18549 Team 7

Omniooculars

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Ron pulled out his Omnioculars ... “I can make that old bloke pick his nose again and again and again”

Omnioculars were used in Harry Potter and the Goblet of Fire in the Quidditch World Cup Final

Can be extensively used in the Muggle world:
- Sports
- Ceremonies
- Concerts
- Bird watching
- Spying
Unfortunately, there is some sort of competition here too

Sony’s Video Binoculars:
- Too expensive ($1,400)
- No slow motion capability
- Geared towards real-time recording
Requirements

- Three phases:
  - Attaching a camera to the binoculars to digitize incoming video
  - Saving the incoming video to a memory card and applying video effects (slow motion, replay)
  - Outputting the rendered video with minimal lag

- Some knowledge of video processing on an embedded device required

- Final device needs to be compact and mobile for best utility
Things to get from Flourish and Blotts

- Binoculars
- CMOS Camera
- Memory (possibly SD)
- Arduino/Raspberry Pi
- Display
Architecture

Video Input
from real world

Binocular Lenses

CMOS Camera

Processing Unit

Memory

Display

User Input
Risks

- Time Lag
  - Have to ensure that video processing step doesn't take too long

- Video processing on embedded systems may be complicated and slow

- Camera quality