

# Sophisticated Data Management System for High Volume of Data

**A**erial imagery, lidar, and planimetric and topographic mapping all involve incredibly large datasets. The extremely high volume of data Surdex processes requires an efficient, secure data management system. Our physical network and our data processing and storage procedures are all designed to meet this need.

## Redundant Backups

As soon as we receive raw data at our main office from field crews, an LTO tape is created and a second copy is stored on the production storage systems. Once data inspection and trajectory processing are complete, another copy is written to tape which is then stored for the duration of the project at an off-site location 20 miles away. Data processing parameters are archived three times daily onsite and weekly offsite. Final data is also stored on tapes at the offsite location. This storage system ensures the security of our data even in the event of a disaster.

## Virus Protection / Firewall Security

All Wi-Fi and externally accessible servers are secured inside isolated network segments. All inbound traffic is run through a series of protective proxies that include Intrusion Prevention System (IPS), or Gateway Anti-Virus (GAV), Advanced Persistent Threat (APT) detection and Application Control which prevents commonly known applications from sending bizarre or harmful traffic. All isolated network servers also run an Anti-Malware component known as Threat Detection and Response (TDR). It looks for malware on a system and if it finds any,



it neutralizes the threat and notifies our firewall so that attempts from other computers will not make it through. All outbound traffic is checked to prevent virus payload download into the office.

## Processing Speed / Power

In addition to being secure, our network is fast as well. Production is centered on Hydra, our distributed processing environment. Hydra is connected to numerous servers, allowing technicians to start several processing steps simultaneously. With 101 computer processing nodes and approximately 60 workstations all with 10Gigabit networking connected to Hydra, production can progress very quickly. Our storage system networking is 40Gigabit, and our office and hangar have Gigabit synchronous connectivity to the world. Surdex's virtual infrastructure hosts 30 VMs across 10TB with sub-millisecond storage reading and writing latencies. Redundant internet providers significantly limit potential connectivity issues.



**Your Strategic Geospatial Resource**

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