

Broadband Steering Group

Minutes of the Meeting held on the 19th November 2024 @ 7:30 pm at Fernaig House

1 Present and Apologies

Present: Phil Game, Mary MacBeth, Kath Smith, Neil MacRae.

2 Approve and adopt previous minutes

The previous minutes for September were proposed by Kath, seconded by Neil.

Copies of previous minutes are on our website at:-

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

3 Chairman's report

The planned October meeting had to be cancelled as Phil & Mary were not available; these minutes cover two months.

3.1 Bandwidth

The new VPNs have now been used several times and are working well making remote support much easier.

We are upgrading our performance monitoring to include latency as well as throughput peaks. **Action: Phil**

Our systems software has been updated to allow the "edge" routers to be configured automatically. Updates will be required to incorporate the performance monitoring using latency. **Action: Phil**

Since the last report there have been some log entries showing very brief failures of the Lochcarron internet connections, more investigation is required. **Action: Phil**

It has become apparent that some of the additional emails produced by the system which are reporting backbone equipment internet usage higher than expected are due to the use of the VPN. In due course our software will be amended to disregard VPN traffic as this distorts the logs. **Action: Phil**

3.2 False RADAR

There were 22 false RADAR events recorded since the last progress report (two months). None of these were on the link between Strome High and Strome Low relays which has been upgraded to 60 GHz. This link is running at 1,400 Mbps a little below the theoretical maximum of 1,600 Mbps. The Achmore High and Strome Low link is scheduled to be replaced by the new 60 GHz radios which will eliminate the FR events and increase throughput capacity. These upgrades will free up more frequencies in the 5 GHz range which will give us more choice for the remaining 5 GHz radios. The 22 logged FR events affected several access points with Ardaneaskan West recording the highest number. It is likely that we will see a change in the FR incidents due to implementing the new equipment. Once this settles down and we have enough data we will review the frequency map.

Most of the access points on Creag Mhaol are scheduled to be upgraded to units which will automatically map frequency channels to help better manage our frequency usage. **Action: Phil**

3.3 Creag Mhaol upgrades

We have started a major upgrade to the Creag Mhaol relays. The number of routers in use will be increased from two to three per relay all will be able to provide power to attached dishes. This will allow remote switching of all the radios and provide extra ports to allow WiFi connectivity at each relay, greatly simplifying testing changes "on site". All the subscriber access points will be upgraded to AC Gen 2 units. These units are faster and in theory, they should also boost signal strengths by a small amount. However, so far, in practise the units are showing a marked improvement both in the signal strengths and throughput speeds, much better than what was expected.

The upgrade of subscriber's access points on the Strome side of Creag Mhaol is complete. However for some reason, as yet not understood, OSPF (which manages the distribution of address between routers) is not working in a small number of instances. OSPF is a critical piece of software as it allows us to automate the recovery of any failed component. To get around the OSPF problem we have had to manually enter addresses which defeat the object of using OSPF. **Action: Phil**

Further work on Creag Mhaol will now be postponed until next year when the days start to lengthen. **Action: Phil & Mary**

3.4 Subscribers

Live subscribers	- 70
Waiting for activation	- 0
Waiting for subscriber's confirmation of details / deposits	- 0
Pending installations	- 0
Waiting for installations	- 12
Leavers since the last minutes	- 0
New joiners since the last minutes	- 0
Total	- 82

We received a request for an installation in Ardaneaskan which was subsequently withdrawn.
 We received a second request for an installation in Ardaneaskan and are waiting for input from the potential subscriber confirming that the line of sight is clear and can be maintained. **Action: Subscriber**
 No new installations this month.
 We have had requests for connections in Lochcarron, Strathcarron and Balnacra; once our existing commitments have been met we will see if these are feasible and schedule the work. **Action: Phil**

3.5 ISPs

Nothing to report

4 Secretary's report

4.1 Risk register

No progress this month.

4.2 Long term support plan

We have adapted our software to allow the automatic cloning of subscribers' routers, subscribers' antenna, subscribers' access points and backbone access points. Changes to add Edge routers and the latest AC Gen 2 subscriber's access points are being tested now. **Action: Phil**

In due course we will look for volunteers at "remote" sites who can hold and configure spare equipment. **Action: Phil**

4.3 Broadband in Achmore Hall

The Hall router will be switched for an AirRouter so that the hall committee can take control of the WiFi password.

Action: Phil

5 Finance Director's Report

Revenue for September

Brought forward

Balance			
Creditors		£4,382.53	
Debtors		£2,321.82	
Net			£2,060.71
Bank balance			£10,741.16

This month

Income	£655.50		£2,060.71	
Expenditure	£139.20			
P&L		£516.30		
Creditors			£32.00	
Debtors			£2,091.53	
Net				-£2,059.53
Adjusted P&L				-£1,543.23

Carried forward

Balance		£516.30		
Creditors			£4,414.53	
Debtors			£4,413.35	
Net				£1.18
Bank balance				£9,197.93

Revenue for October

Brought forward

Balance	£516.30			
Creditors		£4,414.53		
Debtors		£4,413.35		
Net			£1.18	
Bank balance				£9,197.93

This month

Income	£655.50			
Expenditure	£428.30			
P&L	£227.20			
Creditors		£37.00		
Debtors		£124.83		
Net			-£87.83	
Adjusted P&L				£139.37

Carried forward

Balance	£743.50			
Creditors		£4,451.53		
Debtors		£4,538.18		
Net			-£86.65	
Bank balance				£9,337.30

5.1 Outstanding Expenses Claims

One claim is outstanding.

5.2 Next year's tariff

Total number of bytes sold was 28,650 GB; which makes the break-even tariff for 4 fibre lines 206 GB per £1 and for 5 fibre lines 165 GB per £1.

The small external disk to replace the memory stick in The Dude server has not yet been purchased. **Action: Phil**

5.3 Outstanding subscribers' debt

Two accounts are in debit the subscribers have been informed. **Action: Kath**

One subscriber is not responding to emails, Phil will print and hand deliver the message. **Action: Phil**

5.4 Housekeeping

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

There was a small discrepancy between Kath's financial spreadsheet and Phil's; this was due to an unallocated payment in Phil's spreadsheet. Additional checks will be incorporated in Phil's spreadsheets. **Action: Phil**

5.5 Payments for installations of subscriber's equipment

All payments are up to date.

5.6 Subscriber Payment Errors

Nothing to report

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

After the storm on the 20th October blew through we saw that signal strengths to Braeintrā were down; all other subscriber's signal strengths recovered the following day. It was decided to leave Braeintrā on access point (AP) #1 even though signal strengths were down as damage to AP #2 and other equipment on the relay was unknown. We did not want to risk powering down AP #1, finding AP #2 was in an even worse state and then finding AP #1 could not be powered back up. However we received a report of extremely poor speeds in Braeintrā on the 31st October and so decided to take the risk and switch to AP #2. This improved signal strengths and speeds although they were still lower than the norm. The next maintenance trip to Creag Mhaol was on the 12th November and we then discovered that the Braeintrā AP #1 was in pieces (see attached photo), AP #2 was also slightly out of alignment. Before it was destroyed AP #1 was a LiteBeam 5AC with a separate reflector. It has been replaced with an airMAX Lite AP GPS which has a built in reflector although this means it has a slightly lower gain and so lower signal strength than the original unit. However throughput is still well over the limits imposed by our internet gateways. Both the original unit and its replacement are designed, built and tested to survive winds of 125 mph so it is likely gusts on Creag Mhaol exceeded that. It is worth noting that apart from the two Braeintrā access points there are four more LiteBeam 5AC on this relay. All the others survived the storm unscathed. We will look at the stats from the new access point before decided whether further upgrades are required. **Action: Phil**

The photograph below shows the two Braeintrā access points. The lower one is still intact, the upper one's reflector has broken away from its mount and is hanging loose having rotated 90 degrees.



7.1.1 Issues raised by Subscribers

7.1.1.1 *How can subscribers contact CMNet when the internet is down?*

We will investigate the options; ideally the CMNet support team needs to receive problem reports via email. No progress this month. **Action: All**

Phil's proposal to formalise subscribers' problem reports is being held back for the moment pending our investigations regarding sending emails when the network is down. **Action: Phil**

7.1.1.2 *Strome High Relay*

No issues

7.1.1.3 *Fernaig*

No issues

7.1.1.4 *Achmore*

Our systems software is showing one subscriber's AirRouter is offline, this is being investigated. **Action Neil & Phil**

7.1.1.5 *The Glen*

No issues

7.1.1.6 *Braeintr*

One subscriber has reported poor performance - this is down to obstructions in the line of sight of the subscriber's antenna. **Action: Subscriber**

One subscriber reported drop outs when using secondary access points. The mains LAN extenders have been replaced and we will review the situation when we have a few weeks' data. **Action: Subscriber, Phil**

7.1.1.7 *Craig*

We have asked a subscriber to check the line of sight for obstructions. **Action: Subscriber**

7.1.1.8 *Ardaneaskan East*

No issues

7.1.1.9 *Ardaneaskan West*

No issues

7.1.1.10 *Leacanashie*

No issues

7.1.1.11 *North Strome*

The primary North Strome access point based on Creag Mhaol failed and has been replaced. **Completed**

7.1.1.12 *Strome Ferry*

No issues

7.1.1.13 *Ardnarff*

Poor speeds between buildings have been traced to mains LAN extenders not connecting properly probably caused by "noise" on the mains power these will be replaced with radios to link the buildings. We delivered another bracket and fitting for the subscriber to install. **Action: Subscriber**

7.1.2 Usage quotas

The monthly total for September was 10.6 TB, the daily average was 355 GB, with a peak usage of 556 GB on Monday 2nd.

No one exceeded their quota in September.

The monthly total for October was 11.8 TB, the daily average was 382 GB, with a peak usage of 555 GB on Saturday 19th.

CMNet peaks since operations started; highest average daily usage 406 GB, highest single days usage - 708 GB, highest monthly usage - 12.6 TB.

No one exceeded their quota in October.

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 Planned upgrades of equipment

7.1.4.1 *Fernaig*

The upgraded access point has been configured and is ready to install. **Action: Phil**

7.1.4.2 *Achmore*

The upgraded access point has been configured and is ready to install. **Action: Phil**

7.1.4.3 *The Glen*

A new unit has been configured to replace the dish on Creag Mhaol; it and a backup will be installed when weather permits. **Action: Phil.**

7.1.4.4 *Braeindra*

The upgraded access point has been installed and is under trial. **Action: Phil**

7.1.4.5 *Craig*

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

7.1.4.6 *Ardaneaskan East*

The upgraded access points (primary and secondary) have been tested and installed. **Completed**

7.1.4.7 *Ardaneaskan West*

No issues

7.1.4.8 *Leacanashie*

The upgraded access points (primary and secondary) have been tested and installed. **Completed**

7.1.4.9 *North Strome*

The upgraded access points (primary and secondary) have been tested and installed. **Completed**

7.1.4.10 *Strome Ferry*

No issues

7.1.4.11 *Ardnarff*

No issues

7.1.5 *Backbone relays*

7.1.5.1 *Plockton*

We will check the installation and apply a second coat of paint to the school wall. **Action: Phil & Mary**

The hardware has been reconfigured and replaced. **Completed**

7.1.5.2 *Achmore*

The 60 GHz dish mount will be upgraded. **Action: Phil**

An operating system upgrade to the Raspberry Pi corrupted the micro SD card, the unit has been recovered the operating systems upgrade has been installed and the unit is being configured so it can be replaced. It turns out that the new OS is not compatible with Remote Desktop and so the OS will have to be downgraded to an earlier version **Action: Phil**

7.1.5.3 *Lochcarron*

No issues.

7.1.5.4 *Other relays*

No issues.

7.1.6 *System monitoring servers*

The MikroTik server ("The Dude") suffered from yet another memory stick failure and had to have its database restored from a backup. The memory stick will be replaced by an external disk. **Action: Phil**

In the long term AirControl will be replaced by the new Ubiquiti monitoring software. **Action: Phil**

7.1.7 *Documentation*

Phil is part way through a document to list the options for automatic recovery of failures and loss of capacity. No progress this month. **Action: Phil**

7.1.8 *Customer Contracts*

One contract is outstanding; we have chased the relevant subscriber. **Action: Phil**

7.2 *Changes for next month*

7.2.1 *Additional Management tools / reports*

Management Reporting Software upgrades. 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**

7.2.3 *Additional equipment for subscribers*

Nothing to report

7.3 *Volume trial*

7.3.1 *Review of the trial*

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

7.4 *Terms of Reference*

Deferred

8 General topics

8.1 Documentation

8.1.1 Creag Mhaol

We have received a draft lease agreement from our solicitors; we have yet to go through this in detail. We will need to reconfirm all the GPS coordinates of the relays before we can proceed; priority will be given to completing the set up of the relays on Creag Mhaol. No progress this month. **Action: Phil**

8.2 Backbone development

8.2.1 New relays

8.2.1.1 Completed

No progress this month.

8.2.1.2 Next steps

The new relay automated recovery algorithms are being tested (some rather unexpectedly)

The buried mains power cables need to be permanently marked and documented. **Action: All**

8.2.1.2.1 Portchullin (raised beach)

The Portchullin enclosures will be upgraded. **Action: Phil**

Re-align the existing Portchullin Access Point

Install test equipment in Portchullin

8.2.1.2.2 Reraig

We are waiting for a subscriber to provide details of the land they own so we can determine where to install their relay.

Action: Subscriber

8.3 Testing

8.3.1 Management & accounting software

Nothing to report

8.4 Restoring power to the old TV repeater

8.4.1 Removal of old cable

No progress this month.

8.4.2 Protection of cable on the hill

All the cable on the hill has been buried but the routes still need to be marked.

8.4.3 Backup Generator

No progress this month.

8.5 ISPs

Nothing to report

8.6 Implementations

8.6.1 Phase 3

8.6.1.1 Ardaneaskan East

All installations have been completed.

8.6.1.2 Ardnarff

One installation needs to be upgraded. **Action: Subscriber**

8.6.1.3 Strome Ferry

One installation is waiting to be scheduled. **Action: Subscriber**

8.6.1.4 North Strome

All installations have been completed.

8.6.1.5 Achmore

One installation is waiting to be scheduled. **Action: Subscriber**

8.6.1.6 Portchullin

New enclosures have been purchased to act as replacements for the corroded units. **Action: Phil**

8.6.1.7 Craig

All installations have been completed.

8.6.1.8 Leacanashie

All installations have been completed.

8.6.2 Phase 4 - Further investigations / backbone development required.

8.6.2.1 *Ardaneaskan West*

8.6.2.2 *Reraig*

8.6.2.3 *Lochcarron*

8.6.2.4 *Strathcarron*

8.6.2.5 *Balnacra*

8.7 **Company Logo**

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

8.8 **General Data Protection Regulation (Data Protection Act)**

Nothing to report

9 **Director's training session**

9.1 **Configuring Ubiquiti and MikroTik equipment**

Refresher training will be scheduled as required.

10 **AoB**

11 **Next meeting**

Monday 20th January at 7:30 pm

The meeting finished at 9:00 pm