USAGE OF MONITOR/CONTROL BUS PROPERTY
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The access to the Monitor/Control Bus is organized into ports, which provide two facilities: 1) Priority - lowest numbered port takes presidence, even if a mesage has started on a higher numbered one. 2) Masking - a port can be instructed to ignore commands and/or monitor requests.

The number of ports is a sysgen parameter, and is currently set at 6. Ports are reasonably cheap - they cost about 800 bytes of main memory and a coprocessor overhead of perhaps 20 microseconds per message (so that with 6 ports there is about 150 microseconds overhead on top of the 1000 microseconds data transmission time).

The data streams that I would like to regard as separate (but we can still share ports between them) are:

Antenna pointing commands
Receiver setup commands at source change
Standard interface address setting commands
Screens package commands and monitor (possibly separately for local and
    remote?)
Monitor data logger
Monitor data checker
Monitor data flagger
Weather station monitor
Real-time fringe buffer readout

I list below why one might want to inhibit each port.

Antenna pointing commands. Inihibited only for work on the ACU, or, very occasionally, to get the antenna to stop at the current position to drift off source for some special purpose.

Receiver setup commands. Again, for work on modules, so that the astronomy system can be inhibited from interfering with maintenance work. (It is not clear to me whether antenna control unit mode change commands belong in this stream or in the pointing command stream.)

Standard interface address setting. In normal operation they should be checked and, if necessary, reset at source change time, but an attractive way of putting a device offline is to inhibit this function and change the device's address.

Screens package commands and monitor. Inhibiting commands from the screens package is used at the VLA as a security feature so that a technician investigating a problem cannot, with a single slip of the mind, screw up an operating antenna.

Monitor data logger. The only reason for turning this off is to make some observation "off the record"; I can't think of any excuse to do so.

Monitor data checker. Occasionally we do something really weird, which generates all sorts of error messages (for instance observing far

down on the skirts of the receiver bandpass). Turning the port off
would save some wear and tear on the printer that lists the messages and
on the technician who reads them.

Monitor data flagger. As above for checker, could save some wear
and tear on the person who sets up the run for the correlator who would
otherwise have to tell it to go ahead and correlate flagged data.

Weather station. The weather station is used to calculate the
refractivity for antenna pointing. On the other hand, the dewcell
requires reasonably frequent PM, and is one of the less reliable
elements of the station. Putting the weather station port off line would
be an attractive way of telling the computer to use a climate model
instead of the measured weather.

Real-time fringe buffer readout. Masking the port may be the
easiest way for a local person to inhibit the MicroVax in Socorro from
trying to get data that he knows to be faulty in some way or another.

Note that nothing in the MCB handlers limits the uses of these data
streams. They are accessed as public devices, and any number of tasks
can access any port for either command or monitoring any MCB address.
What we are talking about is only a programming convention.

Since there is separate control over the command and monitor
functions, and since some of the items listed above are dedicated to one
or the other, a monitor and command function can be assigned to the same
port without interference.

Except that antenna pointing commands should have the highest
priority and the real-time fringe buffer as lowest priority,
I regard the prioritizing feature as relatively unimportant,
and it can be subordinated to other, even fairly trivial concerns.
However, on an abstract basis, my priority ordering would be the order
in which the ports are listed above, except that the weather station
would be moved above the Screens package.

For current implementation we shall have the following MCB port usage:

Port	Data stream	Task
1	Antenna pointing commands	TIC
2	Receiver setup commands at source change (may require monitor requests, to read module revision levels, for example).	NEWD
2	Standard interface address setting commands	NEWD
3	Screens package commands and monitor	Many (subroutine MCBOPEN)
4	Monitor data logger	LOGER
5	Monitor data checker	CHECKER
4	Monitor data flagger	FLAGER
2	Weather station monitor	NEWD (eventually)
6	Real time fringe buffer readout	Not yet written