

Safety of Medical Electrical Systems Tutorial Software (Liverpool SMS)

Version 3.0

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1- Downloading

- Go to the following website:
<http://pcwww.liv.ac.uk/~afgt/liverpoolsms.zip>
- On the File Download window, click the Save option:

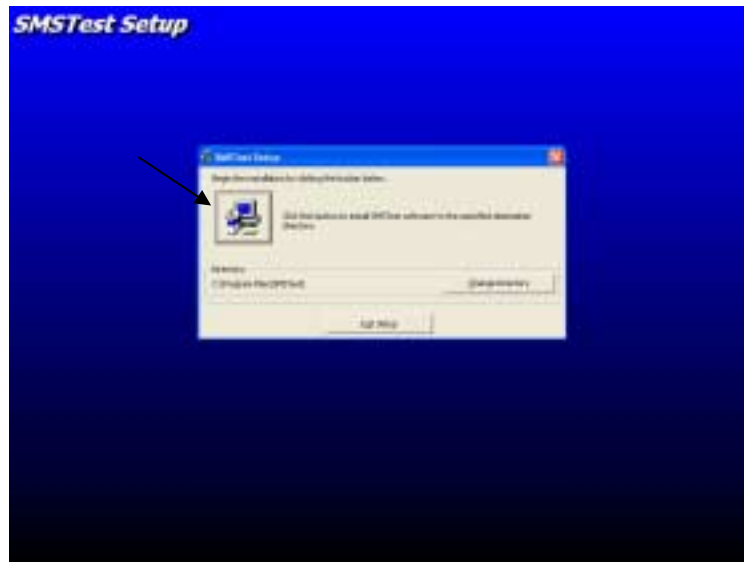


- Choose a folder to save the Liverpool_SMS.zip file to and click save. At the end of the download (which should only take a few seconds) close the Download Complete window

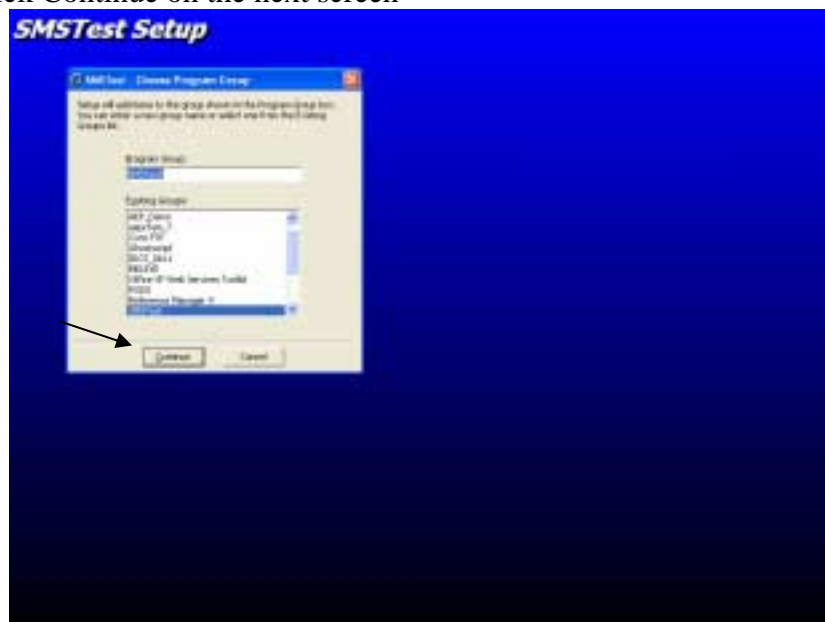


2- Setup

- Double click the zip file you have just downloaded
- Double click the setup program inside the zip file and click OK in the Install window
- Click OK on the next screen
- Click the PC icon on the next screen



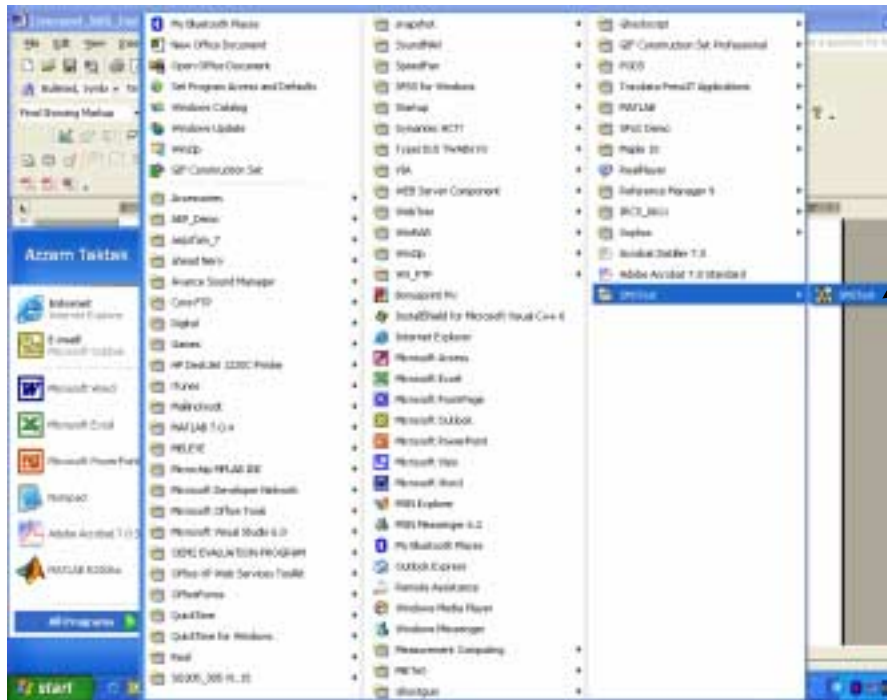
- Click Continue on the next screen



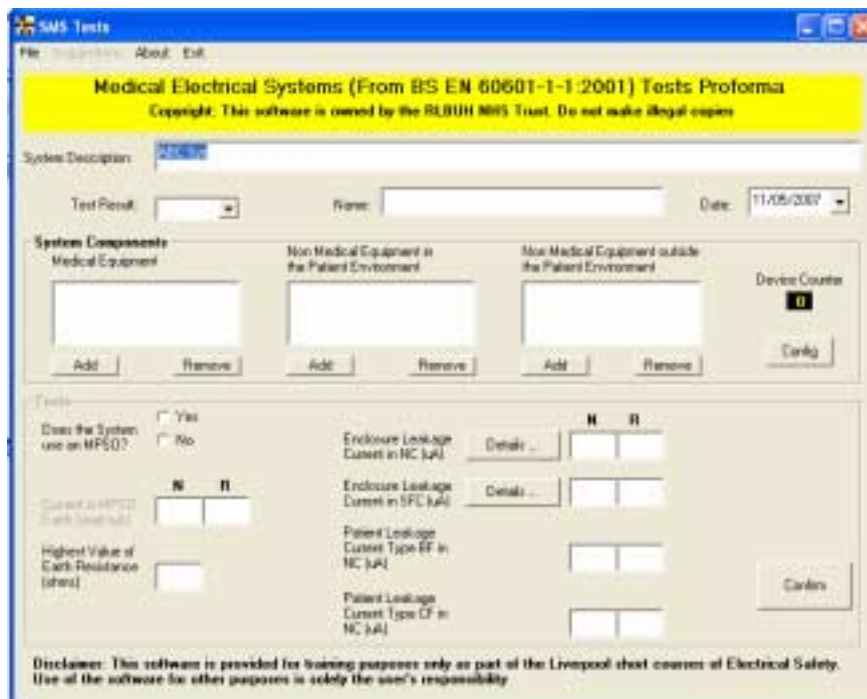
- Click OK when you get the setup complete window
NOTE: During the setup, you might get a few messages regarding version conflict. Click Yes on these to keep the most recent version of the libraries

3- Running the program

- In the Start - Programs menu, you should now have a new item called SMS Test. Point to it and click on SMS Test

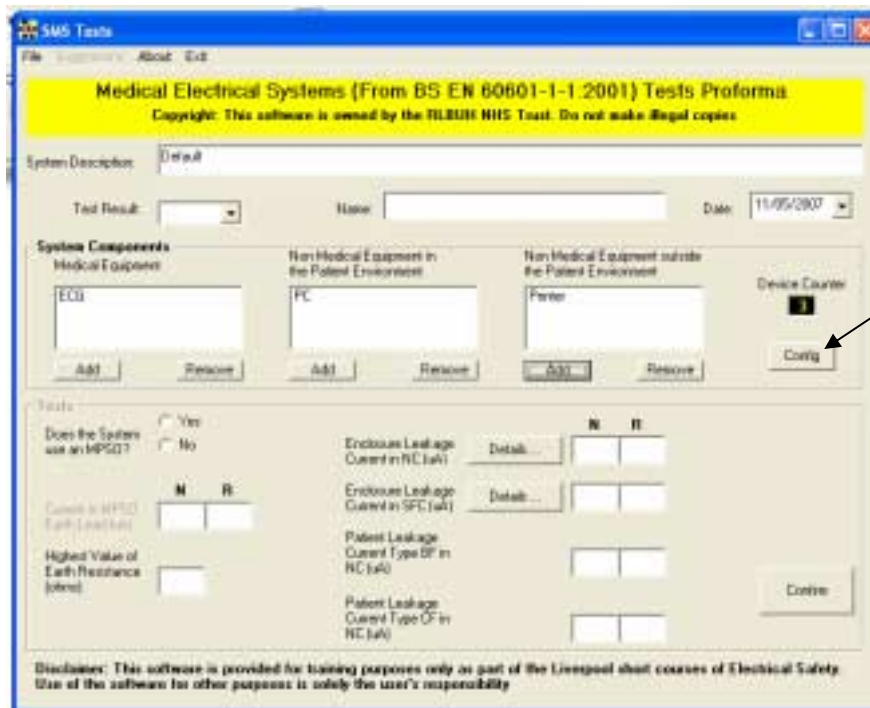


- In the System Description box, enter a name for your system

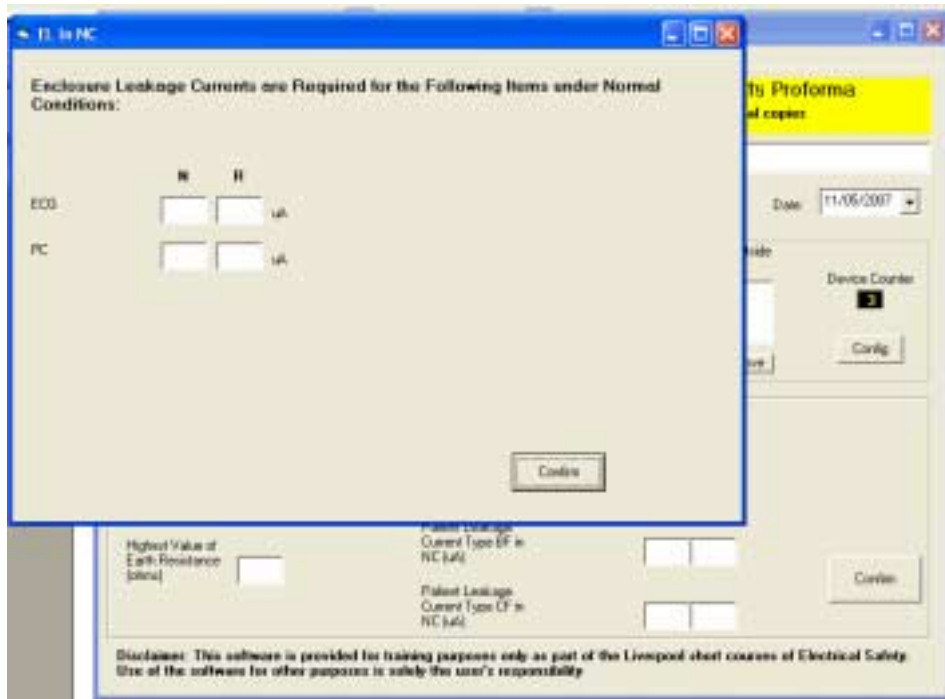


- In the System Components frame, Click the Add button under the Medical Equipment box and enter a short name to identify the device (e.g. ECG)
- Repeat the above step as necessary for all items of equipment

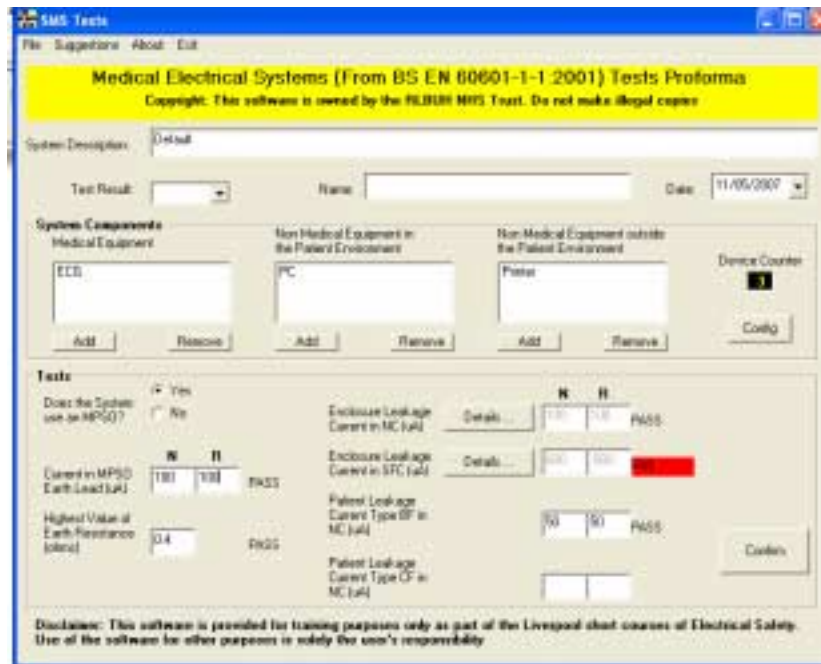
- When you have added all the devices, click the Config button



- Step through the configuration process for all the devices you have entered before you progress to the next stage
- Step through all the tests and enter the test results in the appropriate boxes
- For the Enclosure Leakage Current tests you must click the Details button which will open up another window telling you which tests to do



- When you have entered all the values click Confirm. The results will be displayed



- You can look at the suggestion menu item to see some possible solutions
- You can print a 2-page report summarising you results by clicking on the File Menu button and then Print.

Electrical Medical System Safety Test Result	Enclosure Leakage Current Test Details (Currents in uA with IFR polarity)
<p>System Name: Default Tested By: Date: 11/05/2007</p> <p>System Components</p> <p>1 - Device: Short Name: ECG Serial No:</p> <p>2 - Device: Short Name: PC Serial No:</p> <p>3 - Device: (Outside Patient Environment) Short Name: Printer Serial No:</p> <p>Test Results</p> <p>Current in MFSO (Earth Lead) (uA) (MRE): 100/100 PASS Highest Value of Earth Resistance (ohms): 0.4 PASS Enclosure Leakage Current in MC (uA) (MRE): 100/100 PASS Enclosure Leakage Current in SFC (uA) (MRE): 600/600 PASS Patient Leakage Current Type BF in MC (uA) (MRE): 50/50 PASS</p>	<p>System: Default</p> <p>ECG 016 PC 100/100</p> <p>ECG with MFSO with disconnected: 600 / 600 PC with MFSO with disconnected: 100 / 100 ECG with ECG with disconnected: 300 / 300 ECG with PC with disconnected: 300 / 300 ECG with Printer with disconnected: 300 / 300 PC with ECG with disconnected: 100 / 100 PC with PC with disconnected: 600 / 600 PC with Printer with disconnected: 100 / 100</p>

4- The File menu

- In the File menu item, you can save the system by clicking the Save option. It will store all configuration details and safety test results.
- Also in the File menu item, you can open saved file by clicking the Open option. There are 3 example systems that are included in the package called:
SMS_VirtualSys_1.sms simulating a sleep studies system,
SMS_VirtualSys_2.sms simulating a critical care monitoring system or
SMS_VirtualSys_3.sms simulating an ITU system