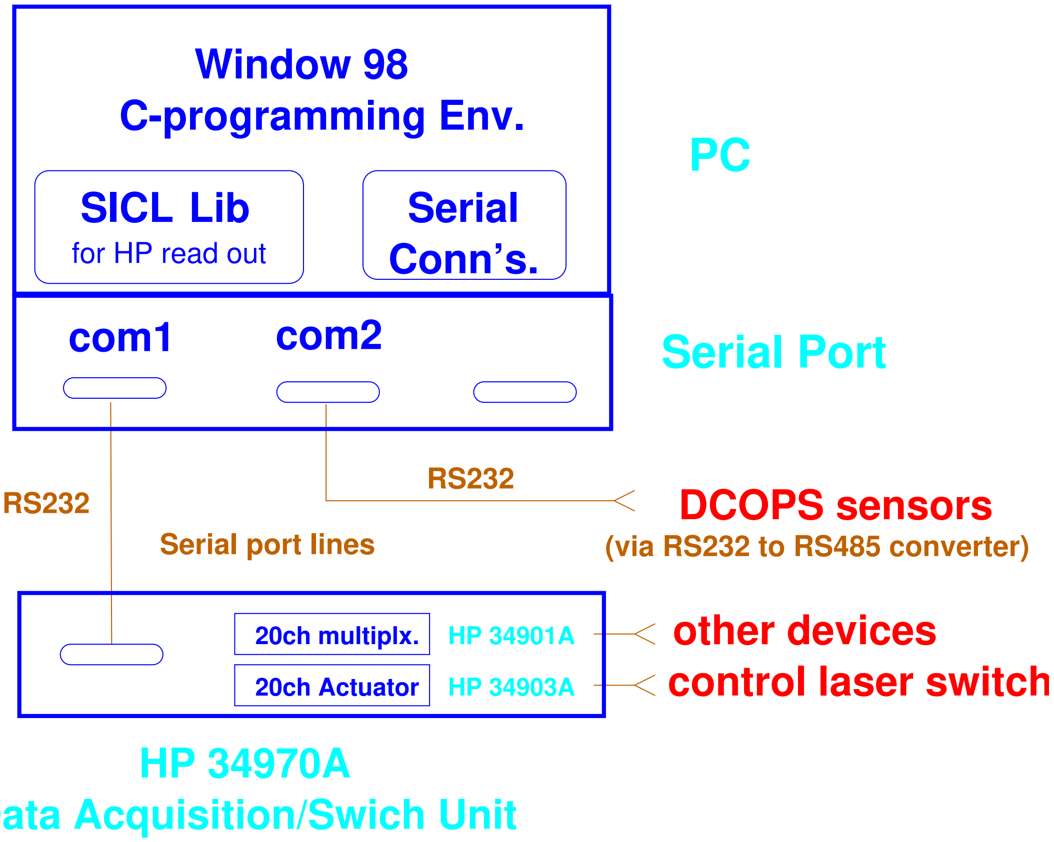
Brief Description and Requirements of the Test DAQ

- We are reading out TWO distinct devices:
  - $\rightarrow$ DCOPS sensors, and
  - $\rightarrow$ All the others.
- DCOPS sensors in an SLM line are daisy-chained along the same length of telephone cable. Data transfer uses a serial transmission protocol, reading out each DCOPS sensor in succession.

  Note that the read-out DAQ will be very much the same for DCOPS and ALMY.
- All the others are single-channel continuous analog readout devices, and very different from the DCOPS sensor read-out which is a digitized serial readout chain. These include the R-sensors, proximity detectors, temperature monitors and clinometers.
- The software to read out the DCOPS chain and merge it into the data stream from the other sensors is a major item in the development of the system. This feature is not naturally accommodated in commercial bench-top DAQ systems.

DAQ Configuration



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HP34970A is a multifunctional data acquisition device comes with standard interface controlled library (SICL lib) software. We use to read out position sensors, temparature monitors, etc. It also controls the laser switches.

Description of Two Step Offline Analysis

- **FLAP (First Level Analysis Program):**
  - → **Takes raw data from DAQ as input and fits data to find centroids in CCD pixel numbers. Also this program converts HP DC voltage read out to appropriate position and temperature units.**
- **SLAP (Second Level Analysis Program):**
  - → **Takes FLAP output as input and converts the CCD centroid pixel numbers to the real space positions using the position calibration constants.**

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Status of the DAQ, FLAP and SLAP

- DAQ (C++ in window98 env.):
  - → Design: Complete
  - → Implementation: Complete
  - → field testing: in progress (works well)
- FLAP (C++, OO design on UNIX platform):
  - → Design: Complete
  - → Implementation: in progress (nearly complete)
- SLAP:
  - → Design: In progress

DAQ and FLAP are developed at Fermilab by Kaori Maeshima and Robert Lee.
SLAP is developed at North Eastern Univ. by J. Moromisato, *et. al.*.