EAO Supported Real Time Telescope Control Systems

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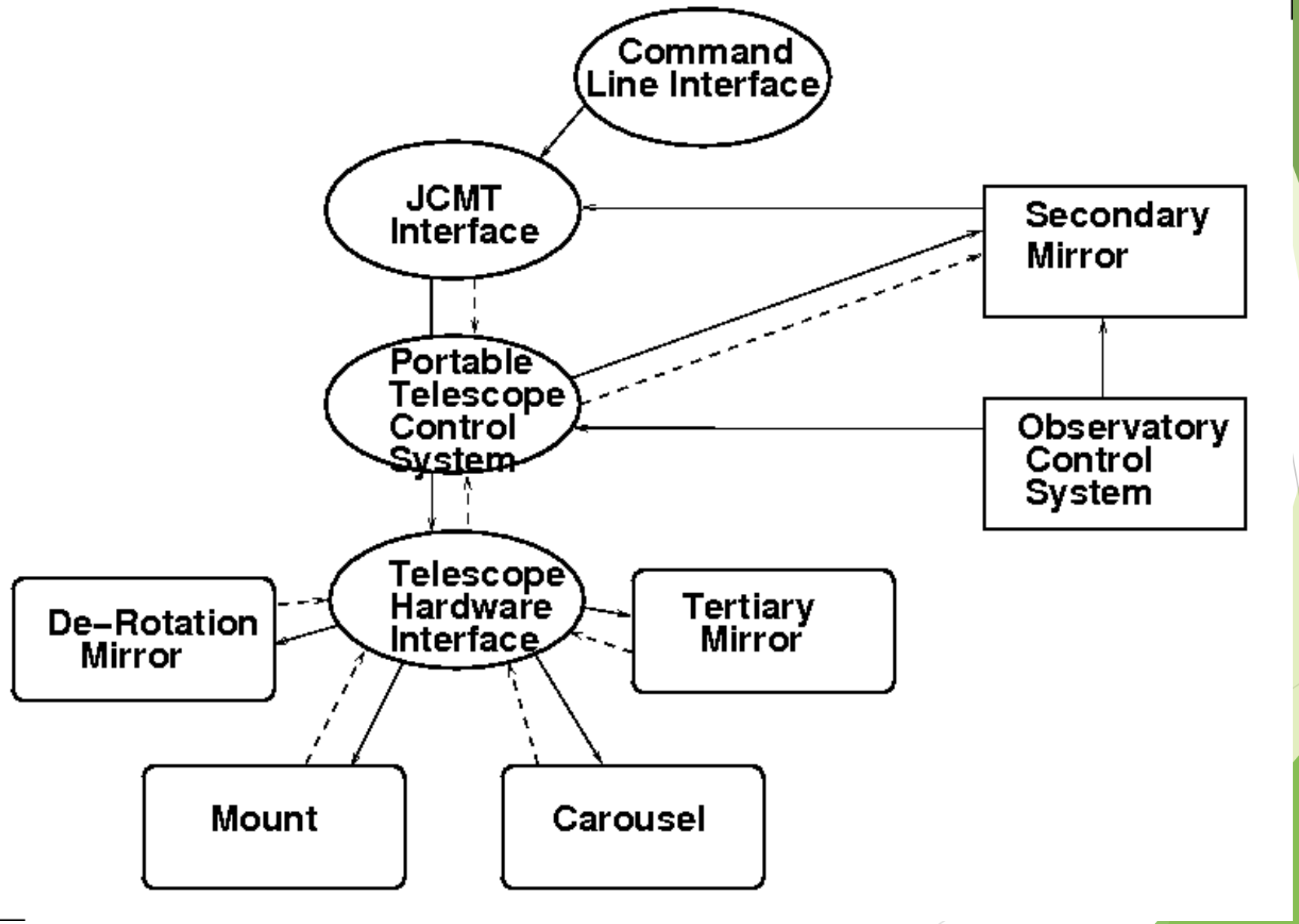
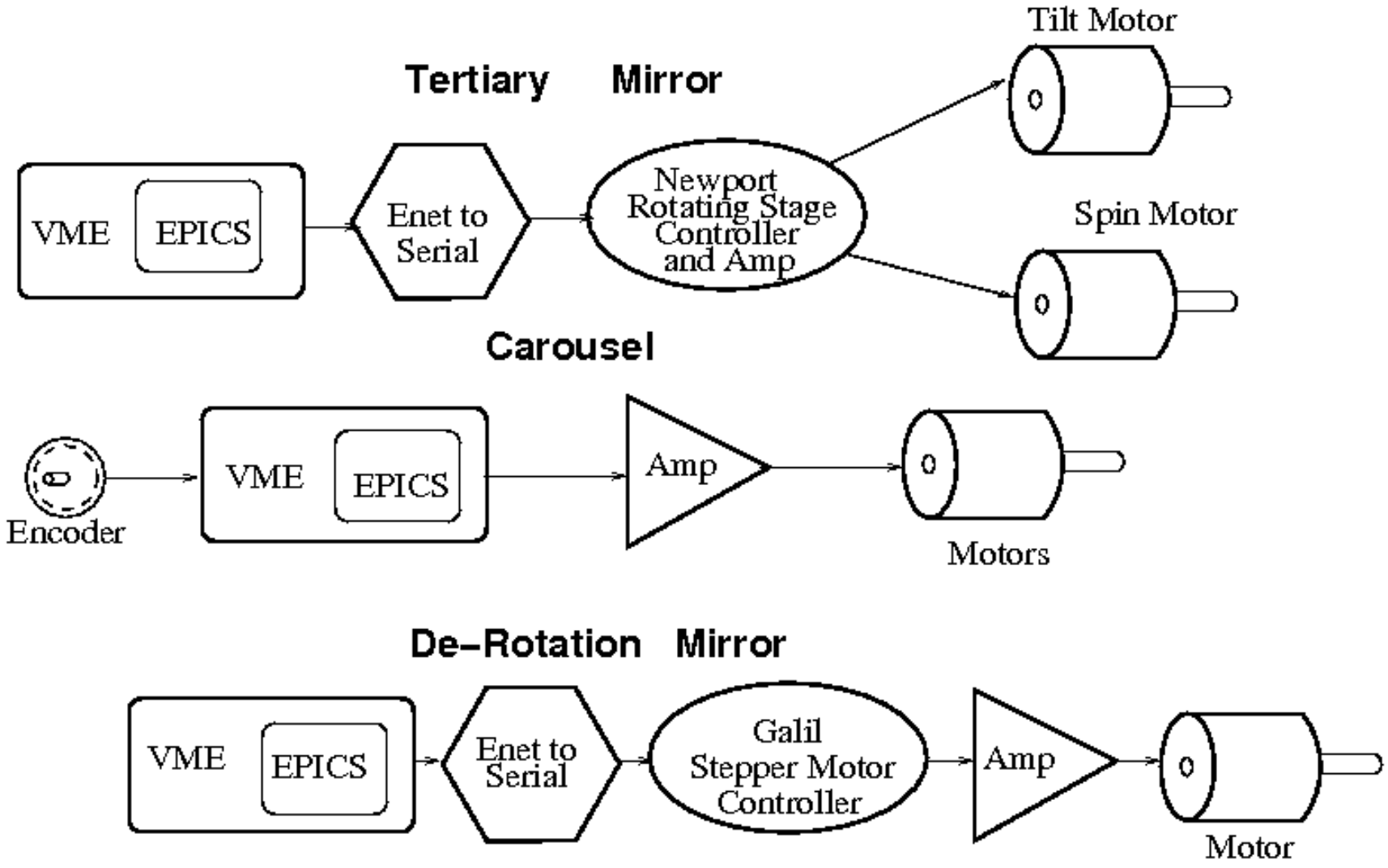
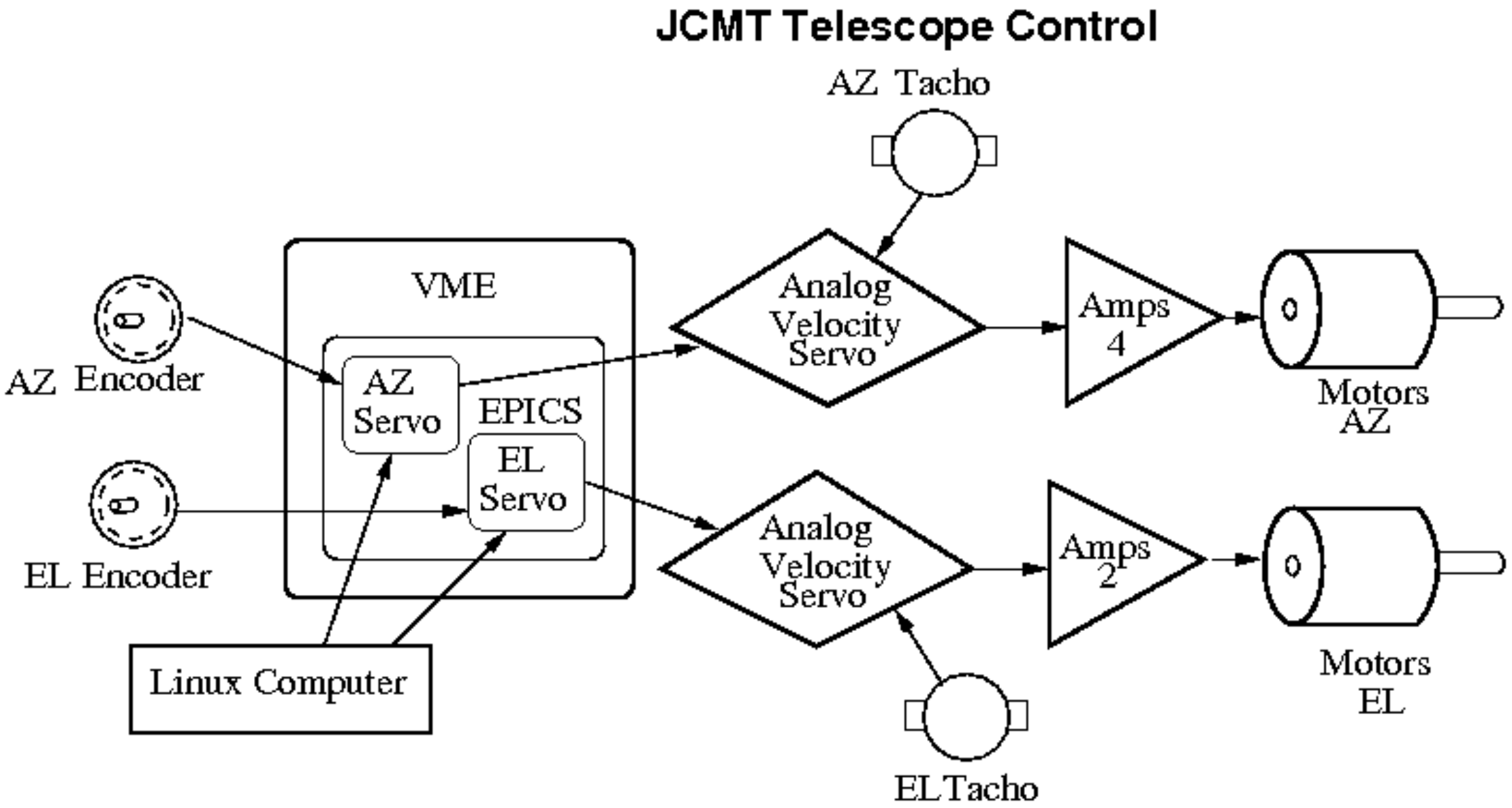
East Asian Observatory

Block Diagram JCMT Telescope Control System

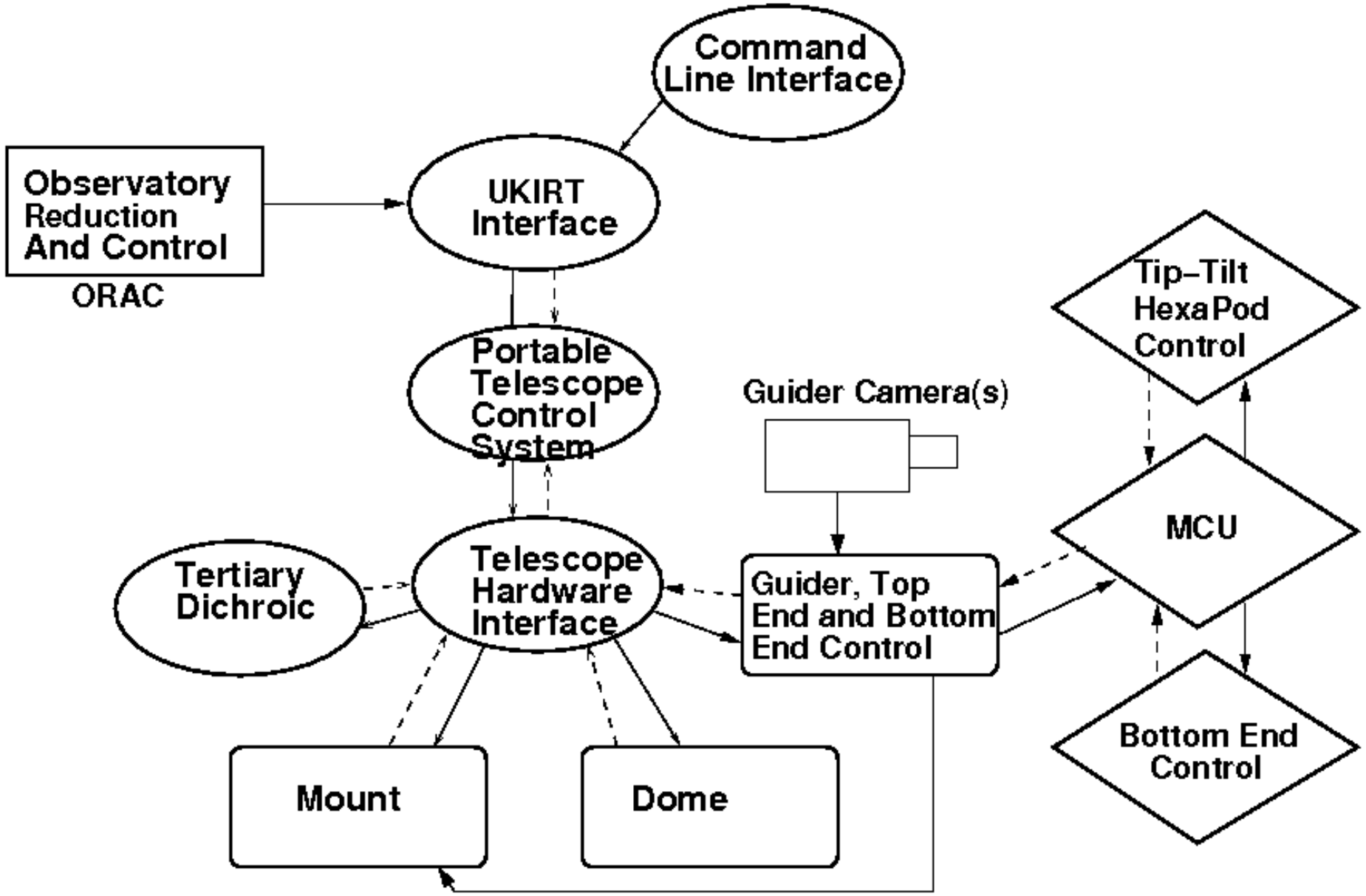


JCMT Auxiliary Systems Control

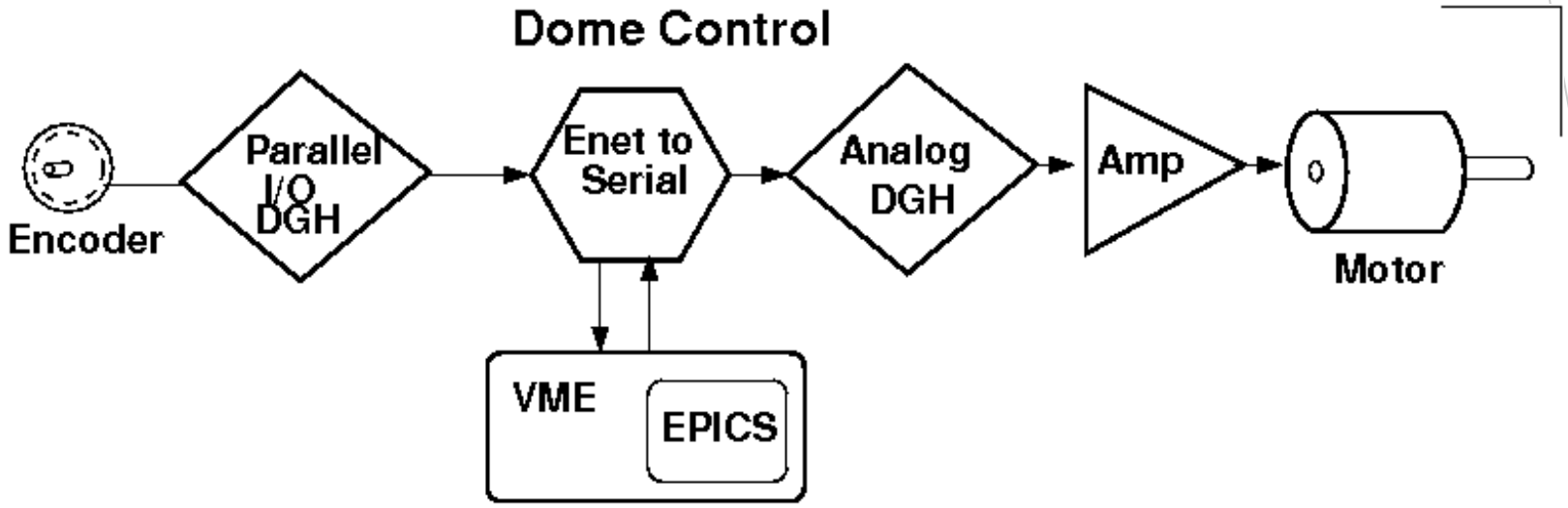


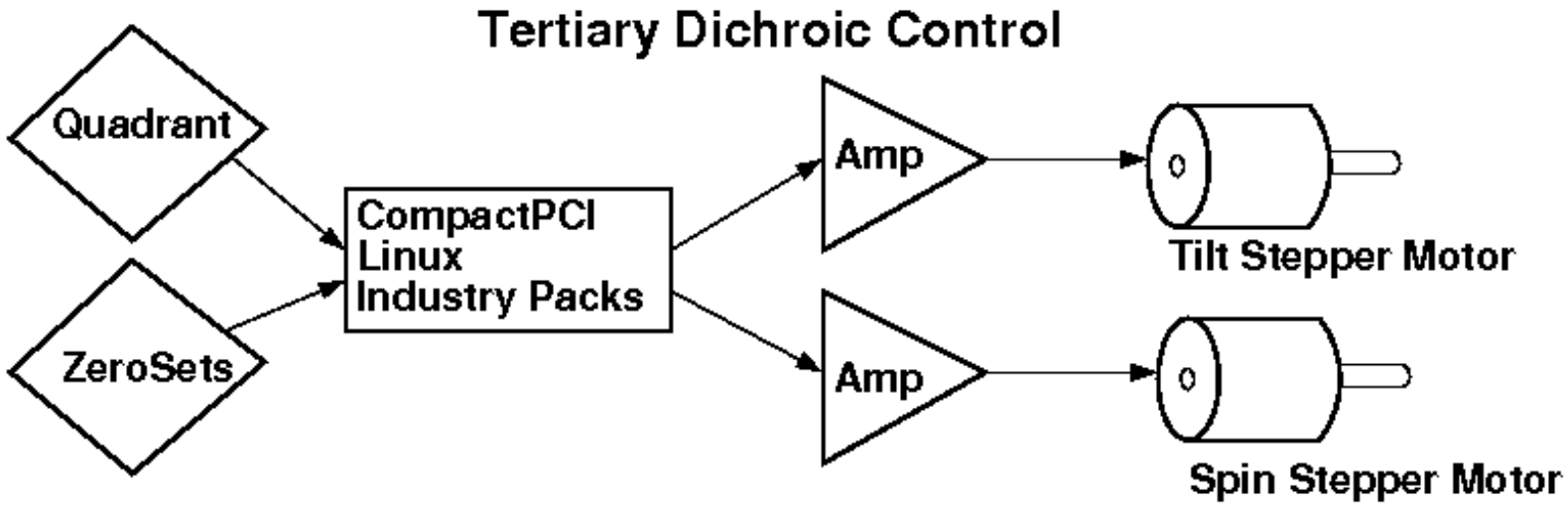

JCMT Telescope Control
AZ Tacho
VME
AZ Encoder
AZ Servo
EPICS
EL Servo
EL Encoder
Analog Velocity Servo
Amps 4
Motors AZ
Analog Velocity Servo
Amps 2
Motors EL
Linux Computer
EL Tacho

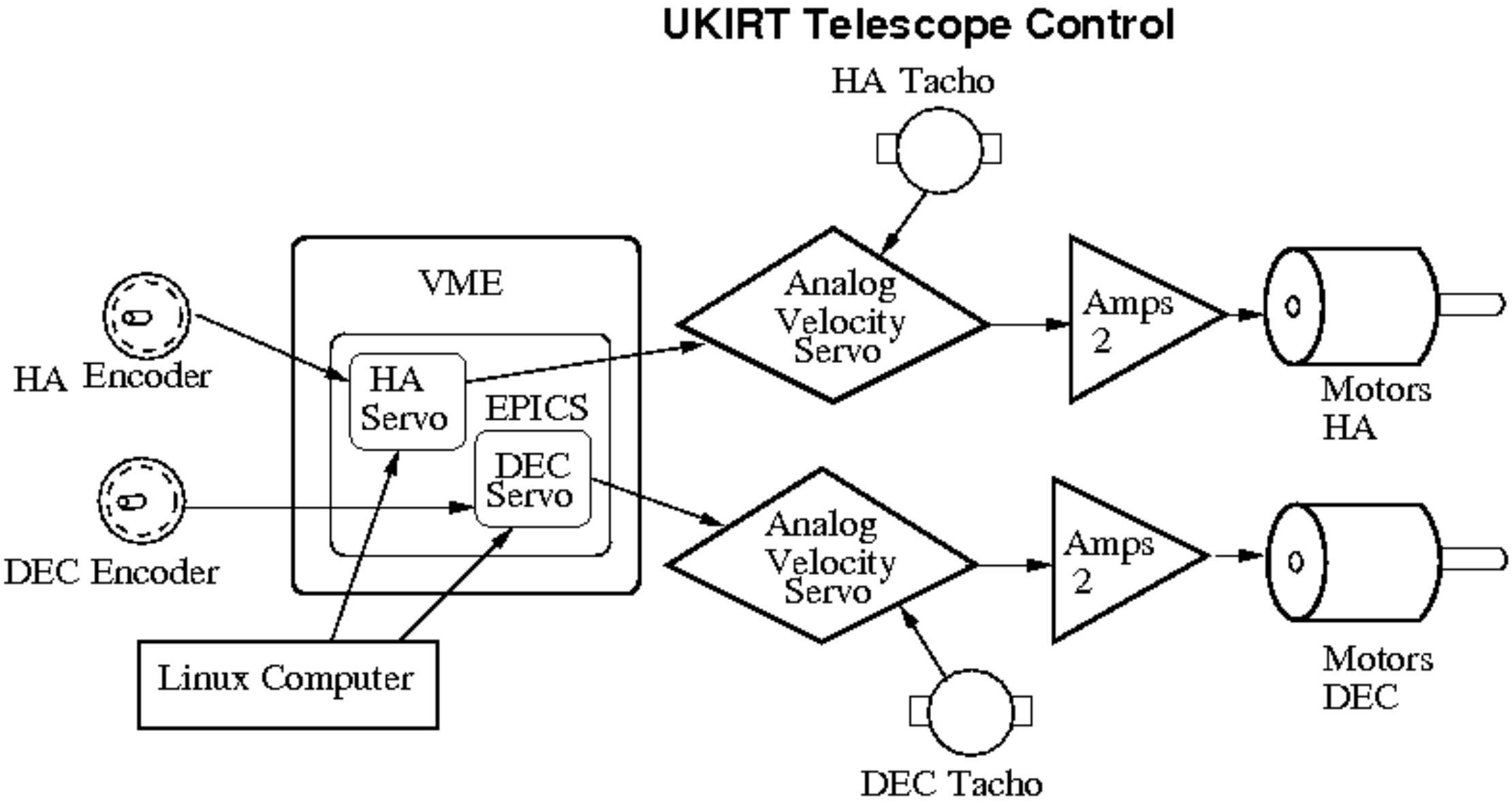
UKIRT Real-Time Control Overview



UKIRT Auxiliary Control






UKIRT Telescope Control
HA Tacho
VME
HA Encoder
HA Servo
EPICS
DEC Servo
DEC Encoder
Linux Computer
Analog Velocity Servo
Amps 2
Motors HA
Analog Velocity Servo
Amps 2
Motors DEC
DEC Tacho

Analog Velocity Servos

1. All of our analog velocity servos are very old and we have had some problems with them.
2. We would like to replace the UKIRT velocity servo with a digital one since we have some oscillations in certain areas of the sky and would like to turn on/off some notch filters based on the sky position.
3. We have been developing this servo based on a CompactPCI board running Linux with real-time patches.

CompactPCI Notes

- We like the form factor and construction.
- We are using an Industry Pack (IP) carrier board which carries four IPs.
- We like the idea that they can run Linux – but have already had a problem that our older (10 years old) boards will not run a current version of Linux.
- We have developed drivers for many different IPs: two types of A/Ds, a D/A, a TTL parallel I/O, a open-collector parallel I/O, a stepper motor controller and a timer-counter .
- We also have a CompactPCI IEEE-488 interface working.
- We are using these computers for the UKIRT instrument selection mirror; and at JCMT a receiver, a polarimeter and a Fourier Transform Spectrometer.
- We do NOT have them working with EPICS yet.