



User Guide v1.7

Remisol Advance

By Normand Info

DOCUMENT NAME:

UG-ADV-UK-17

DATE OF CREATION:

APRIL 2013

VERSION 1.7

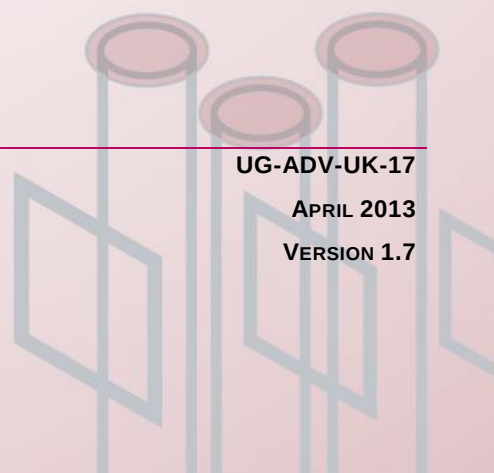
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1 General Information

1.1 Introduction

1.1.1 Intended Use

The Normand Info Remisol Advance Data Manager collects and manages data and workflow for up to three Beckman Coulter instruments. It can also be connected to a host system. It provides data management capabilities such as automatic results validation, delta checking, reflex testing, quality control, results editing, archiving and restoration of patient results. The Remisol Advance system also offers workstation consolidation by providing the ability to control up to three Beckman Coulter instruments from a single user console.

This user guide relates to Remisol Advance version 1.7.

New functionalities for this version are indicated by this logo: **New in 1.7!**

1.1.2 Remisol Advance System Components

Your Remisol Advance system includes the following components:

- CPU (central processing unit) with pre-loaded software
- Remisol Advance Rescue Kit
- Keyboard
- Mouse
- Cables

NOTE:

You must use the serial cables included within the Remisol Advance package. If you need longer serial cables than those provided, please use cables with the same (or even better) quality and isolation.

No monitor, printer, or workstation table is included with the Remisol Advance system.

Pre-loaded software:

Operating System: Microsoft Windows 2003 Server or Microsoft Windows XP
Database management: Microsoft SQL Server 2000 or Microsoft SQL Server 2005
Main software: Remisol Advance

No additional software may be installed on your Remisol Advance system. Normand Info will not take responsibility for their installation and will not provide any support on modified Remisol Advance systems.

Your Remisol Advance kit includes documentation, software, and software licenses for the Microsoft Windows operating system software and the Microsoft SQL Server database operation software.

1.2 Launching and Exiting Remisol Advance

1.2.1 Launching Remisol Advance

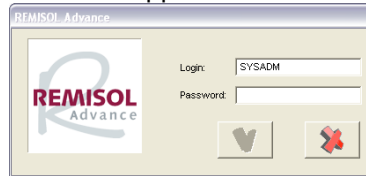
Follow these steps to launch the Remisol Advance Data Manager:

- 1 Turn on the computer. Wait until the computer initializes and tests its internal components (RAM, hard disk, floppy drive, etc.). Windows will start automatically.
- 2 The following message window will appear: **"Press Ctrl + Alt + Delete to log on"**. Simultaneously press the **[Ctrl]**, **[Alt]** and **[Delete]** keys. This will open the Windows log on screen.
- 3 Enter a user name and password. The user name defaults to the last user who logged on. There are two predefined user levels:
 - **LABO**: Laboratory user
 - **SYSADM**: Laboratory system administrator.

NOTE:

Passwords for these two user levels will be provided by your service representative.

- 4 Select **OK** to continue.
If the user logged on as **LABO**, they will directly access the Remisol Advance interface with limited privileges.
If the user logged on as **SYSADMIN**, they will access the Remisol Advance interface with advanced privileges (they may add users, modify privileges, and change passwords) + they may also access the Windows desktop (by minimizing the Remisol Advance software for instance).
On the Windows desktop, the user may also launch the Remisol Advance software by double-clicking the Remisol Advance icon. The following window will appear:



- 5 Once again, the user will be asked to enter a user name and password and as before, the user name also defaults to the last user who logged on. The following user logins are predefined:
 - **LABO**: Laboratory user
 - **SYSADM**: Laboratory system administrator.

NOTE:

Unlike the LABO user, the SYSADM user may add users, modify privileges, and change passwords in the Remisol Advance software.

The default passwords for the two predefined user levels will be provided by your service representative.

Important: The passwords provided must be retained by their owners only.

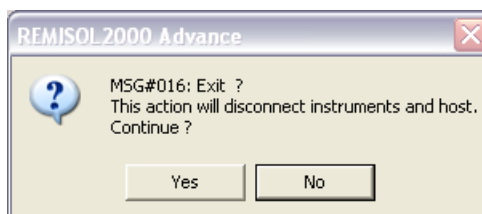
- 6 Click on **OK** to continue. Click on **Cancel** to cancel and exit the Remisol Advance software.

1.2.2 Exiting Remisol Advance

Use one of the following options to exit the Remisol Advance Data Manager:

1. Open the **Environment** menu, and then select **Exit**.
2. Click on the  button on the title bar.
3. Click on the control menu button in the title bar. Select **Close** from the menu.
4. Press **[Alt] + [F4]**.

The following window will appear:



Click **Yes** to exit, or click **No** to cancel exit.

1.3 Events on Start-up

1.3.1 Decimal Checker

Decimal Checker is additional software that compares the decimal precision of the parameters in the current configuration with the requirements of the manufacturer of the instruments. These requirements (expected decimal precision, unit) are provided as a Microsoft Excel CSV file (or text file).

This software starts up automatically on the Remisol Advance initialization.

If the comparison fails for any one of the parameters, a window named **Units-Decimal Precision Discrepancies** will be displayed. That window will show a list of the discrepancies, and the expected precision and unit.

Correcting the configuration of the parameters:

- Double-click on a parameter to open the parameter's configuration window, and then correct the precision and / or unit.

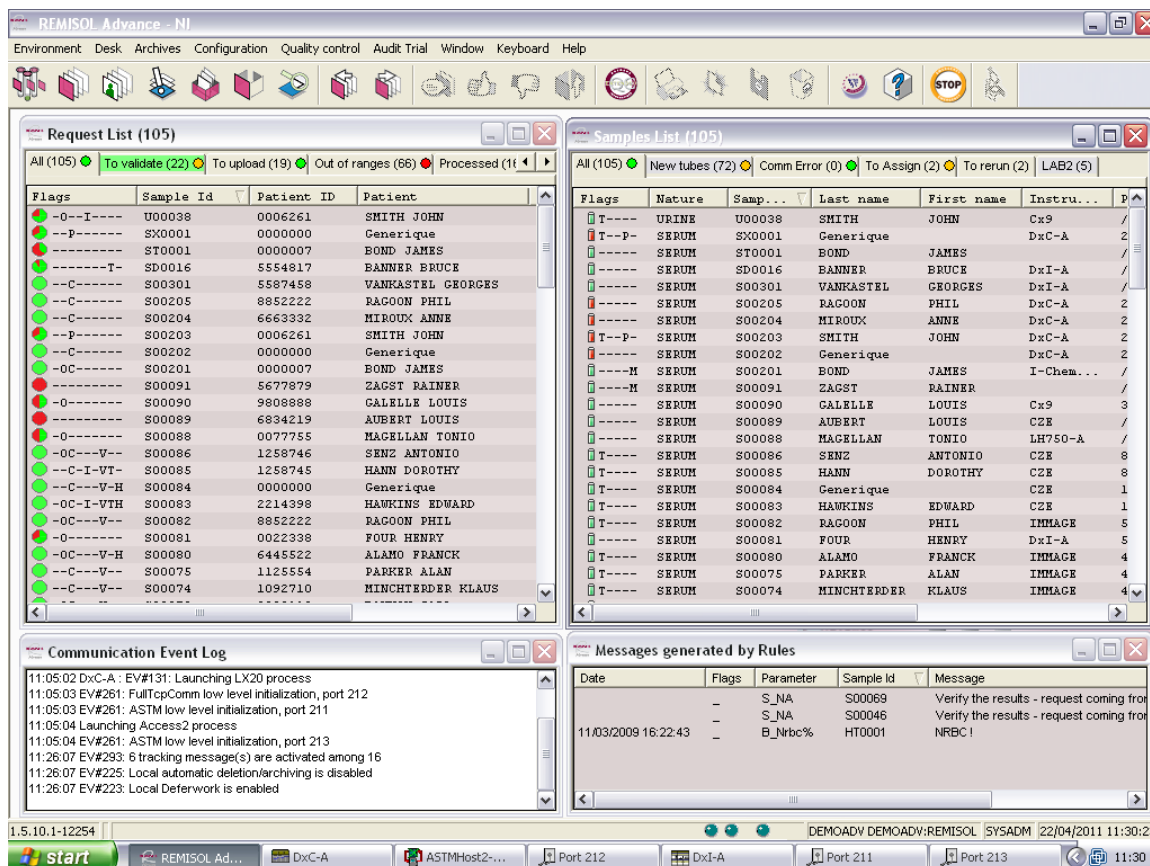
Closing the Units-Decimal Precision Discrepancies window:

- Click on the **Ok** button. The software checks that the corrections have been made before it closes. If there are still one or more uncorrected parameters, a popup window alerts the user that the configuration is not compliant with the requirements.

1.4 Remisol Advance Software Overview

1.4.1 Main software Window

The main Remisol Advance software window is as follows:



- Title Bar
- Menu Bar
- Toolbar
- Client Zone
- Status Bar

This table describes the elements of the main software window.

ELEMENT	FUNCTION
Title Bar	The title bar displays: The control menu button The software name, and the laboratory name (retrieved from the PMF license file) minimize, maximize and close buttons
Menu Bar	The menu bar contains the software menus.
Toolbar	The toolbar contains the software buttons.
Client Zone	The client zone is located between the toolbar and the status bar. Any open window is displayed in this area.

Status Bar	The status bar displays the following information (from left to right): - the current installed version of the software - the status of the software, a short explanation of the buttons (when hovered over) or required actions - connections' status LEDs If the EQC rules blocked the programming or the parameter validation, the instrument LED turns orange instead of the normal dark green yet it continues blinking the normal bright green color when communicating with the instrument. If there is a communication error with the instrument, the led will turn red as this is the priority display in such case. - the computer name - the name of the database - the current user name - the current date and time
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1.4.2 **Remisol Advance Menus**

The following table lists the Remisol Advance menus. Please refer to the adequate section for further details.

Menu	Description
Environment	The Environment menu contains the submenus to set up the Remisol Advance peripherals (instruments, host, etc.) and to carry out some system maintenance functions.
Desk	The Desk menu contains submenus to create and work with patient requests and samples currently being processed.
Archives	The Archives menu contains submenus to archive current patient requests and carry out other archiving functions. Archived requests are available for viewing, printing, and comparison with current requests, but cannot be modified.
Configuration	The Configuration menu contains submenus to configure parameters, profiles, comments, etc.
Quality Control	The Quality Control menu contains all the submenus to carry out quality control functions (either from the integrated module or from the optional -licensed required-EQC, Extended Quality Control module).
Audit Trail	The Audit Trail menu contains the Maintenance submenu allowing the manual entry of tracking events.
Window	The Window menu lists all the windows currently opened in Remisol Advance, and displaying options.

Keyboard	The Keyboard menu lists all the edit options currently available and their shortcuts.
Help	The Help menu on the far right provides access to the integrated help and information on the software version, copyright, etc.

1.4.3 Toolbar buttons

Toolbar button	Function	Keyboard Shortcut
	Samples list	[F8]
	Request list	[Ctrl] + [L]
	Custom list	[Ctrl] + [U]
	Messages list	[Ctrl] + [M]
	Previous results	[Ctrl] + [A]
	New request	[Ctrl] + [N]
	Search	[Ctrl] + [F]
	Previous item in the selected list (sample list, request list, messages list or custom list)	[F9]
	Next item in the selected list (sample list, request list, messages list or custom list)	[F10]
	Comments	[F7]
	Validate one or more results in selected request	[F11]
	Invalidate one or more results in selected request	
	Host transmission	[Ctrl] + [O]
	EQC with no blocked points	
	EQC with blocked points (instrument filters on)	

	EQC with blocked points	
	Print	[F5]
	New	[F4]
	Save	[F2]
	Delete	[F3]
	About	
	Help	[F1]
	Instrument blocking not activated* *not available in 800 x 600 screen resolution	
	Instrument blocking activated* *not available in 800 x 600 screen resolution	
	Manual count (Diffpad)* *not available in 800 x 600 screen resolution	[Ctrl] + [K]

1.4.4 Keyboard Shortcuts

Keyboard Shortcut	Function	Menu Equivalent
[Alt] + [F4]	Exit Remisol Advance	Environment > Exit
[Ctrl] + [A]	View archived results	Archives > Previous Results Search
[Ctrl] + [B]	Lock the station	Environment > Lock station
[Ctrl] + [D]	Download request	Desk > Download Samples
[Ctrl] + [F]	Search for request	Desk > Search Request
[Ctrl] + [G]	Display graphic profile	Desk > Graphic
[Ctrl] + [H]	Host query	Desk > Host Query
[Ctrl] + [J] (*)	View Levey Jennings Chart	Quality Control > Levey-Jennings Chart (*)
[Ctrl] + [M]	Open Message generated by rules	Desk > Message
[Ctrl] + [K]	Manual Count (DIFF)	Desk > Manual count
[Ctrl] + [L]	Open request list	Desk > Request List

[Ctrl] + [U]	Open Custom list	Desk > Custom List
[Ctrl] + [N]	Create new request	Desk > New Request
[Ctrl] + [O]	Transmit to host	Desk > Host Transmission
[Ctrl] + [P]	Define profile	Configuration > Profile Definition
[Ctrl] + [Q] (*)	Create Quality Control Sample	Quality Control > Cup Creation (*)
[Ctrl] + [S]	Define Department/Doctor	Configuration > Departments/Correspondents/Doctors
[Ctrl] + [W]	Print work list	Desk > Print Work List
[Ctrl] + [X] (*)	Open QC Out of Range Results Log	Quality Control > Out of Range Results Log (*)
[Ctrl] + [Y]	Define parameter	Configuration > parameter Definition
[F1]	Help	Help > Help
[F2]	Save	Keyboard > Save
[F3]	Delete	Keyboard > Delete
[F4]	Create new element	Keyboard > New
[F5]	Print	Keyboard > Print
[F6]	Open popup menu	Keyboard > Popup Menu
[F7]	Comments	Keyboard > Information
[F8]	Open sample list	Keyboard > Samples List
[F9]	View previous request in requests list	Keyboard > Previous Request
[F10]	View next request in requests list	Keyboard > Next Request
[F11] or [Ctrl] + [T]	Validate latest results in selected request	Keyboard > Validate
[F12]	Validate and Print all results selected request	Keyboard > Validate and Print

(*) only when using the integrated Quality Control module (does not apply to the EQC optional module).

1.5 Working with Menus

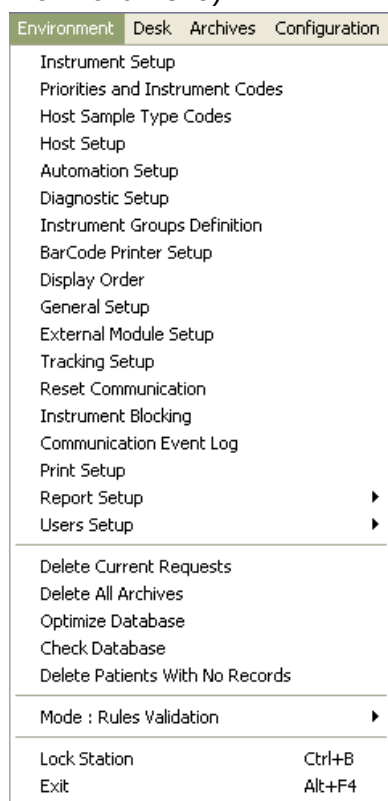
1.5.1 Opening a Menu

Use one of the following options to open a menu on the menu bar:

Click on the menu with the left mouse button.

Press the **[Alt]** key, then use the right and left arrow keys to highlight the menu. Use the up or down arrow key to open the menu and navigate to the required option.

Press the **[Alt]** key, then press the letter key for the underlined letter in the menu (for example, press **[Alt] + [E]** to open the **Environment** menu).



1. Use the mouse or the up and down arrow keys to highlight a menu item.
2. A black arrow on the far right indicates a submenu.
3. If applicable, keyboard shortcuts are listed on the far right.

1.5.2 Selecting a Menu Item

Use one of the following options to select a menu (or submenu) item:

1. Click on the menu item with the left mouse button.
2. Use the up and down arrow keys to highlight the menu item, and then press the **[Enter]** key.
3. Press the letter key for the underlined letter in the menu item.

1.5.3 Opening a Submenu

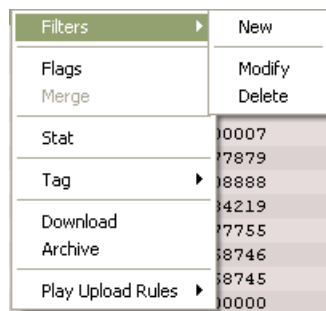
Submenus are indicated by a black arrow on the right of the menu item. Use one of the following options to open a submenu:

1. Click on the menu item with the left mouse button.
2. Use the up or down arrow keys to highlight the menu item. Use the right arrow key to open the submenu. Use the left arrow key to close the submenu.
3. Press the letter key for the underlined letter in the menu item.

1.5.4 Contextual Menus

Some Remisol Advance windows (Request List window, Sample List window, etc.) have additional functions which are accessible through a popup menu. Use one of the following options to open a popup menu:

click the right mouse button anywhere inside the window
press **[F6]** when the window is active



Popup menu items are selected in the same way as for other menu items as described above.

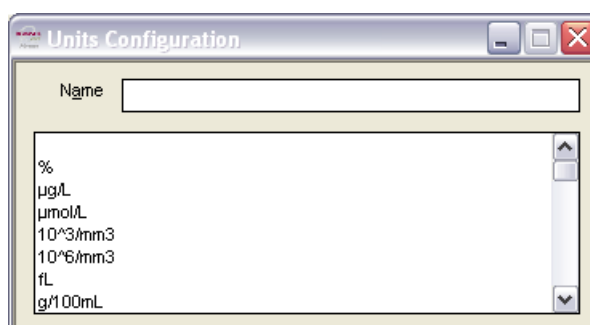
1.6 Working with Windows

1.6.1 Introduction

This section describes the two types of windows used in Remisol Advance (MDI and Dialogue Box) and the various types of data entry fields.

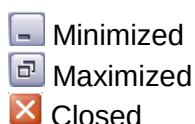
1.6.2 MDI Windows

The following is an example of an MDI (Multiple Document Interface) window:



The characteristics of this type of window are:

1. An MDI window can be minimized, maximized (some windows), or closed by clicking on the following buttons in the title bar.



These functions are also available from the title bar control menu (button on the left side of the title bar for each window).

2. Multiple MDI windows can be opened at the same time. Only one window can be functional (highlighted title bar). To switch between windows, either click anywhere inside a window with the left mouse button or press **[Ctrl] + [F6]**, or select the name of the window in the **Window** menu.
3. Active toolbar buttons (save, delete, etc.) are accessible in these windows.

When an MDI window is minimized, it is displayed as a box at the bottom of the client zone:



To restore the window, click on the  button.

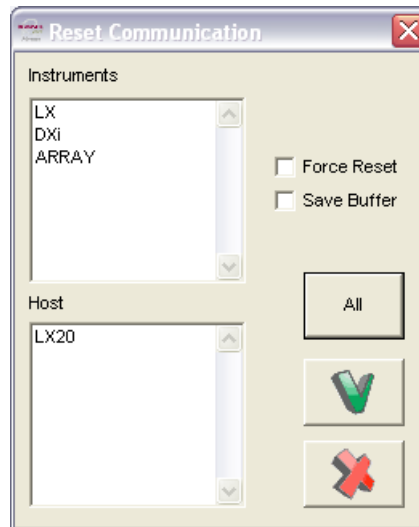
To save information entered in an MDI window, click on the **Save** button on the toolbar, or press **[F2]** before exiting the window.

Use one of the following options to close an MDI window:

1. Click on the  button in the title bar.
2. Press the **[Esc]** key.
3. Select **Close** in the control menu.
4. Press the **[Ctrl] + [F4]** keys.

1.6.3 Dialogue Box

Below is an example of a Dialogue box window:



The characteristics of this type of window are:

- The dialogue box window cannot be minimized or maximized from the title bar. The title bar control menu is accessed by clicking the left mouse button on the title bar.
- Only one dialogue box window can be open at a time. No other window can be accessed until the dialogue box is closed.
- Toolbar buttons (save, delete, etc.) are not accessible in dialogue box windows.
- Dialogue box windows always require an action. Such action is performed by selecting and clicking on a button which will execute a function, exit the window, or both simultaneously. In the example above, Clicking the **OK** button will reset communication for the selected instruments and exit the window.

Use one of the following options to close a dialogue box window without selecting a button in the window:

1. Click on the  button on the title bar.
2. Press the **[Esc]** key.
3. Select **Close** in the control menu.
4. Press the **[Alt] + [F4]** keys.

1.6.4 Moving a Window

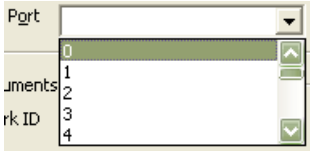
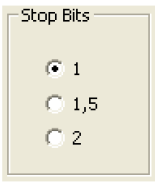
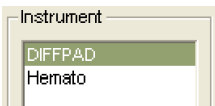
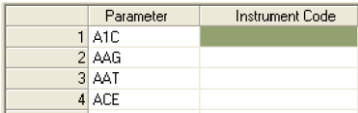
Use one of the following options to move a window:

1. Click on the title bar with the left mouse button and drag the window.
2. Select **Move** from the control menu. Use the arrow keys to move the window, and then press the **[Enter]** key.

1.6.5 Data Fields

The following table describes the different types of data fields in a window:

Field Type	Example	Description
Input Text Box		Type in the appropriate information.

Input Text Box with Drop-down list		Select an option from the drop-down list either by using the arrow keys, the mouse or by entering the first letters of the chosen option.
Drop-down list		Data entry not allowed. Select an option from the drop-down list.
Check Box		Select or deselect one or more options.
Option Buttons		Toggle between options. Only one option allowed.
Selection Box		Select an item in the list. In some cases more than one item may be selected.
Table		Select a table cell. Type the appropriate information in the data entry field at the top of the table.

Use one of the following options to select fields for data entry:

1. Click on the field or option with the left mouse button.
2. Press the **[Tab]** key to move to the next field or press the **[Shift] + [Tab]** keys to move to the previous field. Use the arrow keys to make selections in a field.
3. In a table, use **arrow** keys to change the selected cell. Press the **[Enter]** key to validate the data entered.
4. In a table, use **Copy** and **Paste** using the popup menu, in order to copy and paste a group of cells.

1.7 Maintenance

1.7.1 Daily Maintenance

Please archive current requests at least once a day if "automatic archive" is not activated in the 'General Setup'. See **Archives** for further instructions on archiving current requests.

When the automatic archive process is processing a massive amount of requests, the system may slow down significantly. An information window will be displayed in order to warn the user the process may slow down the system. This window disappears automatically when the process is completed.

1.7.2 As Needed Maintenance

Clean a non-optical mouse: Follow the steps below to clean the mouse if it does not work properly:

1. Unlock the ball cover and remove the mouse ball.
2. Gently rub the ball with a soft lint-free cloth.
3. Reinsert the mouse ball.
4. Return the ball cover to its locked position.

1.7.3 Additional Maintenance

Please save **archives** to a backup file and delete old archives and demographics as needed to prevent performance issues.

It is recommended to back up (off line backup) older archived requests (weekly or monthly).

Example:

You keep 60 days of archive (necessary for delta check...); this is the online backup once a month, you proceed to a backup of all archived requests that correspond to the previous month (on April 1st, you backup all request from February).

1.7.4 Database alert messages

An alert message may be displayed when the amount of data in the database is near the limit.

Also, there is another alert message that will require you to stop Remisol Advance when the database log is full (in order to avoid unrecoverable errors and wrong SQL queries to be executed).

If one of these messages is displayed, please contact your system administrator immediately.

2 Setting Up the Remisol Advance Environment

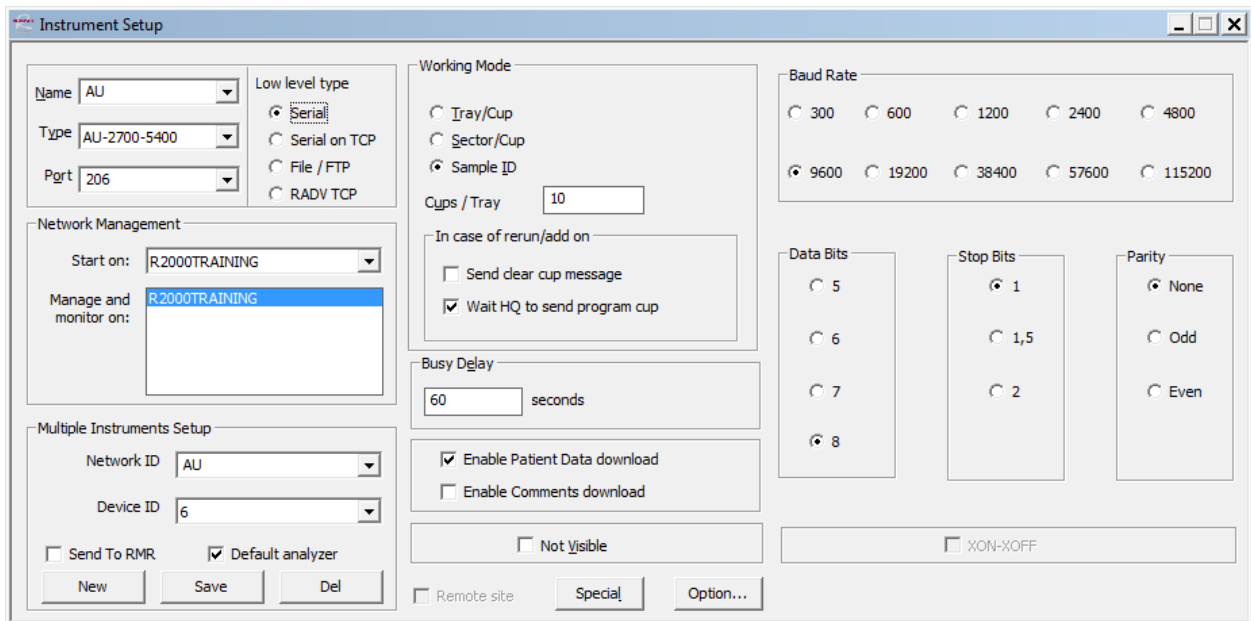
2.1 Instrument Setup

2.1.1 Introduction

Each instrument connected to Remisol Advance must be defined according to a setup. The Instrument Setup window is used to define or modify an instrument setup.

2.1.2 Instrument Setup Window **New in 1.7!**

To open the Instrument Setup window, click on the **Environment** menu, then select **Instrument Setup**.



2.1.3 Procedure

The same settings should be used to define the serial line between the instrument and Remisol Advance. Follow the steps below to define an instrument setup.

- 1 Enter an instrument **Name** (up to 12 alphanumeric characters), or select an existing instrument from the drop-down list.
- 2 Select an instrument type from the **Type** drop-down list. More than one of each instrument type is listed (for example, CX7 and CX7/2). This allows for different setup options if more than one instrument of the same type is connected to Remisol Advance.

NOTE:

the instrument type actually refers to the serial communication interface between the instrument and Remisol Advance, not necessarily the name of the instrument. For example, the SYNCHRON CX3 DELTA would use the CX7 interface, not the CX3 interface. Please see **APPENDIX** to specify which instrument type is appropriate for each instrument.

- 3 Select the **Low level type** of the instrument. Options are:
 - a. **Serial**, to connect an instrument using a null modem serial cable like those provided with your system,
 - b. **Serial on TCP**,
 - c. **File/FTP**,
These two options are dedicated to remote instrument connection; refer to the Remisol Advance technical documentation for more information about these)
 - d. and **RADV TCP**, this option allows the transportation of the full stream over a TCP network; all lines in a stream are transmitted as one block as opposed to Serial on TCP where each line in a stream is transmitted one by one. This mode is intended to be used between the Remisol Advance Instrument type and the Remisol Advance Host type.

- 4 Select the **Port** number to which the instrument cable is attached.

NOTE:

For some instruments and/or type of connections, this entry is used to indicate the instrument's ID that is used in the REMISOL.INI file for additional configuration options.

- 5 **Network Management *New in 1.7!***: In previous versions of Remisol Advance, the Remisol software that started a device task was also implicitly managing the task (plays rules / displays the Communication Event Log and the *respective* LED...).
In Remisol Advance 1,7 the software is not in charge of this task anymore and furthermore tasks may be centralized onto a single server, that will also most probably be located away from the connected devices and therefore also far from the people using the device.
So for each device type, instruments, automations, host(s) and diagnostics, the **Network Management** box was reviewed as launch and management were split: the instrument task may be started from a Remisol machine (by the RADVL of the machine actually), this is defined in the **Start on** field (unique selection only, **Not connected** remains as an option if your instrument is currently not connected to any Remisol station), while the instrument may be managed from one or several other Remisol machines on the network; this is defined in the **Manage and monitor on** field (hence several selections are possible here); this / these machine(s) will play rules / display the **Communication Event Log** and the respective LED for the instrument.
- 6 In case of networked instruments, define the **Network Id** and the **Device Id, Default analyzer** (to specify the default instrument out of two similar instrument) of the instrument,
- 7 Check the **Send to RMR** checkbox ONLY if the RMR Box is activated and required for the instrument.
- 8 Select the **Working mode** of the instrument. Options are:
 - a. **tray/cup** (e.g., Array),
 - b. **Sector/cup** (e.g., CX7)
 - c. or **Sample ID**. Use **Sample ID** if the instrument is running in barcode mode. Use 'HQ' if the instrument allows host query.
- 9 Select or deselect **Send clear cup in case of rerun/add-on**. This option allows Remisol Advance to send a clear cup instruction to the instrument before a rerun/ add-on.
- 10 If the option **Wait HQ is selected in case of a rerun / add-on**, Remisol Advance will wait for a Host Query regarding that request in order to download the programming to the instrument.
- 11 Enter a **Busy delay** setting in seconds (30 to 600). This is the length of time Remisol Advance will wait before automatically retransmitting the sample programming if the instrument is currently busy. The recommended setting is 60 seconds.
- 12 Select or deselect the **download** of the **patient data** (please deselect this option if the system is not compliant with non-ANSI char sets).
- 13 Select or deselect the **download** of the **comments** (please deselect this option if the system is not compliant with non-ANSI char sets).
- 14 Select the **Baud Rate*** setting. Options are 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600 and 115200.
- 15 Select a **Data Bits*** setting. Options are 5, 6, 7, and 8.
- 16 Select a **Stop Bits*** setting. Options are 2, 1.5, and 1.
- 17 Select the **Parity*** setting. Options are none, odd, and even.
- 18 Select or deselect the **XON-XOFF*** flow control.
- 19 Please save your settings before closing the window. Exit and restart the Remisol Advance software to activate the new settings.

** These settings for these fields must be the same as for the instrument.*

2.1.4 Not Visible

This option does not apply to current Remisol Advance configurations. Do not select this option. If an instrument is defined as not visible on a station, it will not be displayed in the sample list, the request list, and the filters on these lists.

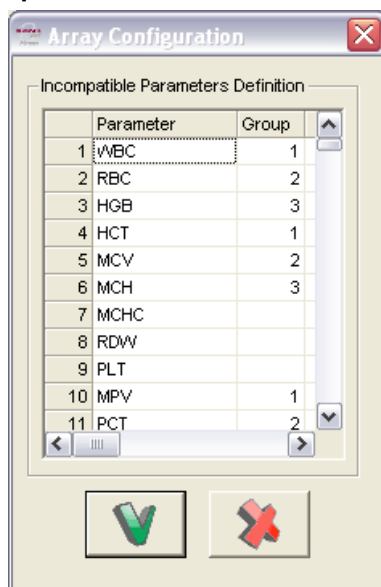
2.1.5 Networked instruments

If you are using networked instruments like Access2 or GenS, it could prove useful to identify each of these networked instruments.

2.1.6 Array Configuration

Array® systems are not able to process certain parameters simultaneously. Parameter groups must be defined so that incompatible parameters are not downloaded to the Array 360CE. The Array Configuration window is used to define or modify Array parameter groups.

To open the Array Configuration window, select the **Environment** menu, then select **Instrument Setup**. In the **Instrument Setup** window, select **Special** at the bottom left corner of the window.



Enter group numbers for Array parameters. Parameters that can be run together should have the same group number.

2.1.7 Exit Array Configuration

Select **OK** to save your changes and exit to the Instrument Setup window. Select **Cancel** to exit to the Instrument Setup window without saving.

2.2 *Priorities and Instrument Codes Setup*

2.2.1 Introduction

Parameter codes correspond to the codes used to transmit parameter information between the instrument(s) or the LIS and Remisol Advance. They must be similar on Remisol Advance and on the instrument / LIS. These codes are also referred to as parameter codes or test codes.

Priorities are used to specify whether an instrument type, or a group of instruments, can manage a parameter (or a profile) and how it does so:

- When the host downloads a programming (the **Automatic Sample Assignment** and the **Automatic Sample Download** options must be checked in the **Host Setup**),
- When a request is created manually in Remisol (the **Assign automatically** and **Download automatically** options must be checked in the **General Setup**).

2.2.2 Priorities and Instrument Codes Window

Parameters codes and priorities are defined in the same window.

To open the Priorities and instrument codes window, click on the **Environment** menu, then select **Priorities and instrument codes**.

The Monitor-It module configuration was improved and a dedicated tab is now available in the Priorities and Instrument Codes window.

2.2.3 Procedure

Follow the steps below to define priorities and instrument codes.

- 1 In the **Order by** area, select how you want parameters/profiles to be displayed:
 - a. **Alphabetical order:** To sort the first column of the configuration table (parameters or profiles) in alphabetical order,
 - b. **Default sort:** To sort the first column of the configuration table (parameters or profiles) in default sort order (user defined sort order as configured in the Environment / Display order menu),
 - c. **Sample Type:** To sort the first column of the configuration table first by sample type number (only for parameters), and then in alphabetical order (parameters and profiles).
- 2 In the **Type of connection** area, on the right of the **Order by** area, check the relevant box(es) depending on which you want to display:
 - a. **Instrument:** To display instruments and automation lines that are configured,
 - b. **Host:** To display hosts that are configured,
 - c. **Instrument groups:** To display instrument groups that are configured.
- 3 In the area below, select which type of the information you want to display per parameter or profile:
 - a. **Codes and priorities:** To display the test code, default and priority columns for every type of instrument, the test code and default columns for every host, and the priority column for every group of instruments,
 - b. **Priorities:** To display the priority column for every type and group of instruments,
 - c. **Codes:** To display the test code and default columns for every type of instrument and host,
 - d. **Priorities (Profile):** To display the priority column per profile for every type of instrument.
- 4 In the configuration table below, enter your parameter codes, your priorities, and check the default box if necessary.
 - a. **Test code:** Code for each parameter configured for the instrument, group, automation line or host you have selected (refer to the specific instrument or host specification for the list of adequate codes).
 - b. **Default:** Default is used when Remisol Advance receives a result from an instrument for a parameter that is not defined in the request. In this case, the parameter defined to be the

default one for the fluid of the tube will be added to the request and will get the result (useful for parameters such as Glucose and Glucose after 1h for example).

NOTE:

When you click inside a Default cell out of the checkbox, you select the cell. When you click inside a Default cell and inside the checkbox, you select the cell and you check the checkbox.

- c. **Priority:** Priority is used to define how Remisol Advance manages the feasibility, the assignment and download of a parameter or a profile to a specific instrument or group of instruments. 3 values are possible:
- 1:** The parameter is compatible with the instrument or group; Remisol Advance automatically assigns and downloads this parameter to the instrument if possible,
 - 2:** The parameter is compatible with the instrument or group; the parameter can be downloaded after a host query, or manually (assigning and downloading have to be done manually or by rules),
 - 9:** The parameter is NOT compatible with the instrument or group; it cannot be downloaded, but results can be received from the instrument (if the instrument code exists).

NOTE:

For any given parameter, there should be only one instrument or group of instrument with a priority set to 1. If the requests are to be assigned and downloaded to more than one instrument, then you should define a group of instrument with a priority set 1.

The automatic assignment and download is possible only if allowed in the Host Setup window (Automatic Sample Assignment and Automatic Sample Download options must be checked) when the host downloads a programming, and in the General Setup window (Assign automatically and Download automatically options must be checked) when a request is created manually in Remisol.

- 5 Save before exiting.

2.2.4 Editing

Copy, paste and recopy functionalities are available in the **Priorities and Parameter Codes** window contextual menu (to open the contextual menu, use the right click).



Copy and paste:

- Select the cells you want to copy using left click and drag,
- Right click to open the contextual menu,
- Select **Copy**,
- Select the cell where you want to paste your clipboard,
- Right click to open the contextual menu,
- Select **Paste**.

Recopy:

The Recopy function uses the value in the top left cell of the current selection and fills all the other cells in the section with this value.

It is recommended:

- To use the **Recopy** function when dealing with a one column selection,
- To use the **Copy** and **paste** functions when dealing with a selection of more than one column.
- Click and drag across cells to create a selection, starting by the one with the value you want to use to fill the other cells,
- Right click to open the contextual menu,
- Select Recopy.

NOTE:

Please remember that there is a difference between clicking inside or outside of the checkbox when selecting in the Default column: Clicking inside the checkbox not only selects the cell but also checks the checkbox.

2.3 Host Sample Type Codes Setup

2.3.1 Introduction

The Host Sample Types Codes window is used to map the sample types exchanged with the host.

Sample type mapping is available for the ASTM, IMAGE, CX7, HPRIM21, LX20, LX20 and RADVH hosts; it is not implemented for the GENS, GENSH and LHSERIESH hosts.

2.3.2 Host Sample Type Codes Window

To open the Instrument Codes window, click on the **Environment** menu, and then select **Host Sample Type Codes**.

	Sample Type	Code	Default	Conversion
1	Amniotic	Amniotic	☐	☐
2	Blood	Blood	☐	☐
3	C.S.F.	F	☐	☐
4	Cervical	Cervical	☐	☐
5	No Sample	NoSample	☐	☐
6	Other	Other	☐	☐
7	Pericardial	Pericardial	☐	☐
8	Peritoneal	Peritoneal	☐	☐
9	Plasma	P	☐	☐
10	Pleural	Pleural	☐	☐
11	RATIO	Ratio	☐	☐
12	Saliva	Saliva	☐	☐
13	Serum	S	☒	☐
14	Synovial	Synovial	☐	☐
15	Timed Urine	T	☐	☐
16	Urethral	Urethral	☐	☐
17	Urine	U	☐	☐

2.3.3 Procedure

Follow the steps below to map sample types.

- 1 Select a host from the drop-down list. If a host is set up in Remisol Advance, it will show up as default.
- 2 In the configuration table, for each sample type, enter your code, and check the default box and conversion box if necessary.
 - a. **Code:** The sample type code to be used when exchanging sample type information with the host. The code associated with a sample type may be blank except for the default sample type.
 - b. **Default:** This column is used to define the default sample type for the selected host type. There should be only one default fluid.
 - c. **Conversion:** This column should be checked if a sample type conversion is required. If, for a sample type, the box is checked in this column and a sample type is modified, a warning message is displayed within the request.
- 3 Save before exiting or selecting another host to modify.

NOTE:

To enable sample mapping for HPRIM21 hosts, it is necessary to set up the Enable_Sample_Type_Mapping entry in the REMISOL.INI file, in the [HPRIM21] section:

2.4 Host Setup

2.4.1 Introduction

Remisol Advance can be connected to one / several central laboratory information system(s) (referred to as LIS or the host). The Host Setup window is used to define or modify the host setup.

2.4.2 Multiple Hosts

2.4.2.1 Adding a new host

To define a new host, you have to:

- 1 Open the Environment / Host setup menu,
- 2 Click on the **New** button located in the toolbar, and then fill all the required information,
- 3 Click on the **Save** button to validate your host definition.

2.4.2.2 Deleting a host

To delete a host, you have to:

- 1 Open the Environment / Host setup menu,
- 2 Select the host you want to delete in the **Name** field,
- 3 Click on the **Delete** button in the toolbar to delete the host definition.

2.4.2.3 Modifying a host configuration

To modify a host configuration, you have to:

- 1 Open the Environment / Host setup menu,
- 2 Select the host whose definition you want to modify in the **Name** field,
- 3 Modify the host definition,
- 4 Click on the **Save** button to validate your modifications.

2.4.3 Host Setup Window *New in 1.7!*

To open the Host Setup window, click on the **Environment** menu, then select **Host Setup**.

The screenshot shows the 'Host Setup' window with the following sections and options:

- Default Host:** A dropdown menu set to 'ASTMH' and a checkbox 'Upload to the host that downloaded the sample'.
- Name:** A dropdown menu set to 'ASTMH'.
- Type:** A dropdown menu set to 'ASTMH'.
- Device ID:** A dropdown menu set to '1'.
- Port:** A checkbox 'TCP' and a dropdown menu set to '201'.
- Server:** A radio button 'The Remisol station' and an empty text field.
- Network Management:** A dropdown menu 'Start on:' set to 'R2000TRAINING' and a list box 'Manage and monitor on:' containing 'R2000TRAINING'.
- Baud Rate:** Radio buttons for 300, 600, 1200, 2400, 4800, 9600, 19200 (selected), and 38400.
- Data Bits:** Radio buttons for 5, 6, 7, and 8 (selected).
- Stop Bits:** Radio buttons for 1 (selected), 1.5, and 2.
- Parity:** Radio buttons for None (selected), Odd, and Even.
- Instrument Download:** Checkboxes for 'Automatic Sample Assignment' and 'Automatic Sample Download'.
- Host Upload:** Checkboxes for 'Only Validated Results', 'Automatic Results Upload', 'Partial Results Upload', 'Delete After Upload', and 'Archive After Upload'.
- Technical comments:** Radio buttons for 'Keep Old Comments' and 'Keep New Comments' (selected).
- Defer the archiving or the deletion of:** A text field set to '14' and the unit 'hours'.
- Buttons:** 'ASTM Host 2 Setup', 'Filters', and 'Options...'.

2.4.4 Procedure

The host and Remisol Advance should be configured with the same settings for the serial line. Follow the steps below to define a host setup.

As of Remisol Advance 1.7, there is no Host Service (HostSrv) anymore, yet the functionality remains and is managed more transparently for the user, making it a whole lot easier to set up.

As a consequence the top **Host Service** box found in previous versions was replaced with the **Default Host** box.

- 1 In the **Default Host** area, define which host your current station will use to upload results:
 - a. **This remisol use by default:** The option indicates Remisol which is its LIS out of the drop-down list of those LIS defined; this option replaces the whole management of the Host Service as known in previous versions.

This will actually have the same effect as specifying the Host Service to use in previous versions of Remisol Advance (yet this is all there is to set up for it!), allowing the sharing of a single LIS connection as well as dealing with multiple LISs.

Like the **Host Service** in its time, this setting is specific to the local machine, meaning each Remisol client needs to be specified which LIS it should upload results to.

On upgrading to Remisol Advance 1.7, the value for **This computer is connected to** in the **Host Service** box of previous versions is used as the value for **This remisol use by default**.

- b. **Upload to the host that downloaded the sample:** The option is brand new; it does what it says: it will upload the result to the host that originally downloaded the request.

As opposed to the previous option, this setting is recorded in the database and therefore applies globally to the network.

This conjures up the question of host routing priorities.

Host routing / upload priorities *New in 1.7!*

Host routing priorities are defined as follow, from the most to the less important, in Remisol Advance 1.7:

- 1) The **Host_Assign** upload rule action, introduced in version 1,6, that forces upload to host will override any other setting,
 - 2) **Upload to the host that downloaded the sample**,
 - 3) **This remisol use by default**, which defines the default host used by the current machine.
- 2 In the **Name** field, provide a name for your host. The drop-down list will get populated with the names of all the hosts defined in a Remisol station connected to the current network.
- 3 Select a host **Type** from the drop-down list. The host type is the serial communication interface between Remisol Advance and the host.
- 4 Select the **Device ID** you want to assign to results downloaded by the host (only for ASTM or HPRIM21 hosts - please see the Device ID options section below).

NOTE:

The 0 value means that the option is not activated.

This option is NOT related to the DeviceID entry located in the CX7S and LX20S sections in the REMISOL.INI file.

Please check the device ID you choose is not already in use for an instrument or another host.

- 5 **Network Management** *New in 1.7!*: In previous versions of Remisol Advance, the Remisol software that started a device task was also implicitly managing the task (plays rules / displays the Communication Event Log and the respective LED...). In Remisol Advance 1,7 the software is not in charge of this task anymore and furthermore tasks may be centralized onto a single server, that will also most probably be located away from the connected devices and therefore also far from the people using the device. So for each device type, instruments, automations, host(s) and diagnostics, the **Network Management** box was reviewed as launch and management were split: the host task may be started from a Remisol machine (by the RADVL of the machine actually), this is defined in the **Start on** field (unique selection only, **Not connected** remains as an option if your host is currently not

connected to any Remisol station), while the host may be managed from one or several other Remisol machines on the network; this is defined in the **Manage and monitor on** field (hence several selections are possible here); this / these machine(s) will play rules / display the **Communication Event Log** and the respective LED for the host.

- 6 Select the **Port** number to which the host cable is attached.
- 7 Select the **Baud Rate*** setting. Options are 300, 600, 1200, 2400, 4800, 9600, 19200 and 38400.
- 8 Select a **Data bits*** setting. Options are 5, 6, 7, and 8.
- 9 Select a **Stop bits*** setting. Options are 2, 1.5, and 1.
- 10 Select the **Parity*** setting. Options are none, odd, and even.
- 11 Select or deselect the **XON-XOFF*** flow control.
- 12 **Instrument Download:**

- a. **Automatic Sample Assignment:** Automatically assign requests and samples downloaded from the host to an instrument.
- b. **Automatic Sample Download:** Automatically download samples assigned to an instrument.

13 **Host Upload:**

- a. **Only Validated Results:** Upload only validated results to the host.
- b. **Automatic Results Upload:** Automatically upload completed requests to the host.
- c. **Partial Results Upload:** Automatically upload results to the host as they are received from the instruments, even if the request is not complete.
- d. **Graph Upload:** Upload a selected CZE scan data and hematology graph to the host.
- e. **Delete After Upload:** Automatically delete requests after all results in the request have been uploaded to the host.
- f. **Archive After Upload:** Automatically archive requests after all results in the request have been uploaded to the host.

NOTE:

If you have activated the automatic merging of requests for the same patient, you have also to select whether you want to keep the old technical comments, or the new technical comments.

If you select the **Delete After Upload** option or the **Archive After Upload** option, you can defer the treatment from 1 to 120 hours by filling the option **Defer the Archiving or the deletion of...hours**.

- 14 Please save before closing the window. Exit and restart the Remisol Advance software to activate the new settings.

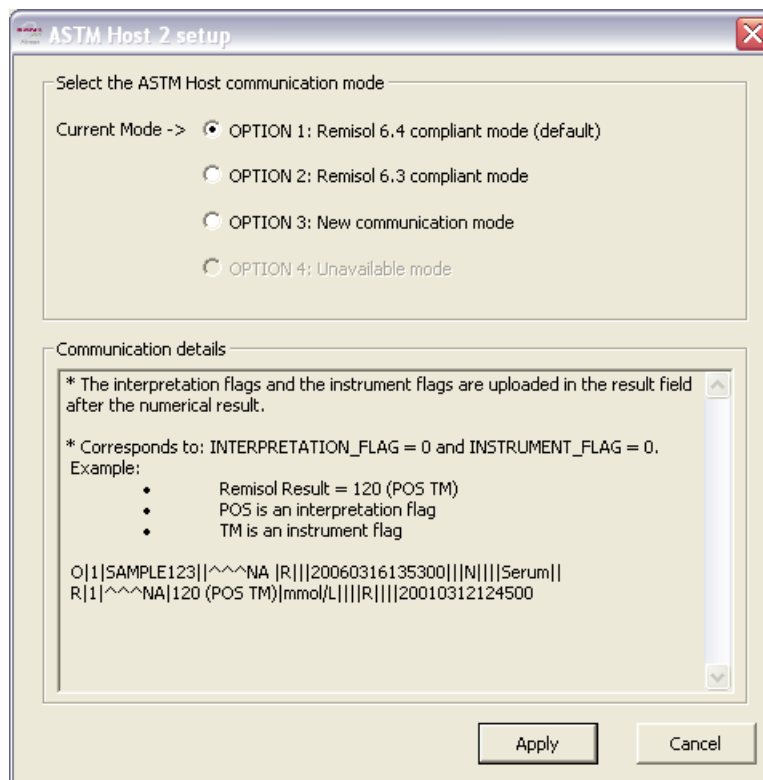
NOTE:

With the addition of 2 entries in the relevant [IMAGES] or [HPRIM21] sections of the REMISOL.INI file depending on the type of host, HPRIM21 and ASTM hosts can send Remisol Advance a ClearCup command in order to clean a wrong programming for a parameter on the Remisol workstation. The ClearCup is not transferred to the instrument

* These settings for these fields must be the same as for the instrument.

2.4.5 ASTM Host 2 Setup

If you have selected ASTMH for the Host protocol, this button is activated (i.e. not greyed out). If you click on the button, a new window will popup allowing you to define how the interpretation flags and the instrument flags will be uploaded to the Host (Refer to the ASTM Host Technical Guide for more information about ASTM Host 2).



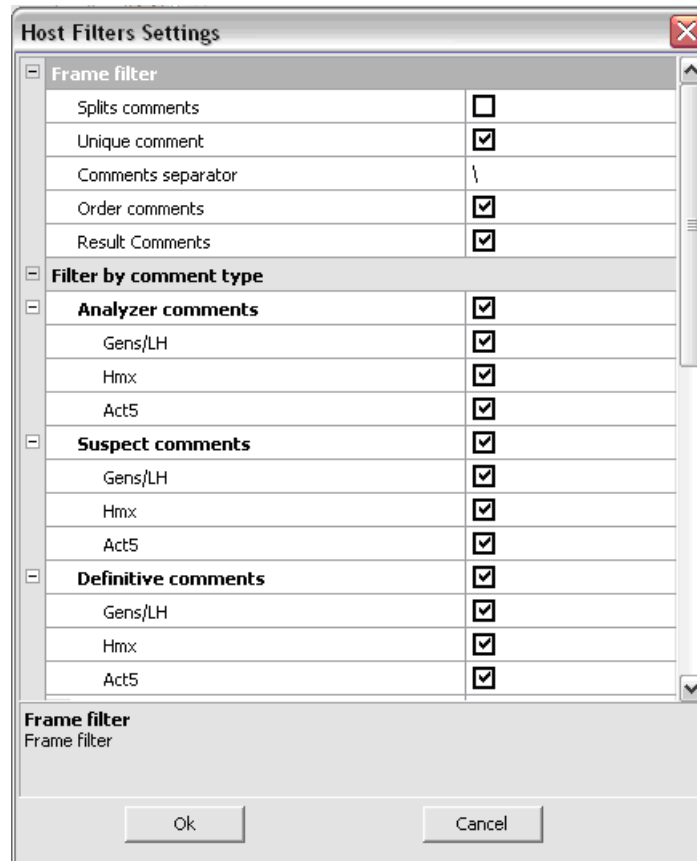
- **Option 1:** Remisol 6.4 compliant mode (default): The interpretation flags and the instrument flags are uploaded in the result field after the numerical result.
- **Option 2:** Remisol 6.3 compliant mode: The interpretation flags are uploaded in the result field after the numerical result. The instrument flags are uploaded in a comment record that follows the result record.
- **Option 3:** New communication mode: The interpretation flags are uploaded in a sub field of the result separated from the numerical result by a component delimiter. The instrument flags are uploaded in a comment record that follows the result record.

2.4.6 Filters: Host Filters Settings

In order to define which comments have to be uploaded to the Host, and which format to use when there are several comments of the same type, a new window has been added to the Host Setup.

Click on the **Filters** button to open the new window named: **Host Filters Settings**

The Host Filters Settings allows you to configure how and which comments are uploaded to the Host.



They are two categories of options: **Frame filter** and **Filter by comment type**.

2.4.6.1 Frame filter

The options may be checked (activated) or not checked (not activated).

- **Splits comments:** Remisol is able to send the comments in several frames if checked, alternatively Remisol sends all the comments in one frame separated by a space char if not checked (only for **Technical** and **Interpretation comments**).
- **Unique Comment:** If the option **Unique comment** is checked, Remisol sends only one comment frame with all comments separated by the **Comments separator** (defined in the next option). Alternatively, if **Unique comment** is not checked, Remisol sends one frame per comment. The **Unique comment** option is not used for **Technical** and **Interpretation comments** if **Splits Comments** is not also checked.
- **Comments separator:** Use this option to define which char is to be used as a separator for comments if Unique Comment is checked.
- **Order comments:** If checked, the order comments are uploaded.
- **Result comments:** If checked, the result comments are uploaded.

2.4.6.2 Filter by comment type

- **Analyzer comments:** If checked, the analyzer comments are uploaded. This option may be used with the following instruments: Gens/LH, HMX, ACT5.
- **Suspect comments:** If checked, the suspect comments are uploaded. This option may be used with the following instruments: Gens/LH, HMX, ACT5.
- **Definitive comments:** If checked, the definitive comments are uploaded. This option may be used with the following instruments: Gens/LH, HMX, ACT5.
- **Conditional comments:** If checked, the conditional comments are uploaded. This option may be used with the following instruments: Gens/LH, HMX, ACT5.
- **Other comments:** If checked, the other comments are uploaded. This option may be used with the following instruments: Gens/LH, HMX, ACT5.
- **Graphics:** If checked, the graphics are uploaded.
- **Rule comments:** If checked, the rules comments (1) are uploaded.
- **Rule comments 2:** If checked, the rules comments 2 are uploaded.

- **Dilution Comments:** If checked, the dilution comments are uploaded.
- **Tracking information:** If checked, the automation comments are uploaded.
- **Manual comments:** If checked, the manual comments are uploaded.
- **Analyzer comments (Other type):** If checked, the Other comments from an instrument are uploaded.
- **Technical comment:** If checked, the technical comments are uploaded.
- **Interpretation:** If checked, the interpretation comments are uploaded.
- **Patient comment:** If checked, the patient comments (i.e. clinical comments) are uploaded.
- **Remisol warnings:** If checked, the Remisol warnings (for more information, see UPLOAD and PARAMETERS RULES: New conditions and action for comments) are uploaded.

NOTE:

Some of these options may not be available depending on Host types.

2.4.7 Automatic merge of requests

The Automatic Merge feature allows the automatic merging of all the requests for the same patient.

Whenever a programming for a new tube is sent by the LIS for a patient for whom there is already a request in Remisol Advance, that new tube is automatically added to the initial request.

The download rules are played once per tube immediately after the Automatic Merge of the new tube into the initial request.

To find the option which enables the automatic merging of programming, click on the **Options...** button of the **Environment / Host setup** menu.

The **Host options** window is displayed, where you can enable the Automatic Merge feature, and define related options.

In the **Host options** window, there are three options that you can configure:

Host Options

Options	
Host Download merge	☐
Merge Delay	12
Check draw date and time	☐
Check request number	☐
Device ID	
User Device ID start	0
Default Device ID	0
Upload comment type	☐
Are you there	
Are you there (AYT) delay	0
Previous result	
Choice	☒ 0- Host result always ignored ☐ 1- Use host result if available else Remisol ☐ 2- Use most recent out of host or archived results ☐ 3- Use Host result only (no merge), Remisol's if no host ☐ 4- Result archived in Remisol always ignored
Consistency	☒ 0- No check ☐ 1- Result must have the same date as MRR ☐ 2- Result must have the same date and time as MRR

Upload comment type
Allow to upload the type of the comment (technical and interpretation comment)

- **Host Download merge:** Check this option to activate the Automatic Merge feature.
- **Merge Delay:** This option defines the length of time after the creation of the initial request up to which you want the Automatic Merge to operate. The delay is in hours. Set the delay to 0 to disable this time limit.
- **Check draw date and time:** Check this option if you want the Automatic Merge to be done only with tubes that have the same draw date and time than the initial request.
- **Check Request number:** Only for ASTM and HPRIM21 Hosts: Check this option to allow Automatic Merge only if tubes are downloaded with the same request ID.
- There is an additional option back in the **Host setup** window to specify which technical comments you want to keep in the Remisol Advance request in case of an Automatic Merge: **Technical comments**.

You can select one the two following values:

- **Keep Old Comments:** Check this value to keep the technical comments from the initial request.
- **Keep New Comments:** Check this value to keep the technical comments from the last merged programming.

NOTE:

This option is very important because, with the automatic merge feature activated, you can only keep one set of technical comments.

Limitations

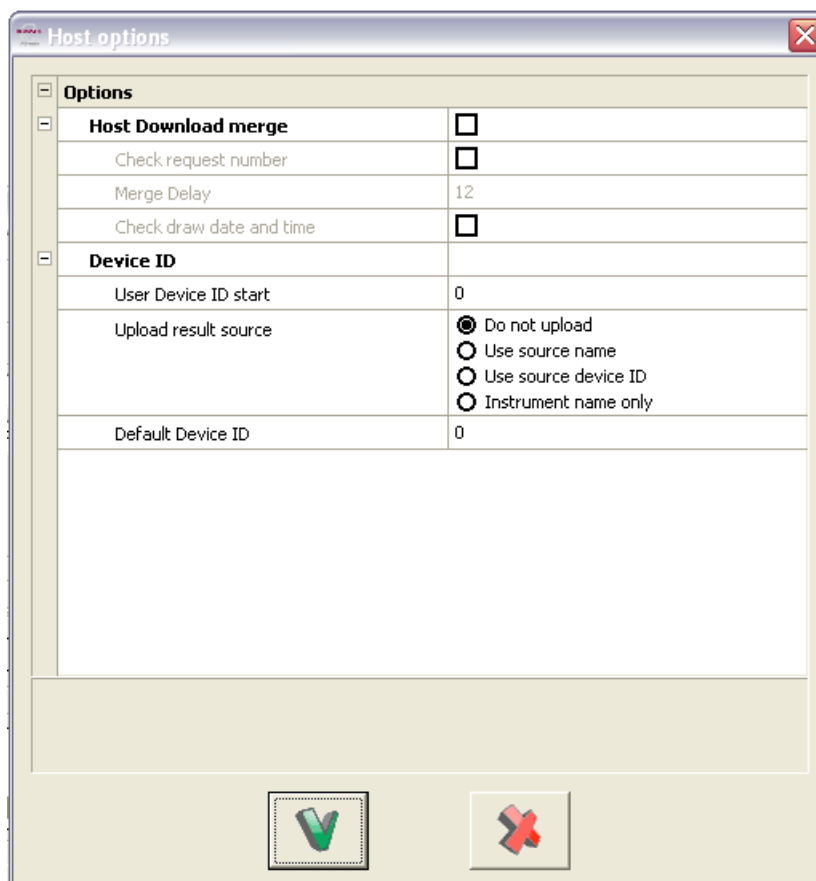
There are some limitations to the Automatic Merge feature:

- The automatic merge feature is only available for the following Hosts: **ASTM, GENS, LH SERIES, IMAGE, and HPRIM21**.
- The Automatic Merge feature **is not automatically activated** when upgrading to Remisol Advance 1.3 (or higher).
- When the Automatic Merge is enabled, the Remisol Advance request's draw date and time never change. It will always be the first programmed.
- If, for two programmings, the patient's IPP is the same but there is a difference in the last or the first name, the automatic merge feature will not work. The option UpdateDemo in the REMISOL.INI file has no effect on the Automatic Merge feature.
- Only the V, C, H and P request's flags are reset by the Automatic Merge.

2.4.8 Device ID options

The device ID options allow defining which Device ID to attach to the results downloaded from an ASTM or HPRIM21 host.

For ASTM and HPRIM21 hosts only, a new User Device ID start option was added in **Host Setup / Options...** The value that you specify in this option will be added to the User ID (User ID is a hidden value which is used to identify the different Remisol Advance users) to create a unique Device ID per user. It is this Unique Device ID (per user) that will be used to identify a result created manually by a user when uploading this result to the host.



In the **Host options** window, there are three options that you can configure:

- **User Device ID start:** This option allows you to define the value that will be added to the user ID in order to create a unique device ID that will be used for every manual result (that is to say with no device ID) that will be uploaded to the host.

NOTE:

Check the device ID you choose is not already in use for an instrument or another host.

- **Upload result source:** This specifies how Remisol should manage the device ID when uploading to an HPRIM21 host. 4 options are available:
 - **Do not upload:** The device ID is not uploaded,
 - **Use source name:** The source name (instrument or Remisol) is uploaded,
 - **Use source device ID:** The device ID is uploaded,
 - **Instrument name only:** The instrument name is uploaded.
 If the result was entered manually on Remisol or originates from the host, nothing is uploaded.
- **Default Device ID:** This option allows you to define the default device ID to be uploaded to the host when the device ID of the instrument is not known (as a reminder only ASTM, CX7, LX20 and HPRIM21 protocols can upload the device ID).

NOTE:

The 0 value means that the option is not activated.

This option replaces the DeviceID entry in the ASTMS section. The DeviceID entry that you can find in CX7S and LX20S sections of REMISOL.INI was not replaced and is still used).

Upload comment type: Check this option to upload the type of comment: technical and interpretation types the Automatic Merge feature.

2.4.9 Are you there option

Remisol will periodically check the communication with the LIS.

If 3 consecutive communication attempts fail, a message is logged in the event log and the Host Low Level task is restarted (ASTM, HPRIM21 & RADVH).

- **Are you there (AYT) delay:** This defines the time gap, in minutes, between 2 AYT upload to the LIS:
 - **0:** AYT are not sent,
 - If no or wrong answer for 3 consecutive times, the host's Low Level task will be started again.

2.4.10 Previous result options

The Previous result options allow defining which result is actually going to be used as the previous result in Remisol. This can be particularly important for the calculation of the Delta-Check, please make sure you also have a look at **Environment / General Setup / More options... DeltaCheck** options after very section.

Choice: This specifies whether the previous result column displays the host result or the result archived in Remisol. 5 options are available:

- **0- Host result always ignored:** The previous result downloaded by the host in the request is always ignored, therefore the previous result is drawn from the Remisol archives,
- **1- use host result if available else Remisol:** If the host downloaded a previous result in the request, it will be used else the previous result recorded in the Remisol archives will be used,
- **2- Use most recent out of host or archived results:** The previous result will be the most recent result out of either the previous result downloaded by the host or the previous result recorded in the Remisol archives,
- **3- Use Host result only (no merge), Remisol's if no host:** If the host downloaded a previous result and the date is consistent (no merge with Remisol anteriority, see **Consistency** below), it will be used; if no previous result downloaded from the host for the request, Remisol archived previous result will be used,
- **4- Result archived in Remisol always ignored:** The previous result recorded in the Remisol archives is always ignored; therefore the previous result has to be downloaded by the host.

Consistency: This will check the date and time consistency with the previous result; this is only relevant for items 3 and 4 of the previous **Choice** option. 3 options are available (MRR stands for the Most Recent Result downloaded by the host):

- **0- No check,**
- **1- Result must have the same date as MRR,**
- **2- Result must have the same date and time as MRR.**

2.4.11 Network interface to the LIS

If you prefer to use TCP/IP instead of a serial connection, you should select the option 'TCP' and refer the IP address of the computer (LIS) you want to talk with (the IP address will be provided by the laboratory administrator).

NOTE:

Only the ASTMH, LHSeriesH, GensH and RADVH interfaces allow IP connection for now.

2.5 Automation Setup

2.5.1 Introduction

Automation lines connected to Remisol Advance should be defined in the system. The **Automation Setup** window is used to define or modify an automate.

2.5.2 Multiple Automation Lines

2.5.2.1 Adding a new automation line

To define a new automation line, you have to:

1. Open the **Environment > Automation setup** menu,
2. Click on the **New** button located in the toolbar, and then fill all the required information,
3. Click on the **Save** button to validate your host definition.

2.5.2.2 Deleting an automation line

To delete an automation line, you have to:

1. Open the **Environment > Automation setup** menu,
2. Select the host you want to delete in the **Name** field,
3. Click on the **Delete** button in the toolbar to delete the automation line definition.

2.5.2.3 Modifying an automation line configuration

To modify an automation line configuration, you have to:

1. Open the **Environment > Automation setup** menu,
2. Select the automation line whose definition you want to modify in the **Name** field,
3. Modify the automation line definition,
4. Click on the **Save** button to validate your modifications.

2.5.3 Automation Setup Window **New in 1.7 !:**

To open the **Automation Setup** window, click on the **Environment** menu, then select **Automation Setup**.

The screenshot shows the 'Automation Setup' window with the following sections:

- Automation Main Settings:** Name (dropdown: ACLTOP), Type (dropdown: OTHER/1), Pprt (dropdown: 7), Device ID (dropdown: 7).
- Low level type:** Radio buttons for Serial (selected), Serial on TCP, File / FTP, and RADV TCP.
- Network Management:** Start on: (dropdown: R2000TRAINING), Manage and monitor on: (dropdown: R2000TRAINING).
- Download behavior:** Radio buttons for Always download to Automation and Use parameter priorities (like instrument) (selected).
- Include in the Update_on_query process:** Checkboxes for Include (checked), Wait HQ in case of rerun/add on, Send clear cup in case of rerun/add on, Deletion Notification, Enable Patient Data download, Enable Comments download, and Direct LIS Connection.
- Busy Delay:** Input field: 60 seconds.
- Baud Rate:** Radio buttons for 300, 600, 1200, 2400, 4800, 9600 (selected), 19200, and 38400.
- Data Bits:** Radio buttons for 5, 6, 7, and 8 (selected).
- Stop Bits:** Radio buttons for 1 (selected), 1,5, and 2.
- Parity:** Radio buttons for None (selected), Odd, and Even.
- XON-XOFF:** Check box (unchecked).
- Special:** Button.
- Line Units:** Table with columns Module and Codes. The first row is highlighted in blue. Buttons: Add, Modification, Delete.

2.5.4 Procedure

The automation line and Remisol Advance should be configured with the same settings for the serial line. Follow the steps below to define an automation line.

1. In the **Name** field, provide a name for the automation line. The drop-down list will get populated with the names of all the automation lines defined in a Remisol station connected to the current network.
2. Select an automation line **Type** from the drop-down list; this tells Remisol which serial communication interface to use with the automation line. You may choose between **Automate 800**, **Preplink**, **Preplink_Extended**, **LH1500** or **Automate 1200-2550**. If you choose **Other 1-12**, you need to specify which interface Remisol should use with the **Special** button by pointing to the adequate high level communication task.
3. Select the **Port** number to which the automation line cable is attached.

NOTE:

Setting an automation line port to 0 equals disabling the automation line in Remisol Advance.

- 4 Select the **Device ID** you want to assign to the automation line.
- 5 Select the **Low level type** of the automation line. Options are **Serial** (to connect an automation using a null modem serial cable like those provided with your system), **Serial on TCP**, **File/FTP** (the last two options are dedicated to remote instrument connection; refer to the Remisol Advance technical documentation for more information about these) and **Full TCP** (this option allows the transportation of the full stream over a TCP network; all lines in a stream are transmitted as one block as opposed to Serial on TCP where each line in a stream is transmitted one by one).
- 6 Select or deselect **Always download to Automation**: the requests are always transmitted to the instrument and the automation line.
- 7 Select **Use parameter priorities (like instrument)**: the priorities for the Automation line are evaluated like any instruments'.
- 8 Select or deselect the **Include in the Update_on_query process** depending on whether you want to include the automation line in the process. When checked, the automation will behave according to the value set for the update on query entry in the REMISOL.INI file. As guidelines:
 - a. If **Use parameter priorities (like instrument)** option is checked, the **Include in Update_on_query process** option should also be checked.
 - b. If the **Always download to Automation** option is checked, the **Include in Update_on_query process** option should not be checked.
- 9 If the **Use parameter priorities mode** is selected, another option is activated: **Wait HQ in case of rerun/add-on**. If the option is selected in case of a rerun / add-on, Remisol Advance will wait for a Host Query for the request in order to download the programming to the Automation line.
- 10 Select or deselect **Send clear cup in case of rerun/add-on**. This option allows Remisol Advance to send a clear cup instruction to the Automation line before a rerun/ add-on.
- 11 Select or deselect the **download of the patient data** (please deselect this option if the system is not compliant with non-ANSI char sets).
- 12 Select or deselect the **download of the comments** (please deselect this option if the system is not compliant with non-ANSI char sets).
- 13 Select or deselect the **Direct LIS Connection** depending on whether the automation line is directly connected to the LIS.

NOTE:

The state of the Direct LIS connection option is now recorded in the dictionary. On update, the previous behavior is kept.

- 14 **Network Management *New in 1.7!***: In previous versions of Remisol Advance, the Remisol software that started a device task also implicitly managed the task (played rules / displayed the Communication Event Log and the respective LED...).
In Remisol Advance 1,7 the software is not in charge of this task anymore and furthermore tasks may be centralized onto a single server, that will also most probably be located away from the connected devices and therefore also far from the people using the device.

So for each device type, instruments, automations, host(s) and diagnostics, the **Network Management** box was reviewed as launch and management were split: the automation task may be started from a Remisol machine (by the RADVL of the machine actually), this is defined in the **Start on** field (unique selection only, **Not connected** remains as an option if your automation is currently not connected to any Remisol station), while the automation may be managed from one or several other Remisol machines on the network; this is defined in the **Manage and monitor on** field (hence several selections are possible here); this / these machine(s) will play rules / display the **Communication Event Log** and the respective LED for the automation.

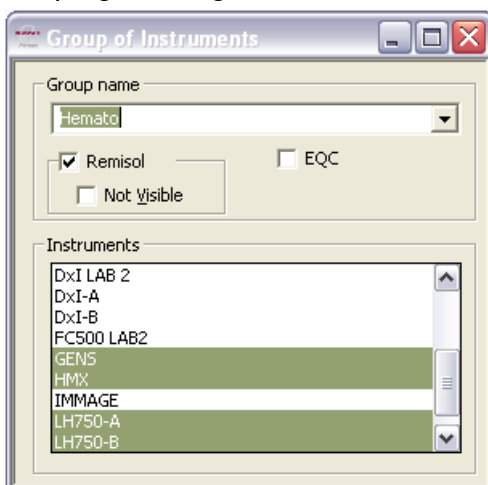
- 15 Enter a **Busy delay** setting in seconds (30 to 600). This is the length of time Remisol Advance will wait before automatically transmitting sample programmings again if the automate is currently busy. The recommended setting is 60 seconds.
- 16 Select the **Baud rate** setting. Options are 300, 600, 1200, 2400, 4800, 9600, 19200 and 38400.
- 17 Select a **Data bits** setting. Options are 5, 6, 7, and 8.
- 18 Select a **Stop bits** setting. Options are 2, 1.5, and 1.
- 19 Select the **Parity** setting. Options are none, odd, and even.
- 20 Select or deselect the **XON-XOFF** flow control.

- 21 Define the **Line Units** (please refer to the **external modules** section)
- 22 Please save your settings before closing the window. Exit and restart the Remisol Advance software to activate the new settings.

2.6 Group of Instruments

The 'Group of Instruments' window allows you to group several instruments working on the same mode. You can, for example, define a group named 'Hematology' that includes all hematology instruments connected to your system (GenS, Lh750...).

The Assignment option, as well as the Download option would then be available to a group of instruments instead of being available to every single one of the instruments that are part of the group (programmings for a group of instruments is similar to programmings for each instrument)



2.7 Device id management

The 'Devices List' window lists the device IDs of all the devices (instruments, host, Remisol machines, users...) that are currently available on the local machine and on the network.

At a glance, the user can review and edit the device IDs of any of these devices. Highlight duplicated device ID, if checked, will highlight those devices whose device ID is duplicated so this can be corrected.

Devices List			
Site	Name	Type	Device id
Local	Local		
	DEMOADV	Remisol PC	0
	R2000BEN	Remisol PC	0
	R2002	Remisol PC	0
	R2003	Remisol PC	0
	R2004	Remisol PC	0
	R2005	Remisol PC	0
	R2006	Remisol PC	0
	ASTMH	Host	
	DEMO	User	0
	LABO	User	0
	SYSADM	User	0
	USER1	User	0
	GENS	Analyser	0
	HMX	Analyser	0
	DIFFPAD	Analyser	0
	IMMAGE	Analyser	0
	LH750-A	Analyser	0
	ACT	Analyser	0
	CZE	Analyser	0
	LX 20	Analyser	0
	Cx9	Analyser	0
	LH750-B	Analyser	0
	DxC-A	Analyser	0
	DxC-B	Analyser	0
	DxI-A	Analyser	0
	DxI-B	Analyser	0
	ACLTOP	Automation	0

☐ Highlight duplicated device ID

2.8 Barcode Printer Setup

2.8.1 Introduction

The **Barcode Printer Setup** window is used to define or modify the barcode printer interface settings and label creation options.

NOTE:

The initial barcode printer installation and setup must be carried out by your service representative. Please contact them for further information on how to use a barcode printer with Remisol Advance.

When your barcode printer is installed by your service representative, make sure that the barcode printer can correctly print a sample ID with the maximum number of characters used by your laboratory. If the barcode printer is not installed properly, the sample ID may be truncated, if so, test requests and results could be assigned to the wrong patient.

2.8.2 Barcode Printer Setup Window

To open the **Barcode Printer Setup** window, click on the **Environment** menu, then select **BarCode Printer Setup**.

The Barcode Printer Setup window contains the following sections:

- Printer:** Radio buttons for "Windows Printer" (selected) and "Serial Printer". A dropdown menu shows "Epson Stylus COLOR 740 ESCP 2".
- Port:** A dropdown menu showing "0".
- Generate a label:**
 - Checkboxes: "If created by Remisol Advance" (checked), "If created by the host", "If created by the qc".
 - Number of labels: Input field with value "1".
- Baud Rate:** Radio buttons for 110, 300, 600, 1200, 2400, 4800, 9600, 19200.
- Data Bits:** Radio buttons for 5, 6, 7, 8.
- Stop Bits:** Radio buttons for 1 (selected), 1,5, 2.
- Parity:** Radio buttons for None (selected), Odd, Even.
- Bottom:** Checkboxes for "XON-XOFF" and "Not connected" (checked).

2.8.3 Procedure

The barcode printer and Remisol Advance should be configured with the same settings for the serial line. Follow the steps below to define a host setup. Follow the steps below to define a barcode printer setup.

- 1 Select which interface is to be used for the printer:
Windows printer (USB) or **Serial Printer**. Select the port number to which the barcode printer is attached (only applicable for a serial option).
- 2 If **Windows printer**: Select the printer from the windows printers list,
If **Serial printer**: Select the serial **Port** from the port dropdown list.
- 3 Select the **Baud rate** setting. Options are 110, 300, 600, 1200, 2400, 4800, 9600, and 19200.
- 4 Select a **Data bits** setting. Options are 5, 6, 7, and 8.
- 5 Select a **Stop bits** setting. Options are 2, 1.5, and 1.
- 6 Select the **Parity** setting. Options are none, odd, and even.
- 7 Select or deselect the **XON-XOFF** flow control.
- 8 Select or deselect **Not Connected** depending on whether the barcode printer is physically connected to Remisol Advance (network configuration),
To generate barcode labels, select one or more of the following options.
 - a. Select **If created by Remisol Advance**, to print barcode labels for requests created from Remisol Advance,
 - b. Select **If created by the host**, to print barcode labels for requests downloaded from the LIS,
 - c. Select **If created by the QC**, to print barcode labels for Quality Control samples.
- 9 Enter the number of labels you wish to print per sample.
- 10 Please save before exiting the window. Exit and restart the Remisol Advance software to activate the new settings.

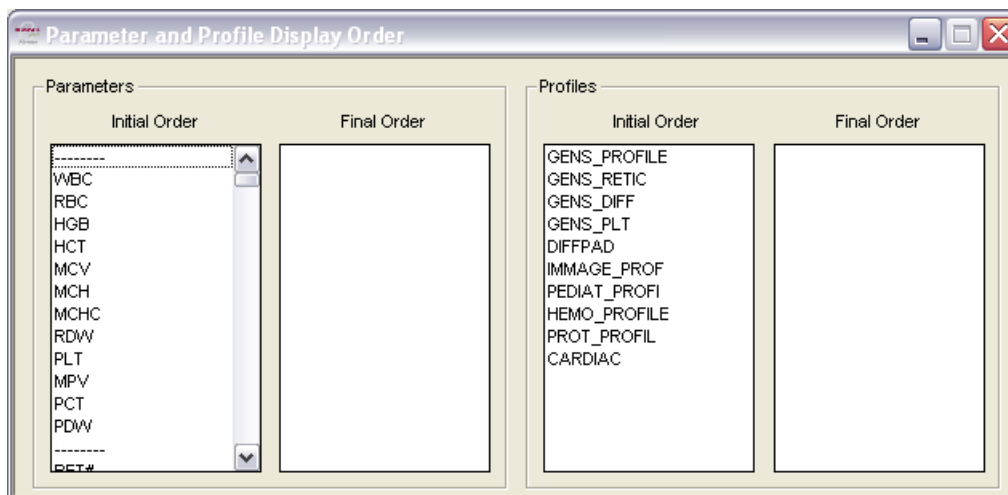
2.9 Display Order

2.9.1 Introduction

The **Parameter and Profile Display Order** window is used to change the order in which parameters and profiles are displayed on screen.

2.9.2 Display Order Window

To open the **Parameter and Profile Display Order** window, click on the **Environment** menu, then select **Display Order**.



2.9.3 Procedure

Follow the steps below to change the parameter display order.

- 1 Select a parameter or profile in the Initial Order list. The parameter will move from the Initial Order list to the first position in the Final Order list.
- 2 Repeat step 1 for the second parameter or profile to be added to the Final Order list, and so forth until all the parameters or profiles have been moved from the Initial Order list to the Final Order list.

HINT:

Try clicking and dragging with the right mouse button to select a group of adjacent parameters or profiles to move.

- 3 If you move the wrong parameter or profile to the Final Order list, select it again in the Final Order list. It will move to the end of the Initial Order list.
- 4 Save before exiting the screen. The new display order will not be saved unless all the parameters or profiles have been moved from the Initial Order list to the Final Order list.

NOTE:

Changing the display order does not affect the print order. To insert separators between groups of parameters in the request sheet, select the option "-----".

2.10 General Setup

2.10.1 Introduction

The **General Setup** window is used to customize the Remisol Advance environment.

2.10.2 General Setup Window

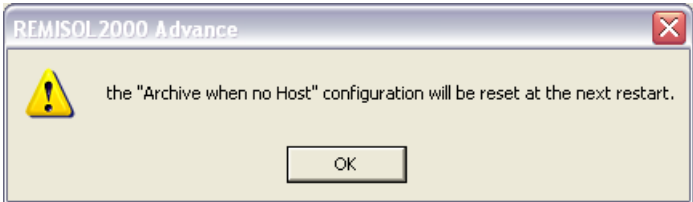
To open the **General Setup** window, click on the **Environment** menu, then select **General Setup**.

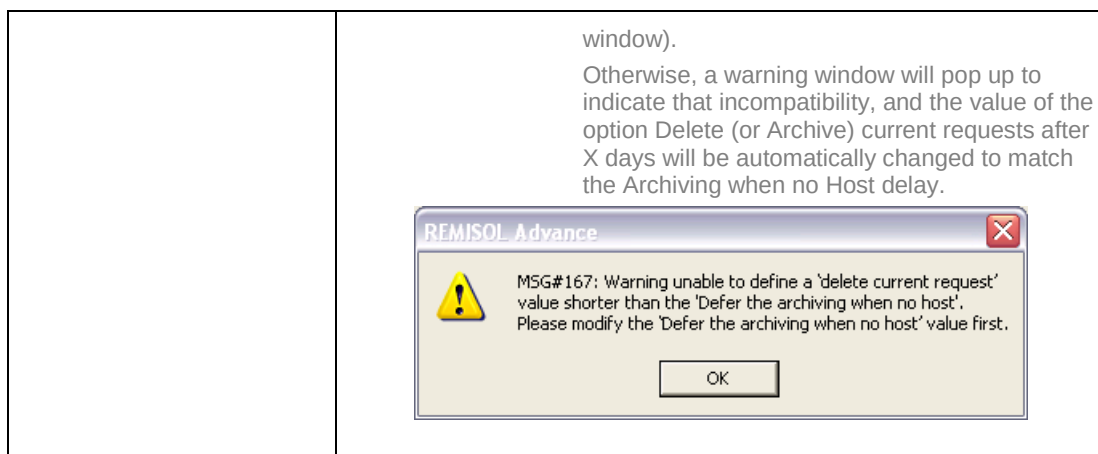
2.10.3 General Setup Options

The following table describes each of the options in the General Setup window.

Field	Function
Windows Refreshing Time	Enter the delay in seconds (1 to 9999) before the request list and sample lists are automatically refreshed. The recommended settings are from 10 to 15 seconds.
Create Patient Demogs For Sample Run at Inst.	Check this option to create patient demographics on Remisol Advance from the demographics sent by the instrument.
UPC Enabled	Check this option to enable the UPC function for Array systems.
Print automatically complete requests	Select: Validated: to print automatically requests that are complete and fully validated

	• Non Validated: to print automatically requests that are complete, even if not fully validated
Print Validated Results Only	Check this option to print only validated results.
Summary Report by Department	Check this option to print summary reports (line reports) by department.
Default Report	Select a default report for automatic printing from the drop-down list. Options are: • Full report • Full report with comment • Graphic report • Multi-sample report • Instruments reports • Scan Data + graph prof
Quick Parameter and Profile input	Check this option if you want to actually type in the parameters and profiles rather than select them from the parameters and profiles list.
Allow Host Rerunning for Pending Results	Check this option if you want all your parameters to be pending again if receiving the same programming from the host.
Allow Host Completed for Pending Results	Check this option if you want your completed parameters to be pending again if receiving the same programming from the host.
Allow Host Uploaded for Pending Results	Check this option if you want all your uploaded parameters to be pending again if receiving the same programming from the host.
Number of archived days to keep:	Enter the number of days to keep archived data before automatically overwriting the oldest data. Recommended settings are from 7 to 60 days. It is not recommended to enter more than 90 days. NOTE: Deleted archived data cannot be recovered. See Archives for further information on backing up archived data. The limit was increased to a maximum 10 000 days.
keep graphs x days	Check this option and enter the number of days you want the graphical information to be kept in the database.
Keep unused demographics	Uncheck this option to allow the automatic deletion of demographics that are not used anymore (if there is no current request for these demographics and when the archived data gets deleted because it is too old). NOTE: The option is checked by default, meaning that the demographics are never automatically deleted.

Delete current requests after x days	Select this option and enter the number of days you want the current requests to be deleted automatically after.
Archive current requests after x days	Select this option and enter the number of days you want the current requests to be automatically archived after.
Assign automatically (if entered manually)	Check this option to automatically assign a sample to an instrument if the request is entered manually in the Remisol Advance console.
Download automatically (if entered manually)	Check this option to automatically download a sample if the request is entered manually in the Remisol Advance console. The Assign automatically (if entered manually) option must also be selected.
Create patient instead of unknown with prefix	Check this option to automatically assign a patient ID to an unknown patient. Enter a prefix for the patient ID (up to 8 alphanumeric characters). The prefix will be followed by an incremented number.
Instrument: manage control tubes	Check this option if you want to send the control tubes to the instrument with the flag 'control' (if controls are managed by the LIS).
Host: manage control tubes	Check this option if you want the Remisol Advance to recall results to the LIS with the flag 'control' (if controls are managed by the LIS).
Archive when no Host after x hours	When checked: - selecting completed request even not validated will allow the automatic archiving of completed requests (even not validated) - selecting completed request and only validated will allow the automatic archiving of completed and fully validated requests after x hours NOTE: Each addition or removal of a Host disables the «Archive when no Host after x hours» option. A window is displayed to warn the user the option is disabled.  You have also the possibility to define a delay (in hours) before the archiving or the deletion of the requests. A value of 0 means that the archiving is processed immediately (no defer). NOTE: The delay defined for Archiving when no Host must be lower than the one defined for the option Delete (or Archive) current requests after X days (also present in the General Setup



Please save your settings before exiting the window.

2.10.4 Patient Fields Setup Window

The **Patient Fields Setup** window allows the user to select which demographics input fields to display on the patient requests sheet.

To open the Patient Fields Setup window from the General Setup window, click on the button at the bottom of the window (See **General Setup window**).



Select or deselect the demographics input fields to display on the patient requests sheet. Click on **OK** to save and exit to the **General Setup** screen. Click on **Cancel** to cancel changes and exit to the **General Setup** screen.

2.10.5 More options...

It is possible to specify that the defer time should be updated when a rerun or an add-on is requested (either from the LIS, within Remisol Advance user interface, or by an upload rule), by choosing if the defer time is assigned to the entire request, or to the tube.

This feature does not change the fact that it is the entire request that must be completed (all tubes of the request) for the archiving or deletion to be processed (with or without a defer time).

NOTE:

A request is archived / deleted when its defer time is reached only if there is no pending results in that request.

2.10.5.1 Configuration

To do so, select the **Environment > General Setup** menu, and then click on the **More options...** button to open the **Options** window:

Rerun/Add param.	☐
Rules	
Traces for played rules:	☐ Do not keep ☐ Keep only if an action is triggered ☒ Keep all traces
Invalidate results if modified	☐
Ignore dependencies by run	☐
Rules evaluation mode	☐ Version 1.5 ☒ Version 1.6 and higher
Manually triggered	
Validation mode	☐
Number of versions to keep	10
Remote site	
Remote instruments assignment	☒
DeltaCheck	
Previous result must be validated	☐
Delta check evaluation	☒ 0- Only use previous result (< 1.6 behaviour) ☐ 1- Only use the latest validated current result ☐ 2- if possible option 0 else option 1 ☐ 3- if possible option 1 else option 0

In the **More options...** window, there are two options that you can configure:

Archiving mode:

- **Deferwork by tube:** Check this option if you want the deferring time to be defined per **tube**. The default value for this option is per request (option not checked). When this option is enabled (**Deferwork by tube**), every tube of the request is processed individually, so they can be archived at different times. **Please change the REMISOL.INI entry named AUTO_TUBE_RECALL to 1 if you activate the Defer by tube option.**

Archive all runs: Check this option to automatically archive ALL the runs of a request. By default, to keep in line with the current behavior, this option is not enabled. If it is activated, all the results received, even if they have not been uploaded to the host, will be archived.

- **Archive attached graphs:** Check this checkbox if you also want to archive the graphs attached to each one of the additional runs.

Update Defer after:

- **Rerun/Add param:** Check this option to enable the update of the deferring time when a rerun or an add-on is requested. The deferring time will be increased by the value defined in the defer option. The update of the deferring time is applied only when a programming is transmitted to an instrument:
- **Rerun / add-on from LIS:** The defer time is updated only when the programming is transmitted to an instrument, and not when it is only a clear cup that is transmitted.
- **Rerun / add-on from Remisol Advance (user interface):** The defer time is updated only when the programming is transmitted to an instrument, and not when it is only a clear cup that is transmitted.
- **Rerun / add-on from Remisol Advance (upload rule):** The defer time is updated only when the programming is transmitted to an instrument: a Download action is required for the update.

Rules: This section is dedicated to the management of rules.

- **Traces for played rules:** This prevents loading traces of rules along with the database when you have a stable configuration. 3 options are available. By default, to remain consistent with the current behavior, Keep all traces is checked. Do not keep increases the system performances.
- **Invalidate results if modified:** This automatically forces the invalidation of validated results if a rule modifies its value.
- **Ignore dependencies by run:** This option will merely ignore dependencies between runs for rules
- **Rules evaluation mode:** The algorithm for the evaluation of parameter rules was improved (the order for these rules is reviewed based on their interdependencies) but because rules are a sensitive topic, the option to return to the previous evaluation mode is provided as a failsafe. This reviewed algorithm speeds up the launch process of Remisol.

As a recommendation: on a new installation, prefer version 1.6; on a previous installation, try 1.6 and if the customer is not satisfied, there is always the option to return to the previous mode.

Manually triggered: This section is dedicated to the management of rules manually triggered.

- **Validation mode:** If rules are manually triggered, the validation of a result will be treated as manual and originating from the current user (instead of Remisol).
- **Number of versions to keep:** This defines the number of versions (i.e. modifications) of a rule to keep in the Rules History window.

Remote site:

- **Remote instruments assignment:** This allows the display of remote instruments in the Sample Assignment window.

DeltaCheck: This section defines which previous result from the Remisol archive database is going to be used in the delta-check calculation (as R2) (please also see the Host Setup > Options... and Previous result section for the management of the previous result).

- **Previous result must be validated:** This defines the previous result from the Remisol archive database must be validated to be used as the previous result, otherwise the latest archived result will be used.
- **Delta check evaluation:**
 - **0- Only use previous result (< 1.6 behaviour):** Remisol will only use the previous result,
 - **1- Only use the latest validated current result:** Remisol will use the most recent validated result in the request or another request,
 - **2- If possible option 0 else option 1,**
 - **3- If possible option 1 else option 0**

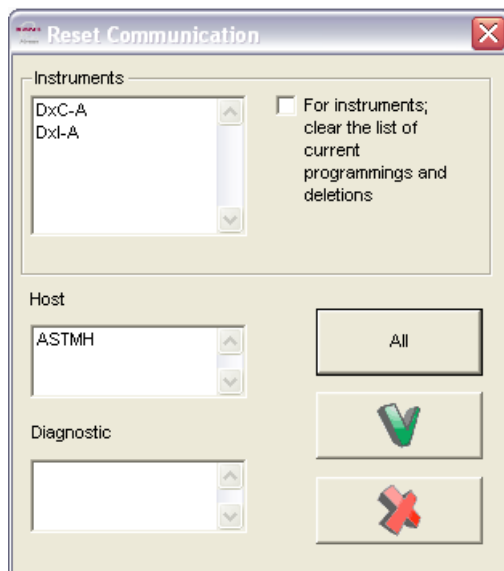
2.11 Reset Communication

2.11.1 Introduction

If a problem arises with the connection to an instrument or host, the connection can be re- initialized through the **Reset Communication** window.

2.11.2 Reset Communication Window

To open the **Reset Communication** window, click on the **Environment** menu, then select **Reset Communication**.



2.11.3 **Procedure**

Follow the steps below to reset communication.

- 1 Select one or more peripherals from the **Instruments** or **Hosts**, or **Diagnostic** lists, or select **All** to select all peripherals for re-initialization.
- 2 Select **OK** to initiate the re-initialization OR Select **Cancel** to cancel the re-initialization and exit the **Reset Communication** window.
- 3 Check **For instruments, clear the list of current programmings and deletions** to purge the list of programmings that have not been sent on reset,
- 4 If you selected **OK**, the **Reset Communication** window will close and the **Instrument Events Log** window will open automatically (if it is not already opened or minimized). Review the messages in the Instrument Event Log to check the re-initialization was successful.

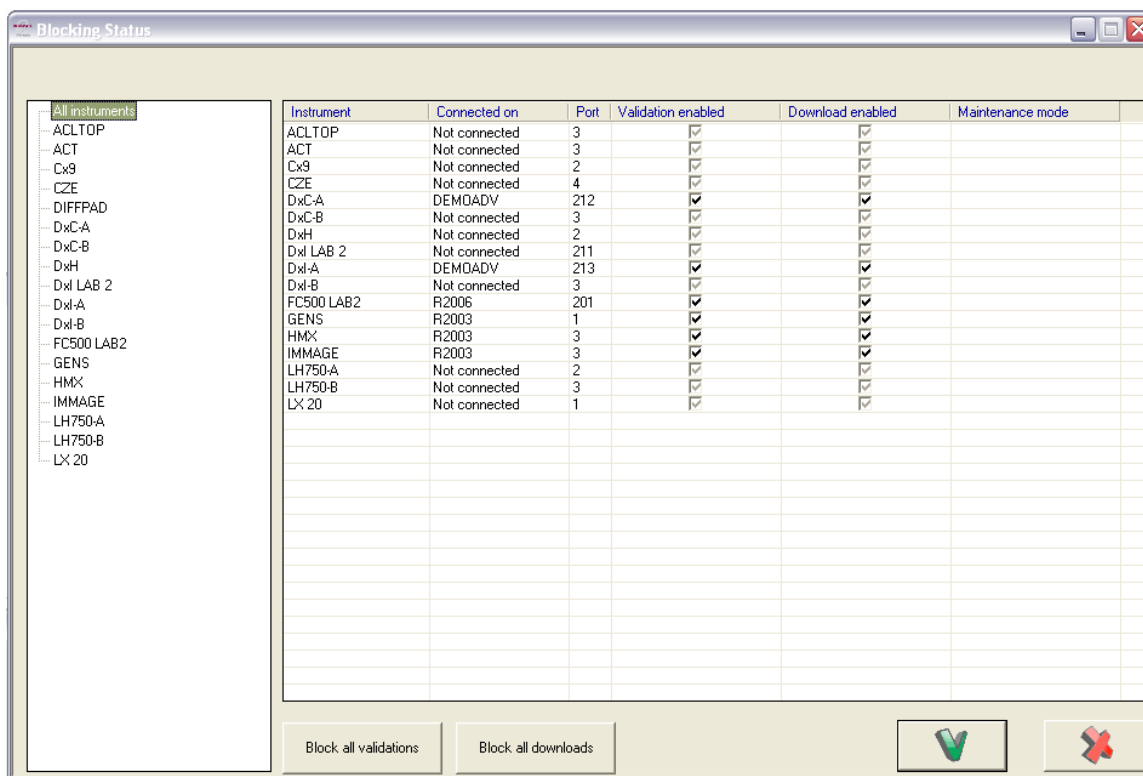
2.12 ***Instrument Blocking Status***

It is possible to block/unblock the automatic download of programmings and the automatic validation of results for any instrument by using the **Environment - Instrument Blocking** menu or when you click on the **Instrument Blocking** toolbar button.

The Instrument blocking status window appears, displaying:

the list of all the available instruments,

- which Remisol Advance system they are connected to on the network,
- which port they are connected to,
- whether the validation is enabled (checked) or not (unchecked + red background),
- whether the download is enabled (ticked) or not (unchecked + red background).



When an instrument is not connected, it is greyed out in the instrument list, and no action is possible on it. There are also two buttons **Block all validations** and **Block all downloads** that allow emergency global blocking.

Any change will only be validated once the user has clicked on the **OK** button; clicking on **Cancel** will merely cancel all changes.

Once modifications are validated, a message is sent to all Remisol Advance systems over the network to implement the newly defined status. Therefore it is possible to block any instrument from any Remisol Advance systems on the network.

All users may block the download or validation for any of the connected instruments but only users with administrative rights can unblock the download or validation for any of the blocked instrument.

If download is blocked for an instrument, all manual and automatic downloads will be rejected by this instrument and a message will be displayed in the event log.

If validation is blocked for an instrument, there is no automatic validation of the results from this instrument and a message will be displayed in the **Message generated by rules** window.

NOTE:

The stopping of the download of the programmings to the instrument only applies to the downloads due to a parameter priority set to 1, to the manual downloads, and to the downloads caused by rules.
If the downloads are stopped, Remisol Advance will not answer a host query from the instrument.

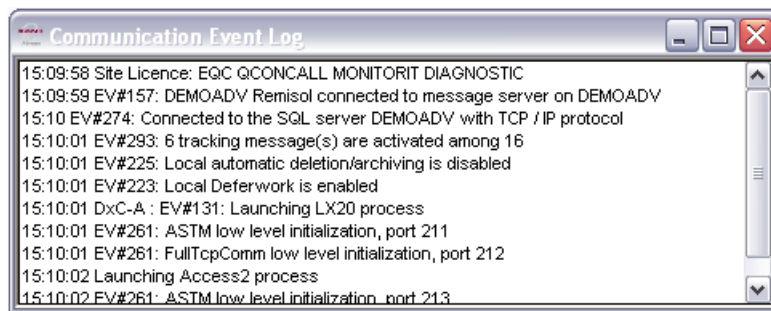
2.13 Communication Event Log

2.13.1 Introduction

The **Communication Event Log** window opens automatically when the user logs on and anytime an instrument event occurs. Instrument events include downloading samples, uploading results, initializing messages, and line down messages.

2.13.2 Communication Event Log Window

To open the Communication Event Log window, click on the **Environment** menu, then select **Communication Event Log**.



2.13.3 Test Messages

When the **Communication Event Log** window is opened from the **Environment** menu, a test message is sent to each instrument that has been configured (whose port number is not equal to zero and whose **Connected** option is checked) to check the status of the serial interfaces.

2.13.4 Event Log options

The content of the event log can be managed by the popup menu (right click or press **[F6]** key). This menu contains the following options:

- **Stop window logging:** if this option is activated, new events will not appear in the event log window.
- **Auto scroll:** if this option is activated, the event list will automatically scroll to the latest event.
- **Print:** to print the event list.
- **Save:** to save the event list.
- **Clear:** to clear the event list.

2.14 Print Setup

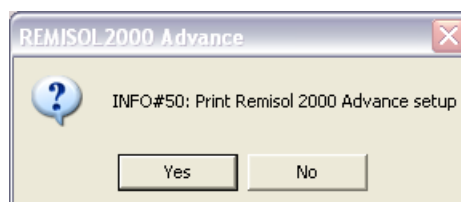
2.14.1 Introduction

This option allows the user to print out the complete configuration of the Remisol Advance system as it currently is. This printout contains the following information:

- connected instruments
- connected host
- modules (quality control and UPC)
- instrument and host types (serial communication interface types)
- software configuration
- Remisol.ini

2.14.2 Procedure

To print the Remisol Advance setup, click on the **Environment** menu, then select **Print Setup**. The following window will appear:



Select **Yes** to initiate the print. Select **No** to cancel the print.

2.15 Report Setup

2.15.1 Introduction

The Report Setup submenu allows the user to set up the following report options.

Option	Function
--------	----------

Printer Configuration	Change printer settings.
Report Header	Enter header information for patient and quality control reports to be printed.
Parameter Print Order	Change the order in which parameters and profiles are printed in reports.

2.15.2 Printer Configuration

The Remisol Advance printer is the default printer in the Windows print configuration software. The printer configuration option allows the user to change printer settings without having to exit the Remisol Advance software.

To open the printer configuration window, click on the **Environment** menu, and then select **Report Setup**. From the **Report Setup** submenu, select **Printer Configuration**.

The main item to check in the printer configuration window is paper size (generally Letter or A4).

It is possible, with Remisol Advance, to choose on which printer a report is to be printed. For further information, please see the **Technical Guide**.

2.15.3 Report Header Setup

To open the Report Header Setup window, click on the **Environment** menu, then select **Report Setup**, then select **Report Header** from the submenu.

NOTE:

Remisol Advance also prints the laboratory name as defined in the PMF license file at the bottom of the page.



Follow the steps below to report header information.

- 1 The first two fields represent the first two lines of the report header. Type in the appropriate information in these two fields.

NOTE:

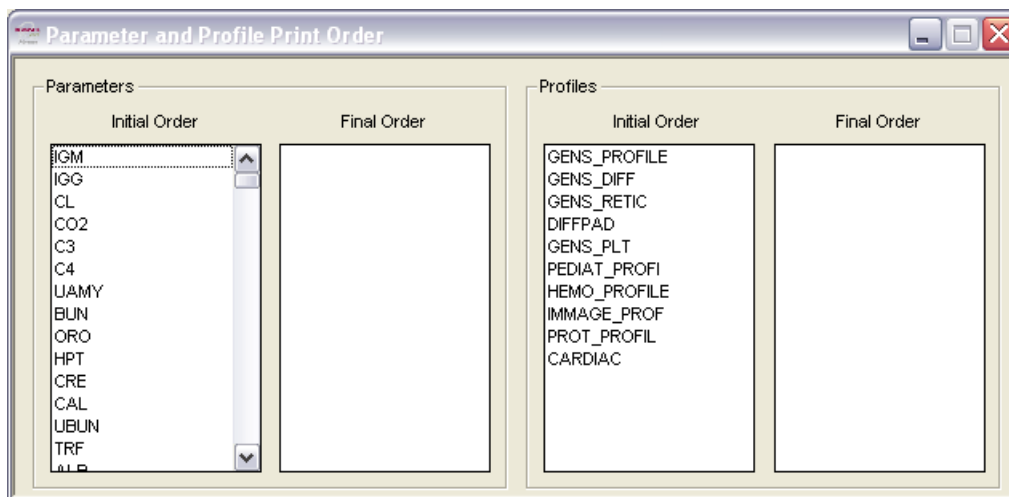
The following reports have headers that contain only these first two header lines:

- line (summary) report
- multi-sample report
- Levey-Jennings chart report

- 2 Type in any remaining header information in the last three fields. Each field represent an extra line in the report header.
- 3 Select **OK** to save and exit the window. Select **Cancel** to exit without saving.

2.15.4 Parameter Print Order

To open the **Parameters and Profiles Printing Order** window, click on the **Environment** menu, then select **Report Setup**, then select **Chem. Print Order** from the submenu.



Follow the steps below to change the parameter or profile print order.

- 1 Select a parameter or profile in the Initial Order list by clicking onto it. The parameter will move from the Initial Order list to the first position in the Final Order list.
- 2 Repeat step 1 for the second parameter or profile to be added to the Final Order list, and so forth until ALL the parameters or profiles have been moved from the Initial Order list to the Final Order list.
- 3 If you move the wrong parameter or profile to the Final Order list, click it again in the Final Order list and it will move back to the Initial Order list, at the end.
- 4 Please save your settings before closing the screen. The new display order will not be saved unless ALL the parameters or profiles have been moved from the Initial Order list to the Final Order list.

NOTE:

Changing the print order does not affect the display order.

2.16 User Setup

2.16.1 Introduction

Different levels of access/privileges (validation, configuration, patient records deletion, etc.) may be defined for different individual users.

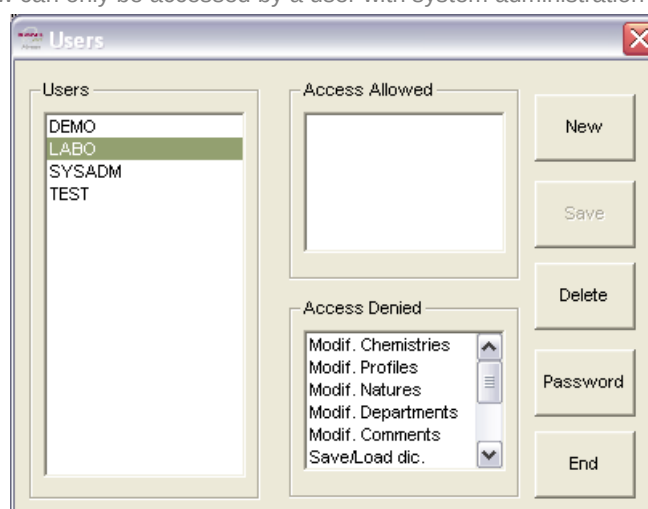
2.16.2 Users Window

The **Users** window is used to define, modify, and delete users and user privileges.

To open the Users window, select the **Environment** menu, then select **Users Setup**. From the **Users Setup** submenu, select **Access Rights**.

NOTE:

This window can only be accessed by a user with system administration privileges.



To edit a user, select one user in the Users list.

2.16.2.1 Define a New User

Click on **New** to define a new user. A new window opens:

- 1 in the field **Your password**, type in your SYSADM password
- 2 in the field **User Name**, define a new user name
- 3 in the field **New Password**, define a new password for the user you have just created (up to 25 alphanumeric characters)
- 4 in the next field, **Confirm Password**, confirm the new password

NOTE:

Passwords are case sensitive.

- 5 click on **OK** to save and exit. Click on **Cancel** to exit without saving.

2.16.2.2 Delete a User

In the **Users** windows, in the list of users, highlight the user you want to delete, and then click on the **Delete** button to delete the selected user.

2.16.2.3 Change a User Password

In the Users windows, in the list of users, highlight the user whose password you want to change then click on the **Password** button to change the password of the selected user. A new window opens:

- 1 in the field **Your password**, type in your SYSADM password,
- 2 in the field **New Password**, define a new password for the user you selected (up to 25 alphanumeric characters),
- 3 in the next field, **Confirm Password**, confirm the new password,
- 4 click on **OK** to save and exit. Click on **Cancel** to exit without saving.

2.16.2.4 Assign User Privileges

The Access Allowed and Access Denied lists are used to assign user privileges to the selected user. To move an access privilege from one list to another, click on the item.

NOTE:

A user with Administrator privileges can define and edit users and access rights, delete current requests, all archived requests from the Environment menu.

2.16.2.5 Save

Select **Save** to save the current settings.

2.16.2.6 End

Select **End** to exit the Users window. Please make sure to save your settings before closing the window.

2.17 Password

2.17.1 Introduction

This option allows users to change their own password.

2.17.2 Password Window

To open the password window, click on the **Environment** menu, then select **Users Setup**. From the **Users Setup** submenu, select **Password**.



2.17.3 Procedure

Follow the steps below to change a password.

- 1 In the field **Current Password**, type in your current password,
- 2 in the field **New Password**, enter your new password (up to 25 alphanumeric characters),
- 3 in the next field, **Confirm Password**, confirm the new password,
- 4 click on **OK** to save and exit. Click on **Cancel** to exit without saving.

NOTE:

Passwords are case sensitive.

2.18 System Maintenance Functions

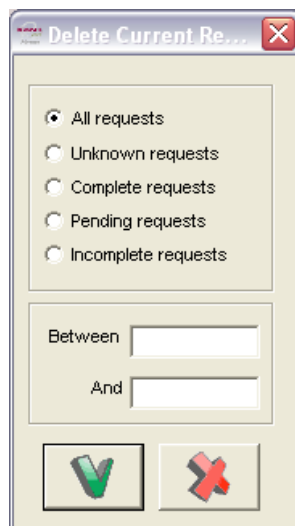
2.18.1 Introduction

The following system maintenance functions are available in the **Environment** menu.

Menu option	Function
Delete Current Requests	Delete current (non-archived) patient requests.
Delete All Archives	Delete all results from the archive database.
Optimize Database	Manually optimize the database. This needs to be carried out if requests are not archived at least once a day.
Check Database	Check the integrity of the Remisol Advance data for troubleshooting purposes.
Delete Patients with No Records	Delete patients' demographics with no associated results/requests.

2.18.2 Delete Current Requests

Follow the steps below to delete current requests from the **Environment** menu.



- 1 Select the **Environment** menu, and then select **Delete Current Requests**. This will open the **Delete Current Requests** window.
- 2 Select one of the following options in the **Delete Current Requests** window.
 - a. **All Requests**: all current requests.
 - b. **Unknown Requests**: current requests with «Unknown» as the patient name (the «Unknown» patient name is automatically assigned when no patient demographics were entered).
 - c. **Complete Requests**: all current requests that are complete.
 - d. **Pending Requests**: all current requests that are pending.
 - e. **Incomplete Requests**: all current requests that are incomplete.
- 3 Enter beginning and ending dates into the 2 date fields, «between» and «and», to delete requests within this range. To delete all selected requests, leave the date fields empty.
- 4 Select **OK** to continue. Select **Cancel** to cancel the deletion and exit the window.
- 5 If you selected **OK** in Step 4, a warning window will open. Select **Yes** to delete the selected requests. Select **No** to cancel the deletion.

NOTE:

This action is irreversible: deleted patient requests cannot be recovered.

2.18.3 Delete All Archives

To delete all results from the archive database, click on the **Environment** menu, then select **Delete all Archives**. This will open a message window. Select **Yes** to initiate the deletion. Select **No** to cancel the deletion.

NOTE:

Patient demographics are not included in the deletion.

This action is irreversible: deleted archived patient results cannot be recovered.

2.18.4 Optimize Database

Database optimization allows the Remisol Advance software to operate faster and more efficiently. Database optimization automatically takes place after requests are archived. If requests are not archived regularly, the optimize database procedure can be run manually.

Before running the optimize database procedure, please make sure that all instruments connected to Remisol Advance are on standby.

To optimize the database, click on the **Environment** menu, then select **Optimize Database**. This will open a message window. Select **Yes** to initiate the database optimization. Select **No** to cancel the database optimization.

2.18.5 Check Database

This option allows the user to verify the integrity of the Remisol Advance data (requests, archives, configuration, etc.) for troubleshooting purposes. A partial validation (system configuration only) is performed each time the system is started.

Before running the check database procedure, be sure that all instruments attached to the Remisol Advance are in standby.

To check the database, click on the **Environment** menu, then select **Check Database**. This will open a message window. Click on **Yes** to initiate the database verification. Click on **No** to cancel the database verification.

2.18.6 Delete Patients With No Records

To delete patient demographics with no associated results from the archive database, click on the **Environment** menu, then select **Delete Patients With No Records**. This will open a message window. Select **Yes** to initiate the deletion. Select **No** to cancel the deletion.

NOTE:

This action is irreversible: deleted patient demographics cannot be recovered.

2.18.7 Lock the station

In order to avoid someone else using the validation console while you are at it, you can lock the station by using the **Lock Station** menu. The logon window will be displayed.

To unlock the station, enter your own password, or log in as a new user by typing in the new user name & adequate password.

With Remisol Advance, you may define a logoff time-out in order to lock the software after a predefined amount of time of inactivity; please see the REMISOL.INI technical guide.

3 Working With Current Requests

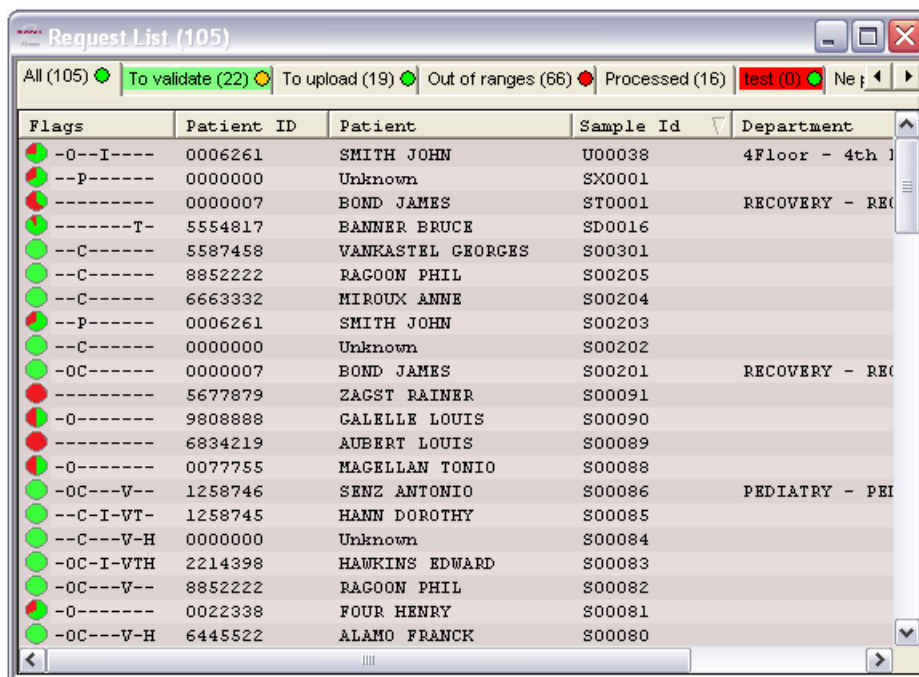
3.1 Request List

3.1.1 Introduction

The **Request List** window gives a concise overview of all current (non-archived) patient requests.

3.1.2 Request List Window

To open the **Request List** window, click on the **Request List** button on the toolbar. The **Request List** window can also be opened by clicking on the **Desk** menu, then select **Request List**.



The request list is re-sizable and its position is memorized when the window is closed. The user can customize the view thanks to the filter tabs located on top of the list.

A counter is displayed on each tab of the Request list to show the number of requests currently in each list. The activated tab counter refreshes with every modification taking place for that list, and the other counters are refreshed during the refresh all operation (see entry named Refreshall in REMISOL.INI, section [REMISOL]).

3.1.3 Patient Flags

The left side of the window (Flags column) allows for nine patient flags (9 positions from left to right). The following table describes the different patient flags.

positions (from left to right)	Flag	Description	Detailed Description
1st	S	Stat	The request is a Stat.
2nd	O	Out of Validation Range	At least one result is out of validation range.
3rd	P	Pending	one or more results pending for this request
	C	Complete	The request is complete.

4th	R	Received	Results received but not reviewed yet.
5th	I	Printed	The request was printed.
6th	E	Error	A transmission error occurred.
7th	V	Validated	The request is complete and validated.
8th	T	Tagged	The request was tagged.
9th	H	Host	Shown if at least one result for each parameter has been sent to the host. Removed if at least one parameter is pending.

3.1.4 **Request List Popup Menu**

To open the **Request List** popup menu, right click anywhere in the request list, or on the tab bar.



The following table describes the options in the **Request List** popup menu.

Option	Function
Filters	This option allows the user to create, modify or delete display filters for the requests list (if the current user has administrator privileges).
Flags	This option allows the user to edit the patient flags for selected requests.
Merge	This option allows the user to merge several requests from the same patient.
Stat / Routine	This option allows the user to change the priority of the request.
Tag	This option allows the user to tag the request; please refer to the Tag management section.
Download	This option downloads the samples for selected requests to assigned instruments.
Archive	This option will directly archive the current requests selected in the request list.
Play Upload Rules	This option allows the user to manually play the Upload Rules; please refer to the adequate chapter in the rules setup section.

3.2 Request List Display Filters

3.2.1 Introduction

Filters can be used in the **Request List** window in order to define which requests to display. Filters can be created, modified and deleted in the contextual Filters menu.

Filters appear as tabs on top of the **Request List**.

3.2.2 Filters menu

To open the **Filters** menu, open the Request List popup menu, and then click on **Filters**. The following sub menu is displayed.



The following table describes the options in the Filters sub menu.

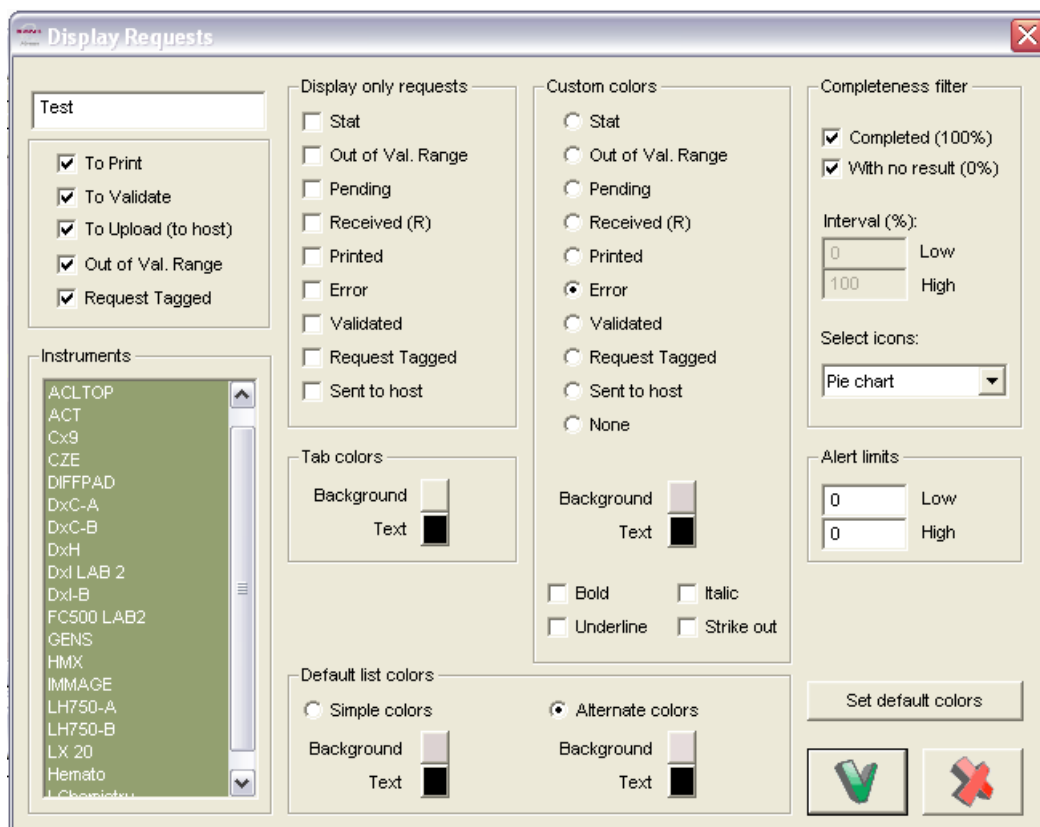
Option	Function
New	This option allows the user to create a new filter. This filter will appear as a new tab in the tab bar on top of the Request List window. When selected, a Display Requests window appears and filter(s) can be selected.
Modify	This option allows the user to modify the current filter. When selected, a Display Requests window appears and current filter(s) can be modified.
Delete	This option allows the user to delete the current filter(s).

NOTE:

Only a user with administrator access may create, modify or delete filters.

3.2.3 Display Requests window

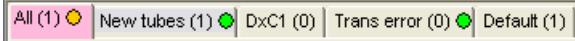
To open the **Display Requests** window, select **New** (in order to create a new filter) or **Modify** (to modify the current filter) in the **Filters** popup menu. The window below shows the default options, which displays all requests.



The following table describes each field available in the Display Requests window.

Field	Function												
Display Requests (upper left)	Select one or more of the following options: <table border="1"> <thead> <tr> <th>Select...</th><th>to display requests that...</th></tr> </thead> <tbody> <tr> <td>To Print</td><td>have not been printed.</td></tr> <tr> <td>To Validate</td><td>have not been validated.</td></tr> <tr> <td>To Upload (to Host)</td><td>have not been uploaded.</td></tr> <tr> <td>Out of Val. Range</td><td>have results that are out of validation range.</td></tr> <tr> <td>Request Tagged</td><td>have a sample tag selected.</td></tr> </tbody> </table> To display a request, it must meet the requirements of one of the selected options.	Select...	to display requests that...	To Print	have not been printed.	To Validate	have not been validated.	To Upload (to Host)	have not been uploaded.	Out of Val. Range	have results that are out of validation range.	Request Tagged	have a sample tag selected.
Select...	to display requests that...												
To Print	have not been printed.												
To Validate	have not been validated.												
To Upload (to Host)	have not been uploaded.												
Out of Val. Range	have results that are out of validation range.												
Request Tagged	have a sample tag selected.												
Display only Requests	Select one or more of the following options:												

	Select...	to display only requests that...
	Stat	are Stat.
	Out of Val. Range	have results that are out of validation range.
	Pending	have been downloaded and one or more parameter is pending.
	Received (R)	have been received but not yet viewed.
	Printed	have been printed.
	Error	have a transmission error.
	Validated	have been validated.
	Request Tagged	have been tagged.
	Sent to host	have been uploaded.
	To display a request, it must meet the requirements of one of the selected options.	
Instruments	Select one or more instruments from the list. To display a request, it must contain a sample assigned to one of the selected instruments.	
Tab Colors	You may customize the tab colors (background and text colors of the tab heading). Click on either color opens the color selection box from which you can select the color.	

Alert limits	You may now define the limits for a visual indicator, next to the tab heading, for the number of requests meeting the criteria you just defined. The indicator appears as a light next to the tab heading. Its color changes according to the thresholds you define: if the number of requests meeting the criteria you just defined falls... • ...under the value you defined as "Low": the indicator will be green, • ...between the values you defined as "Low" & "High": the indicator will be orange, • ...above the value you defined as "High": the indicator will be red.  NOTE: If you leave the default values as they are (0 & 0, i.e. if you do not define thresholds), no indicator will appear next to the tab heading. Should you invert the Low & High figures, Remisol will automatically swap them back to an ascending order.																				
Custom colors	Select one or more of the following options: <table border="1" data-bbox="368 1176 1428 2016"> <thead> <tr> <th>Select...</th><th>to highlight only requests that...</th></tr> </thead> <tbody> <tr> <td>Stat</td><td>are Stat.</td></tr> <tr> <td>Out of Val. Range</td><td>have results that are out of validation range.</td></tr> <tr> <td>Pending</td><td>have been downloaded and one or more parameter is pending.</td></tr> <tr> <td>Received (R)</td><td>have been received but not yet viewed.</td></tr> <tr> <td>Printed</td><td>have been printed.</td></tr> <tr> <td>Error</td><td>have a transmission error.</td></tr> <tr> <td>Validated</td><td>have been validated.</td></tr> <tr> <td>Request Tagged</td><td>have been tagged*.</td></tr> <tr> <td>Sent to host</td><td>have been uploaded.</td></tr> </tbody> </table>	Select...	to highlight only requests that...	Stat	are Stat.	Out of Val. Range	have results that are out of validation range.	Pending	have been downloaded and one or more parameter is pending.	Received (R)	have been received but not yet viewed.	Printed	have been printed.	Error	have a transmission error.	Validated	have been validated.	Request Tagged	have been tagged*.	Sent to host	have been uploaded.
Select...	to highlight only requests that...																				
Stat	are Stat.																				
Out of Val. Range	have results that are out of validation range.																				
Pending	have been downloaded and one or more parameter is pending.																				
Received (R)	have been received but not yet viewed.																				
Printed	have been printed.																				
Error	have a transmission error.																				
Validated	have been validated.																				
Request Tagged	have been tagged*.																				
Sent to host	have been uploaded.																				

	<table border="1"> <tr> <td data-bbox="359 114 563 271">None</td><td data-bbox="563 114 1422 271">(Default selection); no color highlight defined for any request.</td></tr> </table> To highlight with a custom color all requests that match one of the options above. To customize the background and text colors of the selected option, click on either color to open the color selection box from which you can select the color, additionally you may edit the style of the lettering with the Bold, Italic, Underline and Strike out options. * Tagged request customization is available through the Configuration > Tag Definition menu.	None	(Default selection); no color highlight defined for any request.										
None	(Default selection); no color highlight defined for any request.												
Completeness filter	Select one or more of the following options: <table border="1"> <thead> <tr> <th data-bbox="359 817 563 884">Select...</th><th data-bbox="563 817 1422 884">to ...</th></tr> </thead> <tbody> <tr> <td data-bbox="359 884 563 1115">Completed (100%)</td><td data-bbox="563 884 1422 1115">Check this box to evaluate the completion up to 100%, otherwise, if unchecked, fill in the High field underneath Interval (%) with the highest value you want the evaluation to end.</td></tr> <tr> <td data-bbox="359 1115 563 1346">With no result (0%)</td><td data-bbox="563 1115 1422 1346">Check this box to evaluate the completion from 0%, otherwise, if unchecked, fill in the Low field underneath Interval (%) with the lowest value you want the completion to begin from.</td></tr> <tr> <td data-bbox="359 1346 563 1473">Interval (%): xx Low</td><td data-bbox="563 1346 1422 1473">Fill in the lowest value you want the completion to begin from (the default value is 1).</td></tr> <tr> <td data-bbox="359 1473 563 1601">Interval (%): xx High</td><td data-bbox="563 1473 1422 1601">fill in the highest value you want the evaluation to end (the default value is 99).</td></tr> <tr> <td data-bbox="359 1601 563 1832">Select icons</td><td data-bbox="563 1601 1422 1832"> Select the type of graphical indication you want to see, the options are: • Don't display: no indication of completion is displayed (previous behavior), • Pie chart: the completion status is indicated in a pie chart in various degrees ranging from red to green in a </td></tr> </tbody> </table>	Select...	to ...	Completed (100%)	Check this box to evaluate the completion up to 100%, otherwise, if unchecked, fill in the High field underneath Interval (%) with the highest value you want the evaluation to end.	With no result (0%)	Check this box to evaluate the completion from 0%, otherwise, if unchecked, fill in the Low field underneath Interval (%) with the lowest value you want the completion to begin from.	Interval (%): xx Low	Fill in the lowest value you want the completion to begin from (the default value is 1).	Interval (%): xx High	fill in the highest value you want the evaluation to end (the default value is 99).	Select icons	Select the type of graphical indication you want to see, the options are: • Don't display: no indication of completion is displayed (previous behavior), • Pie chart: the completion status is indicated in a pie chart in various degrees ranging from red to green in a
Select...	to ...												
Completed (100%)	Check this box to evaluate the completion up to 100%, otherwise, if unchecked, fill in the High field underneath Interval (%) with the highest value you want the evaluation to end.												
With no result (0%)	Check this box to evaluate the completion from 0%, otherwise, if unchecked, fill in the Low field underneath Interval (%) with the lowest value you want the completion to begin from.												
Interval (%): xx Low	Fill in the lowest value you want the completion to begin from (the default value is 1).												
Interval (%): xx High	fill in the highest value you want the evaluation to end (the default value is 99).												
Select icons	Select the type of graphical indication you want to see, the options are: • Don't display: no indication of completion is displayed (previous behavior), • Pie chart: the completion status is indicated in a pie chart in various degrees ranging from red to green in a												

	pie, • Shaded tones bar: the completion status is indicated in a shaded tones bar in gradient colors ranging from black (0), red, yellow, green, • Simple bar: the completion status is indicated in a simple bar in plain colors ranging from black (0), red, yellow, green, • Numbers: the completion status is indicated in percentages highlighted in colors from blue (0%), orange, yellow, light green, green. Customize the display of the requests completion status by selecting the adequate options above. Completion is defined as the ratio between the number of parameters which were returned a result and the number of those still expecting a result – offline parameters are not part of the equation!						
Default list colors	Select one or more of the following options: <table border="1" data-bbox="368 1420 1422 1977"> <thead> <tr> <th>Select...</th><th>to ...</th></tr> </thead> <tbody> <tr> <td>Simple colors</td><td>Check this box to customize the background color of the Request List To customize the background and text colors, click on either color to open the color selection box from which you can select the color.</td></tr> <tr> <td>Alternate colors</td><td>Check this box to customize the alternate background color for the Request List. To customize the background and text colors, click on either color to open the color selection box from which you can select the color.</td></tr> </tbody> </table>	Select...	to ...	Simple colors	Check this box to customize the background color of the Request List To customize the background and text colors, click on either color to open the color selection box from which you can select the color.	Alternate colors	Check this box to customize the alternate background color for the Request List. To customize the background and text colors, click on either color to open the color selection box from which you can select the color.
Select...	to ...						
Simple colors	Check this box to customize the background color of the Request List To customize the background and text colors, click on either color to open the color selection box from which you can select the color.						
Alternate colors	Check this box to customize the alternate background color for the Request List. To customize the background and text colors, click on either color to open the color selection box from which you can select the color.						

	Customize the display of the requests by selecting the adequate options above.
Set default colors	Click this button to reset all colors to their default values.

Click on **OK** to save and exit the window. Click on **Cancel** to cancel and exit the window.

3.2.4 Displayed Fields

To open the Displayed Fields window, right click on the Field bar on top of the requests list (where all the fields -flags, sample, etc.- are located). A popup window is displayed.

This popup window contains the list of every field available for display for the current Filter. Left click on a field name in order to display or hide it. Checked fields are displayed.



To change the position of a field in the Request List, click and drag that field name in the field bar to its new position, and release the mouse button.

NOTE:

Only a user with administrator access may change the fields displayed and their position.

3.3 Merge Requests

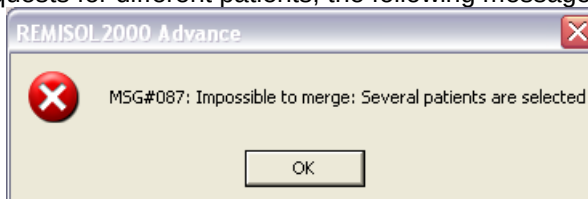
3.3.1 Introduction

This option allows multiple requests for the same patient to be combined into a single one.

3.3.2 Procedure

Follow the steps below to merge requests.

1. Open the **Request List** window.
2. In the **Request List** window, select two or more requests for the same patient (same last name and patient ID).
3. Open the **Request List** popup menu (right click), then select **Merge**. The requests will be merged into a single one.
4. If you attempt to merge requests for different patients, the following message will appear:



5. Click on **OK** to acknowledge the message and return to the Request List window.

NOTE:

It is also possible to configure an automatic merge of requests for the same patient. For more information, please look at the **Host Setup** menu, **Options...**

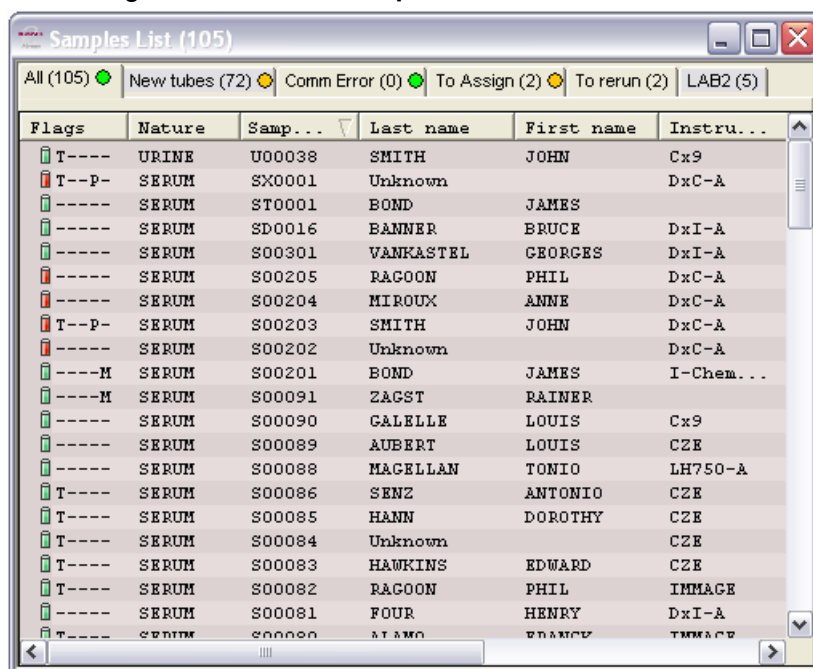
3.4 Sample List

3.4.1 Introduction

The Sample List window gives an overview of all current (non-archived) samples.

3.4.2 Sample List Window

To open the Sample List window, click on the **Sample List** toolbar button. The Sample List window can also be opened through the following menus: **Desk / Sample List**.



The Sample List window contains the following information:

- Quality control result flag
- Routine or stat flags: the color of the graphic tube (far left) indicates whether a sample is routine or Stat (green tubes are routine, red tubes are Stat)
- Sample flags
- Sample ID
- Position (sector/cup, or rack/position, tray/cup, etc.)
- Assigned instrument
- Patient's last name and first name
- Sample nature
- Last run (Date and time of the last run)

The sample list window is re-sizable and its position is memorized when the window is closed. The user can customize the view thanks to the filter tabs located on top of the list.

A counter is displayed on each tab of the Samples list to show the number of samples currently in each list. The activated tab counter refreshes with every modification taking place for that list, and the other counters are refreshed during the refresh all operation (see entry named Refreshall in REMISOL.INI, section [REMISOL]).

3.4.3 Sample Flags

In addition to the tube icon, the left side of the window (Flags column) allows for 4 sample flags (4 positions from left to right). The following table describes the different patient flags.

positions (from left to right)	Flag	Description

1	? T B E U	No response from instrument Downloaded Instrument is busy Transmission error occurred Sample ID already used for a diluted sample
2	? T B E U	No response from automation line Downloaded Automation line is busy Transmission error occurred Sample ID already used for a diluted sample
3	R	Results received but not reviewed yet.
4	P R	Awaiting rerun results from the instrument Rerun results received from the instrument
5	M	Sample ID changed manually

3.4.4 Sample List Popup Menu

To open the Sample List popup menu, click using the right mouse button anywhere in the Sample List window.



The following table describes the options in the Sample List popup menu.

Option	Function
Filters	This option allows the user to create, modify or delete display filters for the samples list.
Stat	Select this option to change the status of a selected sample from routine to Stat.
Routine	Select this option to change the status of a selected sample from Stat to routine.
Tag	This option allows the user to tag the sample; please refer to the Tag management section.
Detail	This option allows the user to display the parameters set for a selected sample on the Sample List window.
Assign Samples	This option allows the user to assign a selected sample to an instrument.

Assign+Download	This option combines the Assign Samples and Download options into one single instruction.
Download	This option downloads the selected samples to assigned instruments.
Play Upload Rules	This option allows the user to manually play the Upload Rules; please refer to the adequate chapter in the rules setup section.
Print Label	This option generates a printout of the barcoded labels for the selected tubes (only accessible if a barcode printer is connected to your system).
Set to Pending Status	This option allows the user to reset the downloaded flag(s) for every parameters of the sample (programming of these parameters will be considered as never downloaded). If selected, a message window is displayed for the user to confirm the reset of the downloaded flags.
Tube History	This options displays tracking information for the selected sample; please refer to the Tracking section.
Merge	This option allows two samples from the same patient to be merged.

3.5 Sample List Display Filters

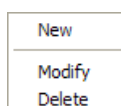
3.5.1 Introduction

Filters can be used in the Sample List window in order to define which sample to display. Filters can be created, modified and deleted in the contextual Filters menu.

Filters appeared on top of the Sample List as tabs.

3.5.2 Filters menu

To open the Filters menu, open the Sample List popup menu, and then click on **Filters**. The following sub menu is displayed.



The following table describes the options in the Filters sub menu.

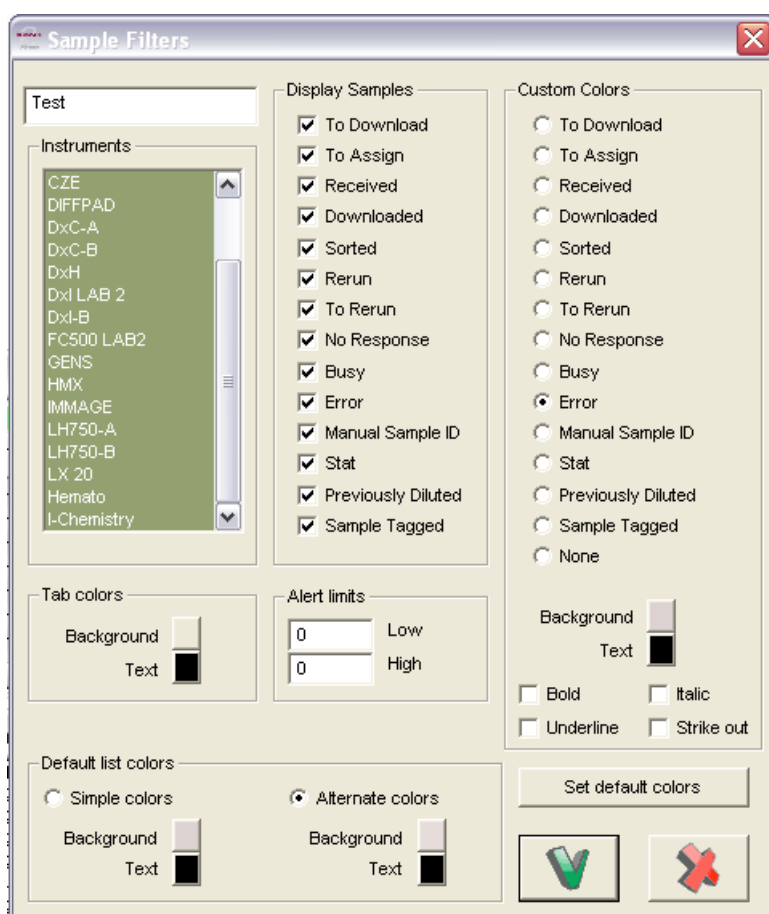
Option	Function
New	This option allows the user to create a new filter. That filter will take place in the tab bar on top of the Sample List window. When selected, the Sample Filters window is displayed in order to fill the filter options.
Modify	This option allows the user to modify the current filter. When selected, the Sample Filters window is displayed in order to modify the options of the current filter.
Delete	This option allows the user to delete the current filter.

NOTE :

Only a user with administrator access may create, modify or delete filters.

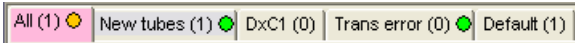
3.5.3 Sample Filters window

To open the Sample Filters window, select New (in order to create a new filter) or Modify (to modify the current filter) in the Filters popup menu. The window below shows the default options, which displays all samples.



The following table describes each field available in the Sample Filters window.

Field	Function	
Display Samples (on the right)	Select one or more of the following options:	
	Select...	to display samples that...
	To Download	have to be downloaded.
	To Assign	have to be Assigned.
	Received	have been received.
	Downloaded	have been downloaded.
	Sorted	have been sorted
	Rerun	have been rerun.
	To Rerun	have to be rerun.

	No Response	have not been downloaded because of the instrument is not responding.
	Busy	have not been downloaded because of a busy instrument.
	Error	have not been downloaded because of a error of transmission.
	Manual Sample ID	have a manually entered sample ID.
	Stat	are stat.
	Previously Diluted	were previously diluted.
	Sample Tagged	have been tagged.
To display a sample, it must meet the requirements of one of the selected options.		
Instruments	Select one or more instruments from the list; samples assigned to the selected instrument(s) will be displayed. You can also choose the samples that are not assigned to any instrument by selecting "Not assigned".	
Tab Colors	You may customize the tab colors (background and text colors of the tab heading). Click on either color opens the color selection box from which you can select the color.	
Alert limits	You may now define the limits for a visual indicator, next to the tab heading, for the number of samples meeting the criteria you just defined. The indicator appears as a light next to the tab heading. Its color changes according to the thresholds you define: if the number of samples meeting the criteria you just defined falls... • ...under the value you defined as "Low": the indicator will be green, • ...between the values you defined as "Low" & "High": the indicator will be orange, • ...above the value you defined as "High": the indicator will be red.  NOTE: If you leave the default values as they are (0 & 0, i.e. if you do not define thresholds), no indicator will appear next to the tab heading. Should you invert the Low & High figures, Remisol will automatically swap them back to an ascending order.	
Custom colors	Select one or more of the following options:	

	<table border="1"> <thead> <tr> <th>Select...</th> <th>to highlight samples that...</th> </tr> </thead> <tbody> <tr> <td>To Download</td> <td>have to be downloaded.</td> </tr> <tr> <td>To Assign</td> <td>have to be Assigned.</td> </tr> <tr> <td>Received</td> <td>have been received.</td> </tr> <tr> <td>Downloaded</td> <td>have been downloaded.</td> </tr> <tr> <td>Sorted</td> <td>have been sorted</td> </tr> <tr> <td>Rerun</td> <td>have been rerun.</td> </tr> <tr> <td>To Rerun</td> <td>have to be rerun.</td> </tr> <tr> <td>No Response</td> <td>have not been downloaded because of the instrument is not responding.</td> </tr> <tr> <td>Busy</td> <td>have not been downloaded because of a busy instrument.</td> </tr> <tr> <td>Error</td> <td>have not been downloaded because of a error of transmission.</td> </tr> <tr> <td>Manual Sample ID</td> <td>have a manually entered sample ID.</td> </tr> <tr> <td>Stat</td> <td>are stat.</td> </tr> <tr> <td>Previously Diluted</td> <td>were previously diluted.</td> </tr> <tr> <td>Sample Tagged</td> <td>have been tagged*.</td> </tr> <tr> <td>None</td> <td>(Default selection); no color highlight defined for any request.</td> </tr> </tbody> </table>	Select...	to highlight samples that...	To Download	have to be downloaded.	To Assign	have to be Assigned.	Received	have been received.	Downloaded	have been downloaded.	Sorted	have been sorted	Rerun	have been rerun.	To Rerun	have to be rerun.	No Response	have not been downloaded because of the instrument is not responding.	Busy	have not been downloaded because of a busy instrument.	Error	have not been downloaded because of a error of transmission.	Manual Sample ID	have a manually entered sample ID.	Stat	are stat.	Previously Diluted	were previously diluted.	Sample Tagged	have been tagged*.	None	(Default selection); no color highlight defined for any request.
	Select...	to highlight samples that...																															
	To Download	have to be downloaded.																															
	To Assign	have to be Assigned.																															
	Received	have been received.																															
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	Sample Tagged	have been tagged*.																															
	None	(Default selection); no color highlight defined for any request.																															
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Default list colors	Select one or more of the following options: <table border="1"> <thead> <tr> <th>Select...</th> <th>to ...</th> <th></th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Select...	to ...																														
Select...	to ...																																

	Simple colors	Check this box to customize the background color of the Samples List To customize the background and text colors, click on either color to open the color selection box from which you can select the color.
	Alternate colors	Check this box to customize the alternate background color for the Samples List. To customize the background and text colors, click on either color to open the color selection box from which you can select the color.
	Customize the display of the samples by selecting the adequate options above.	
Set default colors	Click this button to reset all colors to their default values.	

Click on **OK** to save and exit the window. Click on **Cancel** to cancel and exit the window.

3.5.4 Displayed Fields

To open the Displayed Fields window, right click on the Field bar on top of the requests list (where all the fields - Flags, Sample ID, etc.- are located). A popup window is displayed.

This popup window contains the list of every fields available for display for the current Filter. Left click on a field name in order to display or hide it. Checked fields are displayed.

- ✓ Flags
- ✓ Sample Id
- ✓ Position
- ✓ Instrument
- ✓ Last name
- ✓ First name
- ✓ Nature
- Detail
- Diag.
- ✓ Last run
- ✓ Tag

To change the position of a field in the Samples List, click and drag that field name in the field bar to its new position, and release the mouse button.

NOTE:

Only a user with administrator access may change the fields displayed and their position.

3.6 *Sample Assignment*

3.6.1 Introduction

The Sample Assignment window is used to assign a selected sample to an instrument, or to modify the sector/cup (or rack/position, tray/cup, etc.) assignment or sample ID.

3.6.2 Sample Assignment Window

To open the Sample Assignment window, first open the Sample List window. In the Sample List window, select one or more samples. Open the Sample List popup menu. Select **Assign Samples** from the popup menu.

3.6.3 Procedure

Follow each step below to assign a sample.

- 1 Select an instrument from the list. The sample will be assigned to the selected instrument.
- 2 The **Tray/Sector** field defaults to the sector (tray, rack) that the sample is assigned to, if any. Type in a new sector number, if desired.
- 3 The **Cup** field defaults to the cup (position) that the sample is assigned to, if any. Type in a new cup number, if desired.
- 4 The **Sample ID** field defaults to the assigned sample ID. Type in a new sample number, if desired.

NOTE:

If you manually change the sample ID in this field, the sample will be flagged with an M in the Sample List window.

- a. Select one of the following options:
 - I. **OK:** save and exit the window. If you selected more than one sample, you will move on to the next sample in the Sample Assignment window.
 - II. **All:** save and exit the window. If you selected more than one sample, you will exit without moving on to the next sample.
 - III. **Cancel:** cancel and exit the window.
- b. Samples can be automatically assigned to an instrument when they are programmed in Remisol Advance or when they are downloaded from a host.

3.7 Merge Samples

3.7.1 Introduction

The Merge Sample function is used to merge two samples from the same patient.

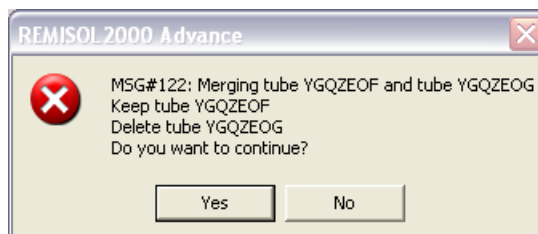
NOTE:

Please use the sample merge with caution as it cannot be reversed. Please check that you are merging the correct sample IDs before completing the following steps.

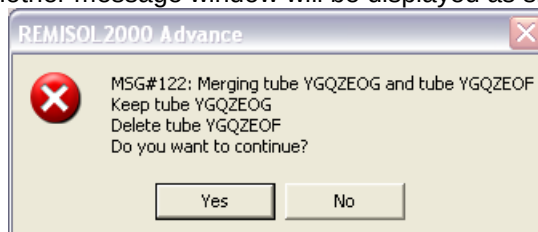
3.7.2 Procedure

Follow the steps below if you need to merge two samples.

- 1 Open the Sample List window.
- 2 From the Sample list, select the two samples you want to merge.
- 3 Open the Sample List popup window.
- 4 Select the **Merge** option. This will open a message window as shown below.



- 5 If you want to keep the first sample ID listed in the message window and delete the second sample ID, select **Yes**. If you want to keep the second sample ID listed and delete the first sample ID, select **No**.
- 6 If you selected **No** in Step 5, another message window will be displayed as shown below.



- 7 Select **Yes** to merge the two samples. Select **No** to cancel the merge.

3.8 Manual Samples Download

3.8.1 Introduction

Samples can be manually downloaded to instruments in three different ways: from the Request List window, from the Sample List window, and from the Samples Download window.

3.8.2 Download from Request List Window

To download from the **Request List** window, samples must first be assigned to an instrument. Follow the steps below to download samples from the Request List window.

1. Open the **Request List** window.
2. Select one or more requests to download.
3. Open the **Request List** popup menu.
4. Select **Download** from the popup menu. This will download all the samples for the selected requests.
5. If one or more samples are downloaded to the Array 360CE system, the Samples Loading on Array window will come up (see below).

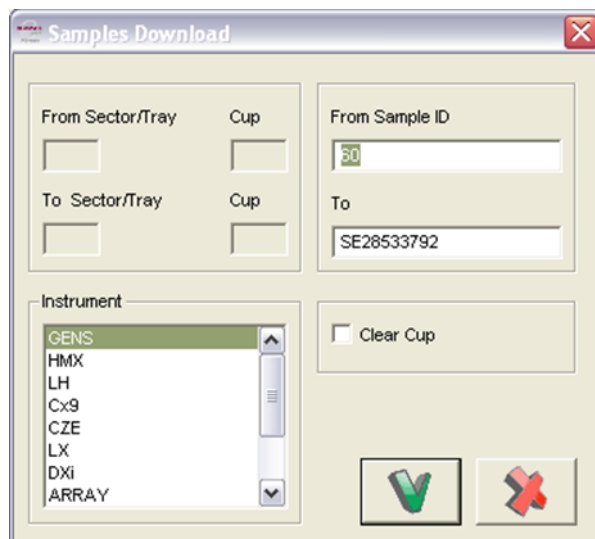
3.8.3 Download from Sample List Window

To download the samples via the Sample List window, samples must be assigned to an instrument first. Follow the steps below to download samples from the Sample List window.

1. Open the **Sample List** window.
2. Select one or more requests to download.
3. Open the **Sample List** popup menu.
4. Select **Download** from the popup menu. This will download the selected **samples**.
5. If one or more **samples** are downloaded to the Array 360CE system, the Samples Loading on Array window will come up (see below).

3.8.4 Samples Download Window

The **Samples Download Window** allows the user to easily download a range of samples to an instrument. To open the **Samples Download** window, click on the **Desk** menu, then select **Download Samples**.



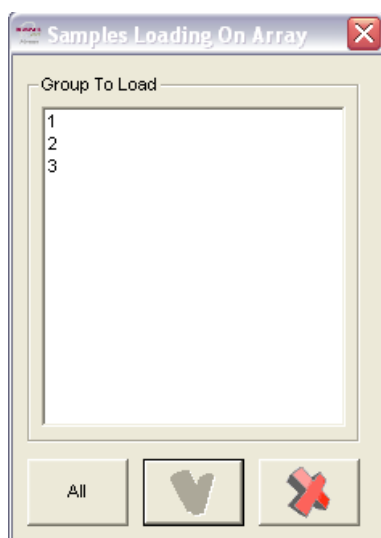
To download the samples via the **Samples Download** window, **samples** must be assigned to an instrument first. Follow the steps below to download samples from the **Samples Download** window.

1. Select the instrument to download the samples to.
2. If the **From Sector/Tray**, **To Sector/Tray** and **Cup** options are highlighted, go to Step 3. If the **From Sample ID** and **To** options are highlighted, go to Step 4. These 2 options depend on the working mode defined for the instrument you selected in Step 1.
3. A default range of sectors (trays, racks) and cups (positions) was already defined. Enter a new range, if desired.
4. A default range of sample IDs was already defined. Enter a new range, if desired.
5. Select the **Clear Cup** option if you want to clear previous programming on the instrument for the selected cups.
6. Select **OK** to initiate the download. Select **Cancel** to cancel the download and close the window.
7. If one or more samples are downloaded to the Array 360CE system, the Samples Loading on Array window will come up (see below).

3.8.5 Group Download Selection

Array systems are not able to process certain parameters simultaneously. Parameter groups must be defined so that incompatible parameters are not downloaded to the Array 360CE. The Samples Loading On Array window is used to select a parameter group when downloading to an Array 360CE.

The **Samples Loading On Array** window will open any time one or more samples are downloaded to an Array 360CE instrument.



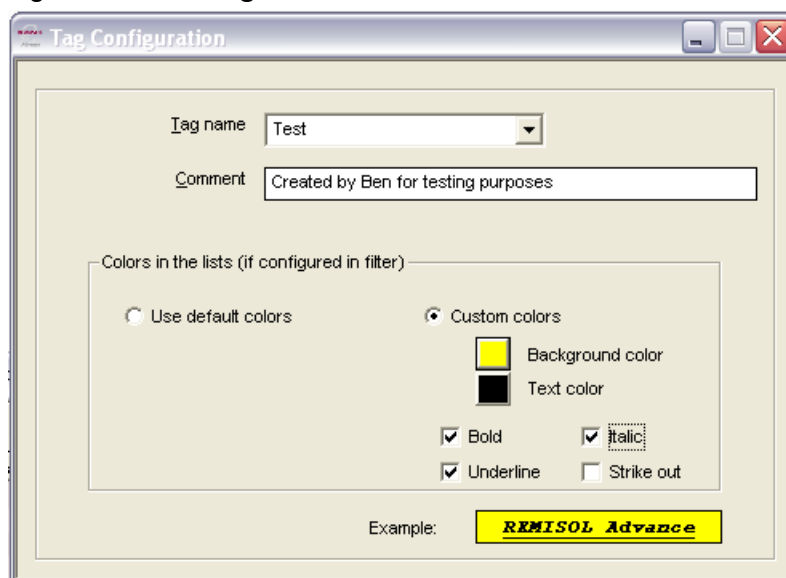
Select a group number from the **Group to Load** list. Click on **OK** to initiate the download or **Cancel** to cancel the download and close the window. Select **All** to select all groups and proceed with the download.

3.8.6 Tag management

The management of tag was improved in Remisol Advance.

In the previous versions, the user could merely tag or untag Requests, **Samples or Patients**, now the user can define custom tags which can be used with **Request and samples**.

The **Configuration > Tag definition > Tag definition** menu allows users to define their own tags:



A style may also be individually applied to each one of the defined tags to make them eye-catching in the Request List or the Samples List provided Tagged Request / Tagged sample items were respectively previously checked as Filters for either the Request List or the Samples List.

The style that will be applied to these tagged items is defined in the Colors in the lists (if configured in filter) box once the Custom colors radio button was checked as opposed to use default colors:

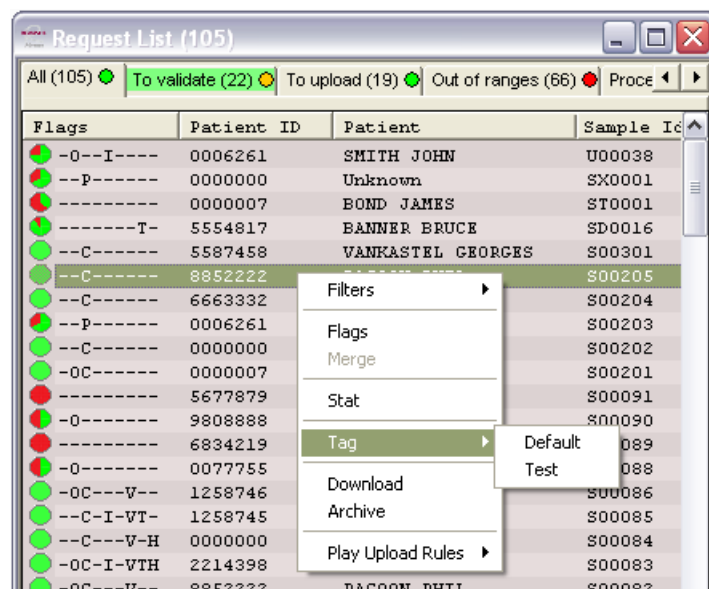
- Background: Click the button to choose the background color of the tagged **requests / samples**,
- Text: Click the button to choose the text color of the tagged requests / samples.

You can also put highlights on the text itself by checking the relevant options; the available options are:

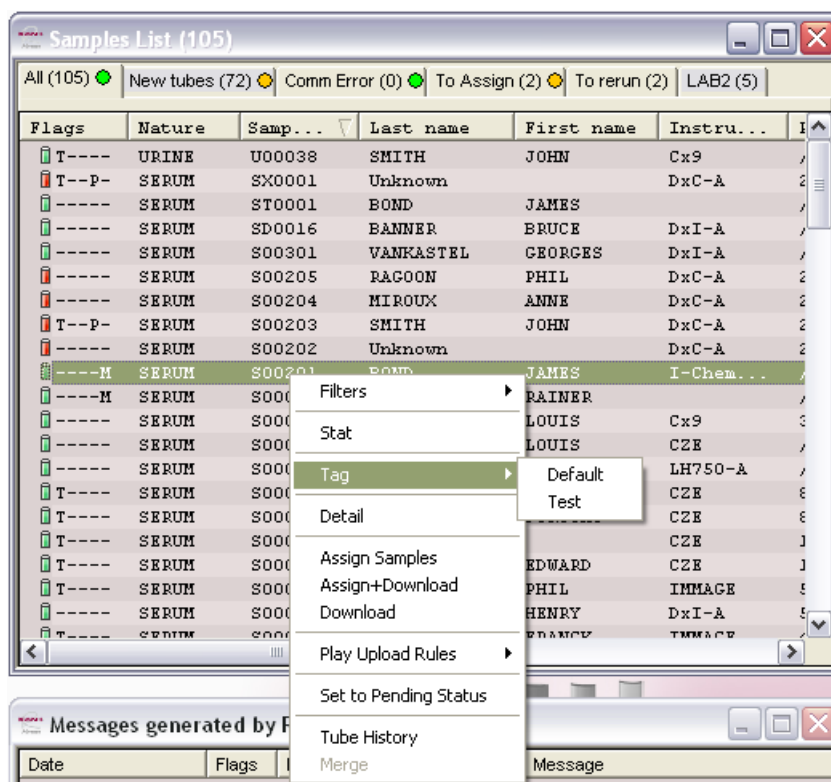
- Bold: the text will be highlighted in bold,
- Italic: the text will be highlighted in italic,
- Underline: the text will be underlined,
- Strike out: the text will be striked out.

Through the contextual menu, these tags may then be used to tag:

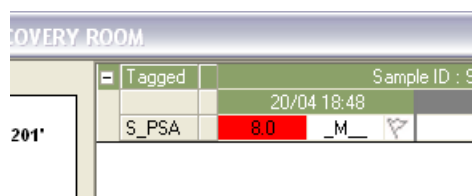
- The request:



- The sample:



When tagged, the status of the tagged sample is also indicated by “Tagged” in the header of the parameter column in the **Request Sheet**:



Once tagged, these samples/ request may be untagged via the same contextual menu with the Untag option.

Please refer to the adequate chapters to see how tags can also be:

- Created and / or modified through rules

- Applied in the Request Sheet (Tagged option - please do not mistake with Patient Tag option),
- Searched for in the Search window.

3.9 Custom List

3.9.1 Introduction

The Custom List window allows the user to define its own lists, based on SQL queries.

3.9.2 Custom List Window

To open the Custom List window, click on the **Custom List** toolbar button. The Custom List window can also be opened by the **Desk / Custom List** menu or the shortcut **[CTRL+U]**.

SAMPLE_ID	IPP	NOM	PRENOM	demNOMJF	demSEXE	demAGE	demAGEUNIT	demDATENAI
1234566	0000000	Unknown			2		0	
6969	0000000	Unknown			2		0	
9875	0001	ROLE	FREDERIC		0	39.0	2	18/10/1967
9877	0001	ROLE	FREDERIC		0	39.0	2	18/10/1967
9878	014514	MERGEZ	PASCALE		2		2	
9879	458541	COSTE	ERIC		2		2	
9880	0326	GAVEL	JEAN-LOUIS		2		2	
9881	03267	BARLET	JULIEN		2		2	
JULBARLET	03267	BARLET	JULIEN		2		2	
mytube	234175	BEDRIGNAMS	MADELEINE		1	81.0	2	05/07/1925
MYTUBG	444				2		2	
MYTUBH	0001	ROLE	FREDERIC		0	39.0	2	18/10/1967
NoRead000001	0000000	Unknown			2		0	
T5633H	PATIENT	PATIENT	JAMES	INDISPONIBLE	0	75.0	2	12/04/1932
YCQ2EOH	007	BOND	JAMES		0	75.0	2	01/01/1932
ZZZZZ3	007	BOND	JAMES		0	75.0	2	01/01/1932

On launch, Remisol Advance checks the contents of a specific directory on the hard drive for PQL files (*.PQL, Personalized Query List). A PQL file defines a Custom List. Each of these PQL files corresponds to a tab in the window named Custom List.

Like the Sample List and the Request List, the Custom List is composed of tabs (each tab corresponds to a PQL file containing the definition of the list to be displayed).

When the user clicks on a tab, the counter for that tab is updated (for the number of items in the list).

In some cases, it is possible to define filters for the list, in which case, the fields corresponding to the filters will appear on top of the list, and the user may then type in the information he is looking for (a Patient name, a Sample Id ...). The buttons Apply and Cancel allow the user to validate/invalidate the filters defined.

NOTE:

If there is no PQL file available, the button in the toolbar will be greyed out (i.e. not available).

The Custom List window is re-sizable and its position is memorized when the window is closed.

3.10 List of Messages

3.10.1 Introduction

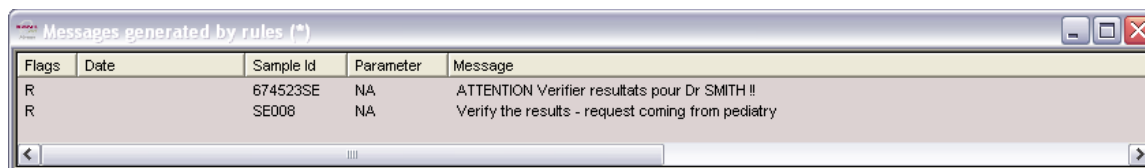
The **Message list** window gives a concise overview of all messages created by extended rules for all current (non-archived) requests.

See **General Setup window**.

See **Extended Rules**.

3.10.2 List of Messages

To open the **Message List Window**, click on the **Desk / Messages** menu or use the shortcut **[CTRL+M]**.



Flags	Date	Sample Id	Parameter	Message
R		674523SE	NA	ATTENTION Verifier resultats pour Dr SMITH !!
R		SE008	NA	Verify the results - request coming from peditry

The list of messages window contains the following information:

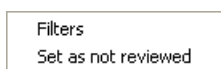
- Review flag (the request corresponding to the message has been reviewed or not)
- Date and time
- Sample Id
- The test name that generated this message
- Text (message defined)

The message list screen is re-sizable and its position is memorized when the window is closed. This allows the user to customize the view. It is also possible to modify the size of a column with a click and drag on the column delimiter, and to modify the order of the columns with a click and drag on the column to change its position. To modify the order of the list based on a column, click on the column header to change the order (ascending or descending).

It is also possible to click on the Print button to **print a report** (alternatively press the F5 key).

3.10.3 Message popup menu

To open the **Message** list popup menu, click with the right mouse button anywhere in the Message List window.



The **'Filters'** option allows the user to select display filters for the message list.

The **'Set as not reviewed'** option allows the user to reset the Review Flag to the state **'Not Reviewed'**.

3.10.4 Message Filters window

The **message filters** window is used to modify each display filter. The filters allow the user to specify which messages to display in the message list window.

You can select one or several of the following filters:

- Display the messages for requests that have not been reviewed (messages will then disappear after requests were reviewed)
- one or several of the instruments that generate the results

3.11 Print Work List

3.11.1 Introduction

This option allows the user to print a work list of the current samples. The work list includes the following information:

- Stat flag
- Assigned instrument
- Programmed parameters (optional)
- Sector/cup (or rack/position, tray/cup, etc.)

- Sample ID
- Department
- Array group (optional)
- Patient name

3.11.2 Print Work List Window

To open the Print Work List window, click on the **Desk** menu, then select **Print Work List** or use the shortcut **[CTRL+W]**.



3.11.3 Procedure

Follow the steps below to print a work list.

1. Select one of the following sort options:
 - a. Department: to sort department.
 - b. Name: to sort last name.
 - c. Sample ID: to sort sample ID
 - d. Sector (Tray)/Cup: to sort sector/cup, tray/cup, rack/position, etc.
2. Select one of the following print options:
 - a. Only Incomplete Samples: to include only incomplete samples in your work list.
 - b. Print Parameters: to list the programmed parameters for each sample in your work list.
 - c. Print Manual Parameters: to list the off-line parameters in your work list.
 - d. Print Calculated Parameters: to list calculated parameters as samples in your work list.
 - e. Include Group (Array) : to include Array group numbers in your work list.
3. Select one or more instruments from the list. The work list will only include samples assigned to the selected instruments.
4. Select **OK** to initiate the print. Select **Cancel** to cancel and close the window.

3.12 Requests Sheet

3.12.1 Introduction

In addition to creating new requests, the Request Sheet window is used to view and edit existing patient demographics and results, manually validate results, and print reports. This request sheet could also include some graphical informations (for instruments capable of sending graphics, Cze, hematology instruments,...) and comments.

3.12.2 Request Sheet Window

Use one of the following options to open the **Request Sheet** window for an existing patient:

- Double click on a patient in the Request List window.
- Double click on a sample in the Sample List window.
- Click on **Previous Request** or **Next Request** toolbar buttons. This will open the **Request List** window and the Request Sheet window for the first patient on the list. Any time the Request List window is opened, these buttons may be used to open the Request Sheet window for the previous or next patient on the Request List.

- Click on the **Search Request** option in the **Desk** menu, or click on the **Search** toolbar button, or use the **[Ctrl +F]** key combination.

The screenshot displays the 'Remisol Advance' software window. At the top, a status bar shows: 'Last Name: BOND - First Name: JAMES - Sex: M - Age: 79Y - Department: RECOVERY-RECOVERY ROOM'. The main window is divided into several sections:

- Patient Information Section:** Includes fields for Patient ID (0000007), Last Name (BOND), First Name (JAMES), Middle Name, Birth Date (01/01/1932), Address (57 Main Square LDN), Comment (No clinical comment), Dgt. (RECOVERY - RECOVERY R), Dgct., Request num. (xxx), Age (79 Years), Sex (Male), and a Patient Tag checkbox.
- Remisol warning Section:** Contains a warning message: 'Tube 'S000201' renamed in 'S00201'' and a 'Clinical Comment' field with the text 'No clinical comment'.
- Sample ID Section:** A table with columns 'Tagged', 'Sample ID', and 'S_PSA'. It shows a sample ID of '20/04 18:48' and an S_PSA value of '8.0'.
- Footer Section:** Includes a 'Date' field (20/04/2011), a 'Time' field (17:30:46), a 'Stat' checkbox, and a 'Tagged' checkbox.

There are five parts in this window:

- Demographics Fields
- Request Information Fields
- Runs' data
- Graphical data
- Comments

These five parts are described below.

3.12.3 Demographics Fields

Demographics fields entries will be stored in the patient demographics record. When a new request is created for an existing patient, demographics fields do not need to be entered again. The following table describes the demographics fields in the Request Sheet window.

Field	Function
Patient ID	Enter the patient's ID (up to 16 alphanumeric characters).
Last Name	Enter the patient's last name (up to 20 alphanumeric characters).
First Name	Enter the patient's first name (up to 20 alphanumeric characters).
Middle Name	Enter the patient's middle name (up to 20 alphanumeric characters) - where applicable.
Birth Date	Enter the patient's date of birth. The date format is MM/DD/YYYY.
Comment	Enter comments about the patient (up to 20 alphanumeric characters).
Address	Enter the patient's address (up to 75 alphanumeric characters).

Department	Select the department from the drop-down list.
Doctor	Select the doctor from the drop-down list.
Age	Enter the patient's age (1 - 9999). Select days, months, or years from the drop-down list. If a date of birth was entered above, the age is automatically calculated. NOTE: If the instrument or host interface uses a 2 digits year (MMDDYY) to transmit the date of birth, YOU MUST ENTER THE AGE, otherwise the date of birth will be ignored by Remisol Advance.
Sex	Select the patient's sex from the drop-down list (male, female, or unknown).
Patient Tag	Select this option to tag the patient. This tag is archived with the patient demographics, and can be used to select tagged patients for viewing, deletion, or backup in the archive database. The management of tags was improved - please refer to the Tag management section

NOTE:

If the data entered for a demographics field is longer than the number of characters the instrument or the LIS interface will allow for, then the demographics will be truncated when transmitted to the instrument or to the LIS.

Remisol Advance demographics records cannot be updated electronically from the host. Changes to existing Remisol Advance demographics records must be made in Remisol Advance.

3.12.4 Sample Information Fields

Sample information fields are specific to the request, and are not saved in the patient demographics record. The following table describes the sample information fields in the Request Sheet window.

The screenshot shows a software interface with the following elements:

- Date:** A text box containing '20/04/2011'.
- Time:** A text box containing '17:30:46'.
- Stat:** A checkbox that is currently unchecked.
- Tagged:** A checkbox that is currently unchecked.
- Dropdown:** A dropdown menu located to the right of the 'Tagged' checkbox, showing a downward arrow.

Field	Function
Date	Enter the sample drawing date (MM/DD/YYYY date format).
Time	Enter the sample drawing time in hours and minutes (hh:mm time format).
Stat	Select this option to flag all the samples for the patient as Stat. NOTE: The Stat flag attached to a sample in the Sample List window can be changed without changing the Stat flag in the Request Sheet window. The Stat flag in the Sample List window is the flag that is sent to the instrument.
Tagged	Select this option to tag the samples. Sample tags can be used to filter requests in the Request List window, or to select tagged requests for archive.

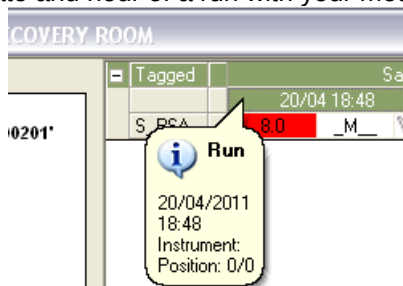
3.12.5 Runs' data

The right part of the request sheet window is used to show and manage runs, results and previous results. Results are organized in runs. A run corresponds to the passage of the sample in the instrument.

Sample ID : H00019 (ACT)				
	20/04 16:28		Prev. Res.	
B_WBC	10.7		5.31	15/02/
B_RBC	4.39		5.34	15/02/
B_HGB	14.0		16.049999	15/02/
B_HCT	39.7	_C_	46.400002	15/02/
B_MCV	90.5		86.800003	15/02/
B_MCH	32.0	_C_	30.1	15/02/
B_MCHC	35.3	_C_	34.599998	15/02/
B_RDW	12.9		15.42	15/02/
B_PLT	436.0		128.0	15/02/
B_MPV	7.8		10.37	15/02/
B_PCT	0.3400		0.133	15/02/
B_PDW	11.00		19.75	15/02/
B_NE#	6.84	_C_	2.22	15/02/
B_NE%	63.9		41.799999	15/02/
B_LY%	18.7		46.299999	15/02/
B_MO%	12.7		6.2	15/02/
B_BA%	0.4		0.6	15/02/
B_EO%	4.3		5.1	15/02/
B_AYTL%	1.9		1.33	15/02/
B_LalmCell%	1.6		0.39	15/02/

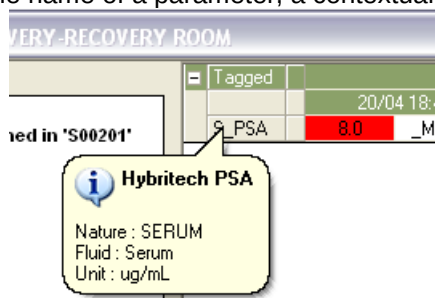
Sample ID : S00051 (ACT)				
	20/04 16:28		Prev. Res.	
S_K	4.6	_MD_	4.5	07/03/
S_HEMOL	10.0	_M_		

If you point on the cell that contain the date and hour of a run with your mouse, an informational balloon will appear:



Selecting a specific run allow you to see the specific graphical data and comments regarding that run.

When the mouse is left hovering over the name of a parameter, a contextual informational balloon appears:



3.12.6 Previous data

When a request is created in Remisol Advance, it is the latest archived data (the one that was archived last) that is used as the previous result, and not the most recent result found in the archived data.

Please see the Remisol.ini documentation for more information.

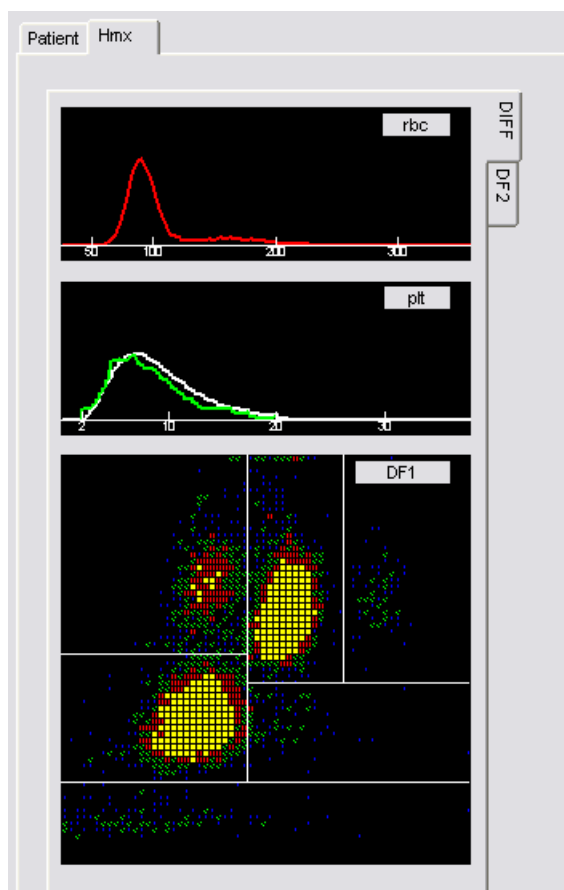
3.12.7 Graphical data

If it exists, it is possible to show the graphical data sent by the instruments (SPE and/or IFE for a CZE, DIFF and/or RETIC for hematology instruments).

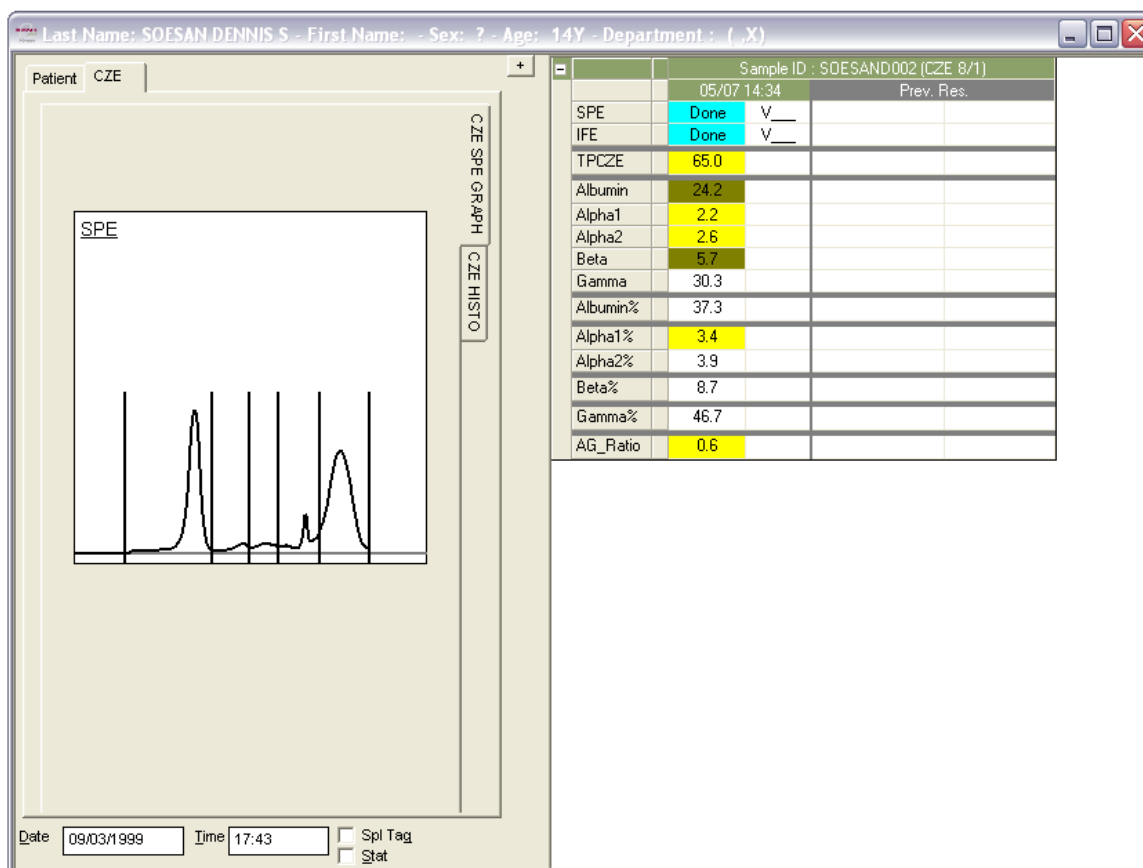
This data is successively organized by run (by default, you can see the graphical data of the latest run, but you can select another run to see the corresponding graphical data), by instruments (tabs near the Patient tab), then by type of graphics (tabs on the right of the graphics).

NOTE

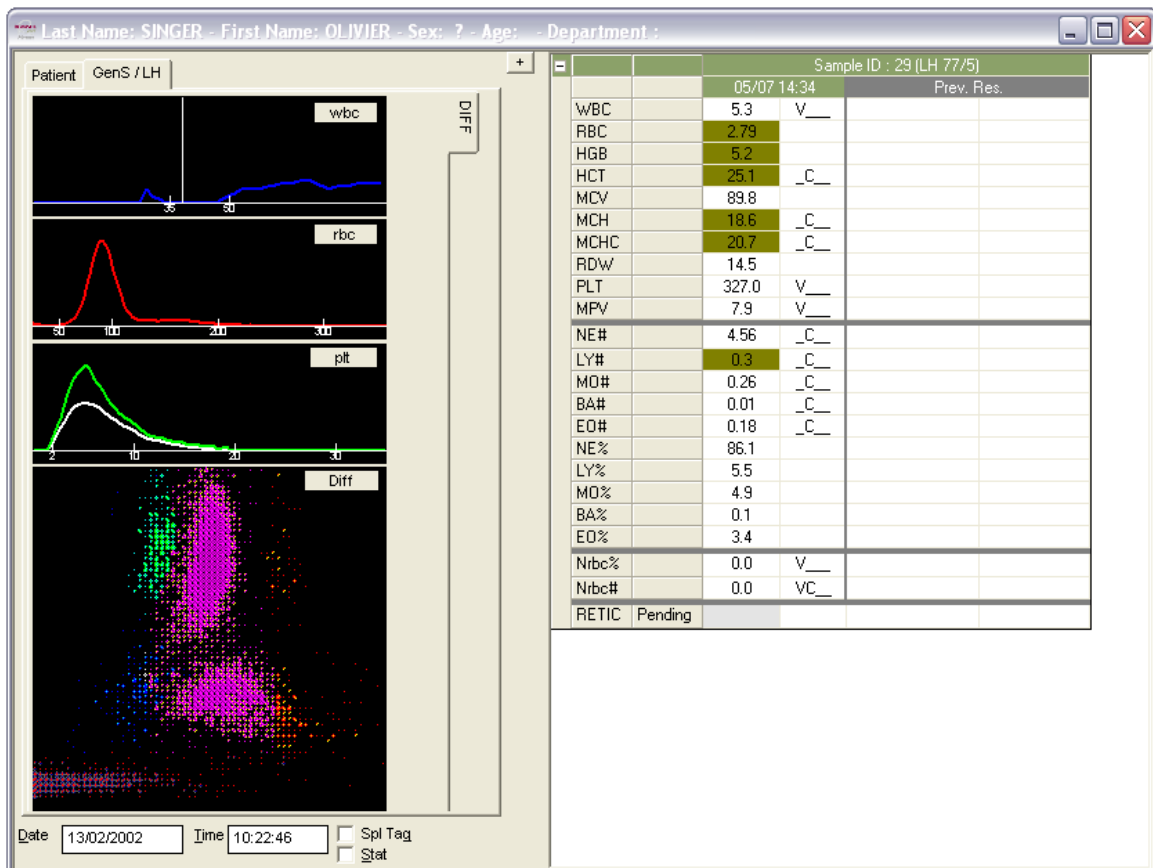
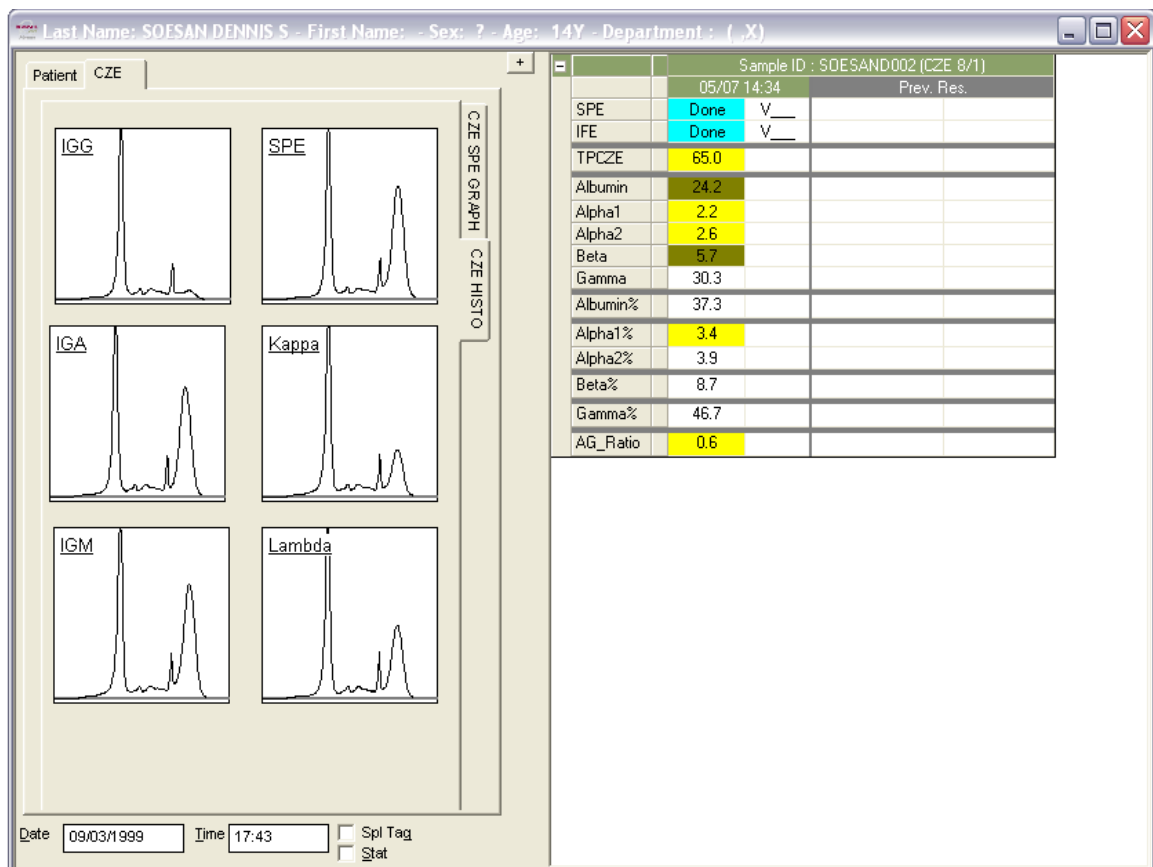
Graphical data cannot be displayed in a 800 x 600 screen resolution.



You may display other information by selecting the tabs on top or on the right of the graphs.



or

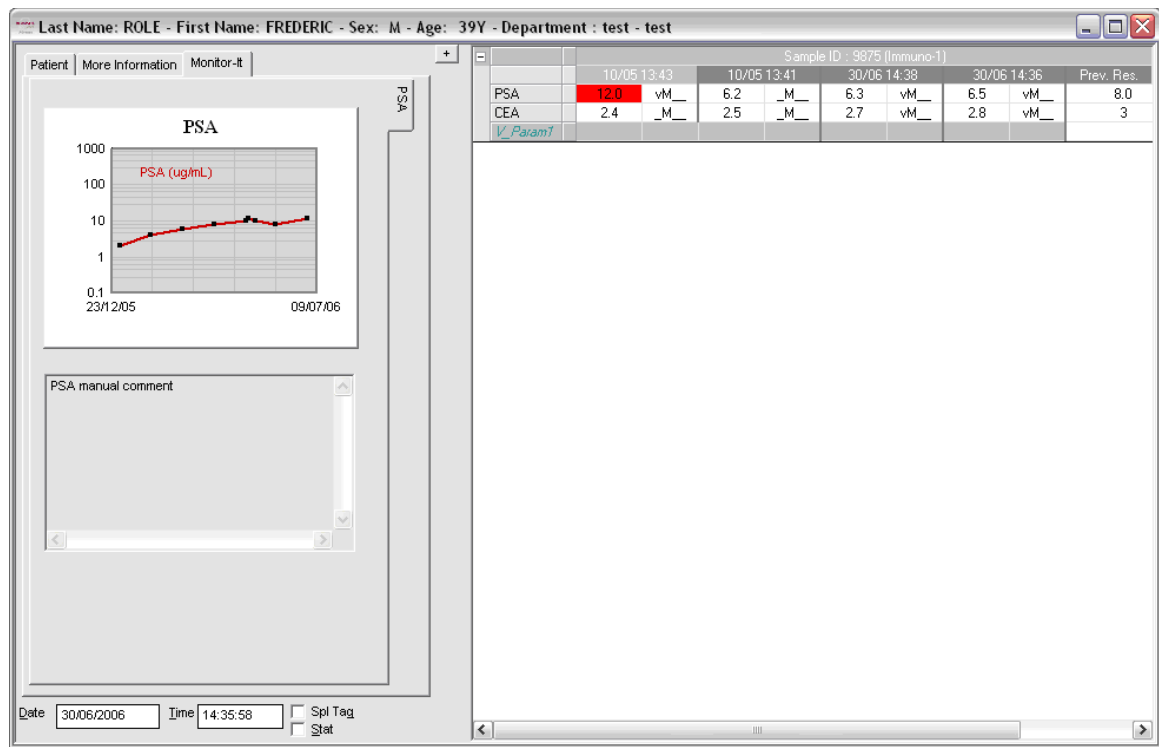


3.12.8 Monitor-It

Monitor-It is an additional module integrated in the user interface in Remisol Advance. Monitor-It creates a point-to-point graph displaying the results history for one or more predefined parameters for a patient.

An extra specific license is needed to use this module (in the.PMF file).

These graphs are displayed in the Request window, in place of the patient's demographics.

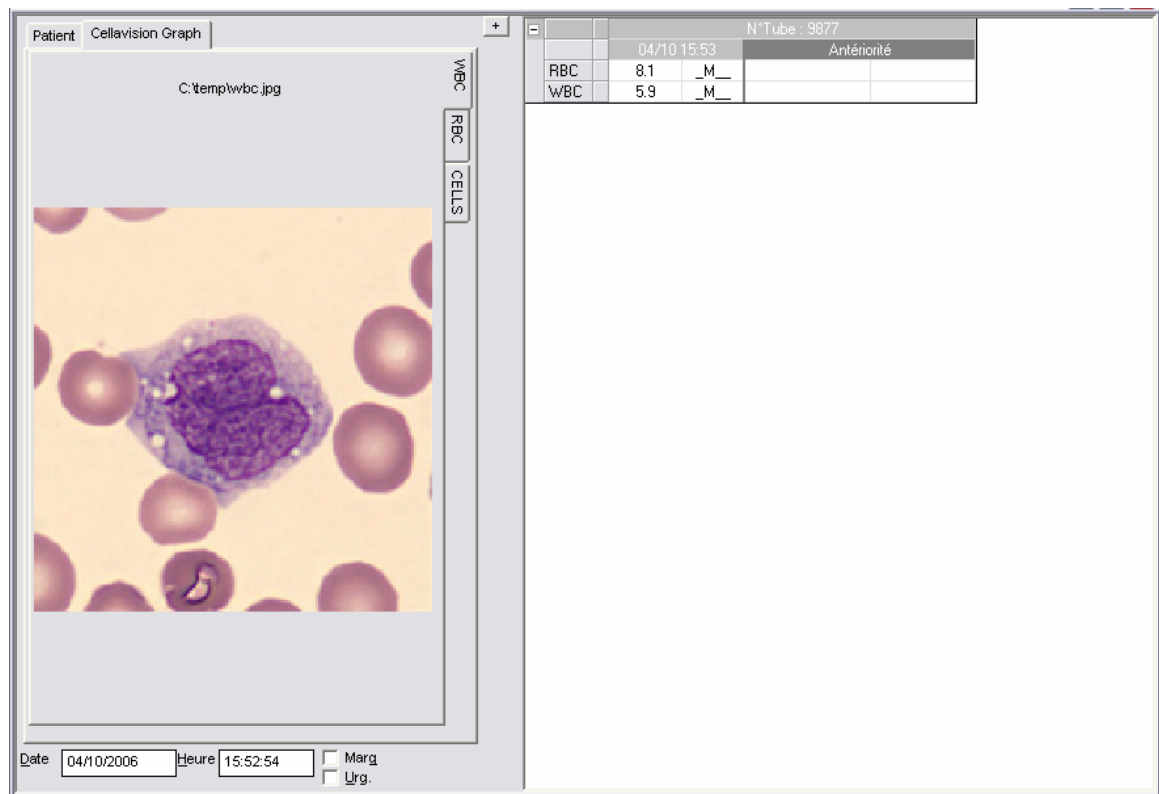


For further information, please see the **Technical Guide**.

3.12.9 Display of pictures exported by instruments

It is possible to display the pictures generated by the instruments in the request window (this function was created for the Cellavision instrument).

If a request contains pictures, a new tab appears on top of the Demographics area so the user can see these pictures. If several pictures are available, different tabs appear on the right side of the picture area in order to navigate between them.



For further information, please see the **Technical Guide**.

Comments

Comments sent by the instruments, generated by Remisol Advance are displayed in the comments area when it is expanded ([+] button at the top between the demographics and the runs' data areas).

The screenshot shows the Remisol Advance software interface. On the left, there's a patient information form with fields for Patient ID, Last Name, First Name, Middle Name, Birth Date, Address, Comment, Dgt., Dgct., Age, Sex, and Patient Tag. The Patient ID is 0000000, Last Name is UNKNOWN, and Sex is Unknown. Below the form is an 'Add parameters' button. On the right, there's a 'Comments' section with expandable categories: 'Suspect Flags' (Small lymphocyte region flag), 'Definitive Flags' (Nucleated red Blood Cells), and 'Rules Comments' (MODERATED ANISOCYTOSE, DIFF: ABNORMAL LY). To the right of the comments is a table of laboratory results. The table has columns for the test name, the result value, and a unit. The results are color-coded: green for 'Out Low', yellow for 'Valid Low', white for 'Normal', and purple for 'Valid High'. The table includes tests like WBC, RBC, HGB, HCT, MCV, MCH, MCHC, RDW, PLT, MPV, PCT, PDW, NE#, NE%, LY%, MO%, BA%, EO%, AYTL%, and LalmCell%.

Test	Result	Unit
WBC	11.0	V
RBC	4.63	V
HGB	14.3	V
HCT	41.1	VC
MCV	88.8	V
MCH	30.9	VC
MCHC	34.8	VC
RDW	15.6	V
PLT	225.0	V
MPV	9.3	V
PCT	0.2100	V
PDW	16.25	V
NE#	Pending	
NE%	58.10(R)	
LY%	32.00(R)	
MO%	06.50(R)	
BA%	0.4	
EO%	03.00(R)	
AYTL%	01.35(R)	
LalmCell%	00.94(R)	

Comments cannot be displayed in a 800 x 600 screen resolution.

3.12.10 Manual Results Entry

Results can be uploaded from an instrument or manually entered in the Request Sheet window.

- To manually enter a result, right-click in the **runs data** section and in the **popup menu that comes up**, select **Add Manual Run**.
- To edit a result manually, click once on the table cell containing the result, then enter the result in the cell.

NOTE:

Validated results cannot be edited.

To prevent accidental manual entries, a confirmation window is displayed each time the user saves a run with manual entries.

3.12.11 Results Default Cooler Code

Results can be highlighted with various default colors to indicate how they compare with validation ranges and reference ranges. The following table lists the various color highlights.

Code	Color	Description
Out Low	green	Out of the validation range low.
Valid Low	yellow	Out of the reference range low but inside the validation range.
Normal	white	Both inside the reference range and the validation range.
Valid High	purple	Out of the reference range high but inside the validation range.

Out High	red	Out of the validation range high.
----------	-----	-----------------------------------

Alphanumeric results are cooler coded in light blue. These default color codes can be changed or customized; please contact your field engineer for information about it.

NOTE:

Remisol Advance reflex testing and delta checking features cannot be used with alphanumeric results.

To view the validation range, reference range, and color codes for a particular result in the Request Sheet window, double-click on its cell. This will open the Reference Values window for the selected result.

The image shows a software window titled "Reference Values : B_MCV". It contains the following information:

- Instrument :** HMX
- Remisol Advance Dilution Factor :** 1.00
- Validated by :** SYSADM
- Received result date time :** 01/04/2009 13:35:14
- A horizontal bar representing the validation and reference ranges for fL:
 - Out Low:** 94.0 (dark green)
 - Valid Low:** 96.5 (yellow)
 - Normal:** 120.0 (white)
 - Valid High:** 122.0 (magenta)
 - Out High:** (red)
- Run Comments:**
 - (COM19) TELEPHONE RESULTS
 - (COM13) HGB VERIFIED
- Result Comments:**
 - (COM20) TO VERIFY
 - (COM20) TO VERIFY
- Buttons at the bottom: Info, a green checkmark, and a red X.

In the example **Reference Values** window above, we can say that:

- this results come from the instrument named 'HMX'
- the dilution factor was 1.00
- the person who validated it manually was named 'SYSADM'
- the validation ranges for B_MCV are from 94.0 to 122.0
- the reference ranges are from 96.5 to 120.0
- 1 run comment and 1 result comment were added
- the reagent serial number has not been uploaded by the instrument

The **Reference Values** window can display:

- The instrument (network id), the host or the user the result originates from,
- The dilution factor,

- The reagent serial number & serial lot number (when applicable),
- Whether the result was generated by a rule: "Rules played on: <name of the machine>"
- Which user validated the result,
- The date and time the result was received by Remisol,

For the Remisol Advance instrument type, as opposed to all the other instrument types, the date & time displayed in the Reference Values window are the date and time the result was generated on the instrument and not the date and time it was received in Remisol Advance.

- And the unit used for the current parameter (underneath the colored scale)

3.12.12 Comments on run& comments on results

With Remisol Advance, it is possible to enter comments on results manually.

Open the request window, and then to double-click on a result to open the **Reference Values** window.

In the lower half of the window, it is possible to enter a comment manually. It will be attached to the result.

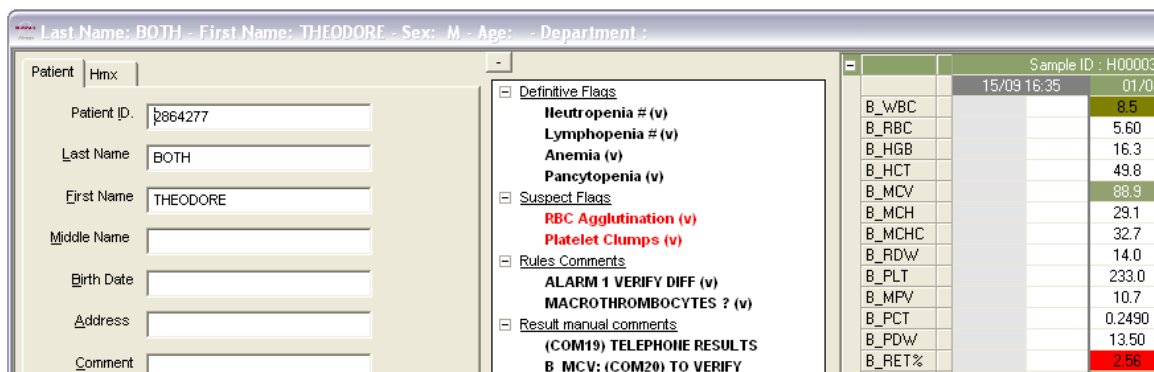
It is also possible to add a predefined comment (a comment that has already been defined in the menu **Configuration / Comments Definition**). In which case, click on the arrow button of the drop-down list located underneath the comment field.

After a predefined comment is selected, click on the add button **[+]** or press the **RETURN** key in order to attach it to the result. It is possible to attach several comments to a single result.



All manually-added comments are also displayed in the comments area when it is expanded (**[+]** button at the top between the demographics and the runs' data areas).

A result's comment is also displayed in the comment's window, in the Automatic comments area:



Parameter	Value	Unit
B_WBC	8.5	
B_RBC	5.60	
B_HGB	16.3	
B_HCT	49.8	
B_MCV	88.9	
B_MCH	29.1	
B_MCHC	32.7	
B_RDW	14.0	
B_PLT	233.0	
B_MPV	10.7	
B_PCT	0.2490	
B_PDW	13.50	
B_RET%	2.56	

These comments are uploaded to the LIS if the Host protocol is ASTM or HPRIM. The comments are included in the comment streams (streams C).

Comments are archived.

3.12.13 Result Traceability to Instrument

The identity of the instrument that returned the result is stored along with the result and can be uploaded to the host. The instrument's name (as defined in Remisol Advance) is displayed in the Reference Values window, or in the information window when the mouse is hovering over the cell containing the date and time of the run. To open the Reference Values window, double click on the table cell containing the result in the Request Sheet window.

3.12.14 Results Validation

Results can be validated automatically or manually. Automatic Validation is set up in the parameters definition, and can depend on extended rules (which could use ranges, delta checking method,...). See **Configuration, Automatic Validation** for further information on setting up the automatic validation. Manual validation is done in the Request Sheet window.

The following manual validation options are available in the Request Sheet window:

- To manually validate all the results from the latest run, click on the **Validate** toolbar button while no results are selected.
- To manually validate a specific result, click once to select this result in the results sheet (it will be highlighted), then click on the **Validate** toolbar button.
- To remove the validation flag for all results, click on the **Unvalidate** toolbar button while no results are selected.
- To remove the validation flag for a specific result, click once to select this result (it will be highlighted), then click on the **Unvalidate** toolbar button.

To prevent accidental manual validation, a confirmation window appears each time the user saves a run with manual validation.

NOTE:

You may select multiple results to validate or unvalidate by holding the **[Ctrl]** key while clicking on the results.

You may select all results of a profile by holding the **[Shift]** key while clicking on any parameter of that profile, see **Profile Definition**.

The username of the person who validated the results manually is memorized.

3.12.15 Result Flags

The results allow for 4 flags (4 positions from left to right). The following table describes the different Result flags.

Column (from left to right)	Flag	Description
1	V v	Result validated automatically Result validated manually
2	M C U D	Result manually entered or edited Calculated result UPC result Dilution factor applied to result
3	D X	Result passed delta check Result failed delta check

4	H	Result sent to host
5		Flags as indicators of the EQC status for the parameter: • White: no protocol defined / no data available • Green: No mistake • Yellow: Protocol in warning or Time-out • Red: Protocol in error or blocked result

NOTE:

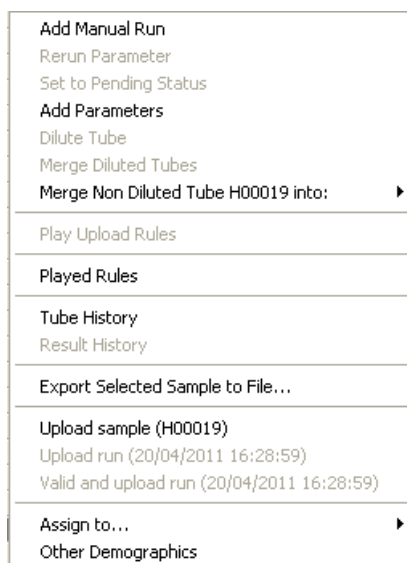
Remisol Advance ignores all abnormal result flags from Access except '<' (less than) and '>' (greater than), which are stored, displayed and printed in the result. All non-fatal result record flags from Access (except GRY, LOW and UNR) are recorded in the Remisol Advance Communications Event Log but are not stored, displayed or printed with the result. GRY, LOW, UNR and all fatal result record flags (i.e., IND, NCR, QNS, RLV, SYS and TMP) will replace any result in the Remisol Advance record field. You must go back to the Access console or Access report to obtain the results and interpretations.

3.12.16 Result Error Codes

If the instrument sends an error code instead of a result, the error code will appear in the results table and will be color-coded in light blue. Please refer to your instrument printout to interpret the error code(s).

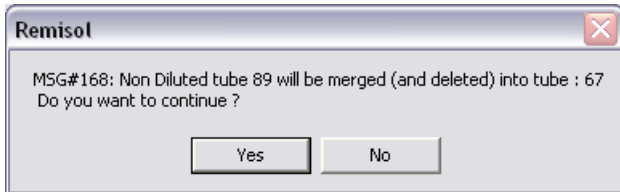
3.12.17 Request Sheet Popup Menu

To open the Request Sheet popup menu, click with the right mouse button anywhere in the Request Sheet window.



The following table describes the options in the Request Sheet popup menu.

Option	Function
Add manual run	This option allows the user to add a run and/or manual results.
Rerun Parameter	This option allows the user to program one or more selected parameters for rerun.
Reset down. flags	This option allows the user to reset the downloaded flag for one or more parameters (the programming of these parameters will be considered as never downloaded).

Add Parameters	This option allows the user to add parameters or profiles. NOTE: If you wish to add parameters to a completed sample in addition to rerunning of one or more parameters, you must select the Rerun option first, then the Add Parameters option.
Dilute tube	This option allows the user to add a dilution factor to one or more selected parameters.
Merge diluted tubes	This option is used in order to merge diluted results (from a diluted sample) into the original sample. NOTE: This replaces the original Merge option and it is only available if the tube is diluted, otherwise it is greyed out.
Merge Non Diluted Tube <your_tube> into:	This option allows the user to merge the results of a non diluted tube into (an)other non diluted tube(s). <your_tube> represents the sample ID of the tube that will be merge. When highlighted, a popup menu appears with the sample ID(s) of the tube(s) it will be merged into. If selected, a confirmation message comes up:  NOTE: This option is only available if the tube is complete, otherwise it is greyed out.
Play Upload Rules	This option allows the user to manually play the Upload Rules (again); please refer to the Manually forcing Upload Rules chapter.
Played Rules	This option allows the user to access, for a selected parameter, the extended rules that applied, and for each of these, to know the status and action performed.
Tube History	This option provides access to the Tube History window; please refer to the Tracking chapter.
Results History	This option provides access to the Result History window; please refer to the Tracking chapter. NOTE: This option is only available once a parameter is selected.
Export Selected Sample to File...	This option allows the user to export a whole sample/tube (demographics, comments and results) to a Remisol data file; then this file can be imported in Test Mode, available through the Environment > Mode: Rules Validation > Switch in Test Mode.

Upload sample (sample id)	This option allows the user to upload ONLY the selected sample/tube to the LIS as opposed to the [Ctrl] + [O] key combination that uploads the whole of the request.
Upload run (run date run time)	This option allows the user to upload ONLY the selected run.
Valid and upload run (run date run time)	This option allows the user to validate and upload ONLY the selected run.
Assign to...	By selecting this option, you will assign the current request directly to any instrument defined in your Remisol Advance environment.
Other Demographics	This option clears most of the demographics information. The user can enter new demographics or select existing demographics. This is useful for entering the demographics for a patient who was "unknown" until then.

3.12.18 Manual Diffpad

If you are using a hematology instrument, you can carry out a manual diff directly from the Remisol Advance console.

You can access this screen by selecting the **Desk / Manual count** menu, or pressing **[CTRL+K]** from the request sheet, or by clicking on the **microscope** toolbar button.

REMISOL 2000 - Intranet - Microsoft Internet Explorer

Manual Diff + Nrbc TUBE02 Close

Total 0

WBC	100	100%	0	Key
BASO	0	0	0	a
MONO	0	0	0	e
EOSINO	0	0	0	r
LYMPHO	0	0	0	t
NEUTRO	0	0	0	y
HypBasoLY	0	0	0	u
Myelo NE	0	0	0	i
Meta NE	0	0	0	o
Blasts	0	0	0	p
NRBC	0	0	0	z

Comments

(COM 13) HGB VERIFIED

1.3.19

It is possible to assign a comment to a result using the Comments field at the bottom of the DIFFPAD window: To assign a comment to a result, either start typing in using the following syntax to find the required comment: <PARAM_CODE>:**Comment** or select it directly from the drop-down list.

If there is no result for the parameter in the request, the comment <PARAM_CODE>:**Comment** will be assigned to the Run.

Example: The user enter the comment: WBC: WARNING

- If there is a result for the WBC in the request, then the comment 'WARNING' is assigned to that result
- If there is no result for the WBC in the request, then the comment 'WBC: WARNING' is assigned to the Run

NOTE:

If there is a comment assigned to a result, it will be displayed in the Result window (double click on a result in the Request window).

If there is a comment assigned to a run, it will be displayed in the Comment window (click on Comment in the toolbar) and in the Comment area located in the middle of the Request window.

For further information about the Diffpad, please refer to the Remisol Advance Intranet user guide.

3.12.19 Rerun Window

Follow the steps below to rerun one or more parameters.

1. First select one or more parameters in the Request Sheet window to rerun by clicking on the result(s) itself/themselves (the row will be highlighted).

NOTE:

All parameters to be rerun in a sample must be selected before selecting the **Rerun** option. To select multiple parameters, hold the **[Ctrl]** key while clicking on the parameters in the results table. You may only select results from one sample at a time for rerun.

2. Open the Request List popup menu. Select **Rerun parameter** from the popup menu. This will open the Rerun window.

3. The **Cup** field defaults to the cup (position) that the sample is assigned to, if any. You can rerun your sample with the same cup number or enter a new cup number.
4. The **Sample ID** field defaults to the assigned Sample ID. You can rerun your sample with the same Sample ID or enter a new Sample ID. You can select another instrument to rerun the test(s) on.
5. Enter a dilution factor for the rerun, if desired.
6. To be able to enter a dilution factor, check the **Derived dilution tube** option, then enter the dilution factor. The default dilution factor is 1. Then, please enter a new Sample ID for the diluted tube. A warning will appear if the user does not type in a new Sample ID. The dilution factor is applied to the result when it is uploaded from the instrument.

7. Click on **OK** to save and exit the screen. The rerun will automatically be downloaded to the instrument. Click on **Cancel** to cancel the rerun and exit the screen.

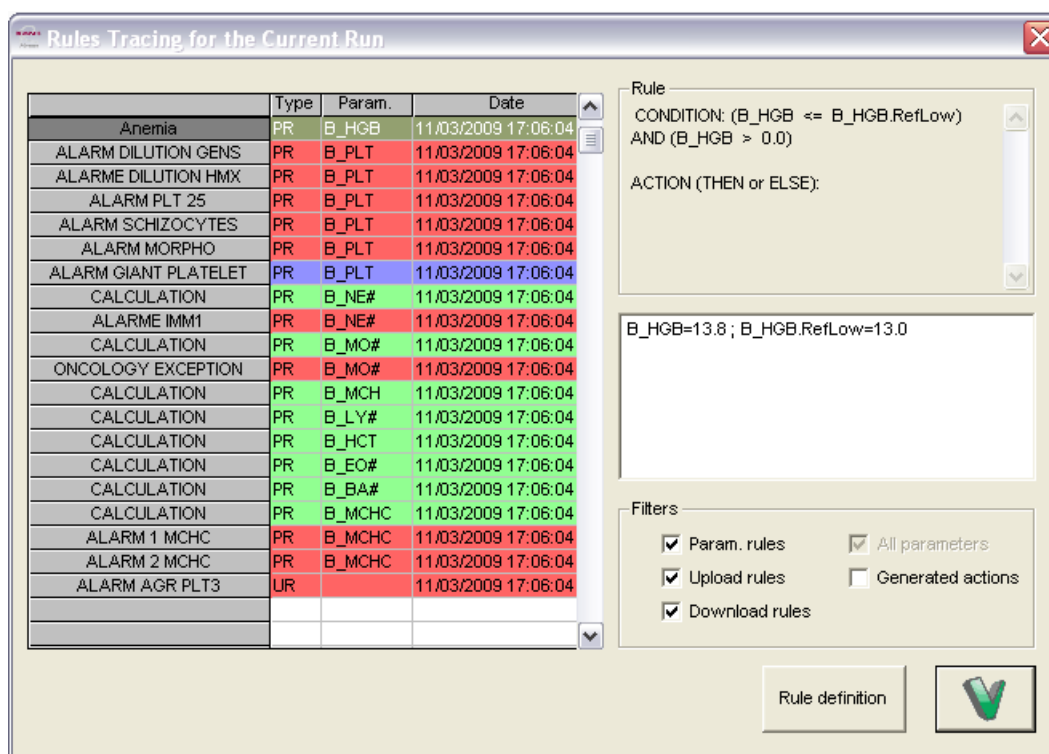
NOTE:

If a rerun is downloaded from the LIS, a window will open notifying the user of the rerun. The rerun will be automatically downloaded to the instrument.

3.12.20 Played Rules

To access the applied rules, right-click in the results in the request sheet and in the popup menu, select 'Played rules'. A new window comes up showing the rules that were applied on the left:

- A rule that generated no action will be highlighted in red with a 'fail' status.
- A rule that worked and consequently generated an action will be displayed in green with an 'ok' status.
- A rule that could not be evaluated will be displayed with in purple.



The right part of the screen contains:

- The display criteria (in order to display some types of rules or not)
- The applied rule (when a parameter/line was selected in the grid on the left)
- The values used for the evaluation of the rule (when a rule is selected)

You can directly access a rule definition by selecting a specific parameter/line in the grid and click on the **Rule Definition** button. Select **Close** to exit the 'Played Rules' window and return to the request sheet.

NOTE:

The history for the rules applied may disappear if you change the rules' definitions for those already evaluated.

3.13 New Request

3.13.1 Introduction

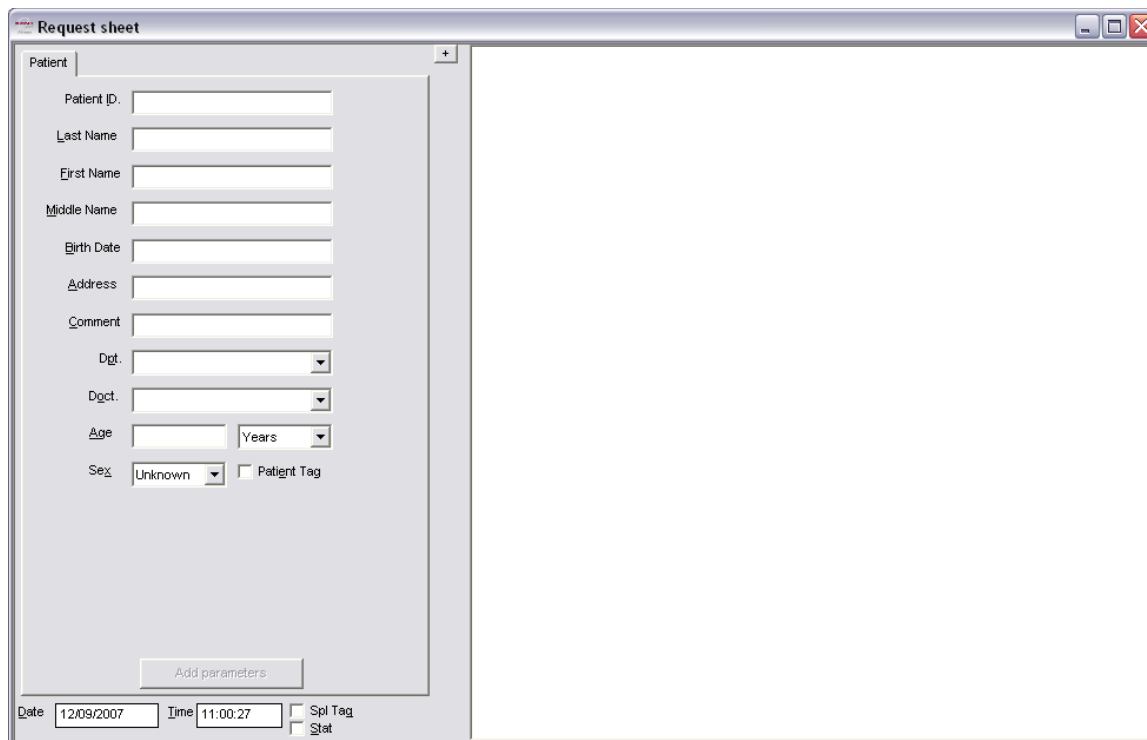
Patient requests can be downloaded from a host, uploaded from an instrument, or created in Remisol Advance. The Request Sheet window is used to create a new request in Remisol Advance.

NOTE:

Patient IDs must be unique. If the host downloads a request with a patient ID that already exists in a demographics record in Remisol Advance, then Remisol Advance will create a request using the existing Remisol Advance demographics record, not the demographics downloaded from the host. If more than one patient is assigned the same Patient ID by the host, test requests and results may be assigned to the wrong patient.

3.13.2 Request Sheet Window

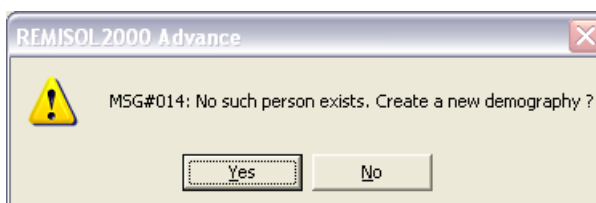
To open the Request Sheet window, click on the **New Request** toolbar button alternatively it can also be opened by selecting **New Request** in the **Desk** menu, or even with the **[CTRL+N]** key combination.



3.13.3 Creating a Request for a New Patient

Follow the steps below to create a request for a new patient.

1. Enter the Patient ID and/or Last Name in the Request Sheet window. Use the **[Tab]** key or the mouse to move between fields.
2. After entering the Patient ID and/or Last Name, press the **[Enter]** key/move to the next field, the following window will come up:



3. Select **Yes** to create a new patient and return to the Request Sheet window. Select **No** to cancel and return to the Request Sheet window. At this point, either you continue to enter the demographics (use the **[Tab]** key or the mouse to move to the next field) until the end and then click on "**add parameters**" or you press the **[enter]** key, both options will bring you to Step 4.
4. Both actions ("**add parameters**" or **[enter]** key) will save the demographics and open the Profiles - Parameters window. Select the desired profiles and/or parameters, then select **OK** to exit the window.
5. The **Sample ID Assignment** window will open when the Profiles - Parameters are validated. Review and/or edit the Remisol Advance assigned sample ID, then select **OK** to exit the window.
6. Save the request by clicking on the save button on the toolbar or by pressing the **[F2]** key. This will close the request and open a blank New Request sheet.

The **Add Parameters** button below the demographics allows the user to add parameters to the current request even when the 'Select Profiles/Parameters' window has been closed.

Only the patient ID and/or last name are mandatory to create a new request. The remaining patient demographics can be entered later.

3.13.4 Creating a New Request for an Existing Patient

Follow the steps below to create a new request with an existing patient demographics record.

1. To search for an existing patient's demographics record in the Request Sheet window,
 - a. type in the Patient ID or Last Name in full, or
 - b. type in the first digits in the Patient ID field, or the first letters in the Last Name field followed by a wild card symbol; an * (asterisk) is a wild card for characters from 0 to x, and a ? (question mark) is a wild card for a single character.

Example: *Search for the name Adams by entering Ad* or Ad???s in the Last Name field.*

2. Press **[Enter]** to validate your entry. The **Demographics Search** window will open.
3. Select the patient's demographics record from the list in the **Demographics Search** window.
4. Select **OK** to confirm your selection. Select **New** to return to the **Request Sheet** window to enter a new patient. Select **Cancel** to cancel the search and return to the **Request Sheet** window.
5. If you selected **OK** in the **Demographics Search** window, the **Profiles - Parameters** window will open. Select the desired profiles and/or parameters, then select **OK** to exit the window.
6. The **Sample ID Assignment** window will open once the **Profiles - Parameters** window is closed. Review and/or edit the Remisol Advance assigned sample ID, then select **OK** to exit the window.
7. Save your request by clicking on the **save** button on the toolbar or by pressing the **[F2]** key. This will close the request and open a blank New Request sheet.

The **Add Parameters** button below the demographics allows the user to add parameters to the current request even when the 'Select Profiles/Parameters' window has been closed.

3.13.5 Creating a Request for an Unknown Patient

You may quickly create a new request for a patient whose demographics you do not currently have by merely entering a sample ID as the identifier. Follow the steps below to create a new request with unknown demographics.

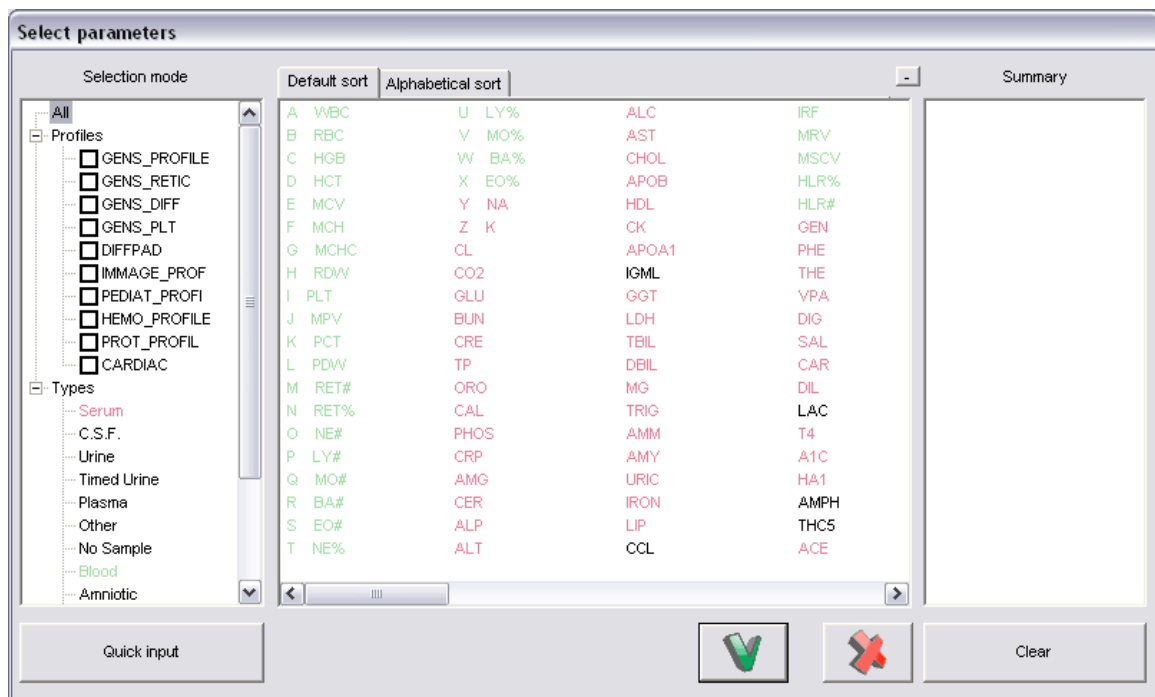
1. Open a new **Request Sheet** window. The cursor should be in the Patient ID or Last Name field.
2. Press the **[Enter]** key without entering any information in the Patient ID or Last Name fields.
3. Remisol Advance will automatically assign '000000' as the Patient ID and 'UNKNOWN' as the Last Name.
4. The **Profiles - Parameters** window will open. Select the desired profiles and/or parameters, then select **OK** to exit the window.
5. The **Sample ID Assignment** window will open once the **Profiles - Parameters** window is closed. Review and/or edit the Remisol Advance assigned sample ID, then select **OK** to exit the window.
6. Save your request by clicking on the **save** toolbar button or by pressing the **[F2]** key. This will close the request and open a blank New Request sheet.

New patient demographics can be entered later by selecting **Other Demographics** from the Request Sheet popup menu.

The **Add Parameters** button below the demographics allows the user to add parameters to the current request even when the 'Select Profiles/Parameters' window has been closed.

3.13.6 Profiles - Parameters Window

The **Profiles - Parameters** window opens automatically when the **[Enter]** key is pressed at any moment while entering demographics in a new request. The **Profiles - Parameter** window can also be opened from the **Requests Sheet** popup menu, and when clicking on the **Add Parameters** button below the demographics.



The left part of the window now displays a tree view with the followings:

- **All:** lists all the available parameters
 - The central part of the window displays all the parameters with neither restriction nor filtering
- **Profiles:** lists all the profiles available (click **[+]** to expand, **[-]** to retract)
 - Ticking the check box in front of a profile/double clicking on a profile name allows you to automatically select all of the parameters for the profile. Also the profile check boxes are automatically updated when a parameter is added or removed from the summary list. You cannot deselect/uncheck a profile in the tree view; you must remove the corresponding parameters one by one, or clear all the current selections.
 - If Profiles is highlighted (color highlight), the central part of the window highlights the parameters for the selected profile out of all the parameters available.
 - If a particular profile is highlighted, the central part of the window only displays the parameters for this profile.
- **Types:** lists all the sample natures
 - If Types is highlighted, the central part of the window displays all the available parameters for all the sample natures.
 - If a particular sample nature is highlighted, the central part of the window only displays the parameters for this nature.
 - Right-clicking on a particular nature will enable you to define/edit the color assigned to this nature through the **Edit colors** option and the **Color** window which opens consequently.

The central part of the main window displays the parameters corresponding to your selection in the tree view on the left side:

- The parameters are displayed with the color assigned to their nature,
- The selected parameters are highlighted with a colored background (which depends on the system options)
- The display order depends on the selected tab (**default** or **alphabetic order**)

The right part of the window (click **[+]** to expand, **[-]** to retract) displays the list of the selected parameters that will be included in the request:

- A double click on a parameter removes it from the list.
- It is possible to empty the list using the **Clear** button at the bottom.

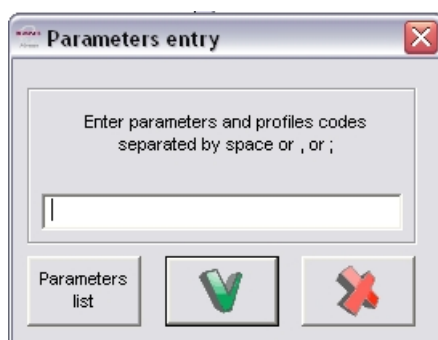
You can easily switch between the standard parameter selection and the quick parameter selection using the dedicated button (respectively the **Quick input** or **Parameters list** buttons).

All selections are automatically converted from one display to the other, thus no selection is lost. If a parameter is not well written in the Quick input field, it is ignored.

Click on **OK** to save, or on **Cancel** to close the window.

3.13.7 Quick Parameter and Profile Input

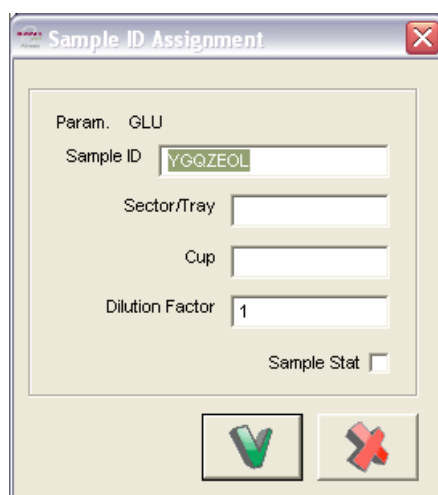
You can set up Remisol Advance to enter parameters and profiles in a quick entry window. Check the **Quick Parameters and Profiles input** in **Environment - General Setup**. If you select this option, the **Parameters Entry** window opens instead of the **Profiles - Parameters** window.



Enter parameters and profiles codes in the entry field, separated by a space, a comma, or a semicolon. Click on **OK** to save, **Cancel** to close the window, or on the **Parameter's list** button to switch to the other parameter's selection window.

3.13.8 Sample ID Assignment Window

The Sample ID Assignment window will open automatically once the **Profiles - Parameters** window is closed after creating a new request.



The following table describes each of the fields in the Sample ID Assignment window.

Field	Function
Sample ID	This field defaults to a Remisol Advance assigned sample ID. If desired, enter a new sample ID (up to 16 alphanumeric characters).

Sector/Tray	This field defaults to the sector (tray, rack) that the sample is assigned to, if any. Type in a new sector number, if desired.
Cup	This field defaults to the cup (position) that the sample is assigned to, if any. Type in a new cup number, if desired.
Dilution Factor	Enter a dilution factor (default is 1).
Sample Stat	Select this option to flag the sample as Stat. Click on OK to save and exit the screen. Click on Cancel to cancel the sample assignment and exit the screen. If more than one sample is required for the request, another Samples ID Assignment window will open for the next sample once you click on OK .

NOTE:

If you enter a sample ID that is longer than the maximum number of characters allowed by the instrument, the sample ID will be truncated when downloaded by the instrument. When these results are uploaded from the instrument, they will be assigned to an "unknown" patient request.

Sample IDs for current requests must be unique. If an instrument uploads results with a sample ID that already exists in a current request on the Remisol Advance, then the results will be merged into the request.

3.14 Dilution

Dilution factor has been redesigned in the 6.5 version of the Remisol Advance software. Dilution functionality is active by default (see the **Remisol.ini Technical Guide**, *Allow_Dilution* entry in the [Remisol] section to activate it).

Dilution factor can be manually entered when programming a new request, a rerun, or by using the Dilute Tube option available in the Requests Sheet contextual menu. In the two last cases (rerun or dilute), **a new tube with a new Sample ID is created in the original request.**

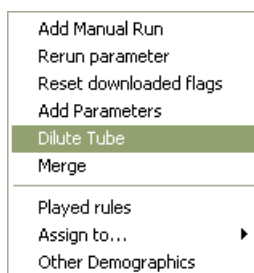
Dilution in the instrument is only allowed for the **Immage**. For the other instruments, the dilution factor applied to the received results when they are uploaded to Remisol Advance (see Instrument Factor and Type of Instrument).

When a dilution factor is to be applied, it is associated with the tube. Once it has been applied, it is associated with the result.

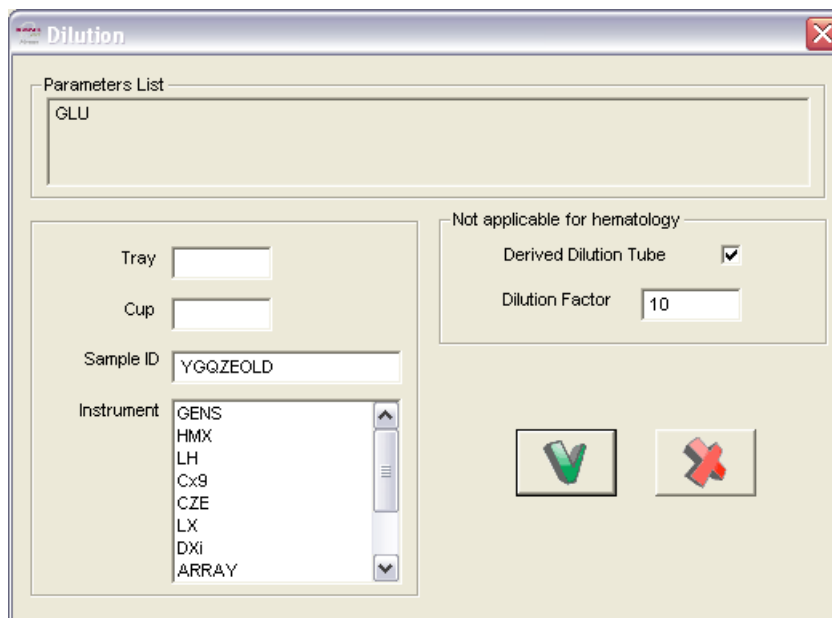
3.14.1 Creation of a dilution

Assigning a dilution factor to one or more parameters is possible only if this tube is not already diluted and has not yielded any result yet.

To create a diluted tube, use the contextual menu in the Request Sheet and select Dilute Tube.



The **Dilution** window is displayed. It is necessary to enter a new Sample ID for the new diluted tube and to check the **Derived Dilution Tube** option to activate the dilution. Then, enter the required **Dilution Factor**



Dilution

Parameters List

GLU

Tray

Cup

Sample ID YGQZEOLD

Instrument

- GENS
- HMX
- LH
- Cx9
- CZE
- LX
- DXi
- ARRAY

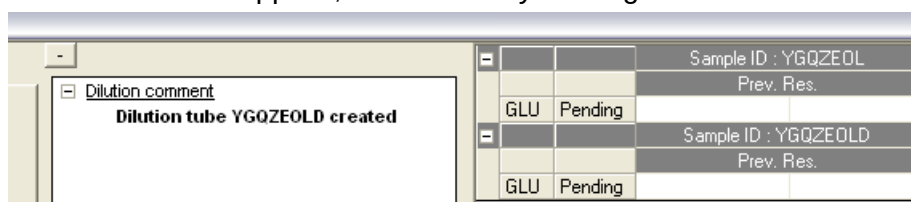
Not applicable for hematology

Derived Dilution Tube ☒

Dilution Factor 10

The new diluted tube is added to the current request with these new parameters. A comment is also added to indicate that a dilution factor was applied, and to identify the original tube.

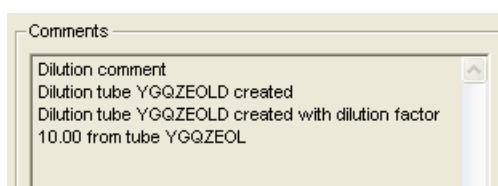


Dilution comment

Dilution tube YGQZEOLD created

		Sample ID : YGQZEOL	Prev. Res.
GLU	Pending		
		Sample ID : YGQZEOLD	Prev. Res.
GLU	Pending		

The **Comments** window provides further information about the dilution in the **Automatic Comments** area.



Comments

Dilution comment

Dilution tube YGQZEOLD created

Dilution tube YGQZEOLD created with dilution factor 10.00 from tube YGQZEOL

The original tube cannot be uploaded or archived automatically if a diluted tube exists.

3.14.2 Diluted Tube

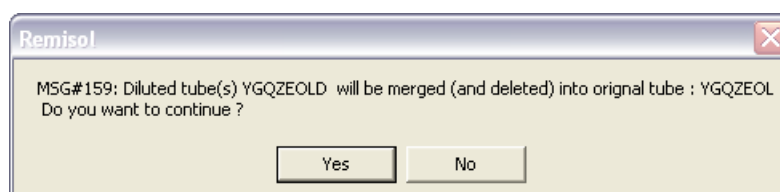
It is possible to add parameters to a diluted tube. The extra parameters and their results are integrated with those of the original tube when merging the diluted tube with the original.

A diluted tube is never uploaded or archived automatically. These operations are only possible on the original tube once the results for every diluted tube have been merged in it (no more existing diluted tube).

Reruns from the Host are ignored for diluted tubes (with a dilution factor different than 1).

3.14.3 Merging of a Diluted Tube

Merging the results of a diluted tube into the original tube is possible only if there are no more pending parameters for the diluted tube.



Remisol

MSG#159: Diluted tube(s) YGQZEOLD will be merged (and deleted) into original tube : YGQZEOL
Do you want to continue ?

The diluted tube is removed from the request once its results have been merged with those of the original tube.

The automatic uploading and archiving of the original tube are possible if there is no more diluted tube for it.

3.14.4 Dilution Factor and Type of Instrument

The management of the dilution factor depends on the type of the instrument.

4 types of instruments are defined:

3.14.4.1 Group 1: Immage.

The Immage is able to manage and transmit the dilution factor when uploading and downloading.

- If the dilution factor downloaded by Remisol Advance to the Immage and the factor uploaded with the results from the Immage are the same, Remisol Advance accepts the results and does not apply the dilution factor.
- If the dilution factor downloaded by Remisol Advance to the Immage and the factor uploaded with the results from the Immage are not the same, Remisol Advance refuses the result and a specific comment is added to the request.
- If the dilution factor downloaded by Remisol Advance to the Immage is equal to 1, and the factor uploaded with the results is different, Remisol Advance accepts the results but also a specific comment is added to the request.

3.14.4.2 Group 2: Cx3, Cx4/5, Cze, Hematology.

These instruments are not able to manage and transmit the dilution factor when uploading and downloading.

3.14.4.3 Group 3: Array, Cx7, DxC600/800, DxC600i, Lx20, Lxi.

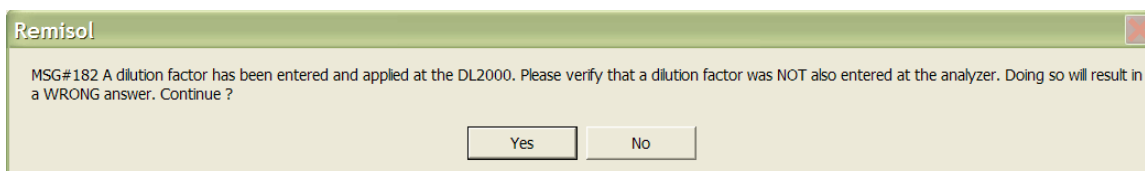
These instruments are only capable of uploading a dilution factor. The download of a dilution factor from Remisol Advance to the instrument is not possible.

- If the dilution factor defined in Remisol Advance is different from 1 and no dilution factor is uploaded with the result from the instrument, then Remisol Advance accepts the result and applies its own dilution factor.
- If the dilution factor defined in Remisol Advance is different from 1 and a dilution factor is uploaded with the result from the instrument, then Remisol Advance refuses the result and a specific comment is also added to the request.
- If the dilution factor defined in Remisol Advance is set to 1 and a dilution factor is uploaded with the result from the instrument, then Remisol Advance accepts the result and a specific comment is also added to the request.

3.14.4.4 Group 4: Access, Access2, Dxi and Other.

These instruments' drivers are not capable of downloading or uploading a dilution factor, but the dilution factor may be managed directly in Remisol Advance.

When merging the results of the diluted tube into those of the parent tube, an additional message pops up to tell the user that a dilution factor should not be entered at the analyser if entered and applied in Remisol Advance.



3.15 Print Patient Reports

3.15.1 Introduction

This option allows the user to print reports for current patient requests. All patient reports include the request creation date, sample ID, and results.

3.15.2 Patient Reports

The following table describes each of the patient reports available in Remisol Advance.

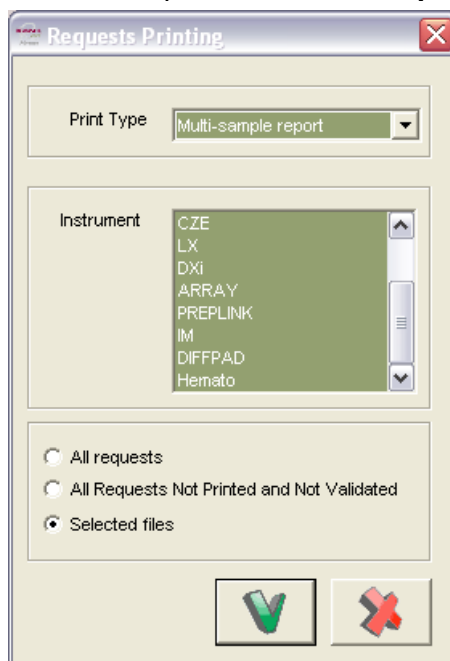
Report	Description
Full report	This report includes the complete demographics, units, reference ranges and flags, as well as the last archived results.
Full report with comments	This report includes the same as the above option in addition with the comments.
Line report	This report is a multiple patient summary report. It includes the patient ID, name, birth date and department. This report can be set up to be printed by department (See <i>Setting Up The Remisol Advance Environment, General Setup</i>).
Graphic report	This report prints a graphic profile, and includes the complete demographics.
Multi-Sample report	This report prints the current results and the last 5 archived results, if available. It includes the complete demographics, units, and reference ranges.
Instruments Reports	This report automatically selects the right format depending on the graphical information received (from LH / GenS / Hmx / Act5 / CZE / DxH).
Scan Data + Graph.Prof.	This report is based on the 'Scan Data' report in addition with the graphic profile for Igg, Iga, Igm

3.15.3 Requests Printing Window

To open the **Requests Printing** window, click on the **Print** toolbar button. The **Requests Printing** window can be opened from the following windows:

- The **Request Sheet** window for a selected patient
- The **Request List** window once a patient was selected

The following **Requests Printing** window was opened from the **Request Sheet** window:



If the **Requests Printing** window was opened from the **Request List** window, the **This Request Only** option would read **Selected Files**.

3.15.4 Procedure

Follow the steps below to print a report.

1. Select a report type from the drop down list.
2. Select one or more instruments. The patient report will only include samples assigned to the selected instruments.
3. Select one of the following print options:
 - a. **All Requests**: to print all current requests.
 - b. **All Requests Not Printed and Validated**: to print all current requests which have not been printed but have been validated.
 - c. **This Request Only**: to print only the opened patient request. This option is available if the Requests Printing window is opened from the Request Sheet Window.
 - d. **Selected Files**: to print only the selected patient requests. This option is available if the Requests Printing window is opened from the Request List Window.
4. Select **OK** to initiate the print. Select **Cancel** to cancel and exit the window.

3.15.5 Printing Graphic Reports

If you select graphic report in the **Print Type** field, the **Profiles Selection** window will open.

Select a profile from the list then select **OK** to print only the parameters in the profile, or select **Cancel** to print all the parameters for the selected requests.

3.16 Comments

3.16.1 Introduction

This option allows the user to enter, edit or review technical notes and result interpretations for a patient's current request. Technical comments will be printed on CZE Graph report and CZE + Graphic profile. Interpretations will be printed on CZE Graphic report, CZE + Graphic profile, GENS Graph report, HMX Graph report and ACT5 reports.

3.16.2 Comments Window

To open the **Comments** window, click on the **Comment** toolbar button. The **Comments** window can be opened from the following windows:

- The **Request Sheet** window for a selected patient request
- The **Request List** window after the selection of a patient request
- The **Sample List** window after the selection of a sample

3.16.3 Procedure

1. Enter the appropriate information in the **Technical Comments** field and the **Interpretation** field. Use the mouse or the **[Tab]** key to move between fields. Do not use the **[Enter]** key to move to the next line in a field (this will save and close the window). Text will wrap automatically.
2. Select **OK** to save and close the window, or **Cancel** to cancel and exit the field.

3.16.4 CZE Interpretations and Comments

CZE interpretations and comments appear in the Interpretation portion of the **Comments** window. These interpretations are identified according to parameter type SPE and IFE/s.

3.16.5 Comments Flags

When some information is entered in the **Comments** window, one of the following flags will appear next to the patient name in the title bar of the **Request Sheet** window.

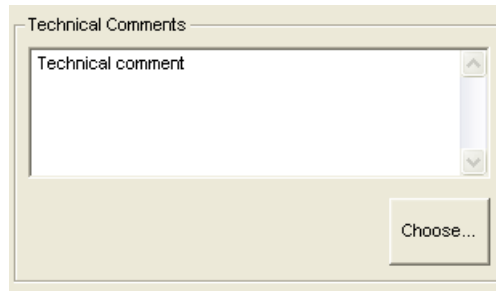
- (X,) - Information entered in the **Technical Comments** field.
- (,X) - Information entered in the **Interpretation** field.
- (X,X) - Information entered in both fields.
- (++) - Warns you that the last archived request for this patient included more results than the current request (access this archived request with the **[CTRL-A]** key combination)

In the example below, information was entered in both fields of the **Comments** window.

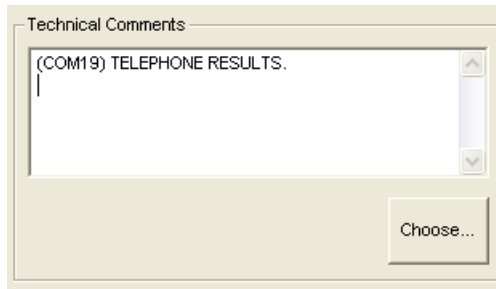


3.16.6 Enter a Predefined Comment

The user can enter a predefined comment in either the **Technical Comments** field or the **Interpretation** field of the **Comments** window. See **configuration** for information on defining comments. To enter a predefined comment in either field, type an & (ampersand) followed by the predefined comment abbreviation, as shown in the example below.

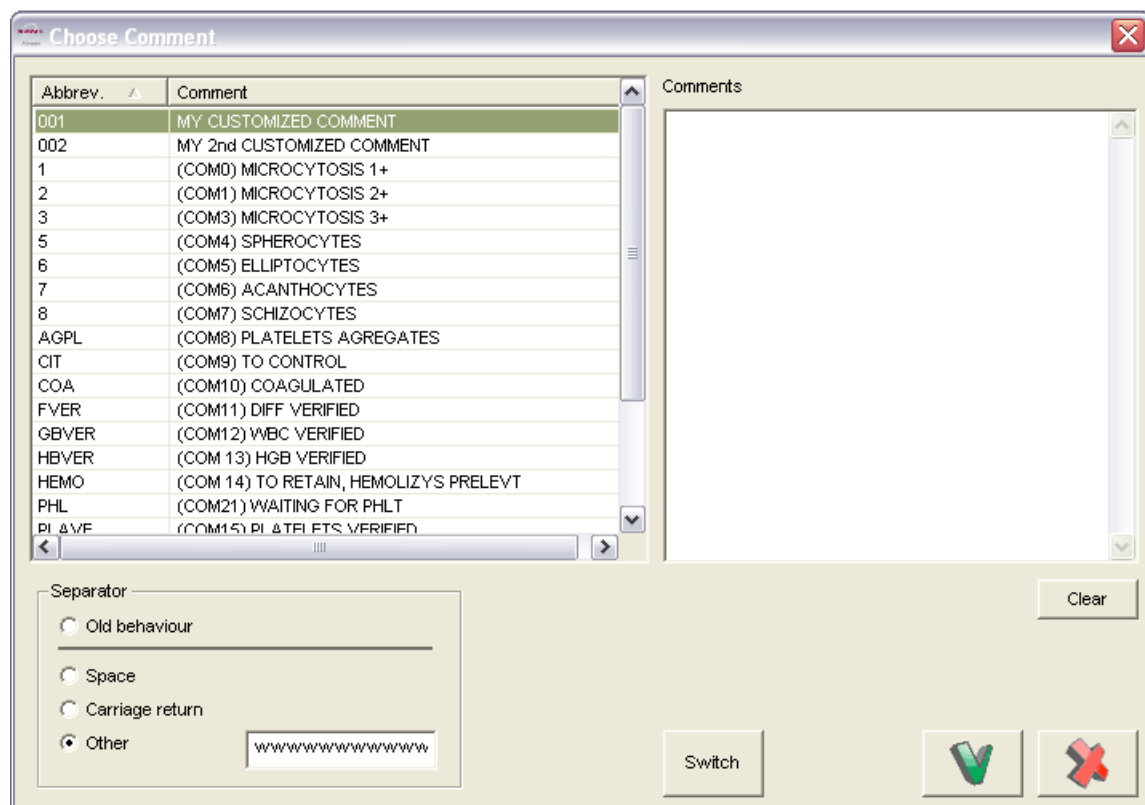


Select **OK** to save and close the window. When the **Comments** window is opened again, the defined comment automatically appears in the field, as shown in the example below.



3.16.7 Selecting Predefined comments

The comment management window, accessible via the **Choose** button was thoroughly reviewed as can be seen below:



Instead of entering comments manually, you can still select them by double-clicking them in the list in the left panel; the manual entry manages:

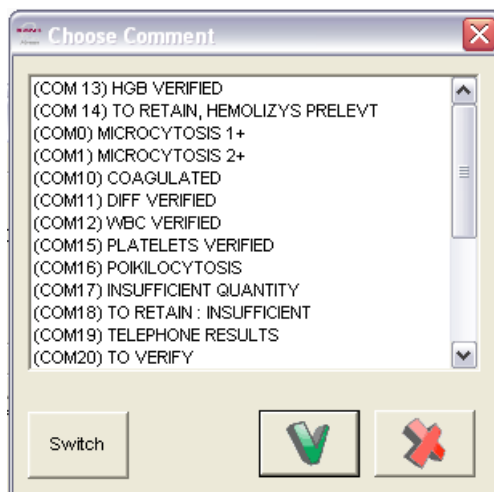
- Intellisense: automatic recognition of the current character entry and listing of all matching comments,
- On-the-fly replacement of abbreviations.

Also, it is possible to select new types of Separators between the selection of several predefined comments:

- Old behavior: same as carriage return, each comment is added on a separate line,
- Space, a space is inserted between each comment,
- Carriage return, each comment is added on a separate line (same as the old behavior),
- Other: this allows the selection of a user defined separator.

This working mode is also implemented in the Intranet and the Diffpad.

At all-time it is possible to switch back to the previous behavior by clicking on the **Switch** button:



3.17 Graphic Profile

3.17.1 Introduction

This option allows the user to view a patient request in graphic format. The results are drawn as percentages of the normal values' average.

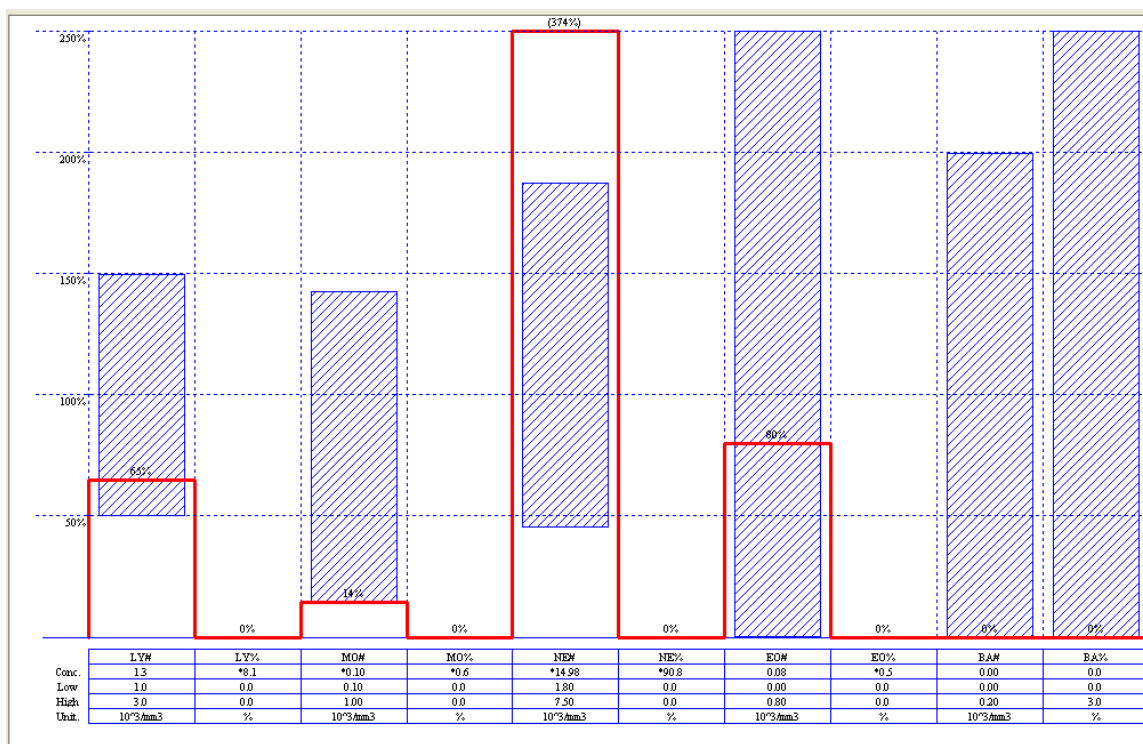
3.17.2 Display Graphic Profile

Follow the steps below to display a graphic profile for a patient request.

1. Open the **Request Sheet** window for a patient, or select a patient in the **Request List** window.
2. Select the **Desk** menu, then select **Graphic**. This will open the **Profiles Selection** window.
3. Select a profile (only the profile parameters will be displayed), or make no selection if you want to display all the parameters for the selected request.
4. Select **OK** open the graphic window. Select **Cancel** to cancel and exit the window.
5. If you right-click in the graphic profile window and select **Atlas** from the contextual menu, this will superimpose an atlas on the current graphic profile (See **Configuration** for more information on atlases).
6. If you right-click in the graphic profile window and select **Previous Results** from the contextual menu, this will open a new window listing the previous results (date/time) available.
7. Select the previous results you are interested in then click **OK** to superimpose them on top of the current results. Select **Cancel** to cancel and close the window.
8. To close the graphic profile window, click on the **cross** button in the top right corner next to the help menu.

3.17.3 Graphic Profile Window

The following window is an example of a graphic profile.



The graphic profile contains the following information:

- Results are plotted as percentages of the normal values' average (red horizontal bars). Each result is labelled with the calculated percentage. A result below the reference mean is inferior to 100%, a result above the reference mean is superior to 100%. Alphanumeric results are not plotted.
- The reference range's minimum and maximum are plotted as a percentages of the reference values' average, and the reference range is represented on the graph as a box with blue diagonal stripes.
- The scale of the graph is 0 to 250%. Any results exceeding 250% are plotted at 250% and labelled with the actual calculated percentage.
- The parameter name, the actual result, the reference range' minimum and maximum, and the unit are listed at the bottom of the graph.

To print the displayed graphic profile (not a patient report), click on the **Print** toolbar button. Refer to the Print Patient Reports section in the current chapter for information on printing a graphic profile patient report. Click on the **Exit** button at the top of the screen to exit the graphic profile window.

3.18 Deleting a Request

3.18.1 Introduction

The user can delete a whole patient request or specific results or parameters within a patient request.

NOTE:

Deletion is irreversible. Deleted patient requests or results cannot be recovered.

3.18.2 Delete whole Requests

To delete a whole request, click on the **Delete** toolbar button. Requests can be deleted from the following windows:

- The **Request Sheet** window for a selected patient request
- The **Request List** window after the selection of one or more patient requests

3.18.3 Delete Run

To delete a run, select the run you want to delete, then click on the **Delete** toolbar button.

3.18.4 Delete selected Results

To delete a result (or results), select the result (or results) then click on the **Delete** toolbar button.

3.18.5 Delete Parameter

To delete a parameter (or parameters), select the parameter (or parameters) then click on the **Delete** toolbar button.

3.19 Deleting a Sample

3.19.1 Introduction

This option allows the user to delete one or more samples. If all the samples assigned to a patient request are deleted, the entire patient request is deleted. Otherwise, only the parameters assigned to the deleted sample are deleted from the request.

3.19.2 Procedure

To delete samples in the **Sample List** window, select one or more samples, then click on the **Delete** toolbar button.

NOTE:

This action is irreversible. The deleted samples cannot be recovered.

3.20 Manual Host Transmission

3.20.1 Introduction

This option allows the user to manually upload results to the host.

Results can be manually uploaded to the host from one of the following windows:

- The **Request Sheet** window for a selected patient request
- The **Request List** window after the selection of one or more requests
- The **Sample List** window after the selection of one or more samples

3.20.2 Procedure

To manually upload the selected results, click on the **Desk** menu, then select **Host Transmission**. You can also click on the **Host Transmission** toolbar button. Selected results will be uploaded.

3.20.3 Upload by sample or by run

A specific sample/tube or run may now be uploaded to the LIS; please check the description of the Request Sheet Popup menus.

3.21 Request Search

3.21.1 Introduction

This option allows the user to search the current requests for a specific patient request. This is useful if a large number of patients are processed before current requests are archived.

To open the **Request Search** window, click on the **Desk** menu, then select **Search Request**, or click on the **Search** toolbar button, or press **[CTRL+F]** keys.

Request Search

Sample ID Tray Cup

Name Patient ID

☒ Run From To

☐ Tagged: ☐ Request ☐ Sample ☐ Patient

Ignored for the research into the archive

20/04/2011 11:12:28 077/05 H00001	0006261	SMITH JOHN
20/04/2011 10:18:00 035/01 S00004	4528754	DALMAS JACK
20/04/2011 13:28:14 000/00 H00003	2864277	BOTH THEODORE
20/04/2011 10:18:00 035/02 S00005	9457618	GRUSELLE BENJAMIN
20/04/2011 10:18:00 035/04 S00007	2451896	JOLI ANGELINA
20/04/2011 10:18:00 035/05 S00008	8457261	CAMPBELL JOHN
20/04/2011 10:18:00 035/06 S00010	6485196	BRONSON CHARLES
20/04/2011 10:18:00 035/07 S00012	4455187	BLONDIN GOOD
20/04/2011 10:18:00 036/01 S00014	3356195	MERGINE PASCALETTE
20/04/2011 10:18:00 002/01 S00016	5554817	BANNER BRUCE
20/04/2011 11:20:34 041/06 H00011	2021970	KRIEGS KARL H.
20/04/2011 10:18:00 002/02 S00017	1155421	PARKER PETER
20/04/2011 11:22:13 041/08 H00013	3350733	JONG KARTS DE

The archived requests are in blue in the list above

3.21.2 Procedure

To search for a patient request, enter your search criteria in one or more of the search fields.

you can type in the first letters/digits in any of the search fields wild card; an * (asterisk) is a wild card for all following characters, whereas a ? (question mark) is a wild card for a single character.

Example:

Search for the name Adams by entering Ad* or Ad??s in the Last Name field.

Click on **OK** to initiate the search. Click on **Cancel** to cancel the search and close the window.

If your search criteria match only one patient request, the **Request Sheet** window for this request will open.

If more than one patient requests match your search criteria, a list of the matching requests will be displayed in the **Request Search** window, as shown in the example window below.

Request Search

Sample ID Tray Cup

Name Patient ID

☐ Run From To

☐ Tagged: ☐ Request ☐ Sample ☐ Patient

Ignored for the research into the archive

000/00 H00003	2864277	BOTH THEODORE
000/00 S00201	0000007	BOND JAMES
000/00 S00046	0000007	BOND JAMES
000/00 S00048	0000007	BOND JAMES
001/01 HT0001	0000007	BOND JAMES
012/02 HT0002	0000007	BOND JAMES
000/00 ST0001	0000007	BOND JAMES
000/00 H00023	0000007	BOND JAMES

The archived requests are in blue in the list above

To open the **Request Sheet** window for a patient request, double-click on it in the list.

The behavior of the Request Search window can be customized with the KEEP_SEARCH_OPEN entry in the [REMISOL] section of the REMISOL.INI file:

- 0: This is the default value and it corresponds to the current behavior, i.e. the Search Request window closes once a request from those brought up by the search criteria has been chosen and opens. The next time the user opens the Request Search window, it is blank; the previous search criteria have not been saved.
- 1: The search criteria and the results they brought up are saved yet the Request Search closes when one of the requests brought up by the search criteria is opened. The next time the Request Search window is opened, the previous search criteria are filled in.
- 2: The Request Search window brings up results from the search criteria yet it remains open even when one of the requests brought up has been opened, enabling the user to open a second request should the first one not be the one they are looking for. Once the Request Search window is closed, the previous search criteria are not saved.

3.21.3 Filtering with Tags

It is possible to search for **Requests**, **Samples** or **Patients** that were previously tagged.

You need to check the **Tagged** option; once the option is checked, further criteria are available, the Request, Sample and Patient can take 3 status:

- Unchecked: the Request / Sample/ Patient should not be tagged,
- Checked: the Request / Sample/ Patient should be tagged,
- Checked and greyed-out: whether the Request / Sample/ Patient is tagged or not, this information is ignored.

3.21.4 Tagging with Rules

2 New rule actions, TAG and UNTAG, are available to allow tagging the:

- Request,
- Sample,
- Patient.

Depending on the above item chosen, the Rule Wizard will contextually provide the user with the relevant options and tags as defined in Remisol Advance (please see the Rules chapter for further detail).

3.21.5 Automatic search through Archives

From Version 1.5, if search criteria do not return any matching result from the current requests, then the search is AUTOMATICALLY carried out through the Archives.

If matching results are returned from the Archives then these are displayed in blue.

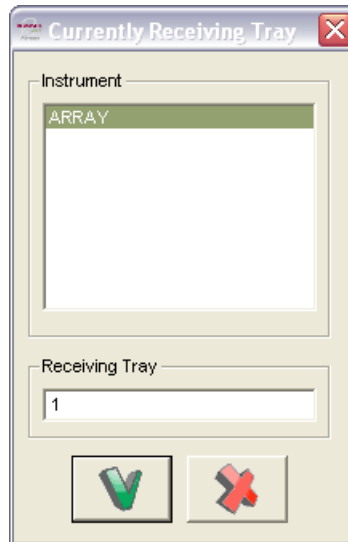
3.22 Array Receiving Tray

3.22.1 Introduction

Array systems do not assign tray numbers to samples. If you are uploading results from the Array which were not programmed in Remisol Advance, and if you are only using cup numbers (no sample ID), then you must assign a virtual tray number (receiving tray) for each Array.

3.22.2 Currently Receiving Tray Window

To open the **Currently Receiving Tray** window, click on the **Desk** menu, then select **Array Receiving Tray**.



3.22.3 **Procedure**

The following table describes the procedure to assign a receiving tray to an Array.

- 1 Select an Array instrument in the **Instrument** field.
- 2 Enter a receiving tray number in the **Receiving Tray** field.
This tray number will be assigned to the samples uploaded from the Array instrument.
- 3 Select **OK** to save and close the window. Select **Cancel** to cancel and exit the window.

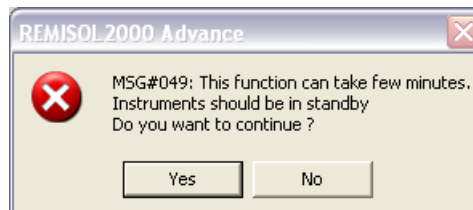
3.23 ***Automatic Merge***

3.23.1 **Introduction**

This option automatically merges all patients with more than one current request into one request for each patient.

3.23.2 **Procedure**

To automatically merge current requests, click on the **Desk** menu, then select **Automatic Merge**. The following window will appear.



Select **Yes** to initiate the merge. Select **No** to cancel the merge.

3.24 ***Statistics***

3.24.1 **Introduction**

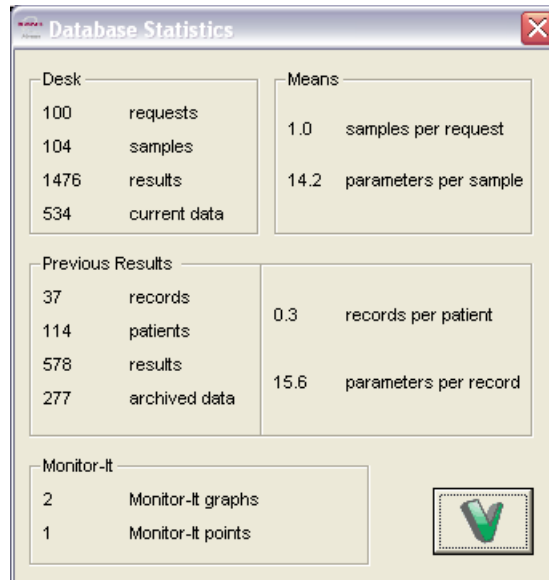
This option calculates database statistics (number of requests, number of samples, etc.) for current requests and archived requests.

3.24.2 **Procedure**

To calculate database statistics, click on the **Desk** menu, then select **Statistics**. This will open a message window. Select **Yes** to initiate the statistics calculation. Select **No** to cancel.

If you clicked on **Yes**, Remisol Advance will calculate the statistics and display them in the **Database Statistics** window.

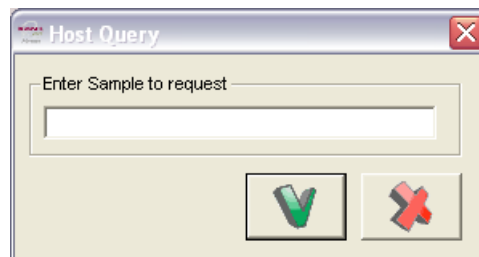
Monitor-It points and graphs are also displayed in the Statistics.



Select **OK** to close the window.

3.25 Querying the LIS

You can query the LIS for a particular sample Id by using the **Desk - Host Query** menu or the **[CTRL] + [H]** shortcut key.



Enter the sample ID you are looking for and press OK

This is only useful in case of communication problem with the LIS

4 Archives

4.1 View Archived Results

4.1.1 Introduction

This option allows you to view and print archived patient results.

4.1.2 Previous Results Window

Use one of the following options to open the **Previous Results** window To view archived results for a patient:

- Click on the **Previous Results** toolbar button
- Open the **Request Sheet** window for this patient. Click on the **Archives** menu and select **Previous Results Search** or use the [CTRL] + [A] shortcut.
- Open the **Previous Results Search** window. This option is described later in this section.
- Double click on a patient listed in the **Patient Records Management** window.

The following is an example of the **Previous Results** window for a selected patient:

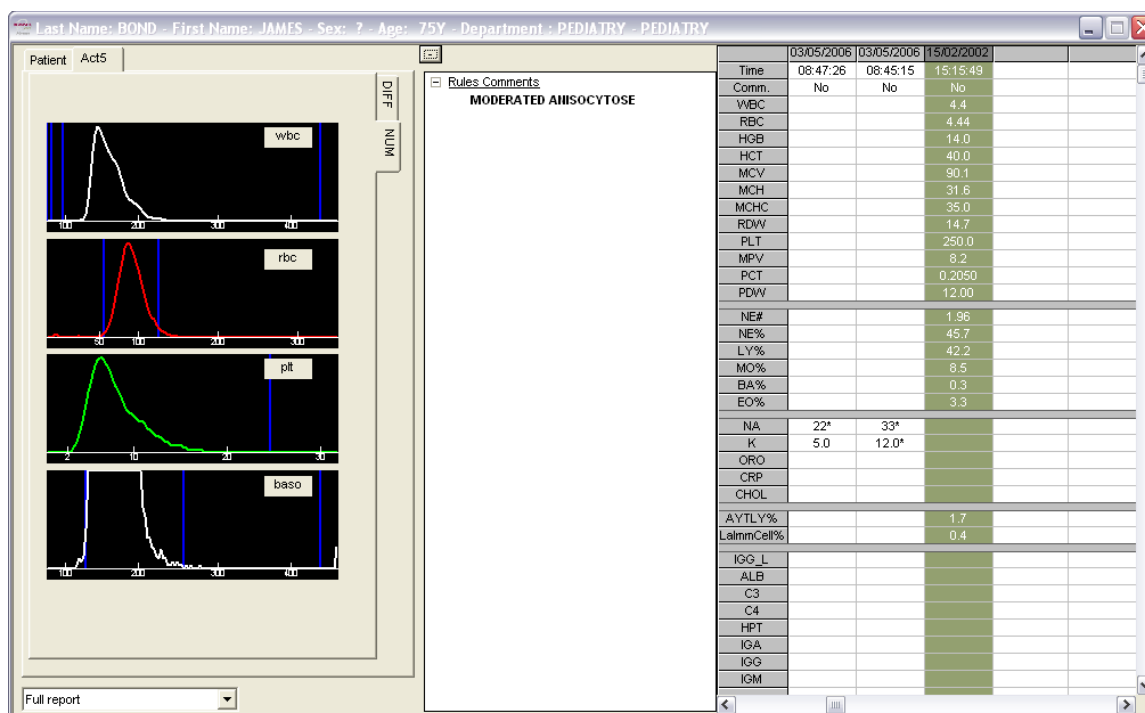
The screenshot shows the 'Previous Results' window for patient JAMES BOND. The patient details on the left include: Patient ID: 007, Last Name: BOND, First Name: JAMES, Birth Date: 01/01/1932, Address: (empty), Comment: (empty), Dgt.: PEDIATRY - PEDIATRY, Age: 75 Years, Sex: Unknown, and Patient Tag: (unchecked). The results table on the right has columns for dates: 29/05/2006, 17/05/2006, 17/05/2006, 17/05/2006, 03/05/2006, and 03/05/2006. The table contains various test results such as Time, Comm., NA, K, ORO, CRP, CHOL, IGG_L, ALB, C3, C4, HPT, IGA, IGG, IGM, and TRF.

	29/05/2006	17/05/2006	17/05/2006	17/05/2006	03/05/2006	03/05/2006
Time	12:30:27	12:17:57	12:17:16	10:31:08	08:48:23	08:48:23
Comm.	No	No	No	No	No	N
NA					11*	2.0
K					4.1	5.0
ORO		1.00		2.00*		
CRP		1.00*		2.00		
CHOL	300					
IGG_L		4.20	4.10			
ALB		1.0*		1.0*		
C3		1.00		2.00*		
C4		1.00*		1.00*		
HPT		1.00		3.00*		
IGA		1.00		3.00*		
IGG		1.00*		2.00*		
IGM		1.00		1.00		
TRF		1.00		2.00		

The results table in the **Previous Requests** window contains the following information:

- Archived results are listed in columns. Use the right and left arrows to view additional requests.
- The header for each column is the date the request was created.
- The top row of each request indicates whether a technical comment or interpretation was added to the request (Yes or No).

- The remaining rows list the results for each parameter. Use the up and down arrows to view additional results for each request.
- Results which fell outside the validation range are indicated by an * (asterisk) after the result.



This previous result window may also display some graphical information and comments (if available).

To see them, select a column (by clicking on the column header, or date information). The window resizes automatically in order to display the graphics and comments.

4.1.3 Multi-run archiving

With version 1.5 came the possibility to archive multi runs in a request, typically an archived request with multi runs looks like this:

	20/04/2011
Time	15:06:24
Rack/Pos	
Comm.	No
B_WBC	5.6
B_RBC	4.78
B_HGB	15.3
B_HCT	44.0
B_MCV	89.7
B_MCH	32.4
B_MCHC	34.6
B_RDW	12.6
B_PLT	264.0
B_MPV	9.5
B_PCT	0.2500
B_PDW	15.00
B_NE#	1.83
B_NE%	33.7
B_LY%	49.9
B_MO%	8.3
B_BA%	0.5
B_EO%	7.6
B_AYTLY%	2.3
B_LalmCell%	0.6

The grey ">>" (arrow) zone allow the expansion or retraction of archived runs; this is what it looks like when it is expanded:

Last Name: MICKA - First Name: PAT - Sex: ? - Age: - Department: -

Patient	Act5	+	20/04/2011	20/04/2011	20/04/2011
Patient ID.	7866878		Time 15:06:24	16:22:54	16:22:54
Last Name	MICKA		Rack/Pos	0/0	0/0
First Name	PAT		Comm.	No	
Middle Name			B_WBC	5.6	5.4
Birth Date			B_RBC	4.78	4.71
Address			B_HGB	15.3	15.2
Comment			B_HCT	44.0	44.0
Dgt.			B_MCV	89.7	93.4
Doct.			B_MCH	32.4	32.4
			B_MCHC	34.6	34.6
Age		Years	B_RDW	12.6	15.5
			B_PLT	264.0	270.0
			B_MPV	9.5	9.5
			B_PCT	0.2500	0.2550
			B_PDW	15.00	15.25
			B_NE#	1.83	1.83
			B_NE%	33.7	33.7
			B_LY%	49.9	49.9
			B_MO%	8.3	8.3
			B_BA%	0.5	0.5
			B_EO%	7.6	7.6
			B_AYTL%	2.3	2.3
			B_LalmCell%	0.6	0.6

4.1.4 Creating a new request from an archived run

At times, it may be necessary to carry out a rerun for a request long after a prior run (sometimes a few days). This rerun (on the same sample) requires the creation of a request that is identical to the one archived; in order to make it easier for the user, a new action was made available in the contextual menu:

Other Previous Results
Archive information
Tube History
Result History
Create a request from this run

Create a request from this run allows the creation of a new request identical to the one archived: same parameter(s), same patient and same sample ID; a popup window informs the user the request is created and provides its sample ID; if the tube is still available in the current request then the creation of the request is cancelled.

Parameters may be deleted from or added to the original ones. If the addition of (a) new parameter(s) requires the creation of a new tube (different sample type or nature), the tube information window will be displayed for each additional tube after validation of the parameter list.

The first new current sample will automatically get the information of the tube of the archived run (sample id and rack pos) and Remisol will abide by the general options set at the time of creation of the new request (automatic assignment and automatic download) yet it is possible to define specific commands thanks to the REMISOL.INI file:

```
[REMISOL]
/* Automatic assignment of a request created from an archived request. Possible values:
   0, disabled & 1 (default), the automatic assignment to the instrument is enabled. */
Archive_RequestCreation_AutoAssign=1
/* Automatic download of a request created from an archived request. Possible values: 0,
   disabled & 1 (default), the automatic download to the instrument is enabled. */
Archive_RequestCreation_AutoDownload=1
/* Management of the position of the sample of a request created from an archived
   request. Possible values: 0, the archived run rack and position are not used (blank
   fields) & 1 (default), the archived run rack and position are used. */
Archive_RequestCreation_KeepRackPos=1
/* Modification of the Sample ID via the display of the Sample ID assignment window.
   Possible values: 0, the sample ID assignment window is displayed & 1 (default), the
   sample ID assignment window is not displayed. */
Archive_RequestCreation_KeepSample=1
```

```
/* Display of the request after it is created from an archived request. Possible values:
0, the request is not displayed but a message is & 1 (default): the request is
displayed. */
```

```
Archive_RequestCreation_OpenRequest=1
```

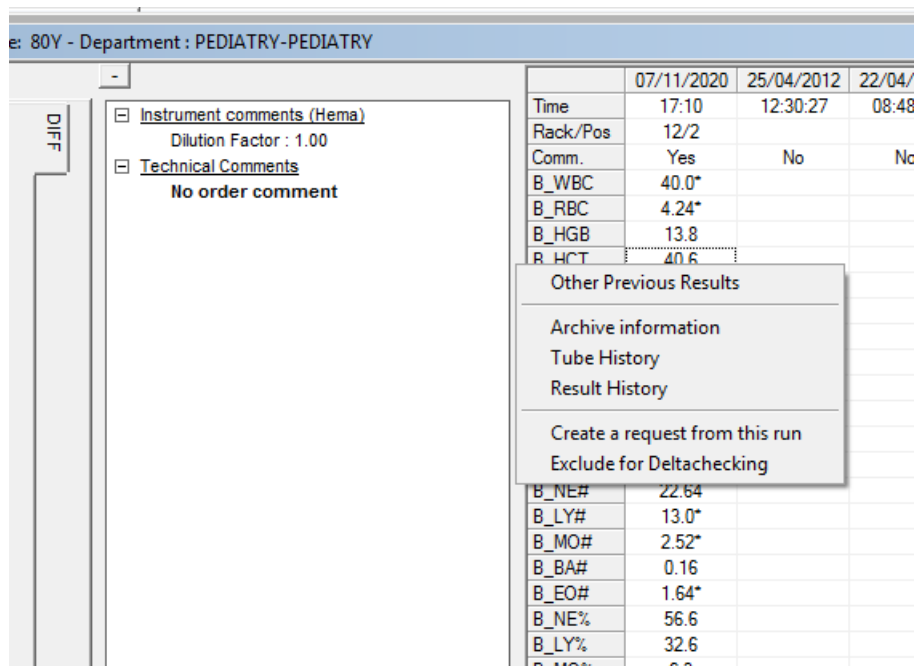
4.1.5 **Exclude an archived run from Delta-check calculation**

Up to version 1.6, if there was an error in a patient record, there was no way to correct the error or delete the run; the only options were to delete the entire patient record or the date of the event.

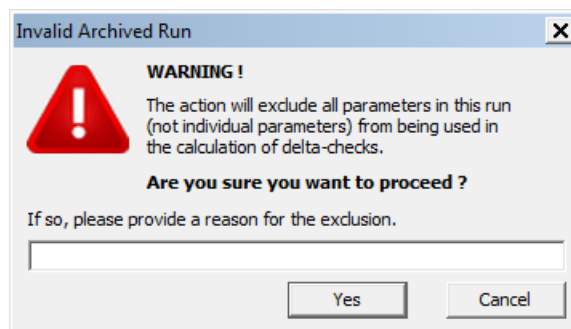
Remisol will now allow the customer to 'hide', and not merely 'Delete' an archived run so that it is not used in the calculation of the Delta-check.

Use the **Exclude from Delta-checking** option to prevent a previous result from being used in the calculation of the Delta-check:

- Right-click in the **previous run** header or column,
- In the contextual menu, choose **Exclude From Delta-Checking**



Yet, you get prompted for a reason for the exclusion:



Once provided and validated it, a Remisol warning comment is attached to the request:

Y - Department : PEDIATRY-PEDIATRY

☐ Instrument comments (Hema) Dilution Factor : 1.00		Time	07/11/2020	25/04/2012	2
☐ Remisol warning Run excluded for deltachecking by SYSADM : This was actually a test tube!		Rack/Pos	17:10	12:30:27	
☐ Technical Comments No order comment		Comm.	Yes	No	
		B_RBC	4.24		
		B_HGB	13.8		
		B_HCT	40.6		
		B_MCV	95.8		
		B_MCH	32.5		
		B_MCHC	34.0		

4.1.6 Archive Information

To view additional information stored with each result, double-click on the table cell containing the result. This will open the Archive Information window for the selected result.

Archive information: B_WBC

Sample ID :	H00009
Sample modification:	-
Stat:	-
Validation:	v
Result Flag:	-
Delta check:	-
Sent to the host:	-
Number of results:	2
Source:	Instrument : ACT
Dilution factor:	1.00
Reagent(s):	
Validated by:	SYSADM
Received on :	20/04/2011 16:27:54
EQC Status:	

History

The following table describes each of the items in the Archive Information window.

Field	Flag	Description
Sample ID	—	Sample ID of result
Sample modification (sample flag)	M	Sample ID was manually changed
Stat (patient flag)	S	Stat request
Validation (result flag)	V v	Result validated automatically Result validated manually
Result Flag (result flag)	M C U D	Result manually entered or edited Calculated result UPC result Dilution factor applied to result
Delta check (result flag)	D X	Result passed delta-check Result failed delta-check

Send to host (result flag)	H	Result sent to host
Number of results	—	Number of results
Source	—	Instrument the result was run on
Dilution factor	—	Remisol Advance dilution factor
Reagent(s)	—	Serial of the reagent that was used
Reagent lot number	—	Lot number of the reagent that was used
Validated by	—	Person who validated this result manually.
Received on	—	Date and time of reception
EQC status	—	EQC status flag: • White: no protocol defined / no data available • Green: No mistake • Yellow: Blocked result or Time-out • Red: Protocol in error

Select **OK** to exit the Archive Information window.

4.1.7 Previous Results Functions

To use these functions, a request must be selected by clicking on the column header (date the request was created). This will highlight the column you selected. The following functions are available:

- **Comments:**
To view the **Comments** window for the selected request, click on the **Comment** toolbar button. Archived comments cannot be edited.
- **Graphic Profiles:**
To view a graphic profile for the selected request, select the **Desk** menu, then select **Graphic**. All the **Graphic Profile** window functions are available, including printing.
- **Print:**
To print a patient report for the selected request, click on the **Print** toolbar button. The report type is selected in the **Print** option field on the left side of the **Previous Results** window. Multiple requests can be printed through the **Print Archived Results** window.

4.1.8 Previous Results Search

To search for an archived patient without first opening the **Request Sheet** window, click on the **Previous Results** button or select the **Archives** menu, then select **Previous Results Search**. This will open the **Previous Results Search** window (blank **Previous Results** window).

Follow the steps below to search for archived patient results in the **Previous Results Search** window.

1. To search for archived patient results in the **Previous Results Search** window,
 - a. type in the Patient ID or Last Name,
 - b. type in the first digits in the Patient ID field, or the first letters in the Last Name field, followed by a wild card; an * (asterisk) is a wild card for all following characters, and a ? (question mark) is a wild card for a single character.

Example: *Search for the name Adams by entering Ad* or Ad??s in the Last Name field.*

2. Press **[Enter]** after entering the search criteria. The **Demographics Search** window will open.
3. Select a patient from the list in the **Demographics Search** window.
4. Select **OK** to confirm the selection. Select **Cancel** to cancel the search and return to the **Previous Results Search** window.

4.1.9 Other Previous Results

If you wish to view archived results for another patient without exiting the **Previous Results** window, click on the right mouse key to open the **Previous Results** popup menu.

Other Previous Results

Select **Other Previous Results** to clear the **Previous Results** window. This allows you to enter new search criteria.

4.2 *Archive Current Requests*

4.2.1 Introduction

Current requests should be archived on a regular basis (at least once a day is recommended). Too many current results may cause performance issues. Also, delta checks are performed against the last archived result. If you are connected to a host, you have the option to automatically archive requests after all results have been sent to the host. See *"Selecting this type of instrument will allow you to assign a request to this device directly from the request sheet (the contextual menu will display the instrument name you enter)"*.

1. Select the **Archives** menu, then select **Archive Current Request(s)**. This will open a message window.
2. Select **Yes** to open the **Requests Archiving** window. Select **No** to cancel and exit.
3. If you selected **Yes**, the **Requests Archiving** window will open.

4. Select one of the following options:
 - a. Tagged: to archive results with a sample tag.
 - b. All: to archive all current requests.
 - c. Selected :to archive the results selected (one or more) in the **Request List** window.
5. Enter a date range to archive. The default date range is from the last archive date to the current date. The date format is dependant on Windows regional settings, (i.e. MM/DD/YYYY for the US, DD/MM/YYYY for the UK & France, etc....).
6. Optional: Select one or both of the following options:
 - a. Archive Only Validated Requests: If you wish to archive only the requests with all their results validated.
 - b. Archive Only Viewed Requests: If you do not want to archive any request that has has not been reviewed yet.
7. Optional: If you are connected to a host, deselect the **Archive Only Recalled Requests** option if you wish to archive requests with one or more results that have not been sent to the host.

Archived results cannot be uploaded to the host.

8. Archive Graphs: Select this option if you want to archive graphs when archiving requests.

9. Select one or more instruments from the list.
10. Check the required options out of the Archiving options.
11. Select **OK** to initiate the archiving, select **Cancel** to cancel the archiving and close the window.
12. If you selected **OK**, a **Requests Archiving log** window opens.

NOTE:

If none of the current results fit the criteria selected in the Requests Archiving window, the **Requests Archiving log** window will not open, and nothing will be archived.

4.2.2 Requests Archiving Window

The status (archived or not archived) of each of the requests selected for archiving is displayed in the **Requests Archiving log** window. If the request is not archived, the reason will be provided. The following requests will not be archived:

- Requests with no results.
- Requests with "Unknown" demographics.
- Results not uploaded to a host (i.e. Request not recalled).

Pending results in a partially complete request will not be archived with the rest of the results.

4.3 Print Archived Results

4.3.1 Introduction

This option allows the user to print one or more archived requests. Requests can also be printed from the **Previous Results** window.

4.3.2 Printing Archived Results Window

To open the Print Archived Results window, click on the **Archives** menu, then select **Print Archived Record(s)**.

Last Name	First Name	Patient ID	Date	Time	Dep
AUBERT	JEFF	NHQA17	09/03/2006	14:34	
DEJAEGERE	PATRICE	688989	13/02/2006	10:22:05	
DELECOURT	PHILIPPE	669898	13/02/2006	10:27:54	
DOORN VAN	E.	1040524	13/02/2006	10:14:28	
DUINEN V-KOU	C	409979	13/02/2006	10:15:16	
DUTOIT	PASCAL	768768	13/02/2006	10:25:03	
FENS-TROUWBO	J	1019930	13/02/2006	10:15:46	
FENS-TROUWBO	J	1019930	13/02/2006	10:15:46	
FENS-TROUWBO	J	1019930	13/02/2006	10:15:46	
FRANCES	G.M.	1163671	13/02/2006	03:55:37	
GAVEL	JEANLOUIS	98088	15/02/2006	14:41:32	
GAVEL	JEANLOUIS	98088	15/02/2006	15:15:49	

4.3.3 Procedure

Follow the steps below to extract and print archived patient requests.

1. Enter the patient's last name in the **Patient Name** field, in full or type in the first letters followed by a wild card symbol; an * (asterisk) is a wild card for all following characters, and a ? (question mark) is a wild card for a

single character.

Example:

Search for the name Adams by entering Ad or Ad??s.*

2. Enter a date range in the **From** and **To** fields.
3. Select one of the following sort options in the **Sorted by** field:
 - a. Alphabetical order
 - b. Date - Time
 - c. Department
4. Select **Extract** to extract the archived patient requests which match the criteria selected in Steps 1 to 3.
5. The extracted archived patient requests will appear in the table on the left side of the window. The following information is listed for each request:
 - a. Last Name
 - b. First Name
 - c. Patient ID
 - d. Date of request creation
 - e. Time of request creation
 - f. Department

Use the left and right arrow keys to view all the columns in the table.

6. Select one of the following report types from the drop-down list in the **Type** field:
 - a. full report
 - b. full report with comments
 - c. line report
 - d. graphic report
 - e. multi-sample report
 - f. Scan Data
 - g. Gen.S Graphic report
 - h. HMX Graphic report
 - i. Act5 Graphic report
 - j. Contextual Hematology report
7. Select **Print** to print the selected patient reports from the extracted patient requests. Requests will be printed in the order selected in Step 3. Select **Cancel** to cancel the print and close the window.

4.4 Result Statistics

4.4.1 Introduction

This option calculates results statistics (count, min, max, and mean) for each archived parameter.

4.4.2 Result Statistics Window

To open the **Result Statistics** window, click on the **Archives** menu, and then select **Result Statistics**.

Results Statistics

From: 05/07/2003 To: 05/07/2007

☐ Include Calculated Parameters

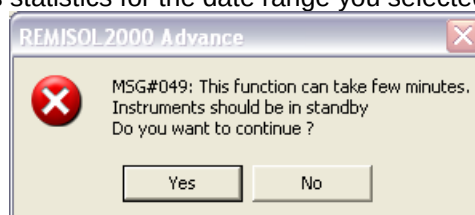
Param.	No.	Min	Max	Mean
WBC	23	2.5	18.9	7.8
RBC	23	1.45	5.47	4.17
HGB	23	4.2	16.4	11.6
HCT	23	12.8	47.7	38.3
MCV	23	86.4	102.1	92.0
MCH	23	18.1	38.5	27.9
MCHC	23	21.0	43.5	30.1
RDW	23	11.3	15.9	13.7
PLT	23	73.0	450.0	239.3

Extract Print End

4.4.3 Procedure

Follow the steps below to calculate and print results statistics.

1. Enter a date range in the **From** and **To** fields.
2. Select the **Include Calculated Parameters** option if you want to include calculated parameters in your statistics.
3. Select **Extract** to calculate results statistics for the date range you selected. The following window will open:



4. Select **Yes** to calculate the results statistics. Select **No** to cancel and close the window.
5. The following results statistics are calculated for each parameter:
 - a. No. - count
 - b. Min - minimum result
 - c. Max - maximum result
 - d. Mean
6. Select **Print** to print the calculated results statistics.
7. Select **End** to close the window.

4.5 Patient Records Management

4.5.1 Introduction

The **Patient Records Management** window is used to save or delete archived patients. Old archive and demographics records should be deleted on a regular basis to prevent performance issues (every 7 to 60 days as a recommendation). The user may first save archived patient data to a backup file.

NOTE:

The Remisol Advance can be set up to automatically overwrite the oldest archived patient data after a specified number of days. See **Setting Up The Remisol Advance Environment** for more information.

4.5.2 Save Archive Window

To open the **Save Archive** window, click on the **Archives** menu, then select **Save**.

The screenshot shows the 'Save Archive' window with a table of patient data and search filters below it.

Patient ID	Last Name	First Name	Sex	Birthdate	Age	Sample ID	Date
.. 1019930	FENS-TROUWBO	JAMAN	F		8		06/03/2011
.. 2419388	OOSTER	MILU	F		51		06/03/2011
.. 1040524	DOOR	BILL	F		4		06/03/2011
*. 5011255	WIEKENS	MACK	F		16		06/03/2011
.. 4099799	GUINEN	AGOULOU	F		7		06/03/2011
.. 2001122	STORM	JOHNY	F		20		06/03/2011
.. 1163671	FRANCES	GABRIELLA	F		50		06/03/2011
.. 2019870	ROELEVELD	ROSETTA	F		52		06/03/2011
.. 2026035	CLAVIER	NICOLAS	F		12		06/03/2011
*M 5789709	PLINSKEN	SNAKE	?		59		06/03/2011
*M 9808888	GALELE	LOUIS	M		23456791		12/02/2011
*. 4576890	SINGER	GABRIEL	?		90		08/03/2011
*. 0987786	LETAILLEZ	GREG	?		65		06/03/2011

Below the table are search filters:

Patient ID: *
Sample ID:
From: 01/01/1990
Name:
☐ Tagged Patients
To: 06/05/2011

Buttons: Extract, Select All, Save, Delete, Close

The following functions can be done in the **Save Archive** window:

- Extract: Extract patients for backup or deletion
- Delete: Delete one or more extracted patients
- Save: Save one or more extracted patients to a backup file

4.5.3 Extract Archived Patients

Follow the steps below to extract archived patients for backup or deletion.

1. Enter your search criteria in one or more of the following fields:
 - a. **Patient Name**
 - b. **Patient ID**
 - c. **Sample ID**

*In any of these fields, you can type, either in full or simply the first letters/digits of what you are looking for followed by a wild card symbol; an * (asterisk) is a wild card for all following characters, and a ? (question mark) is a wild card for a single character.*

Example: *Search for the name Adams by entering Ad* or Ad??s in the Patient Name field.*

2. Enter a date range in the **From** and **To** fields.
3. Select the **Tagged Patient** to extract only tagged patients.
4. Select **Extract** to extract the archived patients which match the criteria selected in Steps 1 to 3.

Extracted archived patients are listed on the right side of the window. The following information is listed for each patient:

- a. Current Request Flag: an * (asterisk) if the patient has current (non-archived) requests
- b. Patient Tag Flag: M if the patient is tagged.
- c. Last name
- d. First Name
- e. Sex: M for male, F for female, ? for unknown

NOTE:

Patients with current (non-archived) requests cannot be deleted or saved to a backup file.

To view archived results for an extracted patient, double click on the patient in the list.

4.5.4 Delete Archived Patient Records

Follow the steps below to delete selected archived patients in the Patient Records Management window.

1. Extract one or more patients in the Patient Records Management window (See **Setting Up The Remisol Advance Environment**).
2. Select one or more patients from the extracted patients list, or click on **Select All** to select all extracted patients. Patients with current (non-archived) results will not be deleted.
3. Select **Delete** to initiate the deletion. A message window will open.
4. Select **Yes** to delete all results for the selected patients. Select **No** to cancel the results deletion and return to the Patient Records Management window.
5. If you selected **Yes** in Step 3, another message window will open.
 - a. Select **Yes** to delete demographics for all patients which have no results.
 - b. Select **No** to cancel the demographics record deletion and return to the Patient Records Management window.

NOTE:

Deletion is irreversible. Deleted patient records cannot be recovered.

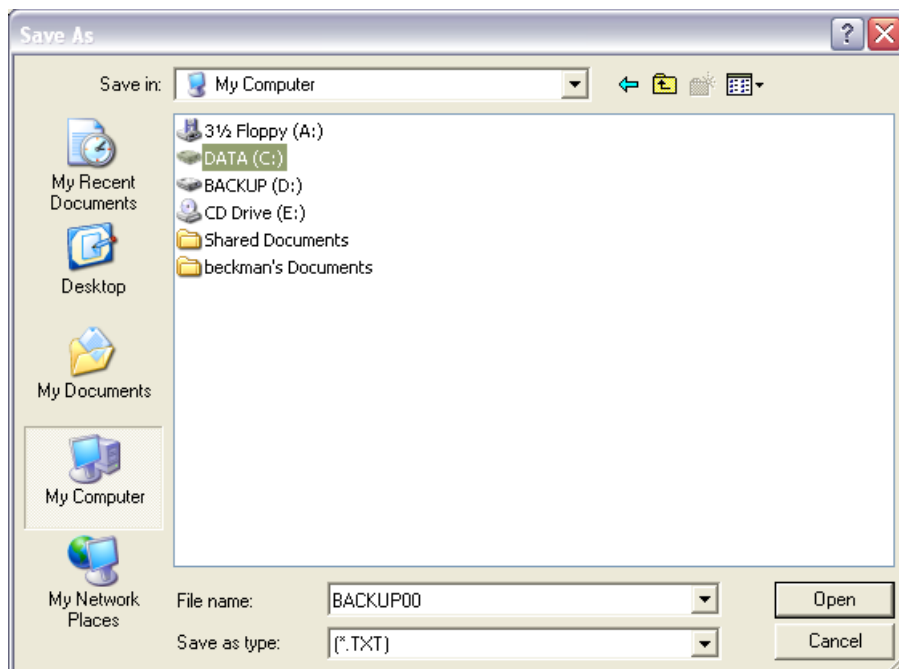
4.5.5 Save Archived Patients Record

Follow the steps below to save selected archived patients to a backup file in the Patient Records Management window.

1. Insert a formatted 3.5" floppy disk into the A:\ drive.
2. Select one or more patients from the extracted patients list, or click on **Select All** to select all extracted patients.
3. Click on **Backup** to open the **Save As** window.

NOTE:

If you do not have a floppy disk inserted in the A:\ drive, an error message will appear. Insert a floppy disk and select **Retry**, or select **Cancel** to open the **Save As** window in a different drive.



4. In the **Save As** window, enter a file name for the backup file in the **File name** field. The default file name is BACKUP00. The file extension is always .TXT. The default backup drive is the A:\ drive, but you can save the file in a different drive or directory by using the **Save In** drop-down list.
5. Select **Save** to continue the backup procedure. Select **Cancel** to cancel the backup procedure and return to the **Patient Records Management** window.
6. If you selected **Save** in Step 5, the selected patients will be saved to the backup file and deleted from the

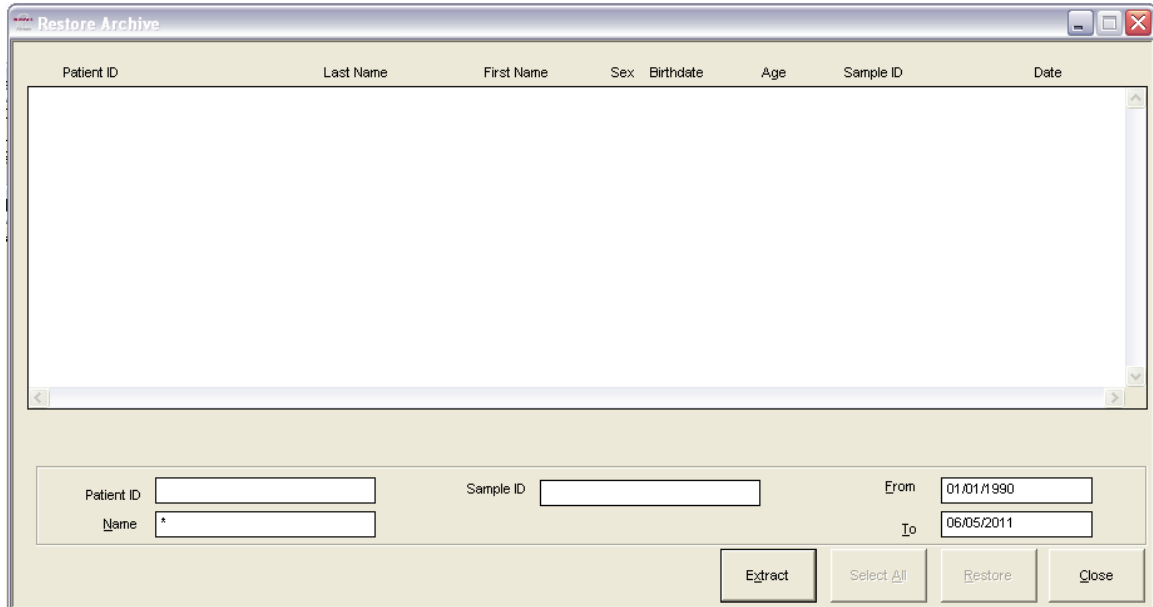
archive database, and a window will open. Select **Yes** to delete the backed up records in Remisol Advance. Select **No** to cancel the deletion and return to the **Patient Records Management** window.

7. If you selected **Yes** in Step 6, a second window will open. Select **Yes** to delete the demographics for all patients that have no results. Select **No** to cancel the demographics record deletion and return to the **Patient Records Management** window.

You can also choose to save these records in another location (C: or D: for the hard drive, or other backup device if available)

4.6 Restore Archived Patients

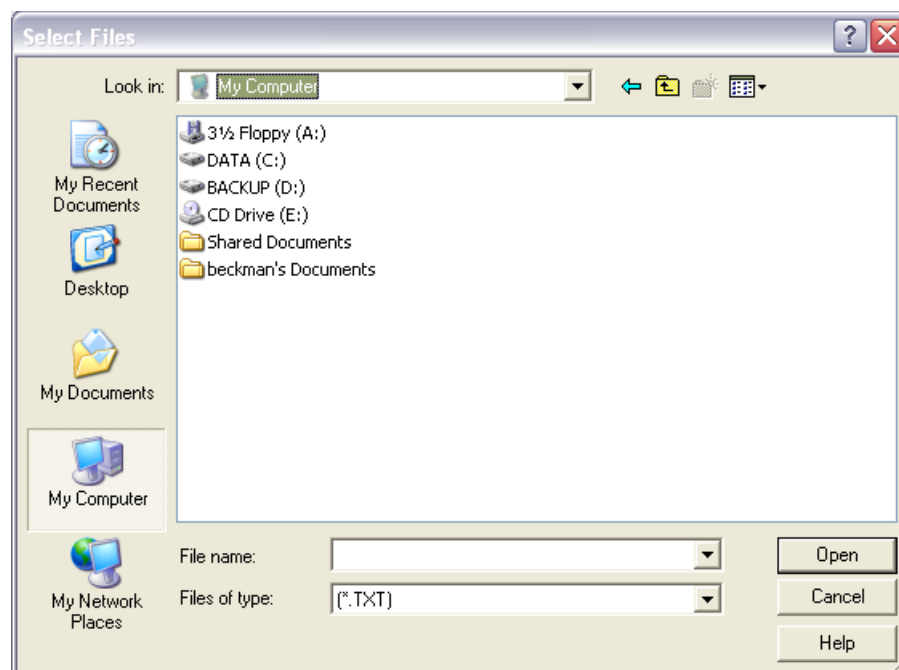
This option allows the user to restore patients from backup file(s) to the archive database.



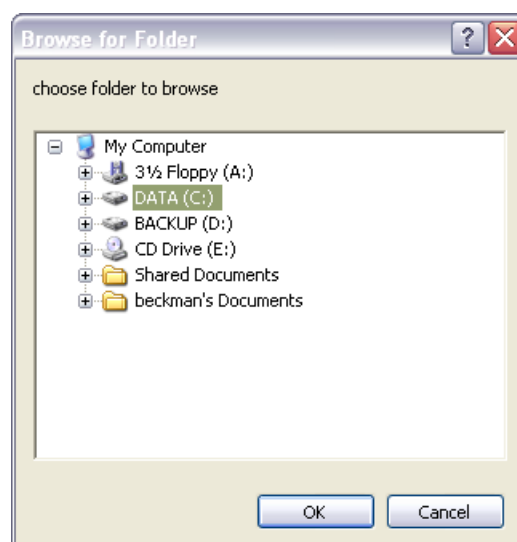
1. If the backup is stored on 3,5" floppy disk, insert the appropriate floppy disk into the A: drive
2. Open the **Restore Archive** window (menu **Archives - Restore**)
3. Enter your search criteria in one or more of the following fields:
 - a. Patient ID
 - b. Patient Name
 - c. Sample ID
 - d. Timeframe
4. Select **Extract**



5. Select the type of extraction between:
 - a. from a file



- b. from a directory (scan of all files in a specified directory)



6. Select **OPEN** or **OK** to continue the restoration restore. All the patients saved in the backup file that correspond to your criteria are displayed in the list.
7. Select the list of archived requests you want to restore or **Select All** for all of them. Click on the **Restore** button to proceed
8. Click on the **CLOSE** button to validate the restoration

NOTE:

If you Cancel or if you close the window, the previously selected patient results will not be restored.

4.7 Delete Archives

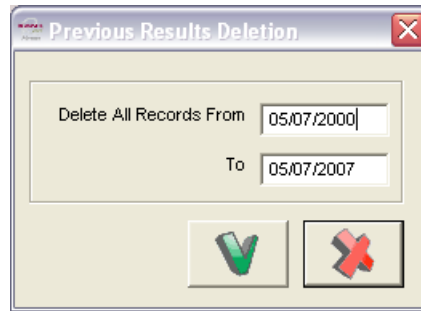
4.7.1 Introduction

This option allows the user to delete archived results by date (patient demographics are not deleted), or to delete a selected archived patient, including their demographics.

4.7.2 Delete Archived Results

Follow the steps below to delete archived patient requests by date. Patient demographics are not deleted.

1. To open the **Previous Results Deletion** window, click on the **Archives** menu, then select **Delete**. From the **Delete** submenu, select **Result**.



2. Enter a date range. All archived patient requests created in the selected date range will be deleted. Select **OK** to continue the deletion. Select **Cancel** to cancel the deletion.
3. If you selected **OK**, a message window will open. Select **Yes** to initiate the deletion. Select **No** to cancel the deletion.

NOTE:

Patient demographics are not deleted by this procedure.
This action is irreversible. The deleted archived patient results cannot be recovered

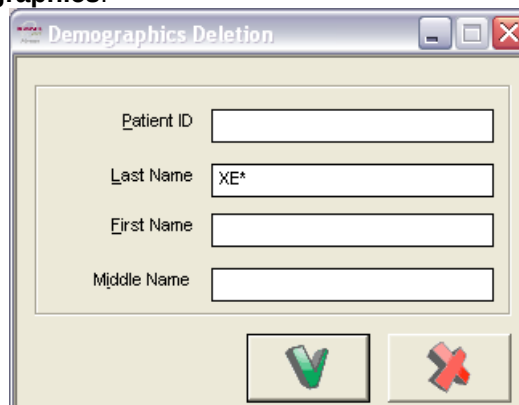
4.7.3 Delete Archived Demographics

Follow the steps below to delete a selected archived patient, including their demographics.

NOTE:

The user has the option of deleting all patient demographics with no results. See **Setting Up The Remisol Advance Environment** for more information.

1. To open the **Demographics Deletion** window, click on the **Archives** menu, then select **Delete**. From the **Delete** submenu, select **Demographics**.



2. To search for a patient in the **Demographics Deletion** screen, enter your search criteria in one or more of the search fields. In any of the fields, you can type, either in full or simply the first letters/digits of what you are looking for followed by a wild card symbol; an * (asterisk) is a wild card for all following characters, and a ? (question mark) is a wild card for a single character.

Example: Search for the name Adams by entering Ad or Ad??s in the Last Name field.*

3. Select **OK** to initiate the search. Select **Cancel** to cancel the search and close the window.
4. If you selected **OK**, the **Demographics Search** window will open with a list of patients. Select one or more patients from the list in the **Demographics Search** window.
5. Select **OK** to continue. Select **Cancel** to cancel and close the **Demographics Deletion** window.
6. If you selected **OK**, a message window will open. Select **Yes** to delete the demographics. Select **No** to cancel the deletion and exit to the **Demographics Deletion** window.

5 Configuration

5.1 Parameter Definition

5.1.1 Introduction

The **Parameter Configuration** window is used to define or edit parameters in the Remisol Advance system. Each parameter must be defined for only one sample type (i.e., serum, urine, CSF, etc.).

If a parameter is to be run on more than one type of sample, a different Remisol Advance parameter must be defined for each sample type. Parameters can also be defined for manual tests and calculated tests.

5.1.2 Parameter Definition Window

To open the Parameter Configuration window, click on the **Configuration** menu, then select **Parameter Definition**.

The screenshot shows the 'Parameter Definition' window. It has a title bar with standard window controls. The main area is divided into several sections. The top left section contains 'Param. Code' (a dropdown menu with 'B_ABO' selected), 'Param. Abbreviation' (a text box with 'ABO test'), and 'Param. Name' (a text box with 'ABO test'). Below these are two checkboxes: 'Read Only' (checked) and 'Offline Parameter' (unchecked). The bottom left section is titled 'Standard Unit' and contains a 'Unit' dropdown menu and a 'Decimal Places' dropdown menu set to '0'. The right section is titled 'Delta Check' and contains a 'Formula' text box, a 'Validity' dropdown menu, and a 'Days' text box with a 'Test' button. At the bottom of the window are two buttons: 'Reference & Validation Ranges' and 'Rules'.

5.1.3 Procedure

Follow the steps below to define a new parameter.

1. Enter a parameter code (up to 12 alphanumeric characters) or select an existing parameter code from the drop down list. The parameter code is displayed in the software and printed in most reports, but is not downloaded to the instruments. Parameter information is transmitted between Remisol Advance and the instrument or host using instrument codes. See **Setting Up The Remisol Advance Environment** for further information on instrument codes.

NOTE:

The parameter code is used by Remisol Advance to identify the parameter, and should be unique for each parameter. If you define the same parameter with two different sample types, two similar parameter (and codes) must be used. For example, serum sodium and urine sodium could be defined with parameter codes NAS and NAU.

2. Enter a parameter abbreviation (up to 10 alphanumeric characters). The parameter abbreviation is displayed and printed in graphic profiles.
3. Enter a full parameter name (up to 20 alphanumeric characters). The parameter name is printed on the full report.
4. Select 'Read only', if the parameter should not be entered or edited either manually or through a rule (e.g. blood group determination)
5. Select 'Offline parameter', specific for Automation, in order to be able to download specific command to an Automation system
6. Select a unit from the drop down list.
7. Select a desired number of decimals from the drop down list (0 - 4). Parameter results will be reported with the selected number of digits after the decimal point.
8. Select a sample type from the drop down list (serum, urine, blood,...).
9. Select a sample nature from the drop down list. Sample nature allows the user to define different parameters which have the same sample type, but cannot be run on the same sample. Examples of this

would be pre-treated samples such as HDL cholesterol, pre-diluted samples such as immunoproteins, or incompatible parameters. The sample nature is used only by Remisol Advance, and is not transmitted between the Remisol Advance and the instrument or host.

10. Save the parameter definition.

NOTE:

Unit information is not transmitted between Remisol Advance and the instrument or host. You must ensure that the parameter is defined with the same units on the instrument, the host and Remisol Advance

5.1.4 Offline parameters for Automation

It may be necessary to define some 'Offline' parameters, specific for Automation, in order to be able to download specific command to an Automation system.

The option 'Offline parameter' must be checked in their Parameter Definition window to enable this functionality.

An Offline parameter is always considered as received, validated, and uploaded to the host. It is not possible to enter a manual value for an offline parameter. An offline parameter is never archived.

A request may be archived even if it contains an offline parameter. A request that contains only offline parameters is evaluated as complete.

An offline parameter is displayed using a different color in the Request window.

Sample ID : YGQZEOL (LX)				
		05/07 16:16	Prev. Res.	
CO2	Pending			
GLU		2000	_C_	
V_Param7				

5.1.5 Conversion Formula

The conversion formula should now be referenced as a rule with the action 'Modify Result'

Example:

(IF (NOCONDITION) THEN RESULT(GLU*1000)). See **Extended Rules**.

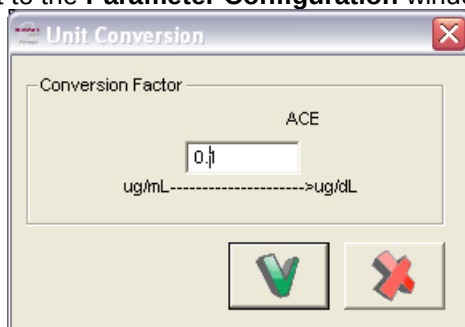
5.1.6 Changing Units

The user can change the unit used for a defined parameter, but is required to either delete existing results (current, archived and Monitor-It points) for this parameter, or convert all results (current and archived) for this parameter to the new unit.

Follow the steps below to change the units for a defined parameter.

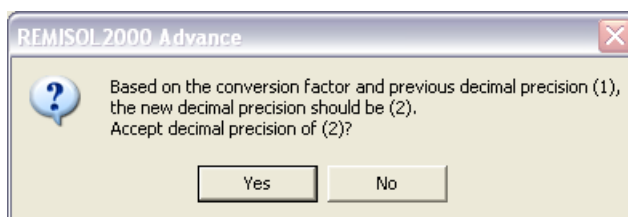
1. Open the **Parameter Definition** window.
2. Select the parameter from the drop-down list in the **Chem. Code** field.
3. Select a new unit from the drop-down list in the **Unit** field.

4. Save the new parameter configuration. The **Unit Conversion** window will open: Enter a conversion factor to convert results from the old unit to the new unit. Select **OK** to validate the conversion factor. Select **Cancel** to cancel the unit conversion and exit to the **Parameter Configuration** window.

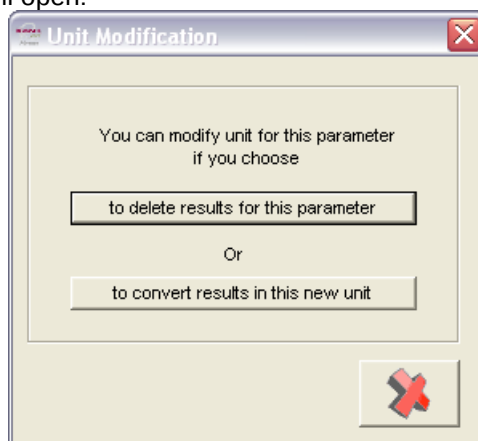


NOTE:

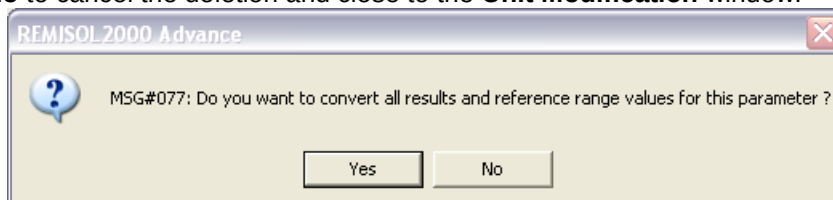
A warning window is displayed if Remisol Advance detects that the number of decimals may be wrong. In which case, you may choose **Yes** to apply the Remisol Advance suggestion for the new number of decimals, or **No** to continue with the number of decimals you set up manually.



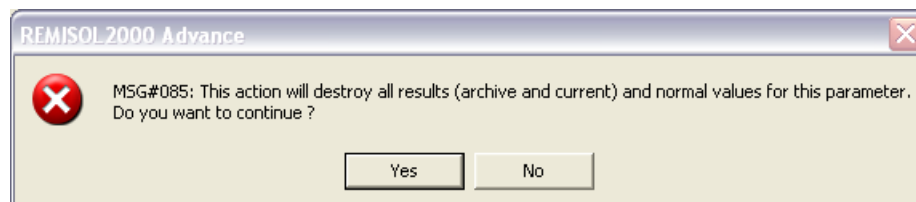
5. The **Unit Modification** window will open:



- a. If you select **to delete results for this parameter**, a message window will open.
- Select **Yes** to delete all current and archived results and reference ranges for the parameter (Monitor-It points are also deleted).
 - Select **No** to cancel the deletion and close to the **Unit Modification** window.



- b. If you select **to convert results in this new unit**, a message window will open.
- Select **Yes** to initiate the unit conversion. All results, reference ranges, and validation ranges will be converted to the new unit using the conversion factor entered in the **Unit Conversion** window.
 - Select **No** to cancel the unit conversion and exit to the **Parameter Configuration** window.



5.1.7 Delta Check

The user can enter a delta check formula to compare a current result to the last archived result. The delta check will compare the result of the current run to the result that is indicated in the column named Previous Result in the request sheet.

The following fields are used to enter delta check information:

Field	Function
Formula	Enter a delta check formula. See Extended Rules for further information on delta check formulas. In the example window above, the absolute difference between the current result (R1) and the last archived result (R2), must be less than 25 (in selected units) to pass the delta check.
Validity	Enter the number of days (1 to 10,000) between the current and last archived result that the delta check is valid.

Example 1:

$$ABS(R1-R2) < 25$$

In this example, the delta check will fail if the difference between the current result and the last archived result is 25 or greater.

Example 2:

$$((ABS(R1-R2))/R2)*100<5$$

In this example, the delta check will fail if the difference between the current result and the last archived result is 5% or greater.

If the delta check passes, the result will be flagged with a "D". If it fails, the result will be flagged with an "X".

Example 3:

$$((ABS(R1-R2)<10) \text{ AND } (R1<120)) \text{ OR } ((ABS(R1-R2)<(5*R1/100)) \text{ AND } (R1\geq 120))$$

In this example, 2 different delta check formulas are combined for two different ranges.

If the result is <120, then the difference between the current result and the previous one should be within 10 but if the current result is ≥120, then the difference should be within 5 percent

To define more complex delta check formulas (by department if needed), see Extended Rules.

5.1.8 Automatic Validation

See **Extended Rules**.

5.1.9 Conditional Messages

The conditional display should now be referenced as rules with the action 'Modify Result' (IF (DRUG>0) THEN RESULT(POS)). See **Extended Rules**.

5.1.10 UPC Definition

The Remisol Advance UPC function creates a calibration curve for a user-defined parameter on an Array system and calculates the results from the rate values uploaded by the Array. Contact your service representative for additional information on this function.

5.2 Reference and Validation Ranges

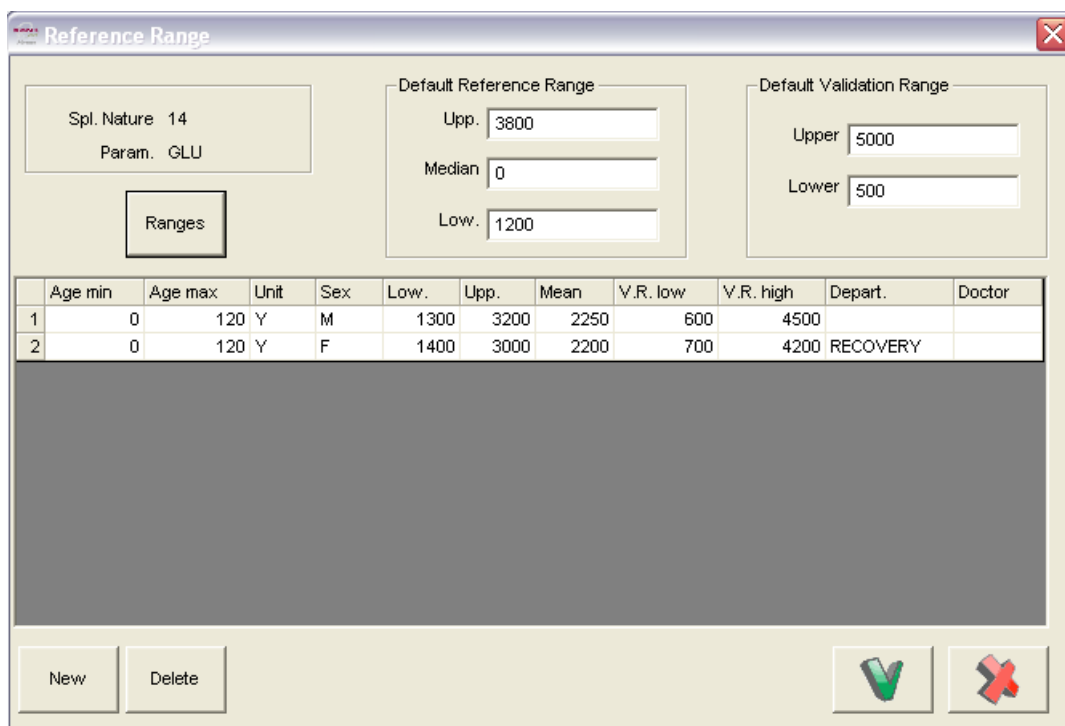
5.2.1 Introduction

The reference and validation window is used to enter both reference ranges and validation ranges for a parameter.

The user can enter default reference ranges, default validation, and specific reference and validation ranges based on patient age, sex, and also doctor and department.

5.2.2 Reference and Validation Range Window

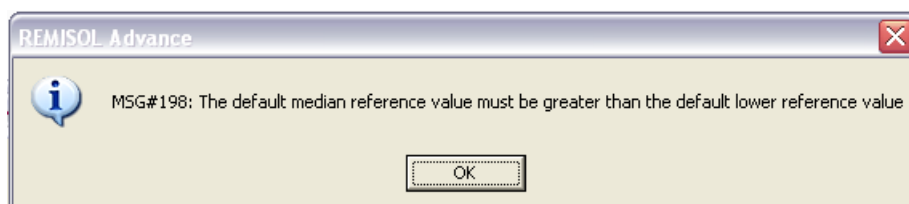
To open the **Reference and Validation** window from the **Parameter Definition** Window, click on the **Reference & Validation Ranges** button. This button is active only when the parameter definition has been saved once.



The 'Reference Range' window displays parameter information (Spl. Nature: 14, Param.: GLU) and a 'Ranges' button. It features two main sections: 'Default Reference Range' with input fields for Upper (3800), Median (0), and Lower (1200); and 'Default Validation Range' with input fields for Upper (5000) and Lower (500). Below these is a table with columns: Age min, Age max, Unit, Sex, Low., Upp., Mean, V.R. low, V.R. high, Depart., and Doctor. The table contains two rows of data. At the bottom are 'New' and 'Delete' buttons, and a green checkmark and red X icon.

	Age min	Age max	Unit	Sex	Low.	Upp.	Mean	V.R. low	V.R. high	Depart.	Doctor
1	0	120	Y	M	1300	3200	2250	600	4500		
2	0	120	Y	F	1400	3000	2200	700	4200	RECOVERY	

On entering a value that does not respect the numerical order, a warning message is displayed with the appropriate, e.g.:



A 'REMISOL Advance' dialog box with an information icon. The message reads: 'MSG#198: The default median reference value must be greater than the default lower reference value'. An 'OK' button is at the bottom.

5.2.3 Procedure

Follow the steps below to enter reference ranges.

1. Click on the **Mode** button (i.e. displays spans or ranges) to select the reference range mode. Options are:

- a. Ranges: Upper and lower limit are entered in the selected units.
 - b. Spans: Upper and lower limits are defined as a percentage above and below the mean.
2. Enter the following default reference range information:
 - a. Median: Enter the default reference range mean.
 - b. Low. and Up. (ranges): Enter the default lower and upper limits.
 - c. %Low. and %Upp. (spans): Enter the default lower and upper percentages.
3. Enter an age minimum for each reference range.
4. Enter an age maximum for each reference range.
5. Enter age units for each reference range. Options are D (day), M (month), or Y (year).
6. Enter a sex for each reference range. Options are M (male), F (female), or B (both).
7. Enter a lower reference limit (ranges) or a lower reference percentage (spans) for each range
8. Enter an upper reference limit (ranges) or an upper reference percentage (spans) for each range
9. Enter a mean for each range (if different from the one that is automatically calculated)
10. Enter a lower validation limit (ranges) or a lower validation percentage (spans) for each range
11. Enter an upper validation limit (ranges) or an upper validation percentage (spans) for each range
12. Specify a Department (if needed)
13. Specify a Doctor (if needed)
14. Select **Cancel** to cancel the changes and exit to the **Parameter Configuration** window. Select **OK** to save the changes and close to return to the **Parameter Definition** Window.

5.2.4 Delete Reference or Validation Ranges

To delete ranges in the table, first select one or more reference ranges by clicking on the row number. This will highlight the row or rows you selected. Then select **Delete**. The selected ranges will be deleted.

5.3 Extended Rules

5.3.1 Introduction

The extended rule is the standard mechanism to trigger a set of actions based on complex formulas.

We can distinguish 3 types of extended rules:

- Parameter rules
- Upload rules
- Download rules

For each type, one or several extended rules could be defined (parameter, hematology, ...)

The rules follow the following syntax:

```
IF condition(s) THEN action(s)
IF condition(s) THEN action(s) ELSE action(s)
```

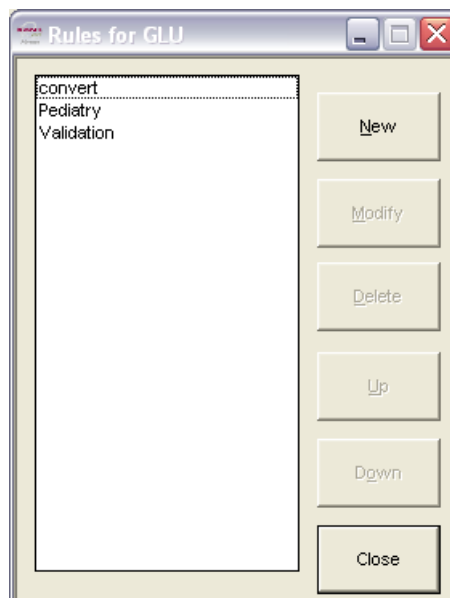
Depending of the type of rule, the condition can involve any parameter, reference limits, validation limits, delta check, patient age or sex, doctor or location, comments, ...

The formula evaluated can include one or several conditions attached with the operators AND or OR.

After evaluation, the formula can trigger (or not) one or several actions (validation, comments, messages, ...).

5.3.2 Parameter Rules

From the **Parameter definition** window, select the parameter you want and press the **Rules** button to get access to the definition and selection of individual rules for the corresponding parameter.



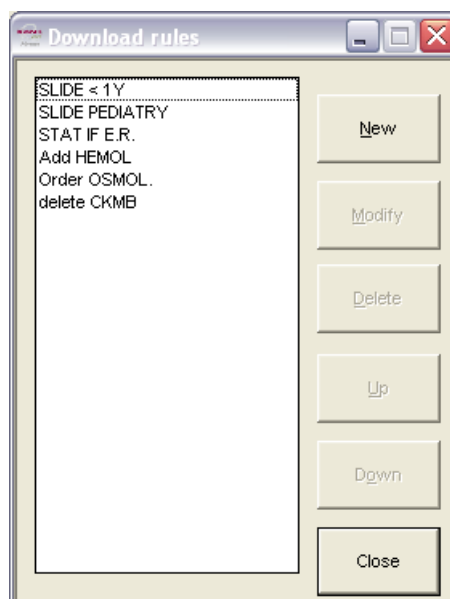
From this screen, you can create new rules, modify existing rules or arrange the rules by order.

The rules for a specific parameter are evaluated (one after the other, in order) once a result is received for this specific parameter.

They can be used to add/suppress instrument parameters automatically or warn the user of something abnormal by displaying messages.

5.3.3 Download Rules

Select the menu '**Configuration - Download Rules**' to have access to the following screen:



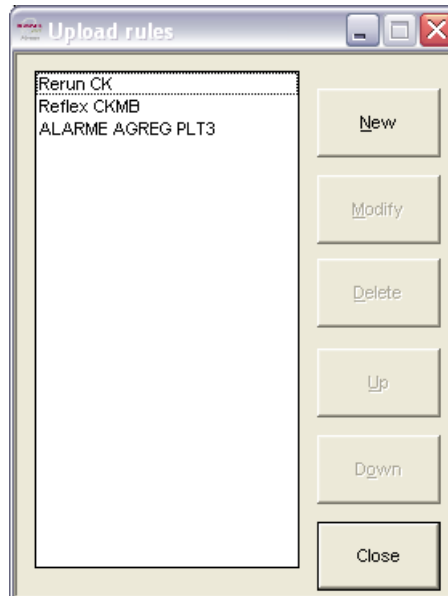
As for the Parameter Rules, from this screen you can define new rules, modify rules, delete and re-order them.

The download rules are evaluated once a new request is received from the LIS.

They can be used to automatically add new tests to a received request, delete some other tests, or warn the user that something requires reviewing for this request.

5.3.4 Upload Rules

Select the menu '**Configuration - Upload Rules**' to have access to the following screen:



As for the Parameter Rules and Download Rules, from this screen you can define new rules, modify rules delete and re-order them.

The upload rules are evaluated once a set of results is received from the instrument.

The upload rules are evaluated once every parameter rules have been evaluated.

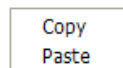
They can be used to run reflexes, reruns, add other instrument tests (reflex testing), add a calculated parameter ...

5.3.5 Copying and pasting rules

The copy and paste function is available in the upload rules list, download rules list, and parameter rules list. This copy and paste feature use the Microsoft Windows' clipboard for more inter-operability (possibility to store the clipboard content in a external software such as MS WordPad, MS Excel,...).

The paste operation copies the new rules at the end of the rules list and they are disabled by default. Once pasted, these rules will automatically open in order for the user to review/modify them.

Copy and paste operations are available from the contextual menu in the rules lists (right-click on the list to open the contextual menu).



Follow the steps below to copy and paste rules.

1. In the Parameter, Download or upload rules lists, the user selects one or more rules using **click and select** (the **[SHIFT]+Click**, to select a range and / or **[CTRL]+Click**, to select several rules, are also available)
2. Right click on the rules list to open the contextual menu. Select the **Copy** option.
 - a. For upload and download rules, **right click** on the rules list to open the contextual menu.
 - b. For parameter rules, close the **rules** window for the current parameter, change the displayed parameter to the one you want to copy the rule(s) to, and then open its **rules** window. **Right click** in the list to open the contextual menu.
3. Select the **Paste** option.
 - a. For every rule that has been copied, a rule edition window automatically opens with the original content. The user has to modify, activate (copied rules are disabled by default) and verify each new rule before clicking on the **Save** button.
4. If the user click on the **Cancel** button, he will be warned that the paste process will be cancelled.

5.3.6 Configuring a rule

The following screen is used to configure a rule (the screen is similar for Parameter, Download and Upload rules).

The upper part displays the evaluated formula (conditions) and the action(s) to execute.

The title bar will provide an indication of the type of rule the user is currently dealing with:

- Upload Rule,
- Download Rule,
- Rule for <parameter> (parameter rule).

Name: The name of the rule, to be provided by the user,

If: One or more conditions (they can be related) to be evaluated (no condition is also possible with the "no condition" item),

Then: The action(s) that will be executed if the condition(s) is/are met,

Else: The alternative action(s) that will be executed if the condition(s) is/are NOT met,

Propagate to parameters...: (only available for Parameter rules), it allows a rule to be propagated to other parameters,

The lower part consists of a wizard to easily write (by mere selection) the conditions and actions (conditions on the left part, actions on the right part).

Condition: The following conditions can be used in the definition of a formula (a set of conditions); depending on the type of rule, some of these conditions may not be available:

- PR: Parameter Rule
- UR: Upload Rule
- DR: Download Rule

Condition tested	Available for type	Interpretation	Example
Age	PR, UR, DR	Patient age in days (the formula can contain mathematical operator)	AGE > 3*365

Assigned Instr. type	PR,UR	Type of instrument that was previously assigned to the tube	InstrumentType='Access2'
Assigned Instrument	PR,UR	Instrument that was previously assigned to the tube	Instrument='Access2-A'
Automatic Comment	PR, UR	Comment generated automatically by Remisol Advance or coming from the Remisol Advance Intranet	AUTOCOMMENT Contains 'COM1'
		NOTE: Not available in the wizard.	
Check status on: - The request, - The tube - The parameter	PR, UR	To check the status of a request or a tube whether it is pending, completed, or of a parameter whether it is pending, sorted, downloaded or received	Request.ispending Request.issorted Tube.issorted Tube.isdownloaded S_K.ispending S_K.issorted S_K.isdownloaded S_K.iscomplete
Comment	PR, UR	Comment receive from the instrument (hematology only)	COMMENT Contains 'Imm. Gr 2'
		NOTE: Not available in the wizard.	
CurrentUser	PR, UR	Current User connected (or last user connected if the station is locked)	USER='LABO'
Day of the week	PR, UR, DR	Test day of the week	DAY=7
Definit comment	PR, UR	Definit comment received from the instrument (hematology only)	DEFINIT Contains 'Anemia'
		NOTE: Not available in the wizard.	
Delta Check else ranges	PR, UR	Delta check verified, or result in the validation ranges if no previous result exists	DeltaCheck_else_Range(GLU)
Delta Check ok	PR, UR	The Delta check is verified	DeltaCheck(GLU)
Delta Check possible	PR, UR	The Delta-check can be computed (a previous valid value exists)	IsDeltaCheckAble (S_NA)
Department	PR, UR, DR	Location code	DEP='SURG'
Department Phone	PR, UR	Department phone number	TEL_DEP=0321217575
Diagnostic received	PR, UR	Decrepited - related to Diagnostic instrument.	DiagReceived
Doctor	PR, UR, DR	Doctor code	DOC='Jones'

Doctor Phone	PR, UR	Doctor's phone number	TEL_DOC=0321217575
Instrument	PR,UR	Checks the instrument that produced the result.	Instrument='Access2-A'
Into the reference range	PR, UR	The result is inside the reference ranges defined (ranges that could be related to patient age and sex, doctor and/or location)	InRefRange(GLU)
Into the validation range	PR, UR	The result is inside the validation ranges defined (ranges that could be related to patient age and sex, doctor and/or location)	InValRange(GLU) InRange(GLU)
Manual Result	PR, UR	Result entered manually	IsManual(GLU)
New Result	PR, UR	New Result sent by the instrument	IsNew(GLU)
No Condition	PR, UR, DR	Condition always TRUE	NOCONDITION
Numeric result	PR, UR	Check whether the result is a numerical value	ISNUM(S_K)
Patient ID	PR, UR, DR	Patient ID	PATIENTID="0000007"
Rack/Position RUN	PR, UR	Number of the rack associated to the current RUN	RACK_RUN=1
Rack/Position RUN	PR, UR	Position in the rack associated to the current RUN	POS_RUN=1
Rack/Position TUBE	PR, UR	Number of the rack associated to the current TUBE	RACK_TUBE=1
Rack/Position TUBE	PR, UR	Position in the rack associated to the current TUBE	POS_TUBE=1
Reprog	DR	Request sent again by the LIS	REPROG
Rules running mode	UR	Depending on configuration in the Remisol.ini file, checks the value associated with the user selection when using Play Upload Rules	MANUAL_RULES=1
Sample ID	PR, UR, DR	Sample Id	SampleId Contains 'ER'
Sample STAT	PR, UR, DR	Stat sample	IsStat

Search in comment	PR, DR,UR	To search specific comments for particular things in • All comments (PR, UR) • Automate tracking (PR, UR) • Clinical comment (PR, UR, DR) • Remisol warning (PR, UR, DR) • Result manual comments (PR, UR) • Rules comments (PR, UR) • Diagnostic information (PR, UR) • Dilution comment (PR, UR) • Instrument comment (hema) (PR, UR) • Instrument comment (other) (PR, UR) • Conditional flags (PR, UR) • Definitive flags (PR, UR) • Other flags (PR, UR) • Suspect flags (PR, UR) • Technical comments (PR, UR, DR) • Interpretation (PR, UR, DR)	e.g. WARNING_COMMENT contains 'warning: call Dr NO' ALL_COMMENT TRACKING_COMMENT PATIENT_COMMENT WARNING_COMMENT MANUAL_COMMENT RULES_COMMENT DIAG_COMMENT (decrepitated) DILUTION_COMMENT HEM_COMMENT OTHER_ANALYZER_COMMENT HEM_CONDITIONAL HEM_DEFINITIVE HEM_OTHER HEM_SUSPECT TECHNICAL_COMMENT INTERPRETATION_COMMENT
Sex	PR, UR, DR	Patient sex in M, F	SEX = 'M'
Suspect comment	PR, UR	Suspect flags received from the instrument (hematology only) NOTE: Not available in the wizard.	SUSPECT Contains 'Blast'
Test programmed in request	PR, UR, DR	Other test requested for the same request	Exist_in_request(K)
Test programmed in tube	PR, UR, DR	Other test requested for the same sample	Exist_in_tube(K)
Test Result	PR, UR	Numeric or Alphanumeric value for the parameter	GLU>120 GLU>GLU.ValidHigh
Tube created by	UR, DR	Origin of the tube	Tube.Origin='ASTMH'
Type of Instrument	PR,UR	Checks the type of instrument that produced the result	InstrumentType='Access2'
Validated Result	PR, UR	Result validated	IsValid(GLU)

NOTE:

Some conditions were removed from the Upload and the Parameters rules wizard, but they are still available for use (for compatibility purposes - dictionary and rules created before the last Remisol Advance version).

These conditions are: Comment, Definit, Autocomment, Suspect, Exist.

It is also possible to use one of the following values as part of a condition (you may have to typed them manually).

NA.Value	Contains only the numerical part for the parameter NA
NA.Flag	Contains the flag for the parameter NA

NA.Prev.Value	Contains only the numerical part of the archived result for the parameter NA
NA.Prev.Flag	Contains the flag of the archived result for the parameter NA
NA.Prev.Days	Contains the number of days between the last archived result and the current one for the parameter NA
NA.Prev	Contains the archived result for the parameter NA
NA.Last	Contains the result of the previous run for the parameter NA
NA.Last.Value	Contains the numerical part of the result of the previous run for the parameter NA
NA.Last.Flag	Contains the flag of the result of the previous run for the parameter NA
NA.Last.Minutes	Contains the amount of time in minutes between the current run and the previous run

NOTE:

The LAST properties can be used with the following conditions: EXIST, ISVALID, MANUAL, INRANGE, DELTACHECK: the result of the previous run will be used to evaluate the condition.

Example:

```
IF (DEP='PEDIATRY') AND (NA.Prev.Days<=10) AND ABS(NA.Value-
NA.Prev.Value)<(NA.Prev.Value*1.1))
THEN VALID
```

Correspond to a validation of the NA parameter based on the DeltaCheck (in the limit of 10% AND only in the last 10 days) only for the department PEDIATRY.

NOTE:

For these properties, the value is NULL if there is no possibility to evaluate the value.

5.3.6.1 List of parameters

A list of parameters is available depending on the condition chosen.

5.3.6.2 Operator

A list of operators is available depending on the condition chosen.

The available operators are:

Operator	Interpretation	Example
=	Is equal to	WBC='++++++'
<>	Is different	RBC<>'-----'
>	Is greater than	GLU > 20
<	Is lower than	HGB < 7.5
>=	Is greater or equal	NA >=120
<=	Is lower or equal	HGB <=7.5
Contains	Contains	DRUG Contains '(NEG')
Like	Correspond to a Search criteria (using wildcards ? or *)	SAMPLEID Like 'SE*'
Contains (Null blocking)	Contains (not evaluated if the tested value does not exists)	DRUG Contains_NEV '(NEG')
Like (Null blocking)	Correspond to a Search criteria (using wildcards ? or *) (not evaluated if the tested value does not exists)	SAMPLEID Like_NEV 'SE*'

5.3.6.3 Value

A list of values is available depending on the condition chosen.

The following values are available :

Value	Interpretation	Example
Low validation limit	Lower validation limit defined for the parameter (default or corresponding to patient age and sex, doctor, location)	GLU < GLU.ValidLow
High validation limit	Upper validation limit	GLU > GLU.ValidHigh
Low reference limit	Lower reference limit (could also depends of the patient, doctor location)	GLU < GLU.RefLow
High reference limit	Upper reference limit	GLU > GLU.RefHigh
7.01	Numerical value entered manually	RBC >= 7.01
Jones	Alpha value entered manually	DOC='Jones'
Value only	Corresponds to the numerical part of a result received	NA.Value*1000
Flag only	Correspond to the flag received from the instrument	IF (WBC.Flag Contains '*')

This entry field could consists of a list when using certain type of condition: doctor, location, comment or suspect comment. Mathematical operators could also be used in the formula (when testing a result).

5.3.6.4 Reverse the Condition

In some cases, it may be useful to reverse the condition. To do so, just check the "Reverse the condition" option; this will automatically add the boolean operator NOT to the condition.

5.3.6.5 Add Multiple Conditions

If you want to relate several conditions together (e.g. K>100 and HEMOL<30...), you can use the "AND" or "OR" options; this will automatically add a boolean operator (AND or OR) between the conditions as required.

5.3.6.6 Actions

The following action(s) can be executed; some actions may not be usable depending of the type of rule:

- PR: Parameter Rule
- UR: Upload Rule
- DR: Download Rule

Please do NOT use semicolons (";") in rules comments as these can be incompatible with some host protocols and the comment gets truncated:

comment(Critically high glucose; call the physician) --> "Critically high glucos" is uploaded to the host.

Action	Available for type	Interpretation	Example
Add *	DR	Add a parameter to the request received	ADD(PIT)
Add a comment	PR, DR, UR	Add a comment to the first comment field of the corresponding request	COMMENT(Anemia)
Add a comment 2	PR, UR, DR	Add a comment to the second comment field of the corresponding request	COMMENT2(Anemia)

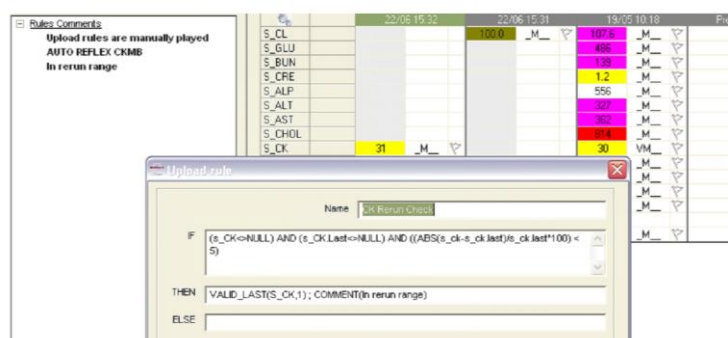
Add Calculated Param. *	UR	Add a non instrument parameter (calculation)	ADDCALC(Ratio)
Assign to an instrument	UR	Assign or re-assign the tube to an instrument	Assign(DIFFPAD)
Block validation and/or download	PR, UR	Allows blocking validation and/or download with the possibility to block validation and/or download by parameter by instrument	BLOCK(Type,Instrument,<Parameter>)
CalcMonitorGraph	PR	activates Monitor-It for the current parameter	CALCMONITORGRAPH
Change tube status to STAT	PR, UR, DR	Change the tube status to STAT	PRIORITY=STAT
Delete (Flags/Comments)	PR, UR	To delete flags or comments • All types (PR, UR) • Suspect flags (PR, UR) • Definitive flags (PR, UR) • Conditional flags (PR, UR) • Other flags (PR, UR) • Instrument comment (hema) (PR, UR) • Instrument comment (other) (PR, UR) • Rules comments (PR, UR) • Automate tracking (PR, UR) • Dilution comment (PR, UR) • Result manual comments (PR, UR) • Remisol warning (PR, UR) • Diagnostic Information (PR, UR)	e.g. Delete_Comments(A1C, HEM_DEFINITIVE,1+ Anisocytosis) Delete_Comments
Delete in the Request	DR	Remove a parameter in the request	DEL_IN_REQUEST (CKMB)
Delete in the Tube	DR, UR	Remove a parameter in the tube	DEL_IN_TUBE(CKMB)
Display a message	PR, UR, DR	Display a message in the "message list"	MSG(Do slide)
Download	UR	Download the sample to the instrument	Download
Evaluate	UR	Forces the evaluation of all the rules	EVALUATE()
Export to file	UR, DR	Export to file	EXPORT
(currently not in the wizard)	UR	Upload to a specific host	Host_Assign(LIS2)
Modify the result	PR	Sets the result (calculation, specific display, ...)	RESULT(URE/CREA)
Reflex *	UR	Reflex rerun or reflex testing	Reflex(CKMB)
Set priority to 'ROUTINE' on the tube	PR, UR, DR	Change the priority to routine for the tube	PRIORITY=ROUTINE

Set priority to 'STAT' on the tube	PR, UR, DR	Change the priority to stat for the tube	PRIORITY=STAT
Set priority to 'ROUTINE' on the request	PR, UR, DR	Change the priority to routine for the request	PRIORITY_REQUEST=R OUTINE
Set priority to 'STAT' on the request	PR, UR, DR	Change the priority to stat for the request	PRIORITY_REQUEST=S TAT
Stop processing rules	PR, UR, DR	Stops executing the rules following the current one	STOP
Tag	PR, UR, DR	Tag the patient / the tube / the request	PATIENT=TAG TUBE=TAG TUBE=TAG(<custom tag>) REQUEST=TAG REQUEST=TAG(<custom tag>)
Untag	PR, UR, DR	Untag the patient / the tube / the request	PATIENT=UNTAG TUBE=UNTAG TUBE=UNTAG(<custom tag>) REQUEST=UNTAG REQUEST=UNTAG(<custom tag>)
Validate	PR, UR	Validate a parameter	VALID(GLU)
Validate Profile	UR	Validate a whole profile	VALID_PROFILE(RETIC)
Validate the result for	PR, UR	Validate the last <u>known</u> result with the possibility to choose the rank of the run to validate	VALID_LAST(GLU) VALID_LAST(GLU,1)

NOTE:

VALID_LAST: This action allows you to validate a result from a previous run, it can prove useful for rerun checks.

Example:



For a CK rerun check of 5%, the rule should be:

```
IF (CK <> NULL) AND (CK.Last <> NULL) AND ((ABS(CK-CK.Last)/CK.Last*100) <= 5) THEN
  VALID_LAST(CK,1)
```

On the reception of value 31 for CK, result value 30 is validated.

Please note that VALID_LAST(CK,1) validates the 1st result to the right of the current one for the CK parameter, and not the one of Run-1.

BLOCK: The Rule Wizard allows for the definition of a rule as:

Block(**Type**,**Instrument**,<PARAMETER>) where:

- **Type**: defines the type of action to carry out:
 - DL: Downloading,
 - DL_VAL: Downloading AND validation,
 - VAL: Validation.
- **Instrument**: defines the name of the instrument that will be blocked,
 - {INSTRUMENT}: current instrument,
 - XXX: name of an instrument defined in Remisol Advance,
- <PARAMETER>: defines the name of the parameter to block:
 - *: all parameters,
 - PPP: name of the parameter,
 - The use of wild cards (*,?) is possible, e.g. H_*

* The rule actions named EVALUATE, REFLEX, ADD and ADDCALC can be played on the current tube, on all the tubes of the request, or on some specific tubes of the request. This feature is also available in the action wizard of the rule definition window.

- Current tube: By default, the action adds the parameter to the current tube.

Example: ADD(param)

- All the tubes of the request: You can add the coma separator and the asterisk character * after the parameter

you want to add to all the tubes of the request.

Example for all tubes of the request: ADD(param,*)

- Specific tubes of the request: You can also add the coma separator and use the asterisk character * to replace

a string of characters, or the question mark character ? to replace only one single character.

Example for specific tubes (tubes with Sample ID last character is 4): ADD(param,*4)

Add a comment 2: With the previous versions of Remisol, the effect of the action Add to Comment was to assign a comment to the result (parameter rule), the run (upload rule), or the tube (download rule). That comment was displayed in Remisol and also uploaded to the Host.

With Remisol Advance, it is possible to choose between two comment fields: Comment 1 (the action Add to comment in the rule wizard), or Comment 2 (the new action Add to comment 2 in the rule wizard).

It is possible to define separately if Comment 1 and Comment 2 are (or not) uploaded to the Host (see **Host Setup** window).

The idea is that it is now possible to assign some comments to the field Comment 1, comments that will be uploaded to the Host; and also to assign some other comments to the field Comment 2 for an internal use, and specify that these comments must not be uploaded to the Host.

DELETE action: The DEL_In_Tube action replaces the previous DELETE action. Please note the old DELETE action is kept for compatibility, even if it is not available through the wizard anymore, therefore older rules containing a DELETE action will continue to work.

5.3.6.7 *Parameter link to the action*

Depending on the type of action, this field could contain:

- a free text or comment if 'message' or 'comment' actions are selected.
- a parameter for 'Add', 'Delete', 'Reflex' or 'AddCalc' actions.
- a value or mathematical formula if the 'Modify Result' action is selected (refer to mathematical operators and values that are available)

5.3.6.8 *Activate the rule*

Each individual rule entered could be activated by selecting this option.

5.3.6.9 *Rule played once*

By checking this option, a rule will only be played once, that is to say that the action in the THEN field will only be played once per tube, whatever the number of times the action in the ELSE field will have been played,

5.3.7 Assigning a comment to a result

In the previous versions of Remisol, the action "Add to Comment" assigned a comment to the result (parameter rule), the run (upload rule), or the tube (download rule). This comment was displayed in Remisol and also uploaded to the Host.

In Remisol Advance, it is possible to assign a comment to a result even within an Upload rule, with the use of the following syntax:

<PARAM_CODE>:Comment

Example: the comment in the Upload rule: WBC: WARNING

- If there is actually a result for the WBC in the request, then the comment WARNING is assigned to the result
- If there is no result for the WBC in the request, then the comment WBC: WARNING is assigned to the Run

NOTE:

A comment on the result is displayed in the Result window (double-click on a result in the Request window).

A comment on the run is displayed in the Comment window (click on Comment in the toolbar) and in the Comment area located in the middle of the Request window.

5.3.7.1 **Action Assign to comment without <PARAM_CODE> prefixing the Comment**

- In Upload rule: the **Comment** in-Rule comment is assigned to the Run
- In Parameter rule: the **Comment** in-Rule comment is assigned to the Result of the parameter's rule
- In Download rule: the **Comment** in-Rule comment is assigned to the Tube

5.3.7.2 **Action Assign to comment with a <PARAM_CODE> prefixing the Comment**

- In Upload rule :
 - If <PARAM_CODE> exists in the tube, the **Comment** in-Rule comment is assigned to the Result of the <PARAM_CODE> parameter,
 - If <PARAM_CODE> doesn't exist in the tube, <PARAM_CODE>: the **Comment** in-Rule comment is assigned to the Run
- In Parameter rule:
 - If <PARAM_CODE> exists in the tube, the **Comment** in-Rule comment is assigned to the Result of the <PARAM_CODE> parameter,
 - If <PARAM_CODE> doesn't exist in the tube, <PARAM_CODE>:**Comment** in-Rule the comment is assigned to the result of the current parameter (where the rule is defined)
- In Download rule: the Rule comment is assigned to the Tube

These comments are displayed in the comment's area located in the middle of the **Request** window. It is not possible to modify these comments.

5.3.8 Propagate to parameters...

This button is only available while defining a parameter rule. It allows the user to propagate the current rule to other parameters.

It is not possible to propagate a rule to the current parameter.

Follow the steps below to propagate a rule.

1. In the **parameter rule definition** window, the user click on the **Propagate to parameters...** button.
2. A dialog window named **Chemistries Choice** is displayed. The user has to select the parameters he wants the rule to be propagated to (it is possible to use **click and drag** as well as the **[CTRL]** and **[SHIFT]** keys). Then click on the **Ok** button to propagate or on the **Cancel** button to cancel the operation.
3. Select the **Paste** option.
4. or each parameter selected, a rule edition window will be displayed with the original rule. The user has to

modify, enable (propagated rules are disabled by default) and verify each new rule before clicking on the **Save** button.

If the user click on the **Cancel** button, a warning that the paste process will be cancelled will come up.

5.3.9 Mathematical operators

The following mathematical operators can be used in formulas:

Operator	Meaning	Example
()	Parentheses	(NA*1000)/(NAU*50)
*	Multiply	NA*1000
/	Divide	CREA/CREAU
+	Add	LY%+MO%+BA%+NE%
-	Substract	100-(LY%+MO%+BA%+NE%)
ABS	Absolute value	ABS(IGG)
SIN	Sine	SIN()
COS	Cosine	COS()
TG	Tangent	TG()
LOG	Logarithm	LOG()
LN	Napierian logarithm	LN()
EXP	Exponential	EXP()
SH	Hyperbolic sine	SH()
CH	Hyperbolic cosine	CH()
TH	Hyperbolic tangent	TH()
ARCTG	Arctangent	ARCTG()
FACT	Factorial	FACT()
SQRT	Square root	SQRT()

Example : In the following example, the result will be reported as a percentage, based on the defined reference ranges and based on the received result : $NA*100/((NA.RefHigh-NA.RefLow)/2)$

5.3.10 Note about the rule parser

If a rule entails a comparison (<, <=, >, >= operators) between 2 operands, a check is carried out on both operands to check whether they are comparable (i.e. same type of value):

- If 1 of the operand is NULL, then the rule will fail and will stop all subsequent rules
- If there is a difference between the types of the operands (e.g. numerical value versus non-numerical value), the rule will fail and a "Not Comparable value" message will be displayed in the Messages generated by the rules window yet all subsequent rules will be played.

5.3.11 Keywords in Rules

It is possible to use keyword in your rules. The keyword must be placed inside braces characters.

Please do NOT use semicolons (";") in rules comments as these can be incompatible with some host protocols and the comment gets truncated:

comment(Critically high glucose; call the physician) --> "Critically high glucos" is uploaded to the host.

The following keywords are managed (per type of rule):

Download rules	Parameter rules	Upload rules
Age (in days): AGE	Age (in days): AGE	Age (in days): AGE
Reprog.: REPROG		
	All comments: ALL_COMMENT	All comments: ALL_COMMENT
	Assigned Instrument Type: ASSIGNEDINSTRUMENTTYPE	Assigned Instrument Type: ASSIGNEDINSTRUMENTTYPE
	Assigned Instrument: ASSIGNEDINSTRUMENT	Assigned Instrument: ASSIGNEDINSTRUMENT
	Automate tracking: TRACKING_COMMENT	Automate tracking: TRACKING_COMMENT
Clinical Comment: PATIENT_COMMENT	Clinical Comment: PATIENT_COMMENT	Clinical Comment: PATIENT_COMMENT
	Conditional Flags: HEM_CONDITIONAL	Conditional Flags: HEM_CONDITIONAL
	Current user: USER	Current user: USER
	Definitive Flags: HEM_DEFINITIVE	Definitive Flags: HEM_DEFINITIVE
	Delta Check ok: DELTACHECK	Delta Check ok: DELTACHECK
Department: DEP	Department: DEP	Department: DEP
	Diagnostic Information: DIAG_COMMENT	Diagnostic Information: DIAG_COMMENT
Test programmed in the request: EXIST_IN_REQUEST	Test programmed in the request: EXIST_IN_REQUEST	Test programmed in the request: EXIST_IN_REQUEST
	Diagnostic Received: DIAG_RECEIVED	Diagnostic Received: DIAG_RECEIVED
	Dilution Comment: DILUTION_COMMENT	Dilution Comment: DILUTION_COMMENT
Doctor: DOC	Doctor: DOC	Doctor: DOC
Test programmed in the tube: EXIST_IN_TUBE	Test programmed in the tube: EXIST_IN_TUBE	Test programmed in the tube: EXIST_IN_TUBE

	Instrument comments (Hema): HEM_COMMENT	Instrument comments (Hema): HEM_COMMENT
	Instrument comments (Other): OTHER_ANALYZER_COMMENT	Instrument comments (Other): OTHER_ANALYZER_COMMENT
	Instrument type: INSTRUMENTTYPE	Instrument type: INSTRUMENTTYPE
	Instrument: INSTRUMENT	Instrument: INSTRUMENT
Interpretation: INTERPRETATION_COMMENT	Interpretation: INTERPRETATION_COMMENT	Interpretation: INTERPRETATION_COMMENT
	Into the validation range: INRANGE	Into the validation range: INRANGE
	Manual result: ISMANUAL	Manual result: ISMANUAL
	New result: ISNEW	New result: ISNEW
	Other Flags: HEM_OTHER	Other Flags: HEM_OTHER
	Remisol warning: WARNING_COMMENT	Remisol warning: WARNING_COMMENT
	Result manual comments: MANUAL_COMMENT	Result manual comments: MANUAL_COMMENT
	Rules Comments: RULES_COMMENT	Rules Comments: RULES_COMMENT
SampleID: SAMPLEID	SampleID: SAMPLEID	SampleID: SAMPLEID
Sex: SEX	Sex: SEX	Sex: SEX
	Suspect flags: HEM_SUSPECT	Suspect flags: HEM_SUSPECT
Technical Comment: TECHNICAL_COMMENT	Technical Comment: TECHNICAL_COMMENT	Technical Comment: TECHNICAL_COMMENT
Test programmed: EXIST	Test programmed: EXIST	Test programmed: EXIST
	Test result: <Parameter code>	Test result: <Parameter code>
	Validated result: ISVALID	Validated result: ISVALID
Sample stat: ISSTAT	Sample stat: ISSTAT	Sample stat: ISSTAT
PatientID: PATIENTID	PatientID: PATIENTID	PatientID: PATIENTID

Current time (Local time format): CUR_TIME	Current time (Local time format): CUR_TIME	Current time (Local time format): CUR_TIME
Current date (Local time format): CUR_DATE	Current date (Local time format): CUR_DATE	Current date (Local time format): CUR_DATE
Current date & time (Local time format): CUR_DATETIME	Current date & time (Local time format): CUR_DATETIME	Current date & time (Local time format): CUR_DATETIME
Current time (ISO time format: HHMMSS):ISO_CUR_TIME	Current time(ISO time format: HHMMSS): ISO_CUR_TIME	Current time (ISO time format: HHMMSS): ISO_CUR_TIME
Current date (ISO time format: YYYYMMDD): ISO_CUR_DATE	Current date (ISO time format: YYYYMMDD): ISO_CUR_DATE	Current date (ISO time format: YYYYMMDD): ISO_CUR_DATE
Current date & time (ISO time format: YYYYMMDD-HHMMSS): ISO_CUR_DATETIME	Current date & time (ISO time format: YYYYMMDD-HHMMSS): ISO_CUR_DATETIME	Current date & time (ISO time format: YYYYMMDD-HHMMSS): ISO_CUR_DATETIME
		Selected item out of the Play Uplod Rules options
Rack associated with a RUN RACK_RUN	Rack associated with a RUN RACK_RUN	Rack associated with a RUN RACK_RUN
Position in a rack associated with a RUN POS_RUN	Position in a rack associated with a RUN POS_RUN	Position in a rack associated with a RUN POS_RUN
Rack associated with a TUBE RACK_TUBE	Rack associated with a TUBE RACK_TUBE	Rack associated with a TUBE RACK_TUBE
Position in a rack associated with a TUBE POS_TUBE	Position in a rack associated with a TUBE POS_TUBE	Position in a rack associated with a TUBE POS_TUBE
Doctor phone number TEL_DOC	Doctor phone number TEL_DOC	Doctor phone number TEL_DOC
Department phone number TEL_DEP	Department phone number TEL_DEP	Department phone number TEL_DEP

To these was also added the possibility to extract some information out: hour, minute, second, days...

Keywords	Signification
CUR_TIME.Hour CUR_DATETIME.Hour	Returns the current hour when the rule is played
CUR_TIME.Min CUR_DATETIME.Min	Returns the current minute when the rule is played

CUR_TIME.Sec CUR_DATETIME.Sec	Returns the current second when the rule is played
CUR_DATE.Year CUR_DATETIME.Year	Returns the current year when the rule is played
CUR_DATE.Month CUR_DATETIME.Month	Returns the current month when the rule is played
CUR_DATE.Day CUR_DATETIME.Day	Returns the current day when the rule is played

Example 1: The following action on a sample named sample1 will trigger the "SampleID = sample1" comment: COMMENT(sampleID = {SAMPLEID})

Example 2: The following action played on the 10/07/2008 will trigger the "Today = 10/07/2008" message in the message list: MSG(today = {CUR_DATE})

5.3.12 Some examples

Type	Rule	Interpretation
PR	R1: IF DRUG Contains ' (NEG) ' THEN VALID ; STOP R2: IF DeltaCheck(DRUG) THEN VALID	R1: Validates DRUG and stops the evaluation of the following rules if the result of DRUG contains the characters (NEG) R2; Validates DRUG if the delta check is ok
PR	IF DeltaCheck(NA) AND Exists(K) THEN Validate	Validates NA if the Delta Check is verified for NA and if the parameter K is programmed in the same request
PR	IF CRP Contains '<5' THEN VALID	Validates the CRP if the result returned by the instrument is '<5' (also allows the validation of alphanumerical results)
PR	IF DEP='EMERGENCY' THEN VALID	Automatically validates the result if the request originates from the 'EMERGENCY' service
PR	IF (SUSPECT Contains 'Variant LY%') OR (SUSPECT Contains 'Imm. NE% 2') OR (SUSPECT Contains 'NRBCs') THEN MSG(Do Slide); COMMENT(Verify instrument results)	Displays the message 'Do Slide' in the message list and adds a comment to the request if the suspicion comment returned by the instrument is 'VariantLY%' or 'Imm. NE%2' or 'NRBCs'
UR	IF (CK>130) THEN ADD(CKMB)	Adds CKMB if the result of CK is > 130 (Reflex Rule)
PR	R1: IF ((Exist(HEMOL)) AND (HEMOL > 30)) THEN STOP R2: IF ((DeltaCheck_else_Range(K))) THEN VALID	R1: The first rule stops the validation of parameter K if the hemolysis parameter (if it exists) is too high R2: The second rule enables the validation of parameter K
DR	IF ((AGE <= 365) OR (DEP = '2nd Floor')) THEN ADD(SLIDE)	Adds SLIDE (for GenS Slide Maker) each time the patient is a baby (Age<365days) OR a request originates from the second floor.

Rule for S_GLU

Name:

IF:

THEN:

ELSE:

☒ The rule is active ☐ Play once

Condition:

Actions:

☒ And ☐ Or

☐ Reverse the condition

☒ Then ☐ Else

Comment:

User: sysadm Date: 06/05/2011 17:44:39

Upload rule

Name:

IF:

THEN:

ELSE:

☒ The rule is active ☐ Play once

Condition:

Actions:

☒ And ☐ Or

☐ Reverse the condition

☒ Then ☐ Else

Comment:

User: sysadm Date: 06/05/2011 17:41:24

5.3.13 Testing rules

The Rules validation - test mode was developed for the user(s) to be able to check the validity of rules on a representative set of data (patient/result) without affecting the production database. Please refer to the respective **Technical Guide**.

5.3.14 Manually forcing Upload Rules and triggering a specific action

The user can manually force Upload Rules and trigger a specific action. This functionality requires prior configuration in the REMISOL.INI file:

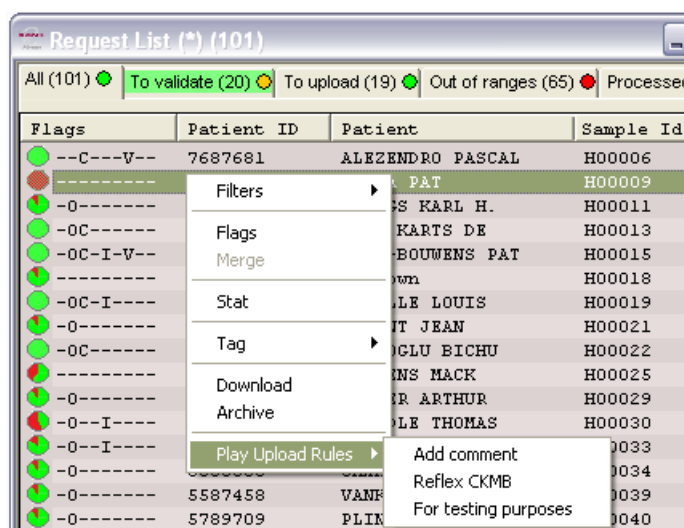
```
[MANUAL_RULES]
/* RULE_x, where x stands for the user-defined key number that will be used by the rule
   engine for the label, and the value for the label as it will be displayed in the
   various contextual menus under the Play Upload Rules option. */
RULE_1=Add call Dr comment
RULE_2=Reflex CKMB
RULE_5=For testing purposes
```

NOTE:

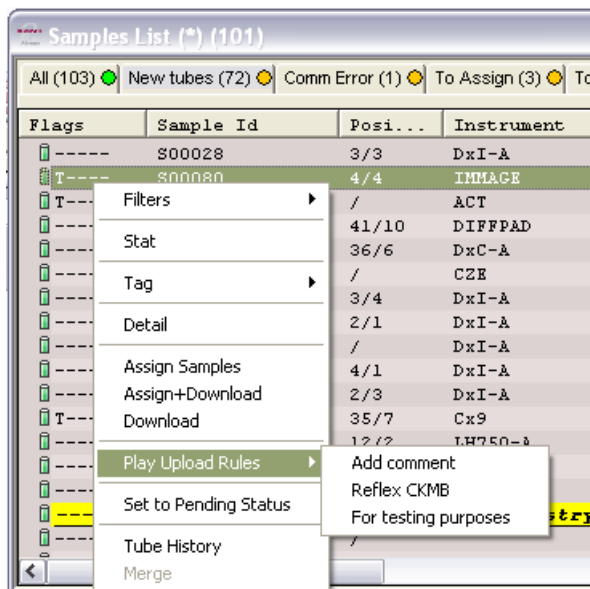
Entries that do not start with "RULE_" are merely ignored, "RULE_0" is not allowed; the entry is also ignored if x is not a number.

If at least one entry is defined in the REMISOL.INI file, The Play Upload Rule menu becomes available (not greyed out anymore), with a sub menu displaying the options as they have been setup in the REMISOL.INI file:

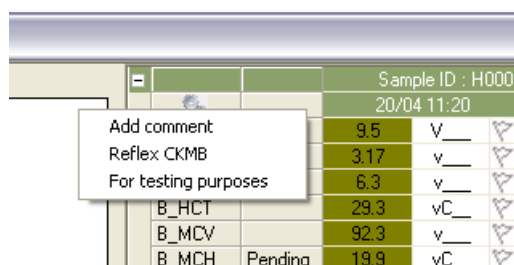
- In the **Request List**



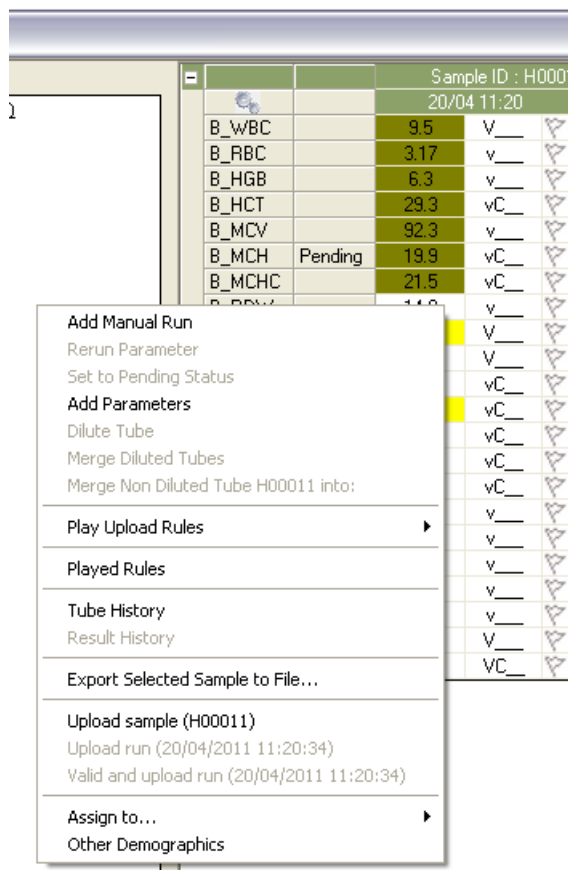
- In the **Samples List**



- By clicking on the gear icon (that will only appear once options have been defined in the REMISOL.INI file)

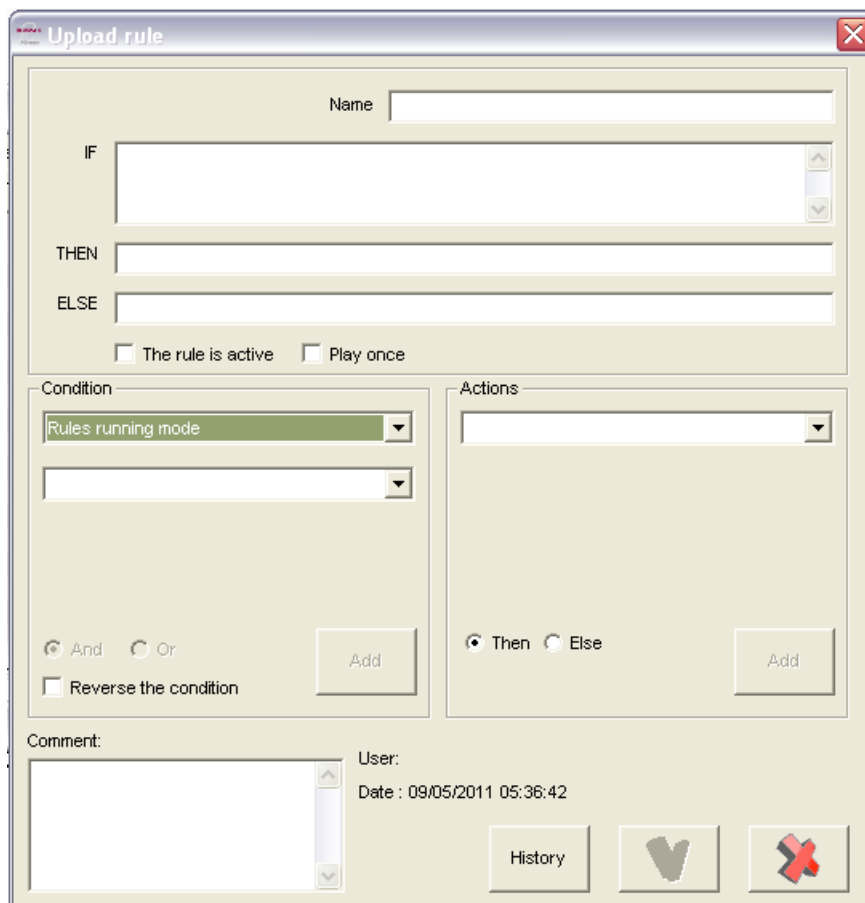


- By clicking anywhere in the **request**:

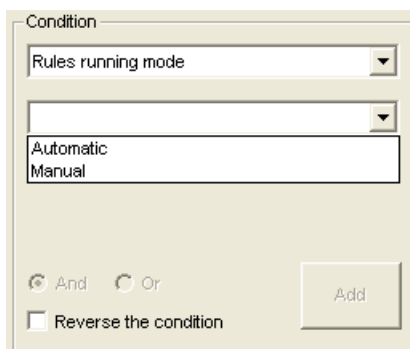


Testing the manual execution of Upload Rules:

In order to trigger a specific action while Upload Rules are manually being played, a new condition/keyword was added in the Rules Wizard: **Rules running mode (MANUAL_RULE)**:



On selection of this item, a list appears:



On selection of **Automatic** and validation by clicking on the **Add** button, the following condition is added in the **IF** field: (MANUAL_RULES=0) and rules are created normally.

NOTE:

The value for MANUAL_RULES is always 0 when rules are played automatically, only value 1 triggers the manual execution of rules.

When **Manual** is selected, two additional lists become available:

- A list of comparison operators:

The 'Condition' dialog box contains the following elements:

- A dropdown menu labeled 'Rules running mode' with 'Rules running mode' selected.
- A dropdown menu labeled 'Manual' with 'Manual' selected.
- A dropdown menu (unlabeled) with a blank selection.
- A list box containing comparison operators: '=', '<>', '>', '>=', '<=', and '<'.

- A list of comparison options as defined in REMISOLINI:

The 'Condition' dialog box contains the following elements:

- A dropdown menu labeled 'Rules running mode' with 'Rules running mode' selected.
- A dropdown menu labeled 'Manual' with 'Manual' selected.
- A dropdown menu (unlabeled) with '=' selected.
- A dropdown menu (unlabeled) with a blank selection.
- A list box containing numeric values: '0', '1', '2', and '5'.

NOTE:

If there is no user selection for these two lists, (MANUAL_RULES > 0) is automatically added as a test, which translates as "if rules are played / forced manually".

By selecting one of the comparison options, the test will exactly match the action as defined in the REMISOL.INI file.

Each time rules are played / forced manually, a specific comment is added in the request.

This test only allows defining a specific action in relation with a manual user selection. If no STOP action follows, all subsequent Upload Rules are executed.

We highly recommend to place specific rules related to manual user selection at the beginning of the list of rules.

5.3.15 Rules: Invalidate results if modified

As an improvement to the rule engine, a new option allows the automatic invalidation of a result if it was modified by a rule.

This option can be enabled in the **Environment > General Setup > More options** menu:

If unchecked (default), the modification of a result by a rule does not alter the validation status.
On the other hand, if checked, then any modification of the result value by a rule will invalidate the results (if it was previously validated).

5.3.16 Modifications history

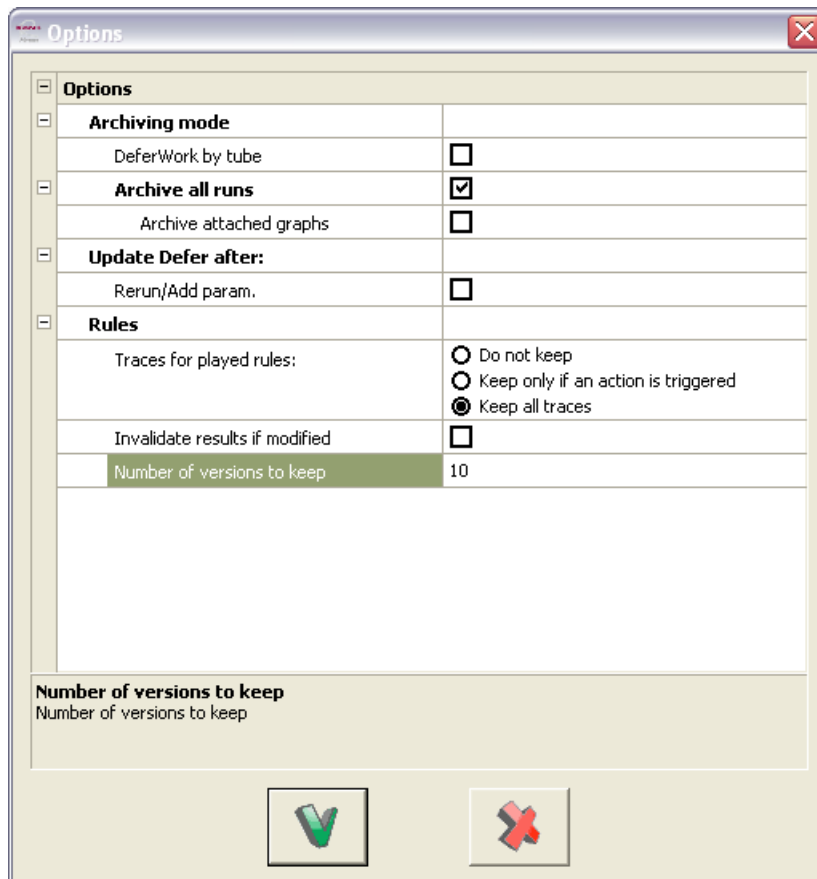
The bottom of the Rules window was modified to provide an access to the list of modifications that were carried out on rules:

The modification includes:

- A Comment field where the user can add comment to a rule or to the modification carried out on a rule. Login, date and time of the last modification are recorded here.
- The **History** button: This button provides access to the history of modifications for a rule:

Date	User	Comment	Rank	Name	Condition	Then
09/05/2011 06:49:07	sysadm	-	3	Rerun CK	(S_CK == S_CK.ValidHigh)	Reflex(S_CK)
09/05/2011 06:48:03	sysadm	-	3	Rerun CK	(S_CK == S_CK.ValidHigh)	Reflex(S_CK) ; COMMENT(AUTO CK RERUN)
09/05/2011 06:09:32	sysadm	-	3	Rerun CK	(S_CK == S_CK.ValidHigh)	Reflex(S_CK) ; COMMENT(AUTO CK RERUN)

NOTE:
This window can be resized.
The number of versions to be kept in the history can be defined in the **Environment > General Setup > More options** menu:

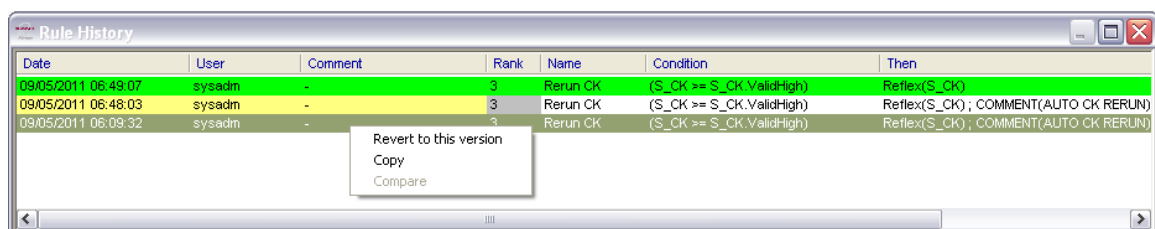


By default, rules are displayed in chronological order (from the latest to the oldest).

Highlights are used as follows:

- White: Definition of the rule: Name, Condition, Then, Else, Active, Play once,
- Grey: The rank; it corresponds to the position in relation with the other rules. (Note: The highest ranking rule is played is played first).
- Green: Highlights the active rule,
- Yellow: Date & time and user information,
- Red: Highlights the differences between two selected lines (accessible via the **Compare** item from the contextual menu)

A right click in the list brings up the contextual menu with 3 options (depending on the selection):



The options are:

- Revert to this version: This option allows the user to revert to a previous version of the rule. It is only available when there is at least a difference between the current rule and the other selected rule.

NOTE:

This option is not available for a modification of the ranking order.

- Copy: This options allows copying the content of the rule into Windows clip board.

- Compare: If 2 versions of the same rule are selected (Click on a line then click on another one while keeping the Ctrl key down), their content can be compared. The difference(s) will be highlighted in red.

NOTE:

A message is added in the Rules Tracing window as a reminder only rules that triggered an action are displayed.

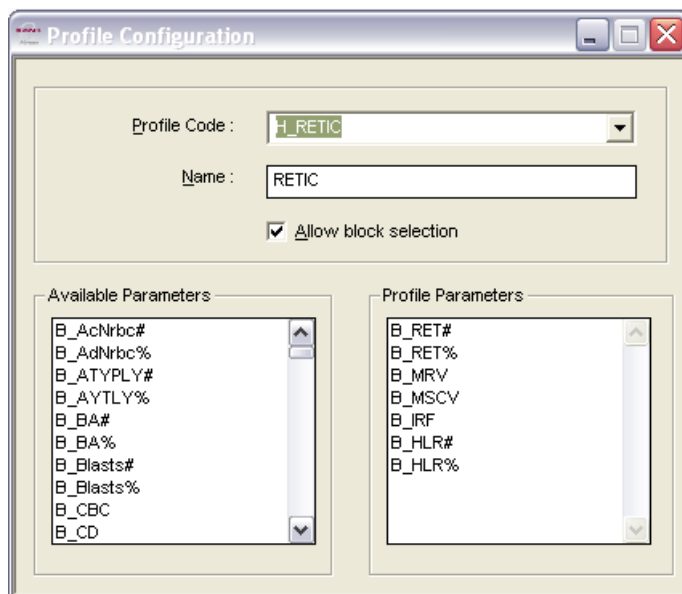
5.4 Profile Definition

5.4.1 Introduction

The **Profile Configuration** window is used to define profiles (panels).

5.4.2 Profile Configuration Window

To open the Profile Configuration window, click on the **Configuration** menu, then select **Profile Definition**.



5.4.3 Procedure

Follow the steps below to define or edit a profile.

1. Enter a profile code in the **Profile Code**: field, or select a profile from the drop-down list.
2. Enter or edit the profile name in the **Name**: field.
3. To add a parameter to the profile, select the parameter in the **Available Parameters** list. The parameter will move from the **Available Parameters** list to the **Profile Parameters** list.
4. To remove a parameter from the profile, select the parameter in the **Profile Parameters** list. The parameter will move from the **Profile Parameters** list to the **Available Parameters** list.
5. Save before you exit this screen or before you define a new profile. When a profile is saved, the **Profile Configuration** screen will clear so that the next profile can be defined.

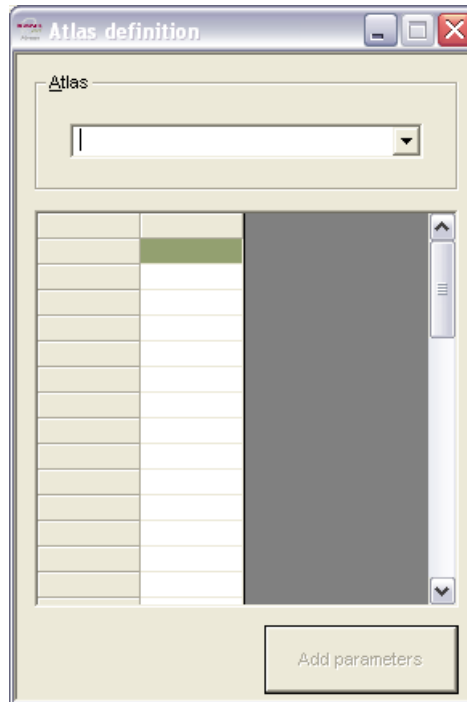
'Block Validation' will allow you to select a group of parameters from the request sheet.

5.5 Atlas

5.5.1 Introduction

An atlas is a graphic profile template for a specific medical condition. An atlas can be superimposed over the graphic profile of a current result (See **Working With Current Requests** for information on graphic profiles).

To open the Atlas Definition window, select the **Configuration** menu, then select **Atlas**.



5.5.2 Procedure

Follow the steps below to save an atlas definition.

1. Enter a name for the atlas in the **Atlas:** field, or select an atlas from the drop-down list.
2. Save the atlas definition.
3. The **Add parameters** button turns active once the atlas is saved. Click on the **Add parameters** button to open the **Parameters** window.
4. Select one or more parameters from the list.
5. Select **OK** to save and exit to the Atlas Definition window. Select **Cancel** to cancel and close the window.
6. The selected parameters will be listed in the first column of the table. Zero values will be listed in the **Value** column. Atlas values are expressed as percentages of the reference values' average. This means that only one atlas needs to be defined for each condition, irrespective of the patient's age and sex. Enter the percentage values for each parameter.
7. Save the atlas definition before closing the window.

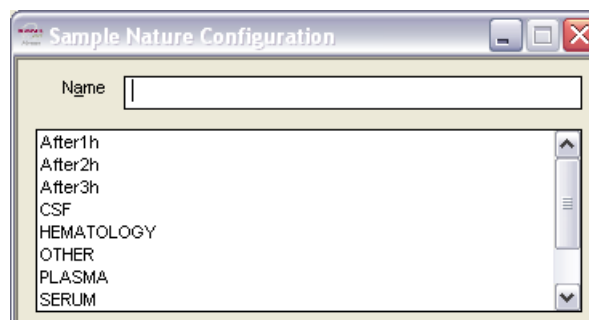
5.6 *Sample Nature*

5.6.1 Introduction

The Sample nature allows the user to define different parameters which have the same sample type, but cannot be run on the same sample. The **Sample Nature Configuration** window allows the user to define sample natures.

5.6.2 Sample Nature Configuration Window

To open the **Sample Nature Configuration** window, click on the **Configuration** menu, then select **Sample Nature**.



5.6.3 Procedure

To define a sample nature, enter its name in the **Name** field, then save it. To edit an existing sample nature, select the sample nature from the list and edit its name in the **Name** field, then save it.

Sample natures defined in the **Sample Nature Configuration** window will be displayed in the **Spl. Nature** drop-down list in the **Parameter Definition** window.

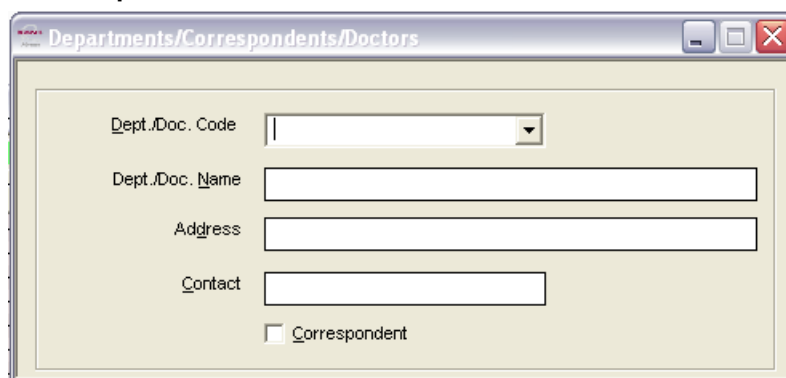
5.7 *Departments/Correspondents/Doctors*

5.7.1 Introduction

The Departments/Correspondents/Doctors Configuration window is used to define or edit doctors, departments, and correspondents.

5.7.2 Departments/Correspondents/Doctors Window

To open the Departments/Correspondents/Doctors Configuration window, click on the **Configuration** menu, then select **Departments/Correspondents/Doctors**.



5.7.3 Procedure

The following table describes each field in the **Departments/Doctors Configuration** window.

1. Enter a code for the department or the doctor (up to 10 alphanumeric characters) or select a code from the drop-down list.
2. Enter a name for the department or the doctor (up to 80 alphanumeric characters).
3. Enter an address for the correspondent (up to 80 alphanumeric characters).
4. Enter a fax number for the correspondent (up to 15 alphanumeric characters).
5. Select this option if the entry is not a doctor or department.

Departments and doctors are selected from the drop-down lists in the **Request Sheet** window.

If you are connected to a host, department or doctor names can be downloaded along the request.

These department or doctor names are automatically assigned an incremental department/doctor code by Remisol Advance. You may modify the department/doctor codes and enter correspondence information in the **Departments/Doctors Configuration** window.

5.8 *Comments Definition*

5.8.1 Introduction

This option allows the user to predefine technical comments or interpretations, also these may be categorized so that they are displayed only where required.

5.8.2 Comments Configuration Window

To open the **Comments Configuration** window, click on the **Configuration** menu, then select **Comments Definition**.

Comments Configuration							
	Abbrev.	Name	Param.	Tech.	Inter.	Run	Diffp.
1	001	MY CUSTOMIZED COMMENT	*	☒	☒	☒	☒
2	002	MY 2nd CUSTOMIZED COMMENT	*	☒	☒	☒	☒
3	003	MY INTERPRETATION COMMENT		☐	☒	☐	☐
4	004	MY TECHNICAL COMMENT		☒	☐	☐	☐
5	005	MY DIFFPAD COMMENT		☐	☐	☐	☒
6	006	MY WBC RESULT COMMENT	*WBC*	☐	☐	☐	☐
7	007	MY FC500 COMMENT	FC*	☐	☐	☒	☐
8	008	MY TECHNICAL, INTERPRETATION & RUN		☒	☒	☒	☐
9	1	(COM0) MICROCYTOSIS 1+	*	☒	☒	☒	☒
10	2	(COM1) MICROCYTOSIS 2+	*	☒	☒	☒	☒
11	3	(COM3) MICROCYTOSIS 3+	*	☒	☒	☒	☒
12	5	(COM4) SPHEROCYTES	*	☒	☒	☒	☒
13	6	(COM5) ELLIPTOCYTES	*	☒	☒	☒	☒
14	7	(COM6) ACANTHOCYTES	*	☒	☒	☒	☒
15	8	(COM7) SCHIZOCYTES	*	☒	☒	☒	☒
16	AGPL	(COM8) PLATELETS AGREGATES	*	☒	☒	☒	☒
17	CIT	(COM9) TO CONTROL	*	☒	☒	☒	☒
18	COA	(COM10) COAGULATED	*	☒	☒	☒	☒
19	FVER	(COM11) DIFF VERIFIED	*	☒	☒	☒	☒
20	GBVER	(COM12) WBC VERIFIED	*	☒	☒	☒	☒
21	HBVER	(COM13) HGB VERIFIED	*	☒	☒	☒	☒
22	HEMO	(COM14) TO RETAIN HEMOLYZYS DELEV	*	☒	☒	☒	☒

5.8.3 Procedure

Enter the abbreviations for the comments in the **Abrev.** column. Enter the technical comments or interpretations in the **Name** column. For each comment, check the box in the adequate column depending on where you want the comment to be displayed. Create specific filters for the Results comments. Save before you close the window.

The comment abbreviation can be used as a shortcut to enter one or more technical comments or interpretations in the **Comments** window for a patient.

You may reorder how the comments are displayed by clicking on one of the first two columns' heading.

The columns allowing the categorization are:

- **Param.:** Specify a pattern to compare with the parameter code. If the parameter code matches, the selected predefined comment will be displayed in the various results comments lists.

NOTE:

An '*' replaces from 0 to several characters, a '?' replaces 1 character. If you do not specify anything, the predefined comment will not be displayed.

- **Tech.:** Check the box in this column to display the selected predefined comment in technical comments lists,
- **Inter.:** Check the box in this column to display the selected predefined comment in interpretation comments lists,
- **Run:** Check the box in this column to display the selected predefined comment in run comments lists,
- **Diffp.:** Check the box in this column to display the selected predefined comment in Diffpad comments lists

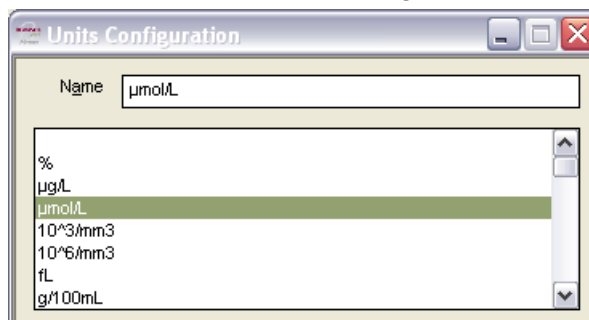
5.9 Units Definition

5.9.1 Introduction

This option allows the user to define units in addition to the predefined units in Remisol Advance.

5.9.2 Units Configuration Window

To open the Units **Configuration window**, click on the **Configuration** menu, then select **Units Definition**.



5.9.3 Procedure

To define a unit, enter a name for it in the **Name** field, then save it. To edit an existing unit, select the unit from the list and edit the unit's name in the **Name** field, then save it.

Units defined in the **Units Configuration** window will be displayed in the **Unit** drop-down list in the **Parameter Definition** window.

NOTE:

Unit information is not transmitted between Remisol Advance and the instrument or the host. You must ensure that the parameter is defined with the same units in the instrument, the host and in Remisol Advance.

5.10 *Saving the Configuration*

5.10.1 Introduction

This option allows the user to save their current configuration. The following configuration and environment settings are saved by this procedure:

- parameter
- profiles
- sample nature
- departments/correspondents/doctors
- comments
- units
- control definitions
- instrument setup
- host setup
- barcode setup
- priorities
- display order
- patient report setup
- users setup
- database query

- download rules
- upload rules
- Parameter rules

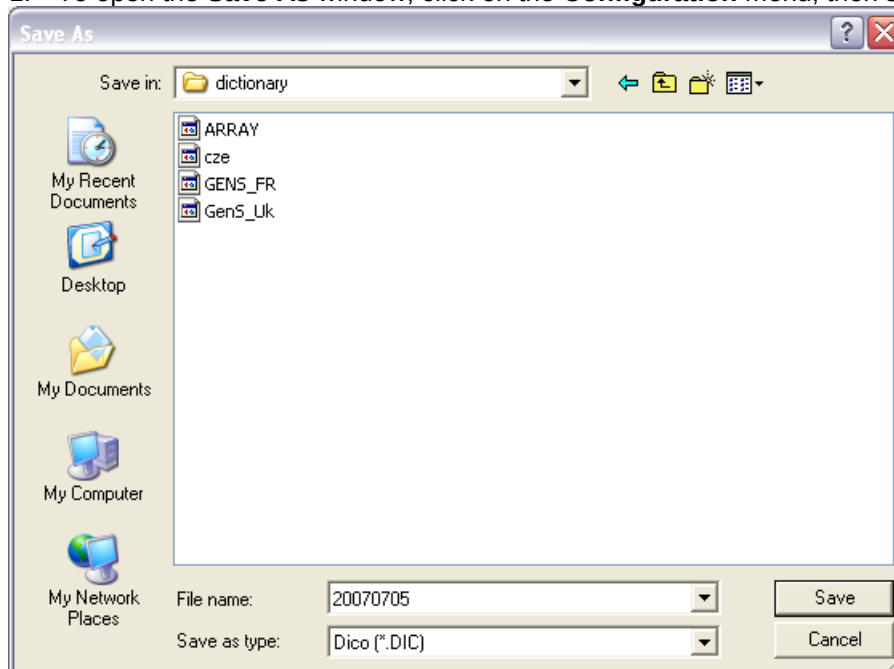
The following configuration settings are not saved:

- atlas
- general setup

5.10.2 Procedure

Follow the steps below to save the current configuration.

1. To open the **Save As** window, click on the **Configuration** menu, then select **Save**.



2. Enter a file name for the configuration in the **File name** field. The default file name is the current date (YYYYMMDD). The file extension is always .DIC (for dictionary).
3. The default directory where the configuration file will be saved is C:\remisol, but you can save the file to a different drive or directory by using the **Save In** drop-down list.
4. Select **Save** to save the configuration. Select **Cancel** to cancel the save and close the window.

5.11 Loading a Configuration

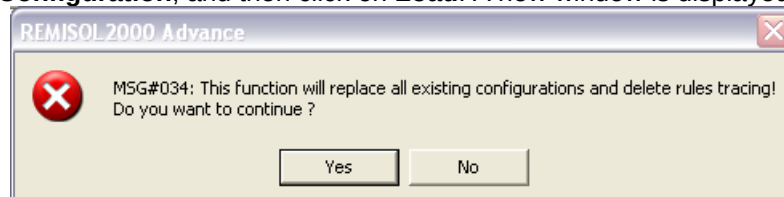
5.11.1 Introduction

This option allows the user to load a saved configuration. Refer to the previous section for a list of configuration settings that were saved.

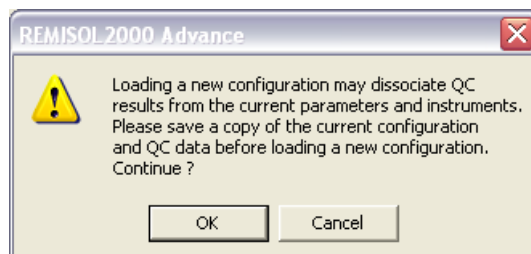
5.11.2 Procedure

Follow the steps below to load a saved configuration.

1. Open the menu **Configuration**, and then click on **Load**. A new window is displayed.

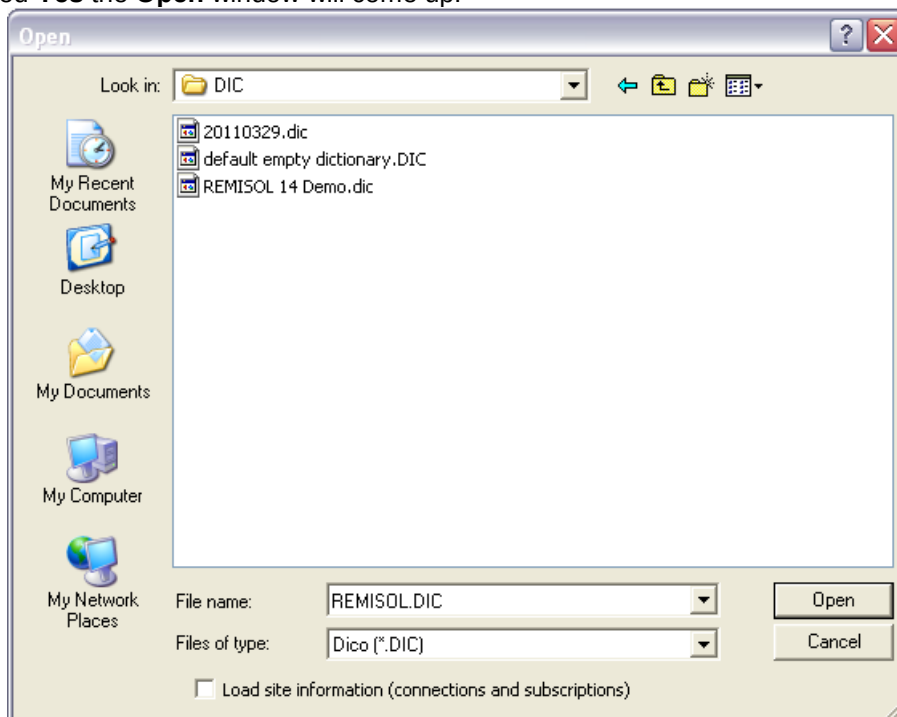


2. Click on the **Yes** button to continue, or click on the button **No** to cancel and quit. Another **Confirmation** window is displayed.



Click on the button **OK** to continue, or click on the button **Cancel** to cancel and quit.

3. If you selected **Yes** the **Open** window will come up.



4. In the **Open** window, select a configuration file to load. If the configuration file is not in the default drive and directory (C:\remisol), you can search in other drives or directories by using the **Look In** drop-down list.
5. Check **Load site information (connection and subscription)** if you want to restore the connection and subscription information from the original dictionary (i.e. rollback to a previous stable configuration); the computer table will be restored to its previous state.
6. Select **Open** to load the selected configuration file. Select **Cancel** to cancel the load and close the window.

NOTE:

Current configuration settings will be overwritten by this procedure. You should always save your current working configuration before loading a saved configuration file.

5.12 Configuration Reports

5.12.1 Introduction

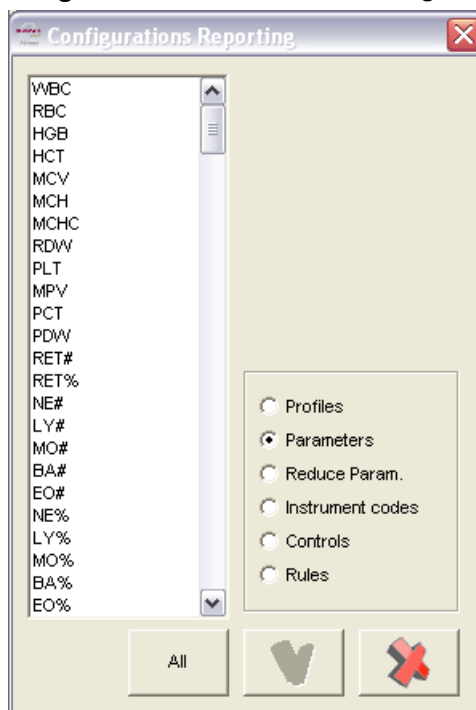
This option allows the user to print out configuration reports. The following table describes each of the configuration reports available in Remisol Advance.

Report	Description
Profiles	This report prints a list of profiles, including profile codes, names, and parameters.
Parameters	This report prints one parameter per page, and includes all parameter values, including formulas and reference ranges.
Reduce Param.	This report prints a list of parameters, including parameter code, sample nature, sample fluid, unit, precision, and validation ranges.

Instrument Codes	This report prints a list of instrument codes defined for each instrument type.
Controls	This report prints one control per page, and includes all control parameters.
Rules	This report prints all the rules defined for each parameters in addition to the Upload and Download Rules.

5.12.2 **Configuration Reporting Table**

To open the **Configurations Reporting** window, click on the **Configuration** menu, then select **Reports**.



5.12.3 **Procedure**

Follow the steps below to print a configuration report.

1. Select a report to print from the list in the bottom right corner of the window.
2. Select one or more parameters from the list on the left, or click on **All**.
3. Select **OK** to start printing. Select **Cancel** to cancel printing.

6 Integrated Quality Control

6.1 Controls Definition

6.1.1 Introduction

The **Controls Definition** window is used to define or edit controls. Each control can only be defined for one instrument. In order to run a control on more than one instrument, the same control must be defined for each instrument.

This quality control module is standard i.e. provided by default with Remisol Advance. It could advantageously be replaced with the additional EQC module (Extended quality Control).

6.1.2 Controls Definition Window

To open the **Controls Definition** window, click on the **Quality Control** menu, then select **Definition**.

	Target value	S.D.	CV (%)
NA	130.00	10.00	7.69
K	3.00	0.30	10.00
CL	102.00	10.00	9.80
CO2	30.00	3.00	10.00
GLU	125.00	12.00	9.60
BUN	50.00	5.00	10.00
CRE	8.00	0.80	10.00
TP	5.50	0.50	9.09

6.1.3 Define a Control

Follow the steps below to define a control.

1. Enter a control code (up to 10 alphanumeric characters) or select an existing control code from the **Code** drop-down list. The control code will be displayed in the software and printed in reports.
2. Enter a full control name (up to 25 alphanumeric characters). The control name will be printed in the Levey-Jennings report.
3. Select **Westgard** or **Rilibak** rules to apply to the control.
4. Select **Control is active** to activate the control. The control must be active before a control sample can be created.
5. Select an instrument from the drop-down list.
6. Enter a barcode ID for the control. This sample ID will be used each time the control is run.

NOTE:

If more than one control is defined with the same sample ID, only one can be active.

7. Enter a sector (rack, tray) to run the control on.
8. Enter a cup (position) to run the control on.
9. Enter the source information for the control.
10. Enter the lot number for the control.
11. Enter the reception date for the control.
12. Enter the expiration date for the control.
13. Save before you define the control parameters.
14. The **Add parameters** button will be active once the control definition is saved. Select the **Add parameters** to

open the **Parameters** window.

15. Select one or more parameters from the list. Parameters may be added to a control at any time.
16. Select **OK** to save and close the window. Select **Cancel** to cancel and close the window.
17. The parameters selected in the **Parameters** window will be displayed in the controls definition table on the right side of the **Controls Definition** window. Enter a target value and S.D. (standard deviation) for each parameter in the appropriate column. The coefficient of variation C.V. (%) will be calculated from the target value and S.D. when the control is saved.
18. Save the control definition before closing the window.

6.1.4 **Duplicate**

This function is used to define a control for the same control material on more than one instrument without having to enter again all the information about the control.

Follow the steps below to use the Duplicate function.

1. In the **Controls Definition** window, select a control from the drop-down list.
2. Right-click to open the **Duplicate** popup menu.
3. Select **Duplicate** to clear the **Code** and **Barcode** fields.
4. Enter a new code and barcode, and select a new instrument from the drop-down list.
5. Save the new control definition.

6.1.5 **Westgard Rules**

The following table describes each of the Westgard rules.

Rule	Meaning
1-2S	Rule 1-2S fails if the control result is outside the target value ± 2 standard deviations. The remaining rules will only be tested if this rule fails.
1-3S	Rule 1-3S fails if the control result is outside the target value ± 3 standard deviations (Random error).
2-2S	Rule 2-2S fails if two consecutive results are both outside the target value ± 2 standard deviations in the same direction (Systematic error).
R-4S	Rule R-4S fails if two consecutive results are both outside the target value ± 2 standard deviations in opposite directions (Random error).
4-1S	Rule 4-1S fails if four consecutive results are outside the target value ± 1 standard deviations (Systematic error).
10X	Rule 10X fails if ten consecutive results are on the same side of the target value (Systematic error).
2/3-2S	This rule is not currently available.

NOTE:

If more than one rule is selected, the control result will not fail if only Rule 1-2S fails.

If Rule 1-2S is the only rule that was selected, the control result will fail if Rule 1-2S fails.

Select which Westgard rules to apply for the control. Rule 1-2S must be selected before any other options are active.

6.1.6 **Rilibak Rules**

The following table describes each of the Rilibak rules.

Rule	Type	Meaning
1	Precision and Accuracy	Rule 1 fails if the control result is outside the target range (± 3 standard deviations outside the target value).
2	Precision	Rule 2 fails if 7 consecutive values are below or above the target value.
3	Precision	Rule 3 fails if 7 consecutive values are increasing or decreasing.

Select which type of rules to apply: precision or accuracy. Select the Rilibak rules to apply to the control. If accuracy was selected as the rule type, only Rule 1 may be selected.

6.1.7 Delete a Control

To delete a selected control, click on the **Delete** toolbar button.

6.1.8 Delete a Control Parameter

To delete a specific control parameter, select the parameter in the control definition table by clicking on the parameter (the row will be highlighted) then click on the **Delete** toolbar button.

6.2 Control Sample Creation

6.2.1 Introduction

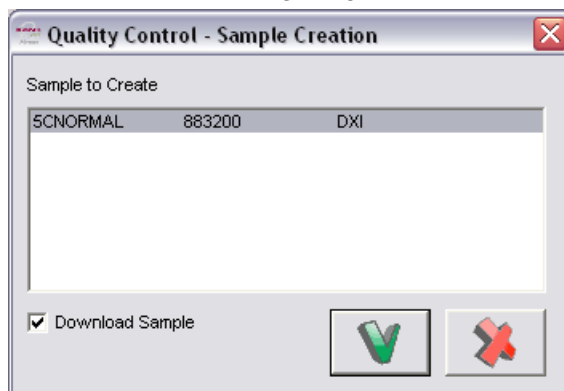
The **Sample Creation** window is used to manually create a control sample.

NOTE:

A control sample is created automatically when control results are uploaded from the instrument, or in response to a host query sent by an instrument.

6.2.2 Sample Creation Window

To open the **Sample Creation** window, click on the **Quality Control** menu, then select **Cup Creation**.



6.2.3 Procedure

Follow the steps below to create a control sample.

1. Select a control from the **Sample to Create** list. Select **Download Sample** to automatically download the control sample.
2. Select **OK** to open the **Parameters** window. Select **Cancel** to cancel and close the **Sample Creation** window.
3. In the **Parameters** window, select one or more parameters (default is all parameters).
4. Select **OK** to create the control sample with the selected parameters. Select **Cancel** to cancel the creation of a control sample.

Control samples are flagged as QC in the Sample List.

Once a control sample has been created in Remisol Advance, it is treated as a patient request until it is collected into the quality control database. It will appear in the **Request List** window and **Sample List** window, and it can be edited in the **Request Sheet** window.

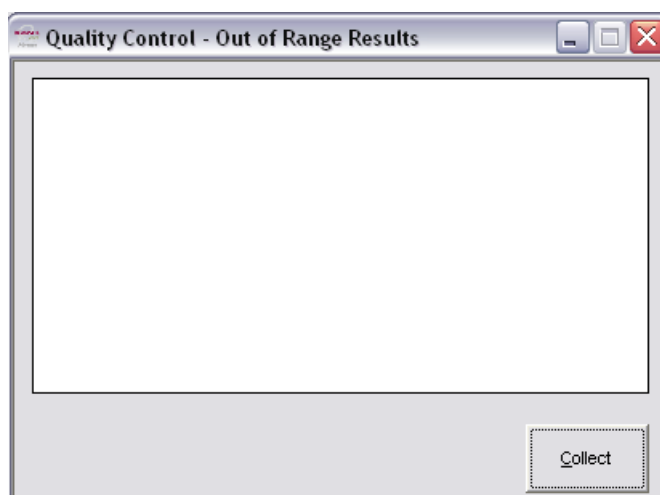
6.3 Out of Range Results Log

6.3.1 Introduction

Control results failing the quality control must be reviewed and the appropriate action taken before they are included in the quality control database. If a control result fails the quality control, a warning window will open when the result is received. The control results that failed are listed in the **Out of Range Results** window.

6.3.2 Out of Range Results Window

To open the Out of Range Results window, click on the **Quality Control** menu, then select **Out of Range Results Log**.



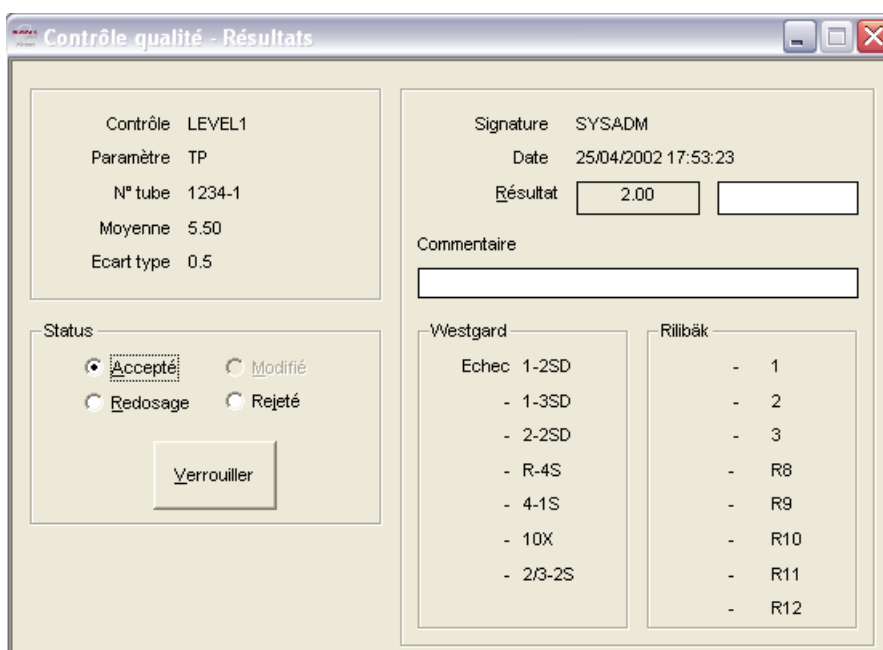
6.3.3 Manual Results Collection

Control results are automatically collected into the quality control database when Remisol Advance receives the results from the instrument.

In the **Out of Range Results** window, click on **Collect** to manually collect control results.

6.3.4 Point Detail Window

To review a result that failed, double-click on the result in the **Out of Range Results** window. This will open the **Point Detail** window.



Contrôle LEVEL1	
Paramètre	TP
N° tube	1234-1
Moyenne	5.50
Ecart type	0.5

Signature SYSADM	
Date	25/04/2002 17:53:23
Résultat	2.00
Commentaire	

Status	
☒ Accepté	☐ Modifié
☐ Redosage	☐ Rejeté
Verrouiller	

Westgard	Rilibak
Echec 1-2SD	- 1
- 1-3SD	- 2
- 2-2SD	- 3
- R-4S	- R8
- 4-1S	- R9
- 10X	- R10
- 2/3-2S	- R11
	- R12

Westgard and Rilibak rules are listed in the lower right corner. Each rule is flagged as follows:

- OK: the result passed this rule
- Fail: the result failed this rule
- Dash (-): the rule does not apply

Comments may be entered in the **Comment** field. These will be printed on Levey-Jennings charts.

6.3.5 Control Result Status

Select which action to take in the Status section of the **Point Detail** window. The following actions may be taken with the failed control result.

Action	Control Result Status Flag	Result
Accept	A	The result will be included in the quality control statistics.
Change	C	This option is only available if a modified result is entered in the field next to the result. The modified result will be included in the quality control statistics.
Rerun	R	The result will not be included in the quality control statistics.
Reject	J	The result will not be included in the quality control statistics.

NOTE:

Results passing the quality control are automatically accepted and assigned a status flag A.

6.3.6 Lock Point

Once an action has been selected, you must lock the point. Locking the point saves the selected action and adds the control result to the quality control database. To lock the point, click on **Lock Point**. A window will open: Select **Yes** to lock the point and exit the **Point Detail** window. Select **No** to cancel.

If you exit the **Point Detail** window without locking the point, the control result will still be listed in the **Out of Range Results Log** window.

6.4 *Control Results*

6.4.1 Introduction

The **Results** window displays statistics for all the data points that were accepted for the selected control and control period.

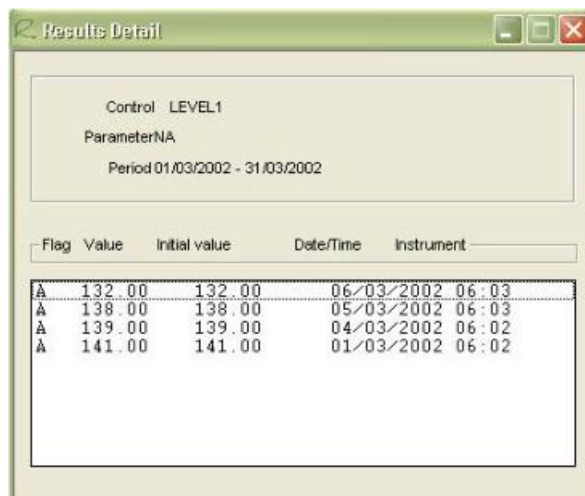
6.4.2 Results Window

To open the **Results** window, click on the **Quality Control** menu, then select **Results**.

To view results, select a control from the **Controls** list. Monthly control periods will be displayed in the **Periods** field. Select a specific period or all of them in the **Periods** list.

6.4.3 Results Detail

To display detailed information on a parameter, double-click on the parameter's row in the **Parameters** table. The **Results Detail** window will open.



The **Results Detail** window lists all the results for the selected control parameter, particularly the results that were not used to calculate the control parameter statistics.

6.4.4 Print Control Results

To print control results statistics for a selected control and control period, click on the **Print** toolbar button.

The Quality Control Results Statistics report contains the following information:

- Selected control period
- Control name and ID
- Control material source, lot number, reception date, and expiration date
- Sample ID (barcode ID) and sample type
- Instrument
- All the parameters for the selected control
- Statistics (average, SD, CV, low, high, and count) for the current and previous months for each parameter and cumulative statistics for each parameter

6.4.5 Delete Control Results

To delete all results for a selected control and control period, click on the **Delete** toolbar button.

6.5 Levey Jennings Charts

6.5.1 Introduction

This option allows the user to view and print Levey-Jennings charts from the control results.

6.5.2 Levey Jennings Charts

To open the Levey-Jennings Chart window, click on the **Quality Control** menu, then select **Levey-Jennings Chart**.

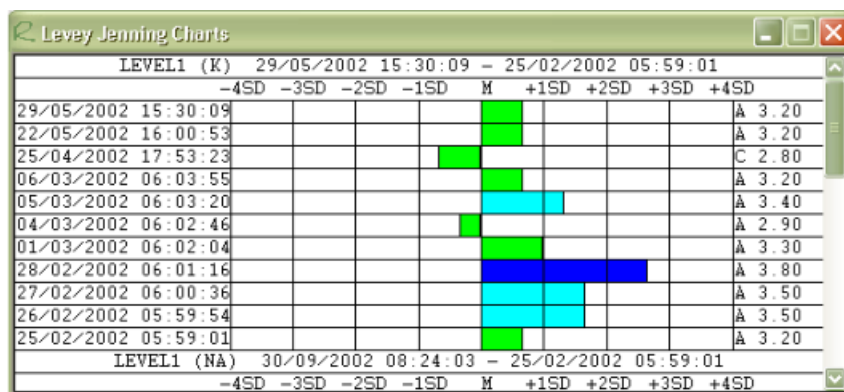
6.5.3 Procedure

Follow the steps below to display Levey Jennings charts.

1. Select one or more controls from the list.
2. Select one or more parameters from the list. If no parameters are selected, all of the parameters will be displayed in the Levey-Jennings chart.
3. Select one of the following options:
 - a. Point to charts all results in the selected date range.
 - b. Day (1 point) to charts the first daily result for each parameter.
 - c. Day (mean) to charts the daily average for each parameter.
4. Enter a date range in the **From** and **To** fields. The date format is MM/DD/YYYY.
5. Select **OK** to display the Levey-Jennings chart. Select **Cancel** to cancel and exit the **Levey-Jennings Chart** window.

6.5.4 Levey-Jennings Chart

If you selected **OK** in the **Levey-Jennings Charts** window, the selected results will be displayed in the **Levey-Jennings Charts** window.



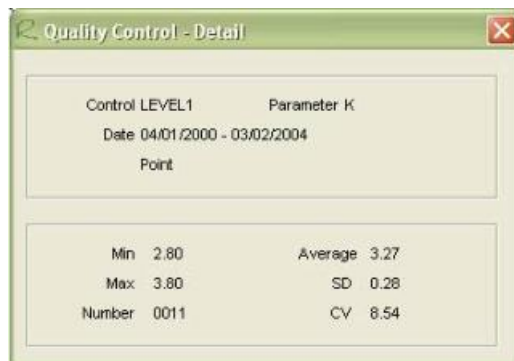
Results (vertical bars) are plotted against the mean (target value) $\pm$ 4SD. Results bars are color coded as follows.

Color	Meaning
Green	Result is between the mean + 1SD and - 1SD or result equals $\pm$ 1SD
Light Blue	Result is between the mean $\pm$ 1SD and $\pm$ 2SD or result equals $\pm$ 2SD
Dark Blue	Result is between the mean $\pm$ 2SD and $\pm$ 3SD or result equals $\pm$ 3SD

Red	Result is between the mean +/- 3SD and +/- 4SD or result equals +/- 4SD
Black	Result exceeds the mean +/- 4SD

6.5.5 Detail

To view detailed information about a selected control and parameter, click on the **Comment** toolbar button. The Detail window will open.



6.5.6 Printing Levey-Jennings Charts

The displayed Levey-Jennings charts may be printed at any time by clicking on the **Print** toolbar button. Each control/parameter is printed on a separate report.

The printed Levey-Jennings chart contains the following information:

- Control name and ID
- Control material source, lot number, reception date, and expiration date
- Instrument
- Sample ID (barcode ID)
- Parameter name, sample type and unit
- Selected Westgard and Rilibak rules
- Target mean and SD
- Statistics for the report, the current month, and the previous month
- Results are plotted against the mean (target value) +/- 4SD
- Each result and the cup creation date and time are printed with the chart

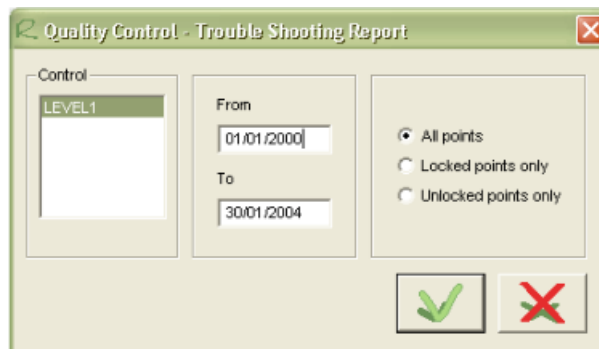
6.6 *Trouble Shooting Report*

6.6.1 Introduction

This option allows the user to generate a troubleshooting report for all the results which failed quality control.

6.6.2 Trouble Shooting Report Window

To open the Trouble Shooting Report window, select the **Quality Control** menu, then select **Trouble Shooting Report**.



6.6.3 Procedure

Follow the steps below to print a troubleshooting report.

1. Select one or more controls from the **Controls** list.
2. Enter a date range in the **From** and **To** fields. The date format is MM/DD/YYYY.
3. Select one of the following options:
 - a. All points to print all failed control results.
 - b. Locked points only to print all locked failed control results.
 - c. Unlocked points only to print all unlocked failed control results.
4. Select **OK** to initiate the print with the selected options. Select **Cancel** to cancel the print and exit the **Trouble Shooting Report** window.

6.6.4 Troubleshooting Report

The troubleshooting report contains the following information regarding each failed control result:

- Control ID
- Parameter
- Control cup creation date and time
- Login ID
- Target value (mean) and SD
- Result
- Westgard and Rilibak rules status with pass/fail flags (flag key is at the bottom of the report)
- Control result status flags (flag key is at the bottom of the report)

6.7 Save

6.7.1 Introduction

This option allows the user to save the current quality control database. This includes all control results and all definitions.

6.7.2 Procedure

Follow the steps below to save the current quality control database.

1. To open the **Save As** window, click on the **Quality Control** menu, then select **Save**.



2. Enter a quality control file name in the **File name** field. The default file name is the current date (YYYYMMDD). The file extension is always .QC.
3. The default directory is C:\Remisol, but you can save the file in a different drive or directory by using the **Save In** drop-down list.
4. Select **Save** to save the configuration. Select **Cancel** to cancel the save and close the window.

6.8 Load

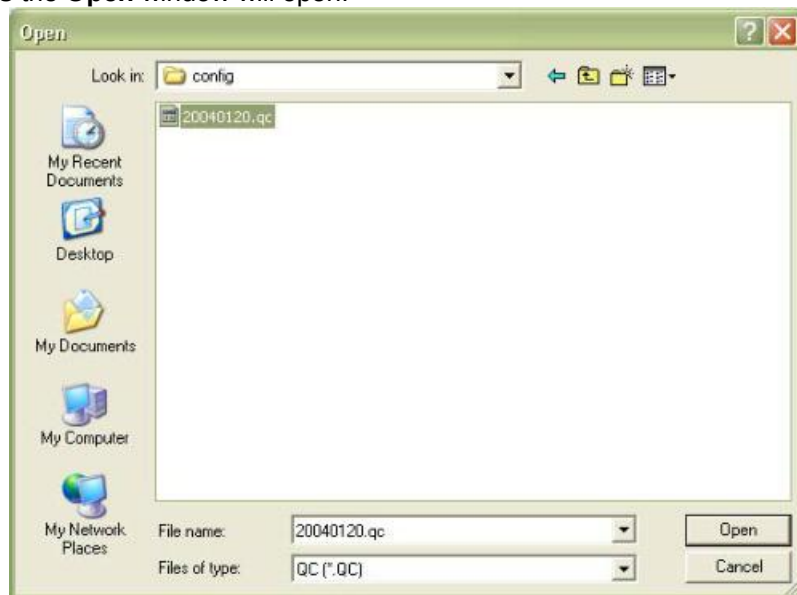
6.8.1 Introduction

This option allows the user to load a saved quality control database.

6.8.2 Procedure

Follow the steps below to load a saved quality control database.

1. To load a saved quality control database, click on the **Quality Control** menu, then select **Load**. A message window will open.
Select **Yes** to continue. Select **No** to cancel the load and close the window.
2. If you selected **Yes** the **Open** window will open.



3. In the **Open** window, select a quality control file to load. If the quality control file is not in the default drive and directory (C:\Remisol), you can search in other drives or directories by using the **Look In** drop-down list.
4. Select **Open** to load the selected quality control file. Select **Cancel** to cancel the load and close the window.

NOTE:

Current quality control definitions and results will be overwritten by this procedure. You should always save your current quality control database before loading a saved quality control file so you can fall back on it should the latter fail.

6.9 Results export module: QConCall

QConCall is an optional module integrated in the Remisol Advance software, which allows the export of quality controls results.

This module is accessible through the **Quality Control - QConCall** menu within Remisol Advance. In order to be able to use it, the module should be registered (in the .PMF license file).

For further information, please refer to the **Technical Guide**.

7 Optional Quality control - EQC

7.1 Introduction

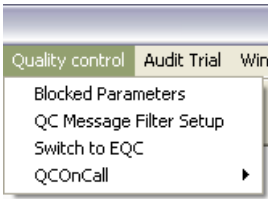
The integrated quality control can advantageously be replaced by the optional EQC (Extended quality Control) module.

Please refer to the EQC operations manual for further informations.

If this option is activated before Remisol Advance is launched, the integrated Quality Control menu is replaced with EQC's.

7.2 Menu

When EQC is activated, the following "Quality Control" menu replaces the integrated one.



7.3 EQC button in the toolbar

Currently, when there are blocked points in EQC, a popup window warns the user. If the user closes this warning without taking any action, these points remain blocked without any more reminders for the user.

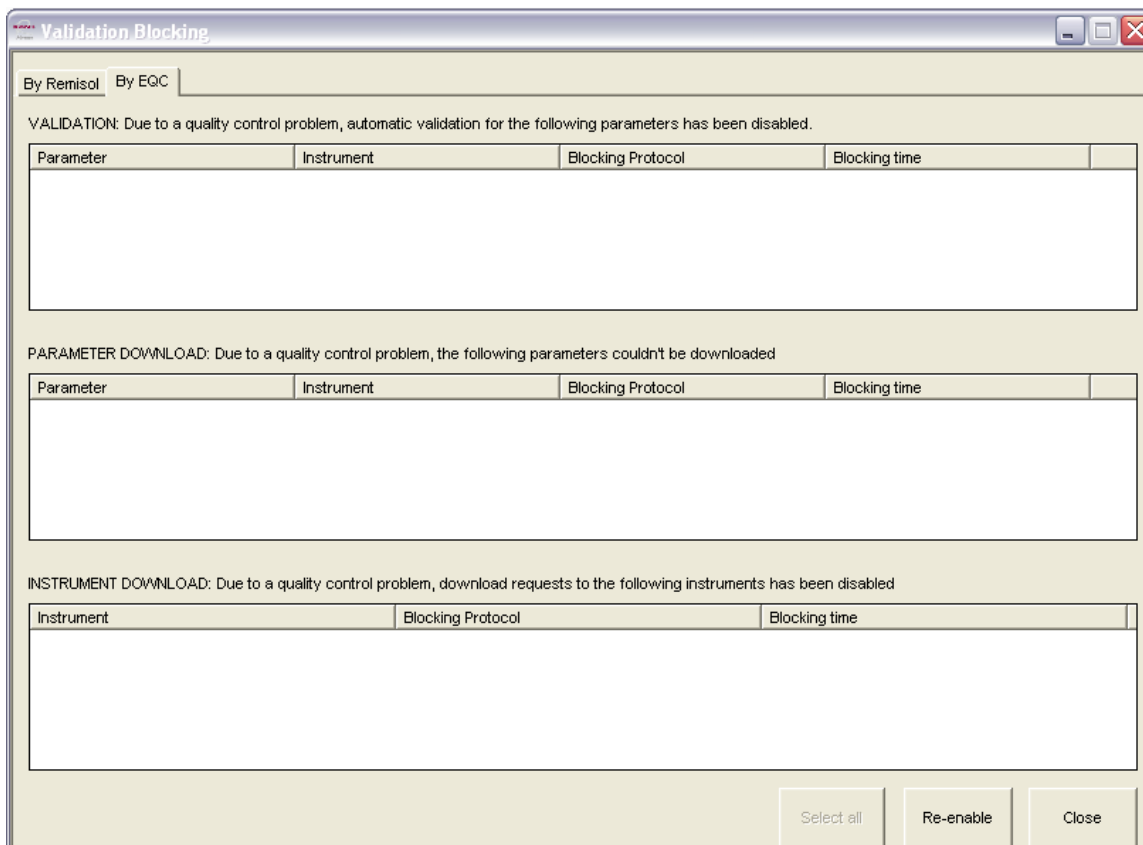
When there are blocked points in EQC, a red indicator (a little red hand) is displayed in the bottom left corner of the EQC button in the toolbar.

Once the points are either accepted or rejected, the red hand disappears.

	EQC with no blocked points
	EQC with blocked points

7.4 Control that fails

The following screen displays the controls which failed the rules that were defined.



The dialog box is titled "Validation Blocking" and has two tabs: "By Remisol" and "By EQC". The "By EQC" tab is selected. The dialog contains three sections, each with a message and a table.

VALIDATION: Due to a quality control problem, automatic validation for the following parameters has been disabled.

Parameter	Instrument	Blocking Protocol	Blocking time

PARAMETER DOWNLOAD: Due to a quality control problem, the following parameters couldn't be downloaded

Parameter	Instrument	Blocking Protocol	Blocking time

INSTRUMENT DOWNLOAD: Due to a quality control problem, download requests to the following instruments has been disabled

Instrument	Blocking Protocol	Blocking time

At the bottom right, there are three buttons: "Select all", "Re-enable", and "Close".

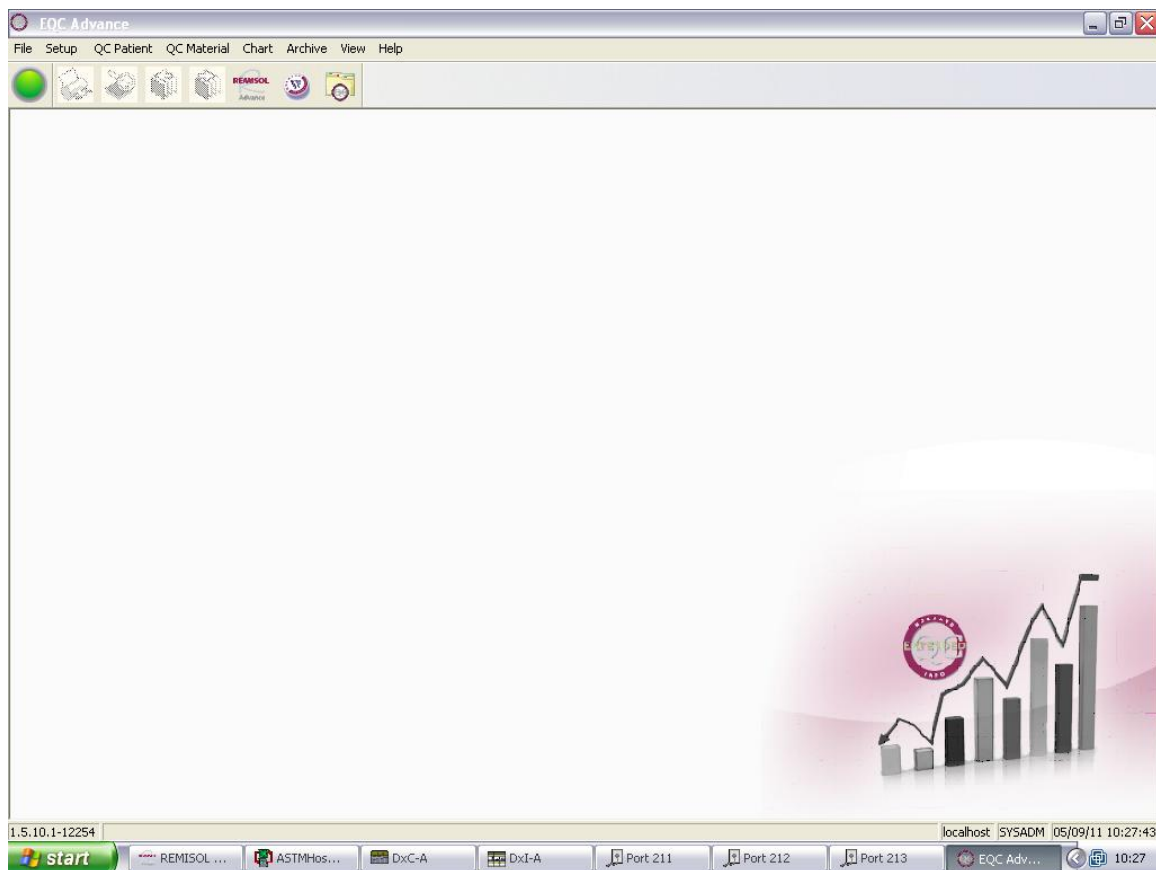
In order to be able to re-enable the automatic validation, when blocked, and instrument download, the user must have the adequate access right properly set up in the Remisol Advance **Users Setup** menu:

Modif QC allows the user to create, modify and erase data in the EQC, and to re-enable automatic validation and instrument download.

Clear EQC Blocking allows the user to re-enable automatic validation and instrument download.

7.5 Switching to the EQC software

You can switch to the EQC software by clicking on the **Quality control - Switch to EQC** menu, or by clicking on the **EQC** toolbar button.



1. **Event:** Type in a name for the event.

Predefined options:

- a. Calibration (will be displayed in the EQC graphs),
- b. Maintenance,
- c. Reagent change (will NOT be displayed in the EQC graphs; EQC will display those entered in EQC).

2. **Instrument:** Select the instrument out of the list of (networked) instruments the Event is associated with.

3. **Operator:** Type in a name for the operator (free entry - this has nothing to do with the Event log user (profile logged in) displayed in the Instruments Events log window).

4. **Event start date:** select a start date & time for the event you are currently logging.

5. **Event end date:** select an end date & time for the event you are currently logging.

6. **In progress:** If you check this option to declare an event as ongoing, the Event end date is greyed out.

7. **Detail:** Provide any detail you want on the event you are logging.

8. **Comment:** (not available in the New event window, only available in the Edit event window): provide any comment on the edition of the event.

9. **Management:** This button allows the management of logs.

1. **Keep at least xxx events:** Specify the minimum number of events you want to keep.

2. **Keep at most xxx events:** Specify the maximum number of events you want to keep.

3. **Keep events for xxx days:** Specify the maximum number of days you want to keep your recorded events for.

9 Tracking modules

Remisol 1.5 introduced a complete traceability of results; that is to say that all events relating to the creation, modification of a result can be saved (all this information will be recorded into new tables made available in the Remisol Advance database).

These events can:

- Addition of a manual run,
- Reception of results from an instrument,
- Manual or automatic (rules) modifications of a result,
- Upload of a result to the Host,
- Result archiving,
- Deletion of a result,
- Manual or automatic validation of a result,
- Invalidation of a result,
- Reception of a Quality Control result.

The following information is added to the event:

- Type of event,
- Date and time of the event,
- Source of the event (user, rule...),
- Details about the source.

9.1 Tracking Setup

The **Environment > Tracking Setup** window allows control over the definition, the activation and the deactivation of the types of events to be kept:

NOTE:

Only users with "administrator" right can modify these options.
This tracking engine replaces the old "(TAT) triggers" which are now obsolete.

Tracking setup

Physical event

☐ Tracking messages ☒ New result ☐ Host query

Logical event

Sample

☒ Created ☐ Archived ☐ Deleted

Parameter

☒ Created ☐ Downloaded ☐ Deleted

Result

☒ Modified ☒ Validated ☒ Invalidated

☐ Uploaded to host ☐ Deleted

Contextual information on result

☐ Analyzer result frame ☐ Calculation rule trace

For non managed requests

Keep data for hours

Purge data every minutes

Database impacts

0 Mb 250 Mb

Before

Info: the detail of the estimation of the impact isn't shown because it is close to the current.
Note: this is an estimation. It does not take account of the number of days of archive to keep.

Physical event:

- **Tracking messages:** Checking this option will activate the logging of all tracking messages (M101 and M103 equivalent) uploaded by automation lines like the Preplink, the Automate 800, the Automate 1200 or the LH1500.
- **New result:** Checking this option will activate the logging of the raw information uploaded by the instruments before any modification by drivers and / or rules (only available for the "standard" BC instruments, not available for "Other" instruments).
- **Host query:** Checking this option will activate the logging of the queries done by some instruments or automation lines.

Logical event:

- **Sample > Created:** Checking this option will activate the logging of the creation of a new sample in Remisol Advance,
- **Sample > Archived:** Checking this option will activate the logging of the archiving of a sample in Remisol Advance,
- **Sample > Deleted:** Checking this option will activate the logging of the deletion of a sample in Remisol Advance.

Parameter:

- **Parameter > Created:** Checking this option will activate the logging of the creation of a new parameter in Remisol Advance,
- **Parameter > Downloaded:** Checking this option will activate the logging of downloads to instruments and / or automation lines,

- **Parameter > Deleted: Created:** Checking this option will activate the logging of the deletion of a parameter in Remisol Advance.

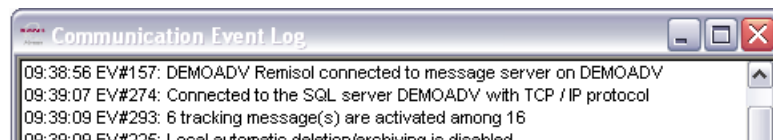
Result:

- **Result > Modified:** Checking this option will activate the logging of the creation and modification of a result for a parameter,
- **Result > Validated:** Checking this option will activate the logging of the manual or automatic validation of a result,
- **Result > Invalidated:** Checking this option will activate the logging of the invalidation of a result,
- **Result > Uploaded to host:** Checking this option will activate the logging of the upload of a result to the host,
- **Result > Deleted:** Checking this option will activate the logging of the manual or automatic deletion of a result.

Contextual information on result

- Analyzer result frame,
- Calculation rule trace.

Altogether, 16 options are available. On the launch of Remisol Advance, a message displays how many logs are activated in the Comm. Event Log window.



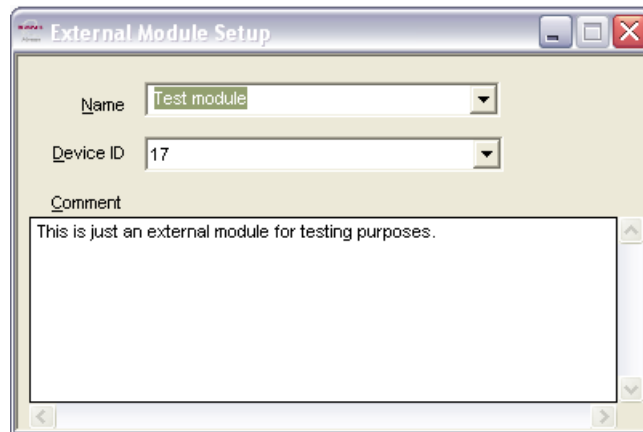
- **For non managed requests** (tubes that do not exist anymore or never existed)
 - Keep data for xxx hours: Defines how many hours tracking information is kept in the database,
 - Purge data every xxx minutes: Defines how regularly Remisol Advance checks if there is obsolete data to be deleted from the database.
- **Database impacts:** In order to visualize the impact on the database, size wise, of the events you have chosen to track out of the 16 options above, the **Tracking Setup** window now provides a graphical display of the estimated impact (the Database Impacts limit equals the size of the SQL archive file, archive.dat).
- **Delete all tracking data** provides the possibility to delete all the tracking data already recorded; it only becomes available only once all tracking options have been unchecked.

9.2 External modules management

Considering they are connected to an automation line, it is possible to log events related to systems that are present yet not connected to Remisol Advance; they are considered as "external modules".

9.2.1 External module setup

The setup is accessible through the **Environment > External Module Setup**:



- **Name:** Name defining the module or type of module (e.g. ACLTOP),
- **Device ID:** Device ID for the module; value between 0 and 99,
- **Comment:** Extra information on the module (e.g. description), with a maximum of 255 characters.

Each external module can then be used thanks to the tracking information provided automation lines.

Open **Environment > Automation Setup**; a new area at the bottom allows linking tracking data with the external module as defined previously above:

Automation Setup

Automation Main Settings

Name

ACLTOP

Type

OTHER/1

Pprt

7

Device ID

7

Low level type

☒ Serial
 ☐ Serial on TCP
 ☐ File / FTP
 ☐ RADV TCP

Network Management

Start on:

R2000TRAINING

Manage and monitor on:

R2000TRAINING

Download behavior

☐ Always download to Automation
 ☒ Use parameter priorities (like instrument)

☒ Include in the Update_on_query process
 ☐ Wait HQ in case of rerun/add on
 ☒ Send clear cup in case of rerun/add on
 ☐ Deletion Notification
 ☒ Enable Patient Data download
 ☒ Enable Comments download
 ☐ Direct LIS Connection

Special

Busy Delay

60

seconds

Baud Rate

☐ 300
 ☐ 600
 ☐ 1200
 ☐ 2400
 ☐ 4800
 ☒ 9600
 ☐ 19200
 ☐ 38400

Data Bits

☐ 5
 ☐ 6
 ☐ 7
 ☒ 8

Stop Bits

☒ 1
 ☐ 1,5
 ☐ 2

Parity

☒ None
 ☐ Odd
 ☐ Even

☐ XON-XOFF

Line Units

Module	Codes

Add

Modification

Delete

Automation Setup

Automation Main Settings

Name

ACLTOP

Type

OTHER/1

Pprt

7

Device ID

7

Low level type

☒ Serial
 ☐ Serial on TCP
 ☐ File / FTP
 ☐ RADV TCP

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 ☐ Deletion Notification
 ☒ Enable Patient Data download
 ☒ Enable Comments download
 ☐ Direct LIS Connection

Special

Busy Delay

60

seconds

Baud Rate

☐ 300
 ☐ 600
 ☐ 1200
 ☐ 2400
 ☐ 4800
 ☒ 9600
 ☐ 19200
 ☐ 38400

Data Bits

☐ 5
 ☐ 6
 ☐ 7
 ☒ 8

Stop Bits

☒ 1
 ☐ 1,5
 ☐ 2

Parity

☒ None
 ☐ Odd
 ☐ Even

☐ XON-XOFF

Line Units

Module	Codes

Add

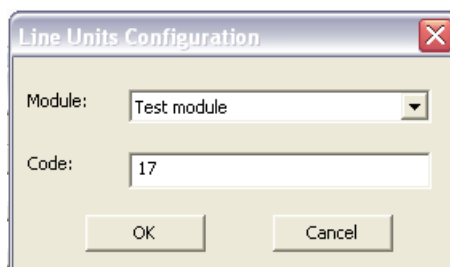
Modification

Delete

In order to connect an external module and an automation line, click on the Add button; the Line Units Configuration window opens:

- **Module:** Select the (external or defined instrument) module from the drop-down list,
- **Code:** Enter the ID for the instrument or module as defined internally in the automation line.

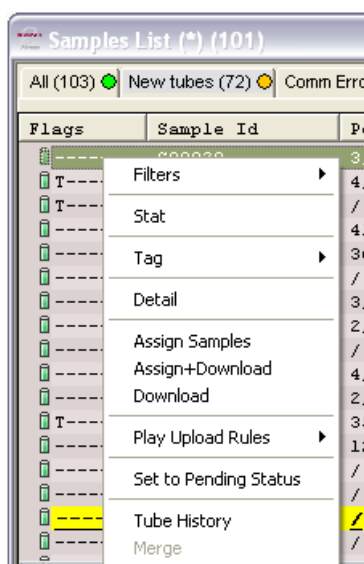
Click on the OK button to save the settings.



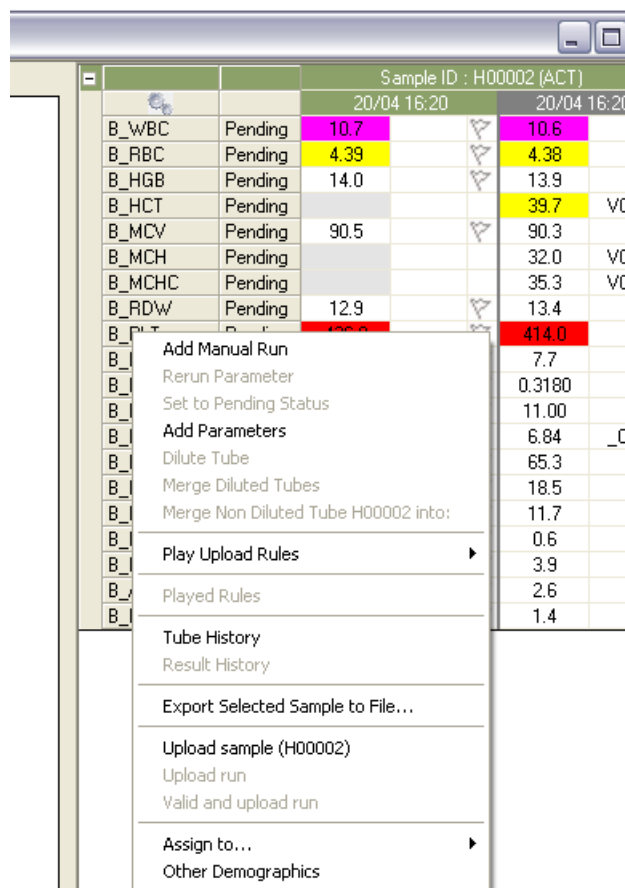
9.3 Visualizing traces

You can visualize traces in different ways:

- From the Samples List, right-click to bring up the contextual menu and select "**Tube history**":



- From the Request sheet, right-click to bring up the contextual menu and select "**Tube history**":



Once opened, The **Tube History** window looks like this:

Tube History (0)

Default | Ma laborantine qui valide | test | +

Sample ID:

Patient ID:

☐ Date of the events

From: To:

Search

Number of events:

Search in: ☐ Archived data ☒ Current data

Physical event

☒ Tracking messages

☒ New result

☒ Host query

Logical event

Sample

☒ Created ☒ Archived ☒ Deleted

Parameter

☒ Created ☒ Downloaded ☒ Deleted

Result

☒ Modified ☒ Validated ☒ Invalidated ☒ Uploaded to host ☒ Deleted

List of tube events:

Date	Sample ID	Module	Event	Position	Comment
------	-----------	--------	-------	----------	---------

List of result events:

Parameter	Result	Comment
-----------	--------	---------

Close

This window displays all logs for the selected sample or for the sample searched for (depending on how the window was accessed). It allows to search / to filter for:

- **Sample ID,**
- **Patient ID,**

NOTE:

Wildcards (*, ?) can be used in these 2 fields.

The search may be restrained:

- **Date** of the events: By defining a start and an end date (date and time),
- **Number of events:** Allows limiting the number of events displayed (the latest),
- **Archived data:** Check this option to search the archived data,
- **Current data:** Check this option to search the current data.

The **Physical event** and **Logical event** areas refer to the logs that could be collected from the activated options in the **Tracking Setup** window.

The **List of tube events** area lists all events all events matching all activated criteria and filters:

List of tube events:

Date	Sample ID	Module	Event	Position	Comment
09/05/2011 14:32:16	S00201	SYSADM	New result	0/0	-
09/05/2011 14:31:25	S00201	SYSADM	New parameter	0/0	-

☒ Date
☒ Sample ID
☐ Patient
☐ Patient ID
☒ Module
☐ Line unit
☒ Event
☒ Position
☒ Comment

The user may modify the information that is displayed by bringing up the contextual display menu with a right- click on any header and selecting the headers they want to see displayed.

Selecting one of the events (i.e. line) in this list will provide details for each event in the List of result event:

List of tube events:

Date	Sample ID	Module	Event	Position	Comment
09/05/2011 14:32:16	S00201	SYSADM	New result	0/0	-
09/05/2011 14:31:25	S00201	SYSADM	New parameter	0/0	-

List of result events:

Parameter	Result	Comment
S_K	4.0	-

9.4 Result History

The selection of the **Result History** item from the contextual menu of the Request sheet displays the following window:

Result History (Sample ID: S00201 - Parameter: Potassium)

Date	Result	Event	Module	Comment
09/05/2011 14:31:25	-	New parameter	SYSADM	-

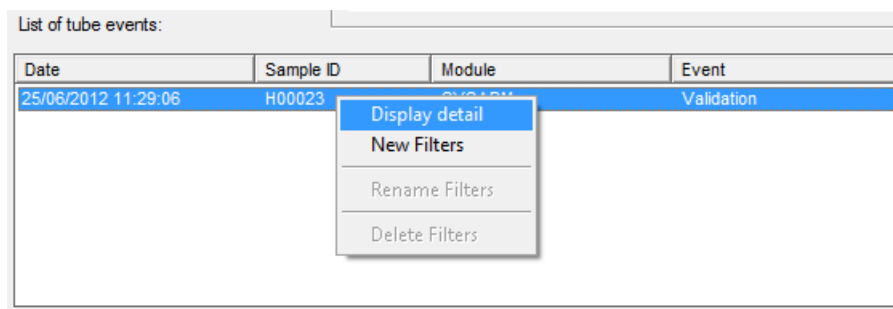
This window lists all events and details for the selected parameter.

9.5 Detail

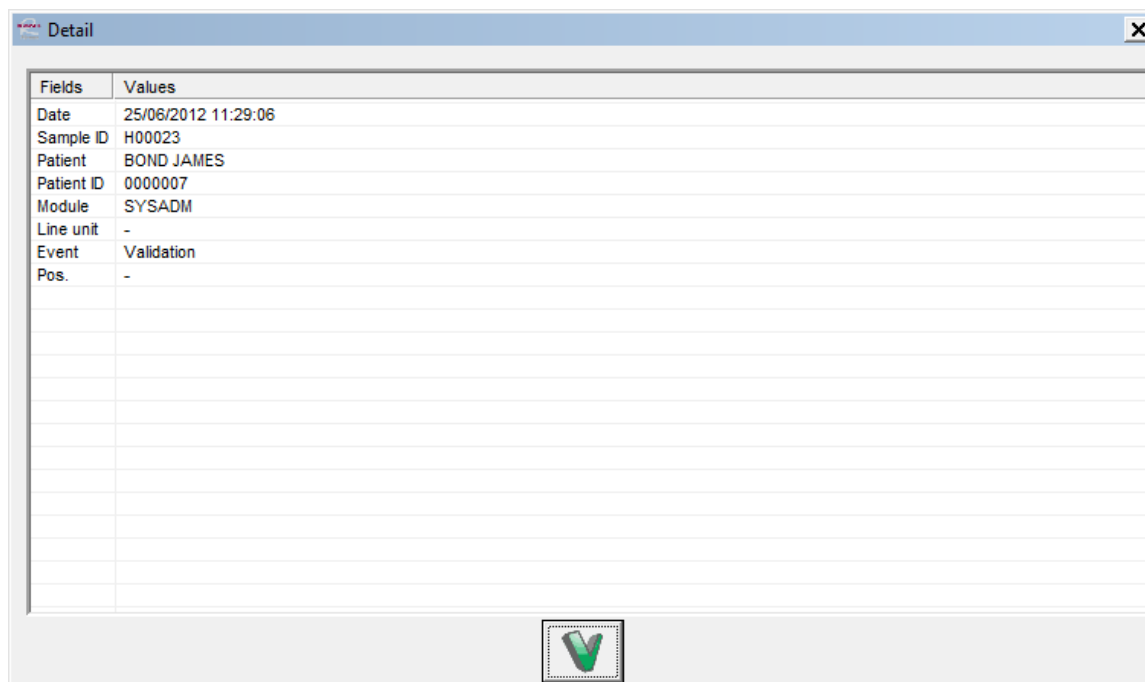
With a right-click on :

- any event listed in the **List of tube events**,
- or any item listed in the **List of results event**

of the **Tube History** or **Result History** windows, the user will also bring up a contextual menu:



This contextual menu allows the management of the filters of the Tube or **Result History** windows. The **Display Details** option displays the information in a more user-friendly way:



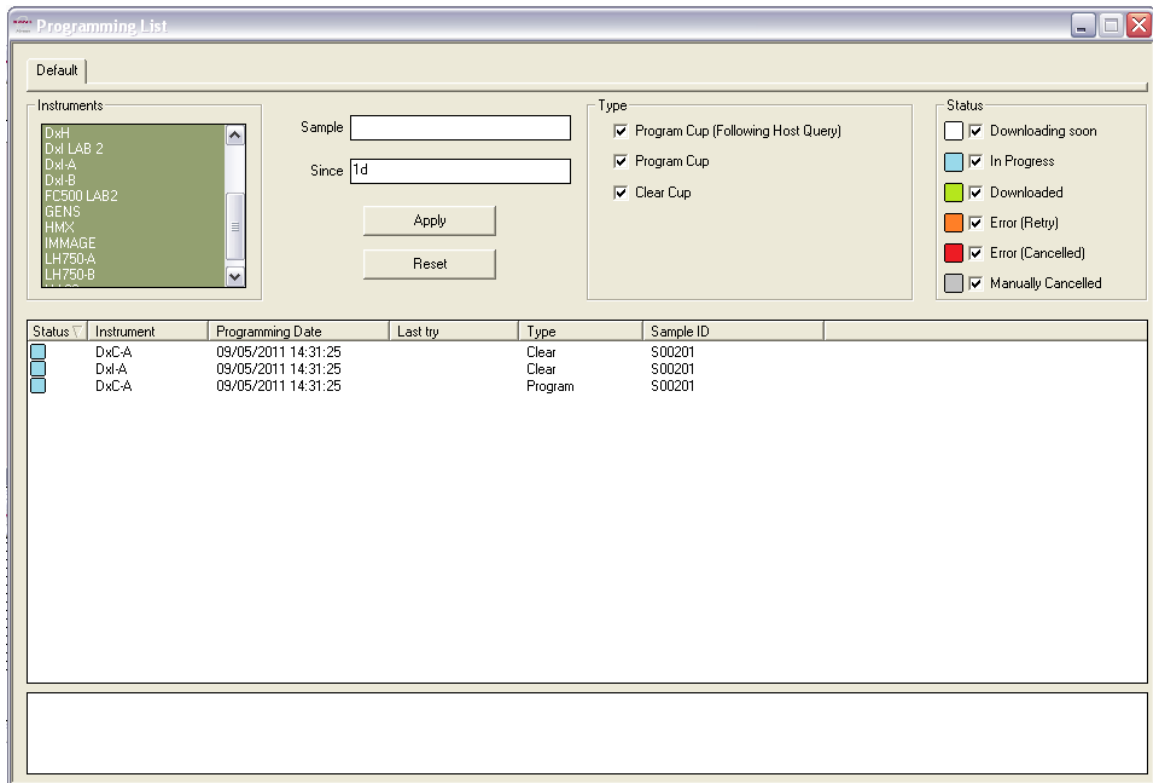
9.6 Programming List: Technical activity management

The Programming List is a new technical window that allows the user:

- To visualize the current programmings,
- To cancel or force a programming if blocked.

It provides the user with a scope on all current programmings to the instruments (and / or automation lines) and allows them to manage or check blockings.

The Programming List window can be opened with the **Desk > Programming List** menu:



It is divided into 4 parts:

- Tabs at the top,
- Filter configuration,
- The list of programmings matching the filters,
- The parameter status matching the selected line in the list of programmings above.

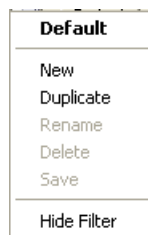
9.6.1 Tabs

The tabs provide an easy access to predefined filters.

The default tab is always available and cannot be deleted, yet it can be duplicated.

If "(*)" is displayed next to the name of the tab, this points to a modification of some filter that was not saved.

Right-clicking on the **Default** tab brings up a contextual menu:



The options are:

- **Reminder of the tab name:** Clicking on the name will refresh the content of the window in relation with the current filters (similar to the Apply button),
- **New:** To create a new tab,
- **Duplicate:** To duplicate the currently selected tab,
- **Rename:** To rename the selected tab,
- **Delete:** To delete the selected tab,
- **Save:** To save the current filter settings for the currently selected tab,

- **Hide Filter / Show Filter:** To hide or to show the filter edition area.

9.6.2 Filter Configuration

The filter editor is used to show / hide events:

- **Instruments:** To filter out instruments whose programmings the user wants to review,
- **Sample:** To filter out tubes by their sample ID; wildcards (* and ?) are allowed,
- **Since:** To define a timeframe from the current date & time to a point back in time (in d, h, m) within which to search for events.

Type: filter by type of programming:

- **Program Cup** (Following Host Query),
- **Program Cup,**
- **Clear Cup.**

Status: filter by status:

- **Downloaded soon: Being programmed,** in the pending list,
- **In Progress:** programming has started,
- **Downloaded:** Programming carried out correctly,
- **Error (Retry):** Programming error, programming will be re-attempted,
- **Error (Cancelled):** Programming error, programming cancelled by the driver,
- **Manually Cancelled:** Programming cancelled by the user.

These status are highlighted by colors to make them more visible in the list.

2 actions are possible through the 2 matching buttons:

- **Apply:** To execute the search based on the current options and filters,
- **Reset:** To reset the initial saved values.

9.6.3 List of programmings

Each line stand for a programming:

Status	Instrument	Programming Date	Last try	Type	Sample ID
	DxC-A	09/05/2011 14:31:25		Clear	S00201
	DxI-A	09/05/2011 14:31:25		Clear	S00201
	DxC-A	09/05/2011 14:31:25		Program	S00201

Some actions are available via the (right-click) contextual menu:

- **Cancel:** To cancel a programming in a Error (Retry) status,
- **Retry:** To attempt to reprogramme a sample to another instrument (same as Assign & download in the Samples List contextual menu).

9.6.4 Parameter Status

If a line is selected in the List of programmings area, the list of parameters associated with this programming is displayed in this area:

S_PSA	
S_K	

The status is colored in:

- Red: The parameter has not been downloaded to the instrument,
- Green: The parameter was downloaded to the instrument.

9.7 Reagent display & management

Remisol Advance can manage several reagents per result. The list of reagents can be displayed with the details for the results.

Also, through the **Desk > Search reagents**, it is possible to run cross searches between patients and their results, samples, instruments and reagents:

Reagent Search

Search reagents: ☐ Current Results ☐ Archive ☒ Both

Filter:

Name:

Patient ID:

Sample ID:

Instrument:

Search

List of the reagents corresponding to the search:

Lot	Serial
532658	123
55447	217
332521	41

Export...

Search results linked to a reagent: ☐ Current Results ☐ Archive ☒ Both

Select a reagent:

Reagent lot number:

Reagent serial number:

Display associated: ☐ Instrument ☒ Sample ☐ Patient

Search

Number of results linked to this reagent:

Sample ID	Count
S00205	1
S00204	1
S00203	1
S00202	1

Export...

Searches can be done both ways:

Request > Reagent,

Reagent > Request.

The search return can be exported (to csv format).

10 APPENDIX

10.1 Instrument & automation Types

Type	Analyzer
ACCESS	ACCESS® Immunoassay System
ACCESS2	ACCESS® 2 Immunoassay System
Act5AL	COULTER® A ^C ·T™ 5diff AL Hematology Analyzer
Act5CP	COULTER® A ^C ·T™ 5diff CP Hematology Analyzer
Act5Diff	COULTER® A ^C ·T™ 5diff Hematology Analyzer
ActDiff2	COULTER® A ^C ·T diff™ Hematology Analyzer COULTER® A ^C ·T diff2™ Hematology Analyzer COULTER® A ^C ·T diff8™ Hematology Analyzer COULTER® A ^C ·T diff10™ Hematology Analyzer
ARRAY	ARRAY® ARRAY® 360 ARRAY® 360CE
AU-400-640	Beckman Coulter AU 400-640 series
AU-480-680	Beckman Coulter AU 480-680 series
AU-2700-5400	Beckman Coulter AU 2700-5400 series
AU-5800	Beckman Coulter AU 5800 series
Automate 800	Beckman Coulter AutoMate 800 and 600 Sample Processing Systems
Automate-1200-2550	Beckman Coulter AutoMate 1200 2500 Family Sample Processing Systems
CX3	SYNCHRON CX®3
CX4/5	SYNCHRON CX®4 SYNCHRON CX®5

CX7	SYNCHRON CX®3 DELTA SYNCHRON CX®4 PRO SYNCHRON CX®4 CE SYNCHRON CX®5 CE SYNCHRON CX®5 DELTA SYNCHRON CX®5 PRO SYNCHRON CX®7 SYNCHRON CX®7 DELTA SYNCHRON CX®7 PRO SYNCHRON CX®9 SYNCHRON CX®9 PRO SYNCHRON LX®20 SYNCHRON LX®20 PRO
CZEBiDi	Paragon CZE® 2000 Paragon CZE® 2.0
DxC 600/800	UniCel® DxC 600 Synchron® Clinical System UniCel® DxC 800 Synchron® Clinical System
DxC 600i	UniCel® DxC 600i Synchron® Access® Clinical System UniCel® DxC 880i Synchron® Access® Clinical System
DxC-ASTM	UniCel® DxC Synchron® Clinical System using ASTM protocol (released post 1.6)
DxH300	UniCel® DxH 300 Coulter® Cellular Analysis System
DxH800	UniCel® DxH 800 Coulter® Cellular Analysis System
DxH800V2	UniCel® DxH 800 Coulter® Cellular Analysis System + SMS
DxH1600	UniCel® DxH 1600 Coulter® Cellular Analysis System
DxI600	UniCel® DxI 600 Access® Immunoassay System
DxI800	UniCel® DxI 800 Immunoassay System
FC500	Cytomics FC500 Series
GenS	COULTER GenS®
HmX	COULTER® HmX Hematology Analyzer COULTER® MAXM® COULTER® STKA® (with STKS2A)
IMAGE	IMAGE®
Import/Export	Monitor-It special instrument
LH500	COULTER® LH 500 Hematology Analyzer
LH750	COULTER® LH 750 Hematology Analyzer
LH780	COULTER® LH 780 Hematology Analyzer
LH1500	COULTER® LH 1500 Hematology Analyzer

LX20	SYNCHRON LX®20 SYNCHRON LX®20 PRO
LXi	SYNCHRON LX®i 725
OTHER	Other (1 to 12). Contact your field engineer for further information. Beckman Coulter FP 1000 Cell Preparation System
RemisolAdvance	Remisol Advance® cascading
STKS-1G1	STKS® (old generation)

10.2 Change history

File	Notes
UG-ADV-UK-13	Redactors: Benoît Gruselle, Frédéric Rolé Released on: 3rd December 2008 Corrections on: 13th January 2009 Notes: Documentation for Remisol Advance 1.3
UG-ADV-UK-14	Redactors: Benoît Gruselle, Frédéric Rolé Released on: 3rd November 2009 Corrections on: Notes: Documentation for Remisol Advance 1.4
UG-ADV-UK-15	Redactors: Benoît Gruselle Released in: May 2011 Corrections on: Notes: Documentation for Remisol Advance 1.5
UG-ADV-UK-16	Redactors: Benoît Gruselle Released in: June 2012 Corrections on: Notes: Documentation for Remisol Advance 1.6
UG-ADV-UK-17	Redactors: Benoît Gruselle + Christian Dumortier Released in: April 2013 Corrections on: Notes: Documentation for Remisol Advance 1.7

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