RS232

What is RS232 ?

RS232 is a software to transfer programs to and from numerical controlled machine tools.

The machine tools program are mainly text files. This software read these files and send them through the RS232 link from the computer to the machine tool.

Reverse operation is also possible.

It allow:

- displayed language selection
- serial link parameter setup
- coding selection
- start and end transmission code setup
- number of null character setup before and after transmission (paper tape puncher)
- number of removed lines setup before transmission (removing of files heading)
- finding of start and end transmission codes
- saving different configuration corresponding to the different machine tools connected to the computer
- preferences saving (current directory, current machine)

Files list

The received package must contain :

- rs232.exe   (the software)
- rs232.crs   (different configurations)
- rs232.prs   (preferences)
- *.lrs   (message file)
- *.hlp   (help file)
- *.cnt   (contents help file)
- gpl.txt   (english license)
- gpl-fr.txt   (french license)

Contacts

For all remark, questions, suggests, you can mail me at : jack.r@free.fr

To look at my other productions, visit : http://jack.r.free.fr my web site !

Legal stuff

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Before starting

Conventions

<u>Bold text</u> :

This is a menu which must be selected, a button which must be clicked or a key which must be pressed.

Example: **File**, **E**x**it** will tel that you have to select the File menu then Exit.

<u>Underlined letters</u> :

These are short key which can be used by pressing Alt key at the same time.

Example: **Help** means that if you press Alt and H at the same time, help will be displayed. It can also be written as Alt+H.

<u>Italic text</u> :

This is something that you have to type on the keyboard and have only an example character.

Example: *Demonstration* means that you have to type demonstration or any other text.

Required material

You only need :

- a PC compatible computer equipped with Windows 95, 98 (2000, NT).
- one RS232 serial port.
- one link cable to the machine tool with which you want to dialog.

Look at http://jack.r.free.fr for more information's about RS232.

My test configurations are as follow :

- Pentium 166, Windows 95 OSR2, 64Mo of ram, graphic card Mystique 4Mo, 17" display setup to 1024*768, 65 536 colors, small or large characters.
- Portable IBM, Pentium II 233, Windows 98, 32Mo of ram, display setup to 800*600, 65 536 colors

Main screen

Menus
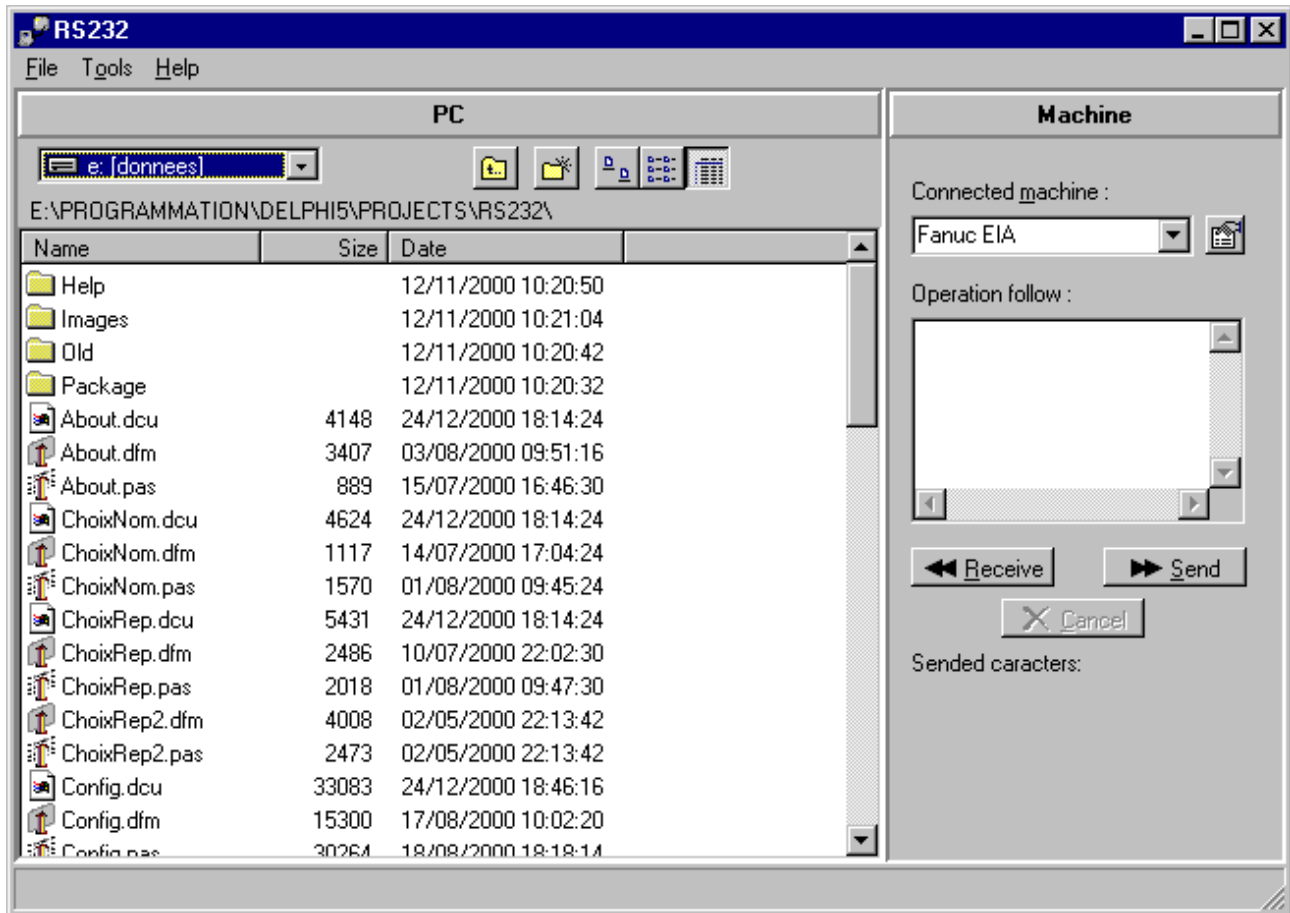
<u>F</u>ile:

> **E<u>x</u>it Alt+X:** enable to close the software. The cross in the upper right window corner do the same.

T<u>o</u>ols:

> **Configuration ...:** access to different dialog which able to setup, create, copy or delete some configuration corresponding to the different setting.

> **Language** enable to select the displayed language between those proposed.

> The default language is french for the following reasons:

> - it is my birth language.

> - french text are quite long, so when translating to other languages the text length should not be a problem
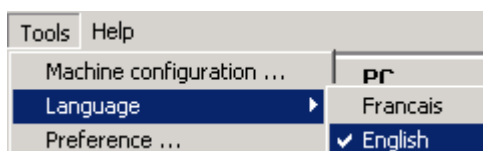
English   : English language selection

Français   : French language selection

<u>P</u>reference ...:

Save : save the present screen status (current directory, kind of file display small icon, list or details, current configuration ...)
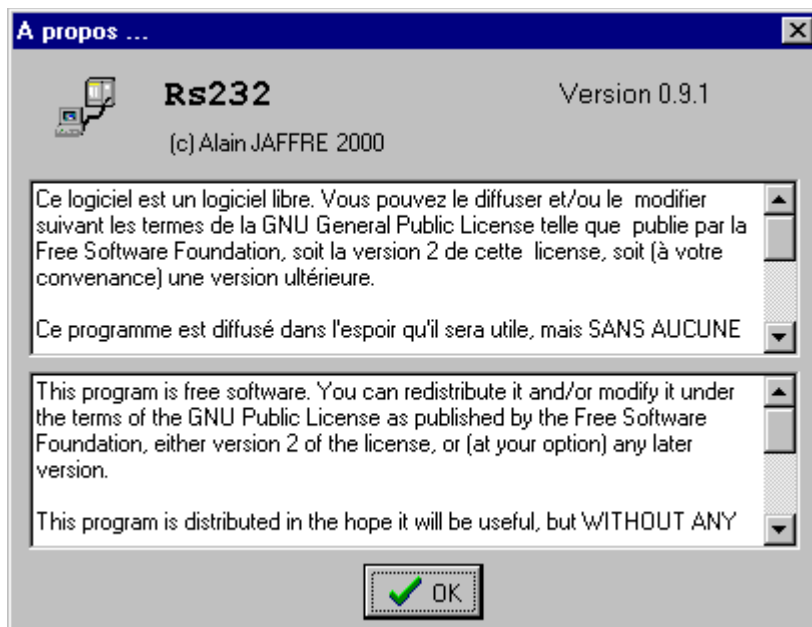
Log: enable to save in a file all event which have occur during transmission in order to help solving troubles.
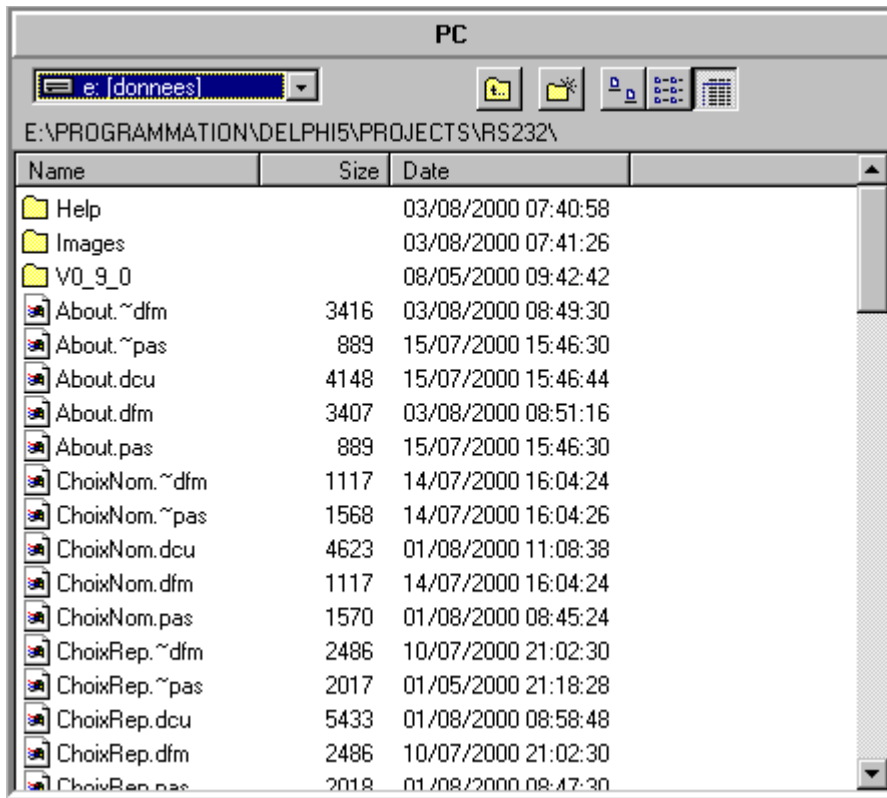
<u>H</u>elp

<u>C</u>ontents   : display that help.

<u>S</u>earch for   : enable to find in this help file.

<u>A</u>bout ...   : display a dialog showing software name, version, author's copyright, short license in french and English.

'PC' area

Top to bottom and left to right :

- current drive selection list box.

- move to upper directory icon.

- directory creation icon.

- icon to display files like small icons.

- icon to display files in a list.

- icon to display files details.

Below, we have the full current directory name.

More down, the current directory files and directories list.

In details display, a top column click will change the order kind.

A right click in that area will display a popup menu enabling to refresh the displayed list. Pressing F5 key will do the same.

A double click on directory icon will move in that directory.

Two spaced click on a filename or directory name enable to rename them.

File selection is done by a single click on the filename.

To select following files, click on the first one, press the **SHIFT** key while clicking on the last one.

To select separated files, click on the first one, press the **CTRL** key while clicking one by one all the other files.
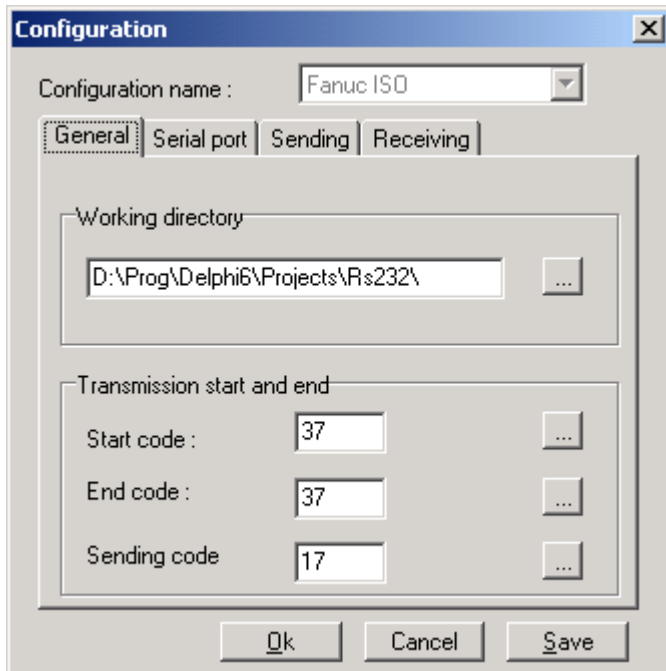
'Machine' area
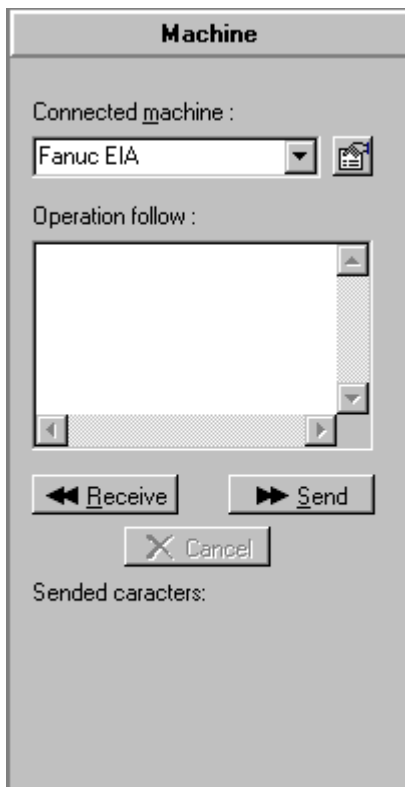
Top to bottom and left to right :

-          existing configuration selection list box.
-     enable to show/modify the current configuration.
-         operation list.
-     button to receive file from the machine.
-     button to send the selected file(s) to the machine.
-     button to cancel transmission.
-         transmitted character number display.

Configuration screens

General

Top to bottom and left to right :

- Working directory:
  Working directory selection. This one is displayed in the PC area when selecting
  configuration. ... button enable to select a directory.

- Transmission start and end :

  ○ start code: selection of the character which will define start part of the file which
    must be send or received. ... button enable to select in an ascii table the desired
    character. It is the decimal value of that character which is displayed and will be used.

  ○ end code: selection of the character which will define end part of the file which
    must be send or received. ... button enable to select in an ascii table the desired
    character. It is the decimal value of that character which is displayed and will be used.

  ○ sending code: selection of the character which will define request for tramsission. ...
    button enable to select in an ascii table the desired character. It is the decimal value of
    that character which is displayed and will be used.

- **Ok**   : confirm change done.
- **Cancel**   : ignore change done.
- **Save**   : save configuration.
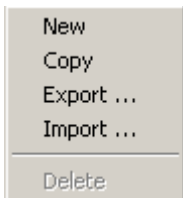
If you came through Tools, Configuration, a right click display a popup menu allowing :
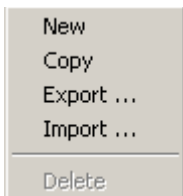
- **New** : new configuration creation with default values.

- **Copy** : new configuration creation with the present configuration values.

- **Export** : export configuration into a separate file (*.xrs) to allow configuration parameter exchange between users..

- **Import** : import a configuration from a separate file (*.xrs)..

- **Delete** : deletion of present configuration except if it is the current one.

Serial port
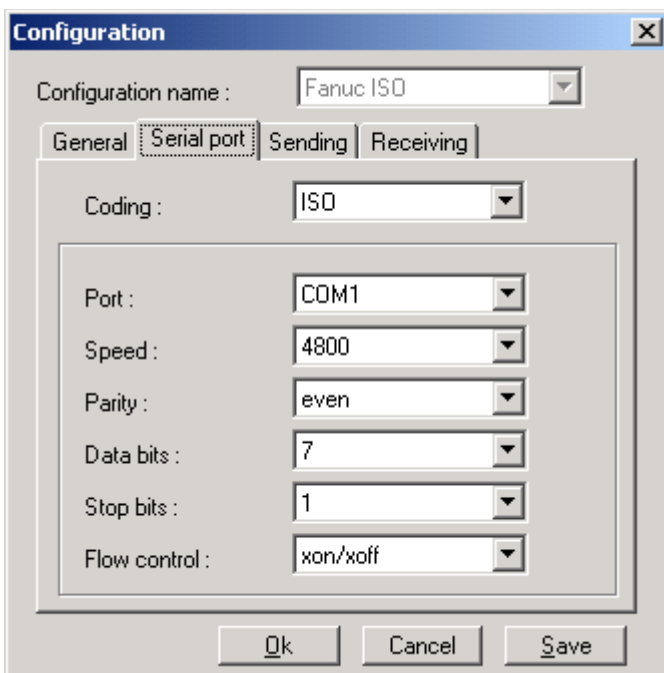
- Coding : selection of character coding for transmission (none, EIA, ISO). ISO coding change automatically to even parity, 7 data bits.

- Port : serial port selection. Only the existing one are displayed in the list box..

- Speed : transmission speed selection (110, 300, 600, 1200, 2400, 4800, 9600, 14400, 19200, 38400, 56000, 57600, 115200, 128000, 256000).

- Parity : parity selection (none, even, odd).

- Data bits : data bits number selection (5, 6, 7, 8).

- Stop bits : stop bit length selection (1, 1.5, 2 times a data bit length).

- Flow control   : flow control selection (none, hardware or CTS/RTS, software or XON/XOFF)

- **O̲k** : confirm change done.
- **Cancel** : ignore change done.
- **S̲ave** : save configuration.

New
Copy
Export ...
Import ...
Delete

If you came through Tools, Configuration, a right click display a popup menu allowing :

- **New** : new configuration creation with default values.
- **Copy** : new configuration creation with the present configuration values.
- **Export** : export configuration into a separate file (*.xrs) to allow configuration parameter exchange between users..
- **Import** : import a configuration from a separate file (*.xrs)..
- **Delete** : deletion of present configuration except if it is the current one.

Sending
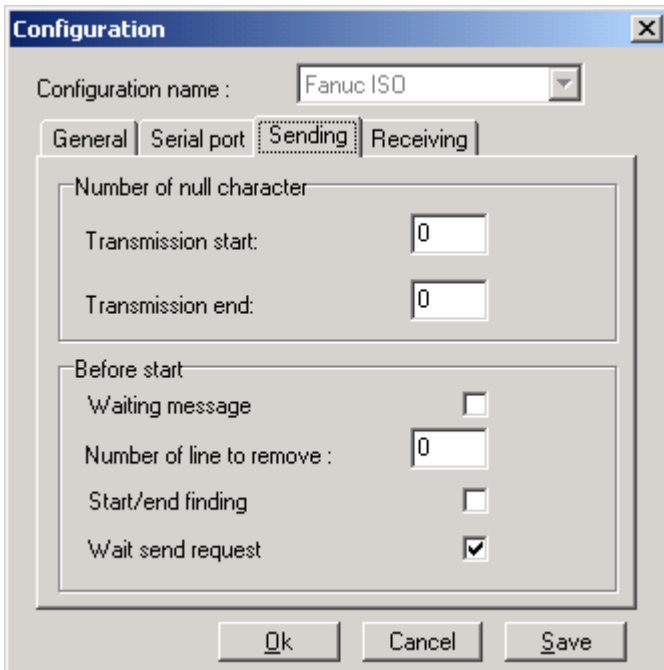
Top to bottom and left to right :

- Number of null character:
  These null character make an empty paper tape for the paper tape reader (paper tape are used in old numerical controlled system).

  - transmission start   : setting of null character number to be send before transmitting (0 ~ ...)

  - transmission end   : setting of null character number to be send after transmitting (0 ~ ...)

- - Before start:

  - waiting message   : display a message box asking to prepare the machine to receive before sending. Transmission will start when this dialog will be closed.

  - number of line to remove   : define how many lines has to be removed before starting sending. Usefull to remove files heading.

  - start/end finding   : define if we have to look for start and end transmission codes setup in the general tab.

  - wait send request   : define if we have to wait for character specified in general tab to start transmitting.

- **Ok**   : confirm change done.

- **Cancel**   : ignore change done.

- **Save**   : save configuration.

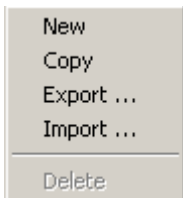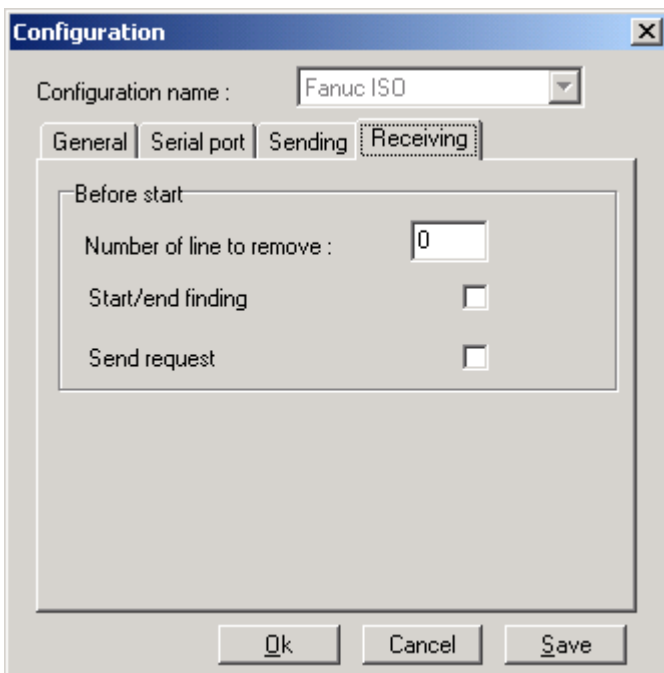If you came through Tools, Configuration, a right click display a popup menu allowing :

- **New** : new configuration creation with default values.
- **Copy** : new configuration creation with the present configuration values.
- **Export** : export configuration into a separate file (*.xrs) to allow configuration parameter exchange between users..
- **Import** : import a configuration from a separate file (*.xrs)..
- **Delete** : deletion of present configuration except if it is the current one.

Receiving

Top to bottom and left to right :

- Before start:
  - number of line to remove : define how many lines has to be removed before starting receiving.
  - start/end finding : define if we have to look for start and end transmission codes setup in the general tab.
  - send request : define if we have to send character specified in general tab to request start of transmission.

- **Ok**   : confirm change done.
- **Cancel**   : ignore change done.
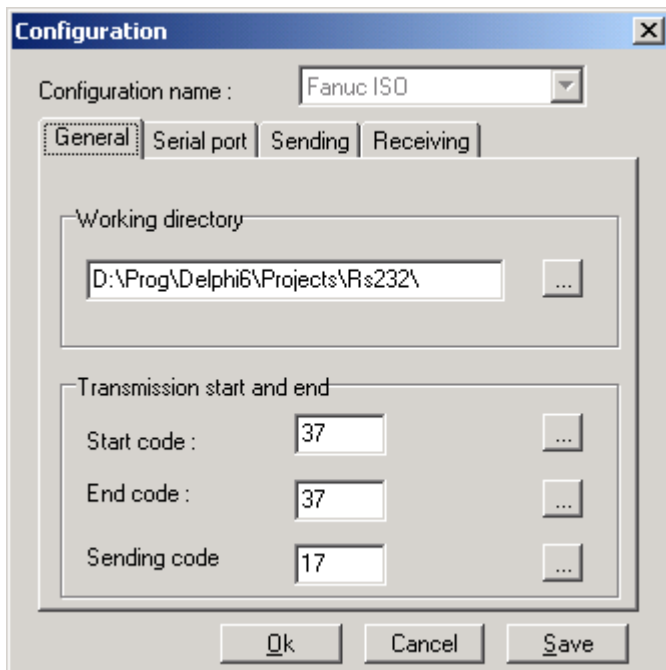- **Save**   : save configuration.
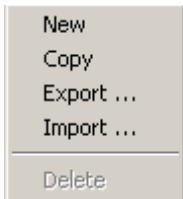
If you came through Tools, Configuration, a right click display a popup menu allowing :

- **New**   : new configuration creation with default values.
- **Copy**   : new configuration creation with the present configuration values.
- **Export**   : export configuration into a separate file (*.xrs) to allow configuration parameter exchange between users..
- **Import**   : import a configuration from a separate file (*.xrs)..
- **Delete**   : deletion of present configuration except if it is the current one.

Step by step procedures

Configuration management

Tools, **Configuration**, right click
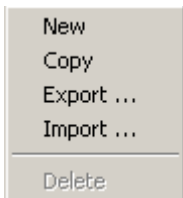
New

Will allow to create a new configuration.

Enter a name, **Ok**.

Check all tabs (**General, Serial port, Sending, Receiving**) and do the necessary setup.

Click on the **Save** button then **Ok**.

A new configuration has been created.

Copy

Will copy current configuration under a new name.

Enter a name, **Ok**.

Check all tabs (**General, Serial port, Sending, Receiving**) and do the necessary setup.

Click on the Save button then **Ok**.

A new configuration has been created.

Export

Will allow to export current configuration in an external file.

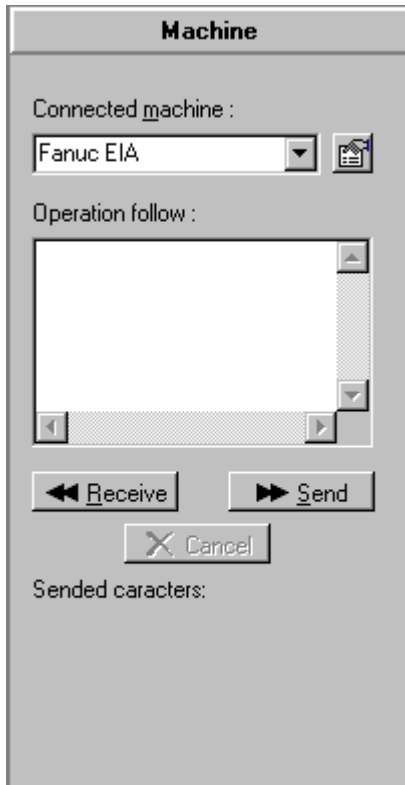Enter a filename, **Ok**. Current configuration has been exported.

Import

Will allow to import a configuration from an external file.

Select configuration file to import, **Ok**.

External configuration has been imported and is displayed.

Configuration selection
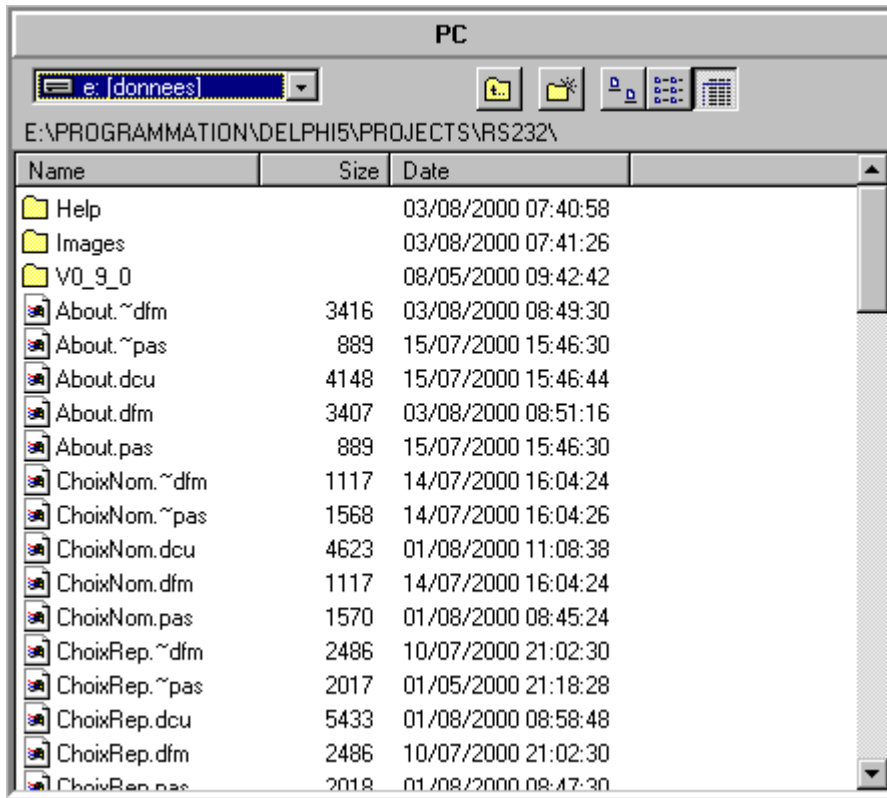

In ['Machine' area](#), open the connected machine list box by clicking on the down triangle.

Select the wanted configuration.

This new configuration is immediately take in count.

Sending

Files selection
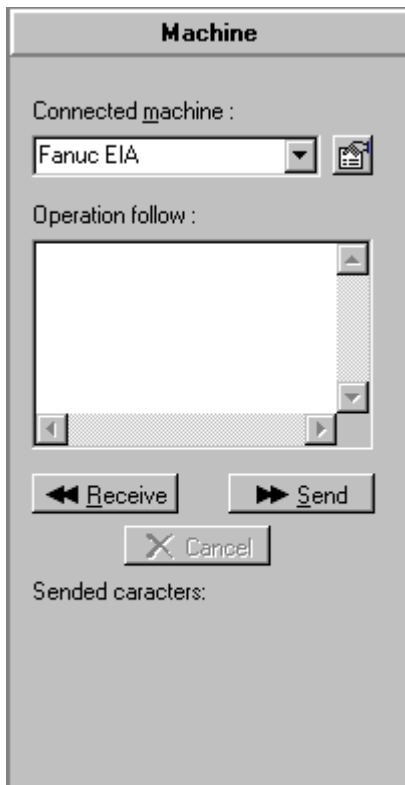

In the 'PC' area file list, do the following :

- one file: click on the desired file.

- many following files: click on the first file, press **SHIFT** key while clicking the last file.

- many separated files: click on the first file, press **CTRL** key while clicking one by one all the other files.

Files sending

Click on ▶▶ Send button. The selected files are send without stop one after the other.

End of sending
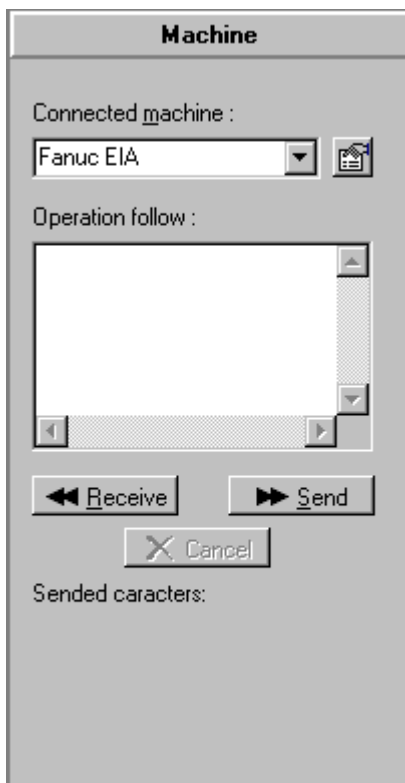
Click on ✕ **Cancel** button to stop transmitting or wait that it have been finished.

Receiving

Save directory selection
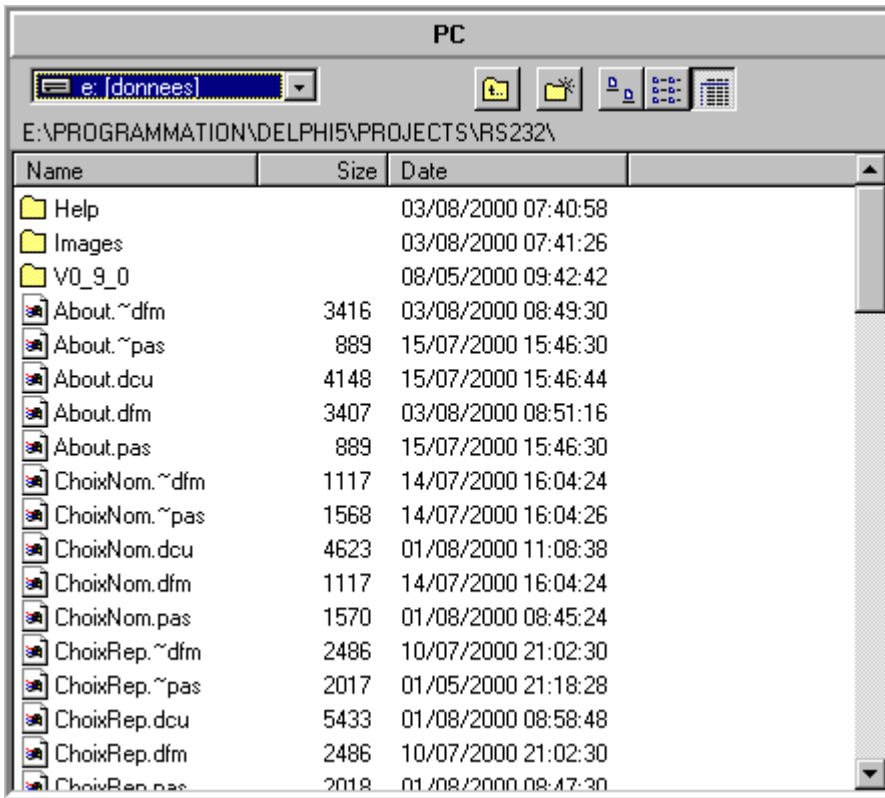
With all the 'PC' area tools, move to the directory where you want to store what we will receive.

Another way is given by the dialog box open after clicking on ◀◀ **Receive**.(Files receiving)

Files receiving

Click on ◀◀ **Receive**.

In the dialog box, move to the desired directory and give a file name.

The received character are stored in that file until we don't do [End of receiving](#).

End of receiving

Click on ✕ **Cancel** button to stop receiving.

Wait that the send character number stop changing before clicking on ✕ **Cancel** button if you want to have the complete file.

Translation

Principles

All the software messages are stored in *.lng files.

Example: français.lng

Help files have the same name, only the ending change to HLP (help) or CNT (contents).

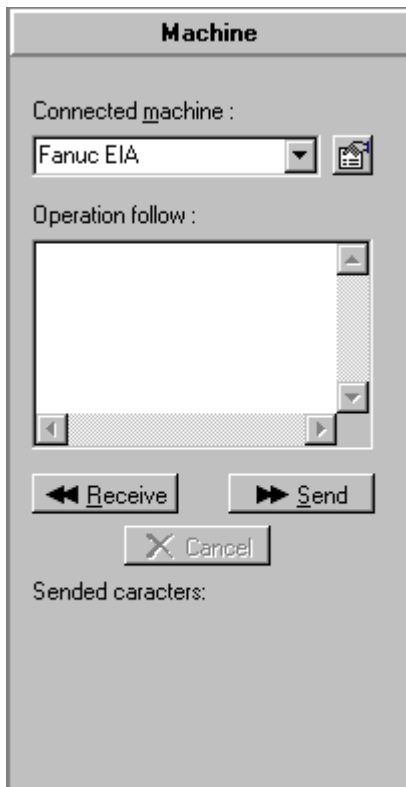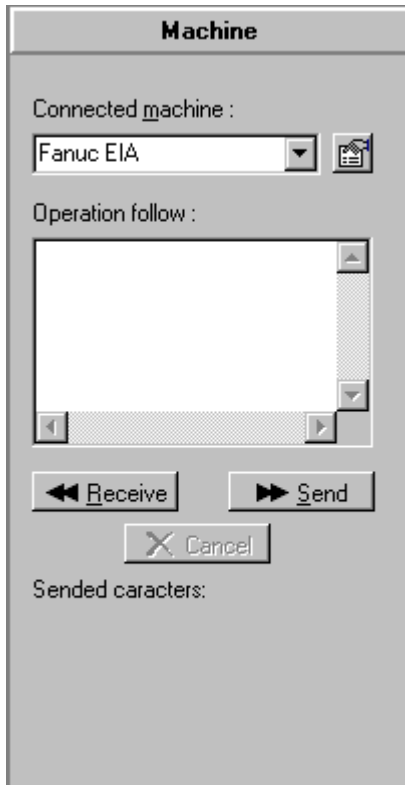It is these filename which will be displayed in the Tools, Language menu.

They must be the language name in that same language.

I explain:

Imagine, you start the software but it is displayed in old Greek. You don't know any things about old Greek!

If, in the menu, the languages are written in old Greek, impossible to change the language except by trying one by one all of the possibilities.

If the languages are written in there own language (Français, English, Deutch, Italiano ....), no

problem, you can select one of the language you know.

Steps

A> Message files xxxxxxxx.lng:

1. Copy the lng file which will be the base for your translation and rename it with its new language name (see Principles).

2. Translate all texts after #.
   Lines starting by { are comments.
   Do not modify lines before #.
   The & preceding a letter is the short cut obtain with Alt.

3. Translate the file heading. Below, the heading of Français.lrs.
```
{------------------------------------------------------------------------------}
{ Fichier de langue de RS232 V1.0                                              }
{ Français                                                                     }
{                                                                              }
{ Créé le 16 août 2000 par A.JAFFRE                                            }
{                                                                              }
{ Pour créer d'autres langues, copier ce fichier en le renommant du nom de la}
{ langue mais en gardant l extension LRS                                       }
{ Exemple: pour l'anglais le fichier s'appellera English.LRS                   }
{                                                                              }
{ Les lignes commençant par { sont des commentaires.                          }
{ Ne pas modifier les lignes avant le #.                                       }
{ Traduire tout ce qui se trouve après #.                                      }
{ Le & précède la lettre de raccourci clavier que l'on obtiendra avec Alt     }
{------------------------------------------------------------------------------}
```

   Don't forget to change the creation date and author's name.
   In case of existing file modification (typing mistake, bad words, ...), add one or more lines with the same structure specifying modification date, author and changes done.

4. Send me by email (jack.r@free.fr) these new or modified files to let me included them in the distributed files.

B> Help files xxxxxxxx.HLP:

You have to create it again with the same structure.

To make this one, I have use the wonderfull freeware Oasis SE from Stephan February.

You can find it at : http://www.interfeb.com/

Don't forget to put the different screenshots in the right language.

For the different icons, ask by email (jack.r@free.fr).