

Broadband Steering Group

Minutes of the Meeting held on the 9th January 2019 @ 7:30 p.m. Fernaig House

1 Present and Apologies

Present: Phil Game, Georgie Grimson, Joe Grimson Mary MacBeth, Neil MacRae

2 Approve and adopt previous minutes

The previous minutes for November 2018, were proposed by Joe, seconded by Mary. Copies of previous minutes are on our website at:-

<http://www.stromeferry-and-achmore.co.uk/index.asp?pageid=433827>

Email cmnetcic@gmail.com if you have any questions.

3 Chairman's report

3.1 Health Report on the Argocat

Work continues to bring the Argocat back from the dead.

3.2 Bandwidth

There are no capacity issues at the moment.

3.3 Review of the problems 7th to 11th December

Phil produced a detailed timeline drawn from the logs of various devices to try to piece together exactly what happened from the evening of Friday 7th until the afternoon of Tuesday the 11th. Some of the problems could be easily isolated and the causes identified. However the reasons for the poor performance that was first identified on Sunday 9th and persisted until early Tuesday afternoon were not so easy to identify with certainty as we could find no direct correlation between cause and effect.

It was therefore decided we would record the information obtained from the logs and keep it for reference to assist with problem determination in the future.

You can read a summary of the log's of weekend's events in section 7.1.1

3.4 New Backhaul Installation in Achmore Hall

Phil proposed a simple schedule to cover the installation of the new VDSL line in the hall. There was a brief discussion of what was involved and a rough timeline. The following steps were identified.

3.4.1 Get a formal agreement approved and signed by the Hall Committee

Joe has produced a first draft hosting agreement for the hall, Phil is to read and respond. Once we are happy with the document we will discuss it with Martin Irving to make sure the hall committee is also happy with the terms. **Action: Phil**

3.4.2 Install our cabinet and internal equipment in the hall

Once everyone is happy with the hosting agreement we will suggest a site meeting to discuss the installation. **Action: Joe, Phil**

3.4.3 Install external equipment at the hall

3.4.4 Install new dish on CMAchmoreHigh for Plockton access

3.4.5 Switch connection from Plockton to CMAchmoreHigh

3.4.6 Install new dish on CMAchmoreLow for Achmore access

3.4.7 Get new line installed in the hall

3.4.8 Test the new line

3.4.9 Activate the new line

3.5 Subscribers

3.5.1 Existing relays

Live subscribers - 42

Waiting for installations / activation - 2

Waiting for subscriber's installation dates - 1

3.5.2 Waiting for new backbone relays

Waiting for installations - 30

Leavers since the last minutes - 0

Total - 74

New joiners since the last minutes - 0

One subscriber installation is waiting for their AirRouter to be re-configured; this unit had been offline for some time but has now been powered up and so can be progressed.

One subscriber's pre installation is complete and waiting for the installation of antenna and router.

One installation is waiting on a date from the subscriber.

The remaining installations are waiting on the completion of the new relays.

3.6 *New MikroTik replacements for AirRouters*

No progress this month due to other commitments. **Action: Phil**

3.7 *Terms of Reference*

Deferred

4 **Secretary's report**

Extra Energy has gone bust and so we have transferred our electricity account to SSE, Mary will check everything has been processed. **Action: Mary**

4.1 *Risk register*

Mary has received confirmation from Zen that the Achmore cabinet is now active and they can accept orders.

Predicted speeds are 80 Mbps download and 20 Mbps upload - i.e. the same as Plockton. See section 3.4 for the installation plan.

Mary has checked the availability of "G.Fast" (which can deliver download speeds of 300 Mbps and upload speeds of 50 Mbps). Zen report that this is not available in Plockton, Lochcarron or Achmore at the moment and no date is available for availability in our area.

4.2 *Long term support plan*

Software to automate the cloning of failed devices - no progress this month. **Action: Phil**

4.3 *Terms of Reference*

Deferred

5 **Finance Director's Report**

Monthly Statistics

Revenue for November:-

Brought forward

Balance	£676.20		
Creditors		£368.67	
Debtors		£440.62	
Net			£-71.95
Bank balance			£6,769.93

This month

Income	£542.00		
Expenditure	£125.42		
P&L	£416.58		
Creditors		£56.95	
Debtors		£4.00	
Net			£52.95
Adjusted P&L			£469.53

Carried forward

Balance	£1,092.78		
Creditors		£425.62	
Debtors		£444.62	
Net			£-19.00
Bank balance			£7,239.46

Revenue for December:-

Brought forward			
Balance		£1,092.78	
Creditors			£425.62
Debtors			£444.62
Net			-£19.00
Bank balance			£7,239.46
This month			
Income	£509.75		
Expenditure	£101.98		
P&L		£407.77	
Creditors			£9.50
Debtors			£8.25
Net			£1.25
Adjusted P&L			£409.02
Carried forward			
Balance		£1,500.55	
Creditors			£435.12
Debtors			£452.87
Net			-£17.75
Bank balance			£7,648.48
Liabilities			
Estimated Liabilities	-	£0	
Estimated balance after liabilities	-	£7,648.48	
Provision for replacement of Electronic equipment			
Total value purchased to date	-	£15,000.00	
Balance after provision	-	£ -7,351.52	

5.1 Year six tariff

The total number of gigabytes sold was 4,500 (an increase of 21% over November); the break even tariff for 2 fibre lines is £0.46 per 20 GB, and for 3 fibre lines is £0.68 per 20 GB.

The year five tariff started on the 1st December 2018, we will be sending out details in late January for those subscribers whose rate will change in March. **Action: Phil**

5.2 Outstanding subscribers' debt

Excluding subscribers with quota increases two accounts are in arrears, the total owed is £2. **Action: Georgie**

5.3 Housekeeping

Work continues to automate the reconciliation of payments; priority will be given to Zen. **Action: Phil**

5.4 Payments for installations of subscriber's equipment

All payments are up to date.

5.5 Standing orders

Four accounts are in credit, the relevant subscribers have been asked to correct their account. **Action: Georgie**

Two accounts are in debit, the relevant subscribers have been asked to correct their accounts. **Action: Georgie**

6 Internal auditor's report

It was agreed we would prepare a synopsis of our current practises, needs and areas of weakness to assist ourselves and the auditor. No progress this month. **Action: Phil**

6.1 Assets, bf, acquired, relinquished / written off, cf

No progress this month.

6.2 Liabilities

No progress this month.

6.3 Description of the Audit Trail

No progress this month.

7 Customer Relations

7.1 Production Environment

7.1.1 Problems and complaints

On the whole the system worked very well in November.

Not so in December, here is a summary of events and key details from the logs of various units.

Friday the 7th December - 18:20

The monitoring system showed that the access point for Braeintra was off line.

Saturday the 8th December - morning

The access point for Braeintra had suffered a hardware failure so Phil and Mary replaced the unit whilst Joe relayed the Braeintra subscriber's signal strengths so the unit could be correctly aligned. Due to adverse weather conditions we were not able to fully re-align the new unit. However before we left Creag Mhaol we checked most users in Braeintra had a good signal and were back to near normal speeds.

Later in the day the new unit suffered a number of false Radar detections and started frequency hopping which caused drop outs to subscribers. Reverting back to an earlier version of the firmware appeared to rectify the problem by early afternoon.

Saturday the 8th December - 19:51

False RADAR signal detected one last time on the new unit and the Braeintra access point automatically changes frequency to 5735 which overlaps with Plockton! This was not recognised at the time.

Saturday the 8th December - 20:22

An apparent "hack attack" starts on the Creag Mhaol dish which points to Plockton and is repeated every few minutes.

This is recorded in the log as a remote unit within sight of the dish on Creag Mhaol (i.e. somewhere in Plockton) trying to log into the network without the correct security information.

Sunday the 9th December - 00:26

We reconfigure the Braeintra access point to boost the signal strength to Braeintra

Sunday the 9th December - morning

Poor performance was seen to be system wide which appeared to be a problem with the Plockton equipment.

Monday the 10th December - 08:00

The link between Creag Mhaol and Lochcarron starts to fail causing the units to try to recover by automatically rebooting themselves every few minutes; this was not picked up until Phil (who was away from Fernaig) tried to log in remotely through Lochcarron.

Monday the 10th December - 10:54

Joe went over to Plockton and rebooted all of the equipment in the school; initially this appeared to resolve the problem. However later speeds started to deteriorate.

Over the next two days the failing link to Lochcarron hinders progress as Phil can't log in remotely for more than a few minutes before the link to Lochcarron fails which was due to the dishes automatically rebooting. Joe investigates and analyses the system logs and forwards copies to Phil by email so they can be discussed.

Tuesday 11th December - 13:20 - 14:48

We reboot the Creag Mhaol dish that points to Plockton and reconfigure the Braeintra access point to increase the remote logging details. During this time we see the last reported "Hack attack" on the Creag Mhaol Plockton dish and the last reported failure of the Lochcarron link. We then reconfigure the Braeintra Access Point to reduce the signal strength and change the frequency back to the original values.

On the 12th the system returned to normal, full speed was restored and no more hacking attempts were seen.

During our investigations we asked Zen to run tests on the Plockton line and they reported that the line was working normally with speeds as expected. We also asked them to check the Lochcarron line and they reported that the line was operating at half the normal speed - this has now been rectified by Zen and the connection is back to 40 Mbps. The server had several corrupt data files which had to be cleaned up and it also crashed and rebooted itself. The problems with the server were almost certainly due to a knock on effect from the other problems and the fact that Phil was logging in remotely and constantly being thrown off the system by the Lochcarron link failures. The server was restarted without any further issues once the changes were made on Tuesday and remote access was restored. The log from the Creag Mhaol dish that provides the link to Plockton showed there were 464 attempts to log in from 349 different MAC addresses (a MAC address is usually used to identify a specific piece of equipment but it can be deliberately falsified to try to hack into a system's security).

When the Braeintra access point failed we installed an updated unit to see if this would improve the signal levels. Tests are still underway to achieve the best configuration. However if we cannot get the desired signal levels by changing the configuration we will try upgrading the equipment to get a more focused (higher power) beam. **Action: Phil**
The roll out of the new version of firmware has started. So far there have been some issues with one or two units. **Action: Phil**

There have been a few unknown “local” IP addresses recorded this month, we have established which subscriber is involved and are investigating the reason. No progress this month. **Action: Phil**

7.1.2 Usage quotas

The monthly total for November was 2.19 TB, with a daily average of 73 GB; the peak usage was **102 GB** on Saturday 10th.

On the 9th of November there was a power outage at Ardaneaskan. On the 12th of November there were two more short duration power cuts which affected the whole system but equipment rebooted on return of power and there were no reported problems.

The monthly total for December was **2.63 TB** (a new record), with a daily average of 84.8 GB; the peak usage was **128 GB** on Sunday 27th.

Two subscribers exceeded their quota and have been moved to the appropriate band. One subscriber requested a quota increase

7.1.3 Possible virus infection

No new instances of the Ubiquiti virus were detected; we will continue to run scans. **Action: Phil**

7.1.4 Installation of equipment

One new installation was carried out since the last report.

7.1.4.1 Ardaneaskan

The Ardaneaskan access point has been reconfigured ready to install the new subscriber.

The subscriber has cleared the line of sight of undergrowth and their antenna is now showing online; we will reconfigure their router on our next trip. **Action: Phil, Joe**

One subscriber has completed their pre-installation work and we will complete their installation on our next trip. **Action: Phil, Joe**

The spare AirGateway will be collected on our next trip. **Action: Phil**

One subscriber has been asked to confirm they have line of sight. **Action: Subscriber**

7.1.4.2 Craig

We will review the situation when we have more experience of low level links over water or other options become available. **Action: Phil**

7.1.4.3 Achmore

One new installation has been carried out since the last report. We are waiting on an installation date from one subscriber. **Action: Subscriber**

7.1.4.4 North Strome

One subscriber has been asked to confirm they have line of sight. **Action: Subscriber**

7.1.4.5 Other installations

Work is temporarily suspended on the Creag Mhaol relays whilst the Argocat is repaired. **Action: Phil**

7.1.5 Customer Contracts

All contracts have now been located and filed. **Completed**

There were no objections from subscribers to our proposal to drop the option to pay a surcharge rather than an automatic increase. Terms and conditions will therefore be amended for all new contracts and existing subscribers notified of the change. **Action: Phil**

7.1.5.1 Terms and Conditions

7.2 Changes for next month

7.2.1 Additional Management tools / reports

Management Reporting Software upgrades. No progress this month. **Action: Phil**

Software to check the configuration of different types of equipment - no progress this month **Action: Phil**

7.2.2 Potential personal safety issue

The new naming standard has been used for all the new installations. **Action: Phil, Joe**

7.2.3 Additional equipment for subscribers

One subscriber has asked for a second access point to be installed to increase Wi-Fi coverage. A spare unit will be configured and installed. We are waiting on the subscriber for details of the installation. **Action: Subscriber**

7.3 *Volume trial*

7.3.1 *Review of the trial*

No progress this month. **Action: Phil**

7.4 *Terms of Reference*

Deferred

7.5 *Problem reporting procedure*

No progress this month. **Action: Phil**

8 **General topics**

8.1 *Documentation*

8.1.1 *Mast lease*

As we have heard nothing from the Highland Council we will drop this item from future minutes.

8.1.2 *Network Plan*

No progress this month due to other commitments. **Action: Phil**

8.2 *Relays*

8.2.1 *Creag Mhaol*

We have received a draft lease agreement from our solicitors; we have yet to go through this in detail. **Action: Phil**

8.2.2 *Plockton*

8.2.2.1 *Hosting agreement*

Nothing to report

8.2.2.2 *Equipment and tidy up*

The new dishes have arrived and will be configured and installed when traffic can be switched away from Plockton.

Action: Phil

8.3 *Backbone development*

8.3.1 *Plockton*

No issues.

8.3.2 *Lochcarron*

No issues.

8.3.3 *Creag Mhaol*

8.3.3.1 *Existing relays*

We will investigate hardware upgrades as the next step to reduce noise on the links. The Braeintra access point has been updated to the latest Nanostation hardware, we are still working on the best configuration. **Action: Phil**

8.3.3.2 *New relays*

Work is temporarily suspended on the Creag Mhaol relays whilst the Argocat is repaired. **Action: Phil**

8.3.4 *The Glen*

One access point will be upgraded to see if that will reduce the noise levels. No progress this month. **Action: Phil**

8.3.5 *Ardaneaskan*

For the moment further testing of the relay in Ardaneaskan has been suspended. **Completed**

8.3.6 *Leacanashie*

The line of sight to the new Strome High relay has been confirmed. Activation of the Leacanashie access point is waiting on the activation of the new Creag Mhaol relays. **Action: Phil**

8.3.7 *Portchullin (raised beach)*

The line of sight to the new Strome High relay has been confirmed. Activation of the Portchullin relay is waiting on the activation of the new Creag Mhaol relays. **Action: Phil**

8.3.8 *Craig*

We will review the link when other work is complete. **Action: Phil**

8.3.9 *North Strome*

The line of sight to the new Strome relays has been confirmed. Activation of the North Strome relay is waiting on the activation of the new Creag Mhaol relays. **Action: Phil**

8.3.10 *Ardnarff*

The line of sight from Ardnarff to the new Strome relay has been confirmed. **Action: Phil**

8.4 Testing

8.4.1 Management & accounting software

The subscriber usage email will be enhanced to give the specific amount of data used to allow subscribers to better manage their quotas. No progress this month. **Action: Phil**

8.5 Restoring power to the old TV repeater

8.5.1 Removal of old cable

No progress this month.

8.5.2 Protection of cable on the hill

No progress this month.

8.5.3 Backup Generator

No progress this month.

8.6 ISPs

8.6.1 ADSL Broadband installation at Plockton High School

No progress this month. **Action: Phil**

8.6.2 ADSL Broadband installation at Lochcarron

No progress this month. **Action: Phil**

8.6.3 ADSL Broadband installation at Achmore

We will make sure we can proceed with the order for an additional line when we need the extra capacity. **Action: Mary, Joe, Phil**

8.7 Implementations

8.7.1 Phase 3 - Relays and creation of access points for the remainder of residents and connect trial subscribers.

Work on the new relays on Creag Mhaol is suspended pending repairs to the Argocat. **Action: Phil**

8.8 Company Logo

No progress this month. **Action: All**

8.9 General Data Protection Regulation (Data Protection Act)

Nothing to report this month

9 Director's training session

9.1 Configuring Ubiquiti and MikroTik equipment

We will organise another training session for all directors

10 Next meeting

Date of next monthly meeting Wednesday 20th February

The meeting closed at 8:30 pm