AzCam Software Infrastructure

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AzCam Summary

AzCam provides the hardware and software interface to Steward facility CCD cameras (and all ITL systems).

It allows for local data acquisition and analysis by observers and provides a remote interface to other software systems.

Development has been on going since the late 1990's (post-Skip Schaller "ICE" package for IRAF).

AzCam Scope

At Steward mountain facilities AzCam is used for both science cameras and telescope guiders.

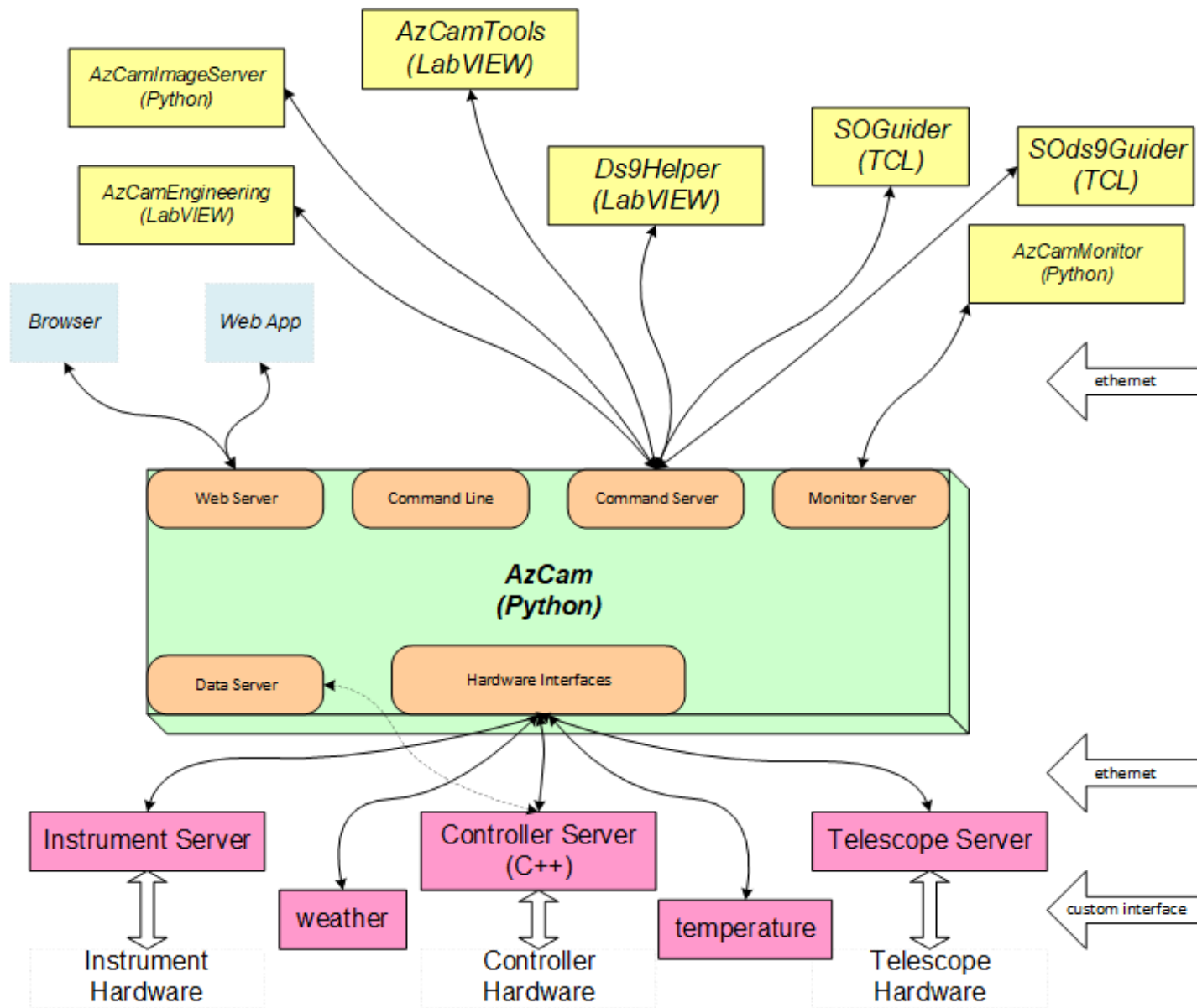At LBTO AzCam is used for guiders and PEPSI Science cameras.

There are 52 separate instances on AzCam on 26 machines for facility cameras.

There are another 22 instances on 12 machines at ITL.

Cameras supported include ARC Gen 1/2/3, Archon, Magellan, and SBIG.

=> Maintenance, upgrades/new features, and long term support must be carefully managed.

AzCam Architecture

AzCamImageServer
(Python)

AzCamTools
(LabVIEW)

AzCamEngineering
(LabVIEW)

Ds9Helper
(LabVIEW)

SOGuider
(TCL)

SOds9Guider
(TCL)

AzCamMonitor
(Python)

Browser

Web App

ethernet

**AzCam
(Python)**

Web Server

Command Line

Command Server

Monitor Server

Data Server

Hardware Interfaces

ethernet

Instrument Server

weather

Controller Server
(C++)

temperature

Telescope Server

custom interface

Instrument
Hardware

Controller
Hardware

Telescope
Hardware

AzCam Remote Interface

Current remote connections include PEPSI at LBTO and CSS and RTS2 at 61".

A standard API could (and should) be developed for ARTN to support remote connection and the current "local" observing modes.

AzCam also interfaces with instrument, weather, telescope, and temperature servers and so "standards" for those interfaces may be important.

AzCam Future Developments

Web browser interface has been developed and is in test (undergrad Alanna Zubler).

The new web server will support future "web apps".

Grzegorz Zareba has developed an FPGA-based ControllerServer which potentially can replace the old PCI interface cards (eliminates a PC per system).

The FPGA interface will be used in future custom CMOS camera projects.