

Digital Video: The Challenges

Digital methods of data acquisition are now commonplace in most offshore survey techniques. One of the last operations still being performed with analogue technology is the recording of video signals from underwater survey inspection tasks. So why has the adoption of digital video technology not been straight forward despite the existing data acquisition method through S-VHS rapidly becoming obsolete?

The compelling benefits of digital video, over current analogue recording methods are clear. Namely improved operations due to better efficiency of off-line review and reporting, when integrated properly with on & offline systems. Time/cost savings from speeding up video review & no tape changes. This technology allows for quicker assessment of remedial work through better visualisation of integrated survey results - Improved access/sharing, directly from email/PC - Better quality control available through tighter integration between reporting & video and finally data storage is more efficient through a reduction in volume and choice of more reliable storage media.

The obvious direct replacement for VHS tapes is DVD. However the real drawbacks is the amount of video which can be recorded onto a single media (2 hours), lack of integration with other data and establishing & adopting industry standards for DVD.

So without a simple choice there are a number of general issues to consider. Probably the most fundamental is which format to choose (Moving Picture Experts Group- MPEG)) M-PEG1, M-PEG2, M-PEG4, Windows Media Video, H.264. Unfortunately at present there is no clear agreement on which is the optimum solution for this industry or on a system that encodes in all of the above formats.

Other significant issues include data management with up to 100 Giga Bytes of data being stored every 24 hours - Picture configuration, pixel sizes, frame resolution, picture size, frame rates - Deliverables defining type and media - IT security policies and how will they affect data viewing and distribution- IT network capacity - Future proofing of the system and deliverables - Which storage media will prevail - What storage media to choose (SDLT tapes, CD, DVDs, NAS hard drives) - Requirements for instant access, data warehousing, highlights on demand.

For some users/survey contractors there appears to be a number of factors hindering adoption. Namely lack of clarity in client requirements and specifications, uncertainty over formats, cost recovery, integration with offline workflows and additional training/competence. However, there are clear examples that once adopted the enhanced data flow improves both the quality of their product and also the timeliness of delivery.

For some end clients there appears to be a number of factors that are hindering adoption. Namely lack of awareness of the issues surrounding the technology. Absence of a specification or adoption strategy. Reluctance to change, especially when the existing system has served them well still exists.

Perhaps the best approach is, within the hydrographic survey industry (clients, survey contractors, manufacturers) is collaboration, in order to agree a common way forward to dispel misconceptions and to benefit from the advantages that digital video technology has to offer.