# BCP Telemetry Plans

**Overview**
The Business Continuity Plan, BCP, exists due to the nature of the data collected and need for robust data collection methods and systems. In the event of system failure the data collection and reporting must continue to allow for effective emergency management decision making. The BCP plan must be flexible enough to copy with a range of failures and still provide a timely means of continuing the core data collection.

**BCP goals**

| | |
|---|---|
| Power: | The system will have built in power failure systems including back up generators for core hardware with UPS's for uninterrupted power.<br>12vdc supplies will have sufficient battery reserves to run for 5 days |
| Hardware | Critical machines will be virtualised to ensure immediate response to a Regional House systems failure.<br>Critical machines will be shadow protected and have configuration files stored off site to enable the system to be brought live in alternate locations dependant on the nature of the BCP response. |
| Software | All installation software for key applications will be stored in hydro sites with telemetry critical software on the ftp domain and with BCP hardware including accompanying manuals to enable competent technician's to rebuild the systems |
| Telemetry | 1 spare unit of all critical telemetry equipment will be stored at Regional house for deployment if required.<br>A redundant system will be available at an off site location ("Over & Out") and will include a minimum of telemetry equipment to ensure critical data is collected |

**BCP time frames**

| | |
|---|---|
| 2hrs | Data collection will be restored to Flood warning sites enabling manual Emergency management updates and flood warning responses |
| 6hrs | Automatic data updates will be restored to the PublicTelemetry file |
| 24hrs plus | Secondary communication paths will be restored where possible and data collection re-established<br>Primary Flood warning sites that have not had comms restored will be visited and telemetry systems resolved where possible |

**BCP Plans**

**Harvest Telemetry**
*Summary*
Harvest telemetry is a non-critical system and is primarily associated with the collection of flow meter data although some rainfall is collected. The telemetry system is run from the CD7 virtualised server with scheduled shadow protection. The system can run independent for data collection and will automatically restart under the IT protocols. The data is stored on the server but data migration is run through scheduled service on CD1 (ARES)

*Key BCP requirements*
Daily system configuration backups
Virtual machine as the system is not easily rebuilt
Data links for vodafone and telecom
IP address must be 192.168.0.10
Link to ARES for updating (backup solution if required)

*BCP options*
Harvest telemetry is automatically restored under the virtual machine BCP, in a failure of that system the restoration will occur as per IT plans.

**LoggerNet Telemetry**

*Summary*

LoggerNet is the core telemetry application for collection of field data; the live system incorporates LoggerNet as well as other applications to enable the communication links to both field loggers and network files.. The LoggerNet application has no direct link to the comms paths as these are managed by other applications, mainly AnywhereUSB, Advance virtual comport and Hilltop Telemetry. The combination of these programs allows the dual comms ability of the system and allows the hardware to be separated from the telemetry hardware. For this reason the BCP options for the LoggerNet system are highly flexible and configurable to the requirements of the event. A link to the ARES system is required for updating site information and editing the SQL database setup files

*Key BCP features*

Daily system configuration backups, including LoggerNet restore file
Virtual machine to ensure hardware redundancy
Secondary telemetry base with remote and direct access
Software and setup files stored on Laptop sync and ftp domain (ftp.horizons.govt.nz)

*BCP options*

Complete system failure

In the advent that the regional House infrastructure was comprised then the BCP will involve relocation to our off site telemetry base housed with "Over & Out" . Here a laptop will be setup with direct links to at least 1 Hytera radio. The BCP LoggerNet working directory contains the setup files for a direct connection independent of the Lncomms application. A USB stick will need to be configured as an O:\drive with the contents of Pseudo O drive loaded to it. This is where LoggerNet will store data and can then be decoded into Hilltop Files. The batch files will need to be modified to reflect the changes in the file locations and a working version of Hilltop HTSupdate is required.

To call in sites the LoggerNet setup will need to be changed to map the sites to the correct com port, groups can then be called together before the radio channel is changed for the next repeater.
If an internet connection is available then the GPRS sites could be called once a VPN connection was made, likewise with a working phone line the laptop modem could be used to poll further sites.

*Partial failure: hardware*

If the LoggerNet Hardware was to failure or be unavailable then the existing telemetry infrastructure could be used via an alternate hardware system. Any Hydro laptop with general sites sync has the necessary files to be set as a base telemetry platform. The daily backup of loggerNet can be restored to any system then configured to connect to the AnywhereUSB, if network available, or direct to the telemetry radios.

*Partial failure: Software*

If the loggerNet software was to become corrupted then the system could be rebuilt from either the daily shadow of the virtual server or form a reinstall of the LoggerNet daily backup.

*Partial failure : Telemetry*

In the advent that the telemetry links from the Horizons office was compromised then the over& Out backup system could be used either through a IP link and using the AnywhereUSB hardware to map to the appropriate Hytera radio of through a complete relocation of the system to the “Over & Out” building with telemetry files forwarded back t the Horizons office