

# FRC FIRST Webcast Unit™ @ home proposal:

## FIRST® MatchBox™

- Runs on standard PC that events are probably already using for streaming with OBS. If events don't have a PC available, we have a network of people that can get free PCs (e.g. stuff businesses are getting rid of)
- One setup per division, makes everything much simpler (trying to run multiple divisions on one PC is just asking for trouble in so many ways IMHO)
- It works as a standalone application that integrates with OBS via OBS websockets
- Software has these configuration parameters:
  - Event Code
  - Number of fields
  - Scoring system IP
  - OBS websocket password (IP should always be localhost and port should always be 4455)
- A template is provided for OBS which is auto-added and auto-configured (scoring URL + event code for overlay, for example) via the application, just have a "Configure OBS Scenes" button and it does the needed magic
- Software does automatic scene switching for the different fields (this code already exists)
- Software will run match autosplitting on the local recording video file recorded by OBS
  - Thankfully since we're actually connected to the scoring system websocket, we shouldn't need to use CV, though we still need some way to somewhat know what time in the video maps to what real-world time to sync everything
    - Put a tiny machine-readable clock in one of the top corners of the video?
- Software will make match clips available via a locally-hosted web interface
  - Refs on the scoring network will be easily able to pull up video of any match, even without access to the wider internet
  - Use mDNS to make accessing it easy (e.g. navigate to <http://ftcvideo.local>)
- OBS will stream event to YouTube/Twitch/etc
- Software will upload clips to clipfarm website
  - Upload as real-time as possible as the internet conditions allow
  - Bonus if we get connections with YouTube that allow us to set up automatic uploading to YouTube without getting rate limited