**ACQUIDATA UROMAC OPERATIONAL <u>FAULT FINDING</u> and <u>Q&A</u>**

This fault finding section has been structured in two parts, the first covers basic operational problems and the second a fundamental Frequently Asked Questions (FAQ) schedule in order of the most frequently encountered. This is intended as a dynamic document which will expand continuously as we and our user base add content. Please do contribute with clinical measurement/testing questions and any product or user suggestions via our e-Mail address <insight@neomedix.com>

**<u>OPERATIONAL ISSUES</u>**

**System will not start:** If the start up chimes are heard but there is no display.  Suspect the monitor  - see also below:'**Computer loses time and date settings:**'  If this is not the problem and  the power to the machine if turned on (for certain) then the original startup or emergency diskette or CD will need to be inserted prior to startup to make the system alive enough to work with to resolve the cause.   After this point a professional computer technician is required.  Remember computers are human made devices and one day you will experience a failure.  Ensure you keep your important data backed up so that a failure does not eradicate (months or years?) of data.

**System Starts but displays 'Cannot find Acquidata':**  This means (form most systems ) that the SCSI port is not able to recognise the connected Acquidata.  There can be a number of reasons but only two you can check as a clinical user-
a)  Is there power to both computer and Acquidata?
b)  Is the  SCSI cable plugged all the way in.  **Note:** never disconnect or reconnect this cable whilst either computer or Acquidata has the power turned on.
c)  The Acquidata power must be on before turning on the computer.  The computer will scan the SCSI port for a device as it boots up but will not look again until  the computer is restarted.  If it is not there first time it will not know it is connected.

*If these are not the causes contact Neomedix or a Neomedix Systems approved service centre.*

**Screen displays 'Cannot find Front Ends':**   This means that the Acquidatas AcquiProcessor is working and being recognised by the computer but the AcquiProcessor/Uromac software cannot find the AcquiAmplifers.  Turn power off the system and the Acquidata units (AcquiProcessor and AcquiAmplifers) and disconnect then reconnect the two rear cables connecting the two Acquidata modules together.  Ensure that the clips and plug securing screws are tight.  Reconnect to the system.  Turn on system cart power and attempt a new start up.
*If these are not the causes contact Neomedix or a Neomedix Systems approved service centre.*

**Uromac operation seems sluggish and misbehaves:**  Macro recording (under Macro menu) has had 'Start Recording' selected and not turned off using 'Stop Recording'.  The

computer will be monitoring every keystroke and cursor operation and saving it to generate a macro. Memory space is reduced  as an inadvertently left on Macro recording grows in size.  Note the macro menus 'Start Recording' is not related to the waveform display recording.

Another reason (particularly on earlier systems with as little as 4Mb of memory) is that there is not enough memory to support the file size or perhaps a multiple of simultaneous applications.

**Cannot Print:** Check that  the printer is powering up (are its lights on)? If not ensure that the power is connected and the printer on button is set. Next check  that someone has not browsed in the Chooser window and accidently de-selected the printer. To check, turn on all instruments which on the cart and then select the Apple menu at top left of screen, move the cursor down to the Chooser and select this window.  The Chooser window will open. You will see some icon choices on the left side of the window.   These are the print driver extensions active on your computer (you can connect to more than one type of printer). Click on the Icon for the model of your printer (eg; Epson SC580).  The right side of the Chooser window should then show the printer name and if it is not highlighted then click on its name and it should then highlight.  Once it does, close the Chooser window and try printing something.  It should then work.  Be aware humans are impatient. If there has been a printer connection problem it is probable that medical staff have pressed the print button many times to try to get results.  These will all be queued up in the printer buffer and so may need clearing.  To do this double click on the desktop printer Icon (Mac OS versions 8.6 and later) which will have an image of page as part of it.  This will open the print control window.  Then use the select and delete commands to remove unwanted print requests.
Also remember that most Acquidata system printers have ink cartridges and they need replacement.  Do not ignore ragged or intermittent ink printing – it is usually a cartridge getting low on ink.

**Monitor screen   displays "No Signal" at system turn on. :**   With some display monitors they will display this message if there is power on the monitor but when there is no video input from the computer.  This is usually because the system power is powered but the computer itself has not been turned on.  This is a feature of some  17" Mitsubishi monitors.

**Cannot find a patient file:**  When viewing normal patient folder a saved patient file is not there.  The destination folder has been set to one other than the intended patient folder at time of saving the patient record file.  Go to the Finder level by click selecting Finder from the Finder menu at the extreme right of main menu bar at top of screen (this finder area displays the current windows application name (such as Uromac) select and  click 'finder'.   Once the Finder is selected the startup screens upper screen main menu will appear.   Then from the File menu select Find.  Use this by typing in filename details and select the search option 'Starts With' or 'Contains' and then click find or the magnifying glass Icon.

Find or Sherlock as it is called in later OS versions will list the matching files and will show their location on the hard drive or desktop.
*See your Macintosh operators manual for more details on using the powerful find file.

**System freezes, hangs or displays a system bomb:**  There is no single reason for this but is usually a conflict with another applications extension (particularly if it has started to happen since new software was loaded onto the computer) or inadequate memory for the software task being executed at the time.  The former needs a computer aware technician / professional user to locate the cause and the latter to add more RAM memory if it happens enough to be a nuisance.  Setting Virtual Memory in the Control panels/memory  window can assist in the latter but it is not advisable to set Virtual Memory more than 50% of the installed memory.

If there is persistent problems the computer will need expert attention to ascertain the cause.  Usually the user needs to be able to advise the exact sequences leading up to the freeze.  The later the model Mac the rarer this becomes.  It is not common to have a system hang and even more unusual a system bomb.  As a high intensity user one may experience it once ore twice a year but remember there is always a reason.
To reset after a problem:
* On earlier systems press Ctrl/Apple and the power on button (Mac version of Ctrl/Alt/Del
* On later (G3 + ) systems and later Powerbooks use the reset button usually on the rear of the computer and next to a small left facing triangle Icon.

**Cannot zero balance a channel:**  One of the following can be the cause:
a)  No transducer is connected – connect appropriate transducer.
b)  The transducer has faulty characteristics – try an adjacent transducer in the suspect channel.  If you try another transducer type its calibration would probably be incorrect if used in this location but the zero balance operation will work.  No harm can be caused by connecting a different Neomedix supplied transducer into any of the  AcquiAmplifier channels.  If an alternate transducer will zero it indicates the original transducer is probably faulty and needs investigation/testing.  If the fault remains the AcquiAmplifier channel is likely to be faulty and in need of service by Neomedix or an approved service organisation.

**A channel does not display a waveform:** There can be a few reasons for this.  In order of likely cause they are:
a)  The recorded signal is of too large a size for the display axis scales selected, often the case if the channel has not yet been zero balanced (small push button on the AcquiAmplifier or Minim or by the menu option to zero).
b)  The recorded signal is too large for the display axis scales, but does zero momentarily when the zero balance is operated.  Click on the small inverted black triangle at the extreme left of the screen for that channel. Select 'Set Scale' and make the signal excursion range larger .

c) The channel has been turned off with the software switch.  When this state is selected the whole waveform area for that channel has a grey background.  Go to the channel control box at the extreme right of the channels waveform area and click the inverted triangle icon on the right side of the control box.  The first line on the menu is the channel ON/OFF switch.  Click it to on.

**Waveforms not being saved:** Record & Save is off - Click the recording Icon adjacent to chart Start/Stop button on the Uromac screen (near the chart Stop/Start button .  This will remove the red alert cross on the flashing recorder Icon and save data to memory as the data scrolls on the screen.

**Computer loses time and date settings:**   All PC,s (Windows and Macs) have a section of memory which is powered by a battery so that when the computer is first turned on it can receive programmed instructions to configure the various electronics modules and components of the computer into a PC.  The memory also contains the configuration software for the system Clock, Monitor and Printer as well as the printers connection path in the Chooser.
With time the battery state will deplete and the voltage drop.   In the Mac the first indication that this is happening is that the time and date will be displayed incorrectly.  This can be again reset in' Time & Date' under the 'Control Panel' menu but is a warning to have the battery replaced.  If ignored this will recur and if the battery is not replaced the next problem will be that the printer connection through the Chooser will be lost requiring that you go to the Chooser and select the correct printer icon. If the battery is still not then changed the last thing which behaves incorrectly is the monitor.  Restarting may randomly allow the monitor to come on but this is NOT recommended.   The duration from when the time and date is first lost to the loss of  monitor  connection is usually 3-6 months.   Have the battery in the computer replaced as soon as early symptoms present.  Its cost is low at about $35 and life is usually in excess of two years (as long as the replacement battery has not had a long shelf life). Except for a couple
 of computer models (including the Performa 630 which is somewhat difficult to open and access the battery)  the time taken to change it and re-enter time and date (remember to also appropriately check the daylight savings box and set the time zone) is under 10 minutes.

<u>FAQ's</u>
**Q:  Can I record a study on my Mac based Acquidata and then review, analyse and edit etc. the urodynamics file on a Windows machine?**

**A:**  Yes if you have Uromac v3.6.8 or later.   Neomedix in April 2002 released its Windows version of Uromac for the Acquidata Minim models and will  (targeted for Q3 2002  do so for the rest of the range -Petite and Median models).  Uromac v3.6.8 or later, now has as a 'Save As' option giving the ability to save the Mac recorded data file in a Microsoft Windows format.  Neomedix will supply Uromac users with their Windows version urodynamics software which you may load onto a Windows PC.  Users will then be able to open , display and edit etc a Mac recorded urodyynamics file on Windows PC.

**Note**: Acquidata models sold with the new USB communications port instead of the previous SCSI port can in principal be used with either Windows or Mac PCs.  However as mentioned above the PC application version of Uromac is not yet released for all Acquidata models.


**Q. How many urodynamics studies can be Stored** on a standard 1.4Mb floppy?
**A.**  Depending upon version of software and file length but between 10 and 30 excluding video capture images.  One standard recording with four or five images will usually fit on one diskette.  Modern Zip drives save 90 times more files (100Mb media).  A Firwire enclosure and  (say) 5Gb drive is not a great cost and on average will save years of urodynamics recordings.

**Q.** What is the **difference between backup and archive**?
**A.**  Back up is to copy currently active work to one or more separate storage devices so that if the main hard drive in the computer is corrupted data can be recovered easily.  Archive is storage of data in case it is required for future use and is considered to be safe for long periods of time (in excess of a decade).  There are similarities between backup and archive but the type of storage device and media is often different.

**Q**. **When do I zero balance** recording channels?
**A.** There are a couple of schools of thought on this. We suggest the following:
a)  connect all transducers then connect and flush patient catheters,
b)  prime the urine receiving chamber with a small (200ml) amount of water and
c)  hang the saline filling bag on the Fill Volume transducer hook.
d)  set pressure transducer stopcocks to the recording position.
e)  position the external pressure transducers on the I.V. pole to the level of the symphus pubis.
f)  hold the patient catheters such that their pressure sensing ports are level (at the same height ) with the centre of the pressure transducer dome.
g)  Then **Zero Balance** all channels.
h)  When the patient is moved to a standing or seated (commode) position reposition the pressure transducer mount such that the transducers are at the same level of the

symphus pubis.  This should re establish the relative zero reference point without re Zeroing the amplifiers.

Note:  An alternative (which we believe is clinically acceptable) to the repositioning of the transducers when the patient sits to void, is to simply ensure the patient is relaxed (no abdominal strain) and that there is a stable resting pressure baseline (with no detrusor pressure activity) on all pressure channels for a 3-5 seconds period. Then zero balance the pressure channels before voiding. Capturing useable recorded data is preferable to not being ready when the patient cannot wait longer.

**Q.** Can I make a **retrospective addition of an event** comment:
**A.** Yes – if it is a standard urodynamics event comment simply place the cursor on the screen at the appropriate location and press the required F Key and the event tag will be placed on the screen and labelled with the text associated with that F Key.  Non urodynamics markers are placed on the screen as above and the 'Add New Comment' option under the Uromac Commands menu is selected and the  dialog box which appears is used to enter the events desired label text with the keyboard.

**Q:  I use v5.7.4 of Uromac on an earlier computer operating system** and the enlarged display **(multimeter) windows** of the current pressures and volumes during recording are initially available but **when I close the current patient and start a new one they disappear?**
**A:**  When this early version of Uromac is used on some computers, a minor bug allows this to occur.  This does not happen with subsequent  versions of Uromac .  The work around is to launch the settings file as usual (with the multimeter windows open) and complete the first patient test.  You can save the data at any time as is your normal practice.  When the test is completed DO NOT select Close from the File menu, but select New.  Note that if at this point you had not already saved the most recent changes on the preceding file you will get a dialog box reminding you to do so before opening the 'New' recording window.  The multimeter windows will still be there.
Note also that these multimeter windows are only active during data acquisition (recording).

**Q.** What is the cause of the **black vertical lines on the recordings** and can I remove them?
**A.** They are there to indicate during review where the chart has been stopped and started. They can be removed by going to the SetUp menu in the main menu bar at the top of the screen and select 'Display Settings' then check or uncheck the box next to 'Line Between Blocks'

**Q. How can I expand the time axis** with a  recorded waveform display:
**A.** The best way is to change the way you record the data. Select (say) a 20:1 or 50:1 display compression during recording so that for the pre-set data sampling rate the displayed recording 'looks' the way you want it.  This means that when reviewing the

recording you can then expand the waveform timebase 5 or 10 times or more (depending upon the set up you have selected).

**Q: Can I smooth a 'noisy' waveform** to allow easier measurement?
**A:** Yes. In the channel options menu (at the right side of the screen next to the start of the waveform trace) for the channel of interest select SMOOTHING.  To set the equivalent of about 2 Hz filtering set to 25 point smoothing.  You can always then later select the raw unsmoothed display as only the recorded raw data is saved in the file.  How you display it in review does not affect the saved raw data.

**Q:** If I modify the display of a previously recorded test, **can changes be reversed?**
**A:** Yes.  At any time the user can reselect the way the stored raw data is viewed.  Note changes in the display are only that.  The raw data is never modified

**Q:** Is there an **Acquidata Uromac data base**?
**A:**  Not as such. We have elected to have all the raw and calculated values, as recommended to be made by the ICS, able to  be exported from the UroReport as a flat ASCII or Text File to any database.  There are Import and Export buttons under the Uromacs Report menu.   This decision was made as there is a wide range of databases in use around the world and most database users would want to have the urodynamics data saved into their existing database.  Note that even the complete tests waveforms (all data sample points) can be exported as a text file to data bases or if into Excel it can even provide a reconstruction of the original waveforms.

**Q: Can I easily see how much memory is available** during recording?
**A:** Yes.  Immediately above the upper scrolling chart window there is a 1-2mm high space.  As memory fills a black line will gradually move to the right in this space. The length of the line represents a percentage of the of available RAM used.  A line right across the screen will show when 100% of the RAM is used.  It is very unlikely that you will even use all available RAM with a usual urodymanics test.
**Q: Why do the baseline pressures rise or fall** when the patient stands?
**A:** Two things can cause this.
      i)  Rises and falls are associated with changes of  abdominal pressure as the mass of the organs above the diaphragm act differently and at a different magnitude between the supine and standing position.  When standing the downwards increase increases the abdominal pressure.  The pressure will reduce again when the patient moves to a supine position.
      ii) Changes (usually to a lower value ) in pressure are also due the lowered location of the bladder relative to the external fluid coupled pressure transducers when the patient moves lower from the examination table onto the voiding commode.

Obviously a change can be due to a combination of the two possible causes.  To remove the relative height error component, reposition the external pressure transducers to be level with the superior edge of the symphus pubis.

**Q: Can I use two 500ml bags of saline** when filling the bladder?

**A:** Yes.  This is commonly done as many patient tests may not require more than one bag to evaluate a functional bladder capacity,  but one may want to continue filling past 500ml without disrupting the Fill Volume baseline calculation.  Simply remove the giving set from first emptied bag and re-spike it into the second full bag and continue filling.  Do not remove the first empty bag until after the testing.  Note - the zero balance at the start of the test will have zero balanced the weight of both bags and their contents (ie empty bag weight plus the 1000ml contents).

**Q:** What is the **difference between direct and integrated EMG** mode?
**A.**  The raw recorded signal is biphasic and bipolar and looks like  amplitude
modulated interference.   The integrated EMG mode has the biphasic bipolar signal precision rectified to convert the bipolar raw signal a an only positive going unipolar signal which is then integrated to smooth it into an 'envelope' display, the height of which is proportional to the energy in the raw data.
There is a hardware switch on the rear of the AcquiAmplifier to select either raw or integrated EMG for both channels G and H (or 7 & 8 on older systems) for eight channel AcquiAmplifiers.

**Q:** What is the **maximum  bladder filling rate** I can use?
**A:**  It depends upon the pressure from the height of a gravity feeding delivery bag or the pressure developed in a powered pumping device and the bore of the filling catheter. The smaller the bore the greater the resistance. With the Neomedix single lumen filling catheter the fill rate is about 50-60 ml/min with gravity only and with the AcquiVes compressed air cuff pump it can reach 200 ml/min.  The finer filling bore in single multilumen catheters may reduce this to a maximum of 125 ml/min.  The Acquidata Fill Rate window accurately calculates the actual filling rate from the loss of volume from the bag, not the assumed rate as with systems measuring the roller speed of a mains powered peristaltic pump.

**Q:** When **I run Uromac with my selected settings file, then open a previous patient file** for review and then revert to start recording a new test, **the settings are not what I had when I started the recording session .**
**A:** In the versions of Uromac prior to v3.6.3, the settings file you select to open Uromac will be overwritten with the settings file of a previous test when it is opened.  If the recalled test had a different settings file to the one you opened Uromac with it will obviously change.  To revert to your desired settings, close the patient file and again select the settings file you wish to use.  Later versions of Uromac (3.6.3 and later) allow you to choose to retain original or adopt the new settings file.

Document NS02380A     31 March 2002