Ergonomic Evaluation of the Microsoft Hololens 2 for Industrial Use

- Category: Software and Hardware

Problem this Research Would Address (1 of 2)

- A barrier to widespread adoption of AR in an industrial setting is the understanding of the safety and ergonomic factors of the device
- To be considered: does the addition of the Trimble Hard Hat improve or diminish the ergonomics of the device and what safety considerations should be put into place before utilizing the Hololens 2 in an industrial engineering setting
- PROBLEM: An ergonomic and safety assessment of the Microsoft Hololens 2 is needed.

Whose problem would be addressed?

- *Providers of enterprise wearable AR platforms* would be able to more quickly/reliably
  - understand suitable use cases for the Microsoft Hololens 2
  - offer safety and ergonomic interventions
- *Enterprise safety managers* would
  - be able to implement safety rules and considerations when utilizing the Hololens 2
- *Regulatory agencies or groups* would
  - be better informed on the impact of the Hololens 2 on the user

How would this research be conducted? (1 of 2)

1. Conduct research with a representative sample
2. Develop an industrial engineering task to be completed by participants utilizing the Hololens 2 with and without a Trimble Hard Hat
3. Develop a detailed ergonomic assessment for both conditions (Hololens 2 X Trimble Mounted Hololens 2)
4. Compile a report that compares both conditions.
    - A review of any ergonomic standards that already exist for HMD's and highlight where the Hololens 2 does and does not meet these standards.
    - Offer recommendations for use of these devices in an industrial setting
        - Recommendations should include potential ideas to help the user mitigate risk.

How would this research be conducted? (2 of 2)

Ideally, the research project will produce:

- A report of findings (outlined in previous slide)
- A detailed explanation of the experiment so that members can test the effects of various interventions on the ergonomic measures collected
- Executive summary of findings for public release and a webinar

Benefits to AREA Members

- AREA members will be able to more quickly determine whether Hololens 2 is ready for implementation or if safety measures need to be taken
- AREA members will be able to better assess the appropriate use cases for this device within their organization
- AREA members will better be able to inform safety and ergonomic stakeholders within their organization of the effects of these devices on the workforce
- Long term impacts of this research: understand the progression of HMD's and what gaps still need to be addressed in future hardware