visionAV

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## Abstract

Simulation laboratories face numerous significant barriers to the deployment and effective utilization of Digital Information Systems (DIS) in their learning spaces. DIS coordinate a collection of partially independent services–such as audio and video capture, event logging, storage of records, and distribution of data–under a common interface, allowing a user to activate or deactivate a given service as needed. While they are convenient and able to deliver valuable services, “under the hood” DIS are complex, highly specialized, and subject to a myriad of operating restrictions imposed by inconsistent legal and technical frameworks.

To the consumer, such complexity manifests in cost of ownership and Return on Investment (ROI). There are few DIS suitable for simulation laboratories “out-of-the-box”, they are universally expensive and require the client to accept the vendor’s implementation, essential features of which are coerced by the Byzantine, multilevel patent schemes which control audio and video codecs.[[1]](#footnote-22) “Home brew” solutions require substantial audiovisual (AV) expertise to build and maintain, far too much for a majority of simulation laboratories even if time is available to undertake the effort, and do not meaningfully sidestep patent issues. Whether buying or building a DIS, baseline knowledge requirements for effective decision-making exceed a reasonable threshold for local expertise.

Since the engineering demands of a robust, usable DIS for simulation learning spaces cannot be mitigated, we propose that an Open Source DIS, with open specifications and an open development process, provides an important entry-point to the market for consumers. Specifically, it makes visible difficult engineering problems with no unified solution and allows genuine collaboration from the community of simulation laboratories.

I would like to say something about lack of incentive for vendors to plug into open source tools like Apache Spark

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## References

Zimmerman, Steven. “Google’s Royalty-Free Answer to HEVC: A Look at AV1 and the Future of Video Codecs,” 2017. <https://www.xda-developers.com/av1-future-video-codecs-google-hevc/>.

1. Steven Zimmerman, “Google’s Royalty-Free Answer to HEVC: A Look at AV1 and the Future of Video Codecs,” 2017, <https://www.xda-developers.com/av1-future-video-codecs-google-hevc/>. [↑](#footnote-ref-22)