

AVECO Disaster Recovery Solutions

White Paper

Although more and more people today rely on the internet for the latest news, in times of emergency, people still turn to their TV and radios to find out the latest status. Broadcasters take this responsibility very seriously and look for solutions to stay on-air during an emergency. This could include natural disasters such as earthquakes, floods, tornados or man-made disasters such as terrorist acts. More commonly though, stations must deal with simple equipment failures, operational mistakes or accidents like

small fires or other disruptions. Broadcasters need a plan to stay on air in these situations and continue generating revenues.

The ideal solution is technically the simplest but extremely expensive—mirror your main facility. In today's environment, few can afford such an approach. Aveco has developed several practical solutions that are cost effective; two of which are discussed here.

1. Dedicated Disaster Recovery (DR) Site

Because of the fortunately small chance of needing to use a DR site, many customers choose to build a site with minimal functionality that has the ability to stay on air at the lowest cost.

This solution is designed with an operational model that is the least disruption to existing workflows and requires minimal, if any new operator training. (Figure 1).

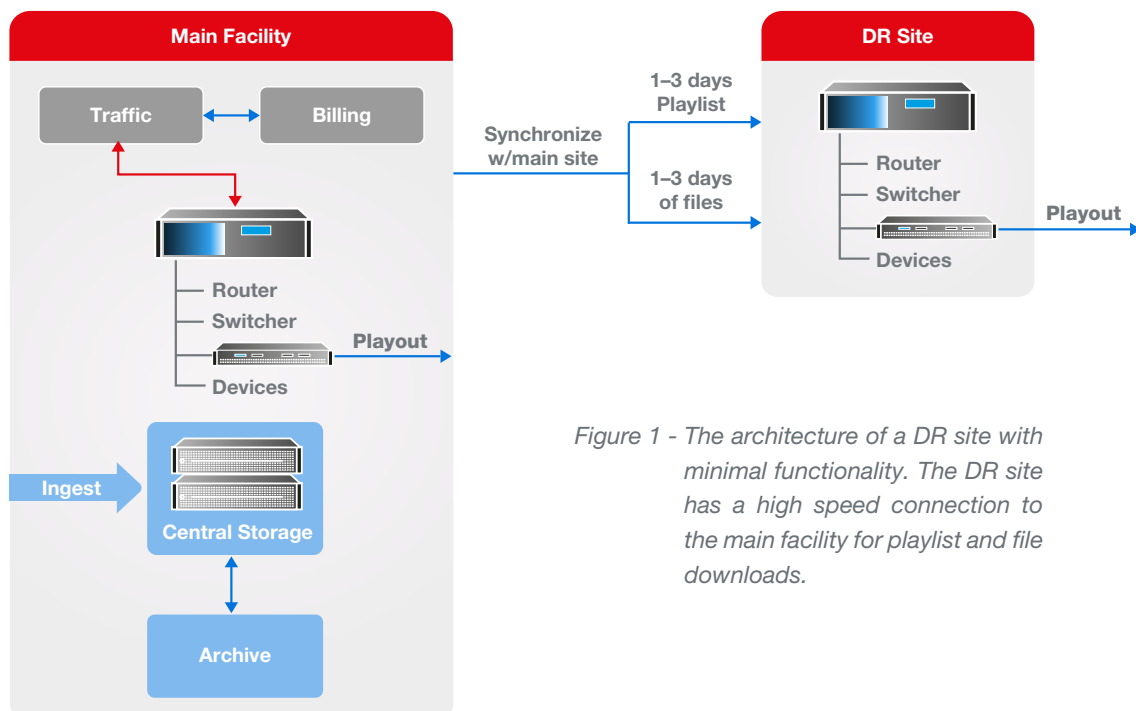


Figure 1 - The architecture of a DR site with minimal functionality. The DR site has a high speed connection to the main facility for playlist and file downloads.

2. Dual Purpose Sites

An alternative solution is one or more dual purpose sites that can be used for everyday operations but has additional channels that can be quickly switched to be used as a backup site for one or more remote channels. This is generally an existing site that has additional channels that can be used in case a remote site goes off air.

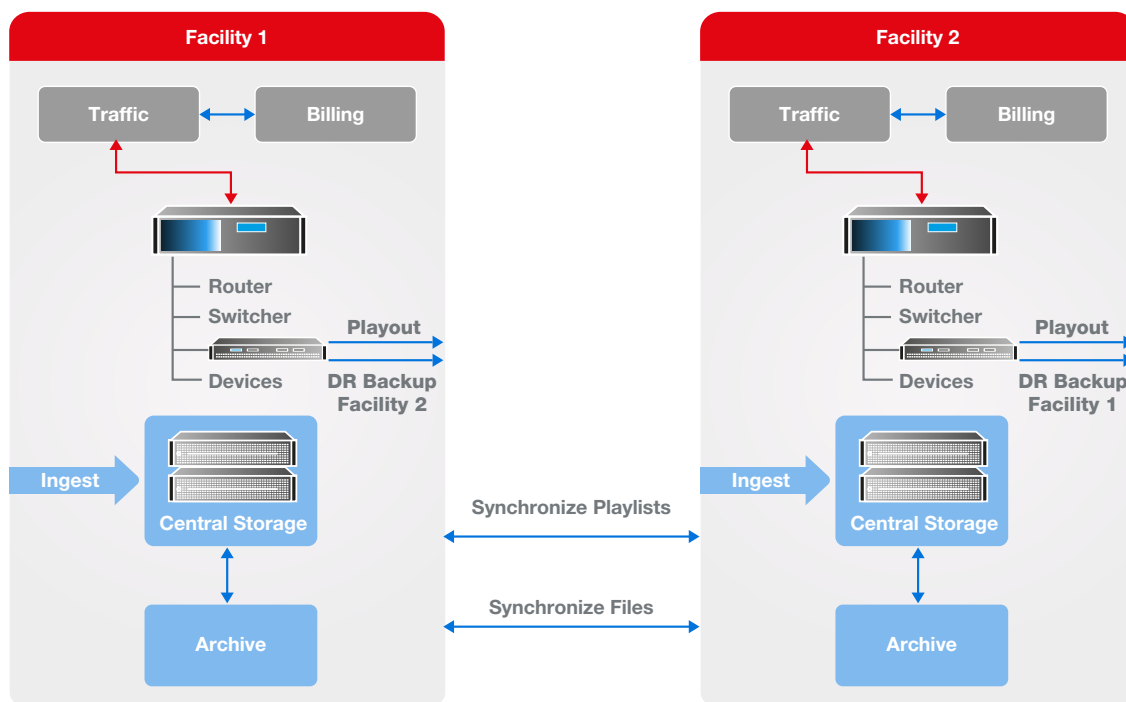


Figure 2 - An example of two fully operational sites backing up each other. By keeping playlists and files synchronized and having a spare channel, each site can provide complete backup of the other site.

Considerations for a DR site

Below are some considerations in designing a DR solution. This is not a comprehensive list, but can be used as a starting point.

- 1. Video duplication** – Video material needs to be constantly updated at the DR site. Ideally the automation systems will monitor the playlists and automatically move the required files to the site in order of its priority in the playlist thus keeping both sites synchronized.
- 2. Playlist Duplication** – short term – A 24 hour playlist is the minimum that needs to be always available at the DR site to provide protection for the next 24 hours. Automation will generally generate a 24 hour playlist which can then be continually synchronized with the DR site.
- 3. Playlist Generation** – longer term – If the DR site is designed to run for more than 24 hours, which would generally be the case, considerations for generating playlists for the next 2-3 or more days need be planned. While a separate traffic system at the DR site would be optimal – but expensive, at minimum, simple tools like Excel can be used to create a playlist if the main traffic system is also down or unavailable. Most automation systems can import simple text based schedules from everyday tools like Excel or even simple text editors.
- 4. Broadcast Equipment Chain** – One of the major costs for a DR site is the equipment. The functionality requirements of the DR site determine the equipment needs. For a basic DR site, minimal functionality can result in significant cost savings. Items like switchers, graphics, routers and other equipment should each be analyzed for minimum required features. In some cases, not all existing types of equipment may be needed. The goal is to stay on air – not necessarily look fancy. A video server is one of the basic requirements. Adding graphics for informational crawls, logos or simple announcements are generally a good idea especially in emergencies. Switchers and graphics might be eliminated for very simple designs without any type of studio. To keep development and operational costs low, keeping the same type of equipment (but maybe simpler functionality) as in the main facility maintains similar interfaces to automation and minimize any additional operational training.

5. **News Studio** – Often it is desirable to have live broadcasting capability at the DR site for reporting current events. A studio can be a major cost but again can be done simply without many of the fancy features in today's News studios. Single camera operation with minimal graphics may be adequate.
6. **Automation** – To control the DR site, having the same automation system as the main site is beneficial if it is relatively up-to-date and fits into your long term growth plans. If your existing system is old and ready for replacement or is no longer or poorly supported, a new system may be in order. Since it is easy for automation systems to import playlists from traffic, a different automation system at the DR site should be a consideration rather than buying an older technology that does not fit your long term plans. The only downside is additional operator training if only the DR site is upgraded but since much will be running without operator intervention, this may not be a big issue. Ideally you should take the opportunity to update both sites.
7. **Operations and Workflow** – To minimize disruptions to current workflows and minimize operator training, a DR site workflow should be as similar to the main facility's workflow as possible. Since these are infrequent events, it is critical that training and workflows remain as similar as possible. Look for a system that can easily be adapted to your existing workflows.
8. **Ingest** – The DR site needs to be designed with ingest capability including live feeds and manual ingest. Often you will want to broadcast videos shot by the public in addition to professional sources. A variety of tape machines should be available as well as file ingest.
9. **Facility Restoration** – This step is often overlooked but moving operations back to the main site needs to be part of the overall DR workflow. Syncing all new material can be manual taping or electronically over the network but all material will need to be available to continue current stories from the main site.
10. **Monitoring and Testing** – The worst thing that can happen is to experience an emergency and have the equipment at the DR site be non-operational when needed for service. Thus a plan to verify that all the backup equipment and workflows are operational is required. Not only the physical equipment needs periodic testing but operators need to refresh their training so everyone knows their roles and responsibilities when needed. Technology such as SNMP remote monitoring can enable you to automatically monitor the hardware at all sites.

Financial Aspects of a DR Site

Few organizations have excess money sitting around for a DR site so significant thought and planning need to go into justifying this investment. Below are a few operational and financial concerns to consider.

- **Cost of going off-air** – One easy analysis is the lost revenue for every hour off air. Your program costs stay the same if you broadcast a program or not but you will have to make good on the spots that did not air or lose that revenue. Depending on when during the day you are off-air, this can be a significant cost.
- **Disaster damage** – If a disaster occurs that does physical damage to the site, then off-air times will be measured in weeks or months while repairs are being made. Without advanced planning, trying to find alternate broadcast facilities and equipment will be an expensive and time-consuming scramble often resulting in mixed results. Even a basic facility will get you back on air with minimal functionality quickly. Loss of revenues for a lengthy amount of time can be devastating, even with insurance coverage, not to mention loss of income for employees, possible loss of key personnel, and loss of community service.
- **Dual Use Sites** – To minimize the expense of a DR site, building it so the backup resources can be used during normal times will help financially as well as providing excess capacity. An additional studio could be used for live events without tying up the main studio. The additional equipment could be used for ingest and QA during busy times. Maintenance of equipment at the main facility can be performed by taking it off-line and using the DR site's equipment.

Aveco Solutions

Aveco has the solutions described in this paper available today and can help with your planning and implementation. Our ASTRA MCR and News solutions are built with a unique networked, distributed architecture that controls equipment at remote sites just as local equipment. Thus a system can be designed such that 2 or more sites operate technically as a single site. In a DR situation, one site can go down and control can pass to another site fairly seamlessly with a redundant, mirrored design.

Summary

In times of stress, good planning and forethought can minimize the disruption to a station's programming and finances while at the same time providing a valuable service to the community. Many options are available to you based on your budget and needs but the key is to start planning today. Aveco industry experts are available today to help with your planning.