Hybrid Display System

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Project Idea

- Combine the strengths of static and dynamic displays for cases where most information is static
- Example case: in-car map display
  - the map is static
  - current and goal locations might be dynamic
- Solution
  - printed static part
  - projected dynamic part
What we are solving

- Align projected with static image
- Use a camera to detect corners of paper
Requirements

- Video Input
  - composite NTSC now
  - VGA sensor later
- Position/orientation detection
  - black & white image, edge following algorithm now
  - smarter/more robust stuff later.
- Display method
  - VGA output with overlay for now
  - laser pointer later
Implementation

- Modular design
Implementation

- For development/evaluation we need video output
- Frame buffer allows different image timings, interlaced input, etc
- Paged memory access
- Synchronize memory access using global state counter synchronized to input signal
Future Enhancements

- More complex corner/edge detection
- Recognition of unique corner identifier
- Laser marker
- Position feedback on laser marker