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CommNetEG

User Manual

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Index

1. Introduction

CommNetEG program allows the data reception from LSI LASTEM instruments (E-Log type) to PC, according to manual or automatic mode. *CommNetEG* program manages one or more communication channels: parallel type, serial type, PSTN and GPRS modem, radio and LAN.

2. System requirements

The program needs following hardware and software requirements:

Personal computer

- Processor with operating frequency of 600 MHz or more, 1 GHz recommended;
- Display card: SVGA resolution 1024x768 or more; standard screen resolution (96 dpi).
- Operating system (*):
  - 32 bit: Microsoft Windows 32 bit XP SP3/Vista/Seven/2003 Server
  - 64 bit: Microsoft Windows Seven;
- Microsoft .NET Framework V.3.5 (**);
- Program LSI 3DOM installed;

(*) Operating systems must be updated with the latest update released by Microsoft and available through Windows Update; for operating systems not listed is not guaranteed correct and complete operation of programs.
(**)The Microsoft. NET Framework 3.5 setup is included in the LSI Lastem product DVD issued after March 2011 and, if necessary, is automatically installed during the installation process starts from the DVD. If you do not have the updated version of the DVD you can download the installer for the Microsoft. NET Framework 3.5 directly from the Microsoft Download Center at http://www.microsoft.com/downloads/en/default.aspx inserting in the search field. the term ".NET".

Acquisition instruments

Data logger LSI LASTEM E-Log, R-Log.

3. Installation

First of all check the needed system requirements. Software installation needs the *login* with system administration rights; at the opposite the installation will be not correct.

Install *CommNetEG* starting program *Setup* from CD. The installation program will supply all needed instructions

3.1. Organization of installed files

The installation sets up some folders; beginning from folder selected during installation (default *c:\Programmi\LSI-Lastem\CommNetEG*). They are:

- **Bin**: includes the executing files *CommNetEG*, *CommNetEG Config* and the support libraries;
- **Doc**: includes the program documentation (including user manual).

Other folders are setup in *c:\Documents and Settings\All Users\ Application data \LSI-Lastem\CommNetEG* and *c:\Documents and Settings\All Users\ Application data \LSI-Lastem\CommNetEG Config*; the operating system usually hides these folders. Display them selecting "*Show hidden files and folders*" from folder's properties.

New folder in *c:\Documents and Settings\[User]\Application data\LSI-Lastem\CommNetEG\Log*, where *[User]* corresponds to the name of the user who executed login in the operating system, includes the log files of the program *CommNetEG*.

NOTE
In Windows Vista and Windows 7 the folder c:\Documents and Settings\All Users\Application data is the same as c:\ProgramData.

4. Preliminary remarks

The program consists of two separated forms: *CommNetEG* and *CommNetEG Config*.
CommNetEG program executes the calls and the data save; *CommNetEG Config* program configures *CommNetEG*.

In order to receive the data from LSI LASTEM instruments, *CommNetEG* needs:

- Licence file for each instrument;
- Instruments must be configured correctly;
- Configurations should have been downloaded correctly through 3DOM program.

NOTE
In order to use LSI LASTEM datalogger, the system needs that: 3DOM has been installed and the instrument's configuration has been already received; only in this way CommNetEG is able to use this instrument for calls.

5. CommNetEG Config: program configuration

The operating modes of *CommNetEG* may be set up through program *CommNetEG Config*; it allows configuring:

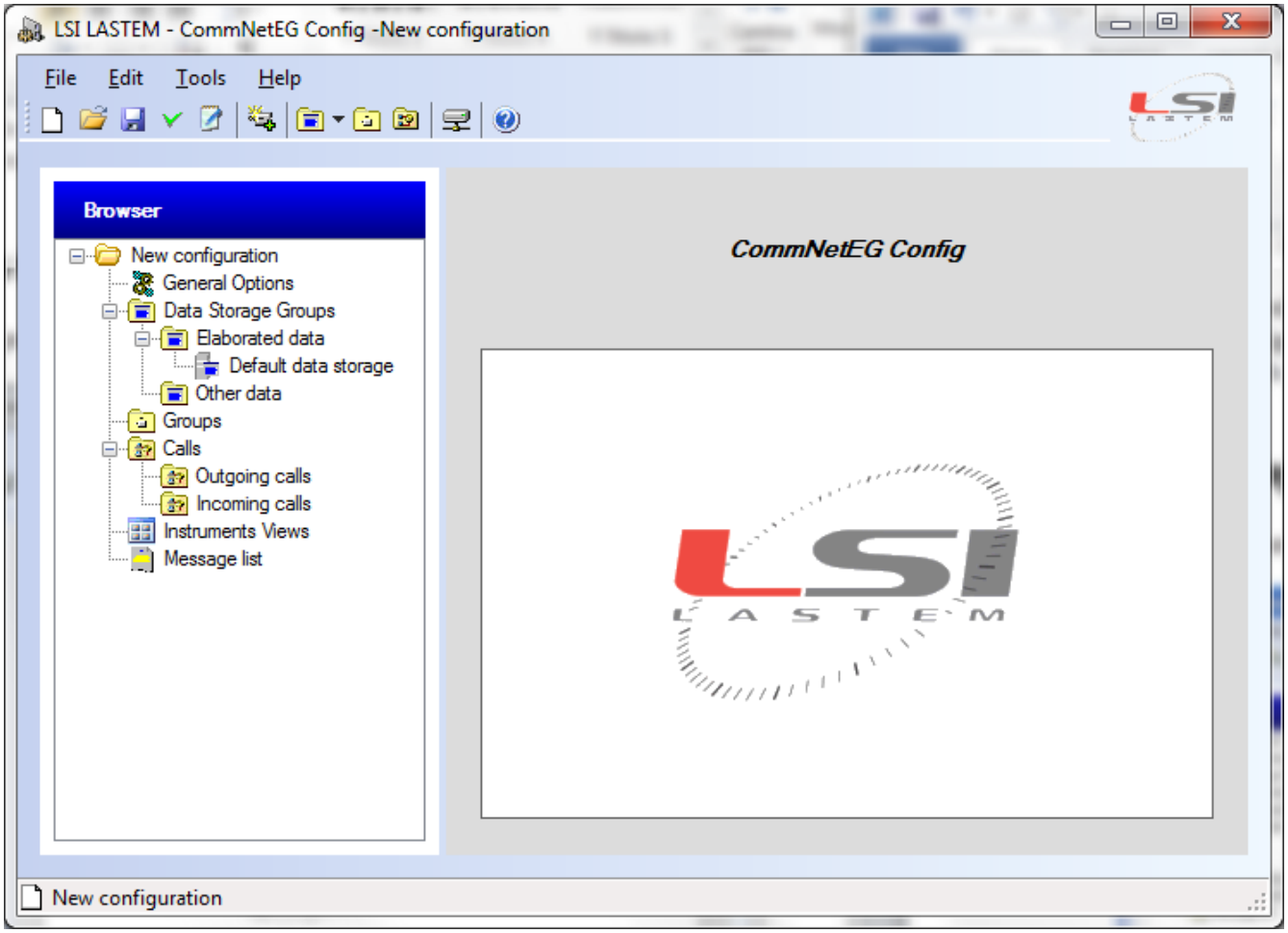
- Data storage and modes (text files, database..);
- Instruments grouping to facilitate Calls definition;
- Calls typologies.
- Instruments grouping to facilitate viewing during communications;

Every different call typology can be associated with several instruments grouping; every instruments group is combined with specific configuration of the data storage, in order to allow maximum flexibility during use of the program.

These setups are saved into configuration file with extension *.cnt*. The program allows the setup of one or more configuration files, which can be used alternatively, according to particular communication needs.

5.1. Program's main components

After start the program shows as follow:



On the left side of the main window there's the *Browser*, it includes several components of configuration that's being modified:

- The configuration groups of the data supports (*Data Storage Groups*);
- The aggregation groups of the instruments (*Groups*);
- The calls (*Calls*) subdivided into *Outgoing calls* and *Incoming calls*.
- The *Instruments Views* to aggregate instruments to facilitate viewing communications.

On the right side of the main window are displayed the details of the component selected from *Browser*.

5.2. Menus structure

The menu and the keys bar allow the selection of different options available in the program.

Menu *File* shows following entries:

- *New*: opens new processing;
- *Open*: opens an existing processing;
- *Verify*: checks the validity of current processing;
- *Show report …*: displays the configuration report;
- *Save*: saves the current processing;
- *Save as…*: saves the current processing with different name;
- *Recent files*: displays the list of the files opened recently;
- *Exit*: program exit.

Menu *Edit* shows following entries:

- *Add instruments group configuration …:* starts the guided procedure for configuration of an instruments group;
- *Add Data Storage*: adds a configured list of data storage; it consists of two sub-menus: one menu for each type of configurable group:
  - *Elaborated Data:* for storage of processed data;
  - *Other Data:* for storage of non-processed data (i.e.: instantaneous data).
- *Remove Data Storage*: removes the selected group;
- *Add Group*: adds new group of instruments;
- *Remove Group*: removes the selected group of instruments;
- *Add Call*: adds a call;
- *Remove Call*: remove the selected call;
- *Edit elaborated Data date request*: modifies the date of first request of processed data, like stored into computer.

Menu *Tools* shows following entries:

- *Available Instruments…:* displays the list of configured acquisition instruments that can be use by *CommNetEG*;
- *Export Configuration:* exports all files used by current configuration into compressed archive;
- *Import Configuration:* imports from a previously setup archive all files used by given configuration.
- *License Manager:* starts License Manager Program.

Menu *Help* shows following entries:

- *Contents*: displays this document;
- *Check for Updates*: checks the availability of program updates from LSI LASTEM website;
- *About this Application*: displays the information about the application, including the program release.

5.3. Setup or open new configuration

In order to setup new configuration select menu *File -> New* or key .
In order to open an existing configuration select menu *File -> Open* or menu *File -> Recent files* or key and select the recommended file.

To make easier the procedure for setup of configuration you can use guided procedure for configuration of instruments single group (§ 5.9)

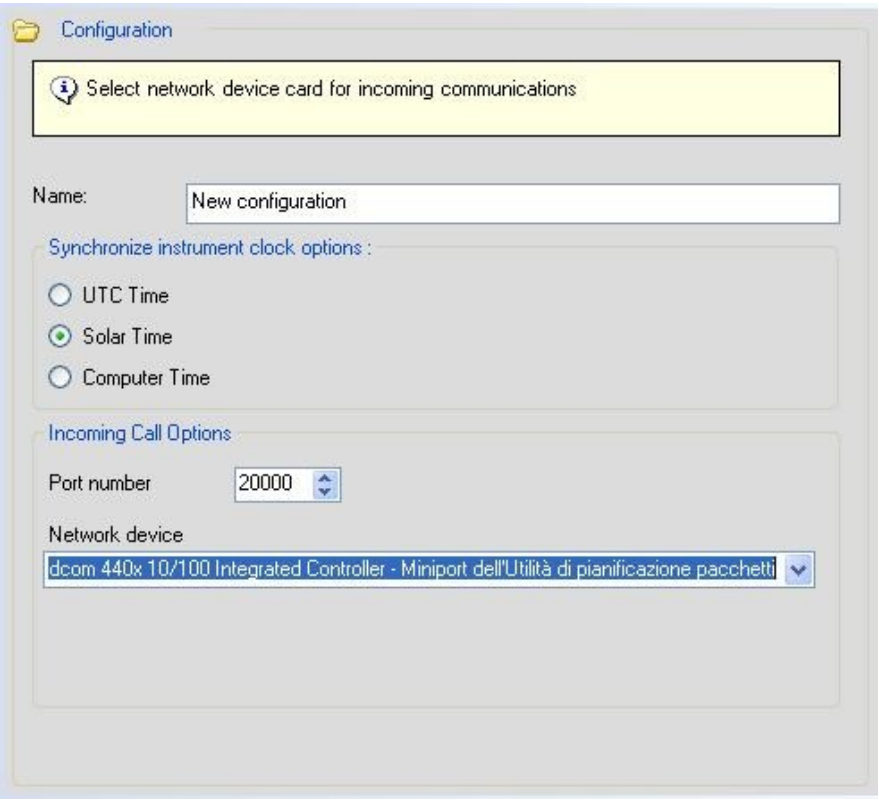
WARNING
When new configuration is setup, the program adds automatically a Data Storage Group for elaborated data (§ 5.5) with the current configuration used by 3DOM program.

5.4. Save the configuration

In order to save the current configuration on the same file, from which it has been loaded, select menu *File -> Save* or key . To save the current configuration on new file, select menu *File -> Save as....*

5.5. Configuration of General Options

In order to configure the general options of configuration select item *General Options* from browser. In this way you can modify the name of configuration (displayed in the main item of browser), the clocks synchronization options and the options for entry calls.



In particular specify TCP listening port and used network card in order to configure the entry calls.

5.6. Configuration of Data Storage Groups

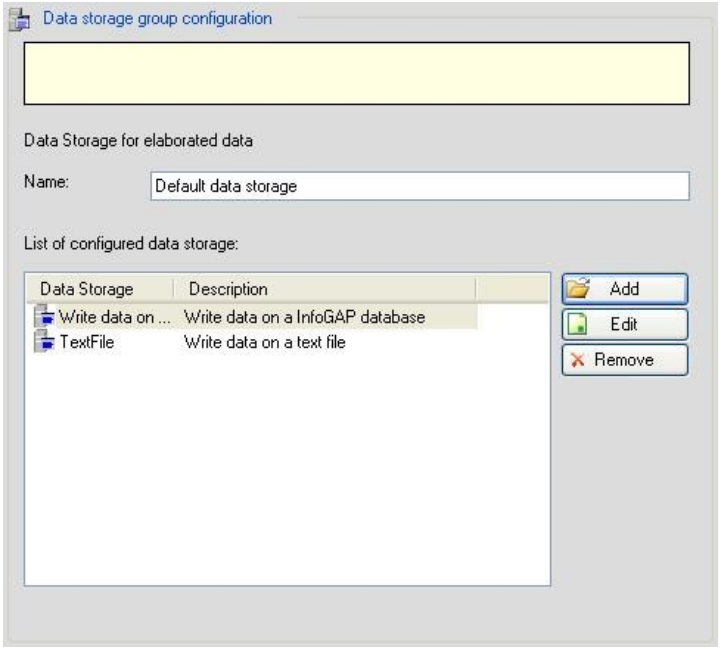
To configure a *Data Storage Group* select it from browser; to setup a new one select menu *Edit -> Add Data Storage -> Elaborated Data* or *Other data*.

Data Storage Groups are divided into two typologies:

- *Elaborated Data;*
- *Other data* (for instantaneous data, state data, etc.).

This sharing is made because some data storage supports aren't able to save the data in case they aren't type *Elaborated Data;* for example the database used by InfoGAP is able to store only elaborated statistic data, and for this reason it doesn't support the storage of instantaneous data.

Every *Data Storage Group* can contain the configuration of all data storage which are available in the installation for selected datum (elaborated or other type).



For every *Data Storage Group* can be specified:

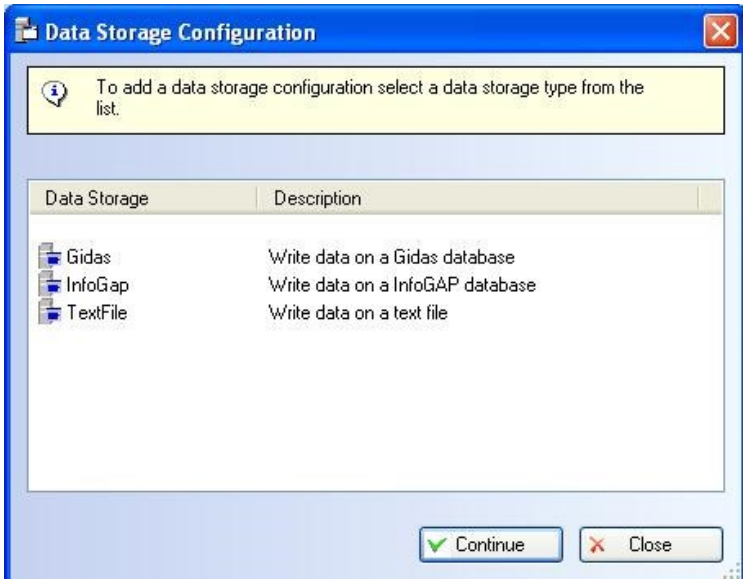
- The group's ID name;
- The list of configured data storage.

To add, modify or remove one data storage from list use keys <Add>, <Edit> and <Remove>.

WARNING
Every "*Data Storage Group****" must contain one configured data storage at last, and it cannot contain two different configurations of the same data storage.***

5.6.1. Add or modify one data storage

To add one data storage press key <*Add*>, to modify the selected data storage press key <*Edit*>. In mask *Data Storage Configuration* select the desired data storage and press key <*Continue*> to activate the configuration mask of selected data storage.



The current program release has got three possible data save modes:

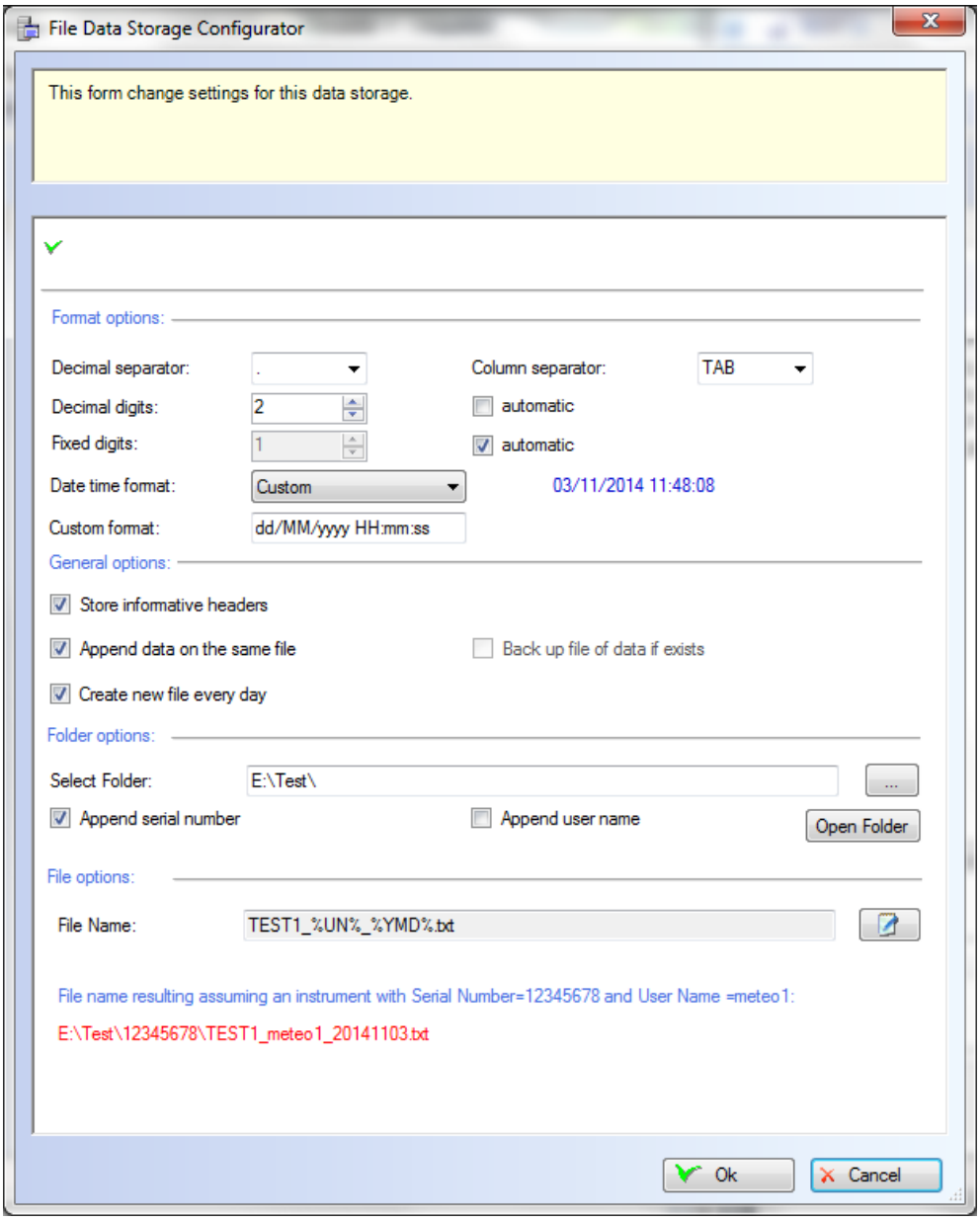
1. *TextFile*: storage of text files in ASCII format;
2. *InfoGap*: storage into database, which can be used by *InfoGAP* program for display of downloaded data. This data storage can save only elaborated data.
3. *Gidas*: storage into *Gidas* database (SQL Server 2005) that can be used by *GidasViewer*.

WARNING
The mask will display only data storage that can be configured for datum type which the configuration is referred to (elaborated data of other type).

5.6.1.1. TextFile: storage the data into text file

The storage in text files allows the save of the elaborated data, instantaneous data and instrument's statistics.

Here below is the mask that configures the storage of text file:



Format options, it's possible set-up:

- Decimal numbers separator (to display the real numbers);
- Decimal places for each processed number;
- Number of characters to display each number;
- Data columns separator, (select it from the list or input a new one);
- Date time format: it is possible to select one of these options:
    a. *Local*: uses computer local settings;
    b. *ISO 8601*: uses ISO 8601 format (*year-month-dayThours:minutes:seconds*);
    c. *Year/Month/Day, Month/Day/Year, Day/Month/Year*: uses this sort order to format date; to format time always uses local separator;
    d. *Custom*: user can insert a custom format using these characters: yyyy=year, MM=month, dd=day, HH=hour, mm=minutes, ss=seconds

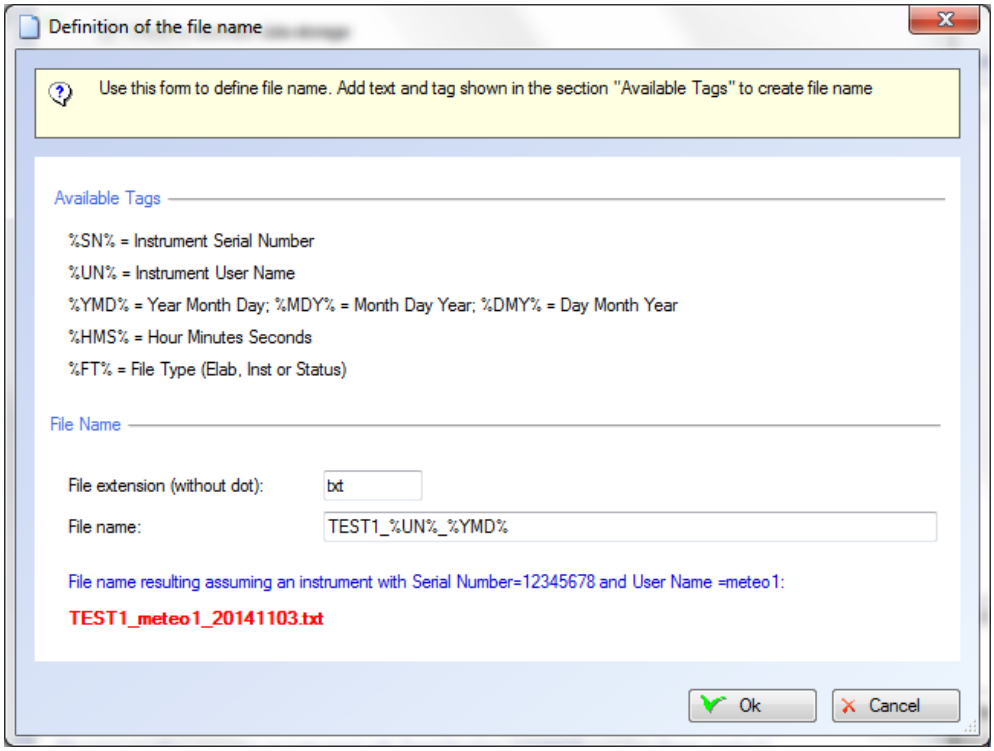
General options, it's possible to set-up:

- The mode for the display of the file header; selecting the checkbox *Store informative headers* it inputs the header inside the data file (this header describes the structure of the available measures and processings
- The writing mode on file: selecting *Append data on the same file* every download writes the data at the end (queue) of the file;); if this option is enabled you can also select the option *Create new file every day* to create e new file every day.
  WARNING: the date used to decide if it is necessary to create a new file is the download date and not the elaborated values date.

Folder options, it's possible set-up:

- The main folder where save the files;
- Select *Append serial number,* to save the files in different folders adding serial number to the main folder, select *Append user name,* to save the files in different folders adding instrument user name to the main folder,

File options, to generate the name of the file where downloaded values are saved select the button  to open the *Definition of the file name* windows;



In this window you can specify the file extension and build the file name using a series of TAG to dynamically generate it. The available TAGS are:

- *%SN%* : this TAG inserts in the name of the file the serial number of the datalogger
- *%UN%* : this TAG inserts in the name of the file the user defined name of the datalogger
- *%FT%* : this TAG inserts in the name of the file the type of the downloaded data (values are *Elab* for elaborated values, *Inst* for instantaneous values, *Status* for statistical values)
- *%YMD%, %MDY%, %DMY%* : these TAGS insert in the name of the file the file creation date using four digits to represent year and two digits to represent month and day. The difference between these TAGS are elements order (Y=year, M=month, D=day)
- *%HMS%* : this TAG inserts in the name of the file the file creation time using the format hours (from 00 to 23) minutes (from 00 to 59) seconds (from 00 to 59).

Every TAG is begins and ends with the characters "%" and is case sensitive. The red label shows the resulting file name assuming an instrument with Serial Number=*12345678* and a User Name = *meteo1*.

Warning
If the user doesn't select the option "*Append data on the same file****" every instrument data save sets-up one new data file .***
If the user selects the option "*Append data on the same file****", the name of the file should NOT include date or time TAGS; if the user selects the option "****Append data on the same file****" AND the option "****Create a new file every day****" the name of the file MUST contain a date TAG and should NOT contain a time TAG.***

Example of: Save of one instantaneous data record:

```
UpdateTime=2007-12-18T14:54:00
SerialNr=06040062
Ch1 VELVento=0 m/s
Ch2 TempINTerna=23.2 'C
Ch3 LivBATTeria=80 %
Ch4 SOILTemp=-55.8 'C
```

Example of: Save of one processed data record:

```
Date/hours  Wind-Speed (m/s) Msr.1 Inp.9
                        Min   Ave   Max
2007-12-18T14:20:00     0.80  1.00  1.20
2007-12-18T14:30:00     0.80  1.00  1.20
```

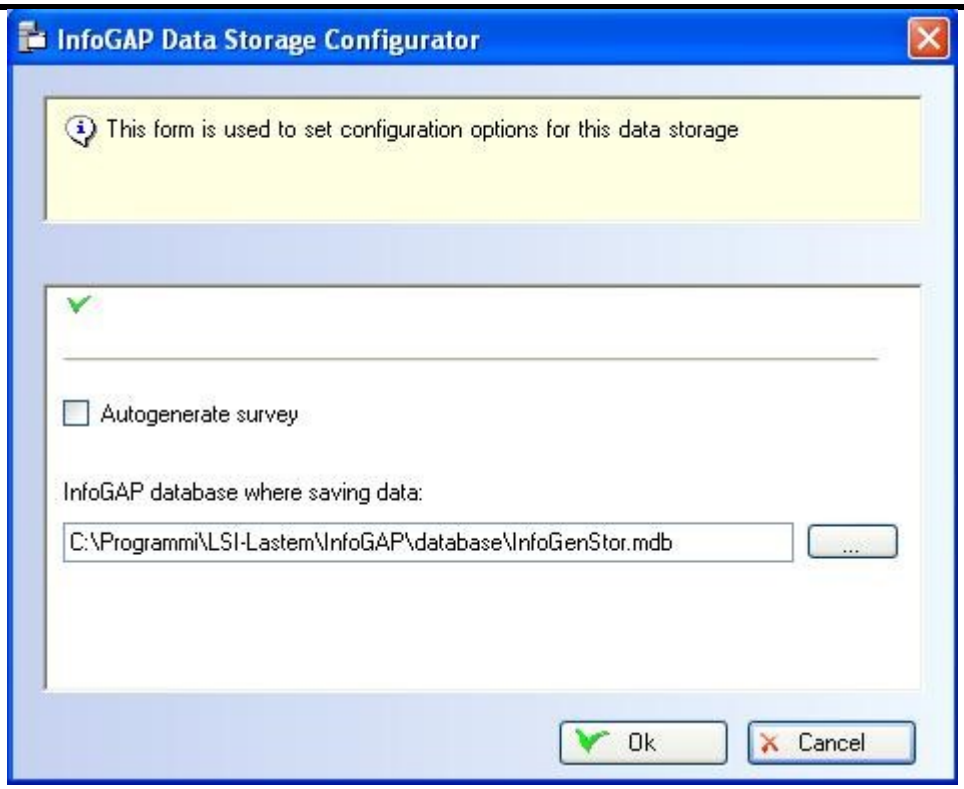
Example of: Save of one statistic data record:

```
SerialNr=05110008
InstrumentDate=2008-04-03T11:56:58
LivingTime=29.17:56:34
StatisticTime=29.17:56:34
RunMode=Normal

SerialPort=1
ReceivedBytes=38687846
SentBytes=14169993
TotalReceivedFrames=190256
ReceivedBadFrames=2
SentFrames=190210
```

5.6.1.2. InfoGap: Storage data into *InfoGAP* database

The storage on *InfoGAP* database allows the save of elaborated data only.
Following mask configures the storage on *InfoGAP* database:



It's possible to set up following options:

- *Autogenerate survey:* it generates new survey at every download; if the checkbox hasn't been selected the program generates new survey only at first download, and queues the data downloaded successively. If anyone of instrument's configuration parameter has been modified, a new survey will be generate at time of new data download;
- *Archive InfoGAP*: select *InfoGAP* database for data save; this database is usually inside the folder *Database* of *InfoGAP*'s installation and it's called *InfoGenStor.mdb*.

Press key *Ok* to accept the modifications.

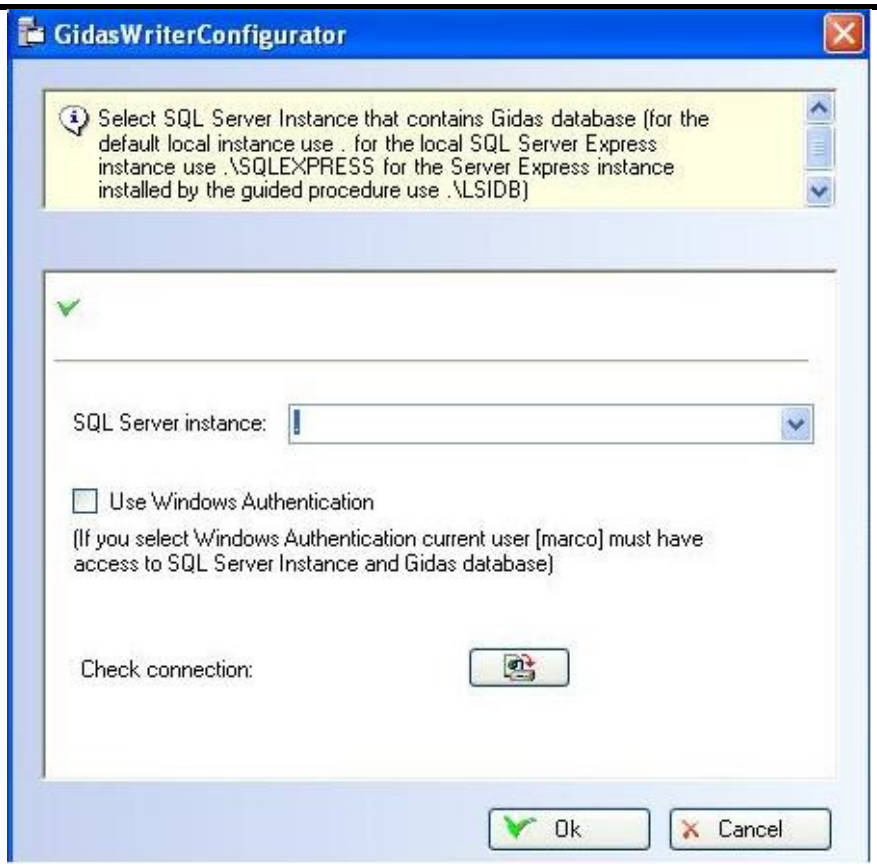
WARNING
The storage of data on InfoGAP database needs:

- ***InfoGAP software must have been installed;***
- ***Instrument's configuration must be compatible with InfoGAP***
- ***InfoGAP database must have up-to-dated operative codes tables, and it must be updated to version 2.0.7 or higher;***
- ***The instrument from which data are downloaded must have been inputted and enabled into database using InfoGAP software.***

5.6.1.3. Gidas: Storage data into Gidas database

Gidas database allows the storage of processed data and instantaneous data.

Here below you can find the window for storage in *Gidas* database:



You can setup these options:

- *Instance of SQL Server:* select SQL Server 2005 instance that includes *Gidas* database (use point like default instance in local computer; use .\SQLEXPRESS like default instance of SQL Server 2005).

- *Windows authentication use:* in case of use of Windows authentication the current user needs the privileges for connection to SQL Server 2005 instance and use of *Gidas* database; at the opposite it'll use the users set by program for database installation and the access to SQL Server 2005 instance happens through mixed mode.

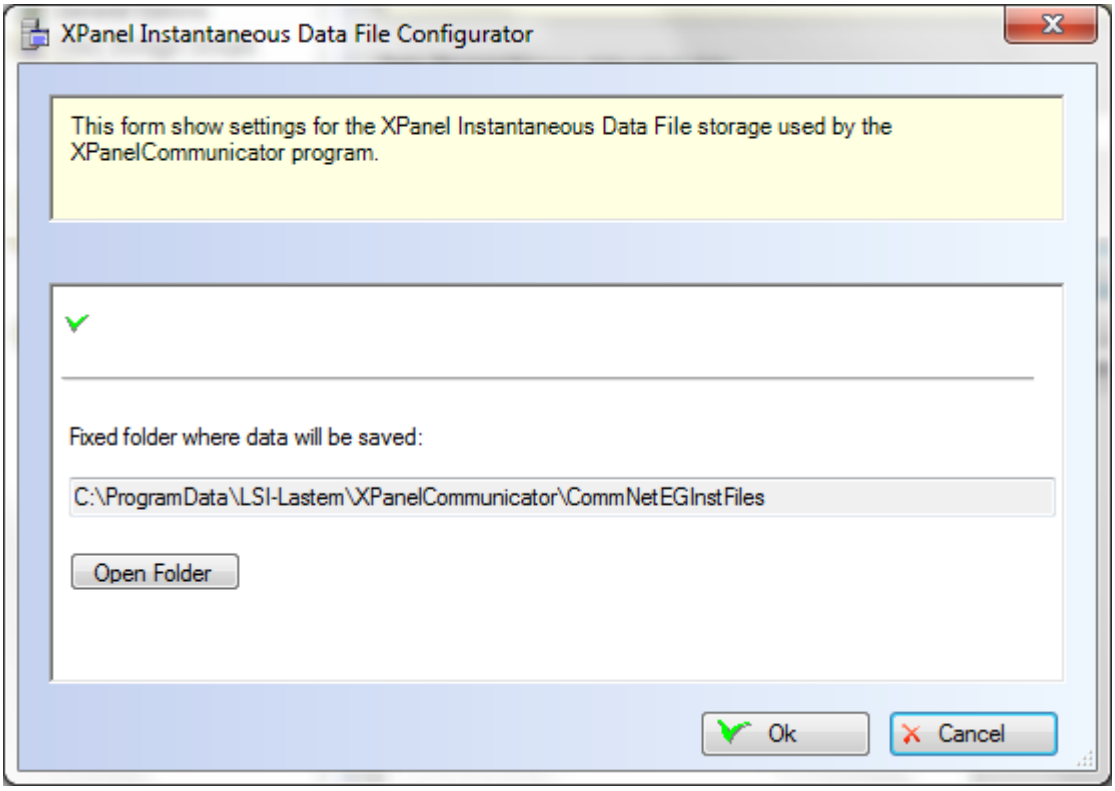
WARNING
In order to store the data into Gidas database of SQL Server 2005 you need Gidasviewer program, which installs database and needs one activation licence for each instrument. Gidas database needs SQL Server 2005: if user doesn't have it, the free release Express SQL Server 2005 will be installed during database installation.
For further information make reference to handbook of GidasViewer program.

5.6.1.4. XPanelFile: storage data to use as sources for XPanel program

Xpanel is the system for the dynamic visualization of data from LSI LASTEM dataloggers.
Xpanel contains a communicator program (*XPanelCommunicator*) that receives the data by the dataloggers or by the program *CommNetEG* and transmits them over the network using TCP connection, and a viewer (*XPanelViewer*) that displays the received data with different types of indicators.

To use *CommNetEG* as a source for *XPanel* you must add at least one *Data Storage Groups* for *Other Data* selecting the data storage *XPanelFile*.

The configuration form shows only the predefined folder when the instantaneous data will be saved:

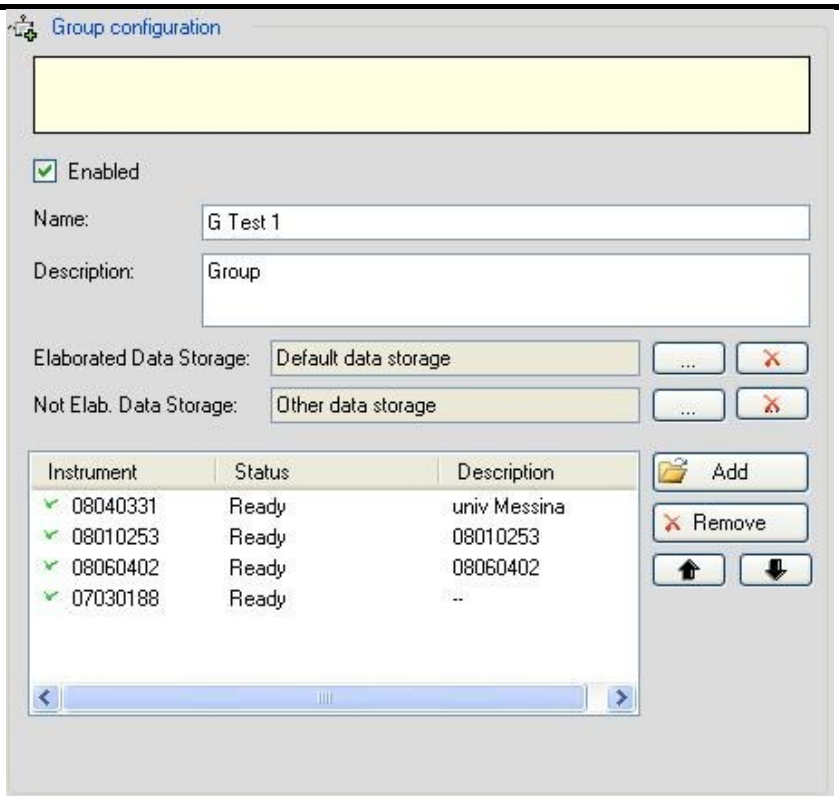


ATTENTION
Carefully read the XPanel user guide for more information about the use of CommNetEG as a source for XPanelCommunicator.

5.7. Configuration of instruments groups

An Instrument Group is an aggregation of instruments that uses a particular call and saves the data in a particular group of data storage. For example instruments called every 30 minutes, which save the data processed in the database Gidas.

In order to configure a *Instrument Group* select it from navigator; to create a new one select menu *Edit -> Add Group*.



For every *Group* it's possible to specify:

- ID name of the group;
- Description of the group;
- The group of data storage for elaborated data;
- The group of data storage for not elaborated data;
- The list of the instruments put into the group.

Furthermore it's possible to disable the *Group* selecting checkbox *Enabled*: in this case the group will not be used during the running of *CommNetEG*.

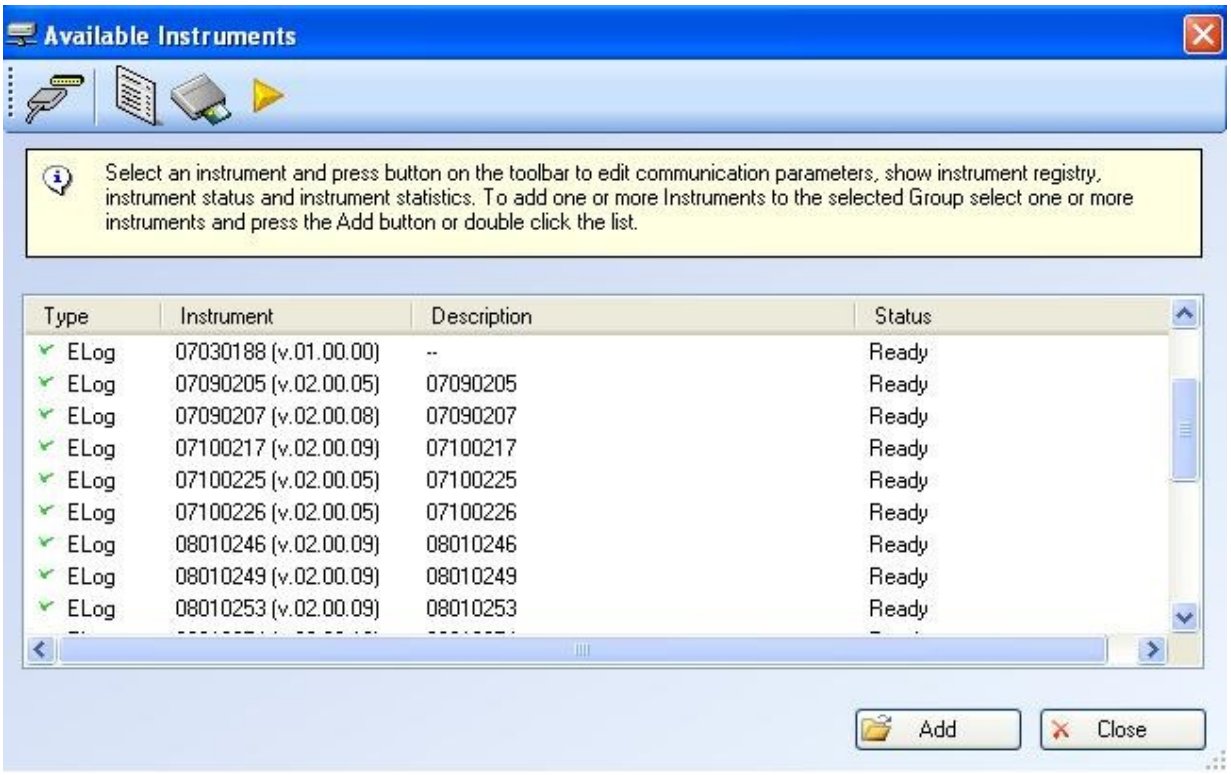
The data of group's instruments (downloaded according to modes of call to which the group is associated) will be saved into data storage suited for required datum type. Use key  to add one data storage and the key  to remove it.

Use keys <*Add*> e <*Remove*> to add or remove one instrument from the list.
Use keys  to modify the sequence of the instruments: the sequence of the instruments list is the same sequence followed by *CommNetEG* program when it calls the instruments.

WARNING
One instrument can belong to different groups only if they use the same elaborated data storage group; this condition is required because the date of data request is added to each call that requires the elaborated data of one instrument. Without this limitation, if and instrument belongs to different groups (which save on different data storages and are managed by different calls made at different times) the data on two data storages will be incomplete.

5.7.1. Available instruments window

Select key <*Add*> to add a instrument to *Group*: it'll be displayed the window of *Available instruments*.



This window shows all available instruments and specify the type, the serial number and firmware version, the description and the state. The keys under headline bar allow:

-  to modify the communication parameters of the selected instrument;
-  to display the personal data of the selected instrument;
-  to display the instantaneous data of the selected instrument;
-  to display the state of the selected instrument.

To add one or more instruments to the list of Instrument Group select the instrument (or the instruments) and press key <*Add*>.

You can get to this windows also through menu *Tools -> Available Instruments* (in this case there isn't key <*Add*>).

WARNING
In order to modify or download the instrument's configuration use program 3DOM; the instruments marked with exclamation mark cannot be used until their current configuration has been received through 3DOM.

3DOM software, with current configuration of instrument, must be installed on PC that uses CommNetEG in order to download data. Otherwise the configuration must be exported and then imported on PC that uses CommNetEG .
After modify of the configuration and the re-establishment of software function, these operation should be execute:

- ***"Disable communications" from Edit menu,***
- ***"Reload current configuration" from File menu,***

- *"Enable communications" from Edit menu.*

5.8. Calls configuration

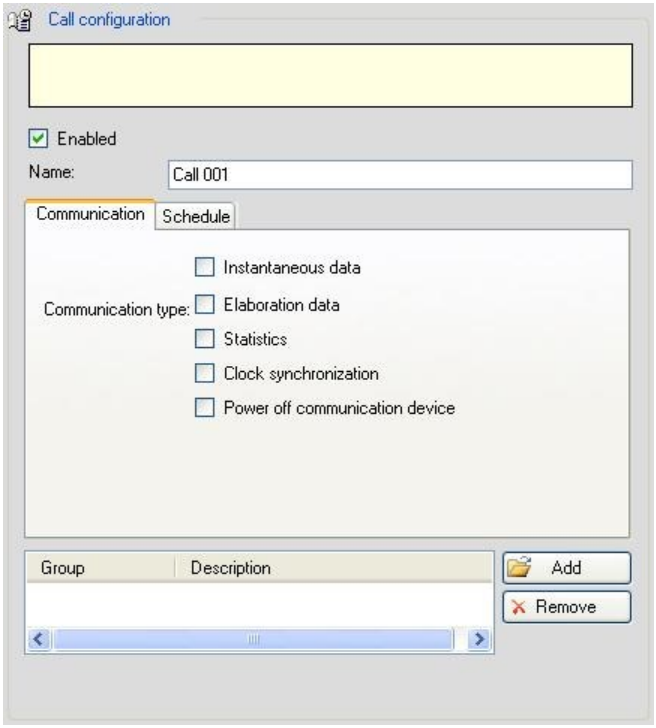
There are two typologies of *calls*:

- *Outgoing calls:* the program executes the programmed calls towards the instrument according to schedule fixed by the user;
- *Incoming calls:* the instrument executes the incoming calls according to configuration's setups; for example the GPRS calls.

To configure one *Call* select it from browser; to set up a new programmed call select menu *Edit -> Add Call* or menu *Add new* on the item browser's *Outgoing Calls;* to set-up a new entry call select menu *Add new* on the item browser's *Incoming Calls.*
Input the name of the call and then modify other parameters. The configuration panel of the call consists of two sections: *Communication* e *Schedule*.

5.8.1. Outgoing Calls

The section *Communication* allows to specify the typology of data required by the instrument, or commands to enter (clock synchronization, power off communication device); it's possible to select several communication typologies at the same time; they'll be managed together in the same call.



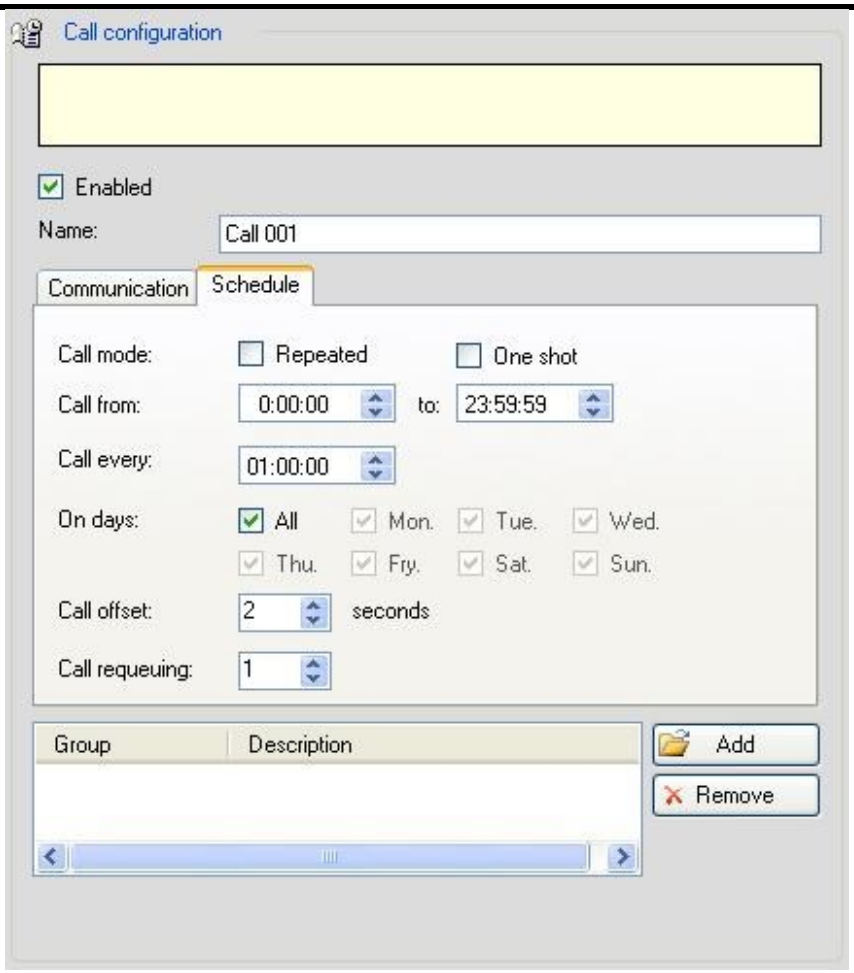
It's possible to select one or more communication types; they are:

- *Instantaneous Data*: they represent last value acquired by each measure; the value is updated inside the instrument according to acquisition rate programmed for every measure; the request to transfer these data doesn't start again their acquisition by the instrument;

- *Elaborated Data*: they represent the whole statistic data calculated for each measure; the program receives the elaborated data (of all measures) from previous reception date to last available datum; in this way computer's updated all processed data stored into the instrument, whenever using shortest time (§ 6.4).
- *Statistics*: they represent the statistic information calculated according to instrument operation; these data can be used to execute diagnostic computer side facilities;
- *Clock synchronization*: it sets instrument's hour according to PC's hour; it's important that PC has been synchronised correctly, i.e. using synchronization system from NTP server; it's useful synchronize the instruments' clocks in case they manage the timed starting of the communication equipments, allowing to CommNetEG to execute the communication at provided time; an other reason is to obtain elaborated data compatible among different instruments perfectly; the clock synchronization should happen once a day at least; it isn't useful to synchronize the clock for periods shorter than one hour; the synchronization hours is selected according to program configuration (§ 5.12);
- *Power off communication device*: it switches off automatically the communication equipment (modem, radio, protocol converter) connected to the instrument and lined up through actuator n. 7; this is an useful function to reduce the acquisition system consumption at least (it's often more conditioned by the communication equipment); the switch-off happens 60 seconds after the reception of switch-off command and owing to inactivity of further communications; in case the communication equipment is power on through timer actuator it's recommended the instrument synchronization through command *Clock synchronization*.

The section *Schedule* determines when the instrument is called, through setup of following parameters:

- Call modes;
- Call timing (starting hour, end hours, interval, day of the week);
- The delay (in seconds) of call execution as regard provided hour;
- The maximum number of call queues that happen in case the communication equipment fails the connection to the instrument; the current call is queued to calls already present for device in question.



The call mode may be *Repeated* or *One shot*. In case of call *Repeated* specify:

- Starting hour;
- End hour;
- Interval between two calls;
- Days of the week in which execute the call.

If call is *One shot* it's necessary to specify the hour of call: in this case the call will be carried out only once at specified hour every day among selected days.

At the end specify the groups of instruments that take part to the call; if several instruments use same communication device at the same time, the program will queue and get over them one at a time. To add or remove a *Group (of Instruments)* from list use keys <*Add*> e <*Remove*>.

Furthermore it's possible to disable the *Call* deselecting the checkbox *Enabled*: in this case the call won't be used during execution of *CommNetEG*, but remain configured all the same for future re-use.

5.8.2. Incoming Calls

The C*ommunication* section and the list of the *Instruments Groups* are configured in the same way of the *Outgoing Calls.*

The *Schedule* section considers only the configuration of one slot. When the program receives one incoming call it checks the incoming calls associated to the instrument, which have call slot that includes current time. So for that call are executed the types of communication it programmed in.

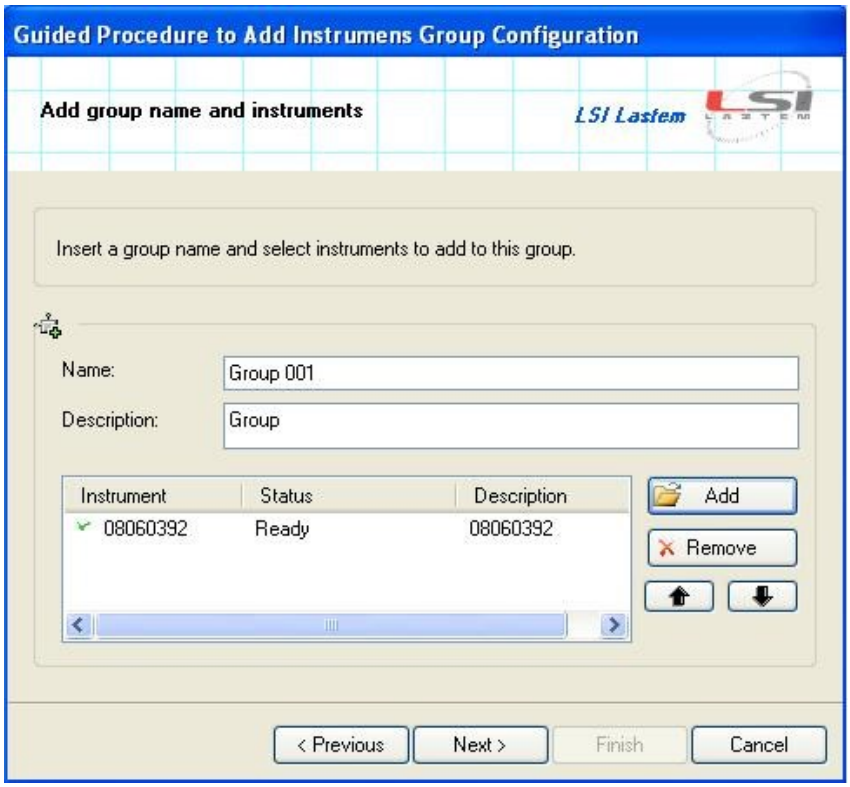
5.9. Guided Procedure for configuration of one instruments group

It's possible set-up one new configuration setting its items in the following order:

1. configuration data storage groups (§ 5.6);
2. configuration of instrument groups (§ 5.7);
3. configuration of calls (§ 5.8).

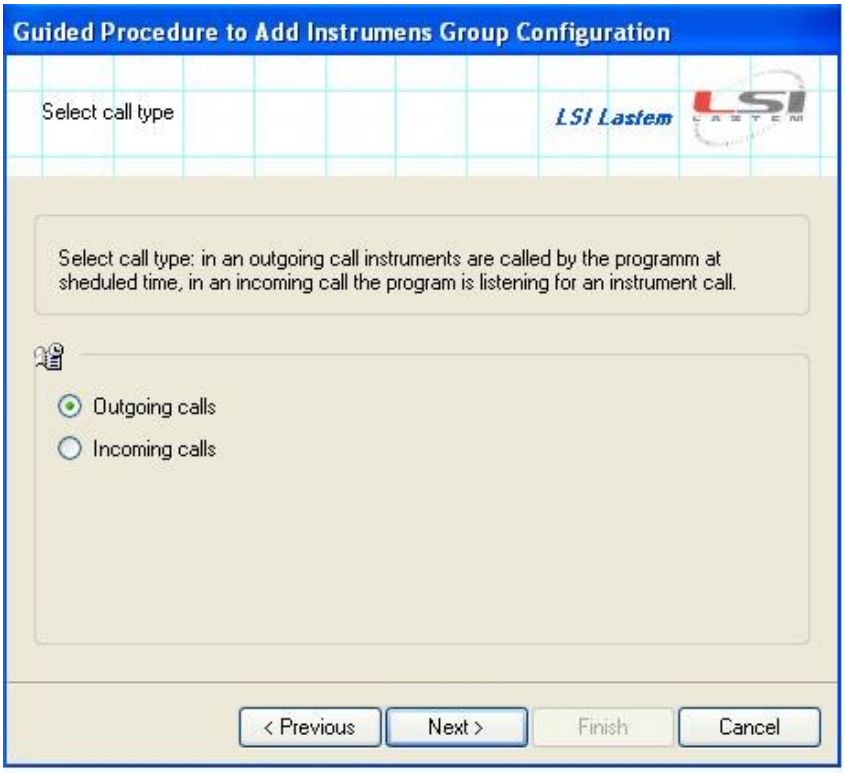
Alternatively it's possible activate the guided procedure for configuration of one instruments group. to activate the guided procedure select menu *Edit->Add Instruments Group Configuration* or select key  .

Step 1: Instruments add:



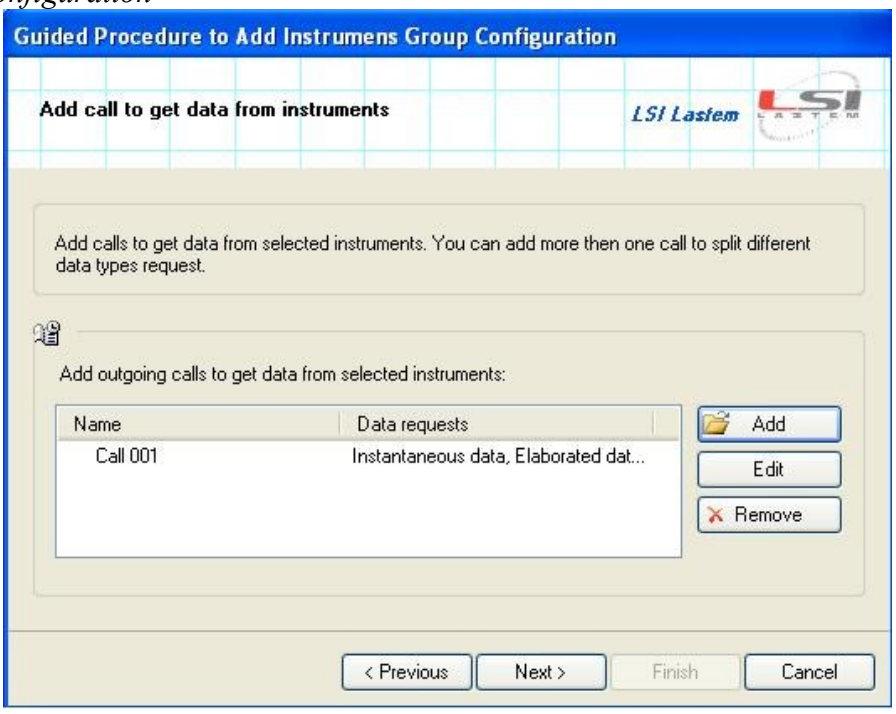
Input the name of the group and its description.
To add or remove one instrument from the list use keys <*Add*> e <*Remove*>.
To modify the order of the instruments use keys  : the list of instruments has the same order the instruments are called by *CommNetEG* program with.

Step 2: selection of call type:



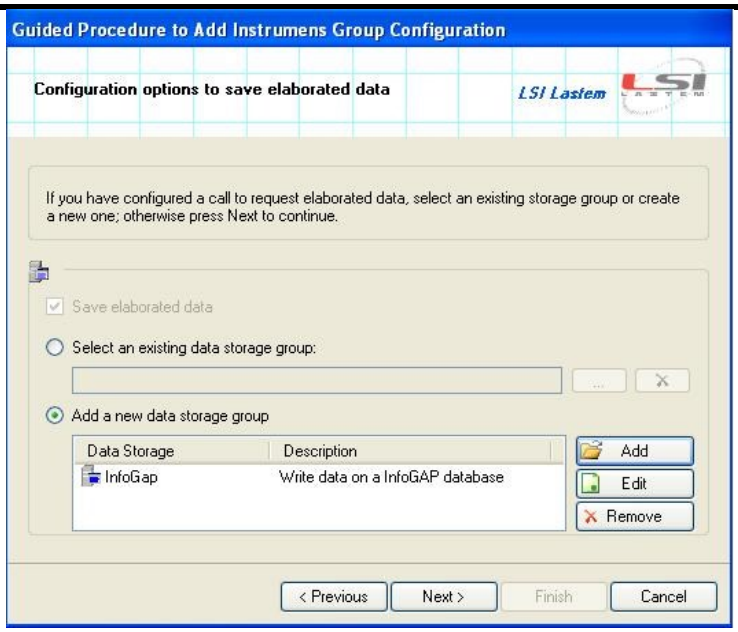
Select the type of call associated to the group (§ 5.8)

Step 3: Calls configuration



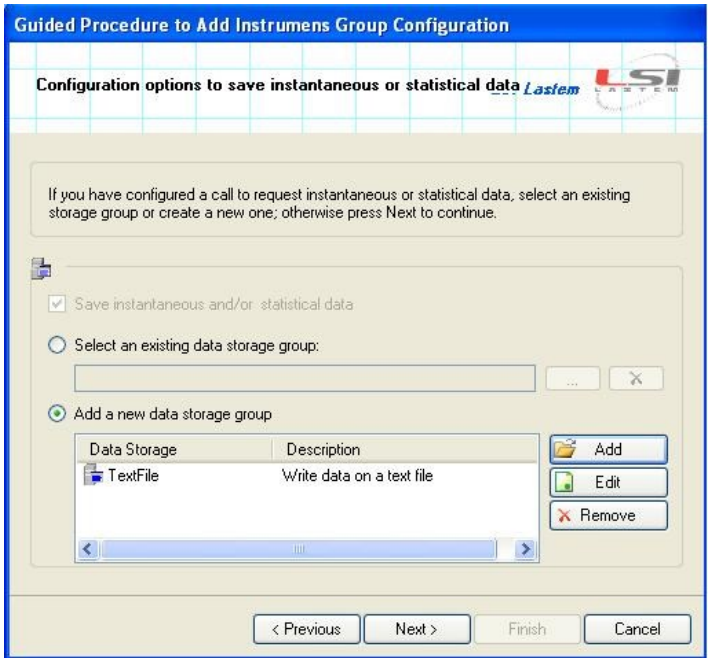
Use keys <*Add*>, <*Edit*> e <*Remove*> in order to configure the calls associated to this instruments group. The call configuration determines the type of required data and the call's time modes for outgoing calls (§ 5.8).

Step 4: Configuration options for storage of elaborated data



If call considers the storage of elaborated data you have to specify the data storages for save of elaborated data. Through this screen you can select one storage group already associated to configuration or add a new one. Use keys *<Add>, <Edit> e <Remove>* to add, modify or remove items that you want associate to new data storage group for processed data.

Step 5: Configuration options for storage of instantaneous data



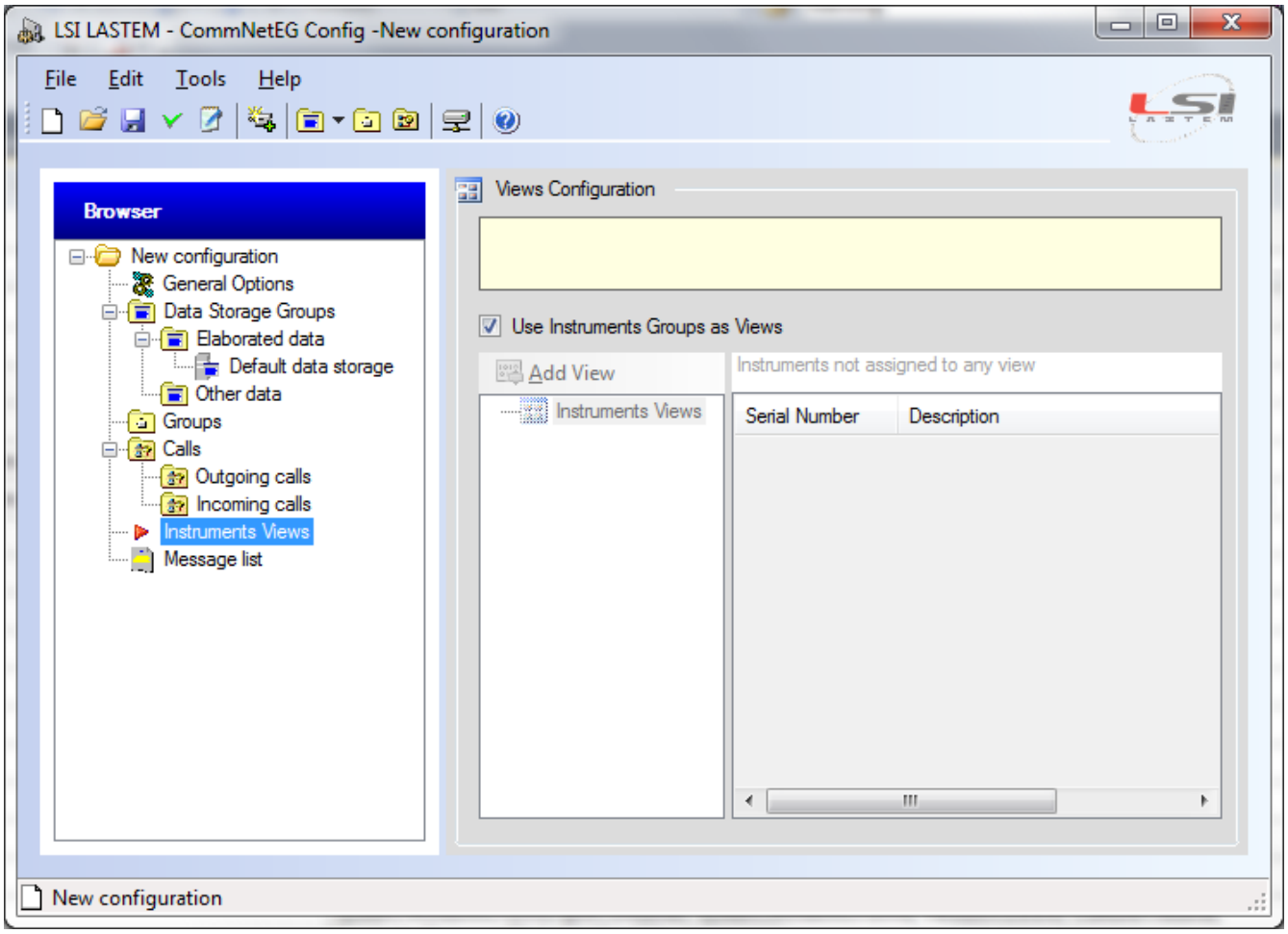
If call considers the storage of instantaneous data you have to specify the data storages for save of instantaneous data. Through this screen you can select one storage group already associated to configuration or add a new one. Use keys *<Add>, <Edit> e <Remove>* to add, modify or remove items that you want associate to new data storage group for instantaneous data.

Going on to next step the information collection will be complete and you'll be able to generate the configuration: the items inputted during guided procedure will be added to current configuration.

5.10. Instruments Views Configuration

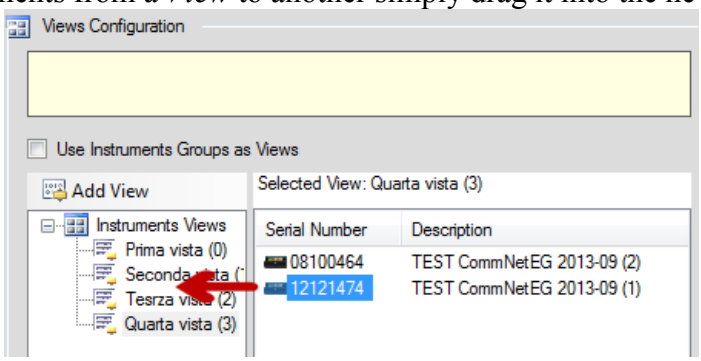
The *Instruments Views* are a way to aggregate the instruments to facilitate the visualization of the state of communications and of the data saved in the communication program *CommNetEG*. For example, you can aggregate in a view instruments of the same type, or belonging to a single customer, or sited in the same geographical area. Conversely Groups (§ 5.7) aggregate instruments according to the characteristics of the calls.

To configure Instrument Views select the node on the Browser:



By default the program uses the *Groups* as *Views*. To create customized views deselect the option *Use Instruments Groups as Views*. Initially, all the instruments are located in the root node *Instruments Views*.

- To add a new View select the button AddView;
- To rename or remove a *View* use the contextual menu by right clicking on the view node; if you remove a *View* all the instruments of the *View* are moved under the root node *Instruments Views*.
- To move an instruments from a *View* to another simply drag it into the new *View*.

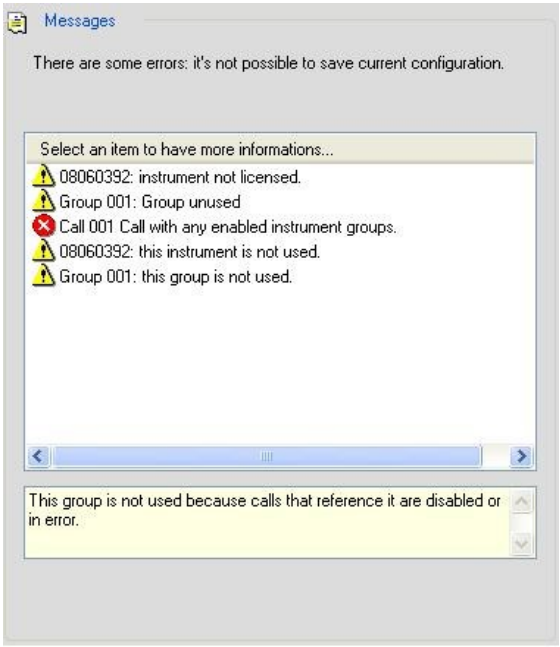


The program *CommNetEG* allows you to select the instruments to be displayed in the information panel in accordance with the views defined in the configuration; you can also select to display all the instruments.

The instruments that are not associated with a View that will remain in the Views root node: in i program these instruments will be visible only if you select the option to display all the instruments.

5.11. Check and save of the configuration

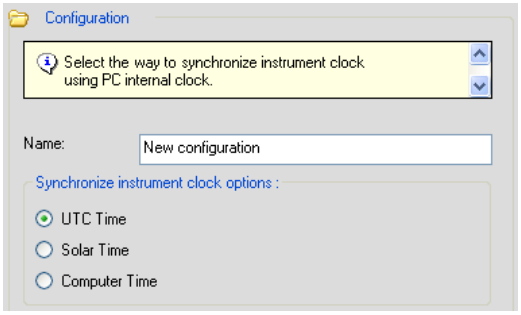
When one configuration is loaded or saved or when menu *File -> Verify* is selected, the program verifies the consistence of contained data. If configuration has some problems, it shows one Messages list that contains all signals about the consistence check.



The list of messages can shows error messages and warning messages: in case there are only warning messages and the save of configuration has been required it shows key <*Continue*> that allows the execution of the save.

5.12. Name of the configuration and clocks synchronization options

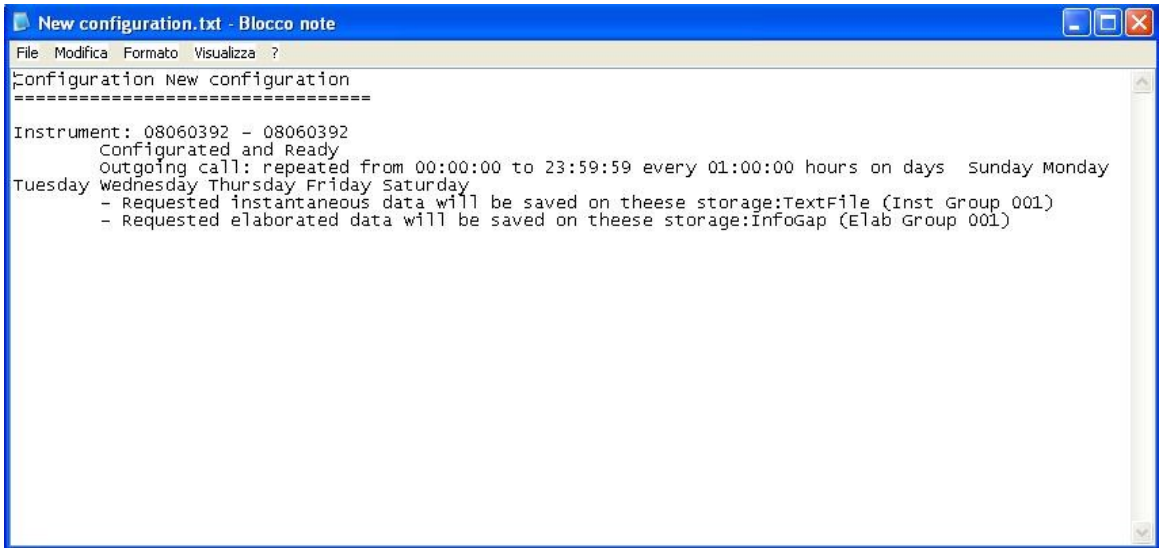
In order to modify the name of configuration and clocks synchronization options select the main node of browser.



In this panel it's possible to modify the name of configuration (displayed in the main element of browser) and the synchronization modes of instrument's clock.

5.13. Display of Configuration Card

Through menu *File* → *Show report…* you can display card of current configuration in text format; it shows, for each instrument, the call modes, the required data and the data storages where required data are saved.

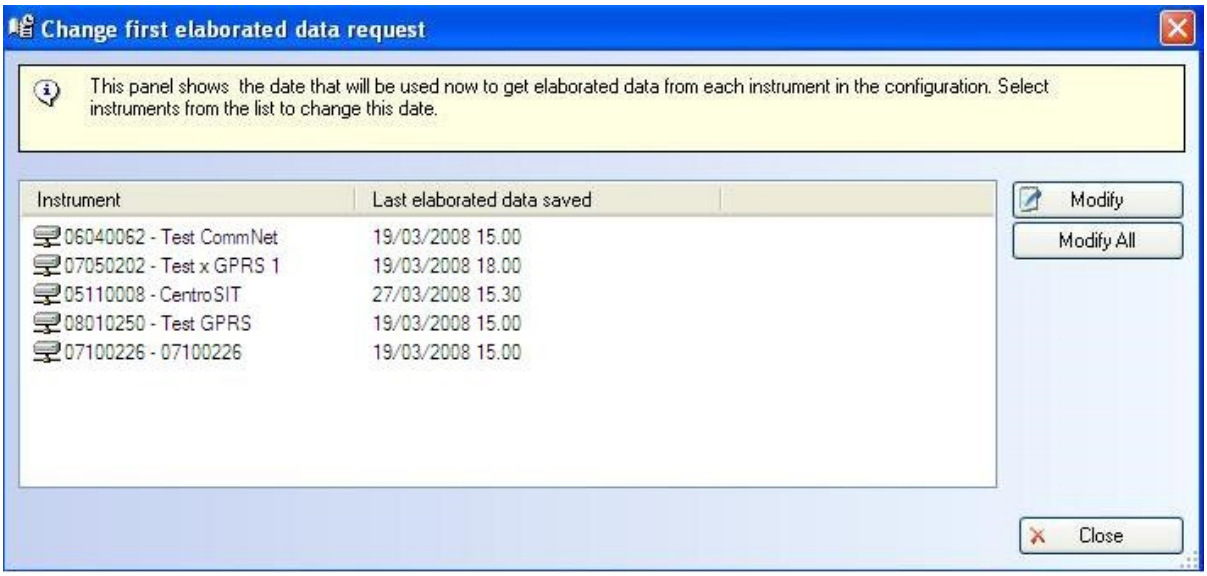


5.14. Modification of processed data request date

When you ask the instrument for elaborated data, at the end of downloaded data storage, the system stores the date of last saved datum in order to set-up the date of next request automatically. If data are stored in several storage mediums, it's used oldest date (about mediums' errors make reference to (§ 6.4). If elaborated data have never been downloaded, the program asks the instruments for all its data.

Through menu *Edit* → *Edit elaborated data date request* you can modify the request date of processed data of each configured instrument: the modified date will be used at next call by CommNetEG.

The modification window displays the date that will be used for request of processed data at next call by CommNetEG too.



5.15. Import and Export of configurations into other computers

When you need to move the execution of CommNetEG on an other computer, besides installing the needed programs, may be useful transfer current configuration, but it ISN'T enough to copy file which includes it. CommNetEG configuration needs other files in order to operate correctly. For each instrument it needs:

- File that includes the description of instrument type and of its release;
- Files that include the configuration of measures;
- File that includes the calibration;
- File that includes the configuration of communication's parameters;
- Licence file;
- File that includes the date of last datum saved in storage mediums.

Use menu *Tools* → *Export Configuration* to export one configuration; this menu activates the guided procedure that sets-up one new file (zip file); this file includes all files needed to repeat configuration on other computer.

Use menu *Tools* → *Import Configuration* to import one configuration; this menu activates the guided procedure that copies all files needed for operation of configuration in a new computer (beginning from zip file set-up through export procedure).

ATTENTION
CommNetEG software must be disactived during both operations of Export configuration and Import configuration

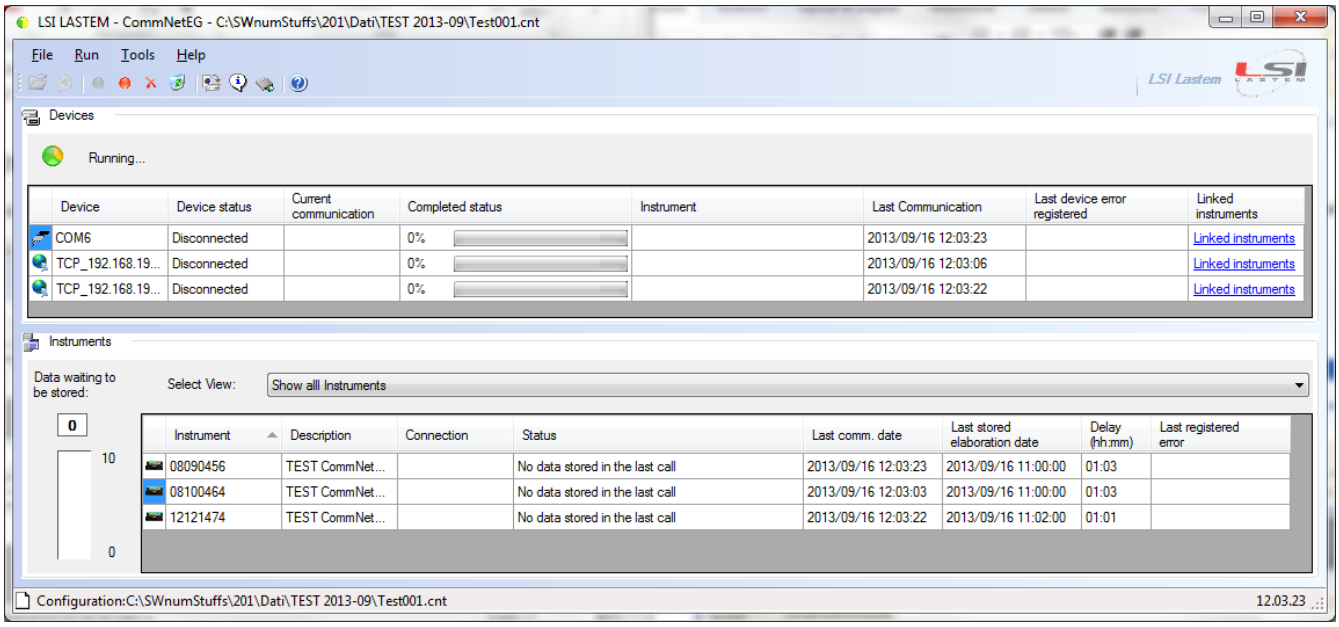
6. CommNetEG

The program *CommNetEG* executes communications in automatic or manual mode with instruments of series E-Log and storages the received data on different data storage.

The operation modes of the program are contained inside the configuration files generated by the program *CommNetEG Config* described in previous chapter.

6.1. Program's main parts

This is the program after its start:



The area *Devices* shows:

- Program's operation state;
- List of configured communication devices; for each device it shows:
  - Operation state of the device;
  - Type of current communication (request of instantaneous data, elaborated data, …);
  - The finishing percentage of communications estimated for call in progress;
  - The instrument that is communicating on the device;
  - The date of the last communication;
  - The date of last error recorded on the device;
  - The instruments connected to device: the connection leads to a window that shows all configured instruments which communicate with specified device.

In case of incoming call (for example when instrument communicates through GPRS) the program sets-up device's line just at time of first received call: if in configuration's file has been set-up `HideIncomingDisconnectedConnection=true`, the set-up device's line is cancelled at the end of communication [§ 6.9]. Furthermore link referred to instruments connected to device is always empty.

The area *Instruments* shows:

- The number of data storage requests (that are waiting to be executed) on several storage devices;
- The instruments Views list;
- The list of configured instruments; for each instrument it shows:
  - The serial number;
  - The description;
  - The presence of a running connection;
  - The instrument state;
  - The date of last communication;
  - The date of last elaborated stored datum;
  - The delay of the last elaborated value;
  - The date of last error stored in data save.

6.2. Menus structure

By means of menu and keys bar you can select the program's options.

The menu *File* shows:

- *Open*: opens an exiting configuration and loads it;
- *Recent files*: opens a configuration recently opened and loads it;
- *Reload Current configuration*: it reloads current configuration; the command is available only after the communications with the instruments have been disabled.
- *Exit*: closes the program.

The menu *Run* shows:

- *Enable Communications*: starts the timing of outgoing calls and the reception of incoming calls;
- *Disable Communications*: stops the timing of outgoing calls and the reception of incoming calls, awaiting for the end of calls in progress;
- *Abort Communication*: stops the communications but doesn't await for the end of communications in progress and stops the calls' scheduler and the reception of incoming calls
- *Clear date queue*: it empties the list of not saved data, without saving them.

The menu *Tools* shows:

- *Manual Call*: displays the window for manual calls;
- *Show Running Events*: displays a window that shows log messages generated by the application running;
- *Explore Events File*: display a windows that allows to explore log file content, using various kind of filters:
- *Show Statistics*: displays the communication's statistics;
- *Edit Actual Configuration*: starts program *CommNetEG Config* and initializes it with current configuration;
- *Show Configuration State*: checks the configuration in progress and displays its possible fault messages.

- *Set Auto Start* : sets the program to start automatically when the P.C starts;
- *Remove Auto Start*: remove auto start option;
- *Edit Program Settings*: display a windows that allows the edit of the settings of the program.

The menu *Help* shows:

- *Contents*: displays this document;
- *Check for Updates*: checks possible program's updates from LSI Lastem web site;
- *About this Application...*: shows the information about application, version included.

6.3. Program starting

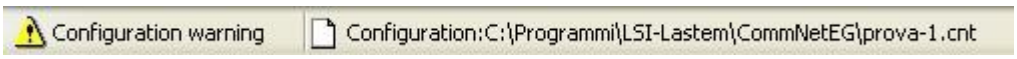
At *CommNetEG* program starting it loads last configuration used during previous execution, and so starts communications automatically.

6.3.1. Configuration replacement

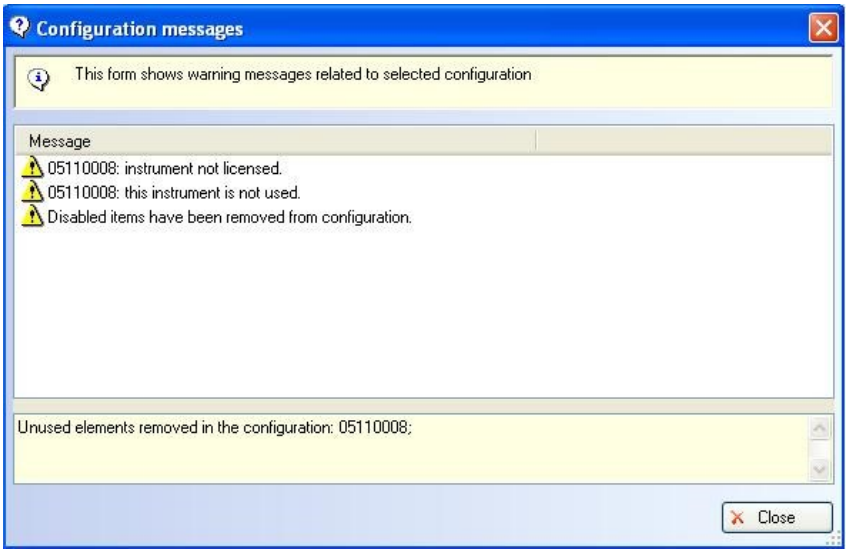
Change configuration as follow:

1. Stop communication by menu *Run* → *Disable Communications*;
2. Load new configuration by menu *File* → *Open*;
3. Start communications by menu *Run* → *Enable Communications*.

If loaded configuration has got some problems, the program doesn't start; if configuration has got notice messages (i.e. contradictions or abnormal conditions which anyway allow its operation), the program starts but its status bar signals these notices:



Click on status bar or select menu *Tools* → *Show Configuration State* to display notice messages list:



Consider that all items that aren't used by the configuration (groups or disabled calls, instruments included into disabled calls…) are excluded from every program's actions.

6.3.2. Display /Modification of current configuration

Select menu *Tools → Edit actual Configuration* to display current configuration. This menu starts the configuration program through current configuration. If the configuration program has already been started, close it and repeat same operation, or check that active instance is using same configuration file like CommNetEG and, at the opposite, open file with current configuration.

In order to modify current configuration you have to stop timing of exit calls and the reception of entry calls (menu *Run → Disable Communications*), then reload the configuration through menu *File → Reload Current Configuration* or through icon in the toolbar.

6.4. Management of elaborated data storage

The program tries to save the data received from the instruments on all data storage of elaborated data configured for each specific instrument.

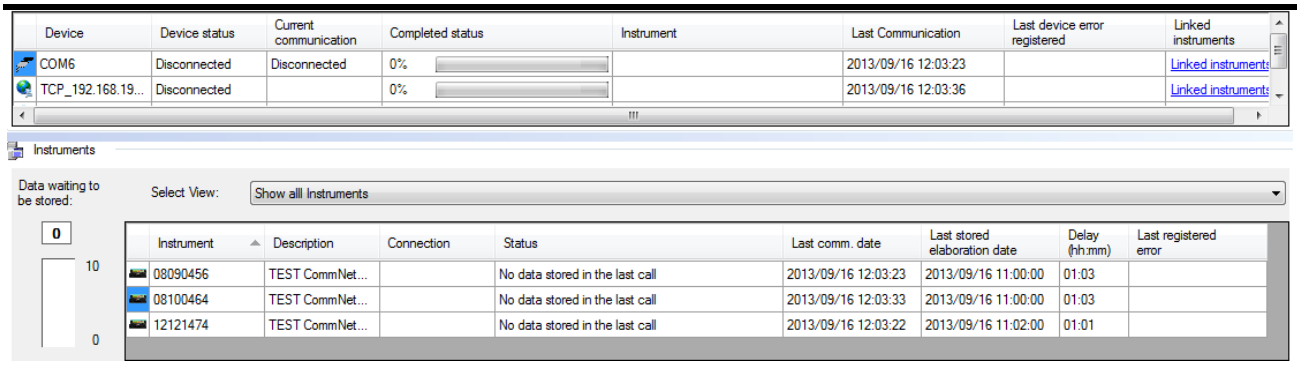
In case of no storage errors, the programs updates the date for next request of elaborated data according to date of the latest value saved on several data storage: in this way at next call it'll be required only data later than saved data.

In case one data storage isn't able to save the data correctly, the program doesn't update the request date of elaborated data. It may happen in case the connection to database or to network has been broken off. Through this operation mode (if data storage has been reconnected) all data storage will be updated with all data received from the instrument. If the lack of connection lasts, the instrument will require much more data: the program is able to manage the communication's timeout during data download saving the data partially downloaded.

It's possible to modify this operation mode (§ 6.10)

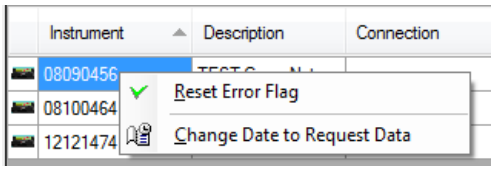
6.5. Viewing the status of communications and data storage

The program displays the status of the communication channels and the status of the individual instruments on two separate lists.



If an error occurs while communicating or while storing data the error is indicated by a special icon  with the date / time of the error, which is useful to check the recorded events (§ 6.6) to investigate the cause of the problem. If the next communication or data storage occurs without error the error message is removed. You can change this setting (§) to maintain track of the error: in this case the error icon is replaced by a warning icon  .

It is possible to delete error message by right clicking on a device or on an instrument using the contextual menu:



If you right click on another place of the list you can delete all the error messages.

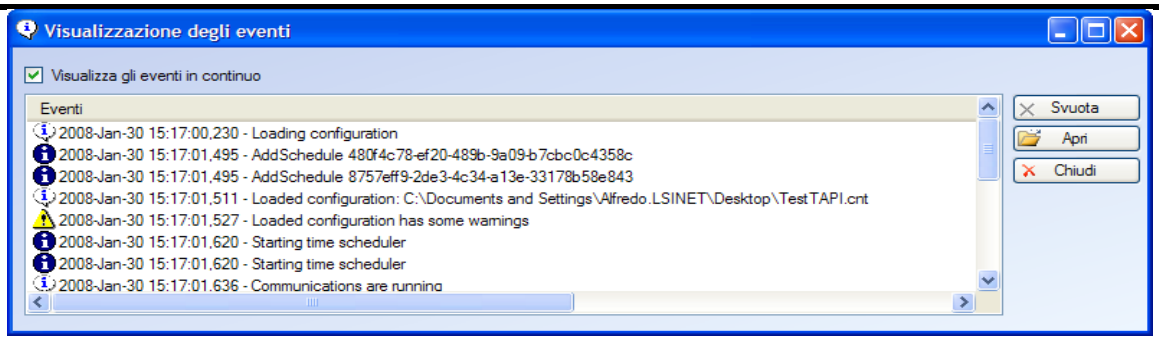
The status of individual instruments reports the result of the last communication and elaborated data storage. Useful indication is represented by the last two columns *Last stored elaboration date* and *Delay*. These columns show, respectively, the date of the last saved elaborated data, which corresponds to the date of requesting data for subsequent communication, and the delay with respect to the current date chosen on the basis of the clock synchronization options (local time, solar time, UTC §5.12); the delay is helpful in evaluating the communication status of the instrument.

6.5.1. Using Instruments Views

It is possible to filter instruments on the list using the Instrument Views defined in the configuration (§ 5.10). To change the filter select another View from the list *Select View*.

6.6. Events display

Select menu *Tools* → *Show Running Events* to display the (log) event messages generated by the application. This menu displays a window which includes last event messages generated by the program:



Select *Clear* to clean the list; selecting *Open* the program starts *Window explorer* and seeks it on the folder where is included the file that includes the log's program.

To stop the automatic update of the event messages deselect the folder *Show event messages continuously*.

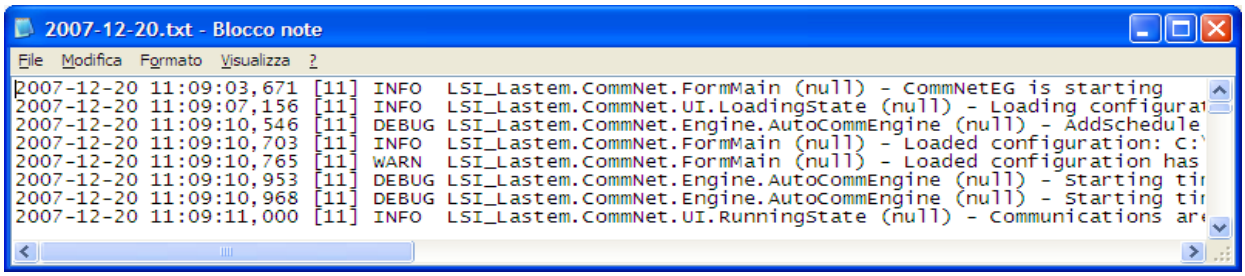
The events recording file lies default in:

C:\Documents and Settings\[User]\Application Data\LSI-Lastem\CommNetEG\Log

where [user] represents the current Windows user.

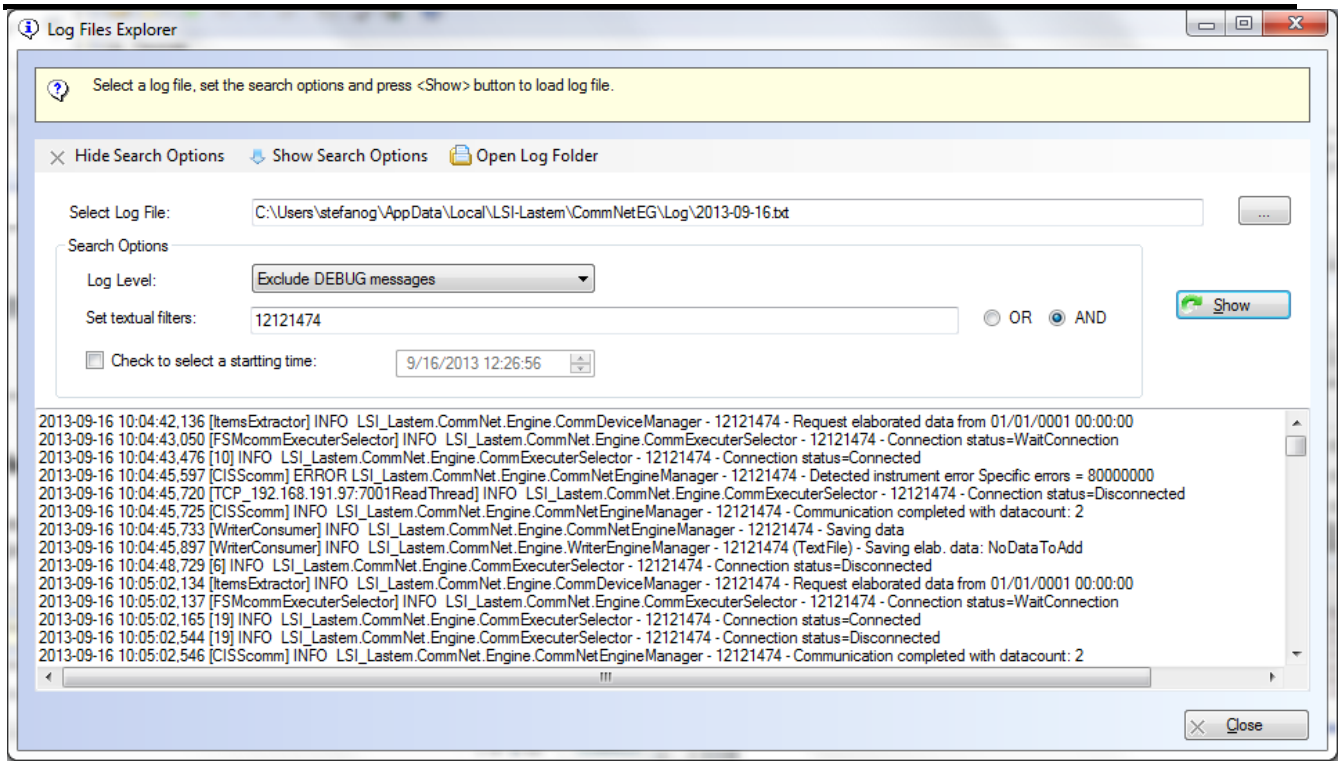
The default setups creates a log file every day and its name is *[year]-[mouth]-[day].txt.*
Every line of log file consists of following information:

- *Date*: format yyyy-mm-dd;
- *Hour*: format hh:mm:ss:ms;
- *Thread*: name or number of thread that has generated the event;
- *Event type*: INFO (standard operations), WARNING, ERROR (operation errors found by the program) and DEBUG (can be set up only by LSI LASTEM);
- *Procedure*: procedure that has generated the log message;
- *Event description*.



6.6.1. Examination and research in the files of events

Select menu *Tools* → *Explore Events File* to display the window which allows user to explore the content of log files using different kind of filter.



In this form you can:

- Select the log file to examine (log file are stored on a daily base);
- Filter message using Log Level;
- Add text filter in AND or OR mode (for example using serial number of an instrument);
- Select messages starting from a user defined date (in the day of the log file).

selecting *Open Log Folder* the program starts *Window explorer* and seeks it on the folder where is included the file that includes the log's program.

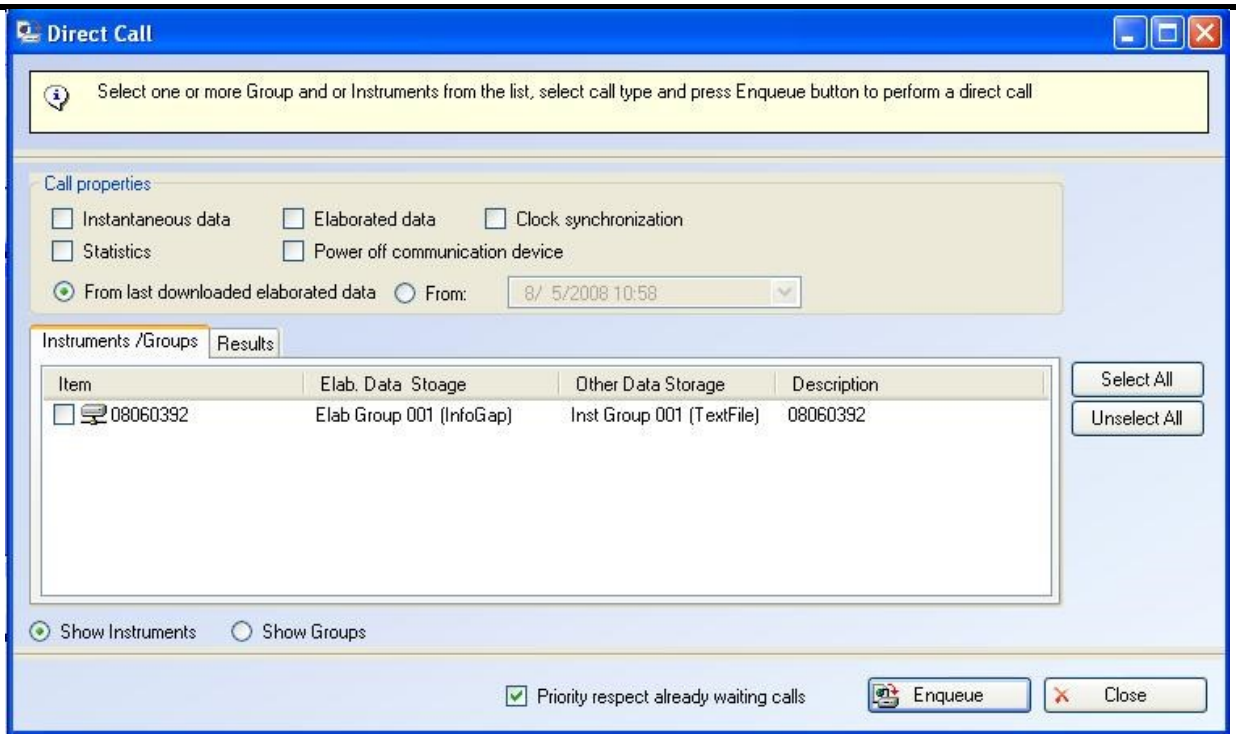
6.7. Manual data request

Even if automatic calls have been set up, it's possible to execute a manual call selecting menu *Tools → Manual Call*.

To run the manual call of an instrument follow these instructions:

- The communications must be enabled;
- The instrument must belong to a valid programmed call.

This is the window for manage of manual calls:



The section *Call properties* allows the setup of:

- Types of data that have to be required;
- Request date for elaborated data; two options are available:
  - It uses automatically for each instrument the date of last saved elaborated datum;
  - It sets up an exact date valid for all selected instruments.

The section *Instruments/Groups* sets up the instruments or the groups that user needs to put into the manual call; the list shows the instruments or the groups according to selected key *Show Instruments* or *Show Group*.

In the display *Instrument* (like shown in the figure) the list displays: the serial number and all files for processed data and for other types of data connected to the instrument; in groups display the list displays only the name of the group and its description.

WARNING
The manual call always manages on single instruments: set up the selection on groups only in order to select contemporary all instruments that belong to selected group.

Remember: the instruments are included into groups and every group is connected to a storage group for elaborated data and to a storage group for non-elaborated data; every storage group can contain the configuration of different data storage of available ones.

After setup of the call modes and after selection of elements or groups press key *Enqueue* to start the manual call; this action queues the call into the execution's queue of *CommNetEG*. If checkbox *Priority respect already waiting calls* has been selected, the call is queued giving it priority over the calls included into the queue, otherwise it doesn't happen.
After press the key *Enqueue* the window shows the list *Results* that indicates if the communication has been a good result.

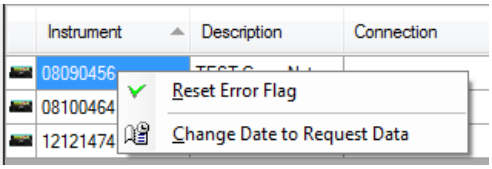
WARNING
If user selects instruments that haven't been configured to save a certain type of data and the call requires them, data like that won't be saved.

If user uses selection mode through groups, the program sets up the list of all instruments that belong to single groups rejecting possible doubles (every instrument can belong to several groups) and the data required by the call will be saved on all data storage configured for single instrument and not only on data storage configured for the selected group: for this reason the selection list in mode Groups doesn't shows the configured data storage.

6.8. Change the date of the data request

When the program calls an instrument to get elaborated data it requires all the data contained in the instrument only at the first communication while for subsequent communication it uses the date of the last elaborated data stored correctly.

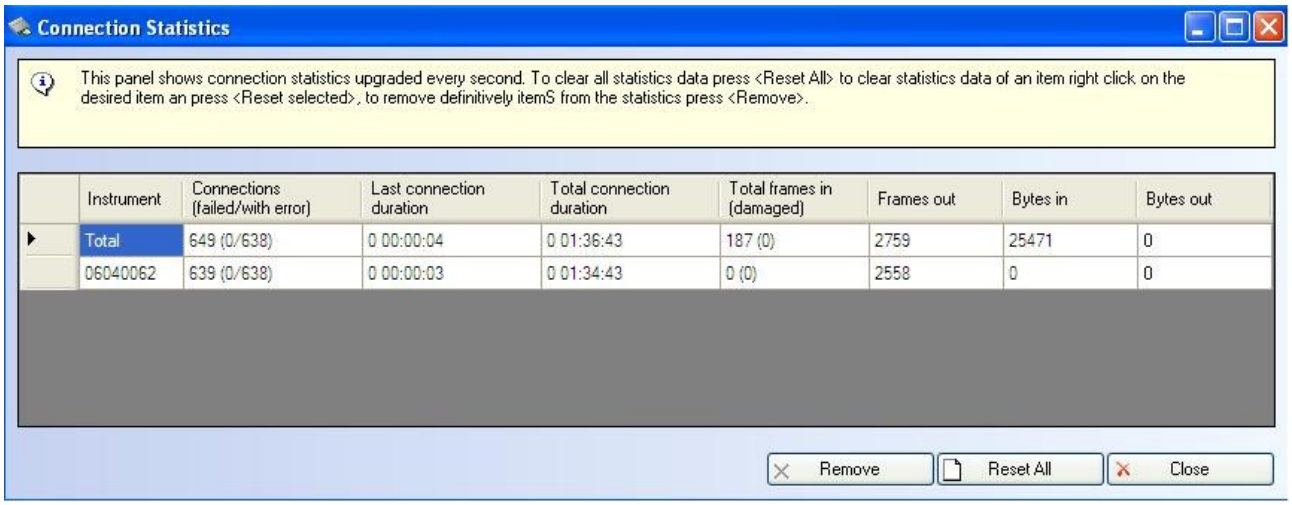
It is possible to change the date of the request by right clicking on the instrument and selecting the *Change Date to Request Data* menu.



WARNING
Don't change the date of the request while the instrument is communicating with the program.

6.9. Statistics Display

Select menu *Instrument* → *Show Statistics* to display the communication statistics.



The communication statistics window displays following information for each instrument:

- Number of total connections, failed connections and connections executed but ended with error;
- Duration of last connection;
- Total duration of connections;
- Total entering frames (data packet) and damaged frames;
- Number of exiting frames;
- Total exiting bytes and entering bytes.

First line of window displays the total statistics.

In this window there are following actions::

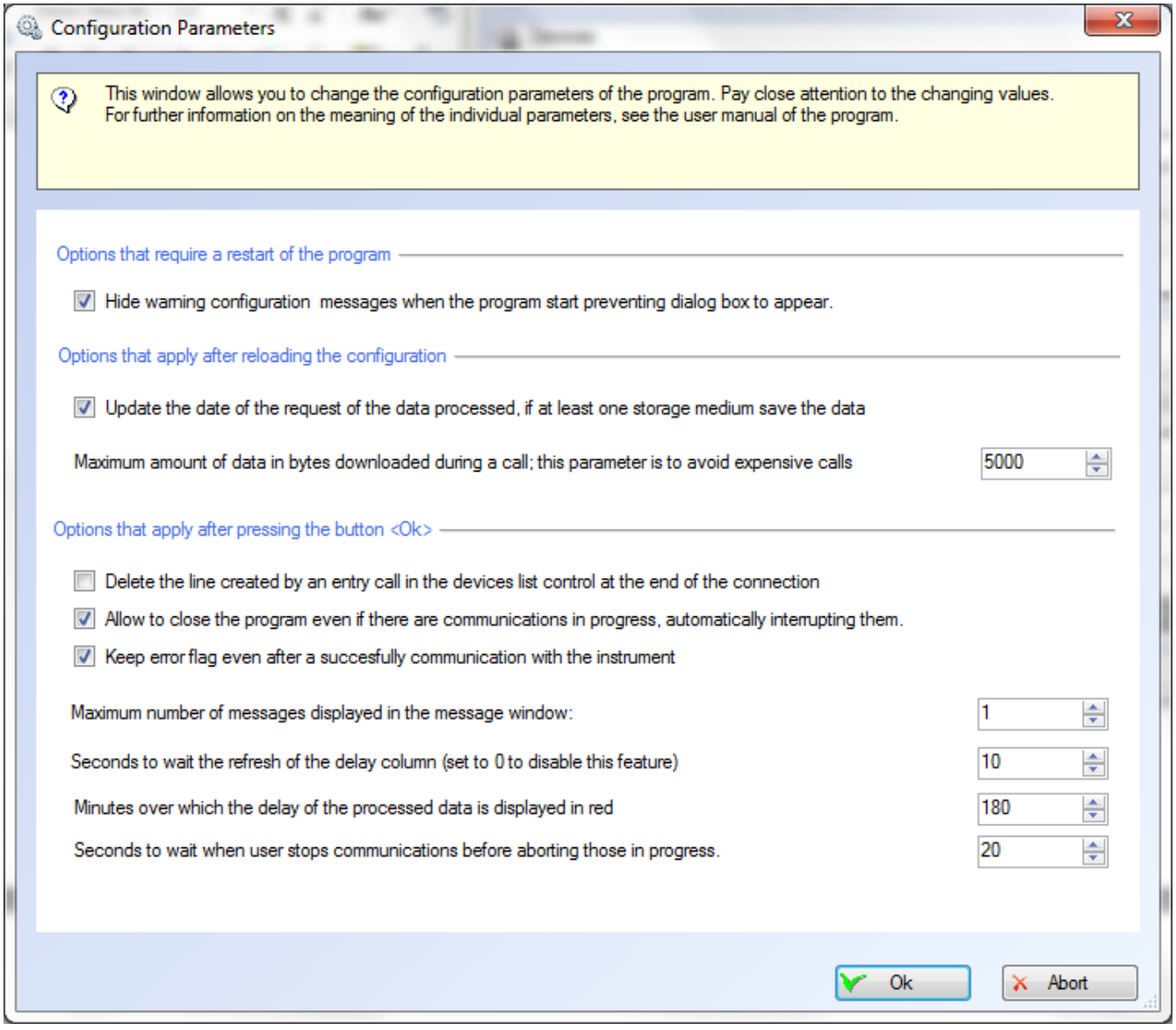
- Contextual menu resets the statistics of selected item on one line of table *Reset selected*;
- Key *Reset* resets all statistics;
- Key *Remove* starts window for removal of statistics items.

Take into consideration that if you change configuration or modify the instruments managed by CommNetEG, the statistics of not managed instruments are always displayed (even if obviously the values don't change): to remove not used items press key *Remove*.

The removal window displays all existing items and allows their removal. If you remove the statistic of a managed instrument, the statistic item will be set-up at first communication.

6.10. Configuration files of program operation

Select *Tools* → *Edit Program Settings* to show the window to edit program's settings.



Options that require a restart of the program

- *Hide warning configuration messages when the program start preventing dialog box to appear*: Select this option if the program is set to start automatically, or if the configuration has warning messages the messages are displayed and the program waits for a response from the user.

Options that apply after reloading configuration

- *Update the date of the request of the data if at least one storage medium save the data*: if it's not been selected and just one data storage of processed data fails the save, it doesn't update the request date of processed data.
- *Maximum amount of data in bytes downloaded during a call:* indicates the maximum amount of data in bytes downloaded during a call; this parameter is to avoid expensive calls. If for some reason the program fails to download multiple times the data of an instrument it can happen that the size of stored data (and thus required during download) exceeds the value of this parameter. In this case, the program will NOT download the data. Manually increase this value, download data and then restore it.

Options that apply after pressing the button <Ok>

- *Delete the line created by an entry call in the devices list control at the end of the connection:* if selected the program deletes the line created during storage of an entry call from the list of devices at the end of connection.
- *Allow to close the program even if there are communications in progress, automatically interrupting them:* if selected it is possible to close the program even if there are communications in progress, automatically interrupting them.
- *Keep error flag even after a successfully communication with the instrument:* if selected keep trace of previous error messages even if the last communication/data storage was successfully;
- *Maximum number of messages displayed in the message window:* sets up max number of messages displayed by events window;
- *Second to wait the refresh of the delay column:* amount of seconds to wait the refresh of the delay information;
- *Minutes over which the delay of the processed data is displayed in red:* minutes over which the delay of the elaborated data storage is shown in red;
- *Second to wait when user stop communications before aborting those in progress:* when the communications are interrupted the program attends the closing of those in progress. After this interval of time in seconds the user can however abort the communications in progress.