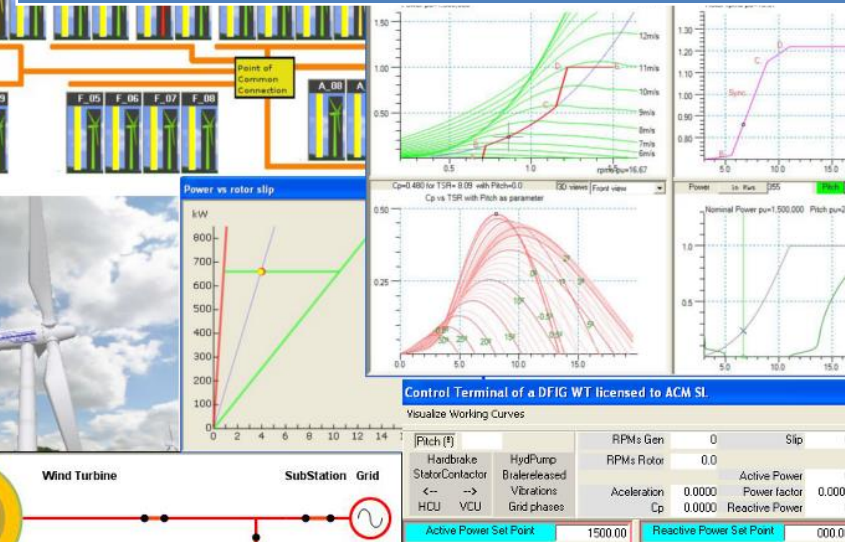




Desktop Organizer as a didactic material User Interface



ACM SL Wind Energy Applications English

- Introduction
- Wind Farm Control Center SCADA
 - [1 - Wind Farm Control Center SCADA](#)
- Wind Turbine Simulators
- Some practical experiments
- Special applications
- Tutorials
- Videos

Click to execute `c:\ACMSL\WindFarmSimulator\LdPv1r10.exe -c WFSSCADAv11.conf` access the Tutorial of this Simulator [here](#).

With this Simulator you can learn the concepts involved in the Operation of a Wind Farm, the datalogging and control of the Wind Turbines, the Meteorological Station, the electric Substation, the connections between the, as well as aspects related to the Production Planning as function of Wind Forecast, the Maintenance Planning, and customer relationships.



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A common problem in the didactic material user interface

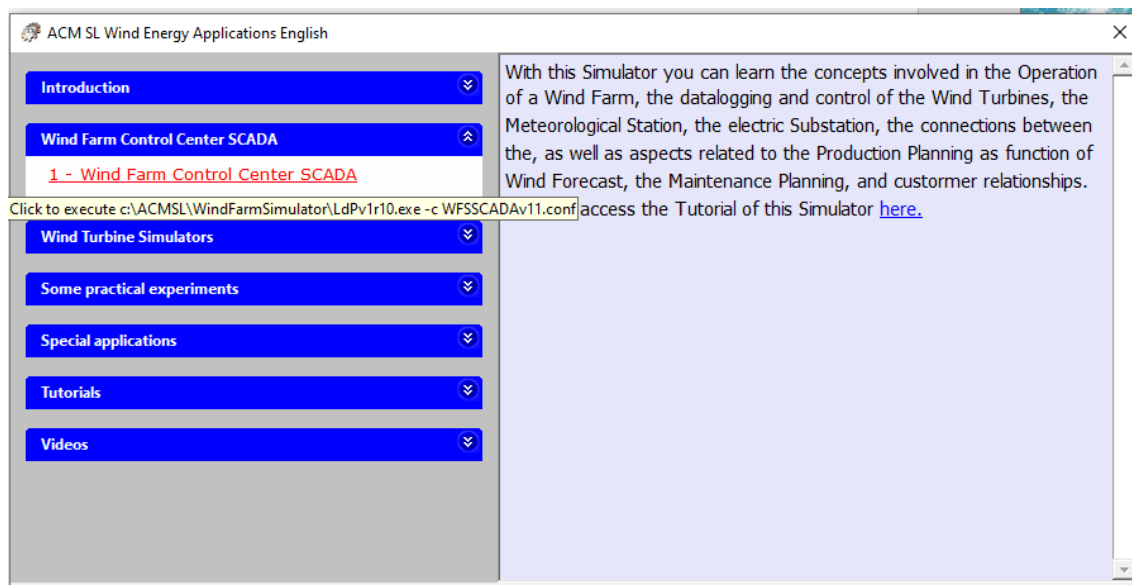
At ACM SL, we develop didactic material focused on industrial subjects and targeted to a broad audience, from Industrial Managers to Operations and Maintenance personnel.

These materials consist of PPTs, documents, spreadsheets, videos, and interactive applications, such as Real-Time Simulators (Digital Twins) that can . For specific subjects, we include HTML based tutorials, very much indexed. Often these materials are interrelated.

We needed a way to provide "sets of didactic materials" that should:

- Allow us to customize them according to the final user and subject.
- Guide the user (trainee) in environments she may find a deterrent at first view.
- Provide the user with very fast feedback on all its actions.

To address these requirements, we developed a solution, named "**Launcher**", that is included in the installation of our "*ACM SL Wind Energy Applications*" suite of Real-Time Simulators for Wind Turbine technologies. Next figures show the look and feel of this approach.



It consists of a *single form* that contains two panels: the left panel contains *Options* (white background) or *Groups* (of Options), with a blue background. A *Group* may be expanded or retracted: when expanded its Options are visible. When all the Groups are retracted, the user has a short index of the possibilities offered by

The interactivity with the user is reduced to three possibilities:

- The user may expand or contract the *Groups*, clicking in the *arrow* icon.
- Whenever the user moves the mouse over a Group or Option, the right panel shows a *Help* or *Comments* associated with that *Group* or *Option*.
If on an Option, a tooltip informs the user about the functionality associated that



Option.

Typically, this functionality would be to *open a document* (PPT, video, word, spreadsheet, etc.) with its associated application, or to *execute a particular application*, with some particular parameters.

The user gets immediate information about this functionality through a *tooltip* that appears shortly after the mouse is moved over the Option.

- If the user *double-clicks an Option*, its associated function is executed. Previously the program asks for permission, to avoid accidental clicks.

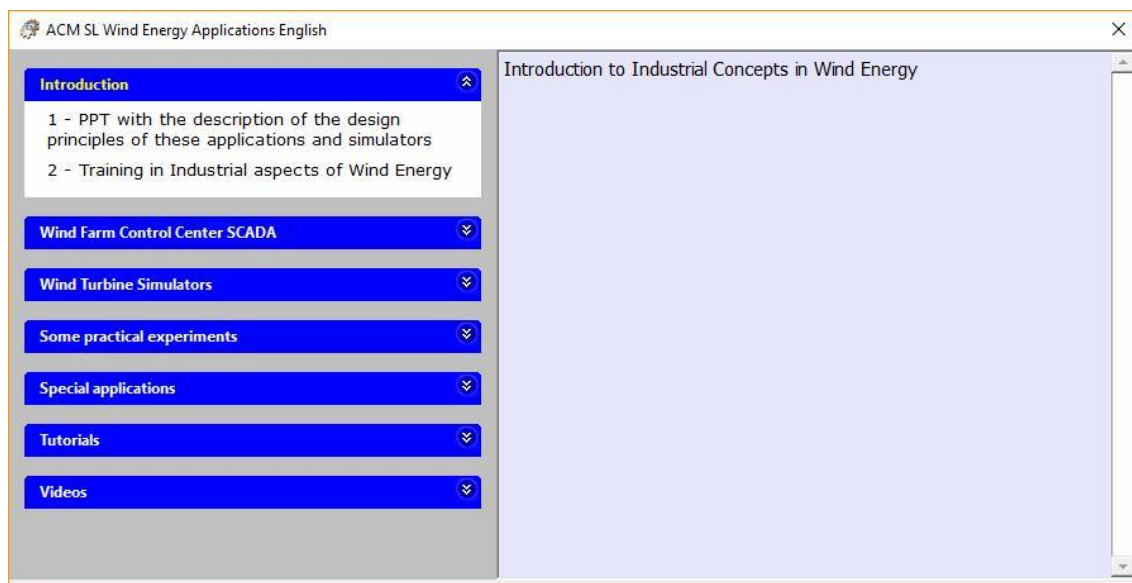
This *interactivity happens in real time*, with no delay, creating a working environment that increases the confidence of the user on that material.

The *Help* or *Comments* associated to an *Option* guides the user on the aspects that the author finds significant in the execution of the associated functionality, acting as *hint* for the user. Its content may include not only plain text but also hyperlinks, images, tables, etc., as the right panel *understands* HTML format.

Benefits of the *Launcher* approach

The **first benefit** of the *Launcher* approach is a **single icon in the Desktop** through which the student access all the materials on the subject, instead of having multiple icons for each of the documents and applications associated with it.

The **second benefit** is to provide the author with a way to transmit the user *meaningful and comprehensive information* for every material available, in a fast way. This is achieved using the two panels approach.



The **third benefit** is the capability to execute applications that require parameters. This capability is borrowed from the *shortcut* concept (or *direct links*) in Windows. The main



differences are that there is *no limitation on the length of title of the Options*, a real problem for direct links.

The **fourth benefit: No programming involved.**

If you have created a PPT presentation, or a Word document, or a video that illustrate a key concept, or a program that teaches how to perform a specific computation, or want to get feedback from your students through email, and want to guide them (no email address to specify, for instance), then you may include the corresponding functionality through an specific Option in the 'desired' top level group creating a text file, copying it from a 'template' file.

Contents of a *Launcher* file:

Let's assume we own to create a Launcher file with two Options:

- an Option for accessing a PPT presentation named 'ACM-*Training_in_Industrial_aspects_of_Wind_Energy.ppt*'. We will assume that the user's PC has installed an application that can visualize it.
- An Option for accessing a tutorial that requires a particular application to be visualized.

We can edit a file using "Notepad" (or similar application, such as "Notepad++") with the "**100-TraininginWindEnergy.xml**", with the following contents. It must be a XML formed file.

```
<?xml version="1.0"?>
<ACMSLLauncher>
  <Group>
    <Title>Introduction</Title>
    <Help>Introduction to Industrial Concepts in Wind Energy</Help>
    <Option>
      <Exec>C:\ACMSL\PPTs\English\ACM-
Training_in_Industrial_aspects_of_Wind_Energy.ppt</Exec>
      <Title>PPT with the description of the design principles of these
applications and simulators</Title>
      <Help>With this PPT you will get an introduction to basic concepts on
Wind Energy</Help>
    </Option>
    <Option>
      <Exec>C:\ACMSL\WindFarmSimulator\ViewerTutorialsWFS.exe -n
'C:\ACMSL\WindFarmSimulator\conf\Training in Industrial aspects of Wind
Energy\Introduction.html'</Exec>
      <Title>Training in Industrial aspects of Wind Energy</Title>
      <Help>This tutorial includes:
      <ul>
```



``An introduction to key concepts that must be known by any one interested in the technologies involved with Wind Turbines.

``

``An introduction to each of the Simulators included in the **Wind Farm Simulator** suite:

``

SCADA ``

``For the Wind Farm Control Center

Turbines ``

``For each of the 3 families of Wind

``

``

``

`</Help>`

`</Option>`

`</Group>`

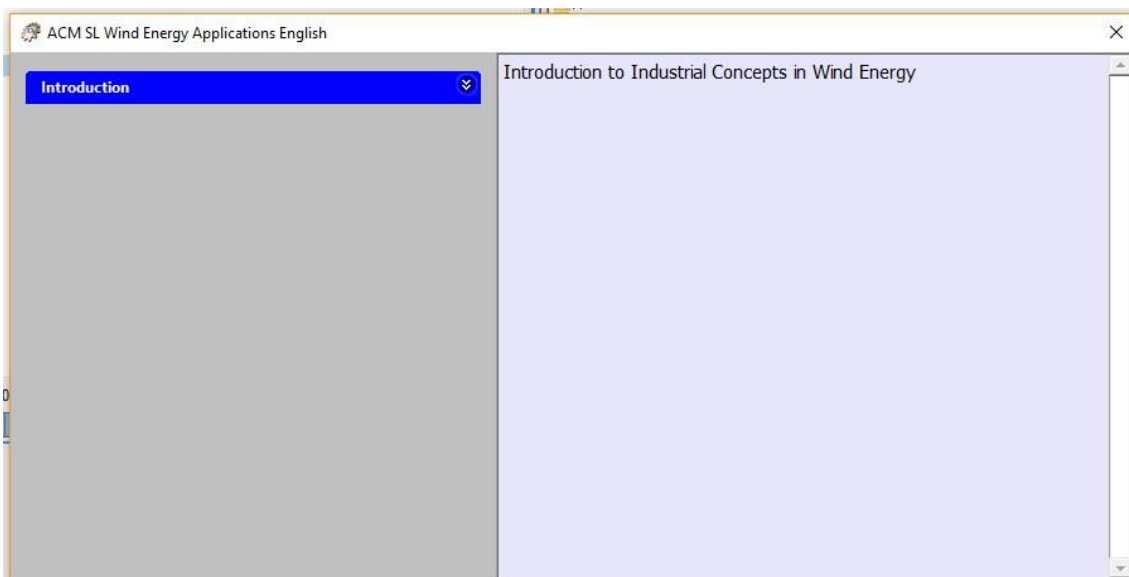
`</ACMSLLauncher>`

Listing 1.

To test this configuration file, copy the *launcher* application (**'ACMSLWindEnergyApps.exe'**) to any directory, create a subdirectory under it with the name of the language in your PC (p.e. *'English'*) and copy the edited file (**"100-TraininginWindEnergy.xml"**) in this subdirectory.

Create a shortcut in your Desktop pointing to location of the Launcher application (p.e. "C:\ACMSL\ACM SL Wind Energy Applications\ACMSLWindEnergyApps.exe") and enter *"Training in Wind Energy"* as name of the shortcut. The shortcut will show the ACM SL icon, that is associated with the launcher. You may change it (mouse right button on the shortcut → Properties → Change icon).

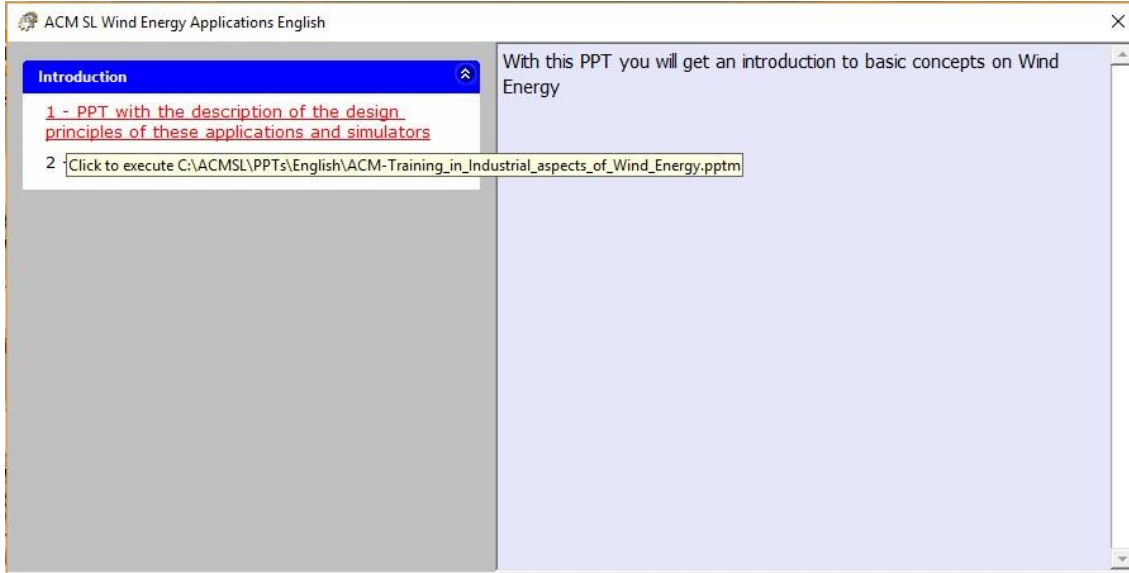
Executing this *shortcut* you will get the following form.



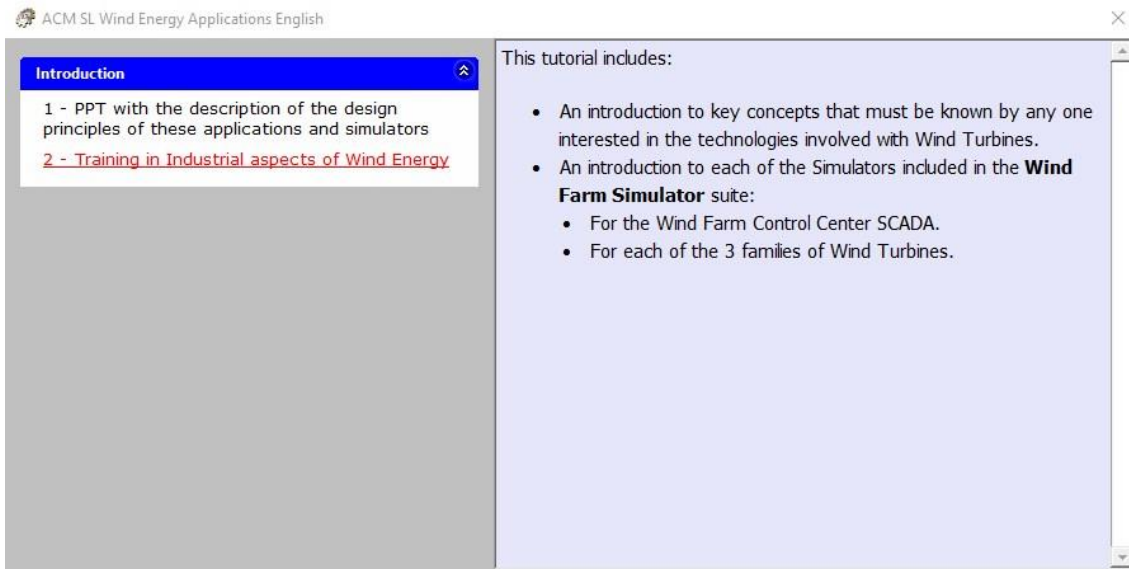


If you expand the *Introduction* group you will get access to the two Options, corresponding to the two applications we wanted.

If the mouse moves over the first Option the right panel will show the help message, and the tooltip will show the corresponding values, as shown in the next figure.



Similarly, if the mouse is over the second Option you will get:





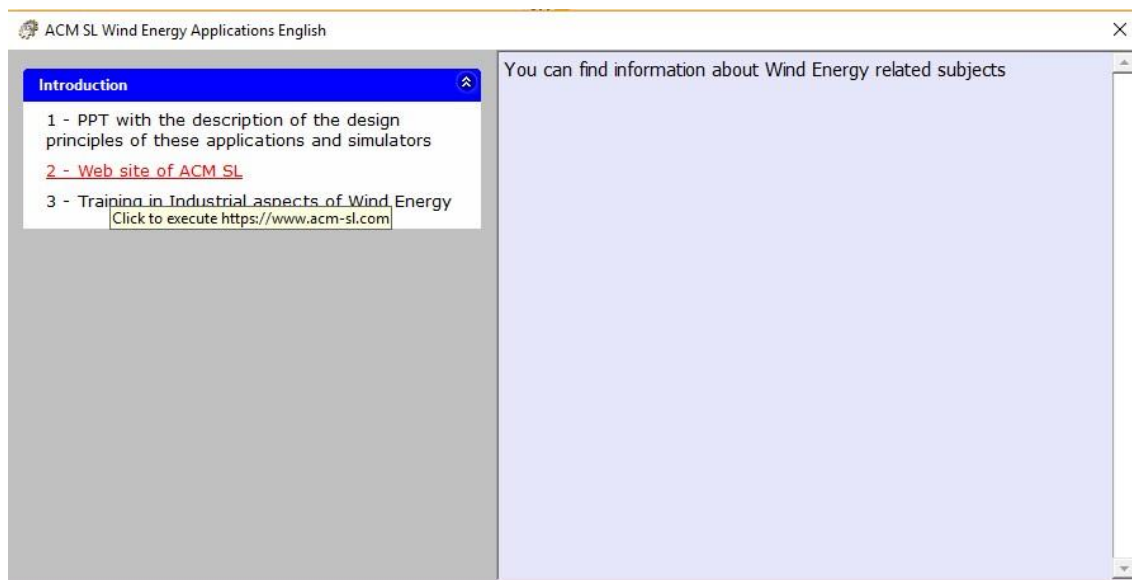
Adding a new option to the menu

You have 3 possibilities for adding a new option to the menu:

Case 1: New option *inside* the same group.

Let's assume we want to add an option for accessing a website (for example <https://www.acm-sl.com>). Using the text editor, we will modify the menu file ("**100-TraininginWindEnergy.xml**") in the following way:

1. Select 'any' 'option': i.e select with the mouse from '`<option>`' down to '`</option>`', and copy it to the clipboard (Control-C)
2. Set the cursor in the editor (click with the left button) on the beginning of any existing '`<option>`' or the end of any '`</option>`', and paste the contents of the clipboard (Control-V)
3. Modify the content of each element of the new option according to the desire contents.
 - a. The '`<Exec>`' element must contain the executable (with the corresponding inline options, if any), or the file, or the hyperlink.
`<Exec>https://www.acm-sl.com</Exec>`
 - b. The '`<Title>`' element contains the text that will be shown in the left panel.
`<Title>Web site of ACM SL</Title>`
 - c. The '`<Help>`' element contains the text that will be shown in the right panel
`<Help>You can find information about Wind Energy related subjects</Help>`
4. Save the file and execute again ('**ACMSLWindEnergyApps.exe**'). You will get the following menu.





Case 2: New option but in another group.

The 'group' concept in these menus are handy tools for guiding the user in a (possibly) big set of options. In this regard, perhaps the option we just added is not part of an 'Introduction', but rather fall in the 'Miscellaneous' category.

You add groups adding the 'group' elements:

```
<Group>
  <Title>Miscellaneous</Title>
  <Help>Set of helpful options</Help>
...
</Group>
```

Then you can 'move' the new option implemented in the former paragraph, to the internal of the new 'group'. So the final contents of "**100-TraininginWindEnergy.xml**" becomes:

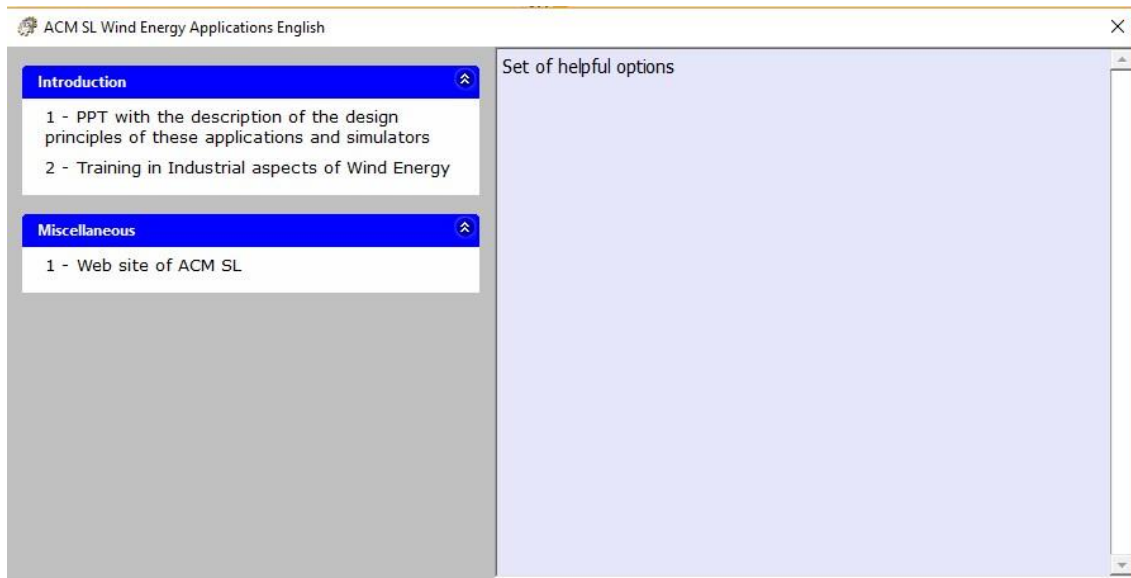
```
<?xml version="1.0"?>
<ACMSLLauncher>
  <Group>
    <Title>Introduction</Title>
    <Help>Introduction to Industrial Concepts in Wind Energy</Help>
    <Option>
      <Exec>C:\ACMSL\PPTs\English\ACM-
Training_in_Industrial_aspects_of_Wind_Energy.pptm</Exec>
      <Title>PPT with the description of the design principles of these
applications and simulators</Title>
      <Help>With this PPT you will get an introduction to basic concepts on
Wind Energy</Help>
    </Option>

    <Option>
      <Exec>C:\ACMSL\WindFarmSimulator\ViewerTutorialsWFS.exe -n
'C:\ACMSL\WindFarmSimulator\conf\Training in Industrial aspects of Wind
Energy\Introduction.html'</Exec>
      <Title>Training in Industrial aspects of Wind Energy</Title>
      <Help>This tutorial includes:
      <ul>
        <li>An introduction to key concepts that must be
known by any one interested in the technologies involved with Wind Turbines.
        </li>
        <li>An introduction to each of the Simulators included
in the <b>Wind Farm Simulator</b> suite:
```



```
<ul>
  <li>For the Wind Farm Control Center SCADA.</li>
  <li>For each of the 3 families of Wind Turbines.</li>
</ul>
</li>
</ul>
</Help>
</Option>
</Group>
<Group>
  <Title>Miscellaneous</Title>
  <Help>Set of helpful options</Help>
  <Option>
    <Exec>https://www.acm-sl.com</Exec>
    <Title>Web site of ACM SL</Title>
    <Help>You can find information about Wind Energy related
subjects</Help>
  </Option>
</Group>
</ACMSLLauncher>
```

You will get a menu as shown in the next figure.





Adding a new option but in additional configuration file.

Let's assume that you do not want to modify the initial configuration file "**100-TraininginWindEnergy.xml**", as it contains a set of 'common' options that you want to keep 'clean'. But still you want to add another 'group' ('Miscellaneous') and some options on it. You can do it creating an additional configuration file inside the same directory. 'Let's name this file '**110-Miscellaneous.xml**'. Let's move to this new file the contents we added in the last paragraph to '**100-TraininginWindEnergy.xml**'. It's full content must include the 'header' element '<ACMSLLauncher>', and will be:

```
<?xml version="1.0"?>
<ACMSLLauncher>    <Group>
                    <Title>Miscellaneous</Title>
                    <Help>Set of helpful options</Help>
                    <Option>
                    <Exec>https://www.acm-sl.com</Exec>
                    <Title>Web site of ACM SL</Title>
                    <Help>You can find information about Wind Energy related
subjects</Help>
                    </Option>
                    </Group>
</ACMSLLauncher>
```

Now, if you execute 'ACMSLWindEnergyApps.exe' will get the same menu as shown in the former figure.

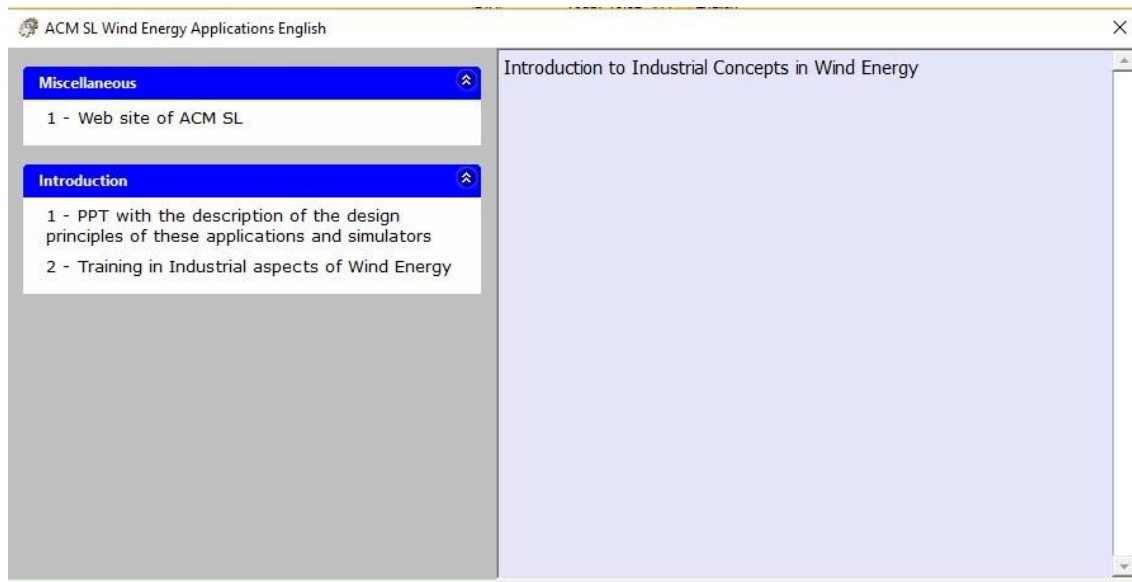


Ordering the Groups

Groups are presented in the left panel 'as they are encountered'. The application 'ACMSLWindEnergyApps' looks for a directory with a name corresponding to the 'family' name of the actual setting for 'Language' in Windows, and search for files with extension '.xml', and assumes they are 'valid' configuration files. If any of these files are not valid or contains formatting errors, it presents an alert informing about it.

The valid files are explored and processed in alphanumeric order: therefore, in our case, the file '**100-TraininginWindEnergy.xml**' is processed before '**110-Miscellaneous.xml**', and, consequently, the 'Introduction' group is presented before the 'Miscellaneous' group.

But, if we change the name of the second file from '**110-Miscellaneous.xml**' to '**010-Miscellaneous.xml**', this order is reverse and consequently, we get the following menu.



This feature provides a big flexibility for the management of configuration files and the options inside them.

Supported languages

The actual version of *ACMSLLauncher* support the following languages:

- English (default)
- Spanish
- French
- Italian
- Portuguese
- German

For any other language it expects the configuration files to be in the 'English' subdirectory below the directory where it is executed.



Additional decoration of the Help messages

The Help element (<Help>..</Help>) may contain text with embedded HTML tags. For a complete list of acceptable tags see [Anex A: Supported HMTL features](#). Using them the text can be easily formatted changing part of it for different **Fonts**, **color**, imbedding **images**, **tables**, etc.

For a complete description of these tags you may check at <https://www.w3schools.com/html/>



Desktop Organizer to the rescue

Although the configuration files for the Launcher can be easily edited using a simple text editor there is a simpler option.

Based on the ideas of the Launcher, ACM SL has developed a freely available application (<https://acm-sl.com/en/desktop-organizer>) that includes an interactive editor for these configuration files. In that page you have a video that shows the main functionalities of the program.



Anex A: HMTL features supported in the Help panel text.

HTML Support

The *Help* text of Options and Groups admits a subset of the standard Hypertext Markup Language (HTML), shown in this table.

Tag	Supported Attributes
A	href, id, name, title
B	
BIG	
BLOCKQUOTE	
BODY	background, bgcolor, text, link
BR	
CENTER	
EM	
FONT	face, color, size
H1-H6	
HR	
HTML	
I	
IMG	alt, border, height, hspace, src, vspace, width
LI	
OL	
P	



SMALL	
STRONG	
TABLE	align (left and center), border, cellpadding, cellspacing, width
THEAD	
TBODY	
TFOOT	
TR	
TH	align, colspan, width
TD	align, colspan, width
U	
UL	