Power PMAC Problems and Associated Fixes

1) Position window displays incorrect Az and/or El. This typically occurs when power is cycled on the PPMAC. In this case, the azimuth and/or elevation position are often 180 degrees off. I have only seen this occur in elevation, when the PPMAC is rebooted when the elevation is less than 0 degress. Occasionally, the azimuth and/or elevation position are twice the real angle. The fixes below apply to either scenario.

    a) Type the following commands in the IDE terminal window: enable plc1<cr> enable plc2<cr>. If this fails move to b).

    b) Abort current scan in scan control GUI. Also type abort in PPMAC IDE terminal window.

    c) Stop syscon process in control1 PC. Open taskmanager from IDE tools menu. Go to programs tab. Stop Program 4 (prog4.pmc). Proceed to d) and or e).

    d) If the problem is in Az only, then type the following commands in the IDE terminal window: #1j:2000 <cr>(moves Az CW about 11 degrees); enable plc 1<cr> enable; plc2<cr>. Generally, need to cross a 180 or 0 degree boundary. So, increment or decrement (#1j:-2000) as necessary to do so.

    e) If the problem is in El only, then type the following commands in the IDE terminal window: #2j:2000 <cr>(moves El up by about 11 degrees); enable plc 1<cr>; enable plc2<cr>

    f) Start syscon process in control1 PC. Start Program 4 (prog4.pmc) in Taskmanager.

    g) Power cycle PPMAC. This is a last resort and should not be necessary.

    In order to re-enable scan control from the GUI, type &1 enable in the IDE terminal window!

2) Position window is not scaled correctly, e.g. readout makes no physical sense when interpreted as degrees.

    a) Set position window scaling correctly -- window scaling is often lost when PPMAC is rebooted. Right click mouse when cursor is on position window. Select from pull down properties => control => motor specific. Set scale factor to 182.044444 and units to deg for motors 1 and 2.

3) Antenna won't move

   a) Check coordinate system definitions are correct: in IDE pull-down menu select; Delta Tau=>Configure=>Setup Variables=>Coordinate System=>Coord1=>Axis Definition.

      Motor 1 182.044444a (this value is what you type, what is displayed is slightly different)

      Motor 2 182.044444b (this value is what you type, what is displayed is slightly different)

   b) Enable coordinate system by typing &1 enable <cr> in IDE terminal window

   c) Try issuing a jog command from the IDE terminal window:

      Az (absolute move) -- #1j=2000 <cr>

      Az (incremental move) -- #1j:2000 <cr>

      El (absolute move) -- #2j=2000 <cr>

      El (incremental move) -- #2j:-2000 <cr> (negative is down, positive is up)

   d) Reboot PPMAC

4) Re-establish communication with PPMAC after reboot

   a) In IDE pull-down menu select; Tools=>Options=>Power PMAC=>Communication Setup=>OK

5) To fix apparent 0.5 degree offset in azimuth and elevation between angle box and PPMAC

   a) In PMAC IDE upper right hand panel should be Solution Explorer – 'PowerPmac_Antcon'. This should display the full project file listing of the current project. If it is blank, go to the File menu -> Recent Projects -> C:\...\PowerPmac_Antcon.PowerPmacSuit_sln

   b) In Solution Explorer select PowerPmac_Antcon(192.168.4.52), then right click mouse. Select Build and Download All Programs, then left click mouse. Status will appear in Output window near bottom of screen.

   c) Output should read: "Download Successful." When operation completes.

   d) In terminal window type the following commands: enable plc 1<cr>; enable plc2<cr>

   e) Check Position window. Ensure the problem has been fixed.