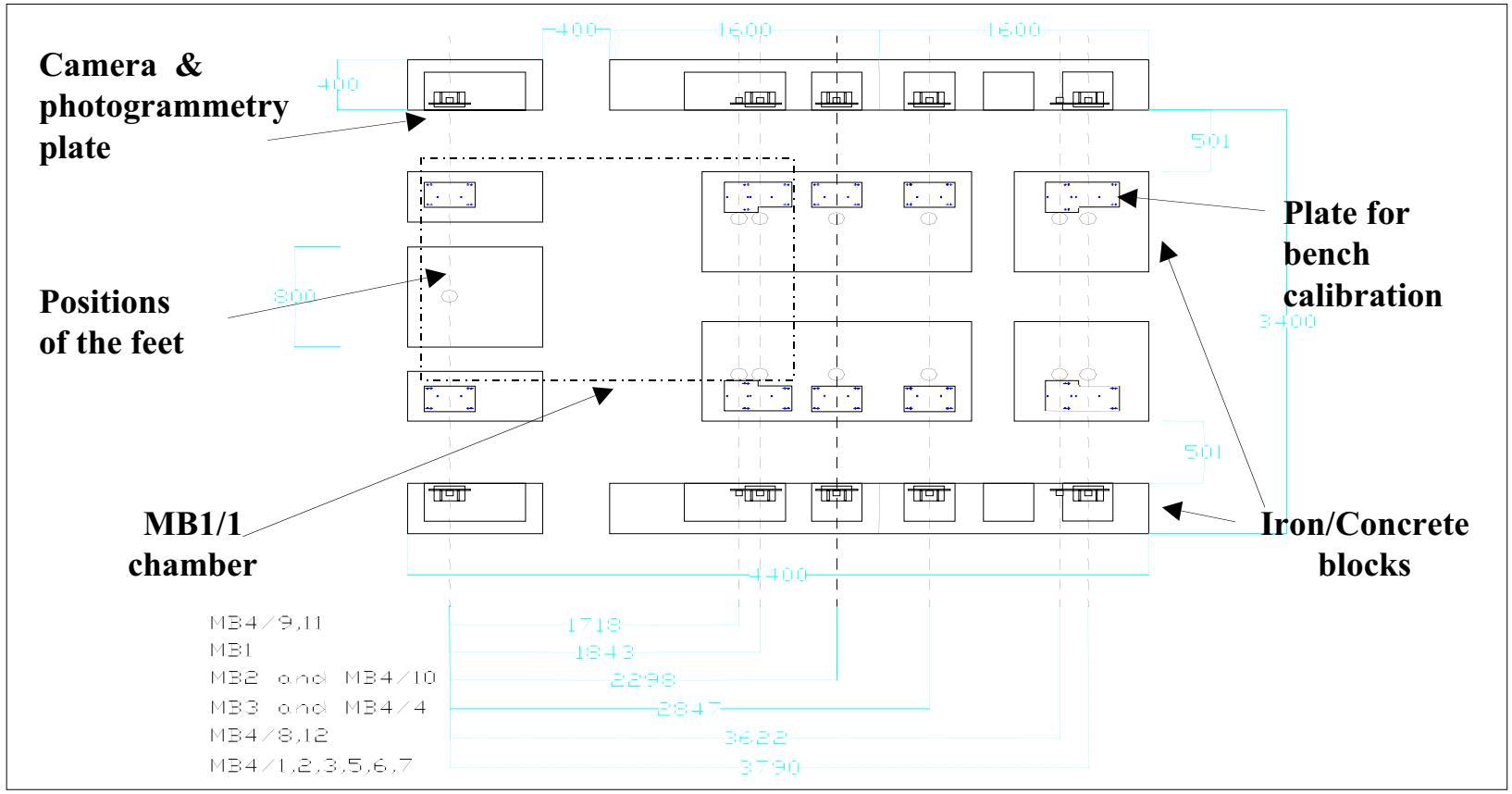
Chamber Calibration Bench Status
September 2002

Barrel Muon Alignment Group

Layout:



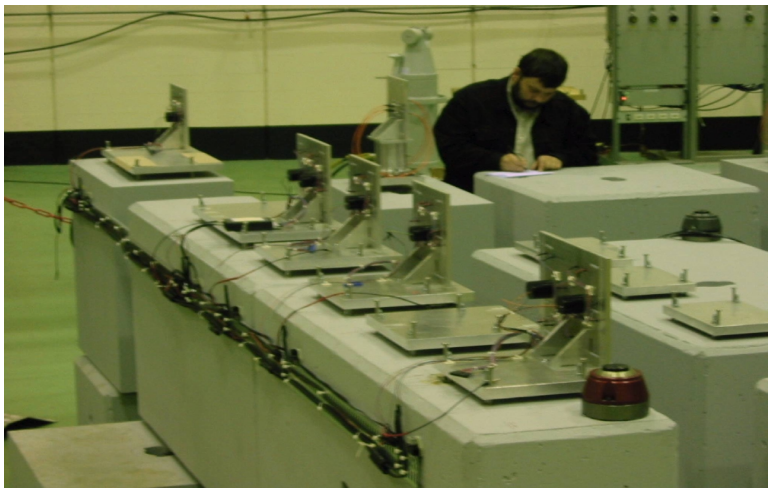
Principle:

Based on the measurement of the chamber fork LEDs by video cameras, geometrically connected by LTD to a frame of reference, which is to be used by photogrammetry to measure the chamber corner block positions.

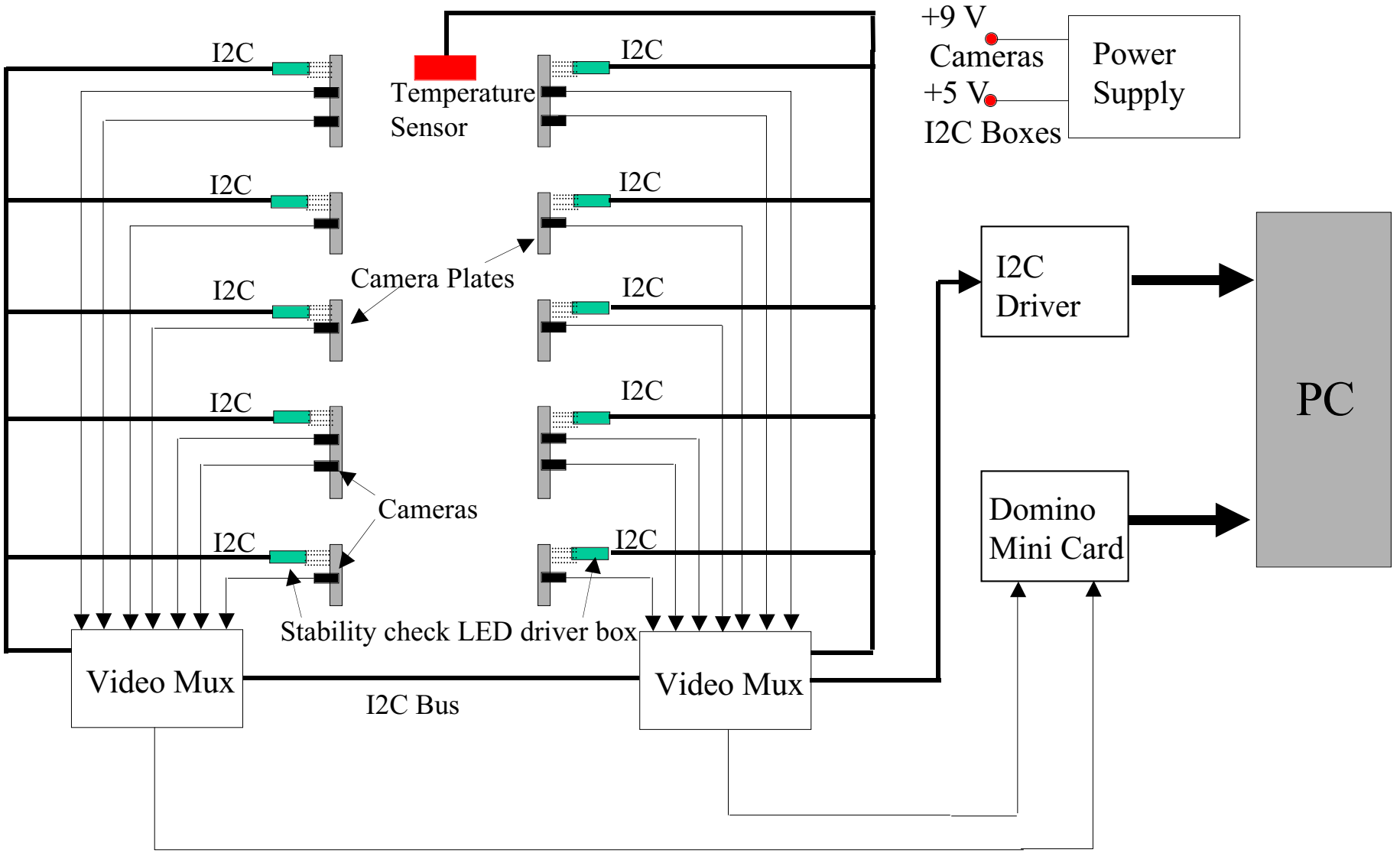
Construction Tasks: (fulfilled)

1. Area of the Bench Floor measured in height by the survey group.
2. Correction of the height for the blocks to be placed within ~1cm.
3. Blocks placement.
4. Installation of base plates and measurement by survey group and adjustment in height to 1mm.
5. Calibration and installation of camera plates and calibration plates.
6. Stability LED's in place & Electronics deployment and cabling.
7. Software installation.

THE BARREL MUON CHAMBER CALIBRATION BENCH



BENCH ELECTRONICS SCHEME



CALIBRATION OF THE BENCH

1. Plates calibration (CERN metrology laboratory).
2. Photogrammetry of the bench (Survey Group).
   (crosscheck with LTD, measurement of extra points for later use when the chamber corner blocks will be measured).
3. LTD + camera measurements using the calibration plates.
   (0 line measured twice to crosscheck).

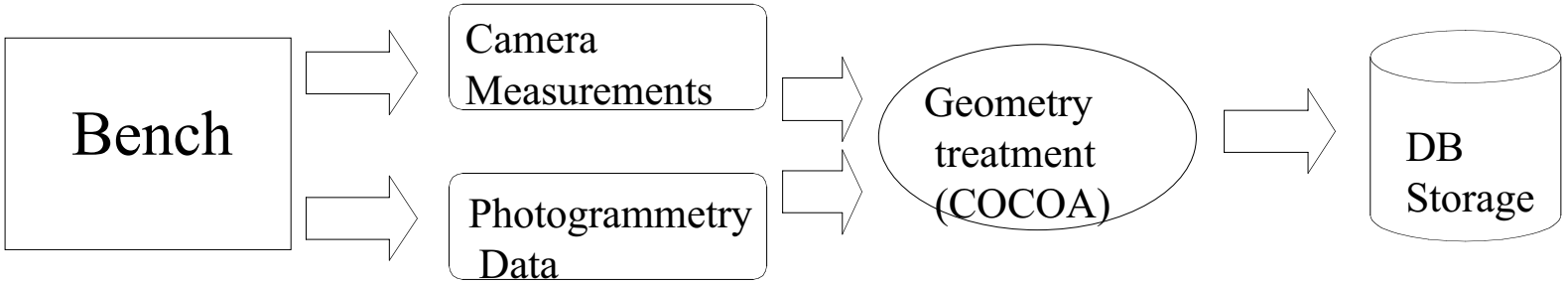
PHOTOGRAMMETRY STUDY WITH A REAL CHAMBER

1. Now in October, if compatible with the survey group agenda, with a real chamber.

OPERATION OF THE BENCH

1. Provided that we will count on an easy way to handle the chambers and that the data handling will be efficiently set we estimate that a rate of 2 to 3 chambers per day will be calibrated.

DATA FLOW SCHEMA



CONSTRAINTS OR REQUIREMENTS

1. ASCII files as output from the bench DAQ.
2. COCOA Bench file to be modified for every measurement (cameras+photogrammetry) and geometry.

PROPOSAL

Program (PERL like) that will deal with ascii files from cameras and survey and will modify the COCOA files as required, send cocoa jobs, get its output and produce it for storage.

REQUIREMENTS

1. We need an ASCII input from photogrammetry.
2. A decision on the frame of reference used by photogrammetry to minimize the data treatment previous to the general cocoa analysis.
3. Agreement in the format data will be stored.