



Air-Stream

Air-Stream  
Official Air-Stream Wireless Newsletter  
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## Air-Stream Direction 2014

Each year the committee discusses a project idea to focus on, and in previous years these have been very infrastructure related, pushing our network coverage far into the outer suburbs of Adelaide and beyond.

This year we want to focus on something that can involve all our members and that would benefit from their unique input. Since 2002 we have created an amazing community network infrastructure thanks to the efforts of dedicated people who are always striving to discover new ways to do things and enjoy experimenting with technology, new and old.

However, at times, we struggle to promote our own efforts and 'connect' with other parts of the community that do not immediately understand our purpose, but could benefit greatly by being involved. This is often due to the fact that

building a network of this nature is a very technical process. Many of us gain enjoyment just from that aspect, but when asked the popular question 'why' or 'what can you do with it', it is usually difficult to explain.

Thus we feel it's time to focus our energy on creating some simple ways to allow the Air-Stream network to 'self-promote' and to nurture some synergies with others in our local community. We have a great technical platform at our fingertips, so why not use it to demonstrate what it does best?

Hotspots are one great way to do this. Already we have a number of prominent sites around the network that offer a limited access connection via hotspot and a simple click-through disclaimer.

*Continued on Page 3*

## This issue

|                               |        |
|-------------------------------|--------|
| Air-Stream 2014 Direction.... | Page 1 |
| Network Team Update....       | Page 2 |
| Direction Update Cont....     | Page 3 |
| Node Spotlight....            | Page 4 |
| Who is the Committee?....     | Page 5 |
| UniSA Upgrades....            | Page 6 |
| What is Air-Stream?....       | Page 7 |

## Upcoming events

|                                    |
|------------------------------------|
| 26/03 - Members Meeting (Parkside) |
| 07/04 - Committee Meeting          |
| 30/04 - Members Meeting            |
| 14/05 - Committee Meeting          |
| 28/05 - Members Meeting            |
| 25/06 - Members Meeting            |

Have an event that should be listed here?  
Email [committee@air-stream.org](mailto:committee@air-stream.org)



Air-Stream

# Network Team Update

There has been a lot going on within the network team over the last few months. The appointment of a new Network Team brings new ideas and a fresh boost of energy to progress the network.

There are several new projects with the Network Team, these include both Upgrade, New Site Projects and improvements to the ongoing operation of the network. The majority of these projects are in the early planning phase.

## Core Node DHCP

A project that has been on the cards for a few years now is the implementation of DHCP on core node access points. The intention of this is to allow members to quickly get access to the network without the need for allocating an IP address from the NodeDB.

Having DHCP on an Access Point would allow members performing stumbles to quickly determine the viability of a client connection and give a better indication of the potential speeds available.

This project is expected to run for several months and will be gradually rolled out across the core network. The intention is to also provide the tools necessary on the Wiki for members to add the same capability to their own access points.

## Kewswick Upgrades

An upgrade for Keswick is planned, this includes the installation of a 5GHz sector providing coverage for members as well as the upgrade of the existing Pasadena 2 backbone. The installation of a new backbone to Torrens Park is also planned.

It is expected that this project will be underway within the coming months. Keep an eye on the Air-Stream Tracker ([tracker.air-stream.org](http://tracker.air-stream.org)) for updates.

## Highgate Park Upgrades

Highgate Park is possibly one of Air-Stream's most important core nodes. Hence it's time for some much needed love.

Highgate Park has two planned upgrades. The existing 2.4GHz sector antennas are planned for replacement by 5GHz Sectors. This would in turn allow members to have much higher speed connections into the site.

In addition to the installation of two new sectors the network team has identified that a major recable is required. The existing data cabling has been causing some issues for the last few years. It has been determined that with the planned upgrade of the sectors the existing cabling will no longer be capable of supporting the entirety of the hardware located there.

This project is going to require a significant amount of work in both the planning and implementation phases. If you are interested in helping out, contact the network team.

## Parkside Upgrades

Having been the site for our monthly members meetings for many years now Parkside is in dire need of an upgrade. With the failure of the 2.4GHz sectors at Highgate Park, Parkside is now offline. With the planned replacement of the sectors Parkside will have the ability to reconnect to the network using 5GHz.

In addition to the replacement backbone connection it is planned to also replace the ageing omni. This would allow members to connect using 802.11n during members meetings for higher speed and more reliable connections. Stay tuned to the tracker for updates on the upgrades.

## Gould Creek Rebuild

Gould Creek has a view of the northern and western suburbs that is only rivaled by those of EARC. New interest in the site has prompted the need to upgrade the existing equipment, much of which is no longer operational.

This project is in the early stages of planning and is expected to include the upgrade of the backbone and replacement of the omni radio. There is also talk of a potential

sector antenna installation.

Gould Creek is one worth watching as it is such a good location and could provide many opportunities for members when completed.

## New Core Node in Happy Acres

At a recent network team meeting it was decided to adopt a site in Happy Acres as a core node. This will mean that the site will be fully managed by the Air-Stream Network team.

Being a new project, considerable planning will be required before any installation is commenced.

As this project has only just been approved by the team for development there is very little information regarding the plans. Keep following upcoming issues of AirZine for the latest on this and other projects.

## Suntrix-Hermitage Build

As many of you may already know, the Suntrix-Hermitage build has been delayed. This is due to some extra requirements that need consideration when building structures within the Hills Face Zone. More documentation and formal building applications are now being drawn up to meet the council requirements.

As this requires a considerable amount of work the committee and network teams would appreciate any assistance from members or the public in getting this project moving again.

If you are interested in helping out the network team or committee on this or any other projects sent an email to:

[network@air-stream.org](mailto:network@air-stream.org) or  
[committee@air-stream.org](mailto:committee@air-stream.org).

Many hands make light work and it takes all of us to keep the network running.

# Air-Stream Direction 2014 - Cont...

Continued from Page 1

With some fine-tuning we are hoping to standardise hotspot deployment and extend this concept to create a polished content delivery system that will work seamlessly from anywhere in the network. We want the community to be able to both consume and share locally produced content with relative ease, and reach the audiences that matter to them.

With this in place, various methods can be employed to provide a selection of content which both showcases the abilities of our network infrastructure, and local community interests. We will then be able to create opportunities for local artists, musicians, technologists and community groups to publish media and information to a diverse audience.

Air-Stream members enjoy a wide range of locally hosted content already, from image galleries and open source file mirrors, to real time streaming media and Voice over IP services. The ubiquity of modern mobile Internet devices has been met with an influx of alternatives to mainstream media and we think local news, events, environmental issues, arts and entertainment would flourish on a 'home grown' platform like the Air-Stream network. Technology and media students could also find many uses for a locally focused delivery channel with the unmatched flexibility we can provide.

So where do we go from here? Thanks to our Network Team volunteers we are lucky enough to have some skilled hands that are dedicated to the maintenance and

growth of Air-Stream's core network. They are a busy bunch but we're sure they will get involved from a technical perspective.

We are looking to everyone for ideas and contributions.

Come along to the next members meeting where it will definitely be on the agenda. If you are unable to make it to the members meeting you can send us an email at [committee@air-stream.org](mailto:committee@air-stream.org) we would love to hear your ideas.

Written by Troy V



# ASLAN

SUPPORTING COMMUNITY WIRELESS NETWORKING IN SA

## COMPUTER LAN PARTY SESSION # 33 SAT 12 APRIL 2014 HEARTHSTONE

HEROES OF WARCRAFT COMPETITION  
44 AUDREY AVENUE, BLAIR ATHOL  
VISIT [AIR-STREAM.ORG/ASLAN33](http://AIR-STREAM.ORG/ASLAN33) OR FACEBOOK



# Air-Stream Node Spotlight

The Node Spotlight is a chance for members to show off their site, here are a couple of interesting ones that are a little different from the normal Air-Stream installation.



## PTAD (Deceased)

Air-Stream PTAD was loved by many and at the time was a game changer for Air-Stream.

During its life PTAD had many different hardware configurations, it was a site that saw many trials and hosted more different hardware configurations at any one time than almost all other nodes combined.

The life of PTAD was sadly cut short when the terms of occupancy of the building changed and no longer allowed Air-Stream access.

So what made PTAD special, other than a location that could see... Everything...? PTAD was a site build from scratch, before Air-Stream built there, there was no other radio equipment. This allowed us to do almost anything we wanted regarding masting and enclosures.

This allowed us to build two brand new masts, a walkway and house a wall mount server and radio enclosure.

There are some amazing pictures of the original build and various upgrades over the life of PTAD on gallery.air-stream.org



## Ottoway 3.0

Ottoway 3.0 as our resident build master Firefox has dubbed it is an independent node in the western suburbs.

To call this node special is an understatement, this mast is a mammoth. Guyed 60mm Mono-Pole cemented in with around 1 tonne of concrete at its base.

3.0 you may ask? This node has had several different stages, including a chimney mount that eventually caused the removal of the chimney so many hardware changes its impossible to know all the different hardware configurations that have been there.

Check out the NodeDB and gallery to check out where this node is connected and the various hardware configurations over the past couple of years.



## Bolivar (Deceased)

Yep that's right. There used to be an Air-Stream node on a caravan. And what a sight it was.

Strapped to the side of a caravan in a caravan park in Bolivar there was a 6.5m guyed mast. This mast consisted of 4 x star pickets and some creative placement of guy wires to keep it up in wind.

The hardware itself was somewhat unique, this site was connected to Air-Stream Paralowie via a 900MHz link. As almost every tree in the greater Adelaide region was in between the two nodes.

This site ran a Mikrotik RB433 with Ubiquiti SR9 and Hills 13dBi Yagi. The link was around 800m and provided speeds of 6-8Mbps on a good day.

During its existence it was a great talking point amongst members as many could not believe such a node existed, let alone the usage of 900MHz.

Thankfully this site is no more as the owner moved and was able to build a real connection into the network.



The Air-Stream committee consists of eight people voted in every year by the members at the Annual General Meeting. The committee is made up of people that are dedicated to progressing Air-Stream as a community and who manage the day to day administration of the organization on behalf of the members

It is often misunderstood what the committee actually does. The committee are the group of people that look after all aspects of administration of the club including, membership, equipment ordering, insurance, peering agreements, site access agreement, procedures and documentation as well as funding allocation.

What makes a good committee members? A committee members shall be a natural person who is focused on improving Air-Stream as a community and make decisions on behalf of the members as a whole.

The committee looks after all these and many more aspects of the club to keep it running and ensure it will continue operating into the future.

What about the network infrastructure? The committee does not directly manage the network. This is the role of the network team. The committee does however provide consultation and recommendations to the network team and has the final say when allocating funding to projects.

How does one become a committee member? Becoming a committee member is the easy part, all committee members are nominated by a fellow member and then the membership votes in their 8 committee members at the AGM. After the AGM the initial meeting (generally in January) the committee nominates the roles and specific responsibilities of the individual members.

# Who is the “Committee?”

As a minimum there are three roles, Chairman, Treasurer and Secretary. Who is on the committee? The current committee members include:

- Troy Vodopivec (hat) - Chairman
- James Nobes (Stormshaker) - Treasurer
- Michael Kellow (nekrn) - Secretary
- Sam Burney (Tanuki) - Network Coordinator
- Shawn Zeppel (DJ\_HIP) - Membership Liaison
- Sam Greenwood (dragoon) - Procurement Officer
- Tony Dalmeyer (tomeyer) - Fund raising Officer
- Nathan Cooke (Firefox) - Training Adviser

These people were voted in by the members at the 2013 AGM and will hold their positions until the following AGM in November 2014.

The committee is comprised of people

with a diverse range of skills including IT managers, A Software Engineer, Mechatronic Engineer, Safety Officer and a business manager.

It is a common misconception that committee members need to have networking knowledge, often being detached from technical aspects of the network makes for better committee members.

All committee members share the same weight when making decisions as any other committee member. The various roles have no more power than any other role. A committee member has no more rights than any other member of the club.

The committee is here to serve the members and progress the club as whole.

If you have any questions or suggestions for the club in any aspect you can contact the committee by emailing us or by attending one of our monthly members





Written by Nekron

# Air Stream UniSA Upgrade

Air-Stream UniSA is one of Air-Stream's most important nodes in the northern suburbs of Adelaide.

The Air-Stream UniSA node is located in Mawson Lakes on the UniSA Library. This site provides critical connectivity between multiple northern core nodes and also houses one of the most active sectors with an ever increasing number of clients connected.

The UniSA node recently had a much needed major backbone upgrade. After the upgrades at the EARC node there is a significant increase in traffic to the far north of the network. This was straining the connection between UniSA and Gulfview heights as GVH was previously connected to the sector. It was identified by the Network Team and Committee that this was a prime candidate for an upgrade. The proposal consisted of

replacing the unused connection to Para Hills 5 to a Ubiquiti Rocket Dish and Rocket M5 connecting to Gulfview Heights. This upgrade is now fully operational and we can easily see the performance increase for both the clients on the EARC sectors as well as those on the UniSA sector.

The upgrade team consisted of Nekron and Blue18. The upgrades started at 8:30am and took roughly an hour to complete. This included the removal of the existing 26dBi grid and box moving the Ubiquiti Nano bridge up higher on the mast and the installation of the new Rocket Dish just below the solid stays. This allowed for the most stable positioning on the mast as this area is subject to some pretty strong winds.

In addition to the wireless upgrades the fibre backbone link to the Mawson Center was modified to allow for better reliability. Previously the RB2011 at the UniSA end of

the backbone was not connected to the UPS. With a minor cable change this is now on the UPS circuit which should mean that during future power outages we should be able run uninterrupted for longer.

Check out the gallery for pictures of UniSA and the Mawson Center as the views are pretty cool.





# What is “Air-Stream?”

Air-Stream Wireless was established by a handful of dedicated wireless enthusiasts in 2001 and became an Incorporated Association in September 2002. It is the first and largest Community Wireless Network (CWN) in South Australia to successfully build a Wide Area Network (WAN) using wireless technologies.

With hundreds of active members the network now forms part of the largest community wireless network in Australia and is continuing to grow with the help of wireless enthusiasts and radio amateurs across Adelaide and Australia.

## Our Mission:

Air-Stream Wireless is a non-profit community group who use Wireless LAN in combination with software and other technologies to deploy a Wide Area Network (WAN) that supports community participation, local content and communications.

## Strategic Plan:

For this mission to become reality members of Air-Stream Wireless shall work together to achieve the following goals:

Maintain and develop Core Router Nodes, Network and Member management systems to ensure continuity and reliability for all members.

Continued to grow the network and promote the benefits of Community Wireless Networks in Australia.

Continue to provide education on the regulatory framework for running a Community Wireless Network such as the “Public Park Concept”

Provide an open platform for members, developers and other community groups to discuss and share information on the effective use of wireless technologies.

Develop tools that allow members to easily access distribute and create local content.

Deploy numerous free community hotspots in public spaces, to garner broader community awareness, participation and sponsorship for Air-Stream Wireless.

Promote the benefits of community participation, support the production and distribution of local content and communication systems.

Air-Stream Wireless supports Free and Open Source Software (FOSS) which is widely used across the network to host essential services such as the Members Database, DNS and Email which have all been developed voluntarily by members.

Similarly, the wireless equipment deployed uses a part of the radio spectrum which is also free to be used by anyone, provided the radiated power is kept down. Called the “Public Park Concept” it is relatively unregulated by the Australian Communications & Media Authority (ACMA) who allow all users the same rights regardless of who they are - business, telecommunications carriers, government departments or private citizens.

## Have a suggestion?

Do you have a suggestion for AirZine? Are you interested in writing an article? Or even have some cool pictures that you think followers of Air-Stream may enjoy. We want to hear from you.

Currently there are a few dedicated members that prepare content for AirZine.

Doing this is a very time consuming process, we are currently on the look out for anyone that is interested in submitting content for upcoming issues. If you are interested in writing a regular column or providing regular content we would love to publish it.

Content is not just limited directly to Air-Stream related activities, we are interested

in all aspects of Wireless, including Amateur Radio, Electronics, Hardware Hacking, Linux and Open Source Software and many more fields.

If you are interested in contributing to AirZine.

Send us an email at:

[committee@air-stream.org](mailto:committee@air-stream.org)