinput (const std::string & title, const std::string & msg, boost::python::dict rows) [static]

Show a window form where the user can write text in each field.

Parameters:

title Title of the window

msg Message text information.

rows Message fields.dict sample {"field one" : "default value" ,"field two" : "default value", "field three" : ["Value 1", "Value 2"] }

Returns:

Tuple (Bool, list) The first cell is the button user choice ok:True cancel:False. The second cell contain a list that had the same size of the rows parameter but contains the new fields values.

8.1.2.12 static bool uictrl::application::importscene (const std::string & path, bool keepexistingfacegroup = true, bool docorrection = true, bool domeshsurface = false, const std::string & paramTetgen = "") [static]

Import an outside defined model. Supported file format is *.3ds;*.ply;*.bin;*.poly

Parameters:

path Model file path

keepexistingfacegroup If True, it will try to fill face groups with the new faces thanks to old-new faces position.

docorrection Execute preprocess.exe to split or destroy triangle faces if needed.

domeshsurface Remesh the surface of the scene. This operation may increase the number of facets and destroy material color and textures data.

paramTetgen User defined parameter for the mesh software. Useless parameter if domeshsurface at False.

Returns:

True on success, false if import fails, see message log for details

8.1.2.13 static void uictrl::application::loadproject (const std::string & *path*) [static]

Load a file project

Parameters:

path File load path

8.1.2.14 static void uictrl::application::newproject () [static]

Close current project and make a new one

8.1.2.15 static int uictrl::application::register_event (boost::python::object & *func*) [static]

Append a new event to I-SIMPA. See [I-SIMPA adding fonctionnality](#)

Parameters:

func Reference to the python function.

Returns:

Integer id of the new function

8.1.2.16 static void uictrl::application::register_menu_manager (const int & *element_typeid*, boost::python::object & *manager*) [static]

Append a new menu manager for this [element](#) type. See [I-SIMPA adding fonctionnality](#)

Parameters:

element_typeid [uictrl::element_type](#) Manager's linked [element](#) type.

manager Manager object instance.

8.1.2.17 static void uictrl::application::reloadgroupsfrommodel () [static]

Recharge les faces à partir du modèle

8.1.2.18 static void uictrl::application::savelog (const std::string & *path*) [static]

Save the content of the message log window

Parameters:

path Save file path

8.1.2.19 static void uictrl::application::saveproject (const std::string & path = "") [static]

Save the loaded project

Parameters:

path File save path

8.1.2.20 static void uictrl::application::saveshell (const std::string & path) [static]

Save the content of the python log window

Parameters:

path Save file path

8.1.2.21 static void uictrl::application::sendevent (const element & pyel, const int & idevent, boost::python::dict parameters = boost::python::dict()) [static]

Send an event to the interface.

Parameters:

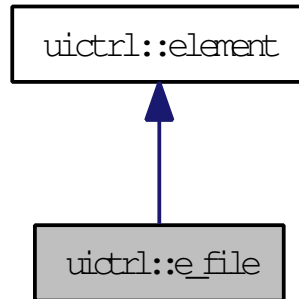
pyel Corresponding tree item node.

idevent Built-in [uictrl::idevent](#) or python defined event by [application::register_event](#)

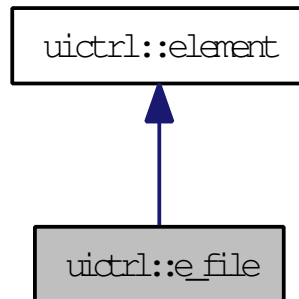
parameters See [uictrl::idevent](#) member for more specific details.

8.2 uictrl::e_file Class Reference

Inheritance diagram for uictrl::e_file:



Collaboration diagram for uictrl::e_file:



Public Member Functions

- `std::string buildfullpath ()`
- `e_file (const element &cpyFrom)`
- `e_file (const wxInt32 &_xmlId)`

8.2.1 Detailed Description

Specification of [element](#), representative of a file or a folder

8.2.2 Member Function Documentation

8.2.2.1 `std::string uictrl::e_file::buildfullpath ()`

Return the relative path of this file [element](#).

8.3 uictrl::Element Struct Reference

Alias.

Public Types

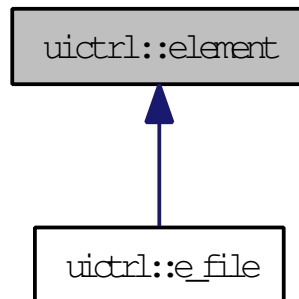
- typedef [element_type](#) ELEMENT_TYPE
- typedef [graph](#) GRAPH
- typedef [idevent](#) IDEVENT

8.3.1 Detailed Description

Alias.

8.4 uictrl::element Class Reference

Give control on a built-in(c++) or python implemented [element](#). Inheritance diagram for uictrl::element:



Public Member Functions

- `int appendfilsbytype (Element::ELEMENT_TYPE etypefils, const std::string &libelle="")`
- `int appendpropertybool (const std::string &propertyName, const std::string &propertyLabel, bool propertyDefaultValue, bool exportToCore=false)`
- `int appendpropertycolor (const std::string &propertyName, const std::string &propertyLabel, long defaultRed=0, long defaultGreen=0, long defaultBlue=0)`
- `int appendpropertydecimal (const std::string &propertyName, const std::string &propertyLabel, float propertyDefaultValue=0.f, bool readOnly=false, int precision=4, bool isMaxValue=false, bool isMinValue=false, float maxValue=0, float minValue=0, bool exportToCore=false)`
- `int appendpropertyentier (const std::string &propertyName, const std::string &propertyLabel, int propertyDefaultValue=0, bool exportToCore=false, bool isMaxValue=false, bool isMinValue=false, int maxValue=0, int minValue=0)`
- `int appendpropertyfont (const std::string &propertyName, const std::string &propertyLabel, const std::string &propertyDefaultValue="")`
- `int appendpropertylist (const std::string &propertyName, const std::string &propertyLabel, const boost::python::list &values, long defaultValue, bool asTitle=false, int hSize=1, bool exportToCore=false)`
- `int appendpropertyposition (const std::string &propertyName, const std::string &propertyLabel, const boost::python::list &propertyDefaultValue, bool exportToCore=false)`
- `int appendpropertytext (const std::string &propertyName, const std::string &propertyLabel, const std::string &propertyDefaultValue, bool readOnly=false, bool exportToCore=false)`
- `boost::python::object appenduserelement (const Element::ELEMENT_TYPE &baseType, const std::string &moduleName, const std::string &className)`
- `boost::python::list childs ()`
- `void deleteallelementbytype (Element::ELEMENT_TYPE typeElement)`
- `void deleteallelementbytyper (Element::ELEMENT_TYPE typeElementToDelete)`
- `bool deleteelementbyxmlid (int xmlIdElement, bool setModification=true)`
- `element (const element &cpyFrom)`
- `element (const wxInt32 &_xmlId)`
- `boost::python::list getallelementbytype (Element::ELEMENT_TYPE typeElement)`
- `bool getboolconfig (const std::string &name)`
- `boost::python::list getcolorconfig (const std::string &name)`
- `float getdecimalconfig (const std::string &name)`
- `int getelementbylibelle (std::string libelle)`

- int [getelementbytype](#) (Element::ELEMENT_TYPE typeElement)
- int [getentierconfig](#) (const std::string &name)
- wxInt32 [getid](#) ()
- wxInt32 [getindice](#) () const
- boost::python::dict [getinfos](#) ()
- int [getlistconfig](#) (const std::string &name)
- boost::python::list [getmenu](#) ()
- boost::python::list [getpositionconfig](#) (const std::string &name)
- std::string [getstringconfig](#) (const std::string &name)
- bool [hasproperty](#) (const std::string &name)
- void [hide](#) (bool visible=false)
- void [modified](#) (int elementUpdated)
- void [register_update_manager](#) (boost::python::object &pymethod)
- void [setreadonlyallconfig](#) (bool readOnly=true, int col=0)
- void [setreadonlyconfig](#) (const std::string &name, bool readOnly=true, int col=0)
- bool [updateboolconfig](#) (const std::string &name, bool newValue)
- bool [updatedecimalconfig](#) (const std::string &name, float newValue)
- bool [updateentierconfig](#) (const std::string &name, int newValue)
- bool [updatelistconfig](#) (const std::string &name, int newIndex)
- bool [updatepositionconfig](#) (const std::string &name, const boost::python::list &newValue)
- bool [updatestringconfig](#) (const std::string &name, const std::string &newValue)

Protected Attributes

- wxInt32 [xmlId](#)

8.4.1 Detailed Description

Give control on a built-in(c++) or python implemented [element](#). An [element](#) is the base class of all project data. From the basic string,bool,float and integer to a project tree node.

8.4.2 Member Function Documentation

8.4.2.1 int uictrl::element::appendfilsbytype (Element::ELEMENT_TYPE *etypefils*, const std::string & *libelle* = "")

Add a new child of etypefils [element](#) type and return this xml id. Return -1 in case of failure.

Parameters:

etypefils [Element](#) type of the children

8.4.2.2 int uictrl::element::appendpropertybool (const std::string & *propertyName*, const std::string & *propertyLabel*, bool *propertyDefaultValue*, bool *exportToCore* = false)

Append a new property to an [element](#).

Parameters:

propertyName Name of the property. Each property name must be unique.

propertyLabel Untranslated property label. Use the language catalog (.po) to append the translation correspondance.

propertyDefaultValue Default value of the property

exportToCore Set it to True to make this property visible in calculation core xml configuration document.

Returns:

The [element](#) index of the new property or of the property of the same name. -1 in case of failure.

8.4.2.3 `int uictrl::element::appendpropertycolor (const std::string & propertyName, const std::string & propertyLabel, long defaultRed = 0, long defaultGreen = 0, long defaultBlue = 0)`

Append a new property to an [element](#).

Parameters:

propertyName Name of the property. Each property name must be unique.

propertyLabel Untranslated property label. Use the language catalog (.po) to append the translation correspondance.

defaultRed Default red color. [0-255]

defaultGreen Default green color. [0-255]

defaultBlue Default blue color. [0-255]

Returns:

The [element](#) index of the new property or of the property of the same name. -1 in case of failure.

8.4.2.4 `int uictrl::element::appendpropertydecimal (const std::string & propertyName, const std::string & propertyLabel, float propertyDefaultValue = 0.f, bool readOnly = false, int precision = 4, bool isMaxValue = false, bool isMinValue = false, float maxValue = 0, float minValue = 0, bool exportToCore = false)`

Append a new property to an [element](#).

Parameters:

propertyName Name of the property. Each property name must be unique.

propertyLabel Untranslated property label. Use the language catalog (.po) to append the translation correspondance.

propertyDefaultValue Default value of the property

readOnly Set it to True to forbid write user access to this property.

precision Precision showed after dot decimal separator.

isMaxValue True to activate max value constraint.

isMinValue True to activate min value constraint.

maxValue Maximum value of the field.

minValue Minimum value of the field.

exportToCore Set it to True to make this property visible in calculation core xml configuration document.

Returns:

The [element](#) index of the new property or of the property of the same name. -1 in case of failure.

8.4.2.5 `int uictrl::element::appendpropertyentier (const std::string & propertyName, const std::string & propertyLabel, int propertyDefaultValue = 0, bool exportToCore = false, bool isMaxValue = false, bool isMinValue = false, int maxValue = 0, int minValue = 0)`

Append a new property to an [element](#).

Parameters:

propertyName Name of the property. Each property name must be unique.

propertyLabel Untranslated property label. Use the language catalog (.po) to append the translation correspondance.

propertyDefaultValue Default value of the property

exportToCore Set it to True to make this property visible in calculation core xml configuration document.

isMaxValue True to activate max value constraint.

isMinValue True to activate min value constraint.

maxValue Maximum value of the field.

minValue Minimum value of the field.

Returns:

The [element](#) index of the new property or of the property of the same name. -1 in case of failure.

8.4.2.6 `int uictrl::element::appendpropertyfont (const std::string & propertyName, const std::string & propertyLabel, const std::string & propertyDefaultValue = "")`

Not implemented

8.4.2.7 `int uictrl::element::appendpropertylist (const std::string & propertyName, const std::string & propertyLabel, const boost::python::list & values, long defaultValue, bool asTitle = false, int hSize = 1, bool exportToCore = false)`

Append a new property to an [element](#).

Parameters:

propertyName Name of the property. Each property name must be unique.

propertyLabel Untranslated property label. Use the language catalog (.po) to append the translation correspondance.

values List option with untranslated labels and index. [{"first list item"}, "second list item"], [0,1]

defaultValue Default value of the property

asTitle At true this list will be the first property shown.

hSize Number of cols occupied by this property.

exportToCore Set it to True to make this property visible in calculation core xml configuration document.

Returns:

The [element](#) index of the new property or of the property of the same name. -1 in case of failure.

8.4.2.8 int uictrl::element::appendpropertyposition (const std::string & *propertyName*, const std::string & *propertyLabel*, const boost::python::list & *propertyDefaultValue*, bool *exportToCore* = false)

Append a new property to an [element](#).

Parameters:

propertyName Name of the property. Each property name must be unique.

propertyLabel Untranslated property label. Use the language catalog (.po) to append the translation correspondance.

propertyDefaultValue Default value of the property [x,y,z]

exportToCore Set it to True to make this property visible in calculation core xml configuration document.

Returns:

The [element](#) index of the new property or of the property of the same name. -1 in case of failure.

8.4.2.9 int uictrl::element::appendpropertytext (const std::string & *propertyName*, const std::string & *propertyLabel*, const std::string & *propertyDefaultValue*, bool *readOnly* = false, bool *exportToCore* = false)

Append a new property to an [element](#).

Parameters:

propertyName Name of the property. Each property name must be unique.

propertyLabel Untranslated property label. Use the language catalog (.po) to append the translation correspondance.

propertyDefaultValue Default value of the property

readOnly Set it to True to forbid write user access to this property.

exportToCore Set it to True to make this property visible in calculation core xml configuration document.

Returns:

The [element](#) index of the new property or of the property of the same name. -1 in case of failure.

8.4.2.10 boost::python::object uictrl::element::appenduserelement (const Element::ELEMENT_TYPE & *baseType*, const std::string & *moduleName*, const std::string & *className*)

Set user defined python object as a children of this [element](#)

Parameters:

baseType Base type of the new [element](#)

moduleName Module name of the new [element](#)

className Class name of the new [element](#)

8.4.2.11 boost::python::list uictrl::element::childs ()

For each [element](#) child this function return The index of [element](#),the type, the name

8.4.2.12 void uictrl::element::deleteallelementbytype (Element::ELEMENT_TYPE *typeElement*)

Delete immediate childs elements corresponding to this [element](#) type

Parameters:

typeElement [Element](#) type

8.4.2.13 void uictrl::element::deleteallelementbytyper (Element::ELEMENT_TYPE *typeElementToDelete*)

Delete recursively childs elements corresponding to this [element](#) type

Parameters:

typeElement [Element](#) type

8.4.2.14 bool uictrl::element::deleteelementbyxmlid (int *xmlIdElement*, bool *setModification* = true)

Delete immediate child [element](#) corresponding to this id.

Parameters:

xmlIdElement [Element](#) id

setModification If true, call [element::modified](#) automatically

8.4.2.15 boost::python::list uictrl::element::getallelementbytype (Element::ELEMENT_TYPE *typeElement*)

Navigate recursively through childrens and return an index list of all corresponding elements.

8.4.2.16 `bool uictrl::element::getboolconfig (const std::string & name)`

Return the value of a property

Parameters:

name Name of the property. Please check with [element::hasproperty](#) if there are any doubt.

Returns:

Value of the property

8.4.2.17 `boost::python::list uictrl::element::getcolorconfig (const std::string & name)`

Return the value of a property

Parameters:

name Name of the property. Please check with [element::hasproperty](#) if there are any doubt.

Returns:

Value of the property [red,green,blue] [0-255]

8.4.2.18 `float uictrl::element::getdecimalconfig (const std::string & name)`

Return the value of a property

Parameters:

name Name of the property. Please check with [element::hasproperty](#) if there are any doubt.

Returns:

Value of the property

8.4.2.19 `int uictrl::element::getelementbylibelle (std::string libelle)`

Return the [element](#) id of the first children with the same [element](#) name

8.4.2.20 `int uictrl::element::getelementbytype (Element::ELEMENT_TYPE typeElement)`

Return the [element](#) id of the first children with the `element_type`

8.4.2.21 `int uictrl::element::getentierconfig (const std::string & name)`

Return the value of a property

Parameters:

name Name of the property. Please check with [element::hasproperty](#) if there are any doubt.

Returns:

Value of the property

8.4.2.22 wxInt32 uictrl::element::getid () [inline]

Returns:

[Element](#) index

8.4.2.23 boost::python::dict uictrl::element::getinfos ()

Return a dict with the following keys :

- typeElement : [Element](#) Type ([uictrl::element_type](#))
- xmlIdElement : [Element](#) index
- expanded : True if [element](#) tree is expanded
- userDestroyable : True if the user is able to destroy this [element](#)
- label : Untranslated version of the [element](#) label
- label_located : Translated [element](#) label using the locale language of [application](#).
- name : [Element](#) name.
- parentid : Index of the parent [element](#). -1 if none.

8.4.2.24 int uictrl::element::getlistconfig (const std::string & name)

Return the value of a property

Parameters:

name Name of the property. Please check with [element::hasproperty](#) if there are any doubt.

Returns:

Value of the property

8.4.2.25 boost::python::list uictrl::element::getmenu ()

Return the final (built-in+python) menu with nested list containing tuple (translated name, event_id)

8.4.2.26 boost::python::list uictrl::element::getpositionconfig (const std::string & name)

Return the value of a property

Parameters:

name Name of the property. Please check with [element::hasproperty](#) if there are any doubt.

Returns:

Value of the property [x,y,z] (m)

8.4.2.27 `std::string uictrl::element::getstringconfig (const std::string & name)`

Return the value of a property

Parameters:

name Name of the property. Please check with [element::hasproperty](#) if there are any doubt.

Returns:

Value of the property

8.4.2.28 `bool uictrl::element::hasproperty (const std::string & name)`

Search inside the element's properties, and return True if a property had this name.

Parameters:

hasproperty Property name

8.4.2.29 `void uictrl::element::hide (bool visible = false)`

Hide this [element](#). It can't be seen by the user.

Parameters:

visible New state of visibility

8.4.2.30 `void uictrl::element::modified (int elementUpdated)`

Tag this [element](#) and its parents as modified and will be saved later.

Parameters:

elementUpdated Updated [element](#) xml id

8.4.2.31 `void uictrl::element::register_update_manager (boost::python::object & pymethod)`

Link a python function to the event of [element](#) update. You can add multiple links. Links are alive until project close.

Parameters:

func Python class with a function called OnUpdate with one parameter, the updated [element](#) index, may be this [element](#) or a child.

8.4.2.32 `void uictrl::element::setreadonlyallconfig (bool readOnly = true, int col = 0)`

Enable or disable the write access to all property of an [element](#).

Parameters:

readOnly New state of access

col For row property, you can set read only on a specific col only.

8.4.2.33 void uictrl::element::setreadonlyconfig (const std::string & *name*, bool *readOnly* = true, int *col* = 0)

Enable or disable the write access to a property

Parameters:

name Name of the property

readOnly New state of access

col For row property, you can set read only on a specific col only.

8.4.2.34 bool uictrl::element::updateboolconfig (const std::string & *name*, bool *newValue*)

Update the value of a property.

Parameters:

name Name of the property

newValue New value of the property

Returns:

True if the property has been found and updated

8.4.2.35 bool uictrl::element::updatedecimalconfig (const std::string & *name*, float *newValue*)

Update the value of a property.

Parameters:

name Name of the property

newValue New value of the property

Returns:

True if the property has been found and updated

8.4.2.36 bool uictrl::element::updateentierconfig (const std::string & *name*, int *newValue*)

Update the value of a property.

Parameters:

name Name of the property

newValue New value of the property

Returns:

True if the property has been found and updated

8.4.2.37 `bool uictrl::element::updatelistconfig (const std::string & name, int newIndex)`

Update the value of a property.

Parameters:

name Name of the property

newIndex New value of the property

Returns:

True if the property has been found and updated

8.4.2.38 `bool uictrl::element::updatepositionconfig (const std::string & name, const boost::python::list & newValue)`

Update the value of a property.

Parameters:

name Name of the property

newValue New value of the property [x,y,z]

Returns:

True if the property has been found and updated

8.4.2.39 `bool uictrl::element::updatestringconfig (const std::string & name, const std::string & newValue)`

Update the value of a property.

Parameters:

name Name of the property

newValue New value of the property

Returns:

True if the property has been found and updated

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