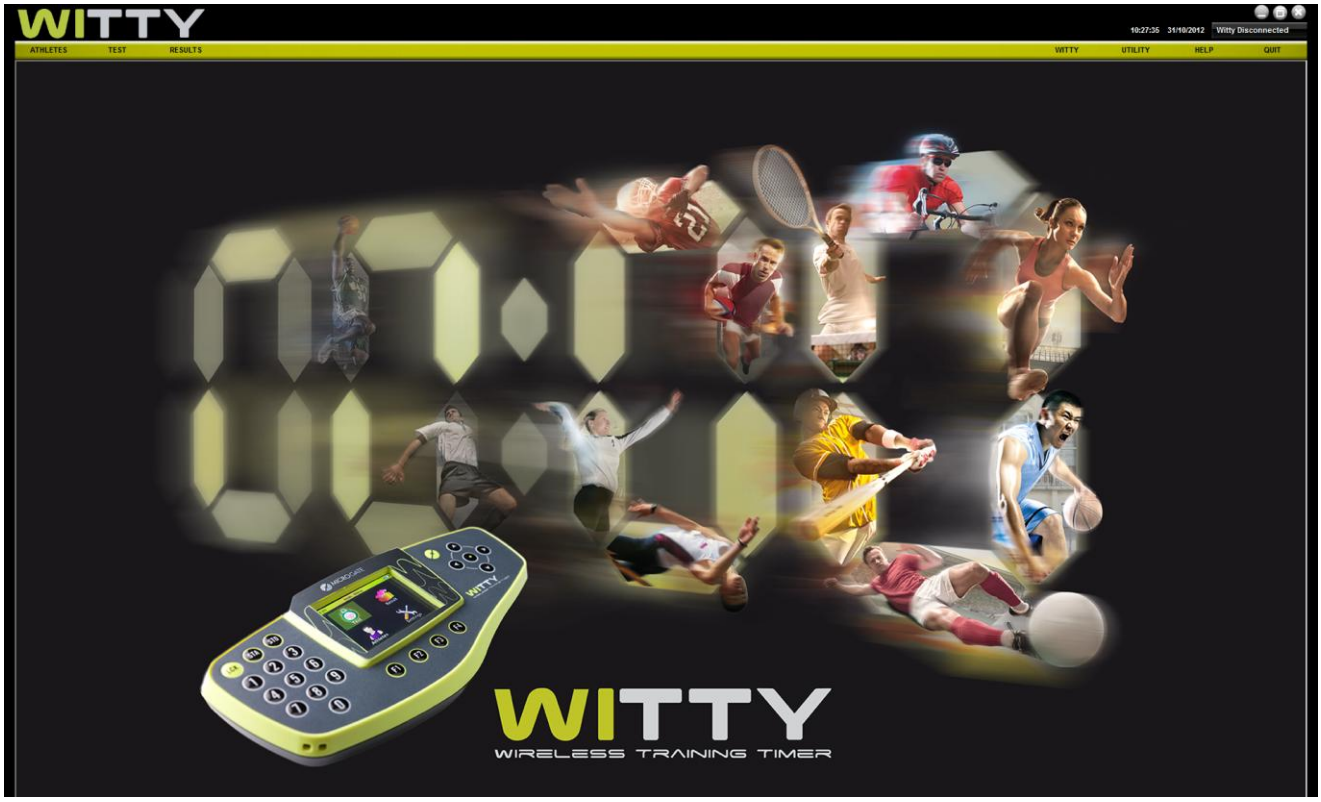
MICROGATE



WITTY MANAGER

User Manual

Manual version 1.0

Software Version 1.0.10

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1 General Overview

Witty Manager is the Witty Timer Kit's management software. It can be used to create athletes' personal data, configure customized tests and display acquired results.

It is divided into 5 main sections:

1.1 Athletes' Personal Data

In this section athlete profiles can be created and edited. Every profile can contain extensive information (personal data, notes, pictures, etc.). Once created, the profiles are displayed in the main list and can be sorted alphabetically, by creation date or by number.

Should it become necessary to divide athletes up in a more defined and orderly manner, *Witty Manager* allows you to create groups and subgroups, making it easier to search for names both when performing tests as well as during analysis and comparison of results.

It is also possible to create "start lists", so that, when data is transferred to Witty, athletes' names and information is sent along with the exact order of the tests that are to be performed, thus preventing the user from having to type in the number of the athlete who must perform the test each time.

1.2 Tests

The main function of this software section is to define customized tests to be then downloaded to the Witty Timer. There are 3 main test types: *Basic, Multistart,* and *Counter*.
Basic: this test is usually executed with one person after the other, allowing to carry out most of the tests. Depending on the requirements it is possible to define a *Sprint* test (straight or circuit, with or without intermediate times), *Go & Return* (multiple runs from one point to another or with more points), as well as *Shuttle with recovery* (if a monitored recovery period is needed between one run and another).
Multistart: This option is selected if, for example because of the test length, it is necessary to have the following athlete start before the first has finished the test.
Counter: This test type is useful to verify how many repetitions of a given action an athlete can execute within a certain amount of time, or, vice versa, how much time an athlete needs to carry out a set number of repetitions. A "timeout" can also be created in order to set a maximum time limit between one repetition and another and to bring the test to a close when the athlete is no longer able to execute a set action (for example in the event of fatigue) within the set maximum time limit.

With the *define grid* option in the **Test** section, users can customize the way that performed tests are viewed in **Results**. For example, users can establish which information to view (time, gap, intermediate times, speed, etc.) and in what order.

1.3 RESULTS

In this section the results of previously performed tests can be viewed.
The results can be filtered by athlete (by typing the name of an athlete, only the results of tests in which the person has participated in will be displayed), test type, date or a combination of these.

Once a test is selected and the *View* mode is entered, the results are displayed in graphical and numerical form, depending on the layout of the predefined or customized *Tables*. To interact uniformly with the information and edit the way it is displayed according to personal needs, the *Configure*, *Order* and *Filter* options are available.

Of course data can be printed and exported using a one-click option (selecting various tests) or a *Report* (selecting one test, where the data to be printed or exported can be configured, a logo may be added, etc.).

1.4 WITTY

When accessing this part of the software, you will be able to interact with your Witty timer in order to, for example: delete information stored on Witty, download data from your PC to Witty, upload data from Witty to your PC, update the firmware of Witty and the photocells.

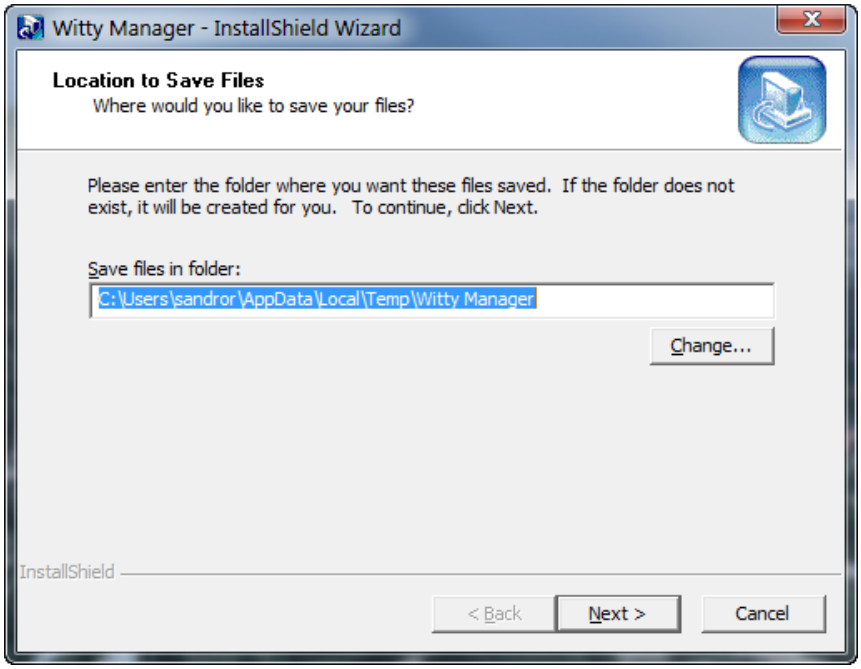
1.5 UTILITIES

Available in the Utilities: *basic configuration* (gives you a choice of language, measurement units, timer precision, etc..); *database* management (to create new, edit or rename)*;* check for *updates* (if your are online, the software checks if you are using the latest version of the software); and information regarding the firmware, software and hardware versions that are currently installed.

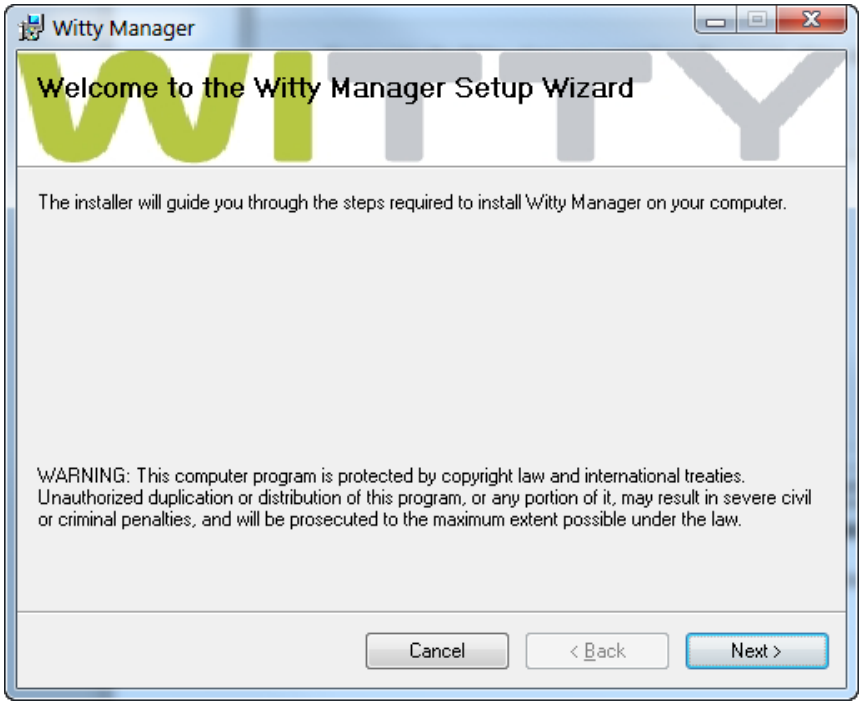
2 SOFTWARE INSTALLATION

Download the WittyManager.exe setup file from your flash drive or from our website and launch it.

In the first installation window the user is asked where to save the *Witty Manager* installation files. We advise you to leave the directory unchanged and to click on <Next> to continue.



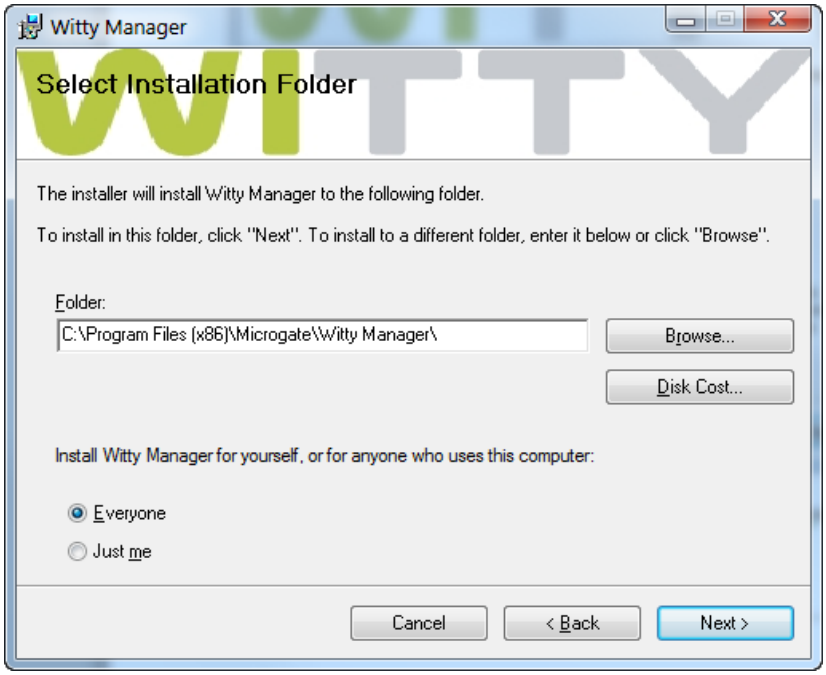
In the first installation program window click on <Next>.



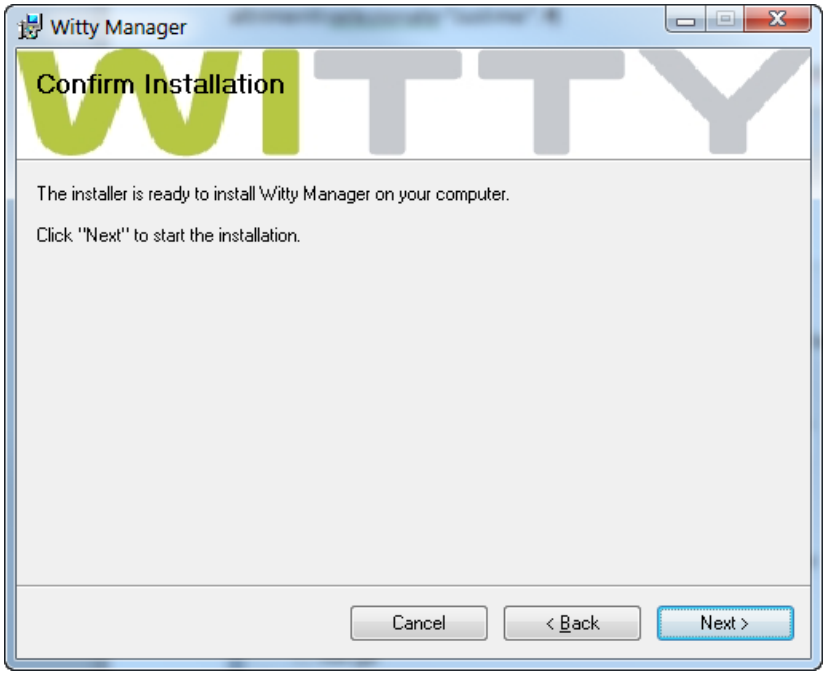
In the next window you will be able to select the folder where the software will be installed.

If you want everyone with access to the computer to be able to use the product, select “Everyone”, otherwise select “Just me”.

We advise you to leave the folder unchanged and select “Everyone”. Click on <Next> to continue.



The next window offers to launch software installation. If all the data are correct, click on <Next>.



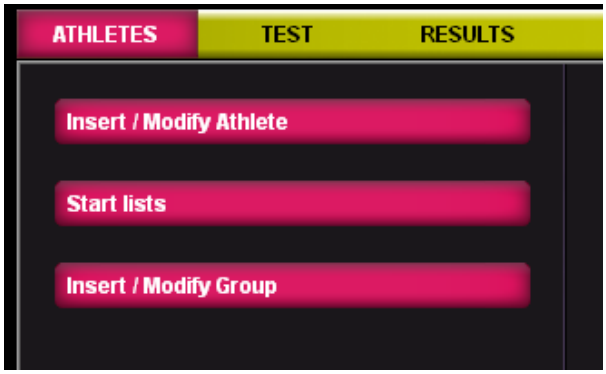
The setup program will install the product onto the PC, showing state of progress.

To launch the software, click on the *Witty Manager* icon on the desktop or from the Start menu.

3 DESCRIPTION OF THE FUNCTIONS

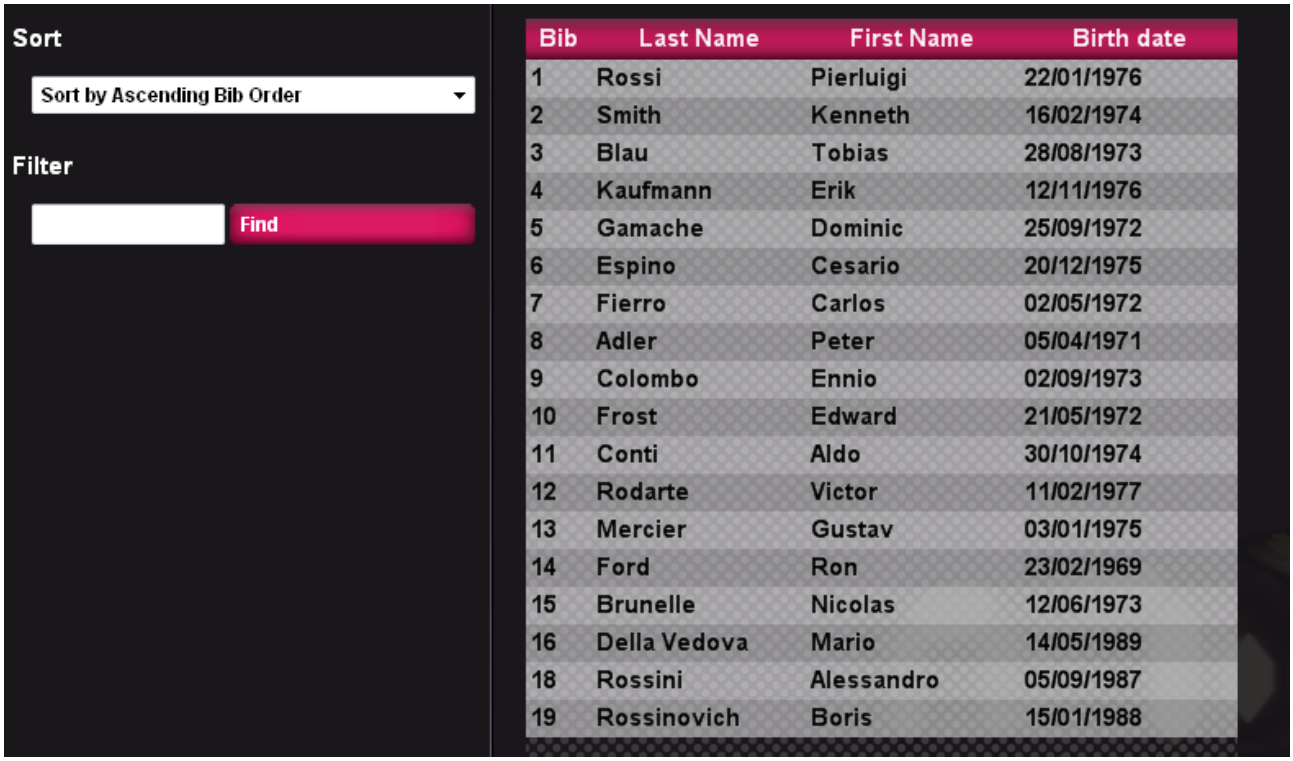
This chapter details all of the functions of each menu of the *Witty Manager* program, starting with the functions in the main menu.

3.1 ATHLETES

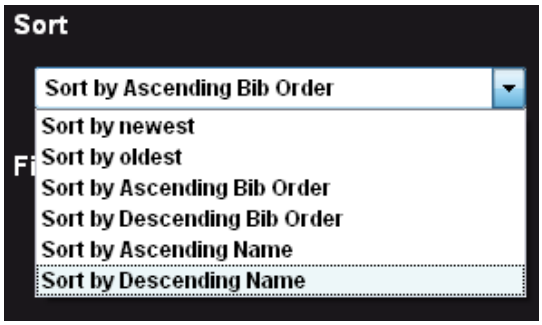


3.1.1 INSERT / MODIFY ATHLETES

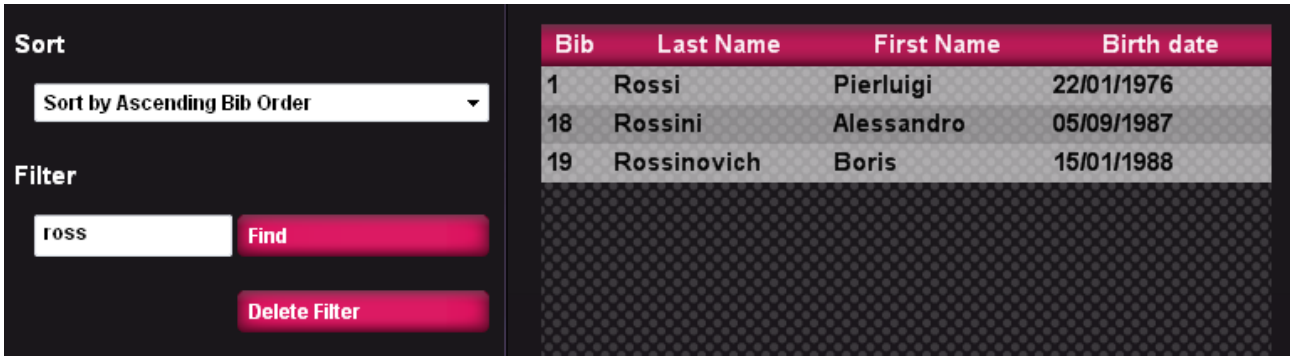
In this section all the athletes stored are displayed.



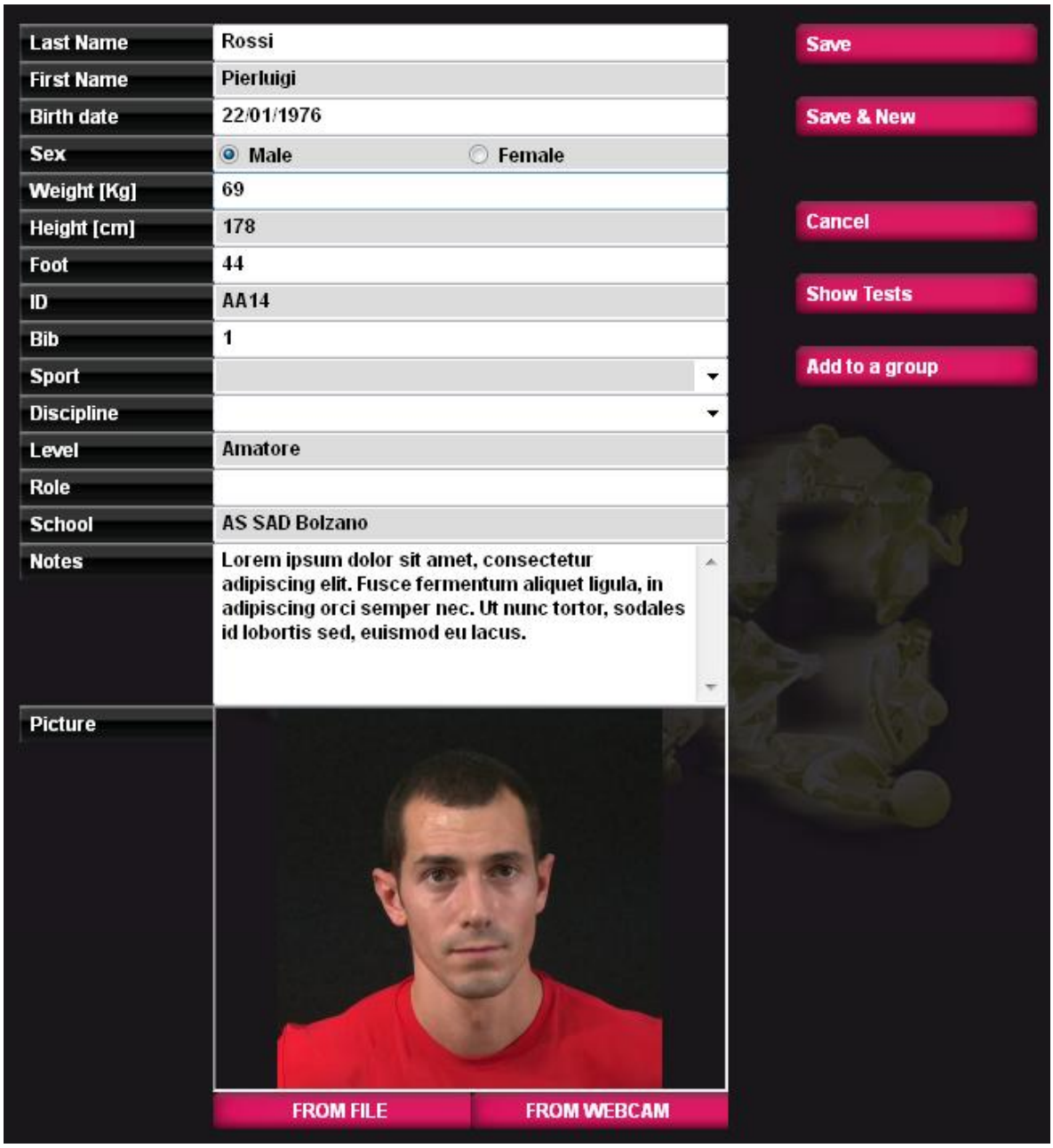
Choose "Sort" from the drop-down menu to select how you would like the information displayed (Chronologically by date added, Bib Number, or Last Name+Name) in the list (ascending means A ... Z or 1 ... 99, and descending is the opposite).



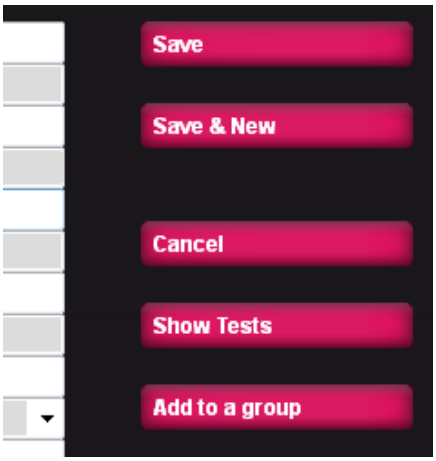
To look for a particular athlete or to filter data (e.g. to search for all athletes beginning with “Ross”), type the text into the box at the top left and click <Search >. To remove the filter press <Delete filter>.



Pressing the button <New Athlete> opens a new panel in which the new athlete’s data must be inserted. The Last Name field is the only compulsory one. The **Bib** is the most important field when selecting an athlete on the Witty timer (type the number into the timer and the relative athlete's information will be displayed).



Associating each athlete with a photograph is quite useful, especially for trainers and coaches who have a large number of athletes to assess. This can be selected from a file that has been saved onto the hard disk (in .jpg or .bmp formats), or taken “on the spot” by using the webcam that is on your computer. If the picture is on your computer, click on <From File> and select the photo from a folder; if you need to take a webcam photo, click on <From Video>, wait for the Live image to appear, frame the athlete and press <Acquire>.



3.1.1.1 Athlete Information Form

To edit an athlete's information, use your mouse to select a row on the grid and click <Edit Athlete>: once your are in that athlete's information form you will be able to edit fields and save them (or cancel and go back to the list).

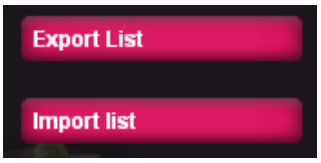
There are also 3 buttons that quickly display the tests that athlete has performed (basically, the software runs an automatic filter as detailed in paragraph 3.3)

When going back to the list of athletes we find the following commands. To delete an athlete, press <Delete Athlete> (NOTE: Deleting an athlete will delete all his/her tests without any chance of future retrieval).

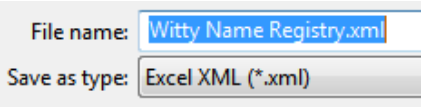
To insert an athlete into a group, select from the list, press <Add to a group>, select the group to insert him/her in (possibly using the right arrow to select a dependent subgroup) and press <Add to a group> again. Press <Back> to return to the athletes' list.

For group management and other ways of associating athletes to groups, we suggest you read the paragraph 0.

3.1.1.2 Importing and Exporting Athletes' Personal Data Using Excel



Once filled out in *Witty Manager*, an Athletes' Personal Data can be exported into an Excel-compatible format (XML Spreadsheet 2003). Press <Export List> and specify the name and location of the XML file. If you have Microsoft Excel installed on your computer, double-click on the file icon to launch the program and view the columns with all relevant athletes' data.



If you already have an athletes' list that has been created with another software, it can be imported with *Witty Manager* by preparing an Excel file with the same format as the export file ('XML Spreadsheet 2003' number, location, column headers and format). It is recommended that you export an empty personal database in order to create a file template and then fill it out with the desired information. Attention must be paid to the birth date format (DD/MM/YYYY) and the 'Gender' field, which must be 'M' or 'F'. The pre-configured fields 'Sport' and 'Discipline' can only be one of those available from the drop-down menu. Possible import errors are listed in a log window at the end of the import phase (if the error is not blocking, the athlete is added anyway, but with error fields possibly empty).

3.1.2 Start Lists

The Start Lists have a dual objective. The first is a classic: to impose a starting order to athletes that is different from the natural order (e.g. 2,5,7,3,1,14, etc. instead of consecutive 1,2,3,4 ...).

The second is to filter athletes' personal data and to form sub-groups in order be faster when performing field tests in order to choose the right athletes.

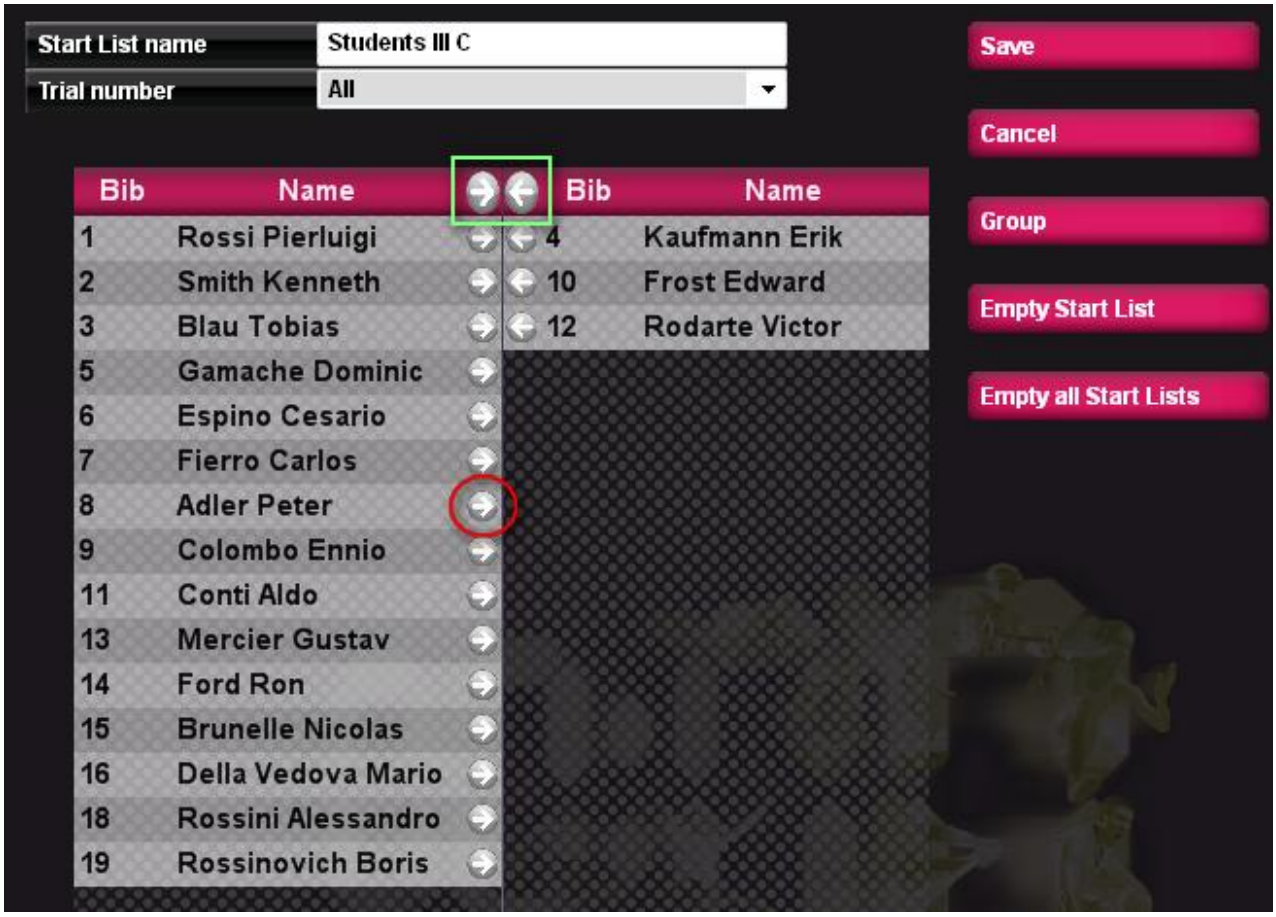
Let's use the example of a gym teacher who has several classes of students. I can upload all of the student names into the athlete database and then make different start lists based on the classes (e.g. 1stA, 2ndB,

3rdC, etc.). When I run a test with the students in that class, I will choose the appropriate list on the timer and I view only the names of the students in that class (in the order in which I created the list).

Users can create a start list with a Group (see chapter 0) and vice versa.

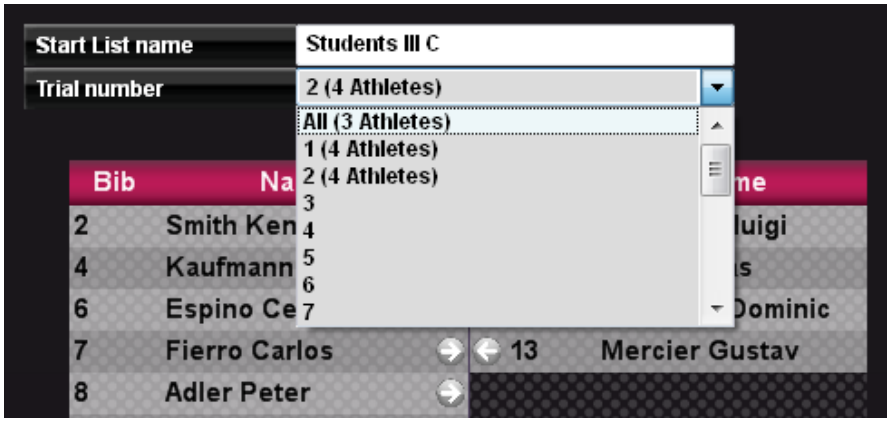
3.1.2.1 CREATION OF A NEW START LIST

Click on <New>, name the list and choose the athletes that will be a part of the list (in the desired order) by clicking on the arrow (circled in red) next to the name. To select ALL athletes, select the arrow on the right on the column heading, similarly, to remove athletes from the list, use the arrows on the left (one by one or the arrow on the heading above).



The lists can also be broken down by "trials," meaning that within the same list I can assign different participants (or the same participants in a different order) according to the "heat/trial" for that test.

Select the Trial drop-down menu to change Trial and see how many athletes we have assigned to each Trial.

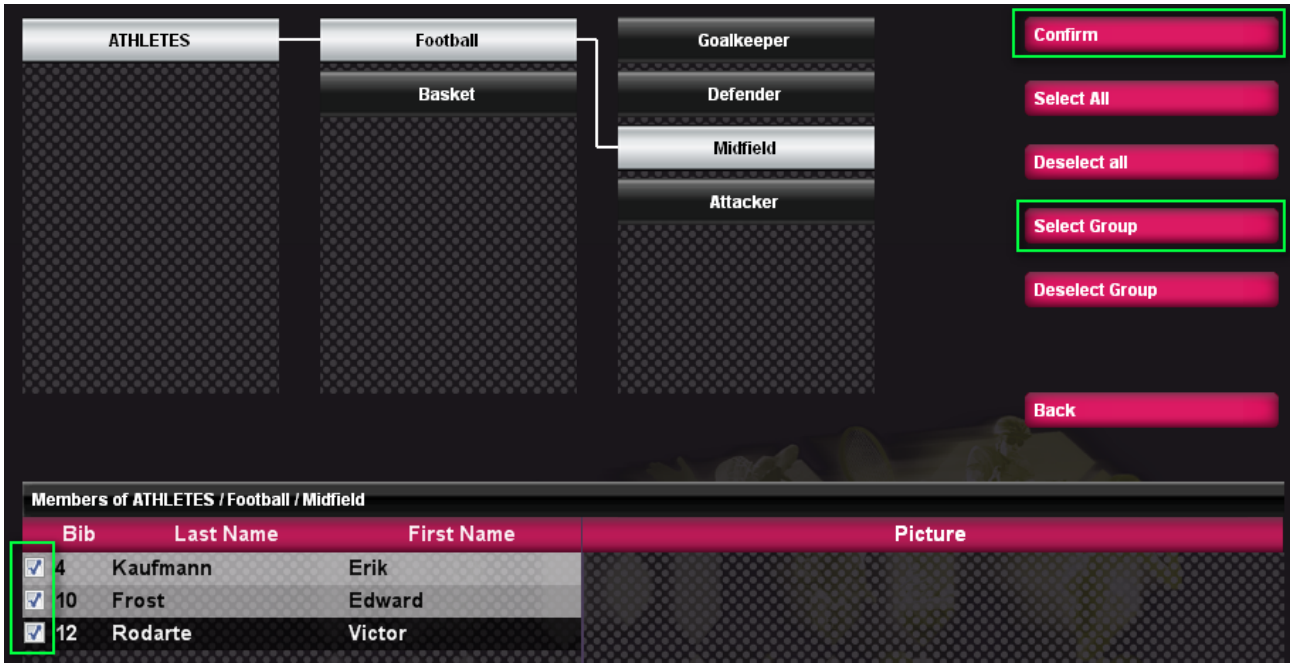


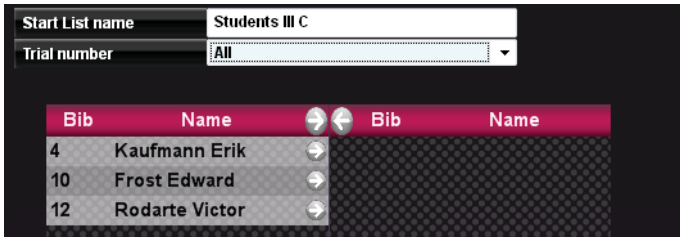
If you want to delete (clear) athletes from a list, press <Clear List> (current list is cleared), but if we want to delete ALL of the trials of that list press <Clear All Lists>.

The <Group> button allows you to choose athletes that belong to one or more groups (if we have already created them, see chapter 0).

Click <Group>, select the desired group (e.g. the Midfield subgroup of the Football group), and its components appear; select them one by one by using the checkbox next to the name or, if you want them all, click <Select Group>. Once you have selected the athletes, click <Confirm>: you will see that the same 3 athletes are filtered in the list creation form.

Since you can choose athletes from more than one group, it is possible that athletes from previous filters remain selected. We recommend that you always <Deselect All> to be sure to start with a blank filter, and then select the required group.





3.1.3 INSERT / MODIFY GROUP

In this section infinite groups and subgroups can be created, making it easy to manage the athletes' personal data.

As a default there is always a group called "Athletes" which is the Father group of the ones we will subsequently create. All the athletes we insert are automatically added to this group.

To create a subgroup, choose the father group under which to create it, press <New Group>, key in the name and confirm (e.g. if you want to create "Basket" as a 2nd level group, select "Athletes" and press <New Group>, and if you want to create a 4th level group under Defender, make sure you have selected it before pressing <New>).

When a group is selected, the grid below will show the athletes belonging to the group chosen and its "relationship".

To add one or more athletes to a group, you have a variety of options:

1) Select the group to which you want to add an athlete and press <Add to Group>, select one or more athletes by checking them in the grid and press <Confirm>. It is possible to use <Select All> or <Deselect All> to speed up checking operations. If you have already created a start list (see chapter 3.1.2), you will be able to choose the list and select the athletes that are on the list. Press <Cancel> to exit this function without adding any athlete.
2) Select the root group “Athletes” (which always contains all of them), select one or two athletes by clicking on them (see below) and drag them with the mouse (the classic drag ‘n drop operation) onto the destination group: the message "Insertion Complete" will confirm the operation. To make multiple selections, use the SHIFT keys to select a range of athletes (from… to…) or the CTRL key for selections that are not adjacent.
3) From the Athletes List, select the row of the athlete you require, press <Add to Group>, select the group or subgroup you would like that athlete to belong to, and click <Add to Group> once again. Press <Back> to return to the athletes’ list.
4) From the Athlete's information form, select <Add to Group>: the entire listing of groups and subgroups will appear on the left. Select the groups with the checkbox and <Save>.

Members of ATHLETES

Bib	Last Name	First Name
1	Rossi	Pierluigi
2	Smith	Kenneth
3	Blau	Tobias
4	Kaufmann	Erik
5	Gamache	Dominic
6	Espino	Cesario
7	Fierro	Carlos
8	Adler	Peter
9	Colombo	Ennio

Selection of a range. Click on “Blau”, press and hold SHIFT , click on “Fierro”

Members of ATHLETES

Bib	Last Name	First Name
1	Rossi	Pierluigi
2	Smith	Kenneth
3	Blau	Tobias
4	Kaufmann	Erik
5	Gamache	Dominic
6	Espino	Cesario
7	Fierro	Carlos
8	Adler	Peter
9	Colombo	Ennio

Selection of N noncontiguous athletes: press and hold CTRL and click on the athletes’ names

It is also possible to move athletes from one group to the other in these two ways:

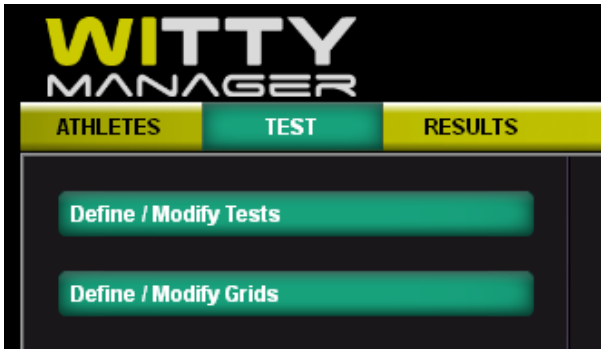
Select the group of origin you want to take an athlete from, select one or more athletes, press <Move into a Group>, select a group of destination and press <Confirm move>. Press <Cancel> to Cancel the operation in progress.

Select the subgroup from which to transfer the athlete or athletes and perform the same drag ‘n drop operations described above. The difference between operating from the root group “Athletes” or from others is that in the first case the athletes are always copied while they are transferred without copying when moved from one subgroup to another.

With the button <Delete Group> the group selected and its dependent subgroups are eliminated (but not the athletes that formed it), while with <Edit Group> its name can be changed.

With <Remove from Group> the athlete selected in the grid is removed; the athlete is only removed but not eliminated from the database. The button is disabled when no athlete is selected or when the first level group “Athletes” is displayed.

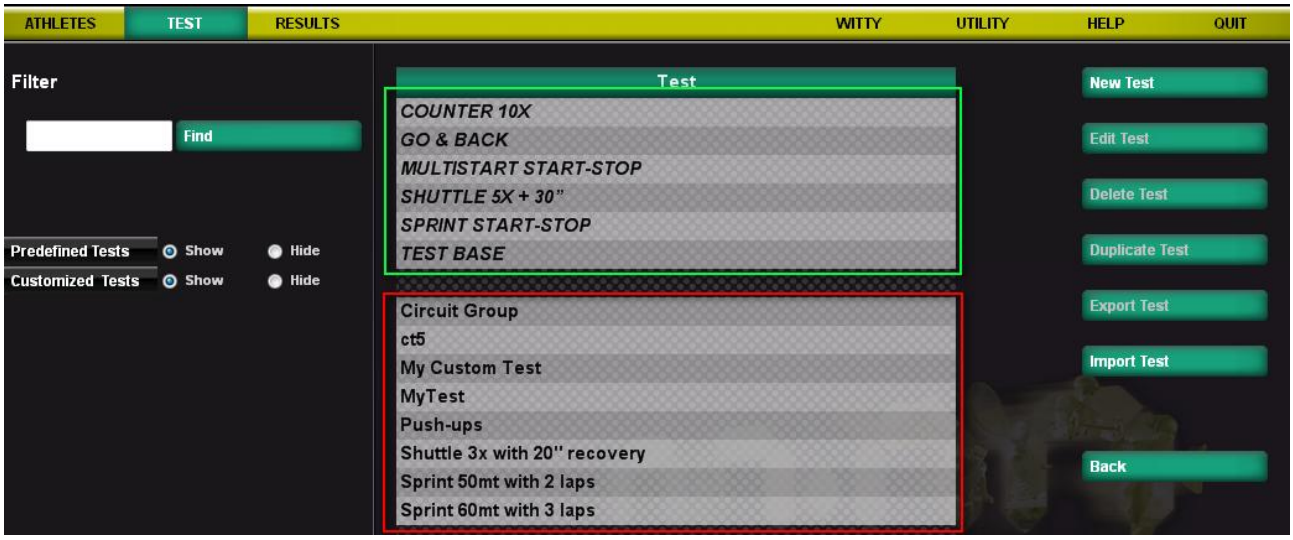
3.2 TESTS



In this section it is possible to create and manage various customized test types as well as different result viewing templates (numerical grids).

3.2.1 DEFINE / MODIFY TEST

With this function you can manage new customized test types or see how the predefined test types have been defined. The top list (green rectangle) shows the available tests defined by Microgate, whereas the lower list (red rectangle) shows the tests defined by the user.

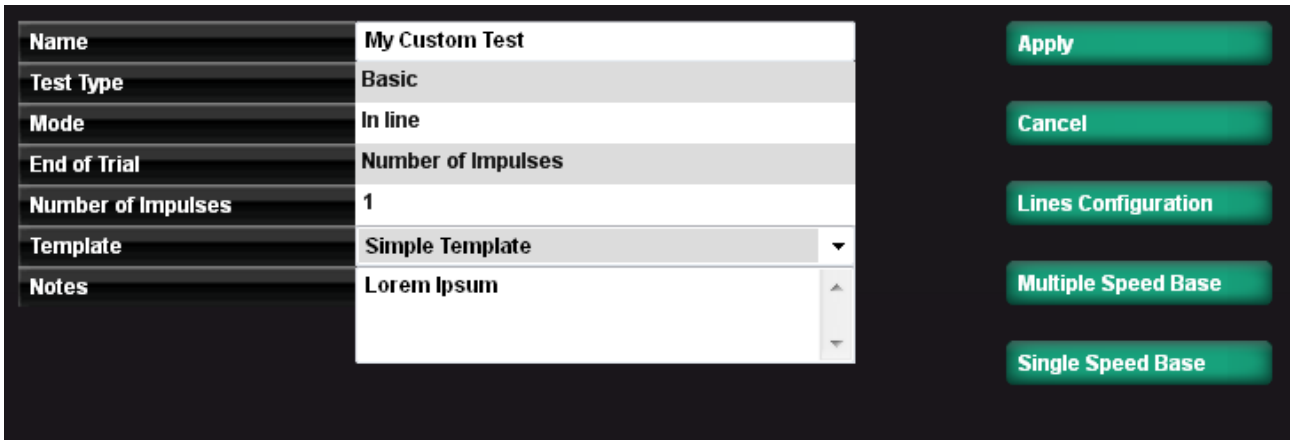


Press <New Test> to create a new customized test definition.

Enter a name and fill in the required information in the fields below.

Please refer to the Witty Timer Kit manual (chapter 4) for a detailed explanation of concepts such as Test Type, Mode, various Test Ends, Number of impulses, etc.

Similarly refer to the same manual for the configuration of external input lines (chap. 5.1.1.4.1) as well as the Speed Bases (chap. 5.1.1.4.3 and 5.1.1.4.4)

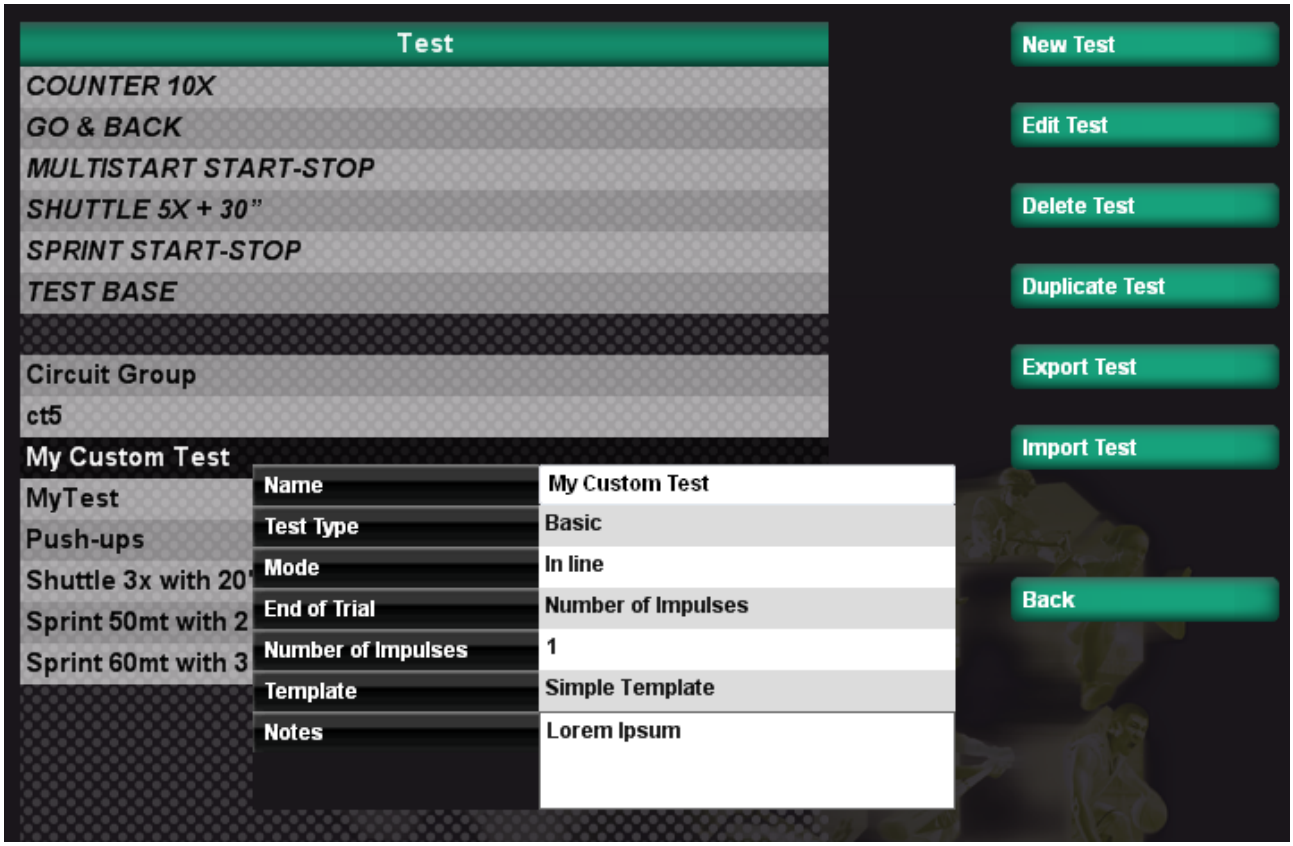


The drop-down menu of the Template field shows the default base template, as well as all other templates created by the user with the 'Define/Modify Grid Configuration' command. It is possible to associate a particular result viewing to a test type (e.g. if a Sprint test of 50 m is defined with 2 intermediate times, the 2 Lap and Split columns must be viewed in a certain way and order).

After having optionally defined the parameters of the Lines Configuration or one of the two Speed Bases, press <Save> to save the test.

Back in the list, move the mouse over the test to view its main features. Selecting the line, the buttons on the right are enabled for editing, deleting, duplicating, exporting, and importing the test.

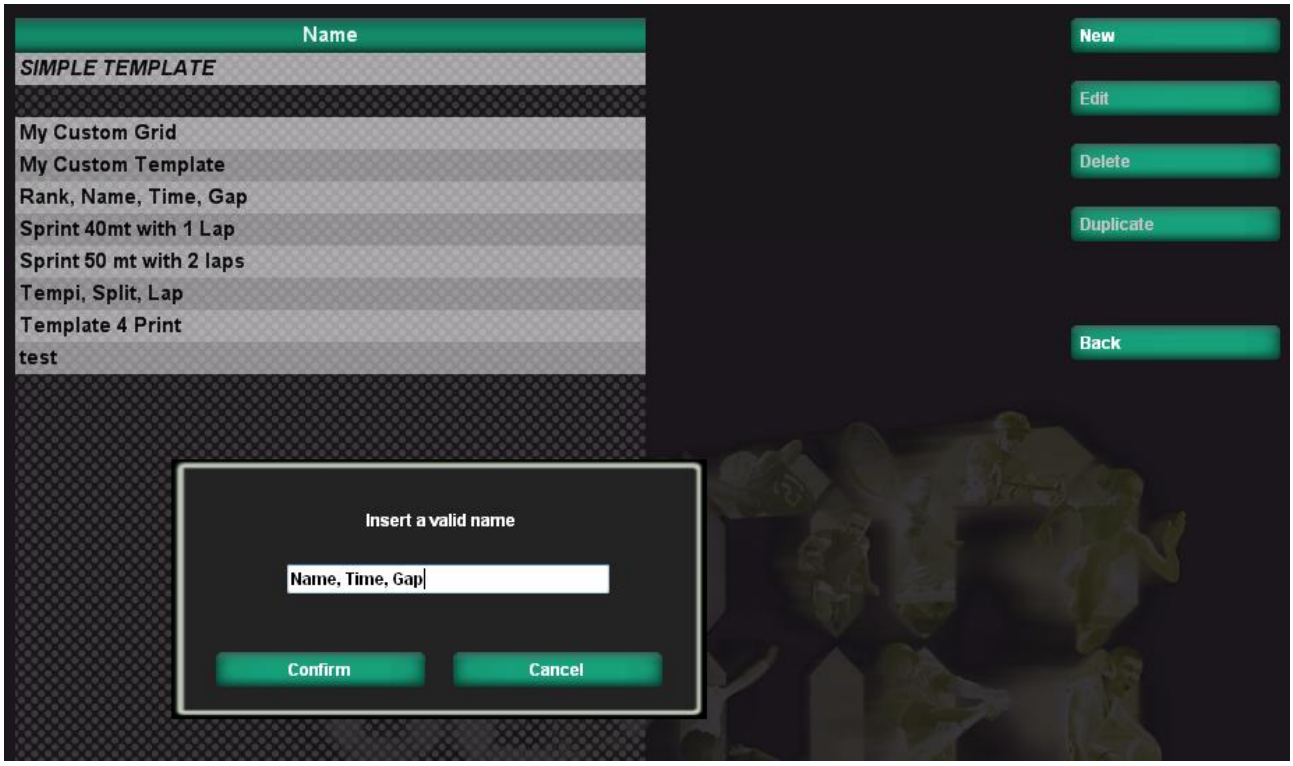
Caution: Deleting a test definition, all tests of that type will be deleted!



3.2.2 DEFINE / MODIFY GRID CONFIGURATION

This function is used to create templates for viewing results imported from the Witty timer. You can choose which columns to view, in what order, how to call the column headers, how to set the graphs (which measures to display, as histograms or colored bars).

As for the list definitions, the list shows the predefined (in italics) and the customized tests (below).



Press <New> to create a new configuration, name using a name which has not yet been used and press <Confirm>.

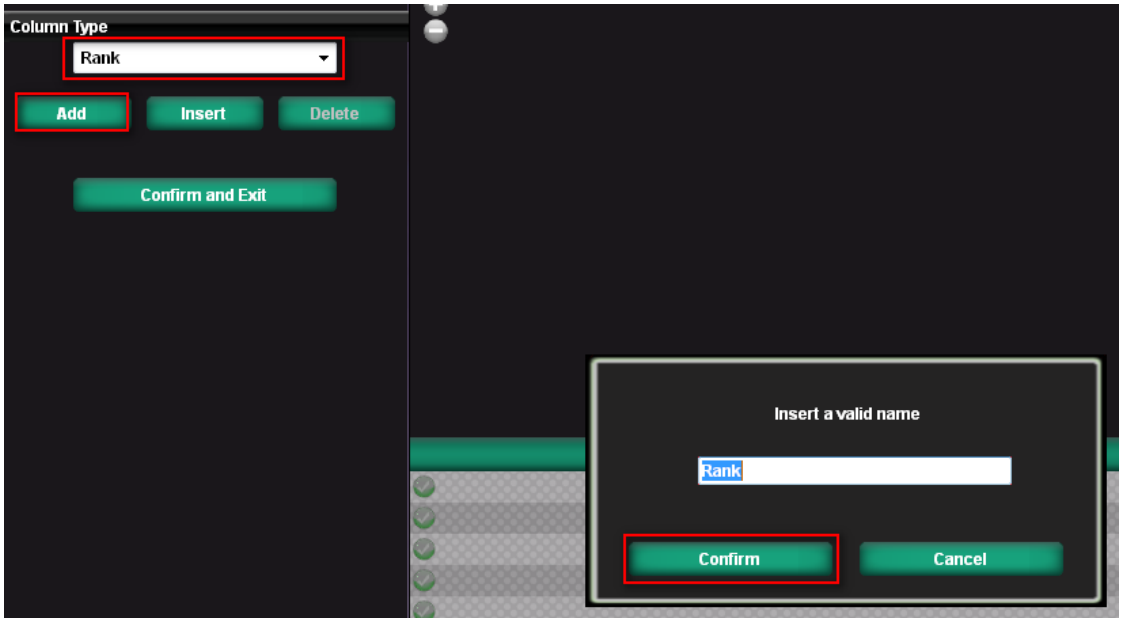
A mask opens, where the new template can be created adding the required columns.

If, for example, a grid with the following columns is required (between brackets the names given to the columns):

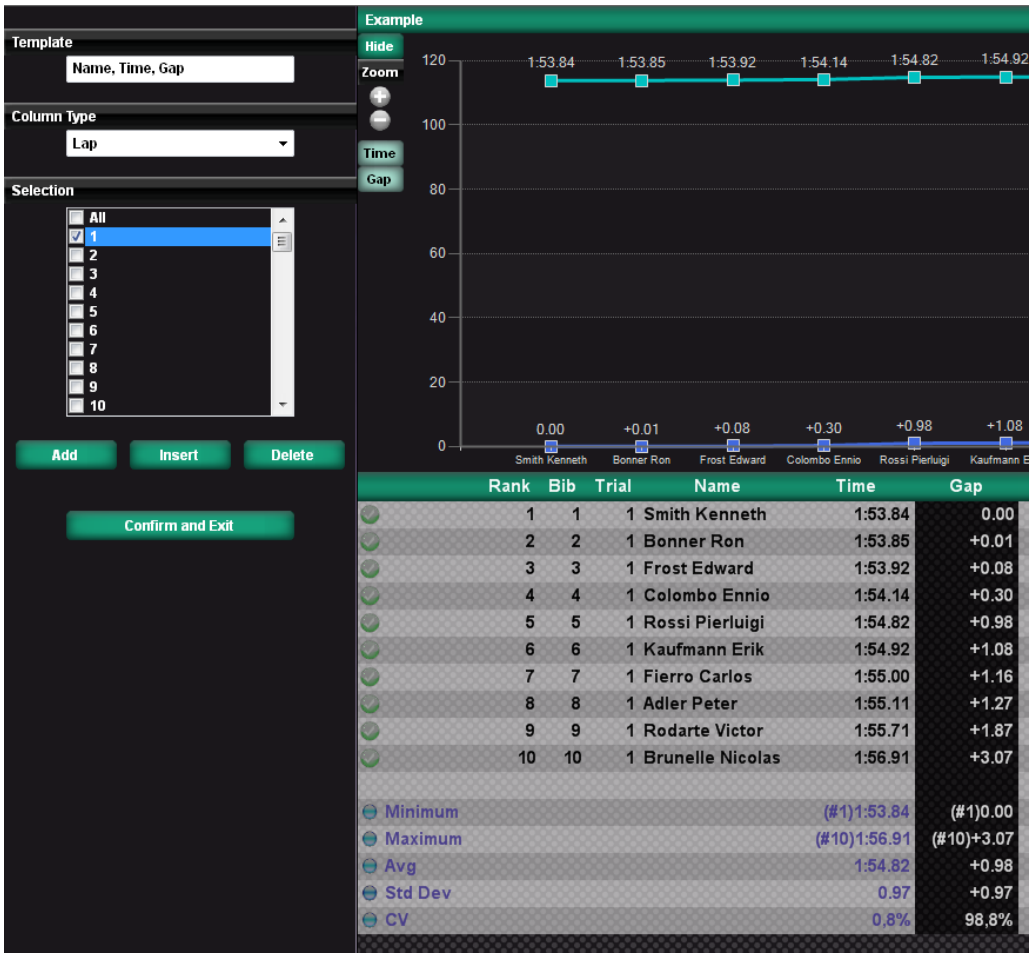
- Ranking number (Rank)
- Bib number (Bib)
- Trial (Trial)
- Athlete name (Name)
- Time (Time)
- Distance between one athlete and the other (Gap)
- Lap 1 (L1)
- Speed (Speed)

Proceed as follows:

From the drop-down menu containing all available 'column types' choose the required columns one at a time, press <Add>, and enter the name.



Adding the columns, the grid is populated with **example data** and relevant graphs.

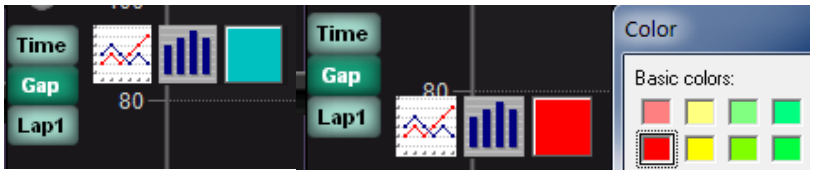


In some cases (Lap, Split, Lap Speed/Split and relevant gap times), it is necessary to enter the name of the event (impulse) to view; e.g. if there are 3 intermediate times, it is possible to display only some or all of them.

If columns have already been added and a new one has to be added between two columns, proceed as follows: select the column AFTER the one to add, choose the required column from the drop-down menu and press <Insert>. Similarly it is possible to delete a column which is no longer needed, by selecting the column and pressing <Delete>. Please note that at the moment there is no 'Move Column' (nor 'Rename') command, therefore the column must be inserted again following the above-described method.

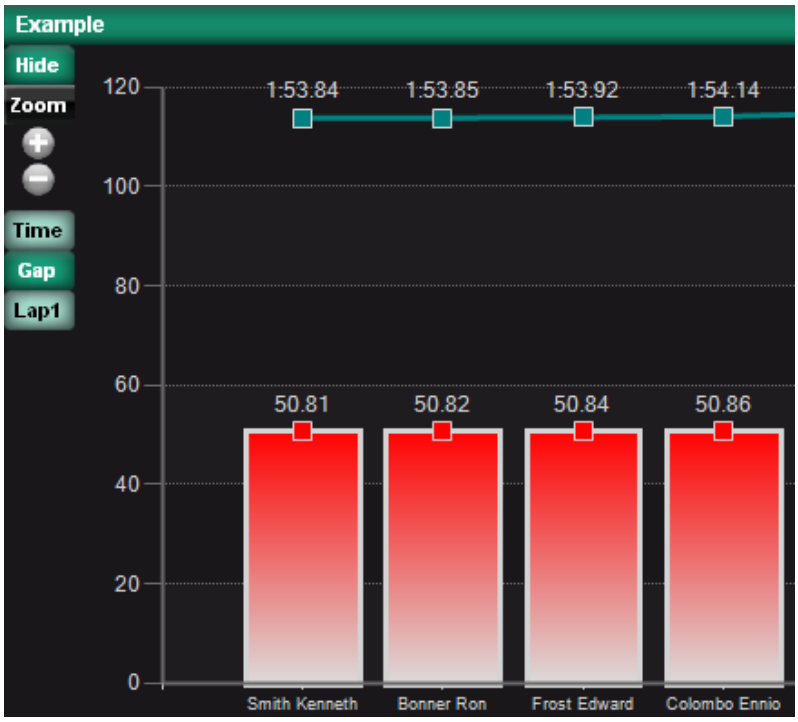
For example: insert a 'Group' column between 'Name' and 'Time'. Select the column 'Time' (i.e. the one after the column to be inserted; the former turns black), choose *Group* from the drop-down menu, and press <Insert>.

Graphs can be configured so as to be displayed, set the display type (lines or bars), and their color.



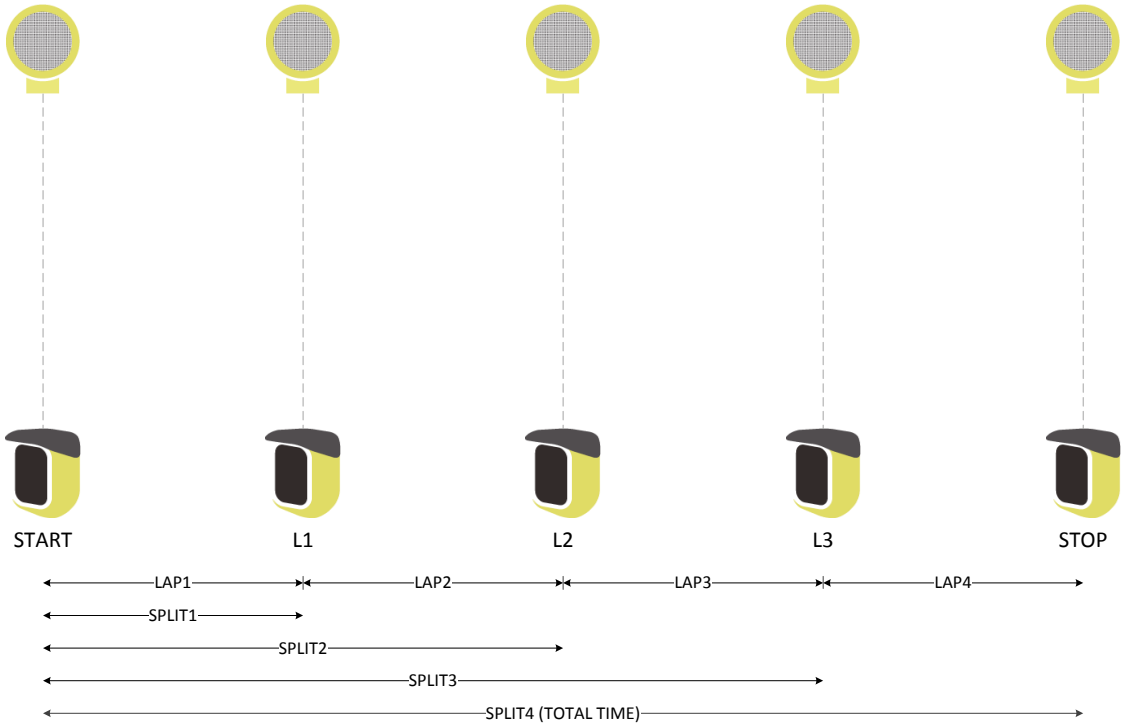
- Click on the label of each column to enable/disable the graphs.
- Move the mouse over them to show the two icons for histograms/bars and choose.
- Click on the colored rectangle to view the color picker and choose a color.

Example: if the graphs are not needed in the Gap column, and the times have to be displayed as light blue histograms and Lap 1 as red bars, the following is displayed:



For intermediate times, please remember the difference between LAP and SPLIT:

SPLIT is the running time beginning from the start, whereas **LAP** is the time of one single lap.

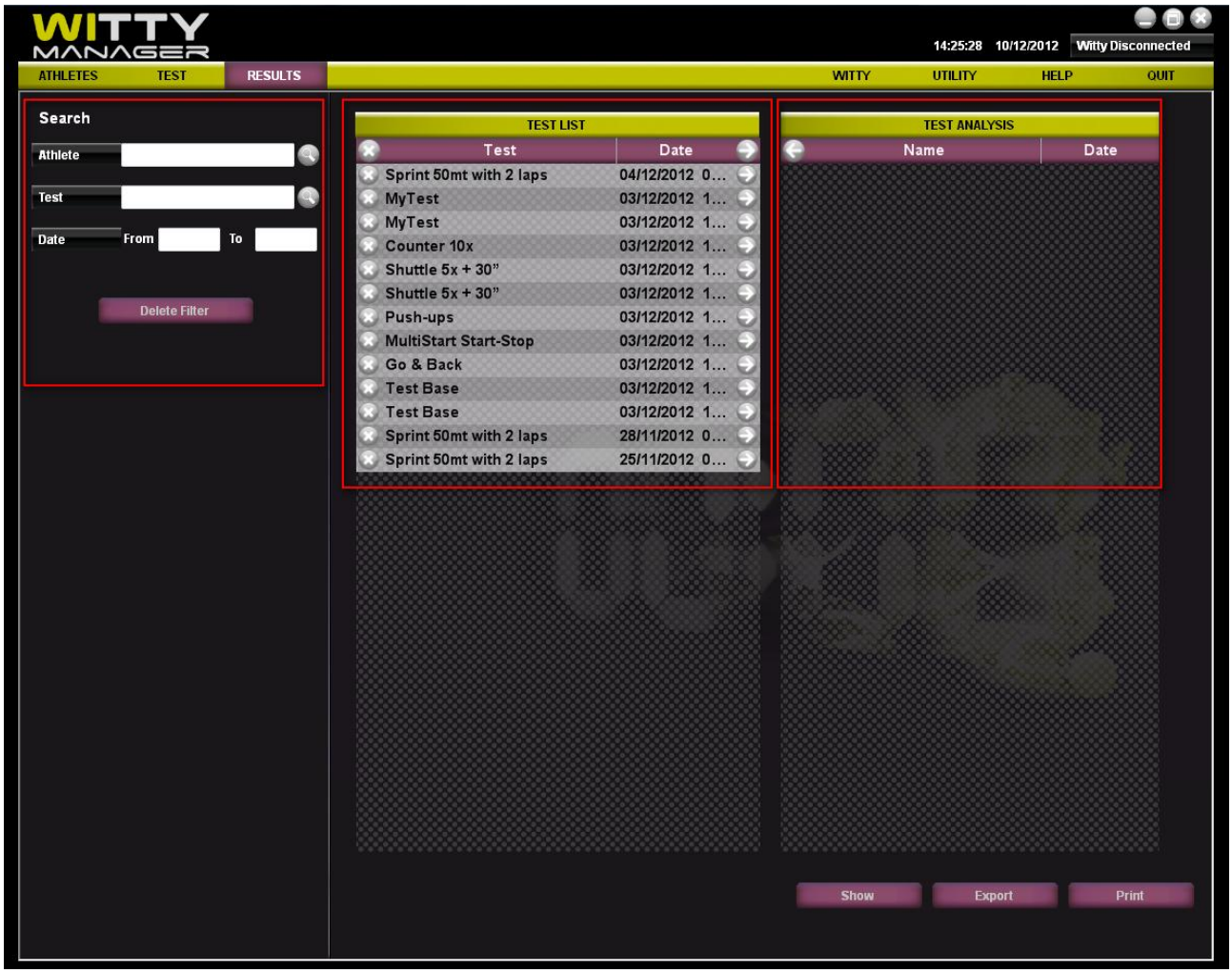


After having completed column and graph configuration, press <Confirm and Exit> to save.

3.3 RESULTS

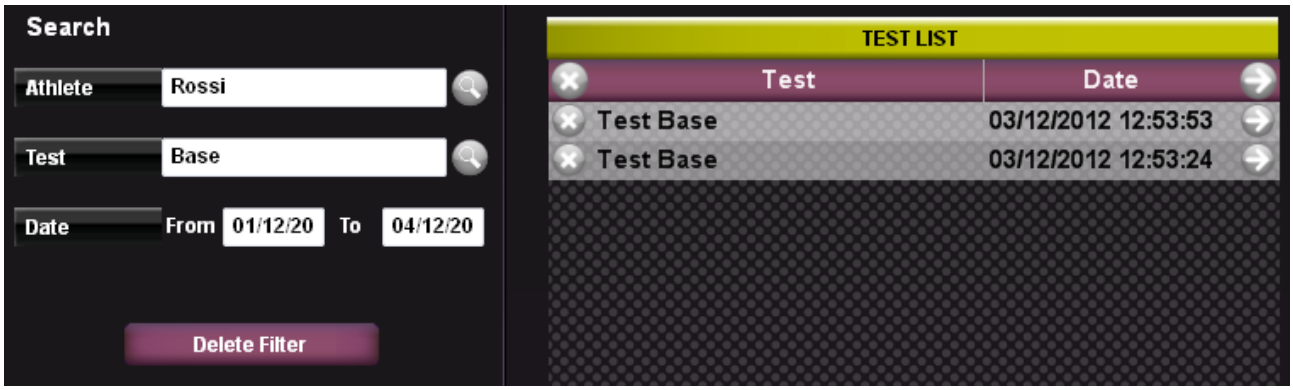
In the Results section the tests (trials) performed are displayed. The RESULTS window is divided into 3 parts (from left to right):

- FILTER section: panel for looking for a single test or for filtering according to various parameters;
- TEST LIST: contains all the tests carried out, possibly filtered by your parameters;
- TEST ANALYSIS: contains the tests you have manually selected for viewing, printing or exporting.

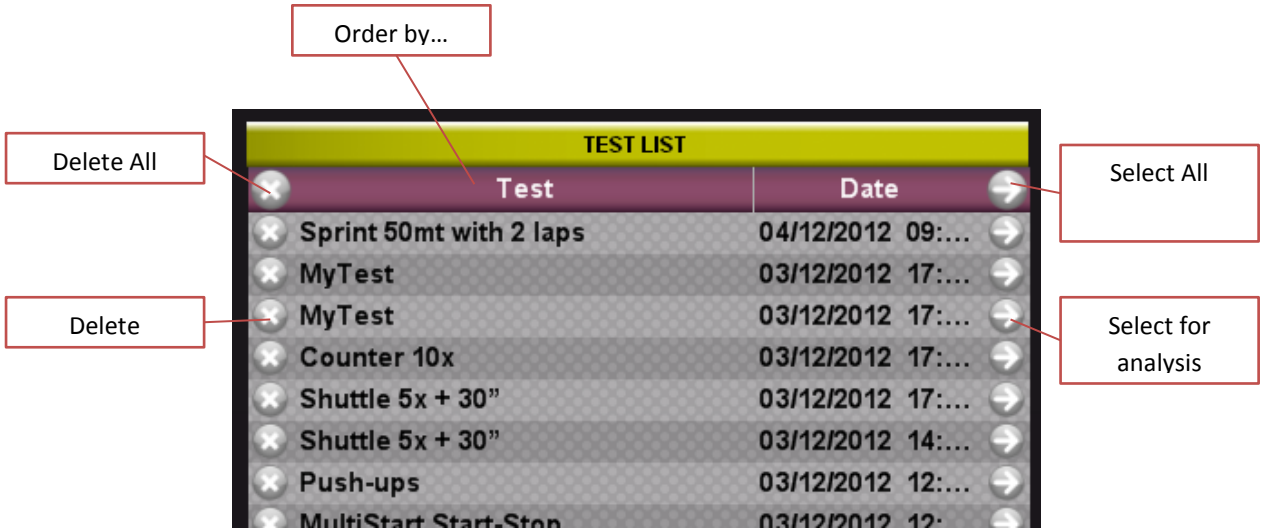


Filters Panel

To look for an athlete or test, the data can be inserted manually into the search boxes (e.g. key in “Rossi” in the Athlete field or “Base” in the Test field) or press the symbol to obtain a list of athletes or tests to choose from. Similarly it is possible to filter by data by inserting a range of data with the calendar control. To view all the tests and reset the various filters, press <Delete filter>.



Test List



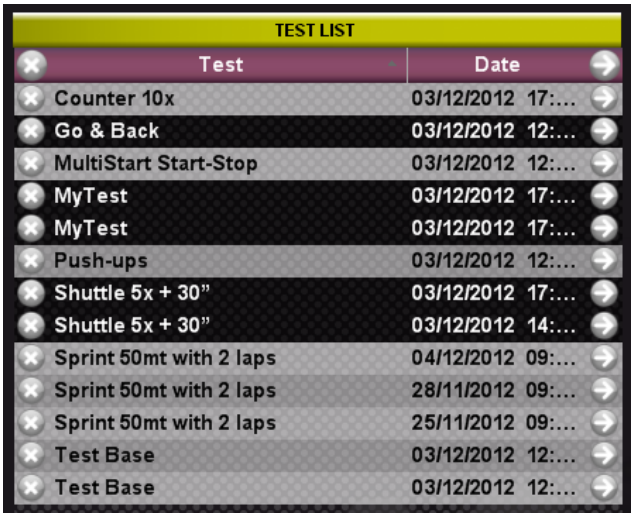
Click on the column names (Test, Data) to order the list according to that field. Press again to reverse the order (A...Z, Z...A).

To eliminate a test, press on the symbol on the corresponding line of the pre-chosen test; to eliminate all the tests displayed, also press on on the table heading (at the top).

To choose a test to analyze press on the symbol on the corresponding line (or double-click with the mouse): the test will be moved from the LIST table to the ANALYSIS table and a filter will automatically be set on the test type (e.g. if a 'Simple Test' is chosen, the Test List is filtered so as to contain only 'Basic - In Line' tests).

To add all the tests displayed, also press on the table heading.

It is also possible to make a multiple selection of various lines using the **SHIFT** (select from...to...) or **CTRL** key (select multiple tests) as detailed in par. 0. Pressing the button , only the selected tests will be moved, whereas pressing the selected lines will be deleted.



Test Analysis

To view a single test, double-click on the corresponding line in the 'TEST ANALYSIS' table. To remove a test from analysis, press on the symbol on the corresponding line in the 'TEST ANALYSIS' table, while to eliminate all of them press on the table heading.

To export the data, add at least one test to the 'TEST ANALYSIS' table and press <Export>. The user is prompted to choose the export format, Excel or .sdf database format (this allows to create a reduced-size database as a subset of the selected tests only, for example the tests performed by a specific athlete).

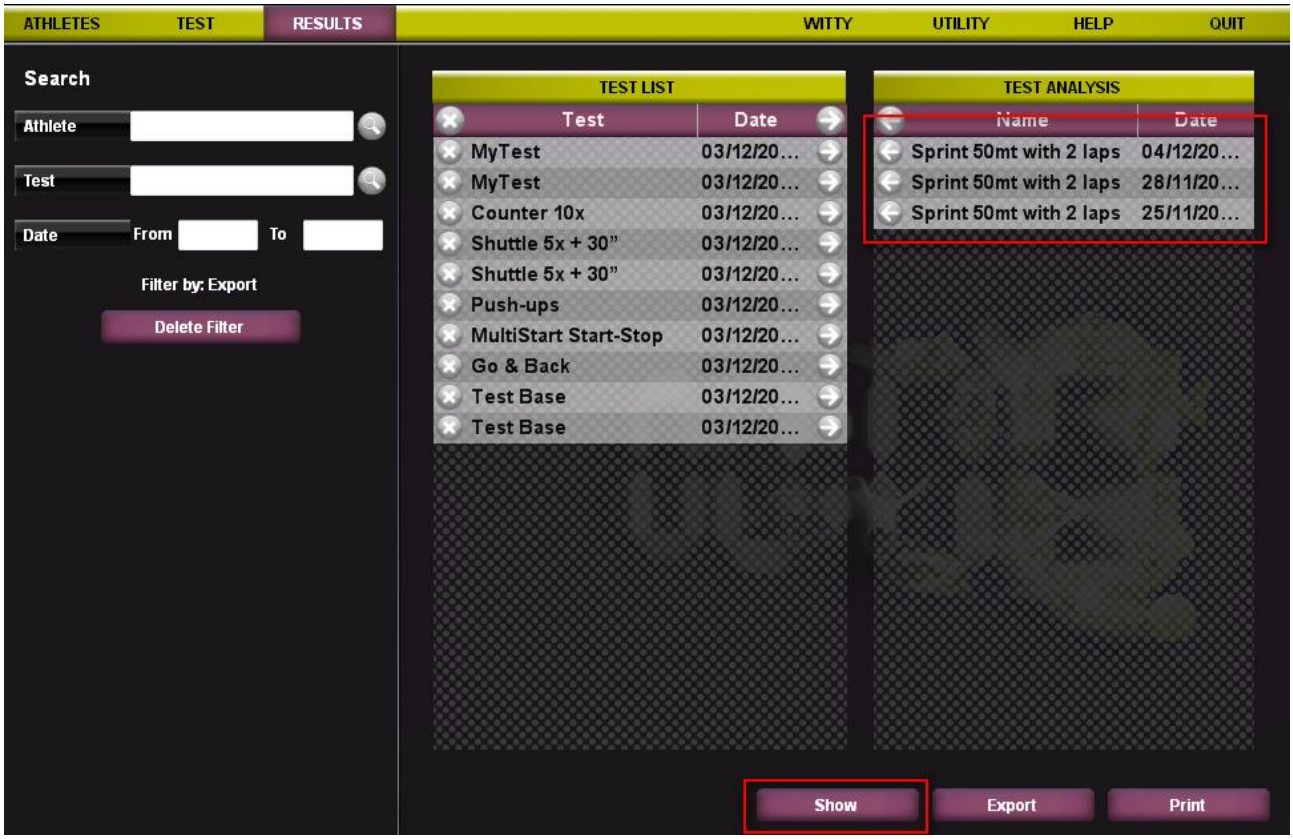
Pressing <Print>, a PDF report is generated containing the sums of the tests displayed in the Test Analysis window. Before generating it, the target directory must be chosen.

Show

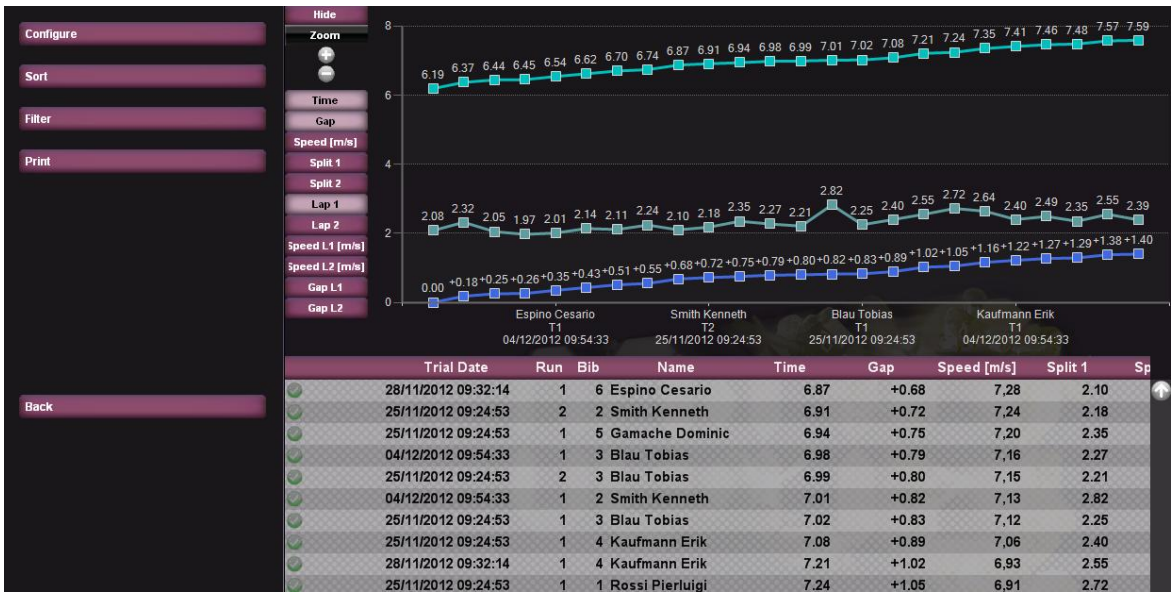
The 'Show' function allows to view detailed information of one or several tests and to display all relevant data both in numerical and graphic format.

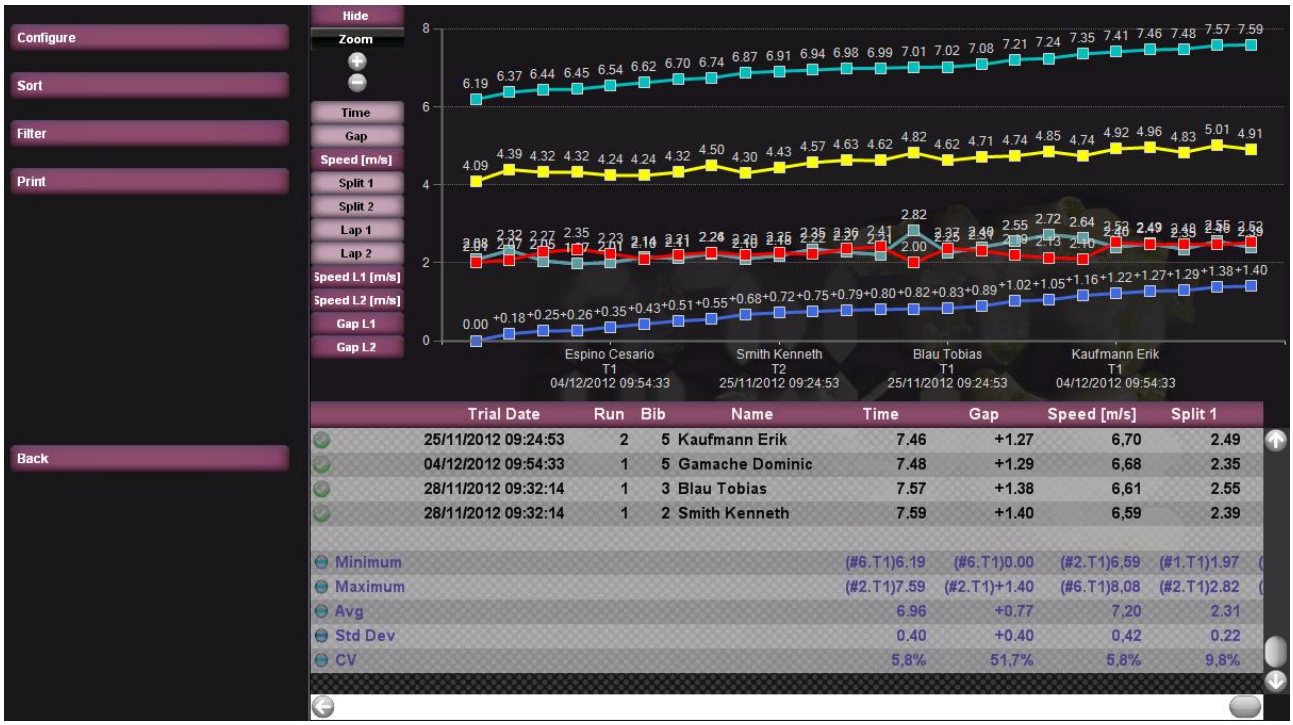
After selecting the tests in the list to the left (Test List) and moving them to the list to the right (Test Analysis), they can be viewed one after the other double-clicking on them.

Whereas by pressing <Show> when multiple tests are displayed in the list, the sum of the results of the N tests in the 'Test Analysis' window is displayed. In order to have consistent and comparable data, the tests must be as similar as possible (same course length, same number of intermediate times, same speed bases, etc.).



When one or more tests are showing, the displayed mask is similar to the one below:



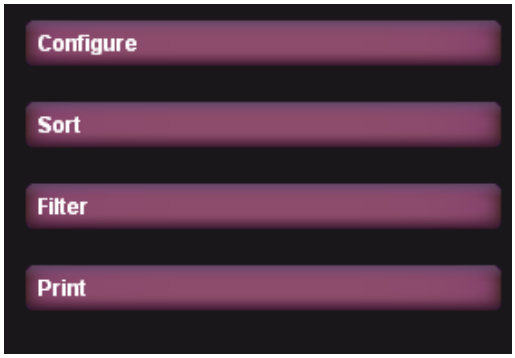


The screen can be devided into three large areas:

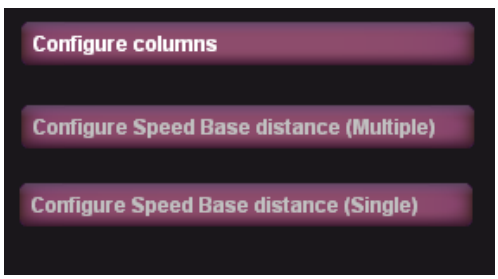
- left configuration panel
- graphs
- numerical data grid

3.3.1 Showing Configuration Panel

This allows to configure graphic aspects and grids, as well as print a results report.



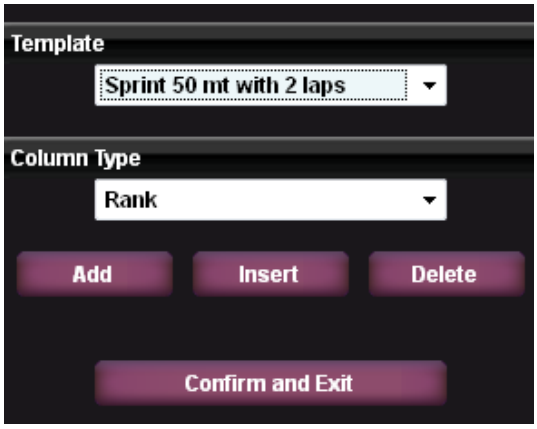
3.3.1.1 Configure



3.3.1.1.1 Configure columns

Using the <Configure columns> command a template different from the default template (Simple Template) or from the one associated to the test definition can be used for viewing.

Clicking on the command a panel is opened, where it is possible to choose a template from those available in the drop-down menu and created with the procedure detailed in chap. 3.2.2. Furthermore it is possible to add, insert, or delete columns just like when creating templates.

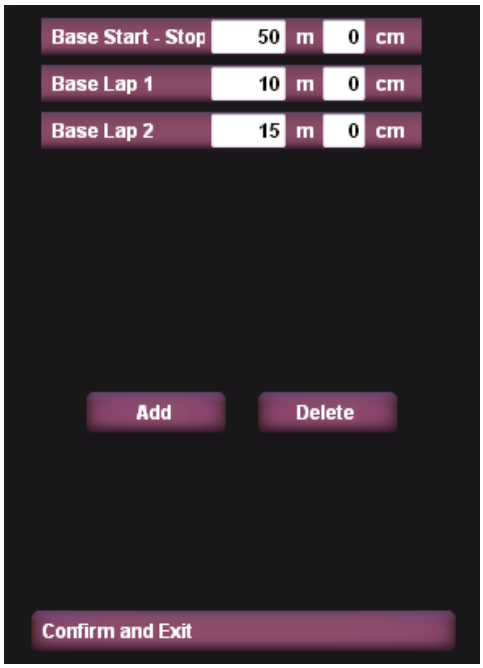


3.3.1.1.2 Configure Speed Multi Base

Similar to the Test Definition procedure, it is possible to view (and modify) possible (single or multiple) Speed Bases in order to view the speed columns in the right order (total as well as single intermediate time segments).

Use <Add> and <Delete> to manage the various bases, and press <Confirm and Exit> to apply the values to the speed columns.

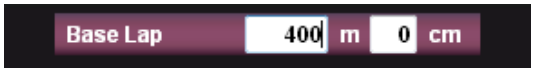
Please note that the <Delete> command deletes always the LAST base added and not the one the cursor is positioned on.



Name	Time	Gap	Speed [m/s]	Lap 1	Lap 2	Speed L1 [m/s]	Speed L2 [m/s]
Espino Cesario	6.19	0.00	8,08	2.08	2.01	4,81	7,46
Smith Kenneth	6.37	+0.18	7,85	2.32	2.07	4,31	7,25
Rossi Pierluigi	6.44	+0.25	7,76	2.05	2.27	4,88	6,61
Espino Cesario	6.74	+0.55	7,42	2.24	2.26	4,46	6,64
Smith Kenneth	6.91	+0.72	7,24	2.18	2.25	4,59	6,67
Gamache Dominic	6.94	+0.75	7,20	2.35	2.22	4,26	6,76
Blau Tobias	6.99	+0.80	7,15	2.21	2.41	4,52	6,22
Blau Tobias	7.02	+0.83	7,12	2.25	2.37	4,44	6,33
Kaufmann Erik	7.08	+0.89	7,06	2.40	2.31	4,17	6,49

3.3.1.1.3 Configure Speed Single Base

Similar to the previous command, but used for Go & Return bases (e.g. 400 meters) or when all bases are the same.



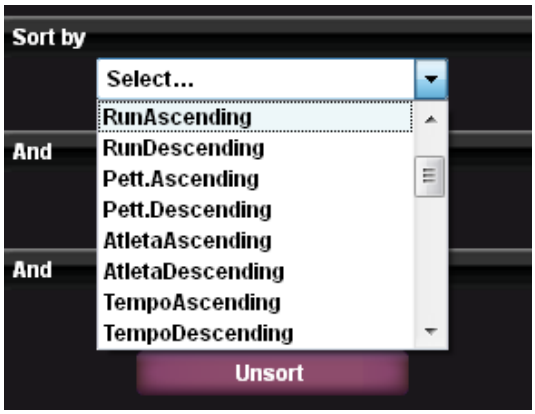
The two previous commands are ENABLED ONLY for a single test and not for several tests simultaneously (which could have different speed bases).

Please refer to the Witty Timer Kit manual for a detailed explanation of concepts such as Speed Bases (chap. 5.1.1.4.3 and 5.1.1.4.4).

3.3.1.2 SORT BY

This allows to choose the order for viewing (numerical and graphic) data, i.e. which columns to sort the list by.

It is possible to choose 1-3 columns and for each field specify the (ascending or descending) order; the columns available in the drop-down menus are those currently showing, with the name given by the user when creating the template. Use <Unsort> to reset the 3 drop-down menus and restore the initial default order.



In the following example the grid has to be sorted by Trial Date, then by RunDescending (referring to the 'Run' column), and finally by Split 1 (i.e. the athlete with the best time on the first course segment).

Trial Date	Run	Bib	Name	Time	Gap	Speed [m/s]	Split 1
25/11/2012 09:24:53	2	1	Rossi Pierluigi	6.44	+0.25	7,76	2.05
25/11/2012 09:24:53	2	2	Smith Kenneth	6.91	+0.72	7,24	2.18
25/11/2012 09:24:53	2	3	Blau Tobias	6.99	+0.80	7,15	2.21
25/11/2012 09:24:53	2	12	Espino Cesario	6.74	+0.55	7,42	2.24
25/11/2012 09:24:53	2	5	Kaufmann Erik	7.46	+1.27	6,70	2.49
25/11/2012 09:24:53	2	20	Gamache Dominic	7.35	+1.16	6,80	2.64
25/11/2012 09:24:53	1	6	Espino Cesario	6.19	0.00	8,08	2.08
25/11/2012 09:24:53	1	3	Blau Tobias	7.02	+0.83	7,12	2.25
25/11/2012 09:24:53	1	2	Smith Kenneth	6.37	+0.18	7,85	2.32
25/11/2012 09:24:53	1	5	Gamache Dominic	6.94	+0.75	7,20	2.35
25/11/2012 09:24:53	1	4	Kaufmann Erik	7.08	+0.89	7,06	2.40
25/11/2012 09:24:53	1	1	Rossi Pierluigi	7.24	+1.05	6,91	2.72
28/11/2012 09:32:14	1	1	Rossi Pierluigi	6.45	+0.26	7,75	1.97
28/11/2012 09:32:14	1	6	Espino Cesario	6.87	+0.68	7,28	2.10
28/11/2012 09:32:14	1	5	Gamache Dominic	6.62	+0.43	7,55	2.14
28/11/2012 09:32:14	1	2	Smith Kenneth	7.59	+1.40	6,59	2.39
28/11/2012 09:32:14	1	4	Kaufmann Erik	7.21	+1.02	6,93	2.55
28/11/2012 09:32:14	1	3	Blau Tobias	7.57	+1.38	6,61	2.55
04/12/2012 09:54:33	1	6	Espino Cesario	6.54	+0.35	7,65	2.01
04/12/2012 09:54:33	1	1	Rossi Pierluigi	6.70	+0.51	7,46	2.11
04/12/2012 09:54:33	1	3	Blau Tobias	6.98	+0.79	7,16	2.27
04/12/2012 09:54:33	1	5	Gamache Dominic	7.48	+1.29	6,68	2.35
04/12/2012 09:54:33	1	4	Kaufmann Erik	7.41	+1.22	6,75	2.40
04/12/2012 09:54:33	1	2	Smith Kenneth	7.01	+0.82	7,13	2.82

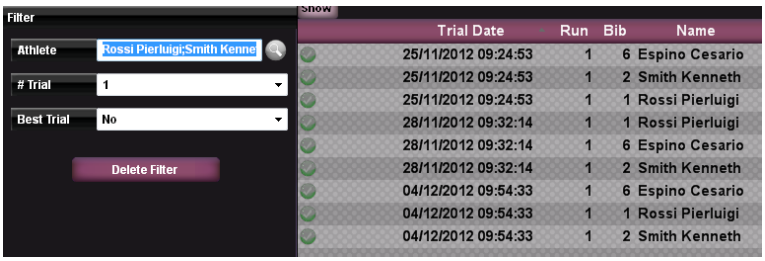
3.3.1.3 FILTER

The 'Filter' command allows to filter the numerical grid lines using two fields:

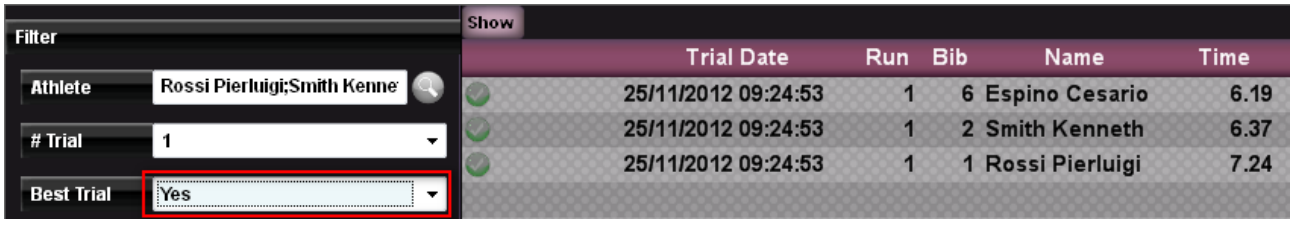
- the athlete's name
- the trial number

For the athlete's last name (and/or name) only the first letters can be entered, e.g. 'Ros' or 'Pier'. It is also possible to enter both the last name and the first name (in this order, i.e. 'Rossi Pierluigi' and not 'Pierluigi Rossi'). Press the <Delete Filter> button to cancel the defined filters and see all lines.

It is also possible to use the 'Search' function by pressing the magnifying glass button to select more than one athlete and see the results of this group of athletes.

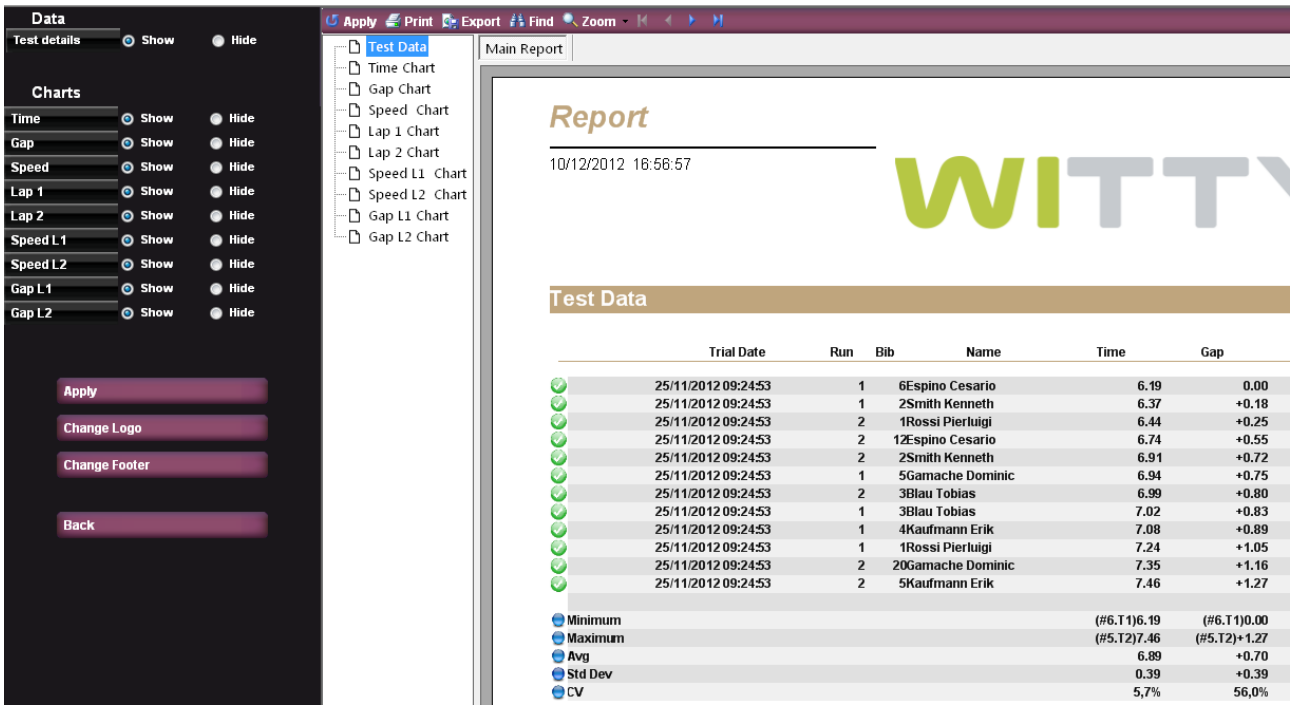


The 'Best Trial' function extracts the best result for each athlete (based on the 'Time' field), allowing to isolate for each group only the best time and create and absolute ranking.

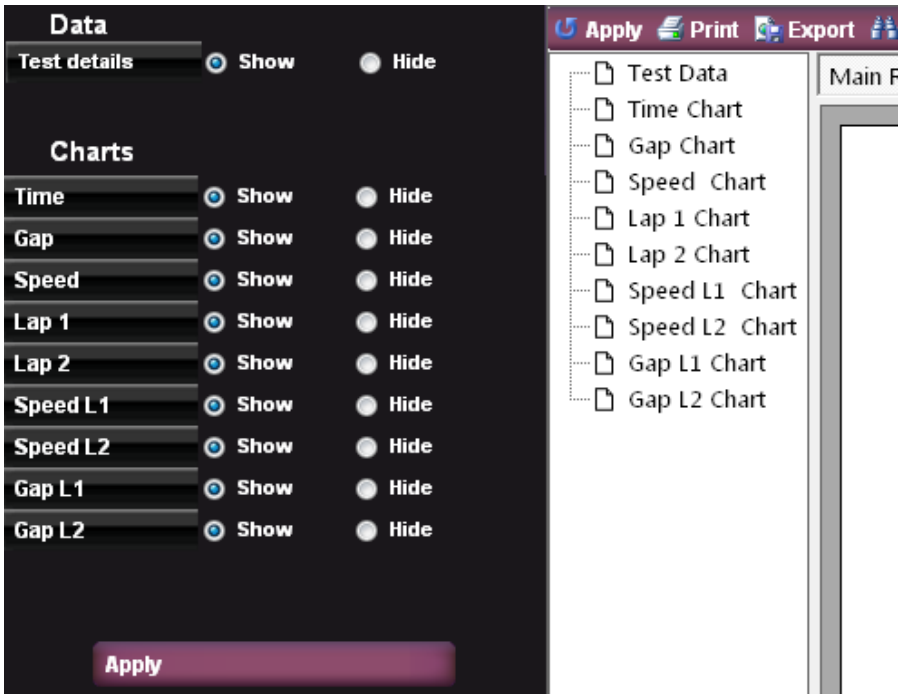


3.3.1.4 PRINT

Pressing <Print> in the 'Show' window will create a highly configurable report.



The *radio buttons* on the left side enable and disable various report sections and more precisely the numerical data as well as the graphs for the columns in the applied template. Select Show/Hide for each section and press <Apply> (or use the 'Apply' icon on the toolbar).

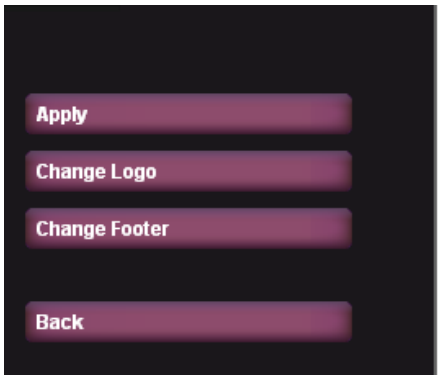


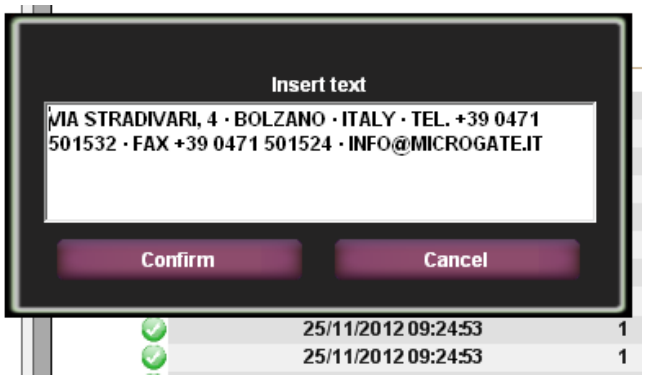
Based on the visible sections, to the left of the report a navigation tree is displayed for skipping to the relevant page.

The other toolbar commands are:

- **Apply**: Has the same function as <Apply> when modifying the visibility of a section.
- **Print**: Launches the Windows print dialog.
- **Export**: Saves the report in Pdf, Word, Excel, Html format in the specified folder.
- **Find**: Finds a word (e.g. an athlete's name) in the report.
- **Zoom**: Zooms the report by various percentages.
- **Go To**: Use the 4 buttons to browse to the first, previous, following, or last page.

The buttons **<Change Logo>** and **<Change Footer>** can be used to customize the report adding a logo and personal data (they will be printed in the top right corner and on the bottom line).



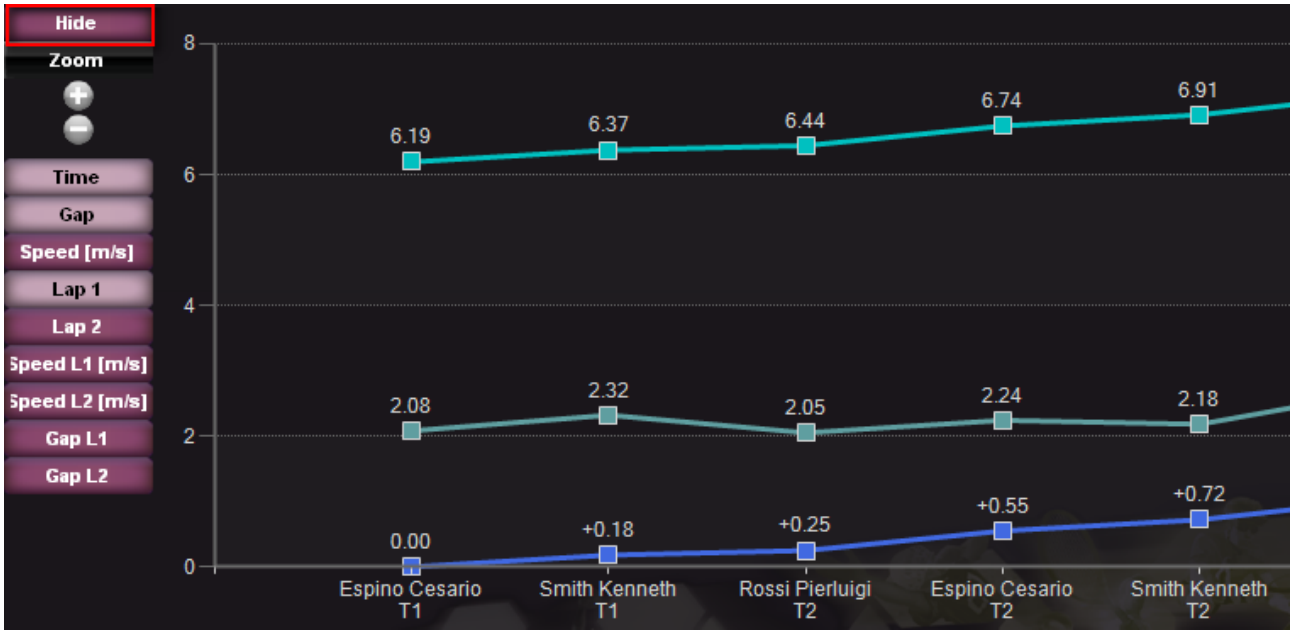


The <Back> command exits the Report Preview and goes back to the result viewing mask.

3.3.2 GRAPHS

All numerical value columns represented in the applied template (times, intermediate times, gaps, speeds) can be displayed graphically in the form of histograms or bar graphs.

If the graphs are not needed, they can be hidden using the Show/Hide button.



The different measures can be enabled or disabled simply clicking on them; in the example above the fields 'Gap', 'Lap1', and 'Speed' are disabled and thus not displayed.

The small square beside the button is a legend displaying the color of the associated graph; clicking on it, the *Color Picker* appears allowing to choose another color.

If you place the cursor over one of the buttons (without clicking), the type of displayed line ( ) or column ( ) graph will appear on the right. To change the type of graph simply left-click on the corresponding symbol.

By pressing the symbols under “Zoom” you can increase ( ) or reduce ( ) enlargement of the graphic display. Similarly it is possible to use a restricted data range (rectangle) for some values to zoom in on them.

3.3.3 NUMERICAL DATA TABLE

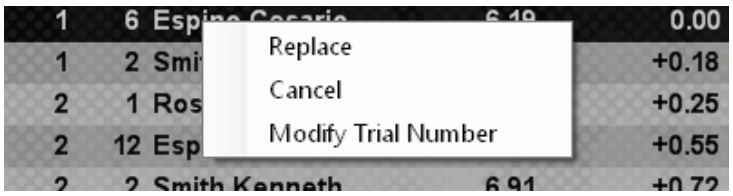
As explained above, the numerical data grid displays the single lines depending on the applied template (standard or customized).

	Trial Date	Run	Bib	Name	Time	Gap	Speed [m/s]	Lap 1
	25/11/2012 09:24:53	1	6	Espino Cesario	6.19	0.00	193,86	2.08
	25/11/2012 09:24:53	1	2	Smith Kenneth	6.37	+0.18	188,38	2.32
	25/11/2012 09:24:53	2	1	Rossi Pierluigi	6.44	+0.25	186,34	2.05
	25/11/2012 09:24:53	2	12	Espino Cesario	6.74	+0.55	178,04	2.24
	25/11/2012 09:24:53	2	2	Smith Kenneth	6.91	+0.72	173,66	2.18
	25/11/2012 09:24:53	1	1	Rossi Pierluigi	7.24	+1.05	165,75	2.72
Minimum					(#6.T1)6.19	(#6.T1)0.00	(#1.T1)165,75	(#1.T2)2.05
Maximum					(#1.T1)7.24	(#1.T1)+1.05	(#6.T1)193,86	(#1.T1)2.72
Avg					6.64	+0.45	181,01	2.26
Std Dev					0.38	+0.38	10,43	0.24
CV					5,9%	84,9%	5,8%	10,8%

At the end of the table some **statistical data** are always calculated, such as:

- Minimum value (preceded by the bib# and the trial number T=Trial)
- Maximum value
- Average (μ)
- Standard deviation (σ)
- Variation coefficient (CV: ratio between the standard deviation and the absolute average value)

Right-clicking on a line, the context menu appears with the following options:



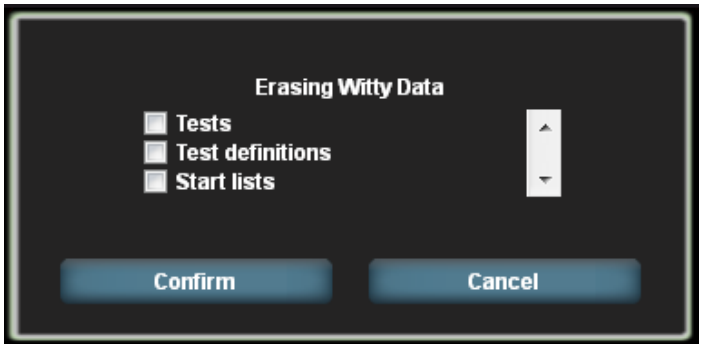
- **Replace**: For replacing the bib number (and therefore the corresponding athlete) with another one. If there are athletes with the same bib number in the athletes' database, a window pops up asking which athlete should be added.
- **Delete**: Deletes the selected row (confirmation required)
- **Modify Trial Number**: Modifies the trial number.

3.4 WITTY

In this section, once the Witty timer is connected to the PC, various functions can be managed; verify the driver installation and the connection via the status bar in the top right corner.

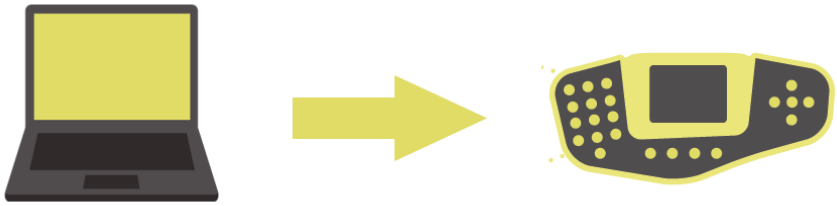
3.4.1 CLEAR WITTY DATA

The data stored on the timer, i.e. the tests carried out, the test definitions, the start lists, and the athletes' data, can be deleted. Choose one or more information categories to be deleted, and press <Confirm>.

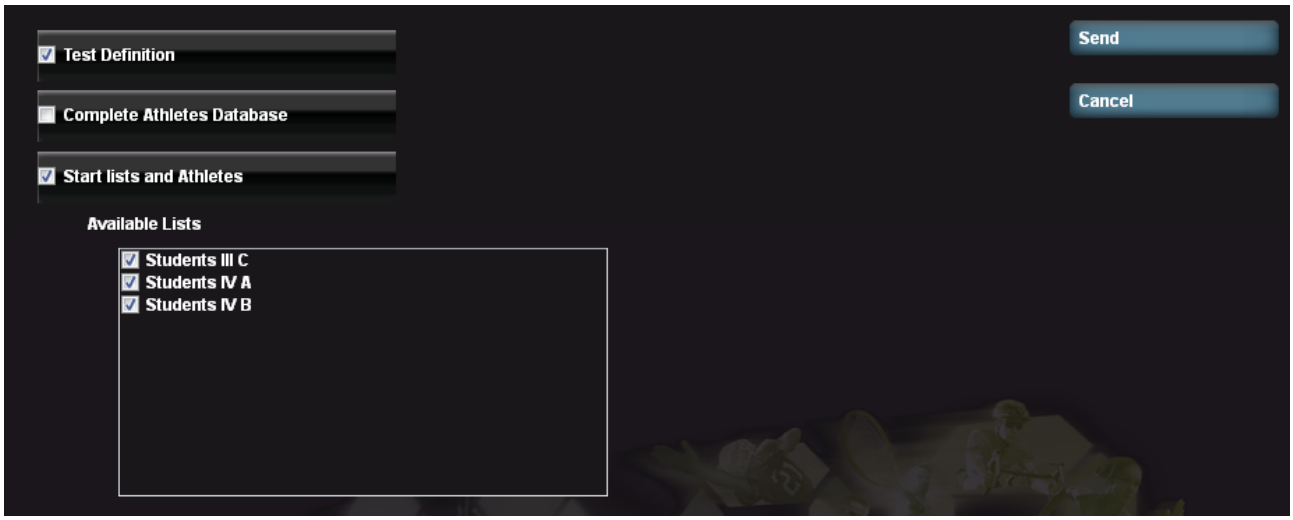


3.4.2 Download Data to Witty

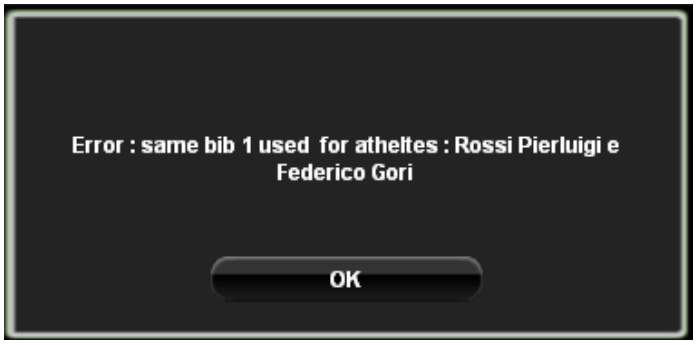
This option downloads data from the PC to the Witty timer, such as customized test definitions, the athletes' data, and possible start lists.



Choose one or more information categories to transfer to the timer; use 'Start lists' to choose which lists to transfer. If a list is chosen, the list and all its athletes are transferred. CAUTION: If the WHOLE Athletes' Database has been previously transferred, but afterwards only one or various lists are required (as in the following example), only the athletes of those lists are copied and the others are deleted from the timer.

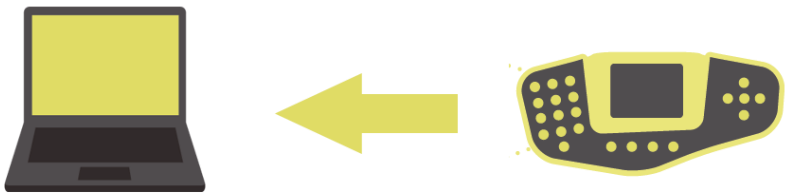


If there are athletes with the same bib number, a warning is displayed and they are not transferred.



3.4.3 Upload Data from Witty

This option allows to upload test data from the Witty timer to the PC. If the test type is not present in the Witty Manager database (e.g. test types created on the timer itself), the connected test type is also uploaded.



Press <Upload Data from Witty> to transfer the tests and possible test definitions, then go to Results, where the uploaded test list is displayed.

The association of tests and athletes' data, i.e. assigning a bib to a name and last name depends on how the data flow has been set up. The suggested workflow is the following:

1. Create a new database on the PC and add the athletes' names.
2. Download the athletes' data to the timer (completely or filtered start lists).
3. Have the athletes execute the tests.
4. Upload the data from Witty to the PC.
5. View the Results with the associations performed automatically by the program.

To this case (the first in the table below) others can be added: for example, if tests have been timed without athlete names (indicating only the bib number, in this case #2), or if working with multiple databases. Following are some examples:

Athletes' Data on PC	Athletes' Data on Witty	Association
Present	Downloaded from PC (therefore identical)	Automatic
Present	Not present at the moment of timing	Automatic (manual, if there are different athletes with the same bib number)
Not present	Not present at the moment of timing	No association with names
Not present	Present, but different from the one on the PC (previously downloaded from another database)	In addition to the results, the athletes' data are also downloaded, therefore the association is automatic and the athletes' database on the PC is populated
Present	Present, but different from the one on the PC (previously downloaded from another database)	As above; the athletes' data on the PC can contain athletes with the same bib number

NB: If the tests have been timed when the athletes' names were not present on the Witty, and the athletes's data are transferred from the PC, for these tests names are NOT assigned automatically (the bibs remain anonymous).

If the database contains more than one athlete with the same bib, when transferring the tests, the user is asked which athlete the result should be associated to.

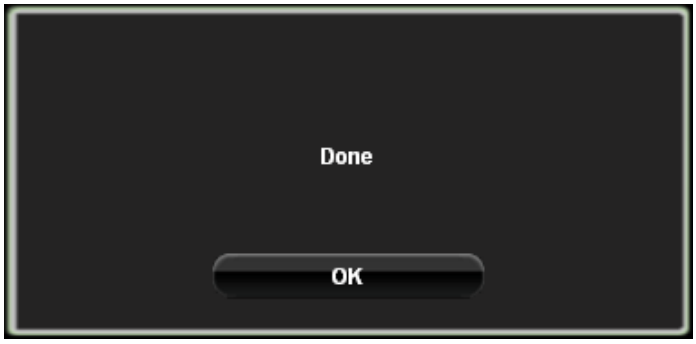
3.4.4 WITTY FIRMWARE UPDATE

If, when launching the software, a message is displayed saying that there is a new firmware version available, using this function it can be downloaded and then installed on the device.

After confirming the action, the firmware is stored on the timer; at the end of this procedure, disconnect the Witty timer from the PC and restart it (switch off and on). After the boot-up, the firmware is checked, loaded, and after a further restart, the timer is started with the new firmware. Any possible data on the timer (athletes, test definitions, tests) will not be deleted. Nonetheless it is advisable to download all data to the PC (see chap. 3.4.3) before uploading the firmware (this means performing a backup).

3.4.5 WITTY PHOTOCELL FIRMWARE UPDATE

Similarly to the timer, it is also possible to update the photocell firmware. Connect the photocell WHILE OFF to the PC using the USB cable. After the operating system has recognized the driver, the LED blinks with a red-green light. Press <Photocell Firmware Update>. After a few moments necessary for the download, the firmware is applied and a dialog window informs that the update has been completed.



Disconnect the USB cable from the photocell and switch it on to check that it is working correctly.

CAUTION: Do not update the timer and photocell firmware if the battery charge is lower than 25% (charge the battery for a few hours first, making sure that the charge level is sufficient).

3.5 UTILITY

3.5.1 BASIC SETTINGS

Allows to change the following settings. Please remember to press <Save> before exiting.

3.5.1.1 LANGUAGE

The language can be changed at any moment during the use of the program and does not require a restart. Select the desired language from the drop-down menu and press <Save>.

3.5.1.2 UNITS

Makes it possible to set the type of unit of measurement with which to view the speed base length values. If using the international unit, the values are entered in meters/cm, whereas the imperial unit uses feet/inches (ft/in).

3.5.1.3 SPEED

Select the unit of measurement (choosing between meters per second, km/h, miles/hour, and knots) for displaying the speeds, if the lengths have been entered in the relevant bases.

3.5.1.4 PRECISION

Choose the time displaying accuracy (seconds, tenths, hundredths, or thousandths) for the times displayed in the result lists.

It is important to know that this configuration sets only the *displaying* of times, which are always calculated as precisely as possible, regardless of the configuration (1/25000 of a second).

Similarly, data exporting from Witty to PC is also always carried out with the highest precision and will not be affected by this function.

3.5.1.5 WEBCAM

A webcam attached to the PC can be used to take pictures of the athletes when entering them into the database. Choose one of the connected webcams from the drop-down menu. Use the <Test> button to check if it is working, and, if necessary, configure its parameters. Press <Confirm> to save the settings.

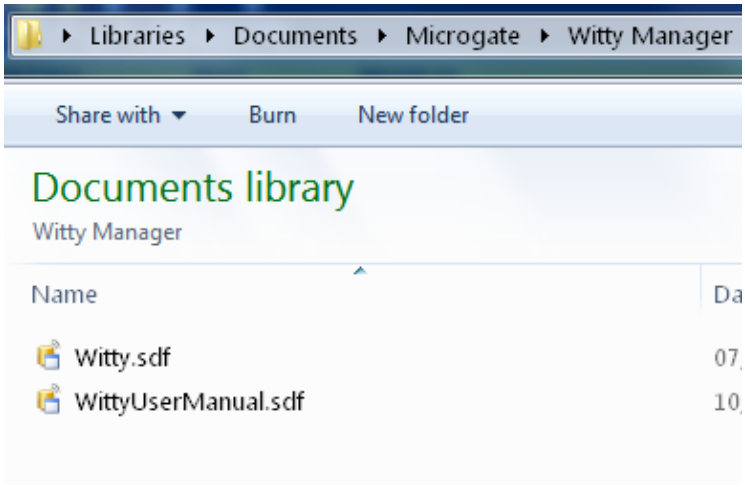
3.5.2 DATABASE

Witty Manager manages all data (athletes, tests, results, settings, etc.) in a database file (Sql Server CE format with the extension .SDF). Most users can use a single file for managing all information, which by default is called 'Witty.sdf' and is located in the following directory:

Documents\Microgate*Witty Manager*

This directory can change depending on the operating system used and the language, but typing it into the address bar of an Explorer Window, the correct folder will be opened automatically. Some examples are shown here (<*YourUserName*> is the user name for logging into Windows):

Windows XP Italian: C:\Documents and Settings\<*YourUserName*>\Documenti\Microgate\Witty Manager
Windows XP English: C:\Documents and Settings\<*YourUserName*>\ My Documents\Microgate\Witty Manager
Windows VISTA/7/8: C:\Users\<*YourUserName*>\Documents\Microgate\Witty Manager
etc.



If there is an error in loading the database (file moved or deleted), *Witty Manager* will report this error when the program is launched, offering to search for the database or continue. In the latter case, *Witty Manager* will create a new empty database.

The software allows to manage multiple databases (one at a time) for particular requirements: for example, a team trainer may want to separate the tests of one season from the ones of another season (but if they are separated, it will not be possible to compare them or study their evolution), or a free-lance consultant carrying out tests for various customers may need to create a database for each team he/she is going to test.

It is also possible to export data into a database to transfer them from a PC to another one or give them to a customer, who can check them with the freeware available at www.microgate.it/witty.

The available commands are listed below:

3.5.2.1 DATABASE

This is the directory where the database used at the moment is stored; use the commands <New> and <Select> to change the directory and the file to be used.

3.5.2.2 NEW

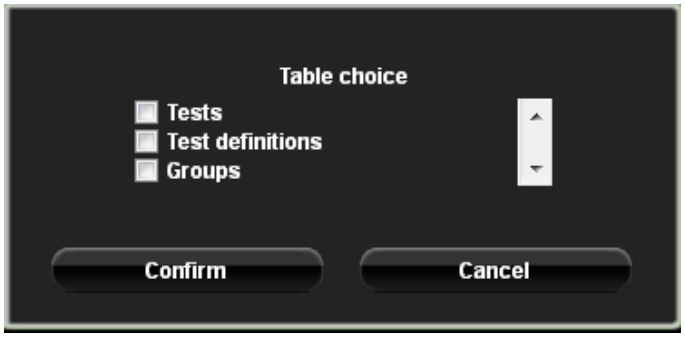
Creates an EMPTY database and sets it as default; a folder must be specified.

3.5.2.3 SELECT

If multiple databases have been created, one can be chosen as ACTIVE database (browsing the hard disc).

3.5.2.4 CLEAR

EMPTIES the current database deleting all relevant data for Athletes, Groups, Test Definitions, Tests. The table to be cleared must be selected and confirmed (this operation CANNOT BE UNDONE or canceled).



3.5.2.5 EXPORT AND SAVE AS

These two commands allow to DUPLICATE the CURRENT database. This can be useful when backing up data or making a copy of the database for keeping the Athletes' Data and the Groups emptying the part relevant to the Tests (for example when beginning a new season). The directory must be chosen and the file must be named. The differences between the two commands lies in the format data are stored: 'Save as' uses the database format (.sdf) and therefore is just like a copy of the file in Windows; whereas Export compresses the file in 7zip format (extension .wyt), which can contain other information in the future (such as videos or pictures).

3.5.2.6 IMPORT

Imports a .wyt file previously exported to another PC or to the same PC if data have been deleted or removed (restore). Furthermore the command is useful for merging two databases.

This operation requires two steps:

- The program asks if the user wants to import into a new database (Import) or into the current one (Merge)

- The following dialog window asks to locate the file with the .wyt extension to import.

If the answer to the first question is YES (import into a new database), the chosed DB will be opened directly from that location (this corresponds to the <Select> command).

If the answer is NO (Merge), the data of the chosen file are imported into the CURRENT database.

3.5.3 Check Update

When this button is pressed, the system will check if the installed version is the most recent one. If it is not, *Witty Manager* proposes the choice of downloading the most recent version.

Please note: before pressing <Check Update> check that the Internet connection is active.

3.5.4 About

This section displays respectively:

- The version of the *Witty Manager* software, as well as the version of its database
- The most recent firmware versions available for the timer and the photocell
- Hardware and software characteristics of the computer

If our Technical Support asks for these data, select the field using the cursor and right-click to COPY them. You may then PASTE them into the e-mail and send it. Press the X in the top right corner to close the About box.

3.6 Help

Loads this PDF file.

3.7 Quit

Closes the program.

4 PC MINIMUM REQUIREMENTS

A 'regular' desktop or notebook PC with Microsoft Windows XP Sp3, Vista Sp2, Windows 7, or Windows 8 is usually enough for running the *Witty Manager* software without any problems. We recommend to perform a Windows Update before setting up the software.

The suggested minimum hardware requirements are the following:

	MINIMUM	RECOMMENDED
Operating System	Microsoft XP SP3	Vista/7/8 (32 or 64 bit)
CPU	Atom/Centrino	i3/i5/i7
RAM	2 GB	4 GB
Hard Disk	40 GB	160 GB
Graphics card	Integrated	Dedicated (512 Mb or above)
Graphic Display Resolution	1024x600	1600x900 or higher
USB ports	1	2 (Witty + Webcam)

Witty Manager requires the installation of Microsoft .NET Framework 3.5 SP1 (installed automatically during the setup, if not found)

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