

Installation and user's manual

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1. DOCUMENT'S AIM AND BIBLIOGRAPHY

1.1. Document's aim

The aim of this document is to give all the information required to use the DLC programme. The DLC programme enables configuration of data loggers among the range of EXXOTEST multiplexing products.

Available functions :

- Activation and configuration of CAN HS or LS channels, Diagnostic On CAN, LIN, ISO9141 available in the data logger.
- Sending Diagnostic On CAN diagnosis requests.
- Activation and configuration of frame filters.
- Activation and configuration of digital or analog inputs
- Configuration of log files activation modes
- Saving / Re-opening configurations
- Recovering data logger configuration
- Recovering saved data

1.2. Bibliography

ISO 11898	Road vehicles – Interchange of digital information– Controller Area Network (CAN) for high-speed communication
ISO 11519-2	Road vehicles – Low-speed serial data communication – Part 2: low speed controller area network (CAN)
LIN V1.3 and 2.1	LIN specifications
ISO 9141	Road vehicles – Diagnosis systems – Features of digital information exchange
ISO 9141-2	Road vehicles – Diagnosis systems – CARB features of digital information exchange
ISO 14230-1	Road vehicles – Diagnosis systems – KeyWord2000 protocol – Part 1: Physical layer
ISO 14230-2	Road vehicles – Diagnosis systems – KeyWord2000 protocol – Part 2: Data link layer
ISO 14230-3	Road vehicles – Diagnosis systems – KeyWord2000 protocol – Part 3: Application layer
ISO 15765-1	Road vehicles – diagnostics on CAN – Part 1: General information
ISO 15765-2	Road vehicles – diagnostics on CAN – Part 2: Network layer services
ISO 15765-3	Road vehicles – diagnostics on CAN – Part 2: Application layer
ISO 15765-4	Road vehicles – diagnostics on CAN – Part 4: Requirements for emission related systems
USB	Universal Serial Bus Specification, Version 1.1, Copyright © 1998 Universal Serial Bus Specification, Revision 2.0, Copyright © 2000

2. INSTALLATION PROCEDURE

2.1. Minimum configuration requirements

Operating system

- Windows 98
- Windows NT
- Windows 2000/Me/XP

Minimum hardware configuration recommended :

- PC type computer, equipped with Pentium microprocessor (PIII 600 MHz or higher recommended) with CD ROM drive.

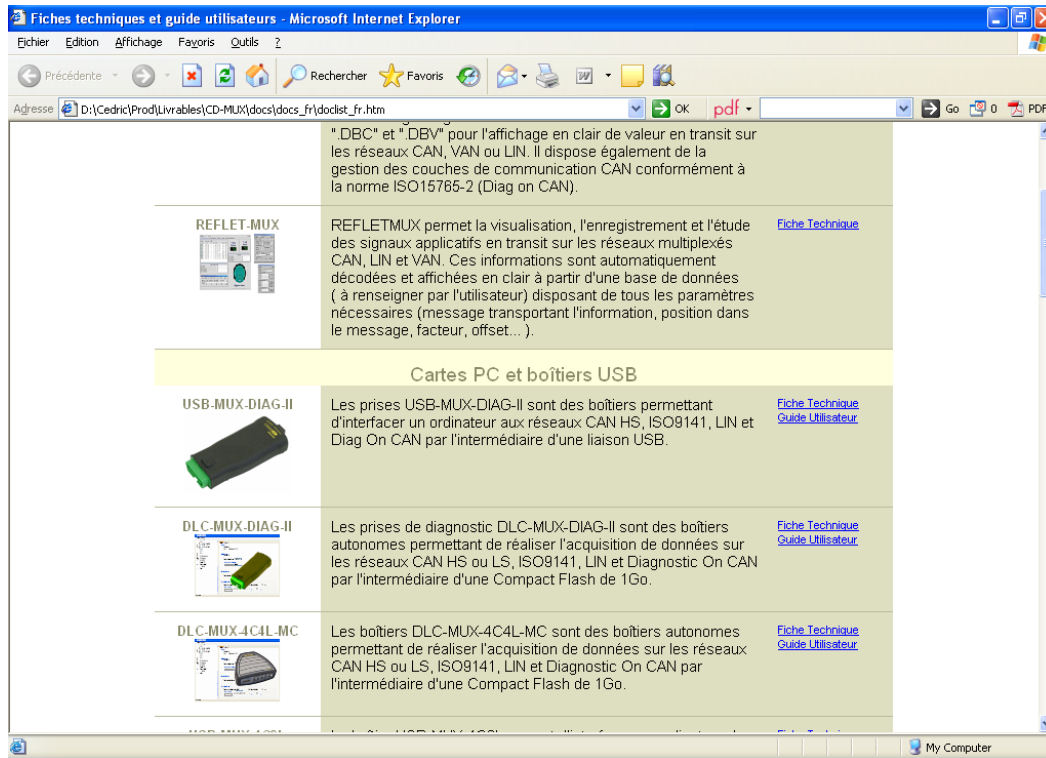
2.2. Hardware installation

Refer to the user manual corresponding to your hardware (xxx-MuxdiagII). In order to do this, insert installation CD that comes with data logger into computer's CD drive. A few seconds later, the application appears :



Click on the « **Documentation** » tab, then on « **Document list** ».

Select user guide corresponding to your hardware.



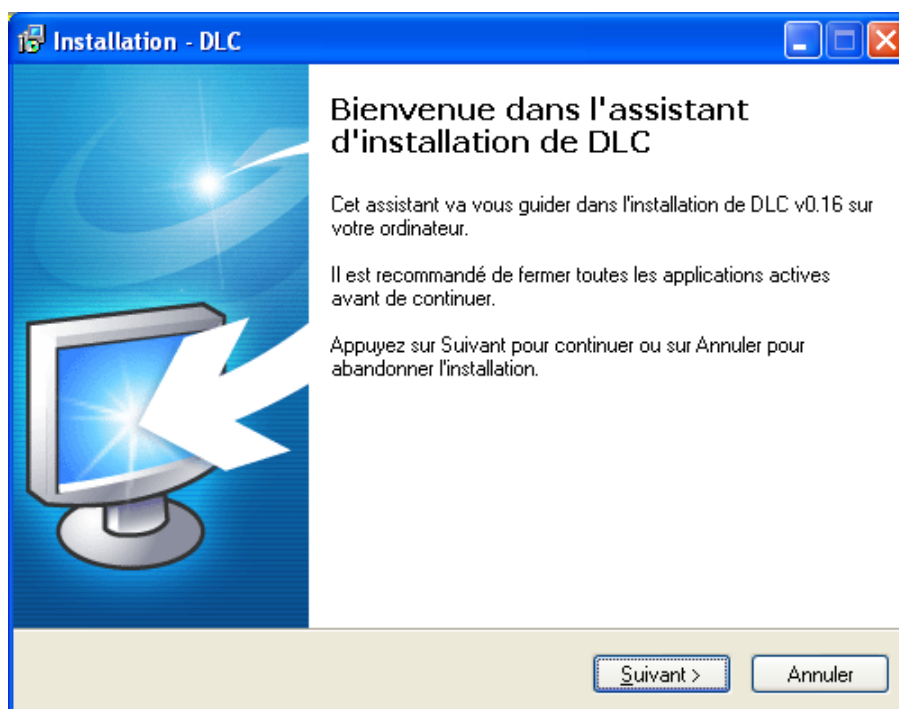
2.3. Software installation

Stage 0 : Insert installation CD that comes with data logger into computer's CD rom drive. A few seconds later, the following application appears :



Click on the « **Installations** » tab, then on « **DLC vx.xx** ».

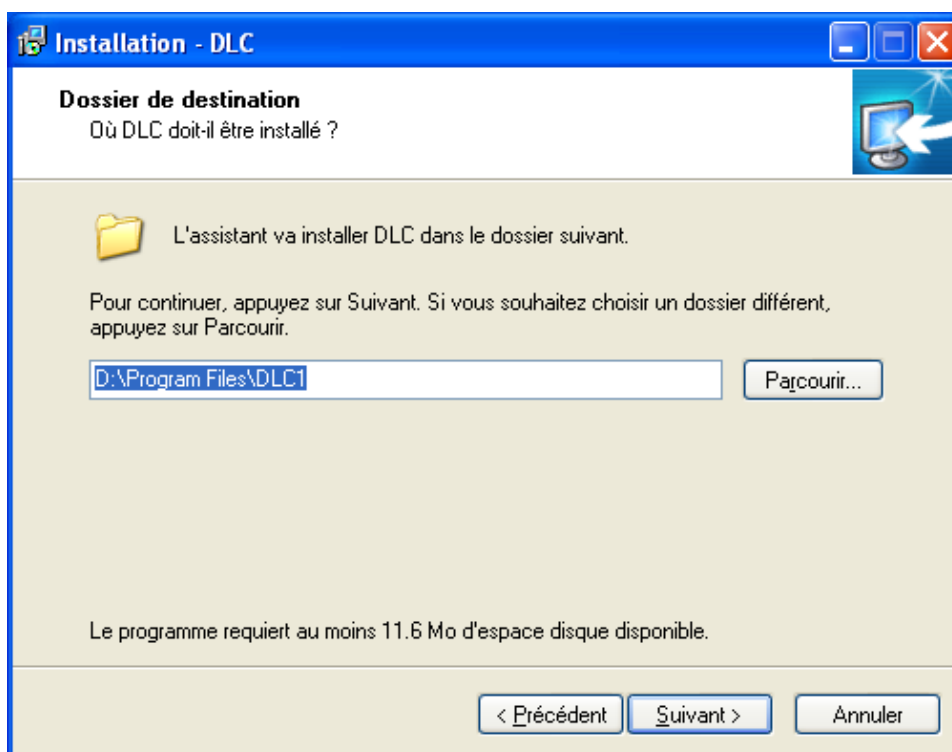
Stage 1 : Launching application for DLC software installation :



Click on « **Next** »

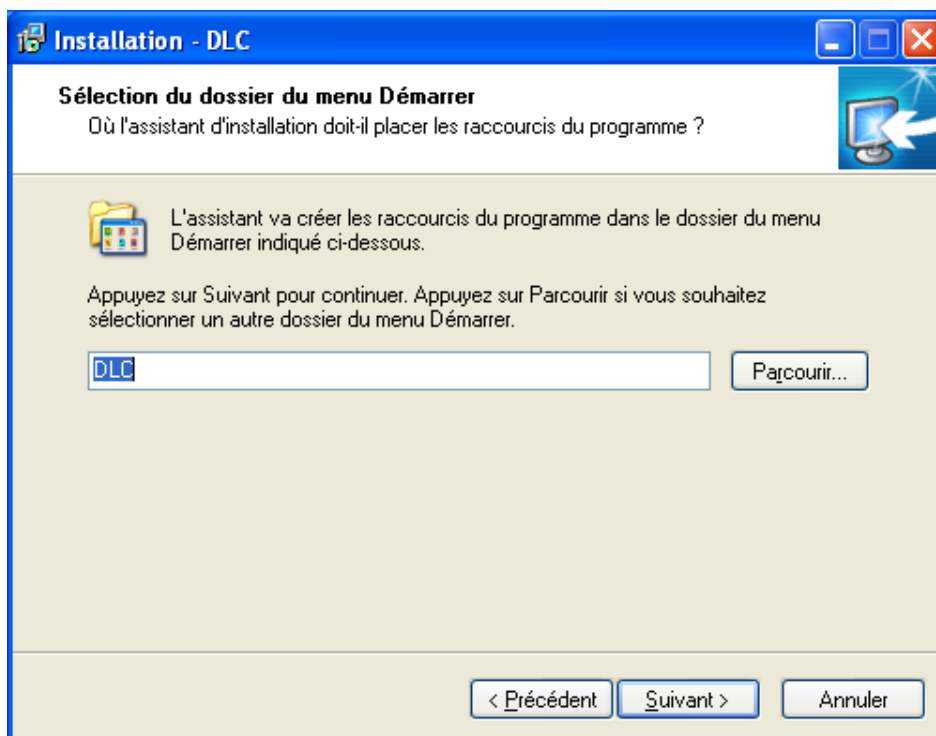
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Etape 2 : Choose destination file



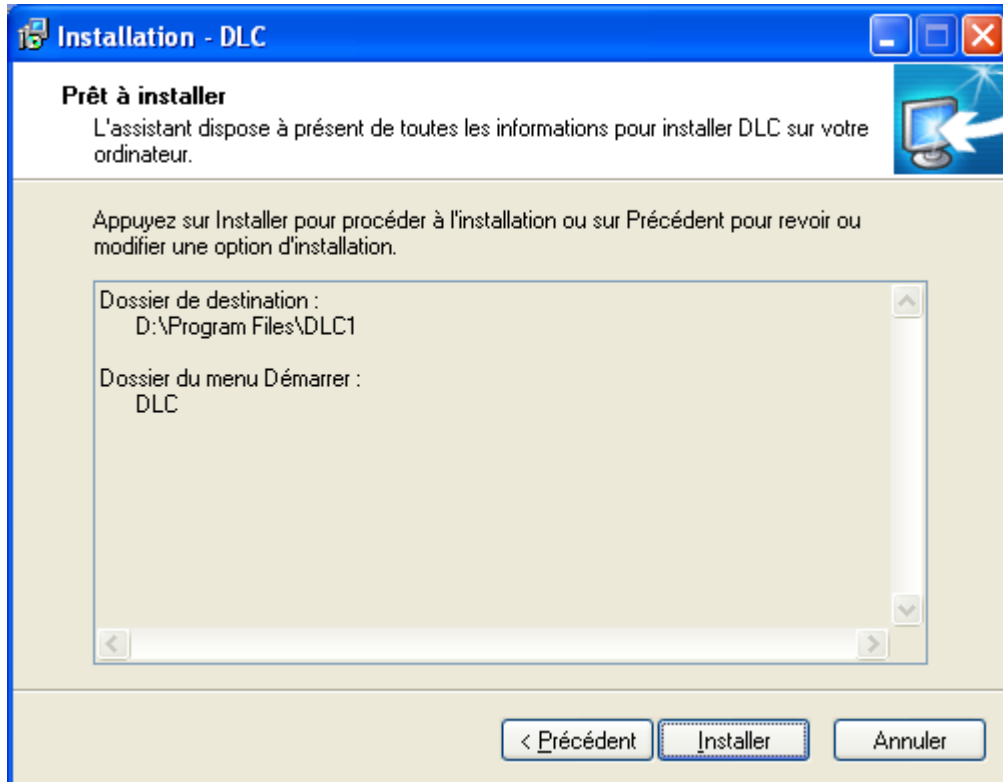
Click on « **Next** »

Etape 3 : Choose start menu file



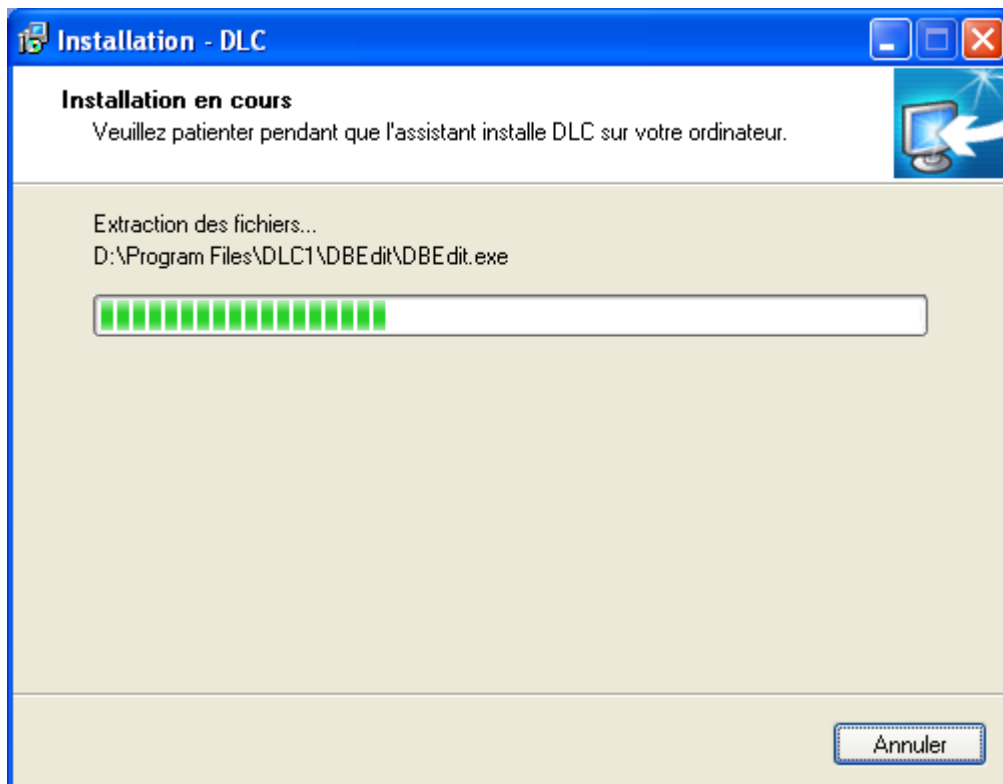
Click on « **Next** »

Stage 4 : Make sure destination files are correct.

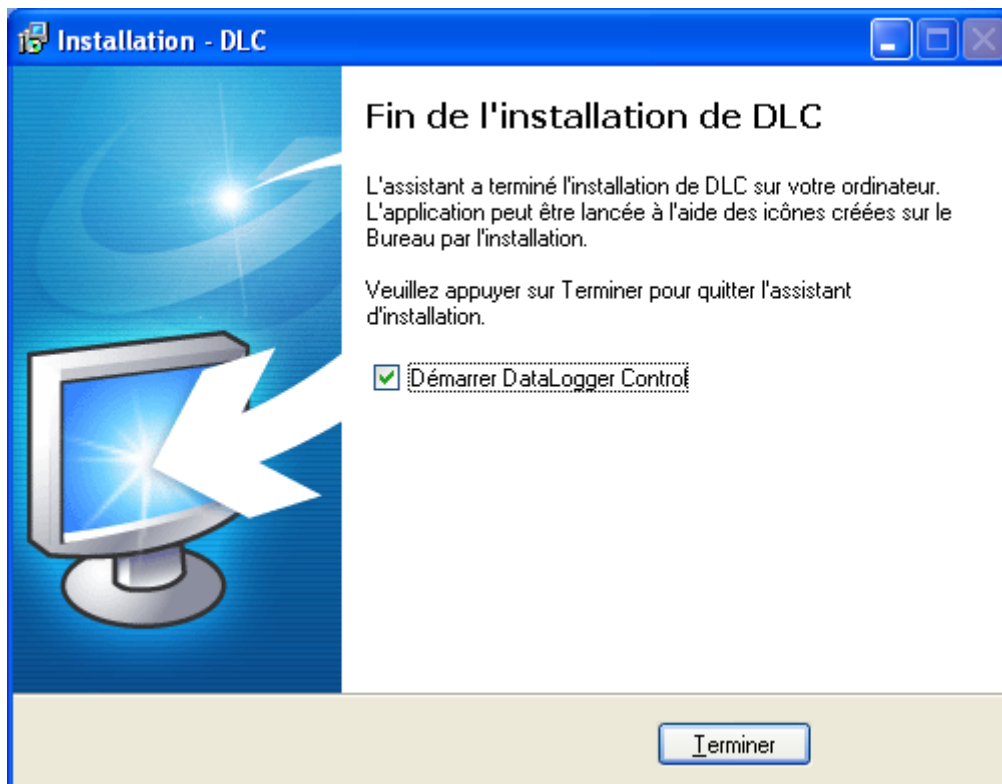


Click on « **Install** »

Stage 5 : Installation in progress ... Please wait !



Stage 6 : Installation completed successfully.



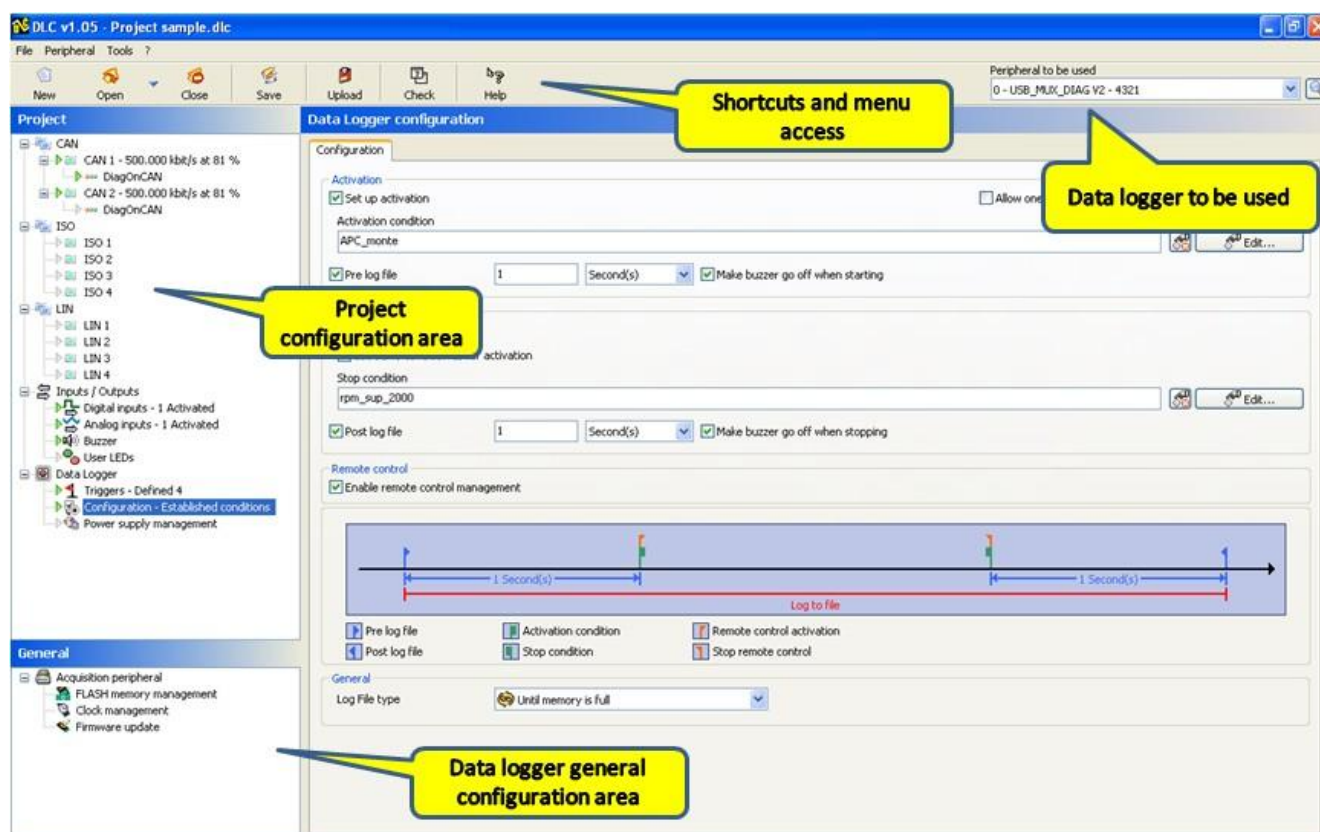
Click on « **Finish** »

3. DATA LOGGER CONTROL SOFTWARE (DLC)

3.1. General presentation

The DLC application is organised in project form and consists of:

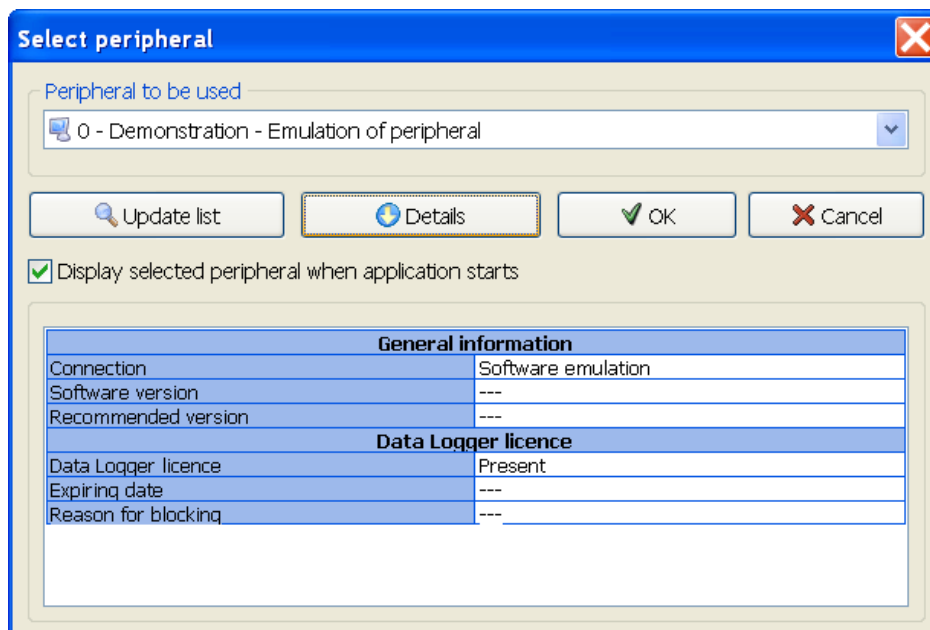
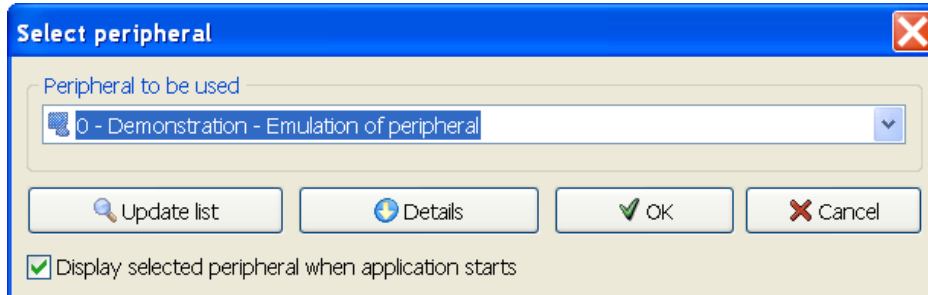
- A project configuration area (configuration of CAN, LIN, ISO networks, of analog and digital inputs),
- A main menu area (Project creation, saving, re-opening,...)
- An area for searching and choosing the connected data logger,
- An area for communicating with peripheral (Update, log file recovery)



- Project configuration enables you to specify and set up the networks and inputs to be saved.
- The definition of log file Triggers enables you to specify a series of tests for the input signals (Analog, CAN, LIN, ...) the results of which will be used for activating and/or stopping the log files.
- Log file configuration enables you to set up how the log files will be carried out (activation conditions, stop conditions, pre-log file, post-log file, remote control activation,...)
- The area for Flash memory management can be used for recovering data, deleting memory, formatting CF card,...

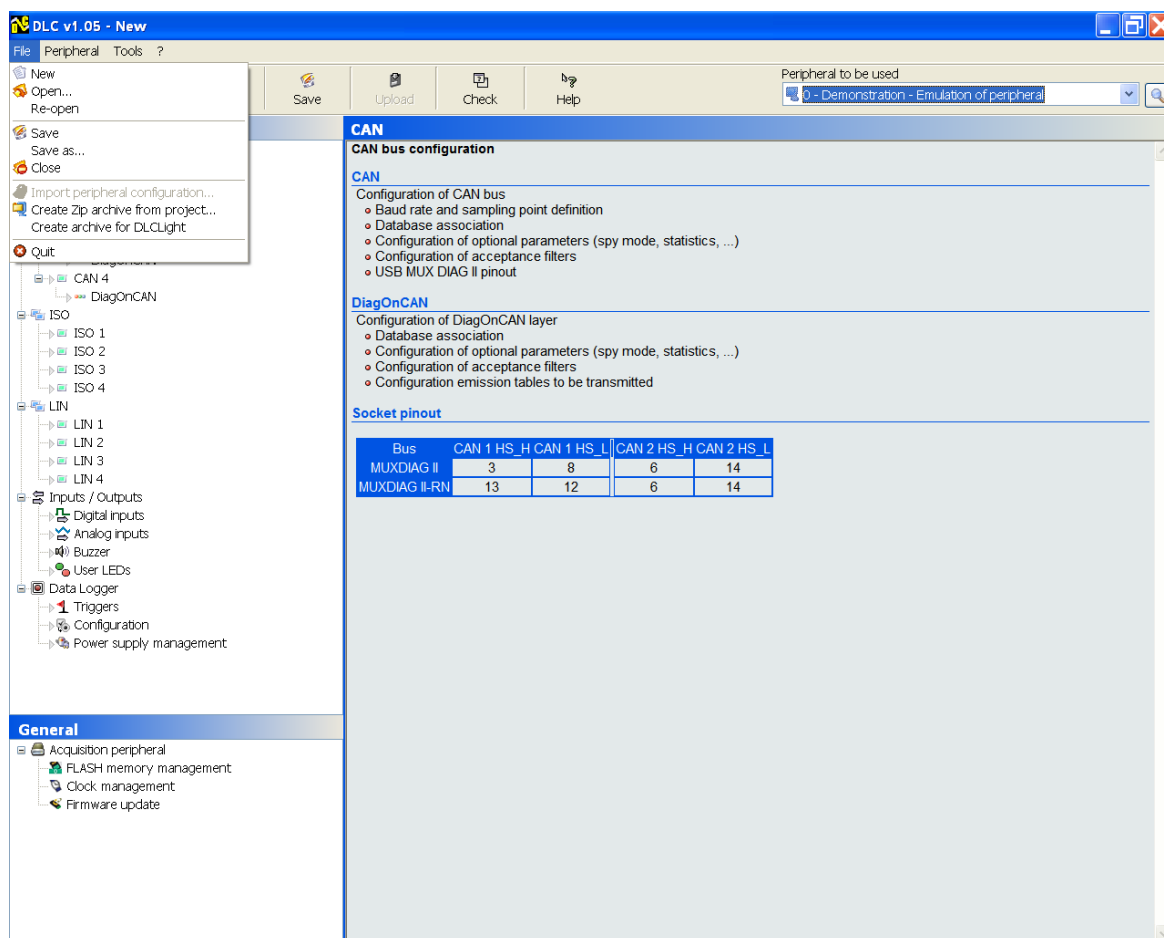
Each project can be saved as a whole in a file (*.DLC) so that it can be used at a later stage.

Selecting peripheral :



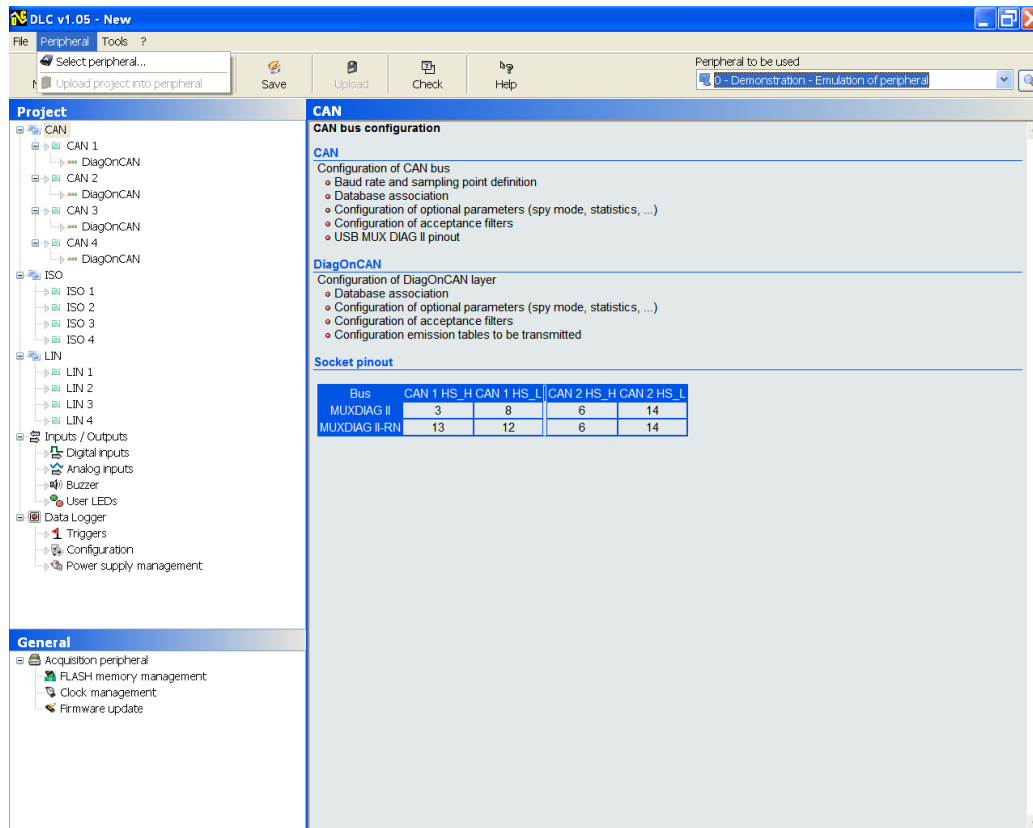
Peripheral to be used	Selects logger to be used.
Refresh list	Updates list of loggers connected to your computer.
Details	Gives more information about selected logger (connection type, software version,...)
OK	Configures DLC program depending on selected logger (number of CAN, LIN, ISO bus, inputs,...)
Cancel	Cancels start of DLC program.

The « File » menu :



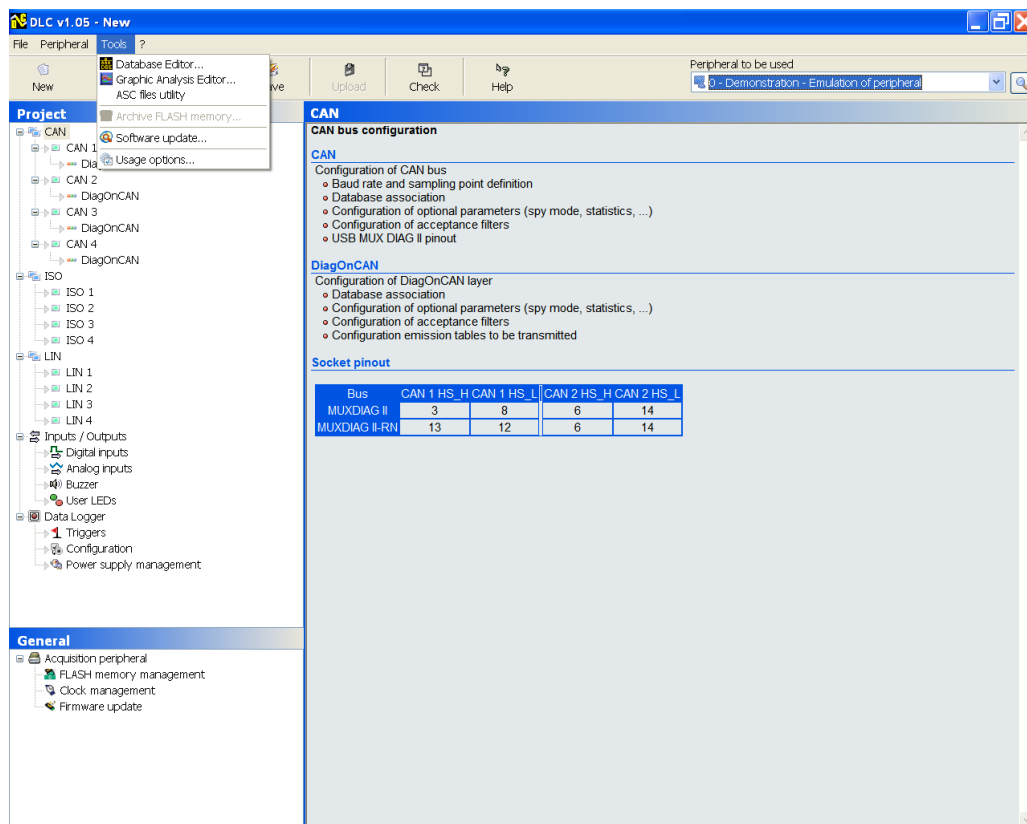
New	Opens new project.
Open	Opens old project.
Save	Saves current project.
Save under	Saves current project under different name or in a different location.
Close	Closes current project
Import peripheral configuration	If there is a certain configuration in the logger, this menu enables you to recharge project configuration.
Create Zip archive from project	Saves project and associated data bases in a Zip file. It also enables you to quickly export this project to another user.
Quit	Closes application.

The « Peripheral » menu :



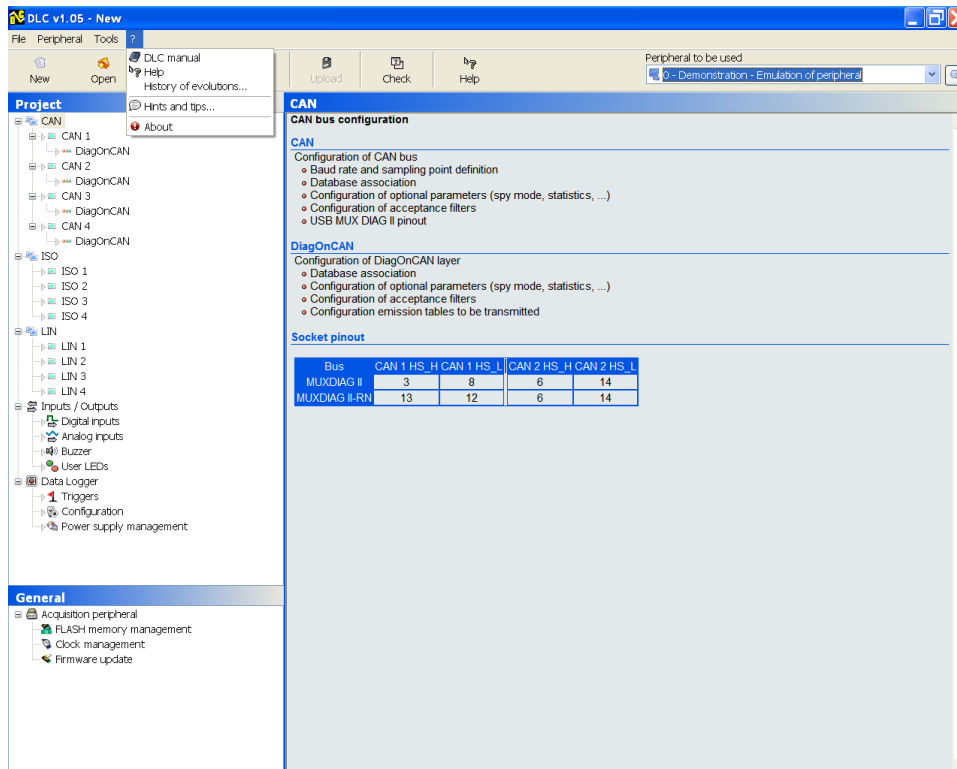
Select peripheral	Selects new logger.
Upload project into peripheral	Uploads project into a peripheral so as to configure it.

The « Tools » menu:



Data base editor	Opens program that can create or modify a data base.
Graphic analysis editor	Opens program that can display data saved in a chart and/or export decoded data to *.csv files.
Archive Flash memory	Utility for saving all files in logger's Compact Flash (system files included).
Software update	Checks availability of software updates on the d'Anney Electronique internet site and downloads them.
Usage options	<p>Allows for configuration of the DLC application.</p> <p>General :</p> <ul style="list-style-type: none"> - Activation / Deactivation of log files time filter - Activation / deactivation of windows at the start « select peripheral », « welcome », « hints and tips » - Select language to be used. <p>On-board clock :</p> <ul style="list-style-type: none"> - On-board clock auto-synchronisation settings. - Adjusting tolerated auto-synchronisation maximum time <p>Additional modules:</p> <ul style="list-style-type: none"> - Plugins association to the DLC application <p>Pilots :</p> <ul style="list-style-type: none"> - Choosing pilot to be used, Windriver or Exxotest

The « ? » menu :

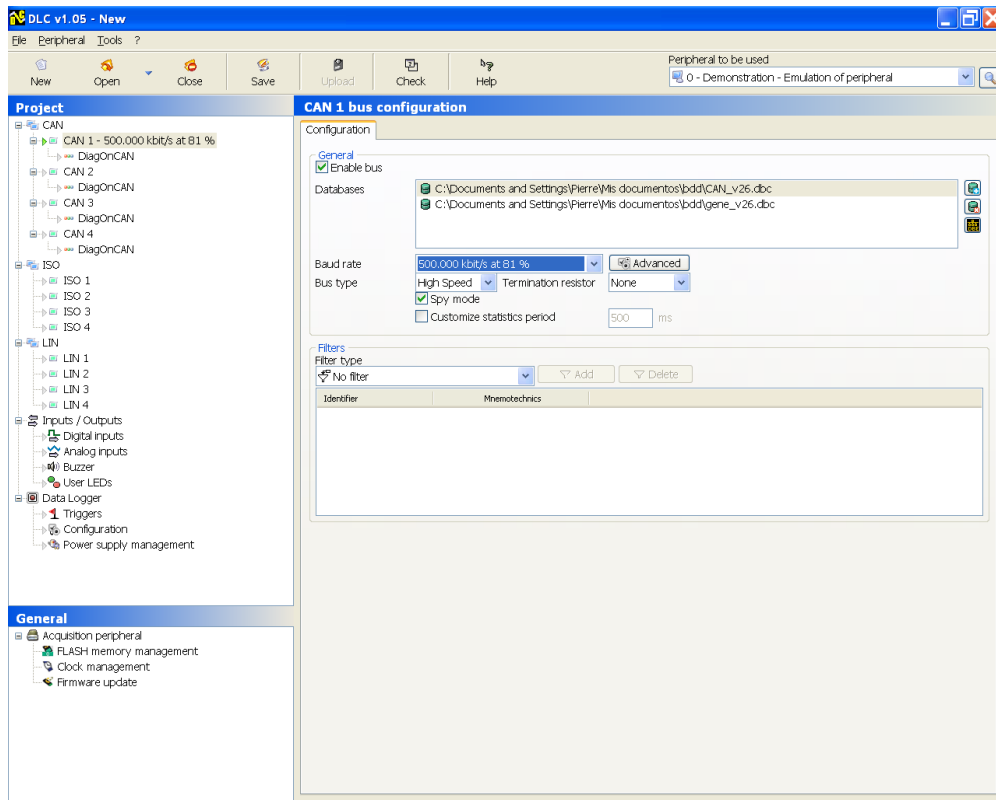


Manual	Accesses pdf version of this installation and user manual of the DLC application.
Help	Shows DLC's user guide.
History of evolutions	Shows changes made to DLC programme from one version to another.
Hints and tips	Shows hints and tips related to the DLC application.
About	Enables you to get information about the versions of libraries and executables composing the DLC programme.

3.2. CAN network Activation and Configuration

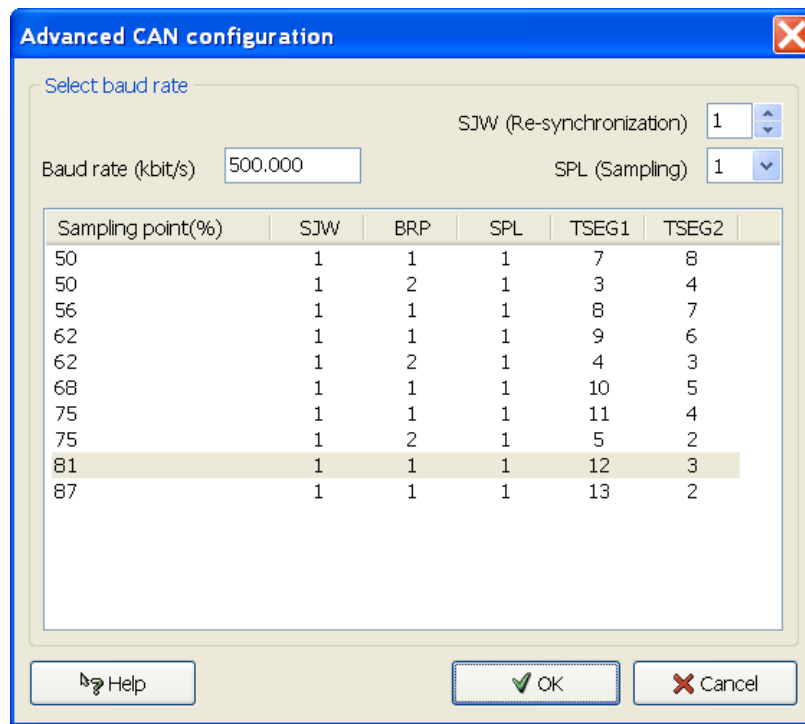
This window enables you to enter configuration of various settings related to the CAN bus.

General CAN network Activation and Configuration :



Enable bus	Selects network.
Databases	Associates a database to a .DBC format so as to allow decoding of messages.
Baud rate	Network baud rate expressed in Kbit/sec. The « Advanced » button enables you to create a customized baud rate.
Advanced	Accesses a window for creating customized baud rate configuration.
Bus type	Chooses between CAN high speed and CAN low speed bus –fault tolerant. The choice depends on card used.
Termination resistor	With this application a termination resistor (120 Ohms) can be added on a CAN HS bus or the value of the pull-up resistors on the CAN LS bus can be modified. Note : This application can only be found in certain loggers.
Spy mode	Not checked : the card behaves as a CAN station active on the network. It can send messages as well as generate acknowledgement messages and error frames. Checked : the card is totally inactive on the network. It is impossible to send messages, generate acknowledgement messages or error frames.
Customize statistics period	To customize refreshment period of statistics on the bus. A 0 value deactivates statistics.

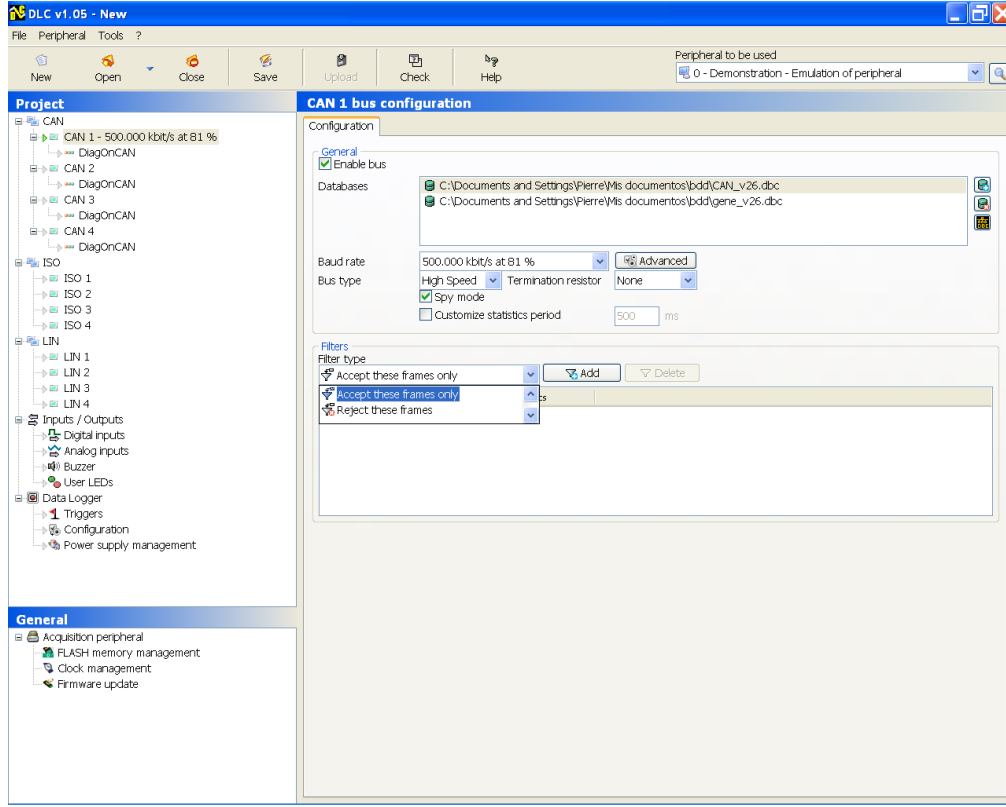
Advanced CAN network configuration



Baud rate	Network baud rate expressed in Kbit/sec. The « Advanced » button enables you to create a customized baud rate.
BRP	Clock pre-divisor. The pre-divisor enables you to specify the time-base of CAN protocol controller from its clock. This time base is expressed in quantum and acts as a reference to the TSEG1, TSEG2 and SJW parameter.
SJW	Resynchronization jump (expressed in quantum)
TSEG1	Maximum time before sampling point (expressed in quantum)
TSEG2	Maximum time after sampling point (expressed in quantum)
SPL	Number of sampling points

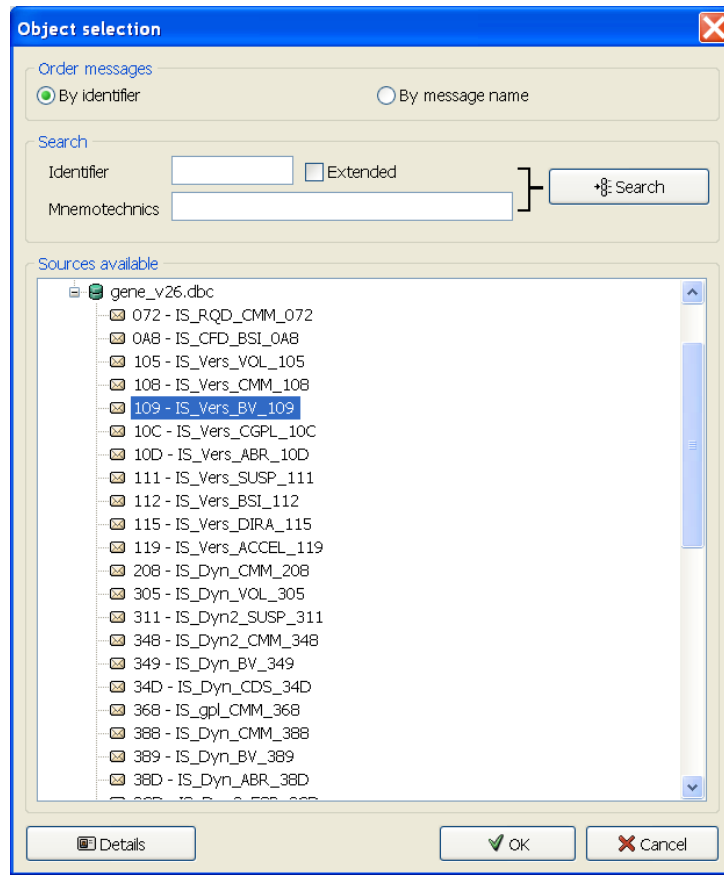
CAN network filter

Filters can limit the number of messages saved to be analysed at a later stage.
By default, no filters.



Filter type	Description of kind of filtering to be carried out
	<u>Accept all frames</u> : All frames received are saved and can be used to activate log file.
	<u>Reject frames</u> : All frames received, except for those specified, are saved and can be used to activate log file.
	<u>Accept these frames only</u> : Only those specified frames are saved and can be used to activate log file.

Adding a filter :



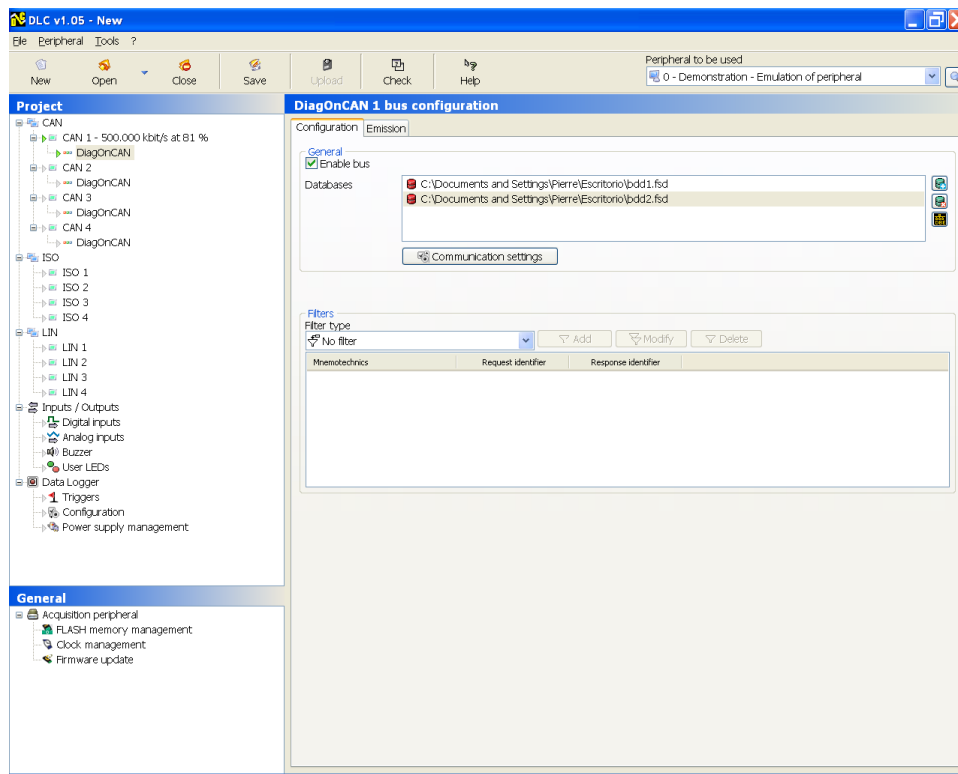
Order messages	Orders the messages by identifier or message name.
Search	Can quickly select a message by searching by identifier or name. Note : when searching by name, it is possible to search for a part of the name only and then click on « search » several times until desired result is found.
Sources available	Displays list of possible filters : <ul style="list-style-type: none"> - Error frame : Filters error frames. - Free identifier : Defines a filter on a message which is not specified in the associated data base. - Associated database : Selects the messages specified in the data base.

3.3. DiagOnCAN network activation and configuration

This window will enable you to enter the configuration of the various settings related to the DiagOnCAN bus (Sending and receiving messages carrying from 0 to 4095 data bytes on a CAN bus via segmentation according to the ISO-15765 standard).

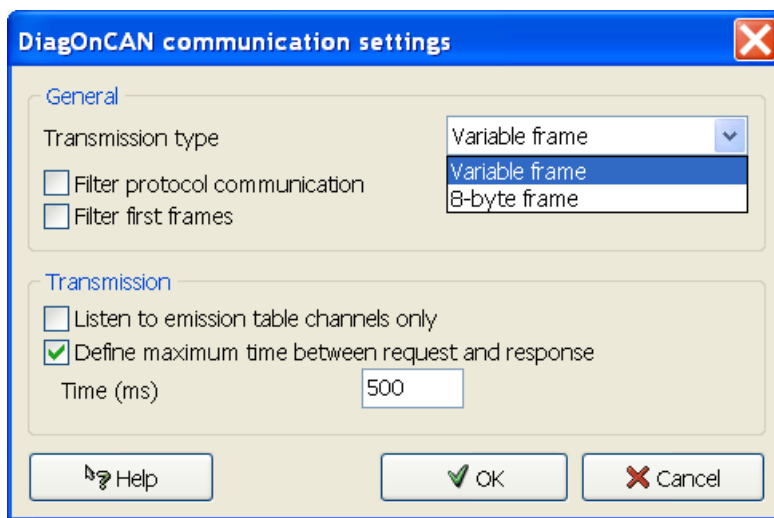
Note : A DiagOnCAN network must necessarily be associated to a CAN network.

DiagOnCAN network general activation and configuration.



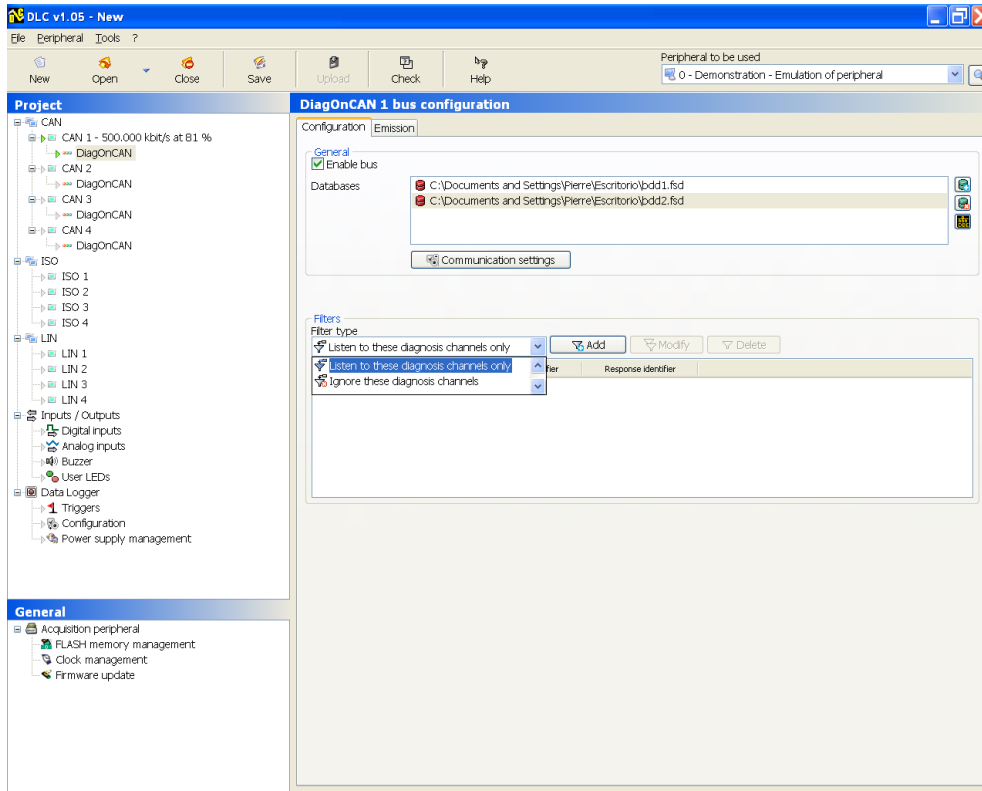
Enable bus	Network selection.
Data bases	From 1 to 8 data bases in xml or fsd format can be associated to the DiagOnCAN bus, with a view to the creation of triggers on DiagOnCAN requests and/or responses, or with a view to the creation of an emission table of DiagOnCAN requests.
Communication settings	Modifies communication settings

Advanced CAN network configuration



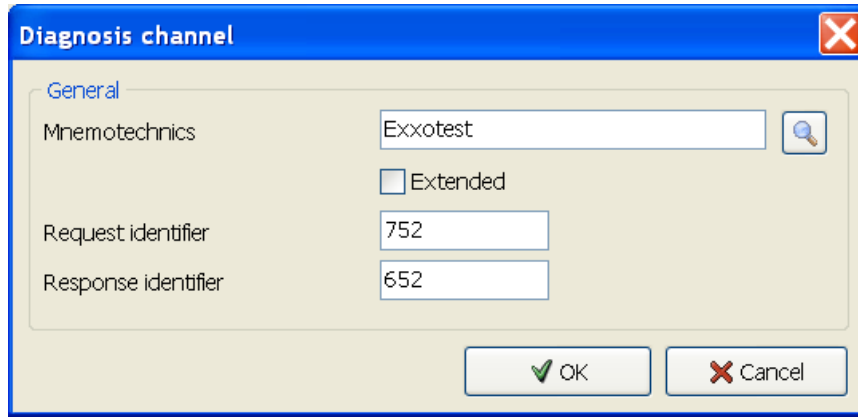
Transmission type	Transmission of variable frames or of 8-byte fixed frames.
Filter protocol communication	The detail of exchanges segmented on the CAN network will not be saved.
Filter First Frames	First Frames will not be saved.
Listen to emission table channels only	Only those defined channels in the emission table will be saved.
Define maximum time between request and response.	Emission of a new request is forbidden unless the expected response is within the indicated values.

DiagOnCAN network filter.



Filter type	Description of type of filtering to carry out.
	No Filter : All frames received will be interpreted as DiagOnCAN frames.
	Listen to these diagnosis channels only : All frames specified are saved and can be used to activate log file.
	Ignore these diagnoses channels : Specified frames are not saved and cannot be used to activate log file.

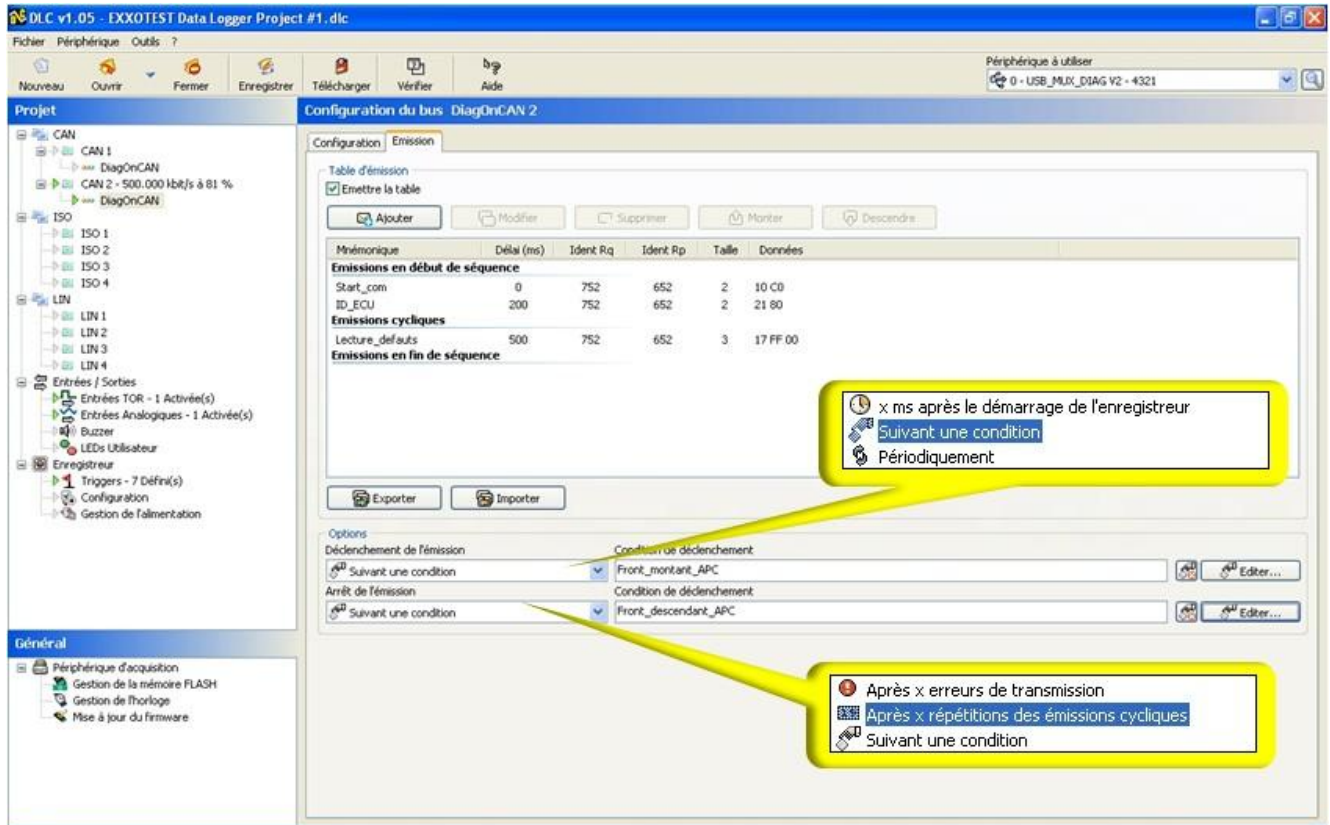
Adding a filter :



Mnemotechnics	Symbolic name given to diagnosis channel.
Request identifier	Request identifier sent to target ECU.
Response identifier	Response identifier sent to the diagnosis unit.

Creation of a DiagOnCAN emissions table

With this tab you can create diagnosis requests and specify the conditions in which they will be transmitted.



Activation and stop conditions of table transmission ; note : these conditions are totally independent from activation and stop conditions of a log file.

Activation of transmission:

x ms after logger starts	Authorises transmission of the defined table « x ms » after logger starts, i.e. « x ms » after power is on.
Following a condition	Authorises transmission of the defined table depending on a condition or logical combination of conditions from previously created triggers.
Periodically	Authorises periodical transmission of table

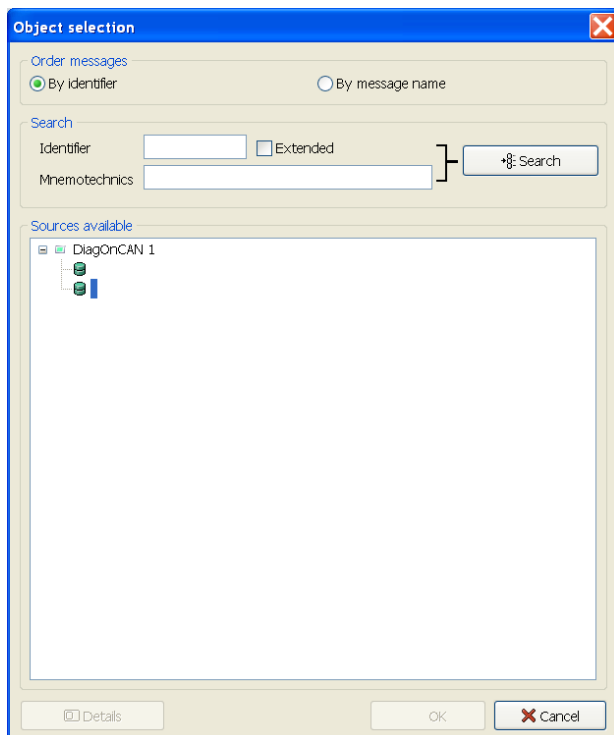
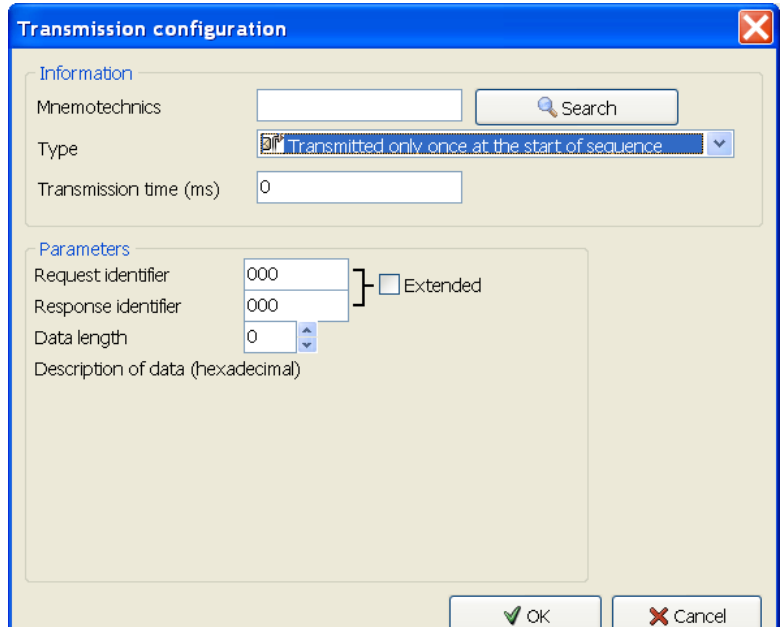
Activation of stop:

After x transmission errors	Stops transmission of the defined table when x transmission errors have been detected.
After x repetitions of cyclic emissions	Stops transmission of the defined table after its cyclic emissions have been transmitted x times.
Following a condition	Stops transmission of the defined table depending on a condition or logical combination of conditions from previously created triggers.

DiagOnCAN transmission configuration

Configuration window of a *DiagOnCAN transmission* :

- Mnemotechnics : enables user to either type in a name for a transmission entered by him/herself, or (with the Search button) to find a pre-defined diagnosis request in the DiagOnCAN associated database or databases.
- Type : defines the intervention of the transmission, at the beginning of the sequence, in a cyclic way or at the end of the sequence.
- Transmission maximum time : defines maximum time of request transmission, counting from the previous transmission, or from the beginning of the transmission of the table when we are talking about the first request transmitted.

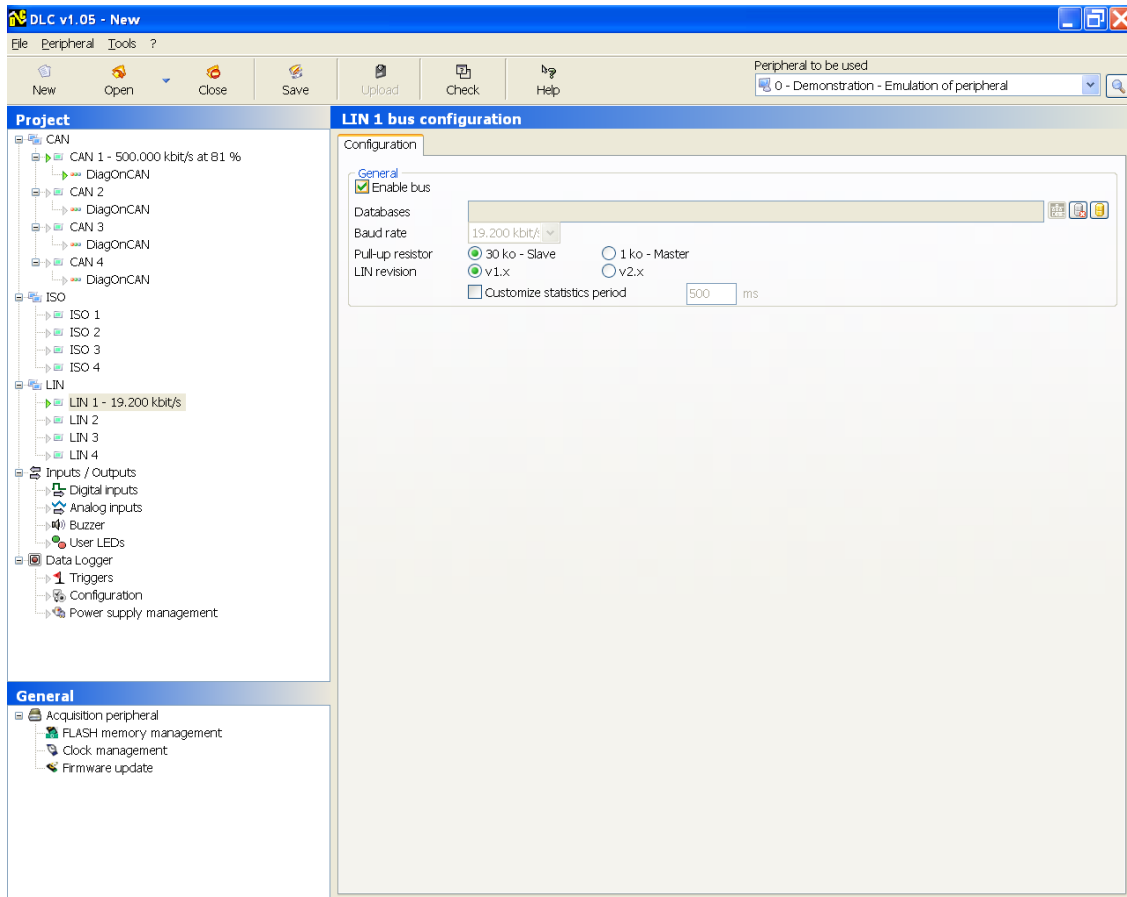


Selection of a DiagOnCAN request

3.4. LIN network activation and configuration

This window enables you to enter the configuration of the various settings related to the LIN bus.

General LIN network activation and configuration :



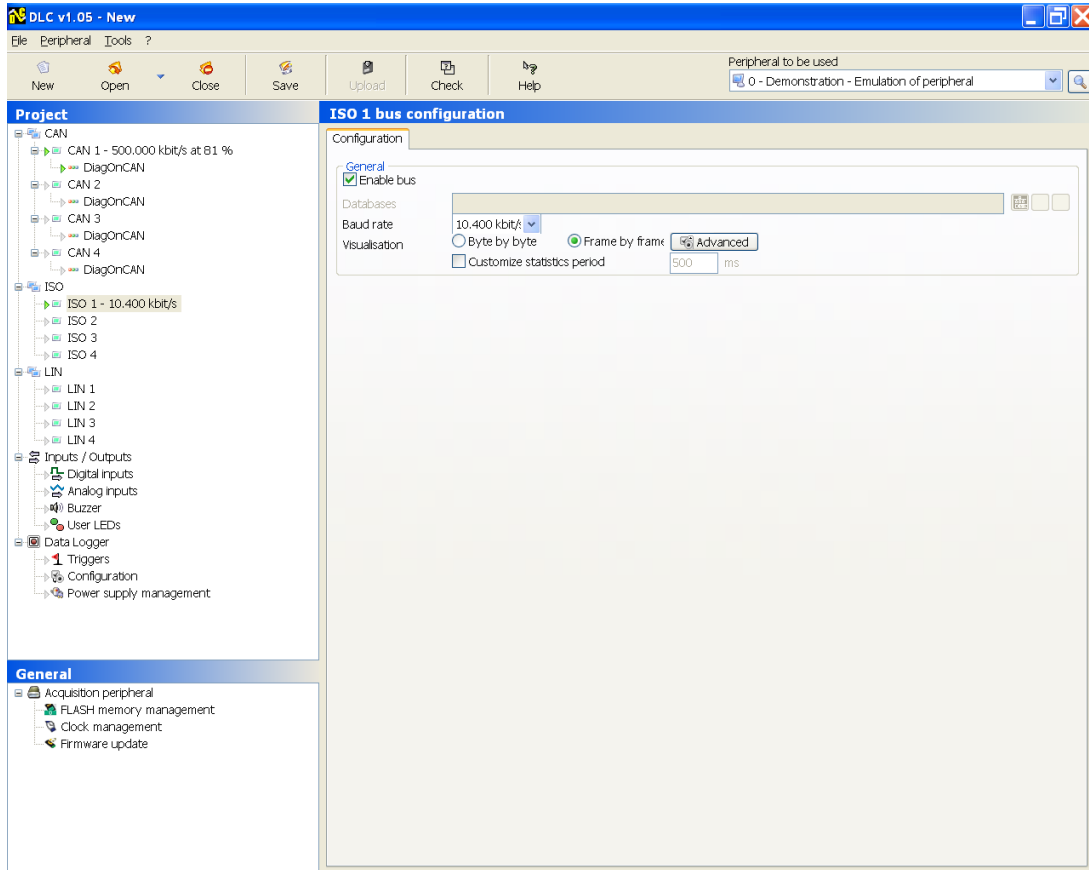
Enable bus	Network selection.
Data bases	Association of an .LDF format data base to decode messages.
Baud rate	Network baud rate expressed in Kbit/sec.
Pull-up resistor	<p>30 Ko - Slave : If the hardware comes with this function (see logger's user guide) it enables simulation of a LIN slave.</p> <p>1 Ko - Master : If the hardware comes with this function (see logger's user guide) it enables simulation of a LIN master.</p> <p>Note : In order to spy a LIN bus, it is advisable to configure the pull-up resistor for 30 KOhms so as to restrict, at an electric level, the influence this node might have on the shape of LIN signals.</p>
LIN revision	<p>Version 1.X : The calculation of the CRC is in conformity with the LIN 1.0, 1.2 and 1.3 revision.</p> <p>Version 2.X : The calculation of the CRC is in conformity with the LIN 2.0</p>
Customize statistics period	<p>Enables customization of the period of time after which statistics will refresh on the bus.</p> <p>Value 0 deactivates statistics.</p>

Note : LIN buses share the line interfaces existing in your data logger with ISO buses.
Consequently, it is important to read carefully your logger's user guide in order to know if the line interface used is physically a LIN interface (30 Ko or 1 Ko pull-up resistor) or an ISO interface (510 ohms pull-up resistor).
Therefore you should not use an ISO line interface to spy on a LIN bus !

3.5. ISO network activation and configuration

This window enables you to enter the configuration of the various settings related to the ISO bus.

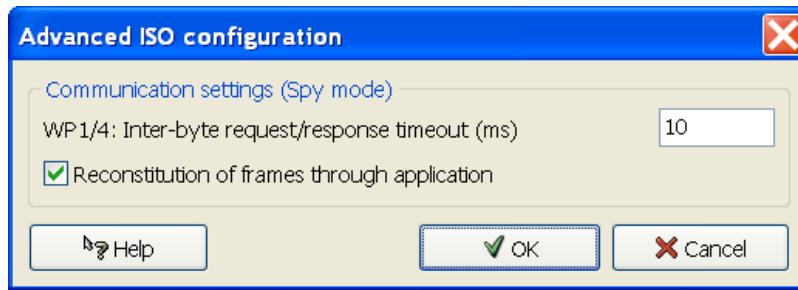
General ISO network activation and configuration :



Enable bus	Network selection.
Data bases	Association of a .DBK format data base to decode messages.
Baud rate	Network baud rate expressed in Kbit/sec.
Visualisation	Byte by byte : In this mode ISO frames can be saved giving all bytes received a time reference. Frame by frame : In this mode, ISO frames can be saved with a time reference corresponding to the end of frame reception. Detection of end of frame can be configured by clicking on the « advanced » button.
Customize statistics period	Enables customization of the period of time after which statistics will refresh on the bus. Value 0 deactivates statistics.

Note : ISO buses share the line interfaces existing in your data logger with LIN buses. Consequently, it is important to read carefully your logger's user guide in order to know if the line interface used is physically a LIN interface (30 Ko or 1 Ko pull-up resistor) or an ISO interface (510 ohms pull-up resistor).

Advanced ISO network configuration

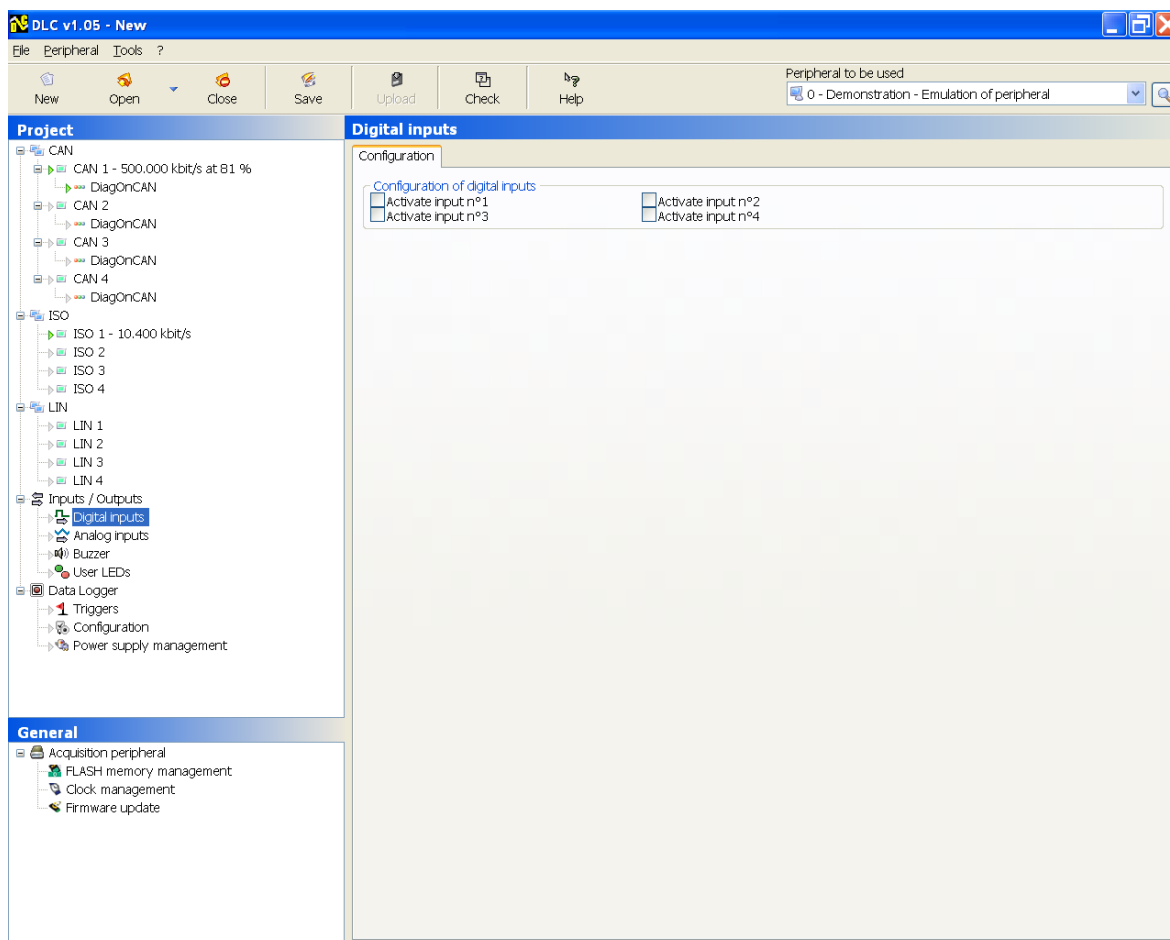


- WP1/4 :** Maximum value of inter-character time of a request or response. This setting is used to detect the ending of a request or the ending of a response.
- Reconstitution** If this option is not checked, then detection of end of frame is done with the help of timeout WP1/4
If this option is checked, then detection of end of frame is done with the help of timeout WP1/4 but also analysing the first characters that carry the frame length (this option enables you to tell between requests and responses in those cases where the time between request and response is lower than the actual inter-character time)

3.6. Activation and Configuration of digital inputs

In this window you can enter the configuration of the various digital inputs.

General Activation and Configuration of a digital input :



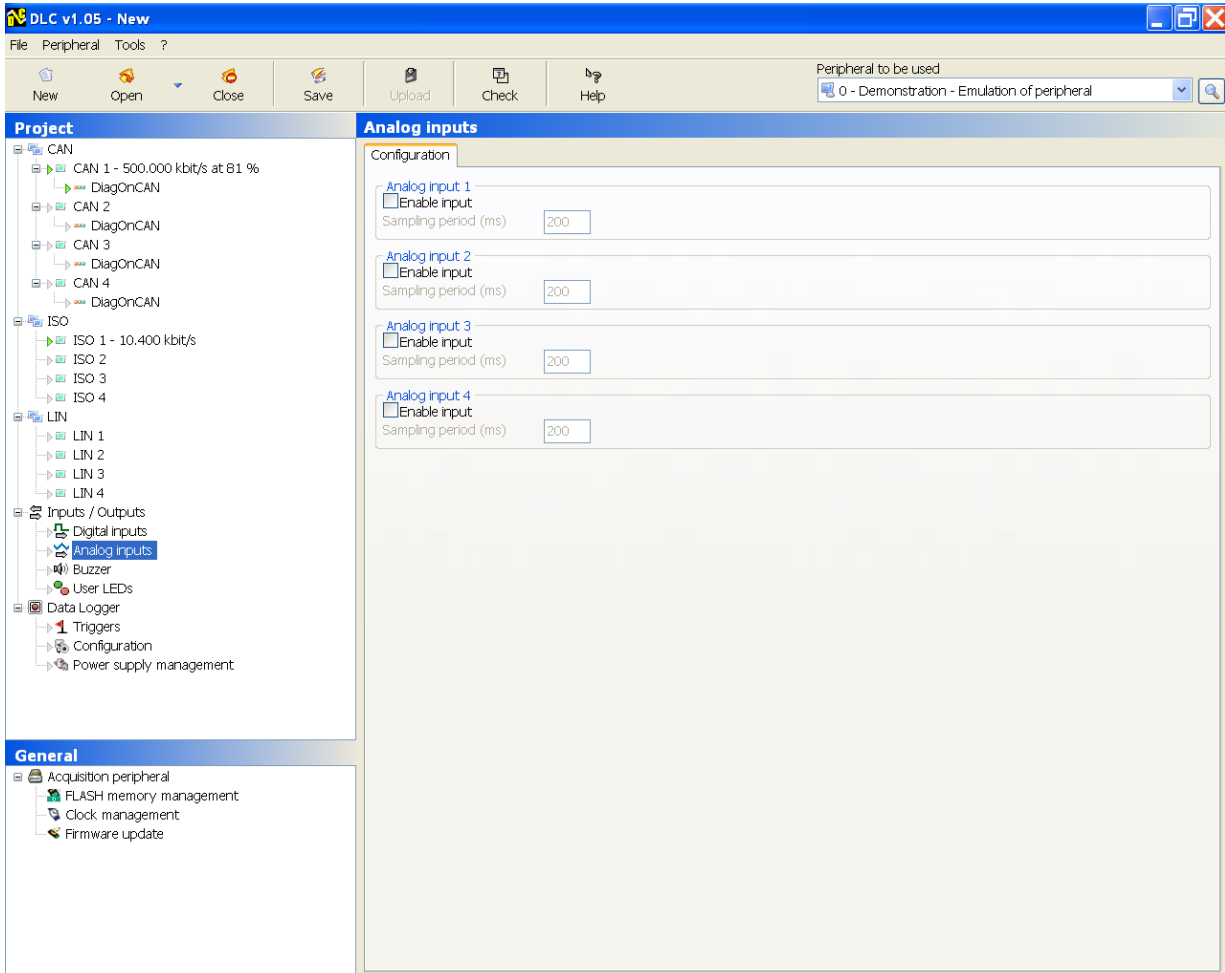
Activate input n° x

If this box is checked, the status of this input will be saved in a file and it can be used to activate a log file.

3.7. Activation and Configuration of an analog input

In this window you can enter the configuration of the various analog inputs.

General Activation and Configuration of an analog input :

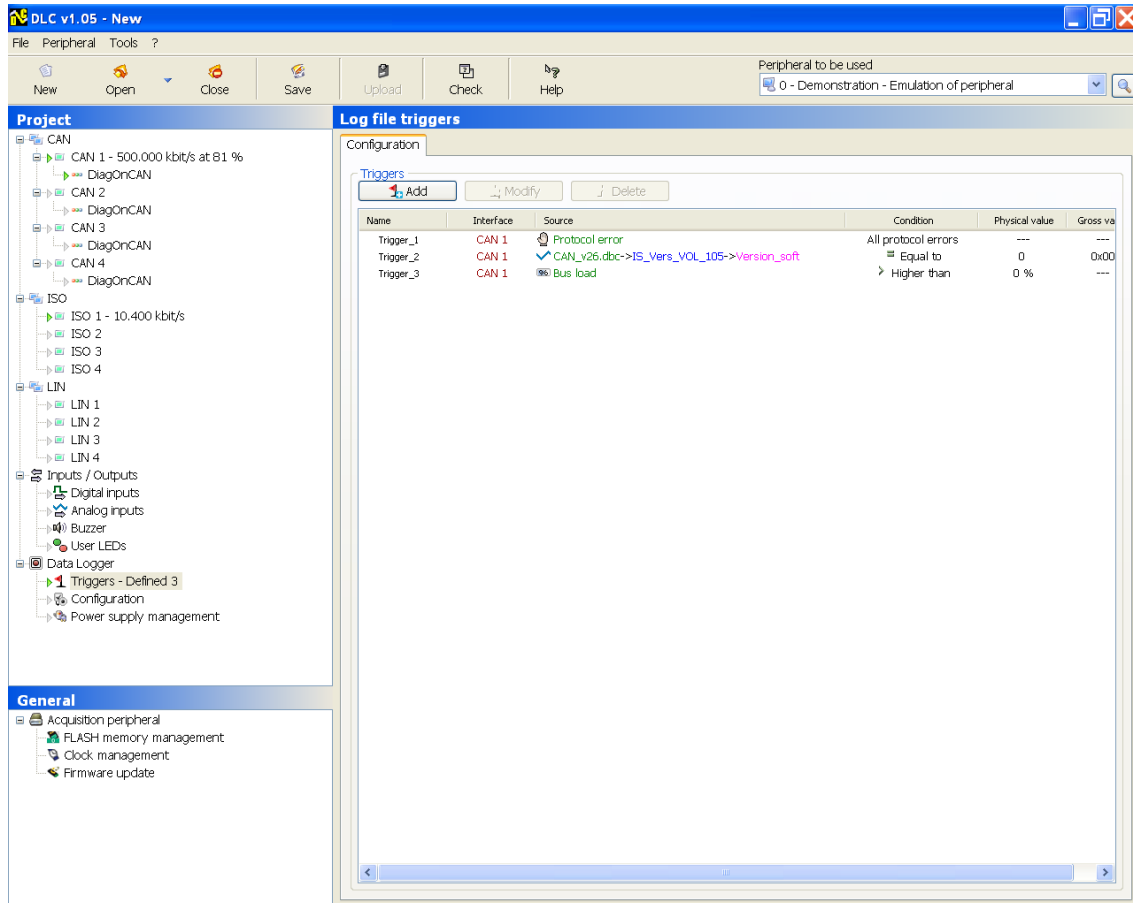


Activate input n° x	If this box is checked, the value (in volts) of this input will be saved in a file and can be used to activate a log file.
Sampling point	The sampling point can be configured between 1 and 9999 ms

3.8. Configuration of log file conditions:

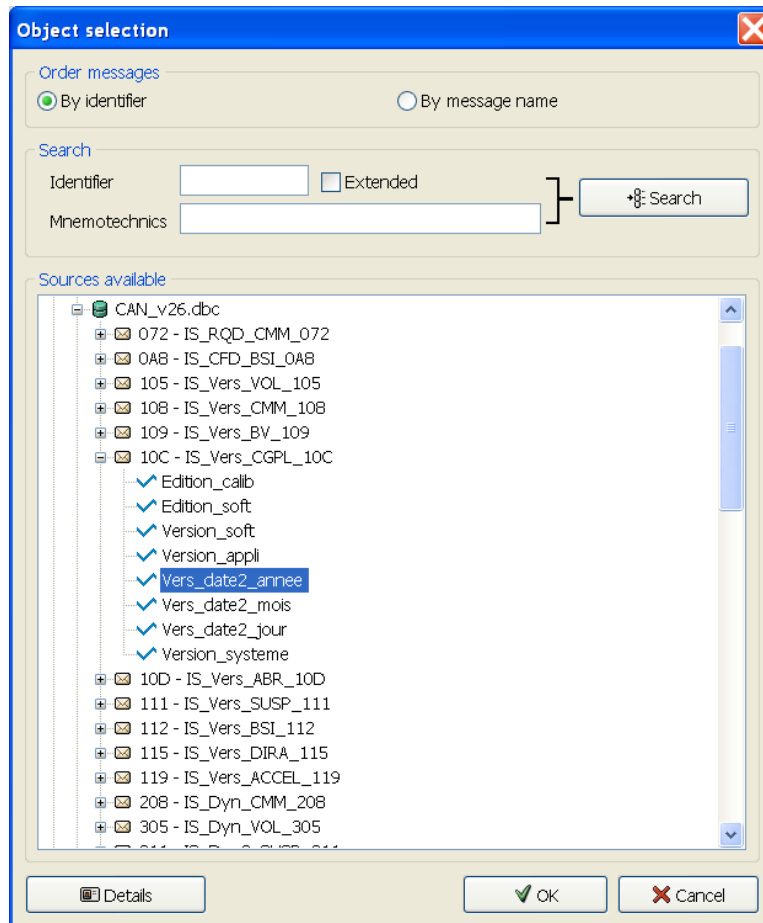
The windows « Triggers » and « Configuration » will enable configuration of the data logger activation conditions.

Trigger creation (event used to activate a log file):



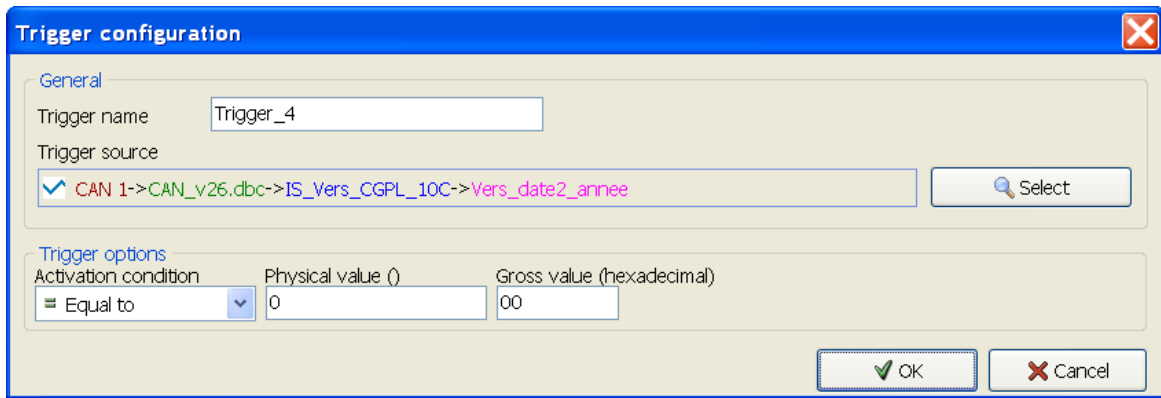
Add	Adds a Trigger
Modify	Modifies a Trigger
Delete	Deletes a Trigger

Adding or modifying a Trigger (Selecting the event source) :



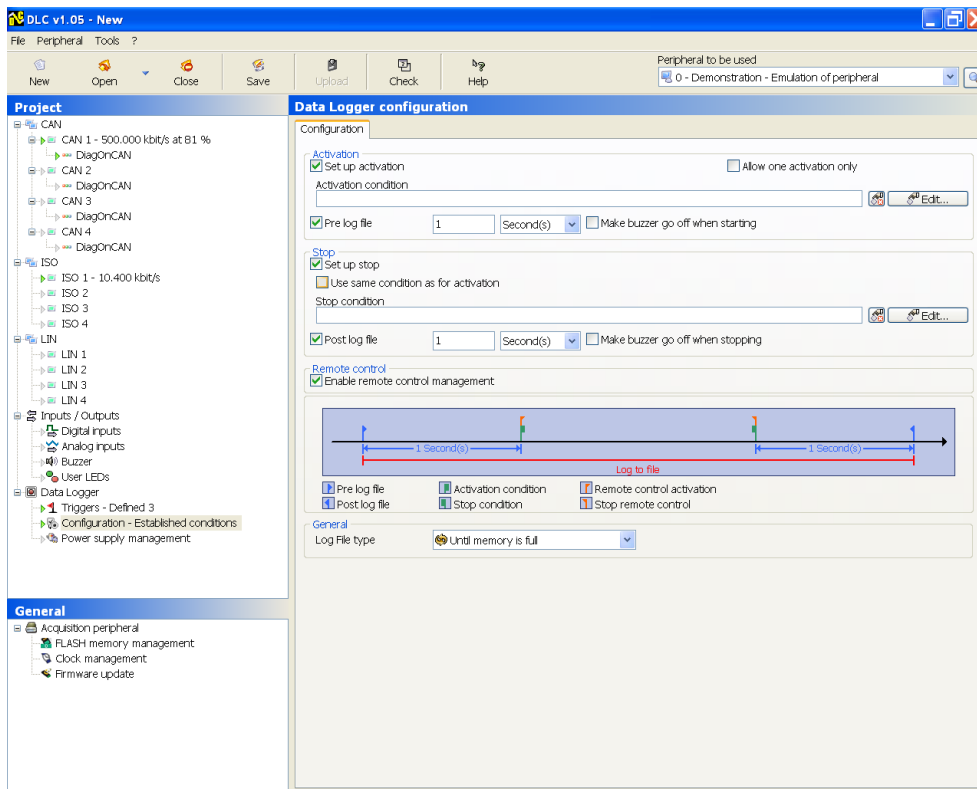
Order messages	Orders messages by identifier or name.
Search	Quickly selects a message by searching by identifier or name. Note : Note : when searching by name, it is possible to search for a part of the name only and then click on « search » several times until desired result is found.
Sources available	Lists the possible filter sources : <ul style="list-style-type: none"> - Error frame : Filters the error frames. - Free identifier : Enables you to specify a filter on a message which is not specified in the associated data base. - Associated data bases : Enables you to choose messages which are specified in the data base.

Adding or modifying a Trigger (Trigger configuration) :



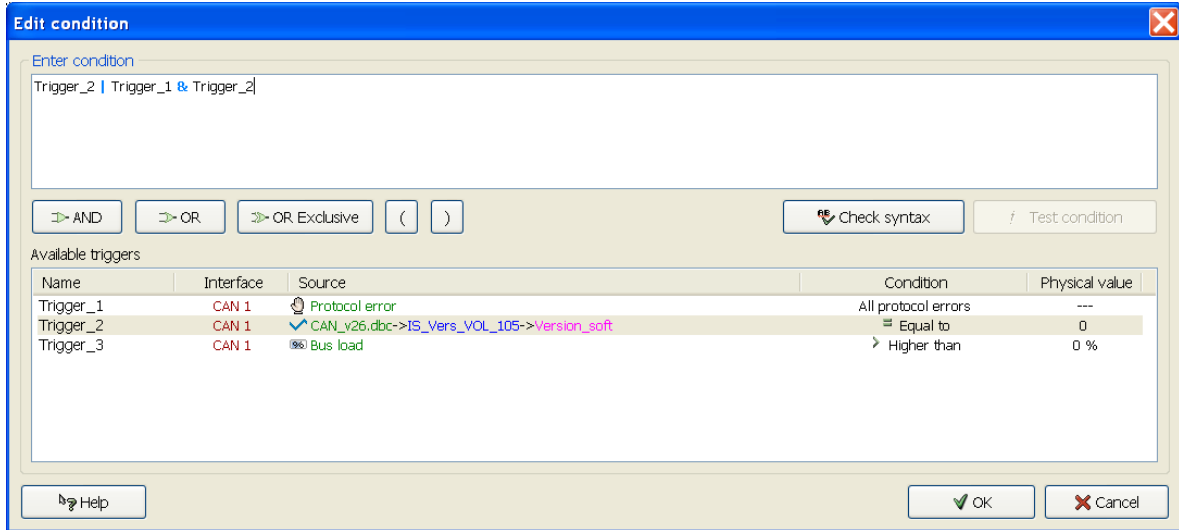
Trigger name	Enables you to modify the symbolic trigger name
Trigger source	Enables you to change the trigger source
Trigger options	Enables you to edit the test carried out on the trigger source

Configuration of log file conditions :



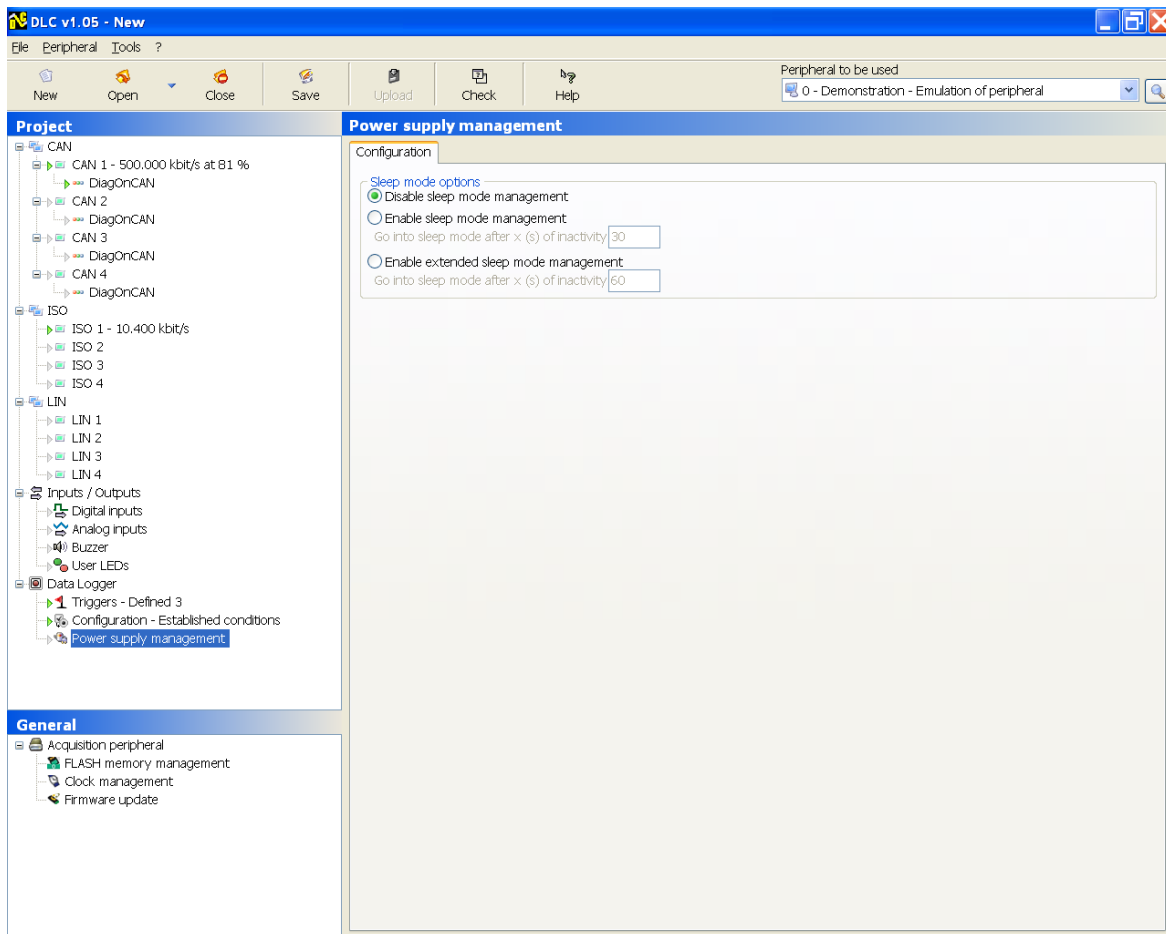
<p>Activation</p>	<p>Set up activation : Enables activation based on a condition. Edit : Enables you to edit the activation condition. Pre-Log file : Enables you to specify length of data log file before activation. Post-Log file : Enables you to specify length of data log file after activation. Make buzzer go off... : Activate buzzer when log file is activated.</p>
<p>Stop</p>	<p>Set up stop : Enables stop based on a condition . Use same condition as for activation : Enables you to stop log file with or without post log file following the activation condition. Edit : Enables you to edit the stop condition. Authorise one log file only : Authorises data logger to only make one log file even if the activation condition/s occur repeatedly. Make buzzer go off... : Activate buzzer when log file stops.</p>
<p>Remote control</p>	<p>Enables log files activation by pressing the red button on the remote control.</p> <p>Note :</p> <ul style="list-style-type: none"> - The remote control has priority over the activation conditions when you give the red button a short press. - The remote control has priority over the stop conditions when you give the black button a long press (about 3 seconds).
<p>Log file type</p>	<p>Until memory is full or in loop (oldest log files will be deleted)</p>

Configuration of log file conditions :
 (Editing activation and stop conditions)



Enter condition	Creating an activation or stop condition from Triggers and logical operators.
Operators (AND, OR, ...)	Operators that enable you to create a complex activation or stop condition.
Check syntax	Enables you to make sure that the syntax of the condition is correct.
Available triggers	List of triggers that can be used to create the activation or stop condition.

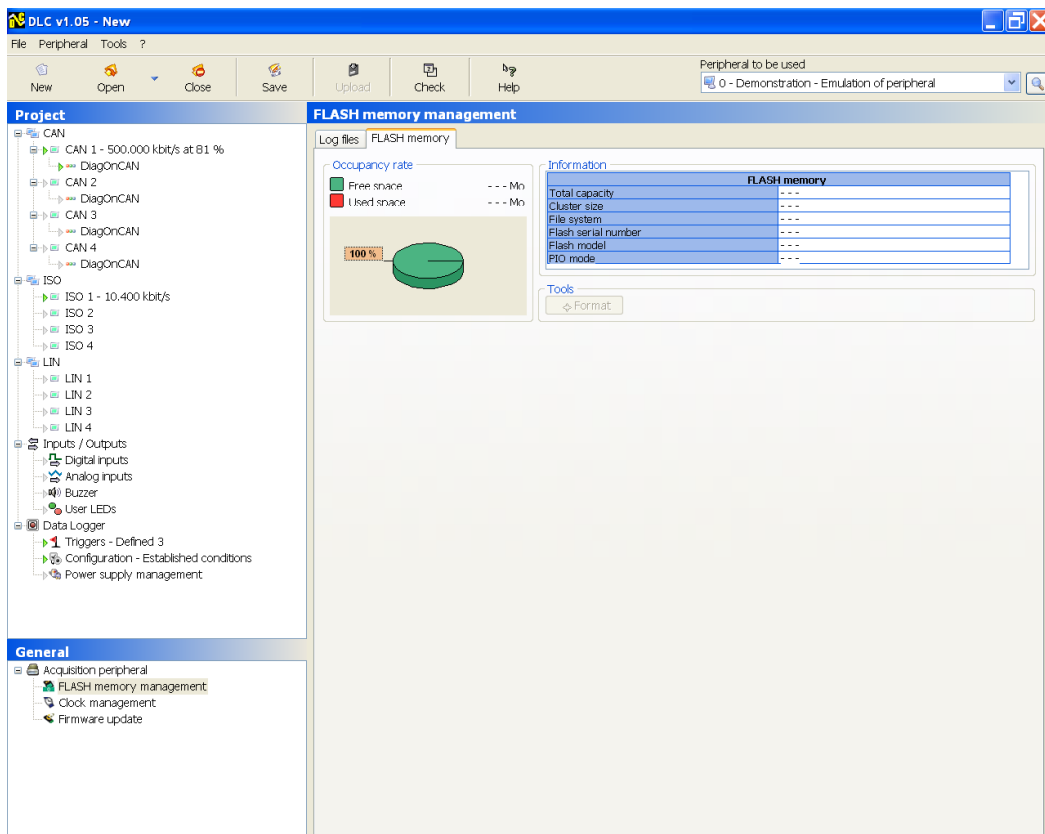
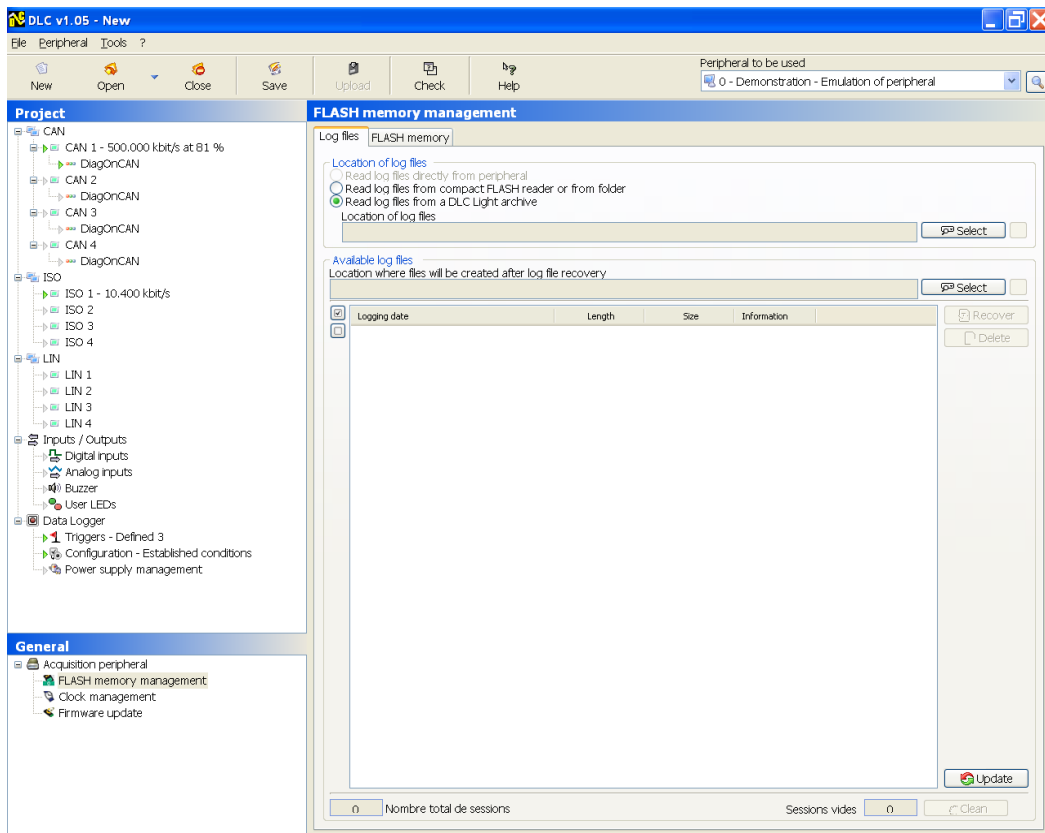
Configuration of power supply management :



Enable sleep mode management	Enables you to go onto low power consumption mode (below 50 mA – Wakeup time below 2 seconds *) in case of absence of events for a certain length of time specified in seconds.
Enable extended sleep mode management	Enables you to go onto low power consumption mode (below 200 μ A – Wakeup time below 2 seconds *) in case of absence of events for a certain length of time specified in seconds.

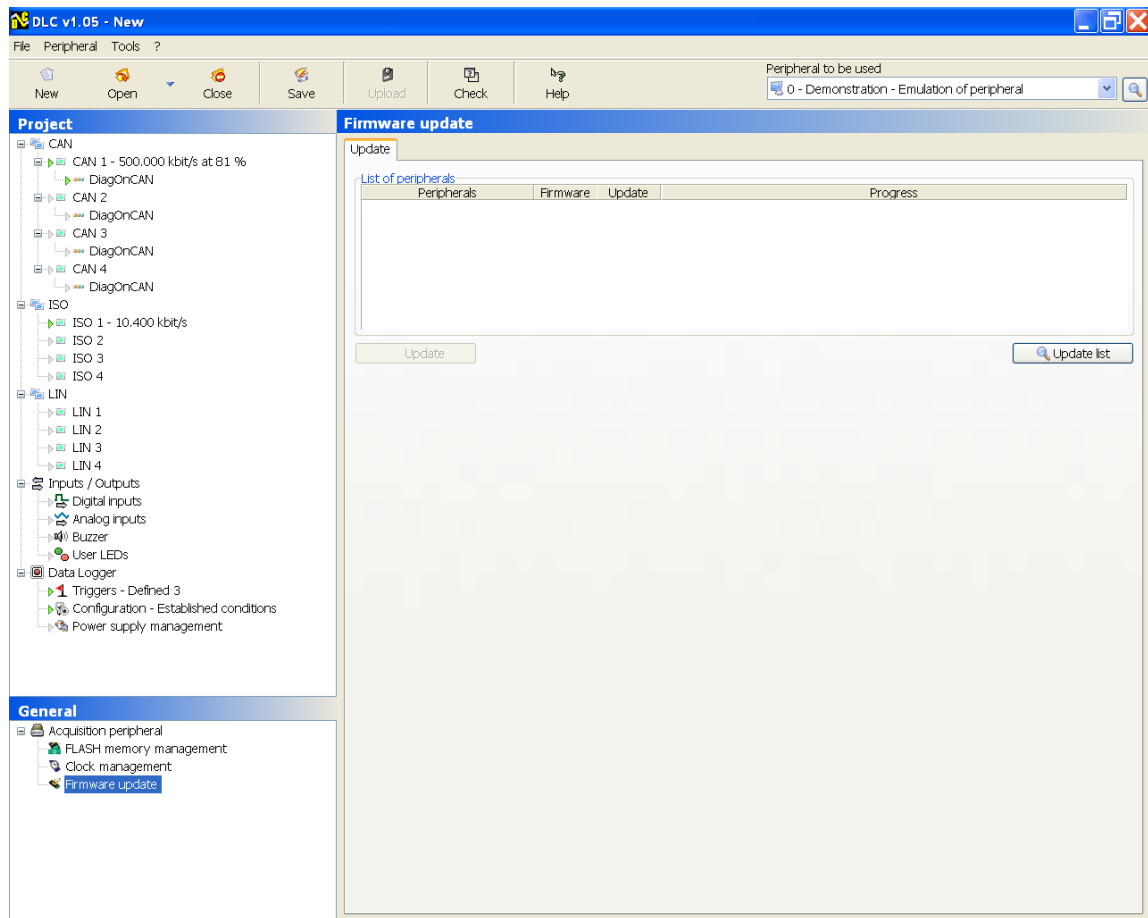
* Note : For more information about power consumption in sleep mode and wakeup time, check logger's user guide.

Managing FLASH memory :



Location of log files	Enables you to read a log file directly from the data logger or via a Compact FLASH reader. Select : Enables you to specify the access path to the Compact FLASH reader.
Available log files	Select : Enables you to specify a location for the extraction of log files. Refresh : Enables you to classify log files from Compact Flash. Recover : Enables you to extract selected log files to the recovery folder. Delete : Enables you to delete the selected log files from the Compact Flash Clean : Enables you to delete empty log files.
Occupancy rate	Enables you to know how much memory is available on Compact Flash.
Information	Enables you to see the properties of your FLASH memory.
Tools	Formatting : Enables you to delete data existing on the Compact Flash and leave it ready for storing new data.

Firmware update :



Refresh list	Lists all Exxotest peripherals connected.
Update	Enables you to update the software of selected peripheral (firmware).

Note : The « Tools / Firmware update » menu enables you to download the latest firmware version available on the internet.

LIST OF VERSIONS

Version	Date	Author	Modifications
01	26/09/2008	G. PERAGOUX	Document creation