

Canarie AAP-03 “Shared Spaces” Project Milestone 1 Report
Appendix 3
Report on Video Capture Method Selected for Development
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DVS HDstation v.s. AJA Xena HD

For the project, we had two hardware options available with respect to HD-SDI interfaces. The first, the DVS HDstation, would have been trivial to incorporate into our existing codebase, as it shared the same programming interface as the standard definition version of the cards we had used for the previous Canarie projects. However, previous experience with the DVS product indicated that their interface imposed significant latency on SDI acquisition and output, due in part to their use of a (mandatory) double-buffer to facilitate source transitions without risking a /tear/ in the video signal. Despite the assurances by DVS that they were willing to revise the software interface to their products in order to permit us direct access to the incoming (or outgoing) SDI signal, we were concerned that this would leave the project dependent on the scheduling priorities of a third party, so opted for an alternative, the AJA Xena HD. From the perspective of minimizing latency, AJA was highly attractive, as their interface permits (in theory) access to the SDI signal at the granularity of a single scan line, without any locks delaying such access beyond its time of arrival in the hardware. However, switching to the AJA product entailed a significant development effort, as the interface was completely different from that of DVS. Furthermore, as we soon learned, the AJA programming interface for Linux had never before been used for this manner of direct access, and its documentation was incomplete and inconsistent with expected practice. Fortunately, the technical support from AJA was outstanding, and we were able to obtain rapid responses to all of our technical questions, eventually resolving the ambiguities for capturing and outputting the HD-SDI signal.