

Broadband Steering Group

Minutes of the Meeting held on the 24th September 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 August were proposed by Neil, seconded by Mary.

Copies of previous minutes are on our website at:-

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

3 Chairman's report

3.1 Bandwidth

New Plockton gateway hardware has been installed with an updated configuration to match the standard used in Lochcarron and Achmore. We have also added a VPN (Virtual Private Network) server which can be powered up remotely as required. A VPN server was also installed in Lochcarron; so all three gateways now have a VPN server. The VPNs allow remote access for problem determination. They are also aids when making major configuration changes. Before we installed VPNs configuration changes affecting device addresses had to be applied working from the most remote device back to the closest as address changes will "disconnect" any devices further away from the source. The VPNs in Plockton, Lochcarron and Achmore allow connectivity to the "remote" part of the network via the internet. I.e. we can effectively route traffic out through one gateway and back in through another. **Completed** Our systems software has been updated to allow the "edge" routers (i.e. those interfacing directly to the internet) to be configured automatically. After the implementation of the new kit in Plockton the software will need to be updated.

Action: Phil

Since the last report there have been no more failures of any of the internet connections.

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 16 false RADAR events recorded since the last progress report, of these, 15 were on the link between Strome High and Strome Low relays. Subscribers have now been routed to bypass this link pending its upgrade to 60 GHz. The Strome High and Strome Low link is scheduled to be replaced by the new 60 GHz radios which will eliminate the FR events. This upgrade will also free up more frequencies in the 5 GHz range which will give us more choice for the remaining 5 GHz radios. 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 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

No new installations this month and no more are scheduled for the moment. Finally it did stop raining and we prepared to start the upgrade of equipment on Creag Mhaol but missed the opportunity due to the network issue reported in section 7.1.

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**

3.4 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 August

Brought forward

Balance	£2,351.46		
Creditors		£2,295.10	
Debtors		£2,183.37	
Net			£111.73
Bank balance			£10,380.26

This month

Income	£660.03		
Expenditure	£2,248.11		
P&L	-£1,588.08		
Creditors		£2,087.43	
Debtors		£138.45	
Net			£1,948.98
Adjusted P&L			£360.90

Carried forward

Balance	£763.38		
Creditors		£4,382.53	
Debtors		£2,321.82	
Net			£2,060.71
Bank balance			£10,741.16

August is the end of our financial year so the figures above show an annual surplus of ~£760. Last year we brought forwards a loss of ~£900 which will be offset against this year's surplus. However, as in previous years, this figure will change when we work out the HMRC tax liability as there will be tax allowances for some purchases this year.

5.1 Possible Attempted Fraud

There have been no more instances of attempted fraud on the bank account and we have had no feedback from RBS.

Completed

5.2 Outstanding Expenses Claims

No claims are outstanding.

5.3 Next year's tariff

The total number of bytes sold was 28,950 GB; which makes the break-even tariff for 4 fibre lines 208 GB per £1 and for 5 fibre lines 166 GB per £1.

We used this year's surplus to buy the following:-

- A mini PC to replace the ageing laptop that acts as a sever
- Aluminium sheet to make a trial temporary cover for the rusting enclosures
- Five stainless steel enclosures as permanent replacements for the rusting boxes

In addition to the above it was agreed that we would purchase a small external disk to replace the memory stick in The Dude server as we have now had 4+ fail. However this was not purchased by the end of August and so will be shown in next year's accounts. **Action: Phil**

5.4 Outstanding subscribers' debt

One account is in debit the subscriber has been informed. **Action: Kath**

5.5 Housekeeping

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

5.6 *Payments for installations of subscriber's equipment*

All payments are up to date.

5.7 *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*

We lost power to Creag Mhaol on the 27th August and this was quickly diagnosed as a problem with one the units on Creag Mhaol. We set about preparing the Argocat and collecting all the tools likely to be needed but then had to wait a few days until the weather improved on the 31st before heading to the top. We were prepared for a whole day looking for the problem but in the end the fault was found almost immediately. One of the Ubiquiti PoE power supplies was causing the RCD to trip. It turned out that this unit was full of water? In a bone dry enclosure? For good measure the enclosure door was gaffer taped.

We would like to thank everyone that volunteered to help and especially Jim Coomber who went out of his way to help us establish communications between "base camp" and "the tops".

Whilst up on Creag Mhaol we took the opportunity to check all the other relays, the central mains junction box is showing signs that the door seal is leaking - it will be replaced.

The Achmore High relay had suffered storm damage; one of the scaffold swivel couplers was broken which meant that the bracing pole was being held in place by the Ethernet cables and all the wire stays had come undone and were no longer stabilising the relay. The coupler was replaced; the wire stays repaired and secured by "Loctite" the following day.

All the other relays were in good condition and all the other enclosures were bone dry.

On the afternoon of the 18th we started to experience problems with the software that handles the automatic distribution of router configurations. The technical term being OSPF flapping - where the OSPF network software is constantly changing the routes on the network. This started whilst Phil was making configuration changes ready to upgrade kit on Creag Mhaol. However it's not clear that the changes were directly related to the "flapping". After consulting Dr. Google for possible cures we rebooted the routers - no improvement, we upgraded all the routers to the same version of software - no improvement. So to bypass the problem we partitioned the network and subsequently added all the configuration details manually. This is not the easiest problem to fix as the rogue software automatically distributes configurations - including those changes made to bypass the problem! Stopping and restarting the offending software on some routers has reduced the problem but not fully eliminated it. The manual configurations will remain in place for the moment. **Action: Phil**

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 & Kath**

7.1.1.5 *The Glen*

No issues

7.1.1.6 *Braeintra*

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 will be replaced. **Action: Phil**

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 August was 11.9 TB, the daily average was 382 GB, with a peak usage of 502 GB on Wednesday 21st.

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

One person exceeded their quota in August.

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 *Braeintra*

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

7.1.4.7 *Ardaneaskan West*

No issues

7.1.4.8 *Leacanashie*

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

7.1.4.9 *North Strome*

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

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 28st October at 7:30 pm

The meeting finished at 9:00 pm