SiS 2.0
User guide

Rev. 2.2

COPYRIGHT INFORMATION

The information in this user's guide and in the PC programme attached is subject to royalties, being these rights represented by FTE Maximal firm (hereafter FTE) that reserves the faculty to make periodic modifications of this product with no liability to notify such revision to any person or entity. Copying, duplicating, distributing or commercial exploitation of this product IS NOT PERMITTED without the expressed, written permission of an authorised representative of FTE. It is also forbidden to submit the product to any kind of inverse engineering, disassembling or recompilation, depriving authority as well of any attempt to access to the source code of the programme. It is strictly forbidden neither the translation nor the creation of derivative products based on this programme. Use license agreement and user rights to use this programme will automatically terminate in case any clause of this agreement is violated.

WARRANTY

The PC programme and user's guide are provided "as is" without express or limited warranty of any kind. FTE or any other person who has participated in the creation, production and/or distribution of the programme hereby disclaim all warranties and conditions with regard to this information, including (and not as a limitation) all warranties of merchantability, whether express, implied or statutory, and fitness for a particular purpose. User assumes all risk concerning the quality and performances of the programme and its user's guide.

LIABILITY LIMITATION

Due to the user accepts all risks related to the quality and fitness of this PC application, FTE does not assume any liability, whether express or implied, with regard to the good running, performance or the ability of SIS application to get adapted to the specific needs of the user. Disclaiming, therefore, any liability for any special, indirect or consequential damage or damages whatsoever resulting from loss of use of the programme or its user's guide, even being conscious of the possibility that such damages occur. In the margin of the previously said, FTE representatives have contrasted and verified thoroughly SIS application beforehand its distribution, resulting the programme, according to author's subjective estimation, totally operative.

Index

INTRODUCTION

Development team of SIS wants to thank you for acquiring his programme of switches installation software. Its versatility will let you make all necessary calculations for an installation introducing a few data. This way, it covers the most complex and tedious processes automatically, what means a productivity increase and a time saving without precedents.

Programme description

SiS programme needs some indispensable data to work, such as the number of apartments, floors, stairs, outlets, headend stairs and number of polarities that have to be distributed. Once data have been introduced in the programme, it will generate the electric scheme of the installation. You could modify the scheme structure to adapt it to the exact necessities of the building. The programme is also capable of generating a full list of materials needed and an outlet levels report.

In brief, the elements that this programme can generate are:

- Installation electric scheme.
- Text documents: list of materials and outlet levels report.

About this guide

This guide requires that user has a basic knowledge of how to use the operative system of windows, because in this guide there are a lot of references to multiple functions of this operative system.

System conditions

This programme needs a computer Pentium IV 2.4 GHz type or faster, a minimum of RAM memory of 256 MB, and 20 Mb of space in the hardware. Screen resolution has to be at least 800x600 pixels and with at least 256 colours. It also needs that the operative system is Windows 2000, Windows XP, Windows Vista and Windows 7 (1 GB of RAM for the two latest).

Programme setting

To set up the programme, execute the programme <setup.exe> directly from the unity. Follow the instructions of the installation programme. Once installed, you could execute the application.

Note for Windows 2000, Windows XP, Windows Vista and Windows 7 users.
To install and register correctly the programme, you will have to have the rights to install programmes in your operative system.

Executing the programme

To execute the programme, you have to look for in Windows “Start” menu and choose “SIS” programme from the applications list.

HOW TO START WORKING WITH SIS

The process of generating a project with SIS is divided in the following parts:

- Choose initial preferences for the project (if it was necessary)
- Property data introduction
- Installation regulation
- Documents generation
- Documents and different schemes printing

In this chapter, it is explained how to introduce property data in the programme.

New project assistant

To create a new project you can push <New> icon or choose in menu File>New It will appear the first assistant's window of project creation.

In the first step of the assistant you should fill basic data about the installation. Such as number of stairs, floors, apartments, polarities, headend stair or distribution type.

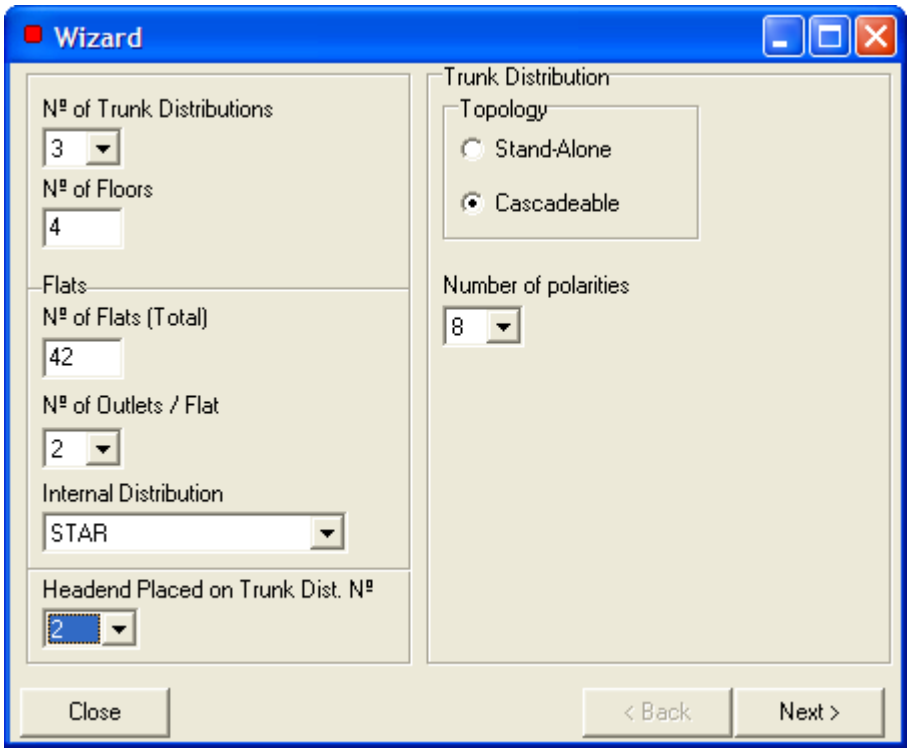

Figure 1: Introduction of installation data

- **Number of stairs**
  You must indicate the number of stairs or verticals that your installation has. This number must be between 1 and 8 stairs.

- **Number of floors**
  You must fill this field with the maximum number of floors that the installation has.

- **Number of apartments**
  In this field you will indicate the total number of apartments that the project is going to have.

- **Number of outlets**
  This is the number of outlets that there will be in every house of the scheme when the assistant has finished. Its value can be only from 1 to 8 outlets.

- **Distribution configuration**
  In this field, you will choose where you want to place outlets in the apartments. You have two cascade and two star outlets.

- **Headend stair**
  In this box you will indicate which stair is going to be placed at the installation headend.

- **Distribution**

  - **Type**
    Distribution type can be direct or cascade.

    In a direct distribution, apartments are directly connected to a multiswitch placed at the headend. This type of distribution is limited to a maximum of 64 apartments. If the total of apartments is bigger, then you could only use cascade distributions.

    In a cascade distribution, multiswitches are placed at apartments' floors that give services, connecting each stair' multiswitches to a cascade distribution.

  - **Number of polarities**
    You should indicate the number of polarities that has to be distributed in an installation. This number can only be four or eight polarities.

    Once filled, press <Next> to go to the second step of the assistant.

In the second window of the assistant, you should indicate how must be the distribution of the apartments in the installation. Once filled, press <Create> to end assistant and start with the calculation process and with the scheme creation. In case you want modify any value of the previous step, you could retreat pressing <Back> button.

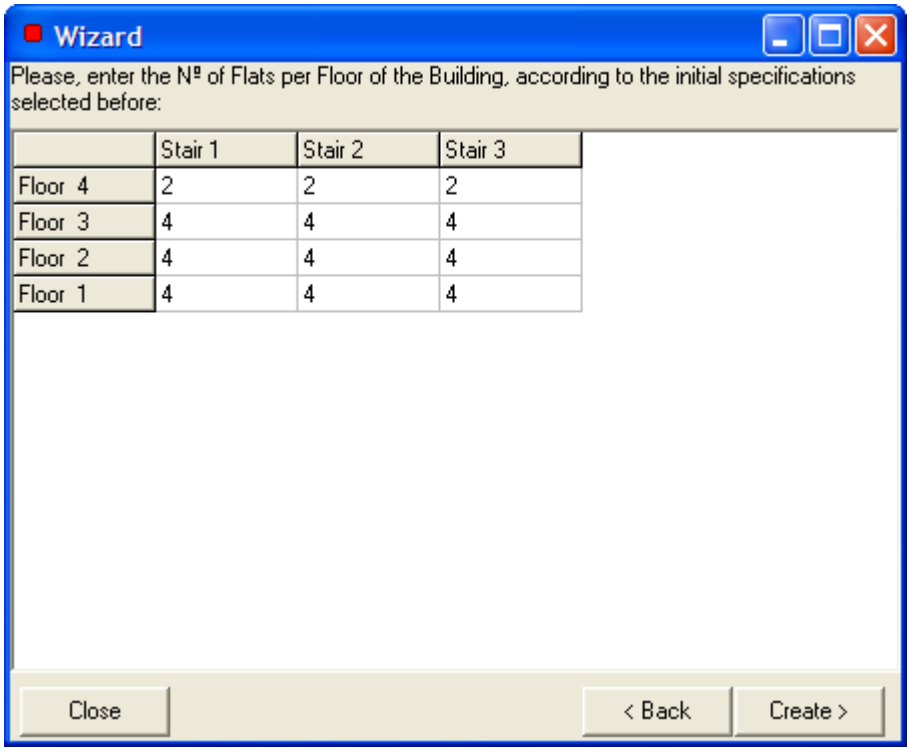

Figure 2: Elements distribution between floors and stairs.

If you want to cancel the creation of a new project, press the button <Close>.

Work environment

In the following figure is represented a triptych work window:

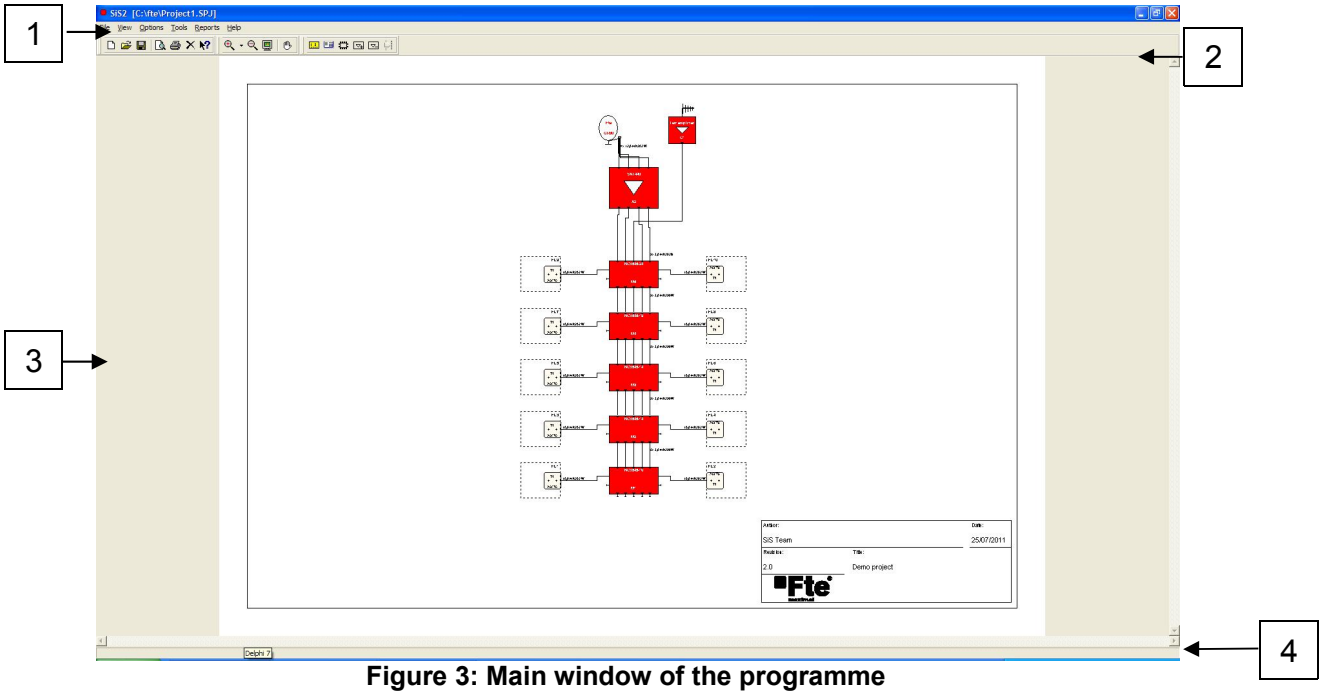

Figure 3: Main window of the programme

Working area is divided in various parts:

(1) Programme menu
(2) Tools bar
(3) Working area
(4) State bar

Programme menu

From this menu, you could access to the majority of the programme functions. You should take into account that, due to programme's nature, there are certain functions that are only accessible using the mouse. All menus of the programme are detailed in the following section:

File Menu

This menu is used to access to functions related to opening, saving, closing and printing of the projects.

- **File> New**
  Used to create a new project opening the assistant of project creation. If you are working with another project, you will be asked to close the present project before creating a new one.

- **File>Open**
  Used to recuperate a project saved in hardware. Valid extension of project files is ".spj".

- **File>Close**
  Used to close the present project. If the project has not been saved previously, it will appear a window that is going to ask you confirmation to close it and will give you the option to save it.

- **File>Save**
  Used to save the present project. If the project has not been previously saved, it will appear a window where you will have to specify its name and the location where it will be stored.

- **File>Save as**
  Used to save the present project. In this case always appears a window to specify the name and the location of the file.

- **File>Save image as**
  Used to save the present scheme as a BMP or JPEG format image. For further information look for "Save scheme as an image" in page 32.

- **File>Page setup**
  It shows a window where user specifies size, orientation and establishes scheme's margins.

- **File>Print**
  It shows the printing window that let the user make a paper copy of the scheme.

- **File>Exit**
  It allows the user to exit the programme. It follows the same steps used to close the project, but with the difference that when it finishes, it exits the programme.

View Menu

In this menu, user can adjust the size of the scheme in the screen and introduce the window of error levels.

- **View>Zoom in**
  It allows extending working window scale.

- **View>Zoom out**
  It allows reducing working window scale.

- **View>Zoom all**
  It adjusts scheme scale to window area.

- **View>List of error levels**
  It shows the window where user could check error levels in installation outlets. For further information see “List of error levels“ in page 20.

Options menu

This menu is used to access to different configurations of the programme and to introduce scheme small box’s information.

- **Options>Configuration**
  It allows user to configure options that the programme is going to use to create a new project as well as the route of initial directories where projects and documents would be kept. For further information, see “Programme configuration” in page 13.

- **Options>Projectinformation**
  It allows user to introduce, define size and write information in the scheme small box. For further information, see “Project information” in page 12.

Tools Menu

This menu is used to choose the tool that is going to be used by user to modify, measure or regulate elements of the scheme.

- **Tools>Change length**
  This tool allows modifying the distance of the scheme cables. For further information, see “How to change distance between elements” in page 22.

- **Tools>Levels**
  This tool allows measuring scheme levels. For further information, see “How to measure levels of the scheme” in page 22.

- **Tools>Edit component**
  It allows modifying the model of component or the distribution of the apartments. For further information, ”How to edit a component of the scheme” in page 24.

- **Tools>Add amplifier**
  It allows adding a line amplifier to the installation. This tool can only be used if the distribution is cascade one. For further information, see ”How to add a line amplifier” in page 25.

- **Tools>Remove amplifier**
  It allows removing a line amplifier previously added. For further information, see “How to remove a line amplifier” in page 25.

- **Tools>Component regulation**
  This tool allows changing amplifier regulation, satellite parabolic antenna input levels and terrestrial amplifier output levels. For further information, see “How to regulate components of the installation” in page 25.

Reports Menu

This menu allows creating and opening all documents the programme can generate.

- **Reports>Create**
  It opens the window of documents’ creation. From this window you could generate all documents that the programme allows you to. For further information, see “How to generate documents and prints” in page 29.

- **Reports>Open**
  It opens the editor of programme documents. With it, you could recuperate and modify a document previously created. For further information, see “Editor” in page 30.

Help Menu

This menu allows user to dispose of help functions.

- **Help>Contents**
  It shows help file of SIS programme.

- **Help>About SiS**
  It shows the window with information of the programme version

Tools bar

Tools bar allows user to dispose of a more comfortable and faster access to the main functions of the programme.

Standard tools bar

This bar allows user to access to the most used functions of the file and to the help of the programme.

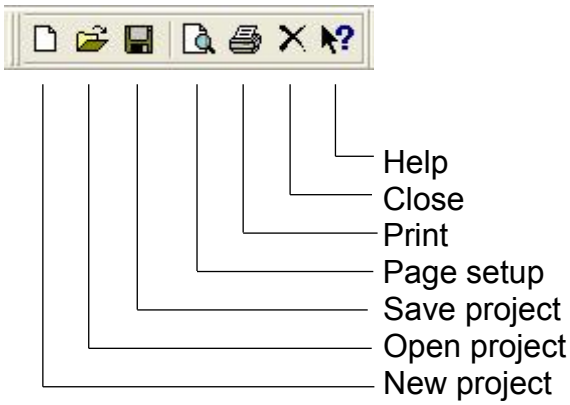

Figure 4: Standard bar

PAN tools bar

This bar allows choosing visualisation tools.

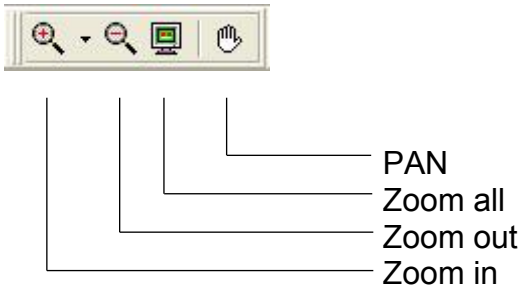

Figure 5: PAN bar

When you choose PAN bar and the scheme size is bigger than the screen, it allows user to move through the graphics. For that, you should press left button of the mouse in a point of the scheme and without stop pressing move it through. In case you have a three buttons mouse, the central button actives automatically this tools.

Tasks tools bar

With these tools you could modify and obtain information about the levels of the scheme elements.

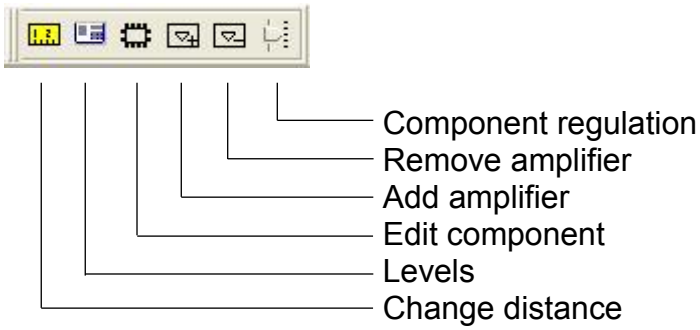

Figure 6: Tasks bar

Working area

This is the zone where schemes will be visualised and where great part of the work is done.

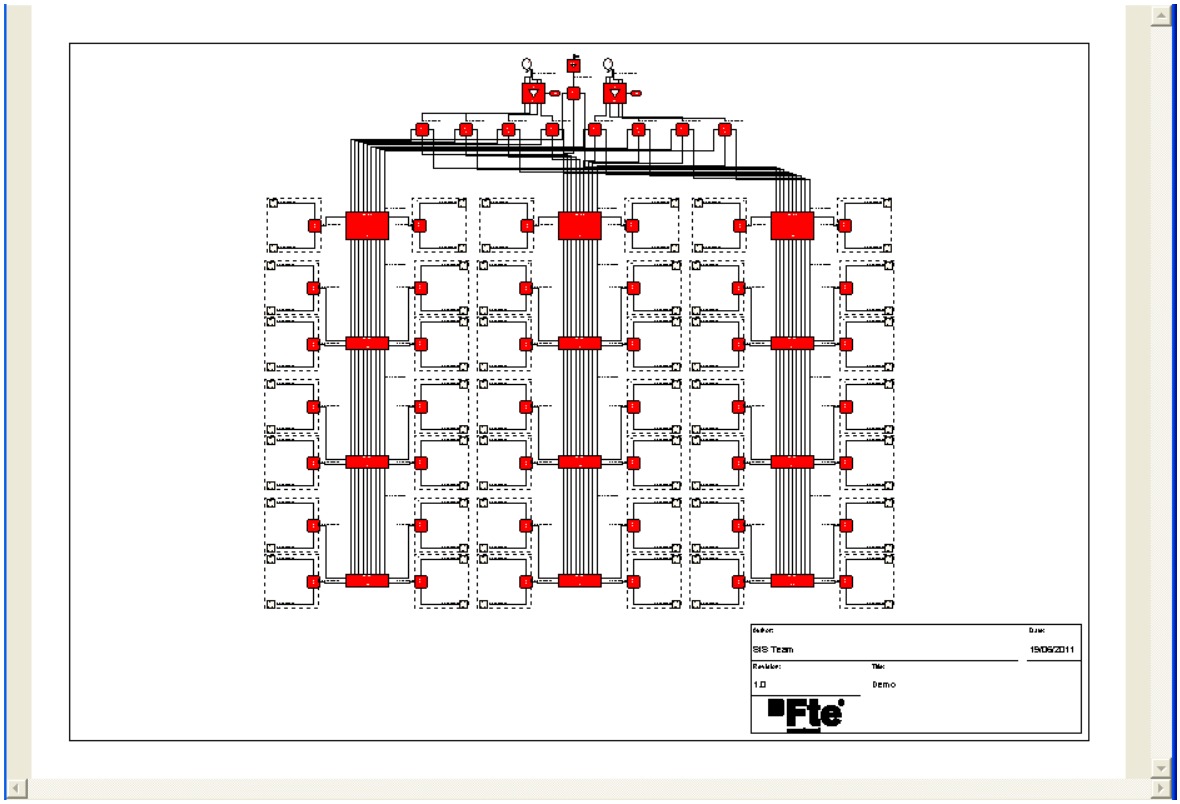

Figure 7: Working area

In the case that the area of the scheme is larger than the available working area, displacement bar will get active and it will allow you to move through the graphic. Another option for moving through the scheme is using PAN bar.

State bar

State bar is an area where information referring to the graphic is shown. Every time you pass with the mouse through an element, it will appear the element description in the state bar.

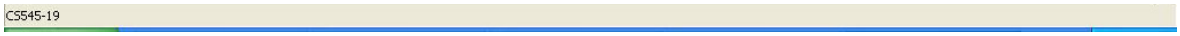

Figure 8: State bar

Project information

In menu <Options>Project information a window is opened where you could edit information that appears in the small box of the scheme and modify its size. You also have the option of not making it visible on the scheme. Another way of opening this window is making a double click on the small box of the scheme. You can only modify small box information if there is a project opened.

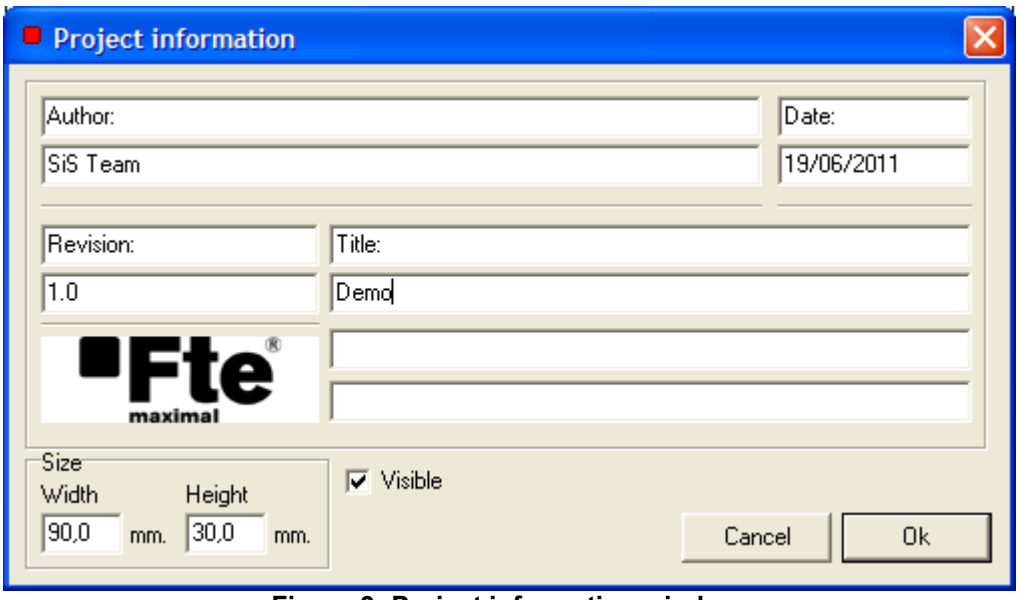

Figure 9: Project information window

You could change all texts that appear in the small box. At the bottom part, there are two fields for defining the width and the height of the small box in millimetres. If you do not want to present the small box in the scheme, you must remove the tick from the box with the title <Visible>.

Programme configuration

The Menu Options>configuration opens a window with six lapels with the options of programme configuration. They are used during the creation of a new project. If there were an opened project, any variation of these options would not have an effect on that project.

Distances configuration

In that lapel, the user must define what distances there would be between stairs, between floors of a stair and which is the initial distance between the outlets inside the apartments.

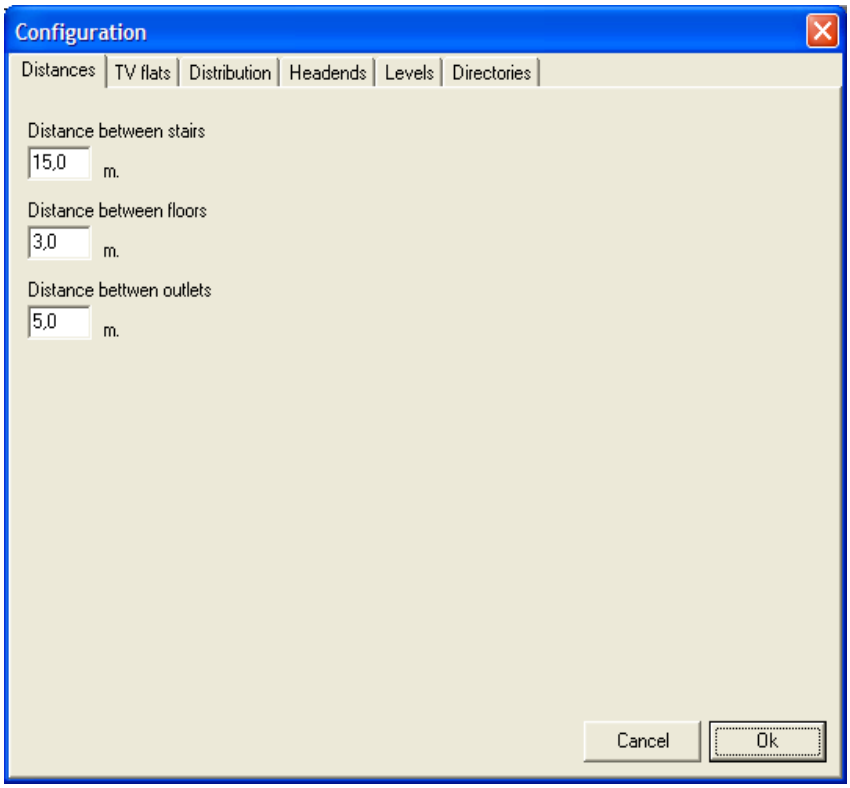

Figure 10: Distances configuration window

- **Distances between stairs**
  In this field, it is defined the initial distance between two stairs of the project.

- **Distance between floors**
  In this field, it is defined distance between floors during the creation of new projects.

- **Distance between outlets**
  In this field, it is defined initial distance between apartments' outlets.

TV apartments configuration

In this lapel, user can modify component series and the model of cable that, by default, is going to use the programme for the fulfilment of the installation in the apartments

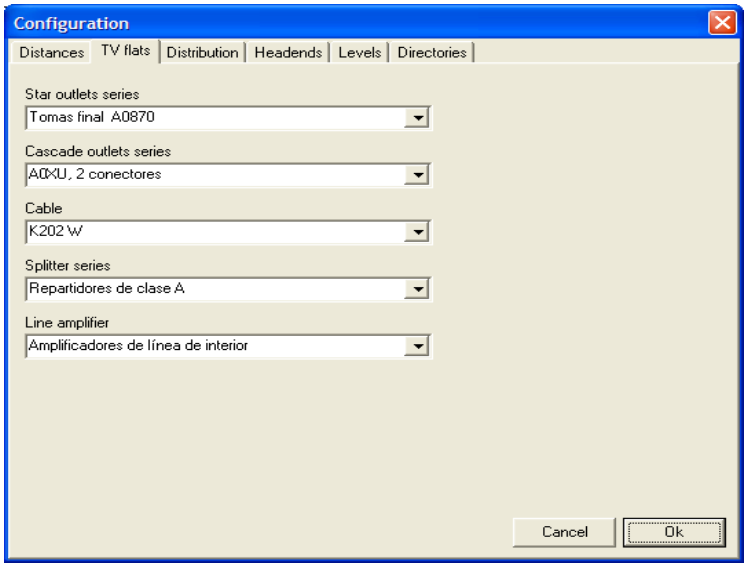

Figure 11: TV apartments configuration

- **Star outlets series**
  This lapel specifies outlets series that the programme is going to use if you choose a star distribution for the outlets in the apartments.

- **Cascade outlets series**
  This box specifies outlet series the programme is going to use if you choose a cascade distribution in the apartments.

- **Cable**
  This box specifies the cable model that is going to be used in the apartments.

- **Splitters series**
  This box specifies the splitter series used in star distribution inside the apartment.

- **Line amplifier**
  This box specifies the Line series used inside the apartment.

  To change the value of an element you should press the button placed on the right of the box we want to modify. It will appear the window of the Figure 12 where you could change the model or the family of the elements.

Figure 12: Families and models selection

Distribution

In this lapel are specified the parameters for the distribution net.

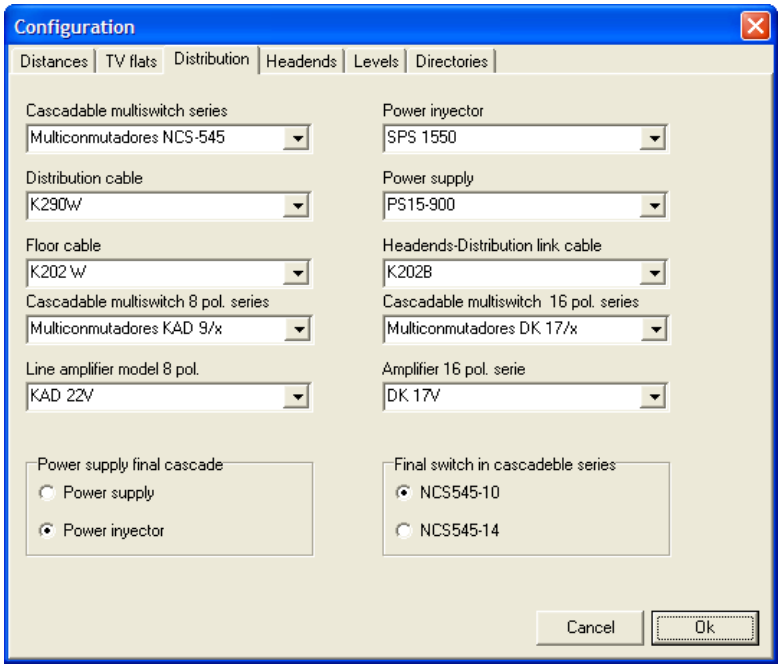

Figure 13: Distribution configuration

- **Cascadable mutiswitch series**
  In this box is specified multiswitch series for making a cascade distribution.

- **Distribution cable**
  In this box, it is specified the model of cable that is going to be used in the stairs or in the verticals of the installation.

- **Floor cable**
  In this box, it is specified the model of cable used in the union of the apartments with the multiswitches.

- **Power supply final cascade**
  This row allows choosing between a power supply and power injector for the final cascade power unit from CS-545 multiswitch series. If the final cascade power unit is not active there won't be placed power supplies.

- **Power injector**
  This box specifies the power injector model to use if power injector is selected in box "Final cascade power unit ".

- **Power supply**
  This box specifies the power supply model that is going to be used in final switch in cascadable series and in line amplifiers

- **Headends – Distribution link cable**
  This box specifies the model of cable used in the union between installation headend and the final switch in cascadable series.

- **Final switch in cascadable series**
  This box allows choosing that the element in cascadable multiswitches series is used by default as a final switch in cascadable series.

- **Cascadable mutiswitch 8 pol series**

In this box is specified multiswitch 8 polarities series for making a cascade distribution.

- **Cascadable mutiswitch 16 pol series**
  In this box is specified multiswitch 16 polarities series for making a cascade distribution.

Headends

This lapel specifies the models of the elements that the programme is going to use in headends construction.

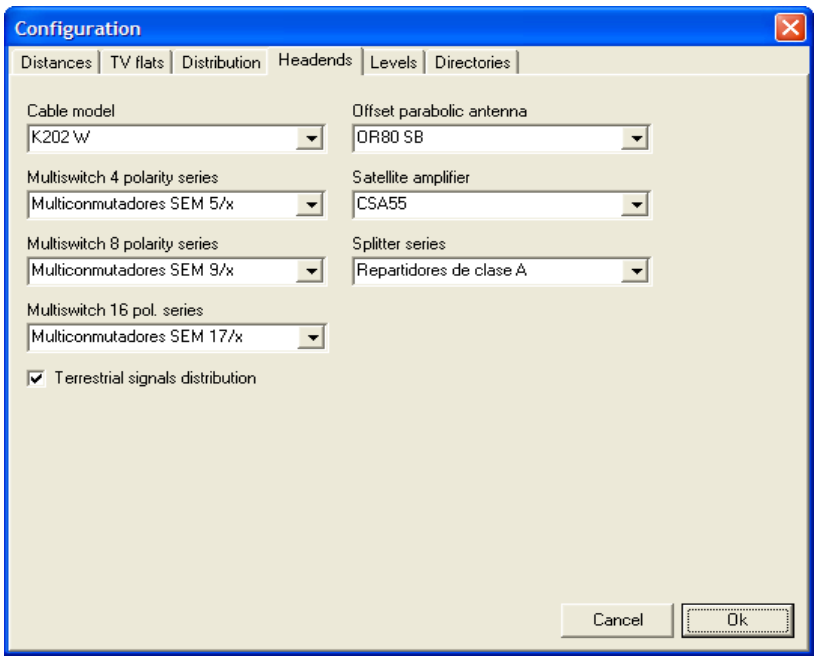

Figure 14: Headends configuration

- **Cable model**
  It specifies the model of cable that is going to be used in the union of headend elements.

- **Multiswitch 4 polarity series**
  This box allows specifying the multiswitch 4-polarity series used in direct distributions.

- **Multiswitch 8 polarity series**
  This box allows specifying the multiswitch 8-polarity series used in direct distributions.

- **Offset parabolic antenna**
  This box specifies the model of parabolic antennas used in headends.

- **Satellite amplifier**
  This box specifies the model of amplifier used in the headend to increase the level of the signals received in the parabolic antenna. Amplifiers are used in cascade distributions.

- **Splitters series**
  This box specifies splitters family used in the headend.

- **Terrestrial signal splitters**
  If this box is ticked, it allows the headend creation and the distribution of terrestrial signals in the installation.

Levels

This lapel allows specifying input levels of the installation and levels margin that have to have signals in the outlets.

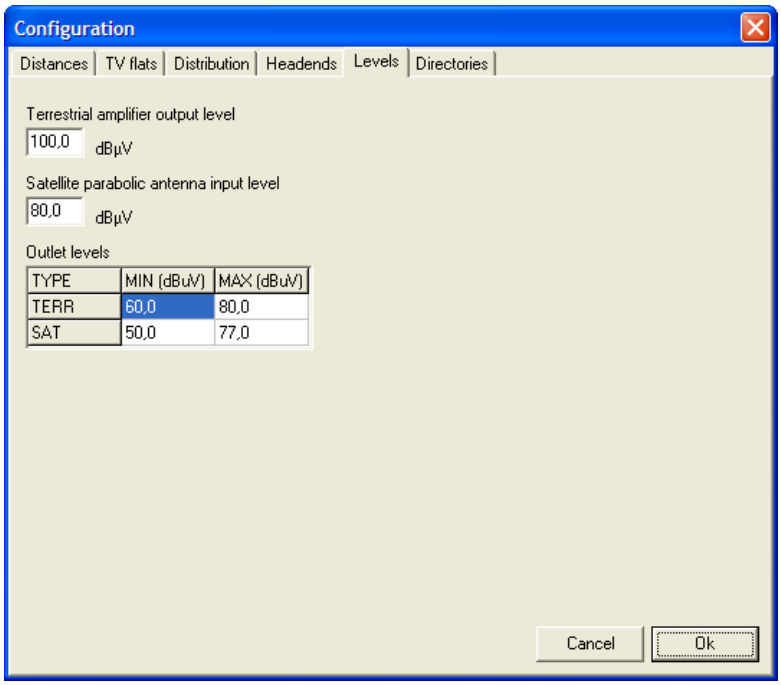

Figure 15: Levels configuration

- **Terrestrial amplifier output level**
  This box specifies initial output level that terrestrial signals' amplifier is going to have in the headends.

- **Satellite parabolic antenna input level**
  This box allows specifying the initial level of the parabolic antenna,

- **Outlet levels**
  This table has the rank of values that must have signals in outlets.

Directories

This lapel specifies the initial directory where projects and programme documents are going to be stored.

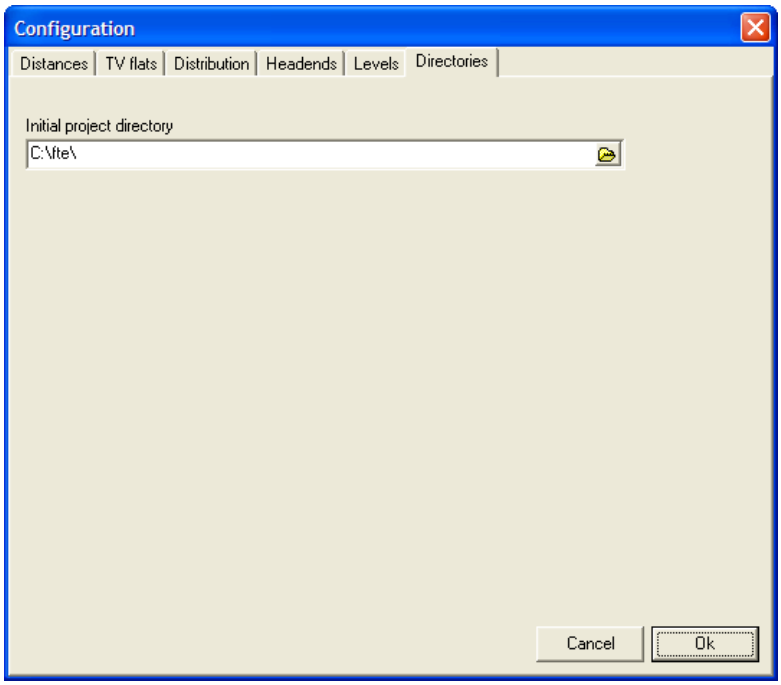

Figure 16: Directories configuration

- **Initial project directory**

This box specifies the initial route where projects and documents generated will be stored. To change this value, press the button with the folder icon and select the new route in the window of Figure 17.

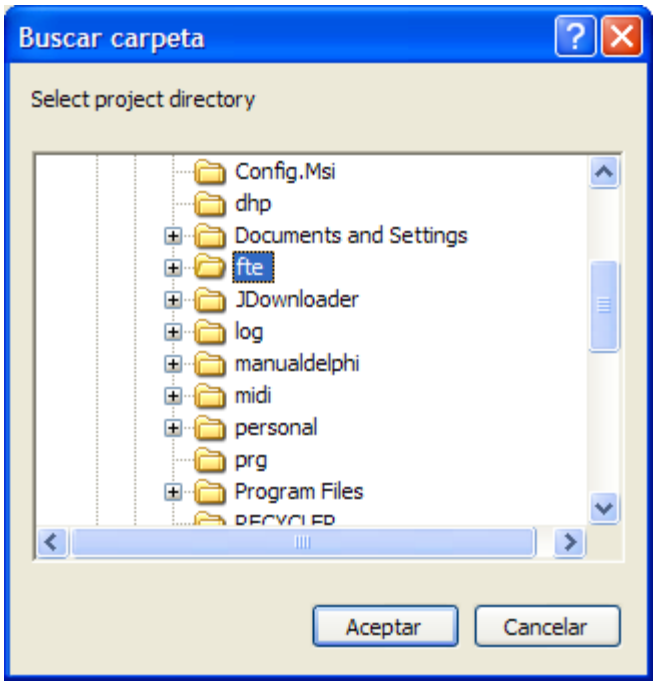

Figure 17: Selecting project directory

Working with SiS

In this chapter, is described the running of the programme working tools. With them you could modify and regulate elements of the scheme. You could also measure the levels and check if there is any mistake in installation.
Once created a new project, the programme will generate an electric scheme of the installation like the one shown in the following figure:

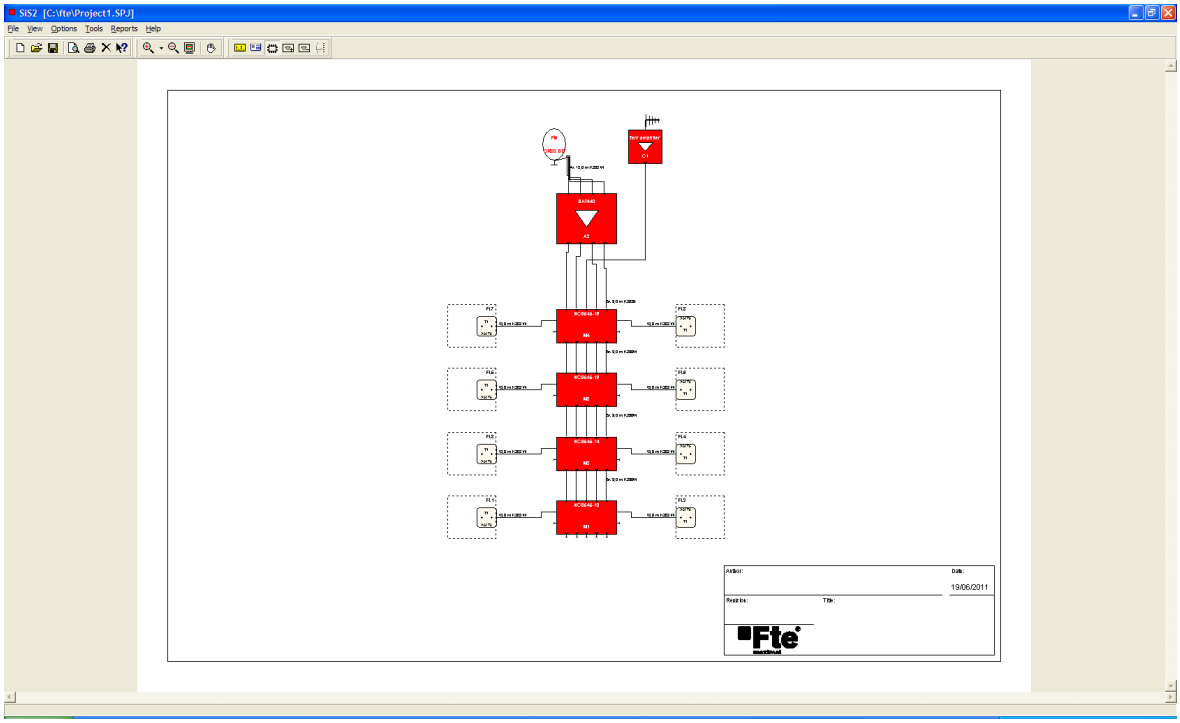

Figure 18: Electric scheme of the installation

List of error levels

In case some outlets of apartments have problems of excess or lack of the signal, it will appear the error levels window. This window shows a list of error outlets indicating their location and the type of error found. Furthermore, it shows information about the worst value found per mistake. To see the window with the List of error levels, you must go to Menu View>List of error levels.

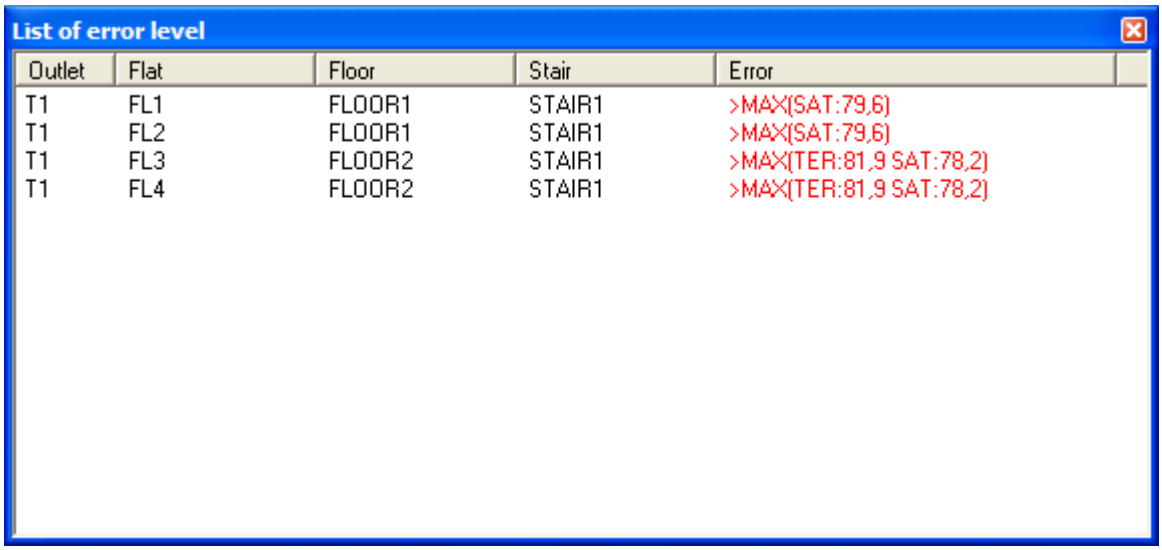

Figure 19: Error levels window

When making a double click on an element of the list, it will be opened the window of outlets level. At the same time, in the scheme the colour of the outlet will change making easier its identification.

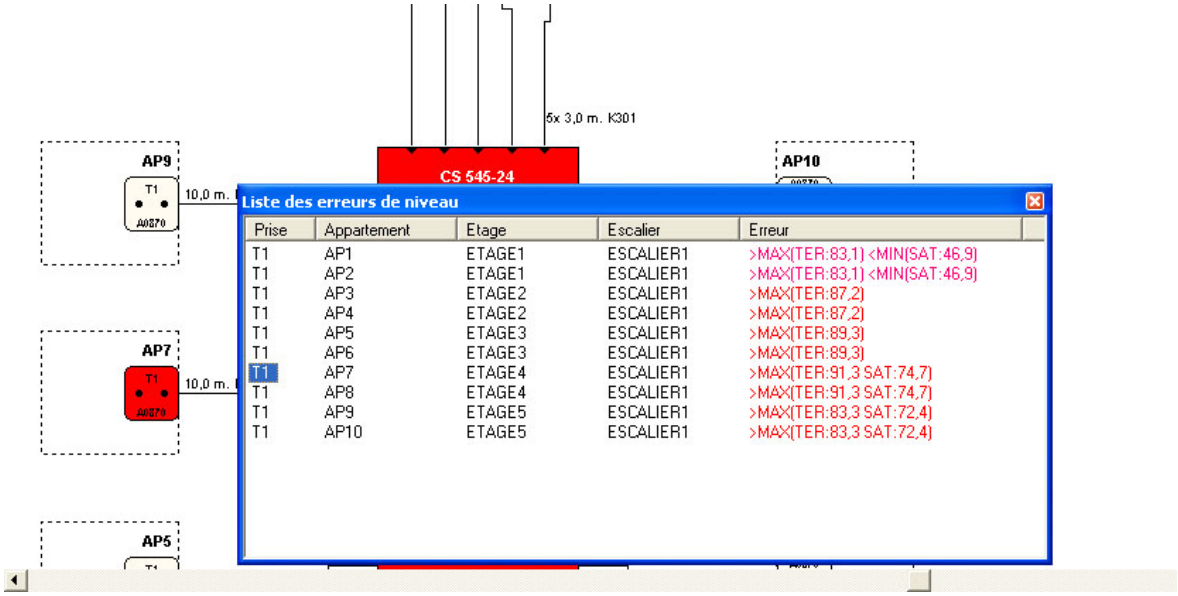

Figure 20: Outlet stressed by error levels window

Note about outlets levels

A level in outlet is wrong if it is out of the margin specified in preferences window. It is not convenient leave signals too adjusted in order to have margin in installation execution.

Error levels window sets up in real time, it means, if it adjusts the potentiometers of an amplifier or it makes any modification with the window opened, you will see how elements appear and disappear from the list, while the

adjustments are being done. If you have a slow computer, it could be that it slows potentiometer adjustments, due to the setting up of the error levels window.

How to change distance between elements

When the initial scheme is generated, taking values of the preferences' distances, it is likely that they do not coincide with real distances in installation. To modify them, first you have to choose the tool "change length", in the Menu Tools>Change length, or press the icon with the picture of a ruler in quick access bar. Secondly, you must choose on the scheme the stretch of cable you want to modify pressing the left button of the mouse. It will appear the window of distance modification.

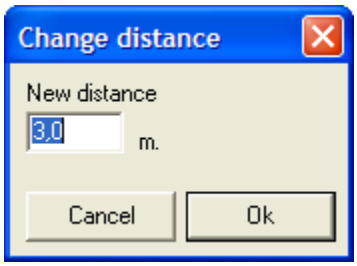

Figure 21: Change distance window

You must write in the box "New length" the new value in metres and press <Accept>.

How to measure levels of the scheme

To measures levels estimated by the programme, you must choose the tool Levels in the Menu Tools>Levels. Then, you must go to the point on the scheme from which you want to obtain the measure. A point of measure is valid if mouse's pointer change its shape as if it was a sight.

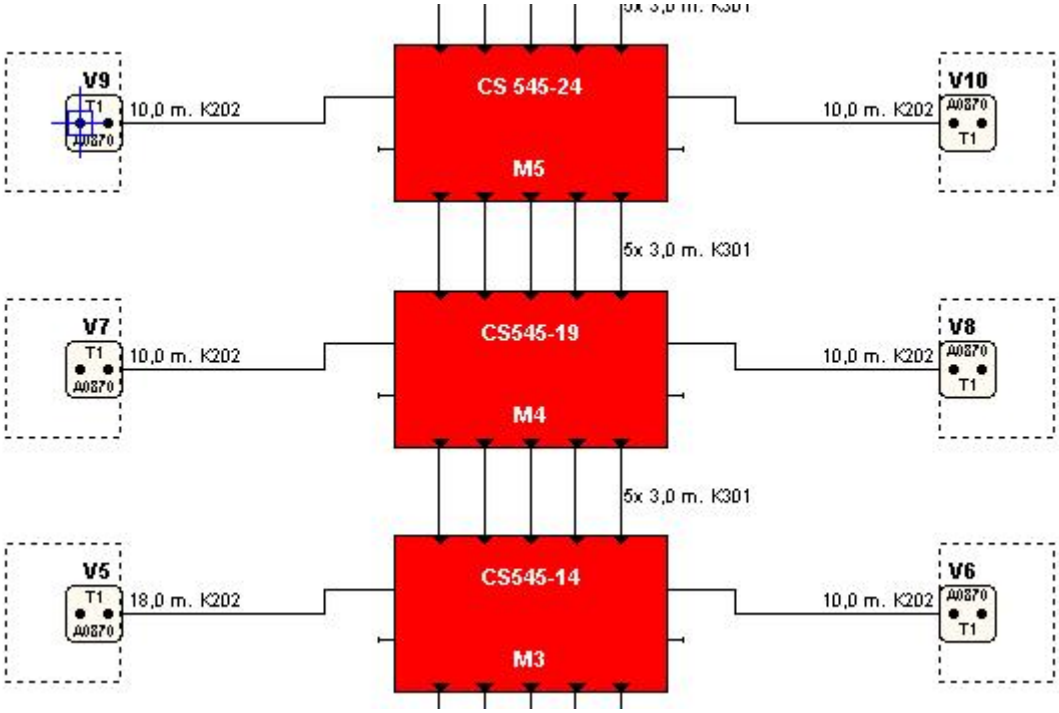

Figure 22: Point of measure

Once the measure point is there, you must press the left button being over the measure point. It will appear the window of measured levels in installation. On it you could see different information simultaneously on its different areas of visualisation.

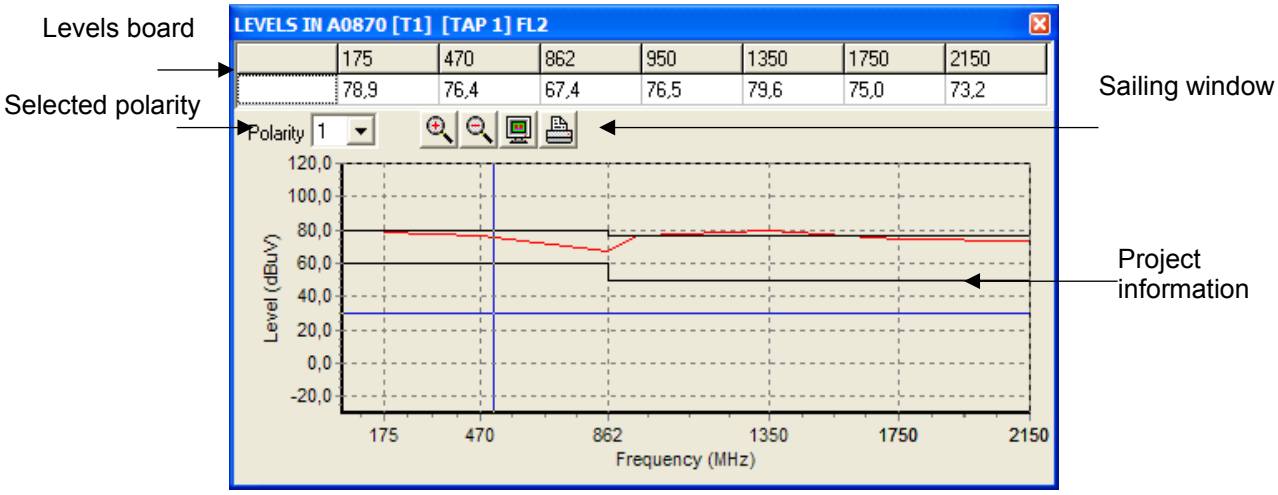

Figure 23: Measured levels in a point of the installation

- **Numeric information board**
  In this board are shown numeric values of measured levels of the polarity selected by the box “Polarity”. The board has two rows. The first one shows the frequency in the estimated points. The second one shows the value of the level in dBµV estimated in that point.

- **Project information window**
  It shows the previously information but in a schematic way. In case that the measure point is of an output outlet, it will show two additional curves with the maximum and minimum levels values in outlets.

- **Sailing window**
  You could use an in, out or all zoom (in the same way that the scheme does it). Additionally, you could print information about the project directly on your printer.

  You could also directly zoom over the window clicking with the left button of the mouse while you move to the right. If you do the same task, but moving to the left you will make a <zoom all>. To move the project content through, click with the right button of the mouse while you make the displacement.

- **Polarity selector**
  You could select the polarity you want to see in the outlet. This control is only active when you are measuring an outlet.

How to edit a component of the scheme

To edit the component of the scheme you must choose the tool Edit component in Menu Tools>Edit components or make a double click on the element. It will appear a family selection window and models where you could do the component change.

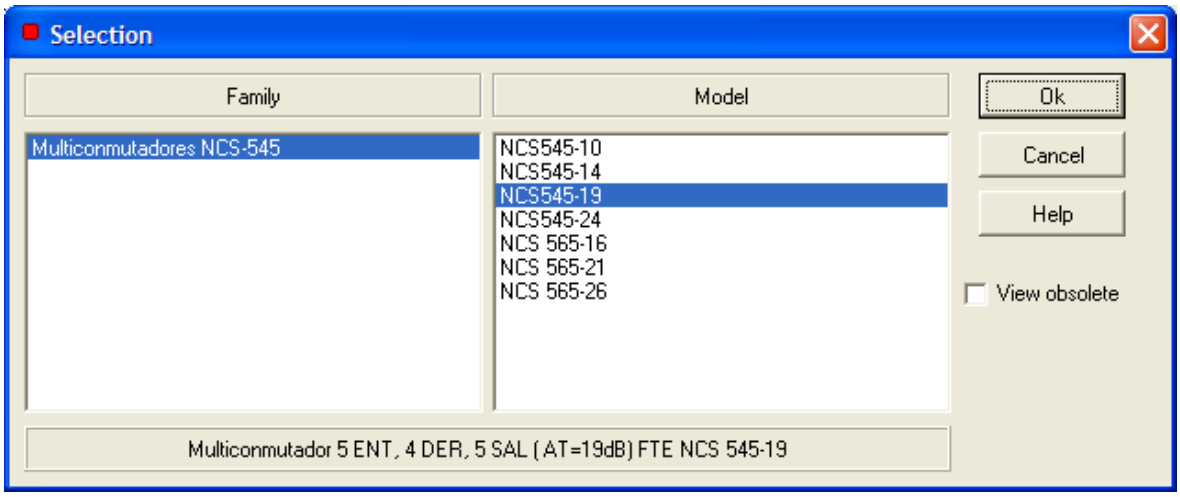

Figure 24: New component selection

Families of valid elements for the component to substitute will appear on the left column. Models of valid components will do so on the right column.

How to modify apartment distribution

To modify distribution or the number of outlets of an apartment, you must choose in the Menu Tools> Edit component. Then, press the left button of the mouse, in a point inside the house area that do not belong to any element. It will appear the window of apartment distribution modification.

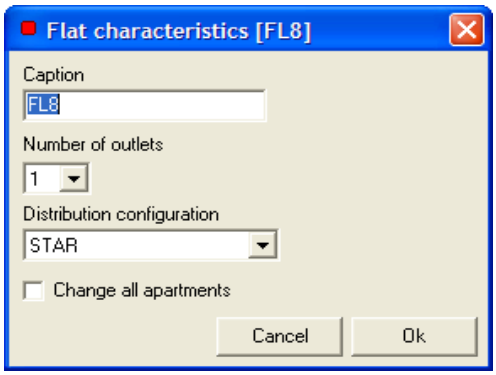

Figure 25: Apartments properties window

On it, you could change the name, the number of outlets and choose the distribution type: cascade or star. The name just can have at last 6 characters. If you want to apply the change to all apartments of the project, you must tick the box “Change all apartments”.

How to add a line amplifier

To add a line amplifier, first you have to select in the Menu Tools>Add amplifier. Secondly, you have to choose the element of the scheme that will be in the output of the new amplifier. To do that, press the left button of the mouse on it. It will appear the model selection window. Once the amplifier model is selected, it will be placed in the scheme.

How to remove a line amplifier

To remove a line amplifier, you must select in the Menu Tools>Remove amplifier. Then, press the left button of the mouse when placed on the line amplifier and it would be deleted.

Note:
You could only add or delete line amplifiers if you have a cascade distribution.

How to regulate components of the installation

In this section it is explained how you can regulate amplifiers, multiswitches and how you can modify input levels of the installation.

Amplifier regulation

To regulate the value of the amplifiers potentiometers you must choose in the Menu Tools>Component regulation and press with the left button of the mouse on the element you want to regulate. It will appear the amplifier regulation window.

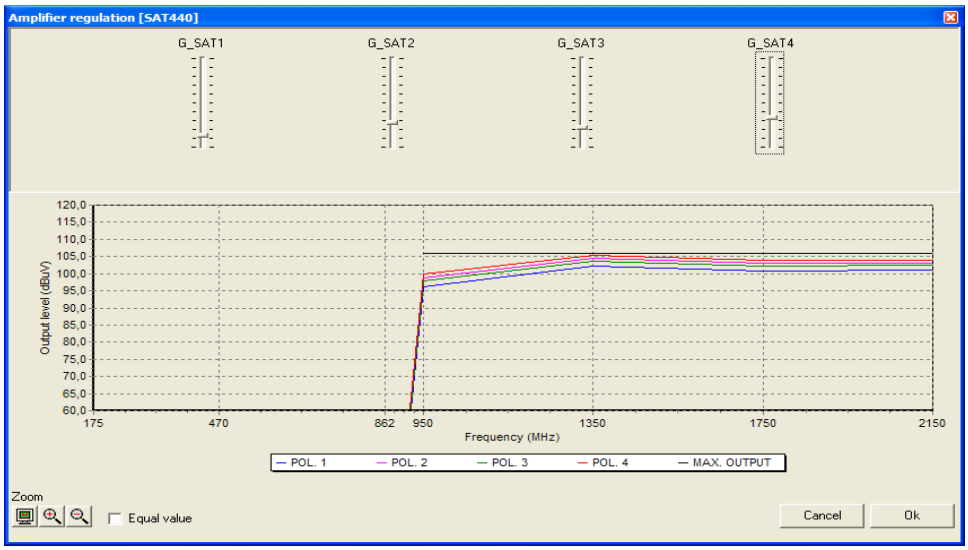

Figure 26: Amplifier regulation window

You could adjust by hand each one of the amplifier potentiometer moving with the mouse each one of the gliders. The graphic at the bottom of the window shows the

level of each amplifiers output. To know the value of the output level, you must move the mouse on the graphic and the state bar of the programme will show the value of frequency in MHz and of the output level in dBµV.

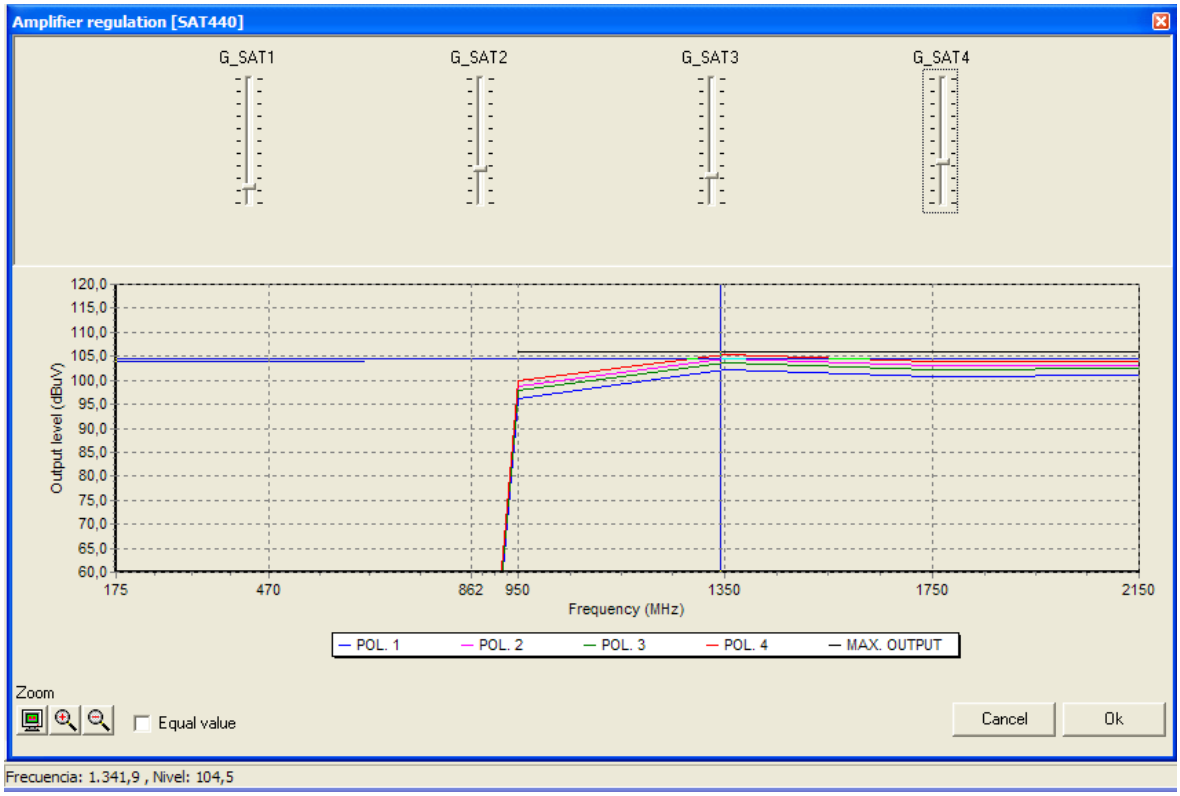

Figure 27: Level measuring in amplifier regulation window

At the bottom it has sailing buttons. You could use in, out and all zoom (in the same way that it does it in the scheme).

You could also directly zoom on the window clicking with the left button of the mouse while you move it to the right. If you do the same action, but moving it towards the left, you are going to do a <all zoom>. To move the graphic content, click with the right button of the mouse while you make the displacement.

Multiswitch regulation

To modify multiswitches potentiometers select in the menu Tools>Component regulation. Place the mouse on the element you want to regulate from the scheme and press the left button of the mouse. It will appear multiswitch regulation window. Its running is identical to the amplifier regulation window.

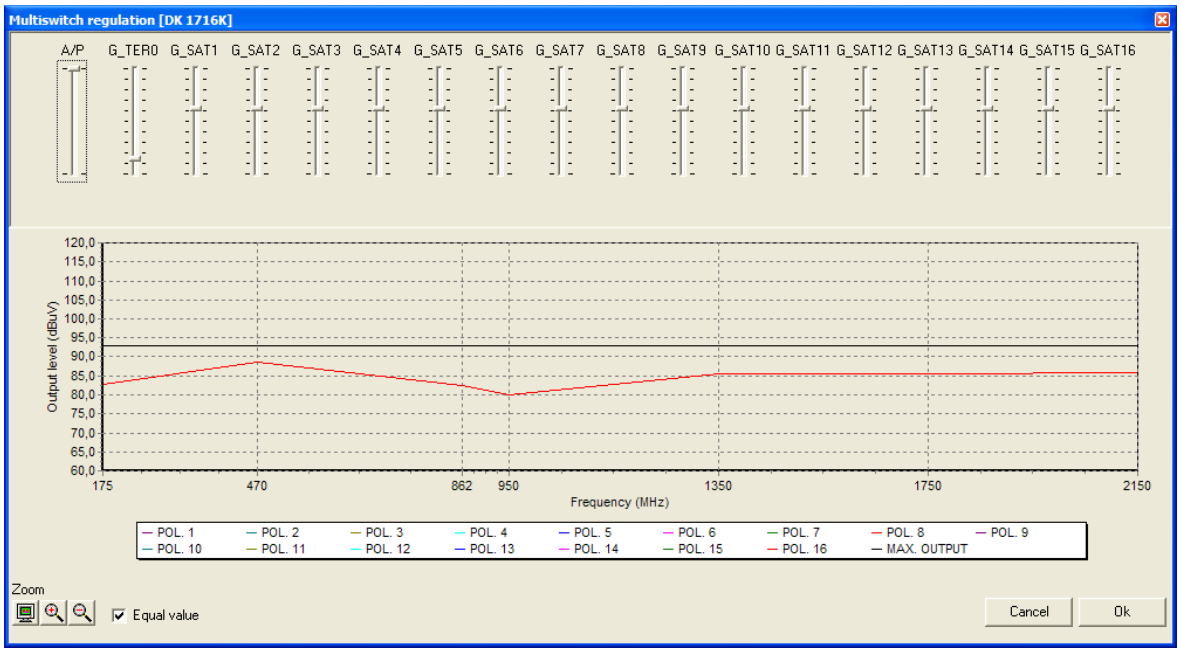

Figure 28: Multiswitch regulation

Note:
If any of multiswitch polarity is not selected in some of its outputs, even moving the mouse, you won't see the project variation. For further information see "Note about polarity selection" in page 21.

Satellite parabolic antenna input level regulation

To change satellite parabolic antenna input level, you must choose in the menu Tools>Component regulation and press the left button of the mouse on the antenna in the scheme. It will appear satellite parabolic antenna input level window.

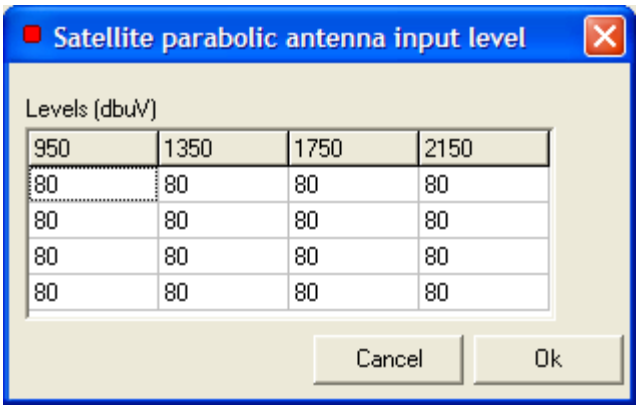

Figure 29: Satellite parabolic antenna input level window

The board has a row of fix elements where are represented the values of level in dbuV. Each row represents one of the polarities. You could modify levels writing their value on each cell of the board.

Terrestrial amplifier output level regulation

To change the terrestrial amplifier output level select in the Menu Tools>Component regulation and press the left button of the mouse on terrestrial signals amplifier of the headend. It will appear the terrestrial amplifier output level regulation window. On it we can change signals level writing their new value in each cell.

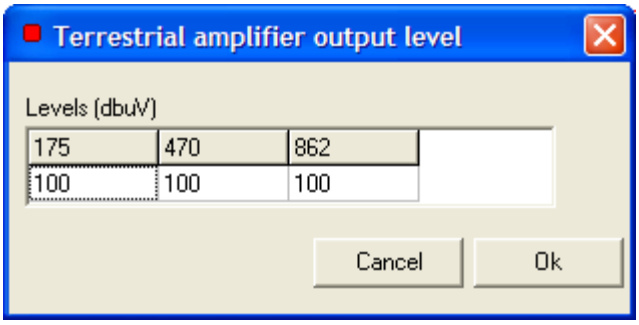

Figure 30: Terrestrial amplifier output level regulation

How to generate documents and prints

SiS programme allows presenting a paper copy of the installation scheme and creates several reports.

Documents generated by SiS are compatible with Microsoft Word 97 or newer versions (*.doc).

Documents generation

To generate a new document of a project you must go to the Menu Reports>create. It will appear the window of new document creation.

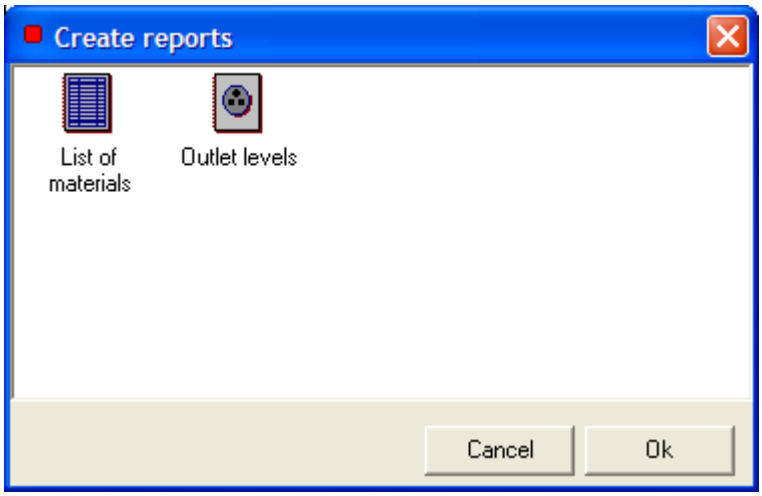

Figure 31: Reports creation window

Select in the list the icon, the document to generate and press <Accept>. It will appear the progress window during the document generation. While the document is being created, user can press <Cancel> button to cancel the document.

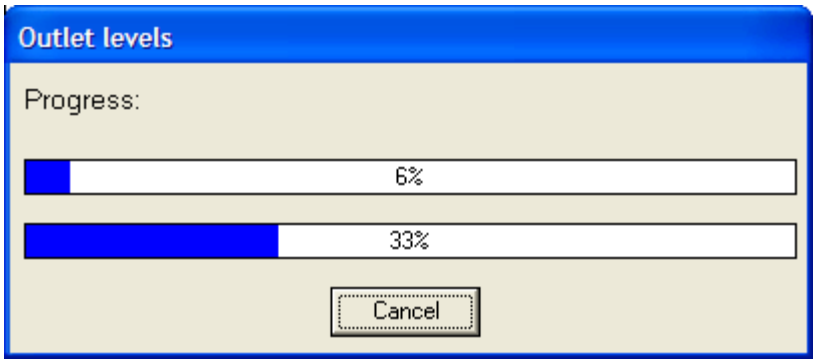

Figure 32: Progress window in document creation

At the end of the document generation, the programme will save it in Project directory and then it will open editor window to show you the new document.

Editor

The programme has a simple internal text editor for the presentation, modification and printing of the documents generated by the programme. The format of the created documents with this editor is compatible with Microsoft WORD97. To open text editor you must go to the menu Reports>open.

Main features of the editor are the following:

- Read and write files in formats of Microsoft WORD97
- Table creation
- Text with format

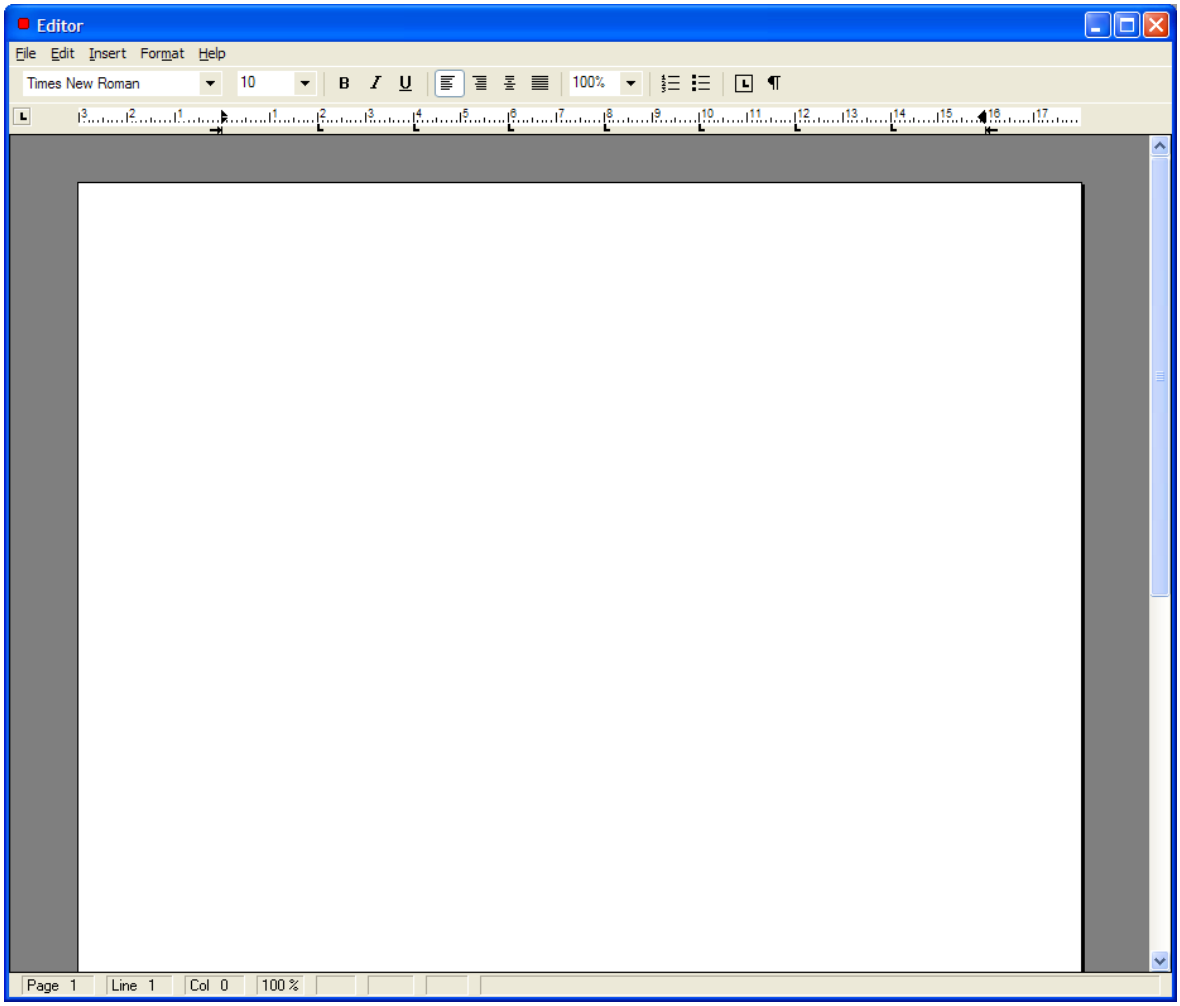

Figure 33: Editor

Page setup

Before doing a paper copy of the scheme, you could set-up the format of the page, its margins and its orientation. To access to this window you must go to the Menu Files>Page setup.

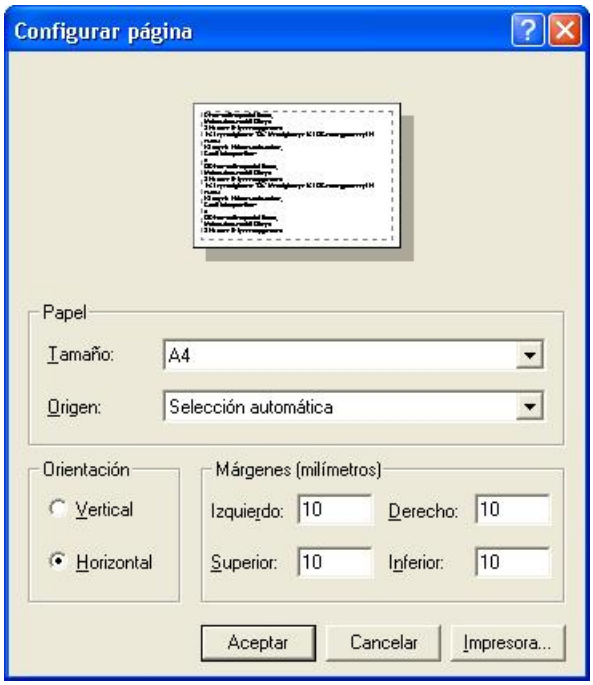

Figure 34: Page setup

Scheme printing

To print the scheme you must go to the Menu Files>Print. It will appear a dialog square where you can choose the printer, its properties and the number of copies you want.

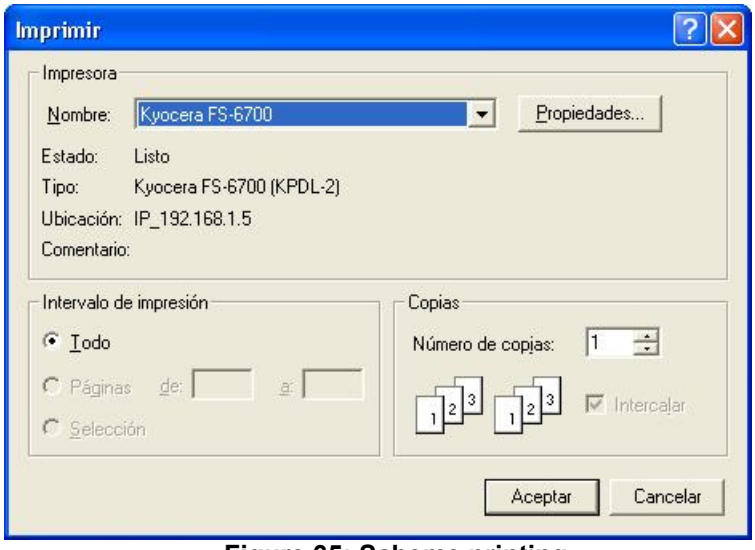

Figure 35: Scheme printing

Once all options have been selected, press <Accept> button to print the paper copy of the scheme.

Save scheme as an image

This program allows you to use the option of saving the image of the scheme in a “BMP” or “JPEG” file. To do that, you must go to File>Save image as. It will appear a dialog box where you can choose the name, the format and the size of the image.

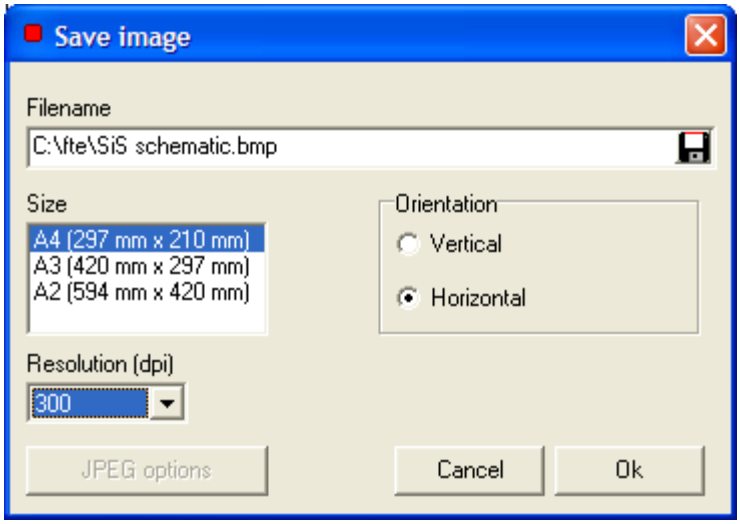

Figure 36: Image options selection window

- **File name**
  In this box you must write the name and the format of the image. Press the right button of the mouse and it will appear the dialog box to choose the name and the type of the image. You could only save image in “BMP” or “JPEG” format.

  Note:
  If you save it in “JPEG” format “JPEG options” button will get active. Otherwise, this option will remain inactive.

- **Size**
  In this box you must choose the size that the image is going to have. You could only choose between the three sizes of the list.

- **Orientation**
  This box should indicate which is going to be the orientation of the image. You could choose between vertical and horizontal.

- **Resolution**
  In this box you could define image resolution in points per inch. Available options are 150 and 300 points per inch.
- **Jpeg options**

If you save image in jpeg format, you could define with this option image's compression factor. If you press this button, it will appear the following window.

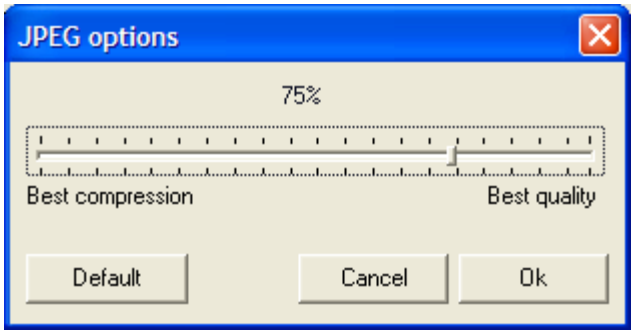

Figure 37: Options window of jpeg images

If you move mouse to the right of the image it will reach a higher quality but it will also the size of the file will be enlarged. If you move it to the left, you will obtain a larger compression and a smaller file. By default button will place the mouse in the by default position of the program. By default value is a 75%.

Once the image and its format is selected, you must press accept to create the image.

Note:
The process of image saving may last depending on the size, the resolution, the format and the speed of the computer.