



Comparison: Standing HMD-based UI vs Pointman

External Impression



- How does it come across as seen from outside?



Looks Tactical



Looks Pedestrian



Look



Visual Input (provided by display)

Head-Mounted Display

- Low Resolution
- Narrow Field-of-View
- Stereo



Tunnel vision

Table-Top Display

- Higher Resolution
- Wider Field-of-View
- Non-Stereo



User sees more

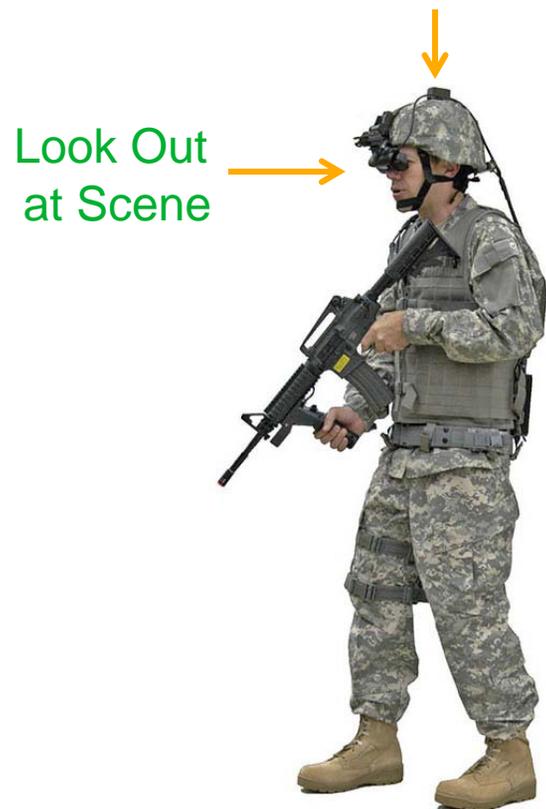


Look Control Over Viewing



Head-Coupled View

- Track rotation of head



Can just orient head

Head-Coupled View

- Track rotation & translation



Can orient head
& lean upper body



Move

Control Over the Virtual Locomotion



Thumbstick

- Direction of Motion
- Rate of Motion



Turning the leg
turns the body

Motion redirected as body turns
- Difficult to scan while following a path

Left Thumbstick
- Direction of motion

Right Thumbstick
- Turns Body

Slide pedals
to take
measured
steps



Motion directed independently of turning
- Easy to scan while following a path



Move

Taking Cover & Looking Out from Behind It



Tilting Leg
Triggers
Discrete
Postural
Transition



Depress
pedals
to lower
posture



Discrete control of posture



Continuous control
over postural height



Shoot

Control Over Aiming



Aim by directing virtual gunsight
- Unaligned with physical gunsight!



Degrades marksmanship skills!

Head-Coupled Aiming
- Head directs virtual gunsight



More abstract
- But mitigates negative transfer