



Benefits of using the DVR Pro for pipeline inspections

Introduction;

There are many companies looking to interface the NETmc Marine range of DVRs with their software to allow three channels of video to be recorded simultaneously and be associated to events, the following describes the benefits of using the DVR Pro as opposed to 3 DVR Inspectors.

DVR Pro Vs DVR Inspector for Pipelines inspections

When recording triple channel video - the Pro system is our recommended choice because:

1. It creates 1 file with 3 video streams inside - cutting your file management overhead by a 3rd.
2. The 3head (media player) filters automatically, play and truly synchronise the 3 streams without any involvement from the survey software developer.
3. The operator can determine the duration of the files.
4. It provides a central management point for its 3 encoders
5. It displays encoding status and gives a confirmation of connection to the central storage (NAS etc).
6. It ensures that changes to encoding settings (bit rate / format etc) are applied to all encoders.
7. The DVR Pro is made up of 4 units 1 DVR Server and 3 DVR Inspectors. As the DVR Inspectors could be used on the same installation independent of the DVR Pro e.g. for structural inspections the DVR Server ensures that all DVR Inspector encoders are re-configured automatically for pipeline use as soon as the DVR Server takes control.
8. A software developer's kit is available that enables the seamless playback of contiguous files, i.e. those that have been recorded sequentially in one recording session and allows for the editing across these contiguous files. These edited files can be stored as MPEG or pkt files depending on how they are to be reviewed.
9. Nav data can be embedded in the pkt file with the 3 video streams making archiving and client delivery easy - "here is the player – and here is your file"
10. The controlling survey software can interrogate the DVR Pro to enquire to which file the video is being recorded - and at which point in the recorded file it is at any instant. This allows the online system to build up a database (or lookup table) of filename and timecode for any noted anomaly or GPS time tick.
11. Feeding the filename and timecode into the 3head filters effectively jumps the system to that exact place in the video – automatically opening the 3 video images.
12. Developers can use our free triple player as a guide as to how to create their own replay environment or clients and other lesser-interested parties who want an easy way to review the triple view on their own desktop can use it.
13. The next step for reviewing pipeline video is via a GIS system and the DVR Pro is a far better solution to this than 3 DVR Inspectors.

Why not use 3 DVR Inspectors for Pipelines?

Users who are familiar with the DVR Inspector may initially feel the desire to just use 3 of these units for pipeline survey. It is true that 3 DVRi units could each be sent file name information and each could be started by the survey software at almost the same instance, certainly as far as the user is concerned, however we don't think this is ideal especially when interfacing to the Pro uses an almost identical command set. The drawbacks of using 3 DVR Inspectors are:

1. The DVRi doesn't have the same ability to be polled for current position within file, which means any "jump to timecode" action has to be a crude approximation based on the time when the record command was first given, plus the elapsed time (GPS possibly) from that point to when the anomaly happened.
2. 3 sets of filenames and time jump offsets have to be tracked and calculated whenever offline navigation is required.
3. Loading, playing and synchronising of the video files is left in the hands of the survey software developer, the operating system and the hardware being used during replay.
4. Any resultant files would not be compatible with the NETmc Marine free player
5. Editing and combining clips will be a more laborious process

Pkt Vs MPEGs

What is a pkt file ?

A pkt file is actually an mpeg file. The MPEG standard allow a certain degree of flexibility within its structure which NETmc Marine exploit to insert the navigation data and the multiple video images.

When we do this we have to identify to an *enabled player* that the file it is about to play is no ordinary MPEG file and that it may contain much more. If a user were to take a pkt file and change its extension in windows explorer to mpg - it would play perfectly - but if it had embedded Nav or other video images - they would not be displayed.

The NETmc pkt file is created in such a way that editing is incredibly easy. Files can be joined, played and edited without the overhead of traditional non-linear editing - - which means the time to extract a clip is based mainly on the computers ability to copy the quantity of data from one location to another.

Summary

The pipeline video review experience is very laborious and anything that can speed up the process should be considered a benefit. Using 3 DVR Inspectors is a half way house to the ultimate solution, which is to use the DVR Pro controlled by a suitable eventing and replay package. With data gathered in this way the next step to GIS integration is much alleviated.