• Output Module (Venkat)
  o Properly display video on a TV sourced from the video input module (done: 11/29)
• Control Module (Ben)
  o GUI Functions
    ▪ Buttons respond to mouse input (Done: 11/21)
    ▪ All buttons rendered on screen (Done: 11/21)
    ▪ Font rom used to render text on screen (Target: 11/29)
    ▪ Keyboard input accepted and displayed on screen (Target: 11/30)
  o Logic Functions
    ▪ Simple control outputs work – framegrab trigger, all enable lines, bluescreen calibrate, zoom position and magnitude, trace clear (Target: 11/30)
    ▪ Overlay memory programming work – select, data, we. This will need to be tested along side the appropriate portion of the overlay module to verify correct behavior. This step will include placement of overlay objects and trace. (Target: 12/2)
    ▪ Font rendering and loading into overlay memory (Target: 12/4)
• Overlay Module (Venkat)
  o Overlay Functions
    ▪ Demonstrate overlay functionality with a color square (Done: 11/29)
    ▪ Setup BRAMs for text and trace objects (Target: 11/30)
    ▪ Overlay hardcoded trace data (Target: 11/30)
    ▪ Setup position and length registers for text and test with hardcoded data (Target: 11/30)
    ▪ Test overlay with hardcoded framegrab data (Target: 11/30)
  o Control Module Memory Interface
    ▪ Implement select logic to decode signal sent from control module (Target: 12/1)
    ▪ Test write capability with hardcoded signals (Target: 12/1)
• Zoom Module (Venkat)
  o Setup one ZBT RAM with a faster clock and double buffering (Target: 12/3)
  o Zoom using sample/hold around top left corner of frame and a zoom factor of 2 (Target: 12/3)
  o Zoom using linear interpolation around top left corner and a zoom factor of 2 (Target: 12/4)
  o Zoom around an arbitrary point (Target: 12/4)
  o Zoom with variable scale factor of at least 2 (Target: 12/4)
• Framegrab Module (Ben)
  o Setup one ZBT ram to capture one complete frame of video (both fields) (Target: 12/5)
- Test reading out value using working overlay module (Target 12/5)
- Use DCM to generate faster clock, and configure framegrab module to be dual port so it can be accessed by both the overlay and bluescreen modules simultaneously (Target 12/6)

- Blue Screen Module (time permitting)
  - Implement background filter with hardcoded threshold values (Target: 12/5)
  - Implement calibrate logic to find thresholds for background pixel value (Target: 12/5)