Operational Features of Varian Systems

1) RE-STARTING THE COMMUNICATION BETWEEN THE CONSOLE AND THE WORKSTATION WHEN THE SYSTEM DOES NOT RESPOND:

If the ACQUISITION STATUS window shows “Inactive”, go to the <<CONSOLE>> icon and double-clicking on it to open. At the UNIX prompt “>”, type:

```
> su acqproc <enter>
```

A message is displayed “Starting ExpProc”. After a few seconds, the ACQUISITION STATUS changes to “Idle” and the NMR system is ready to go.

2) 2H GRADIENT SHIMMING

• 2H gradient shimming uses the lock channel as a means to adjust Z1 to Z4 shims. That is why the lock shows “Not regulated” in the ACQSTAT window.

• The usual number of iterations is 2 to 3. It may take more iterations, however, because the cutoff criterion (r.m.s. error < 1.00) must be met for the shimming procedure to end and quit.

**OBS** – the default 2H gradient shimming Setup uses 4 scans for ANY SOLVENT, regardless of the number of deuterons in the solvent molecule. For CDCl3, this parameter setup might cause a low signal/noise ratio (S/N) in the Z-profile, and, therefore, **no convergence at all!** (The max. number of iterations is 10).

Setting nt=16 would improve S/N, but with a concomitant increase in the total time for $^2$H auto shimming. When you note that the $^2$H shimming is “struggling” to converge due to a low S/N in the profile:

- Abort the $^2$H shimming with ‘aa’ <ENTER>
- Type nt=16 <ENTER>
- Click on the button “Gradient Autoshim on Z”

_to continue shimming._
3) **UNLOCK one experiment**

The VNMR software protects each expn in which there is an active experiment running against accidental overwriting. The command unlock(\(n\)), where \(n\) is the number of the experiment, make it possible to join again the active acquisition exp.

**If unlock(\(n\)) does not work, click on the following buttons:**

![Diagram showing the steps for unlocking an experiment](image)

**Return to your folder:**

![Diagram showing the steps to return to your folder](image)

4) **WHEN YOU DO NOT SEE THE ‘Acqi’ BUTTON**

- Type acqi <ENTER> at the command line in Vnmr