The Academy of International Extended Reality releases a safety update for using Virtual & Augmented Reality during the Covid-19 (Coronavirus) outbreak International

Large conferences and events with VR/AR exhibitors should take specialist advice and implement precautions immediately in the interest of attendee safeguarding

The safety of users currently wearing head mounted displays and immersive haptic devices has prompted the academy to provide basic guidelines and advice to minimize the risk of contracting and spreading the Covid-19 virus.

While the guidelines published below have been specifically created in response to recent global circumstances, AIXR would like to remind all organizations, events and individuals that common hygiene practices should be utilized at all times, no matter the circumstances.

In particular the academy has identified key areas of heightened risk:

- VR location-based entertainment
- Immersive devices / content showcasing at large gatherings or international events
- Devices that are used daily within enterprise-based solutions, including but not limited to healthcare and training sectors.

The following guidance takes into consideration advice issued by the world health organization in addition to specialist experience from AIXR.

The following should be observed:

1. Follow rigorous hand cleaning procedures.

All staff trained to handle VR or AR devices either at conferences, LBE or enterprise situations should have alcohol based (60% or higher) hand sanitizer on hand. Before a user puts on a device it is advised they should be required to wash their hands using the sanitizer.

Water and soap hand cleaning for 20 seconds is preferred when the facilities are available.

2. Foam inserts on devices WILL NOT enable effective cleaning of headsets

The porous foam material that usually sits on the inside of head mounted displays allows for bodily fluids to easily seep into the material preventing wipes from effectively cleaning headsets. We recommend all devices should be required to be either covered with a waterproof headset cover or coated in a water proofing chemical before making use of Alcohol based wipes (60% isopropyl **alcohol**).

3. Make sure to wipe down controllers, in addition to headsets

The controllers themselves are often an overlooked device when it comes to hygiene. On average viruses can live on surfaces for between four and five days. Make sure to clean the controllers and any other accessories that a user may make use of between each rotation.

4. Concentrated UVC Light cleaning increases effectiveness

Consider making use of some Medical grade UV light cleaning solutions that are on the market. They may help alleviate the overall time spent cleaning devices and increase your hygiene procedure effectiveness.

5. Staff should receive basic training on hygiene and safety procedures

Staff should be trained on not only how to properly clean a headset, but to spot the signs of an unwell user prior to them wearing a headset – if at any point a user looks as though they could have a high temperature or shortness of breath, staff should reconsider whether it is a good idea for them to be in XR.

Staff should be aware of how to deal with situations where there is a suspected COVID-19 case and the guidelines set out by local government agencies.

6. It's the large gathering of people in general that increases risk

Trade shows, Ibe locations and large enterprise deployments are most at risk due to the environment they are placed in. The majority of organizations and individuals that take the precautions issued by AIXR into effect should see a substantial decrease in transmission risk. Those who are based in areas with large epidemic outbreaks should take the health and safety of both their employees and clients into consideration before deploying.

Additional Information:

For more additional information in regards to COVID-19 (Also known as the Coronavirus) AIXR advises you follow up to date information from the World Health Organization in addition to your local government.

Read our recent article on Planning for Scalable XR Deployment: the Problem of Hygiene

For specialist advice on safely using VR and AR within your environment contact the AIXR team directly.

Hygiene for Virtual Reality Headsets

So you have everything ready to go for an extended VR demo session. You have two people on one virtual reality demo station. One person fixing up the computer, launching the demos and talking to people and one person managing the cable jungle and cleaning the headset in between uses. Great!

We had a look at some studies related to headset and office hygiene to give you an idea why cleaning your VR HMD in between uses makes sense.

Dr Charles Gerba, a microbiologist at the University of Arizona conducted a study analyzed 7,000 samples from offices around the USA. The study found that the highest form of germ contamination areas were telephones, desktops and keyboards. Surprisingly, toilet seats consistently had the lowest bacteria levels of the 12 surfaces tested. Microbiological populations found include potentially dangerous and contagious organisms like E.coli, Klebsiella pneumonia, Streptococcus and Salmonella. The same bacteria can be found on telephones, and ear cushions.

The study got commissioned by a major clean wipes company but you get the idea. There are some nasties out there.

Gupta, Wantland and Klien (1996) suggest that much of the peripheral equipment used in VR are potential fomites. A fomite is a harmless object that is able to harbor pathogenic organisms and therefore, may serve as an agent for the transmission of infections. They go on to suggest that airborne pathogens and skin flora thrive in environments similar to those of HMDs and hand controller devices.

So what kind of infectious disease can be spread by sharing VR headsets?

The most common infectious diseases and are usually transmitted by close contact with the saliva or nasal secretions from an infected individual are influenza, strep throat, pink eye, and meningitis. Because of the enclosed nature of HMD's, they can become quite warm causing the user to sweat and this can be exacerbated if the user is forced to move around while playing.

Here are some suggestions for keeping your headset clean and in good shape even when showing it to hundreds of people:

1. Wipe the lens and foam using a microfiber cloth, the same kind you would use to clean glasses or a computer screen. Dab the cloth into water or soapy water, when necessary. Even better get one of our waterproof VR Cover that are easier to clean.
2. We recommend you wipe our waterproof VR Cover with non-alcoholic anti-bacterial wipes after every user and use alcoholic wipes just every 10 – 15 users. The residue from alcoholic wipes can be a bit harsh on some people's skin.
3. Use watch glass protectors or some other form of plastic to cover the lenses. This can help to prevent scratches.
4. Keep your VR headset somewhere where it won't collect dust, use a can of compressed air to blow it out of any nooks and crannies.

It is important for the life of your HMD that you take care of it, store it properly and keep it clean. But beyond just ensuring you get the most use possible out of your purchase before having to replace it, it will also ensure that you and your users remain healthy and free of unpleasant illnesses.

In light of recent events, it's more important than ever before to ensure your headsets are sufficiently sanitized and cleaned before and after use.
Given the outbreak of COVID-19 and the literal up-in-your-face nature of headsets, VR users will have to be especially alert and cautious about headset hygiene over the next few months. To ensure we had the best information on how to clean and sanitize your headset without damaging your device, we reached out to Facebook to get their official tips and recommendations. Here's what the company had to say:

Caring About Sharing

Although it may seem like an obvious point, Facebook did stress that users should not share their headset with anyone who has had symptoms of contagious condition, infection or disease. The company also encouraged users to refer to their Health and Safety guides and the CDC guidance for general directions on cleaning and disinfecting.

Squeaky Clean

In addition to the CDC guidelines, Facebook did give some direct feedback specific to cleaning and sanitizing Oculus headsets, including the Oculus Quest and Rift. Here are its points, copied directly:

- Wash your hands prior to using your headset and controllers.
- Use nitrile gloves while cleaning your headset and dispose of gloves after each use.
- Between cleanings, wash your hands thoroughly.
- Clean your devices (headset, controllers and other elements that have been touched) between each use with non-alcohol, non-abrasive, anti-bacterial wipes. When using these products, wet the surface until it is visibly wet. The surface should remain wet for 10 minutes.
- Wipe your headset's facial interface with a clean cloth and water to remove any residual cleaner and let dry completely before using again. In the event this causes any discomfort, replace the facial interface with a new one. Wipeable facial interfaces are also available as an accessory for use with some headsets.
- Use a dry microfiber cloth to clean your headset's lenses.
- Let your VR equipment completely air dry after cleaning before the next use (at least 10 minutes). Use a dry microfiber cloth (but not the same one used to wipe lenses, as alcohol can damage lenses) to remove any wetness or residue from the headset and controllers.

Facebook also noted that alcohol-based wipes and cleaners are **not** recommended for use on the lenses. The lenses can be damaged by alcohol, so users should opt to use a dry microfiber cloth instead. If a smudge is being stubborn, users can dab a small amount of water on the cloth as well, but alcohol should not be used on lenses at all, according to the company.
