

Covering All the Bases



Surdex Institutes Contingency Plans to Assure Continued Operation

To assure our clients receive their products on schedule, Suredex must have proper contingency plans in place. The success of our projects is dependent upon our ability to stay on schedule throughout the entire project so we can provide the final deliveries to our clients "first time right, on time." We have therefore developed contingency measures to deal with every conceivable disruption for every step of our projects, from aerial acquisition through production to final delivery and data archiving. Having these measures in place ensures that weather, illness, power outages and other disasters do not seriously inhibit progress or cause loss of data.

During acquisition, we monitor weather conditions in all active project areas. Because we own our aircraft and sensors, we can easily shift resources to take advantage of good weather. We also have our own FAA-certified maintenance, repair and inspection staff, which helps maximize the availability of our aircraft. This staff is based out of our hangar at the Spirit of St. Louis airport. Maintenance schedules are interspersed to minimize the number of aircraft grounded at any given time. In the event the Spirit of St. Louis Airport becomes unusable, our aircraft can be relocated to other nearby airports, or they can be retained at field airstrips. Pilots would remain in contact with our headquarters via cellphones and continue to deliver data on drives.

Once we receive raw aerial mapping data, we store it in two locations. This raw data is downloaded, and a copy is made to tape. A separate copy is made for use in production, and this is copied to tape once it has been inspected. This second tape is stored off-site for the duration of the project. During production all key intermediate products are archived upon creation. Our central database stores most parameters necessary for recreating intermediate and final products, and this database is backed up three times daily, with a copy saved offsite once daily. This assures that even in the event of equipment failure, we will never lose more than the most recent iteration of a product. When data is ready for final delivery, we save a copy of final client products on tape at a secure location 20 miles away from our main office. These archive and backup tapes are written with validation, a process which reads the tape back for a comparison to source data to avoid unreadable or corrupt tapes. All storage is RAID protected against multiple hard drive failures.



Engine repair and maintenance in progress on one of our Cessna Conquests to ensure safety, maximum uptime, and FAA compliance

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Production is also dependent upon a continuous power supply; even outside of normal production hours, automated production processes are always running. To ensure there are no disruptions to the power supply, Surdex has a Kohler 200Kw generator with a John Deere turbo-diesel engine. This generator can sustain production operations for half of our workstations and all servers in the event of power outages, with the ability to operate for up to four days or more on a single tank. We also have a fuel contract in place to keep it filled indefinitely. Production is therefore able to continue even in extended power outages, although the generator is also important for avoiding loss of work during minor power surges. This generator is tested automatically on a weekly basis and manually on a monthly basis to ensure proper functionality, and fuel is tested and replaced as needed every six months.

Flooding, illness, or other problems could prevent employees from coming to the office, and Surdex is prepared for such situations as well. If the hardware at our main office is untouched, but an employee cannot physically come to work for whatever reason such as minor illness, many of our staff have the ability to remotely log in to their workstations from home. We can also resume operations within a few hours of setting up a minimal computer and data storage system, should remote login not be a feasible option. Production could return to normal speed once additional computer resources were added.

Even when production is unaffected by any sort of disaster, projects may align such that one department is much busier than the rest. For this reason, we cross train our staff so that production can stay on schedule. Technicians have trained as sensor operators during peak acquisition season, and sensor operators have trained as technicians in low acquisition season. Orthoimagery and 3D Mapping staff are trained on a variety of tasks within their departments, and some have even trained on tasks across production departments. This mobility allows us to maximize the productivity of our staffing resources.

With these contingency plans in place, Surdex can adapt to virtually any situation and maintain production, without the loss of data.



Surdex's Kohler 200Kw diesel-powered backup generator, which can generate electricity for four days on a single tank and be re-fueled indefinitely



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