

innovation

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annual report



vital enabling infrastructure
underpinning the nation's
innovation agenda



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2015 Financial Highlights

43.3%

Average annual growth
in GB received from all
sources for Members
(2010–2015)

Inbound traffic
from all sources
up by

54.78%

Cost of off-net traffic
to Members per GB

2010	2015
\$4.00	\$1.20

Average
annual
reduction **21.4%**

Commonwealth
funding contributes



\$38.1
million

to network infrastructure
(2012–2015)

1.8%

Average annual increase
in aggregate Members'
subscriptions, access and
traffic charges
(2010–2015)

Member subscriptions
as % of total income

2010	2015
 73.8%	 45.6%

(incl access and traffic)

In 2015 aggregate
Members' subscriptions,
access and traffic
charges reduced by

1.1%

International Traffic

34%

of received traffic

\$92.3
million



committed
to future
operations

A message from
the **chair**


2015

has delivered **outstanding value** to shareholders
- aarnet is recognised
as **vital**, enabling
infrastructure
underpinning the
nation's **innovation**
agenda



Dear Shareholders

2015 marks my 4th year as Chair of the AARNet Board, and I am pleased to report that it has been another very successful year for AARNet. A great year for AARNet is one that not only generates a solid business performance, but one that enables our customers to improve the performance of research and education in Australia and which in turn sustains our global competitiveness.



For almost 27 years AARNet has been reporting on the development of a world-class national research and education network and its excellence in network operations. This is an update about our widespread engagement and the value that we are delivering to our shareholders. It showcases the national and international collaboration of our customers and how they have capitalised on the opportunities that the network has made available to them.

Today AARNet is a model business, an exemplar of academic/business partnership that has endured in the highly regulated world of telecommunications to become one of the world's leading National Research and Education Networks (NREN)s. We are increasing our investment in infrastructure and services for Australia to remain connected to our international NREN partners, who together operate some of the world's most advanced networks and who underpin the advancement of science and innovation.

We are on the verge of an exciting new era for AARNet. We are experiencing a paradigm shift in which scientific process and innovation are beginning in the virtual world of modelling and simulation before moving to the real world of the laboratory.

Sophisticated analysis tools and visualisation software are being used to mine massive amounts of experimental data from the health, life and environmental sciences. In Australia, the Square Kilometre Array (SKA) computing platforms will develop new algorithms and codes to exploit hardware technology and technology transfer for the world's largest radio telescope project. AARNet will be at the very heart of enabling all of these changes.

The rapid development of emerging economies around the globe is resulting in more individuals and organisations valuing education and relying on the outputs of research to underpin their rapidly increasing economies and living standards. Network technology is making it increasingly easier to reach, and serve the broader education communities both nationally and internationally.

Australia is located in the right place at the right time in the Asian region in this the "Asian century". The international network will rise in importance, as the need to capitalise on collective research capabilities around the world becomes more pressing. This presents both opportunities and challenges, particularly in connecting to Asia, and a key focus for 2016 will be upgrading our network west to Singapore.

As Chair of the Board at AARNet I would like to thank my fellow Board Members, the CEO Mr Hancock and the Management and Staff of AARNet for their professionalism and dedication.

I sincerely believe that our people, and core capabilities provide a unique opportunity to play a lead role in this new globally connected era. During the year we welcomed Dr Christine Burns and Mr Rob Fitzpatrick to the Board, and I wish to offer my sincere thanks to Professor Ian Young AO, who retired from the Board in 2015. Finally, I would like to thank the Commonwealth Government for its continued support.

We are confident that we are creating great value for you and the other members of our community and I have no doubt that 2016 will be an equally successful and exciting year.



Gerard Sutton AO
Chair, AARNet Board



A message from the CEO

2015

a year of **delivery**
to our **customers**

This past year has seen AARNet ramp up its focus right across its customer base, from our 38 Shareholder Universities and the CSIRO, to our schools, TAFEs, health partners and our galleries, libraries, archives & museums. In addition, AARNet stepped up its interactions with both Federal and State Governments in order to ensure that the value and contribution of its services can be fully integrated into the planning and deployment of the Science, Education, Research and Innovation Agenda across the country.



The health and medical research sectors were also a focus this past year. Our Eduroam wireless service is now in widespread use across the health sector in most states of Australia and we connected new medical research institutes and health precincts to AARNet. The AARNet network once again exceeded both the core network availability metrics and delivery to our customer premises equipment. Of significance was the successful completion of the roll-out of our next generation AARNet 4 backbone network, which provides significant increase in capacity to 100 gigabits per second across the country ensuring even higher levels of performance at a lower cost. In addition to this quantum leap in capacity, AARNet has pushed the boundaries by developing two new world-leading technologies.

SDN (Software Defined Networking) is an emerging new technology, focused on teasing apart the data forwarding function of a piece of network equipment from its path calculation function, providing greater network flexibility at a lower cost. AARNet developed an SDN testbed which was officially launched at the Australian Open Networking Foundation symposium in Sydney with participating universities and the CSIRO linking to two international testbeds in the USA.

AARNet has also developed a Science DMZ offering as part of a broader focus on "Data Access" and "Data Movement" in the eResearch environment aimed at accelerating the transfer of big datasets into and out of campus networks. AARNet has implemented Science DMZ deployments simulating the connections deployed at RDSI Nodes, which have already proved invaluable in demonstrating peak data transfer performance to our research community.

During 2015 AARNet accelerated its focus on providing products and solutions 'above the network layer'. Zoom, our cloud based video product, grew strongly with more than 120,000 participants across 36,000 meetings and has expanded to 31 organisations. The CloudStor phenomenon continued for both sending and storing 'big data' with almost 20,000 researchers using the system, and working with our international partners and CERN developing a global cloud mesh to share data across international collaborations. Our Enterprise Services assisted customers with off-site backup data centre services, network blueprint reviews and ongoing support with network troubleshooting, supplier design sanity checks and change management processes.

In 2015 AARNet delivered on its international engagement by continuing to drive the development for ongoing funding for TEIN 5, the 5th generation of the Trans Eurasian Information Network and we were also responsible for the deployment of Eduroam in 7 beneficiary countries throughout Asia.

AARNet was actively engaged in the Global CEO's Forum, including in the development of a global network infrastructure, the delivery of global products & solutions platforms and the launch of the global "In the Field" website highlighting the extraordinary array of global collaborations between national research & education networks serving teaching, learning and research.

Finally, I would like to thank the AARNet Board for their strong support and guidance throughout the year. I would also like to extend my sincere gratitude to the AARNet Advisory Committee and its Chair, Jeff Murray, for their reinvigorated approach to assisting AARNet to meet its goals throughout 2015. I would like to personally congratulate the outstanding contributions by each and every employee of AARNet this past year. Their efforts are always above and beyond the call of duty and have positioned AARNet as a world leader in the global research and education community and in our delivery to our customers.

Chris Hancock
Chief Executive Officer

Selected Financial Data (\$m)	2004	2005	2006	2007	2008*	2009*	2010*	2011*	2012	2013	2014	2015
Net Assets	\$36.8	\$43.5	\$60.2	\$65.1	\$65.8	\$74.9	\$82.6	\$92.3	\$107.9	\$130.3	\$150.4	\$179.5
Surplus	\$11.2	\$6.6	\$16.8	\$4.9	\$0.7	\$8.1	\$8.7	\$9.9	\$15.3	\$22.0	\$19.8	\$29.3
Net Tangible Assets	\$11.6	\$19.5	\$21.2	\$20.8	\$27.3	\$34.2	\$35.1	\$40.0	\$52.0#	\$64.2	\$79.4	\$109.8
Cashflow from Operations	\$6.9	\$10.8	\$14.7	\$19.2	\$21.0	\$26.3	\$31.5	\$22.4	\$29.4	\$45.5	\$31.5	\$45.9

*The figures above have been restated to reflect the change in accounting policy adopted in 2012. Refer to note 1(c) in the 2012 Financial Annual Report



Improving how complex diseases are treated

AARNet collaborated with the University of New South Wales Australia (UNSW) and the Garvan Institute of Medical Research to develop a specialised high-performance network for Garvan's Kinghorn Centre for Clinical Genomics (KCCG). This facility, the largest genome sequencing centre in the southern hemisphere, provides Australian genomics researchers with cost-effective whole human genome sequencing.

Genomics is generating new insights into the genetic causes of diseases such as cancer, diabetes, heart disease, and congenital disorders, and promises to transform healthcare.

In 2003 the international Human Genome Project announced the first sequence map of a human genome, spending 13 years and US\$3 billion to do it.

Thirteen years later, Garvan's KCCG is able to sequence 150 whole human genomes every 3 days, at a cost to Australian researchers of less than A\$2,000 per genome.

At full capacity, the centre can sequence 18,000 whole human genomes per year and is expected to generate in excess of 4.5 petabytes of data over the next three years.

Dr Warren Kaplan, Garvan's Chief of Informatics says at full capacity KCCG will be moving at least 4 terabytes of data per day from the sequencing centre to the National Computational Infrastructure (NCI) supercomputing facility in Canberra.

Designing a specialised network for a new era of genomics research

UNSW IT partnered with AARNet for the design and deployment of the network infrastructure required for the sequencing centre. The network provides high-speed interconnections between Garvan/UNSW and the NCI supercomputing facility.

"There are more than 70 Garvan bioinformaticians working with local and international collaborators on genomic data, and we have mind-bogglingly large amounts of genomic information that needs to be moved over the AARNet network for analysis and storage at the NCI.



The volume of data is increasing exponentially so we require a scalable network to meet our needs into the future," says Dr Kaplan.

Researchers from across Australia and around the world will be able to analyse their Garvan-generated genomic information in a secure environment by using the NCI's supercomputer or high-performance cloud computing infrastructure.

Enabling access to a world-class genome reference collection

In addition, Garvan is creating a reference collection of healthy human genomes from participants in existing longitudinal study cohorts. The Medical Genome Reference Bank (MGRB) project is part of a \$24 million genomics research collaborative funded by the NSW State Government.

The size of the datasets means that downloading them to the researcher's laboratory is impractical. Instead, researchers will access and analyse the data through tools and computing facilities underpinned by AARNet at NCI.

With some of the most cost-effective genome sequencing facilities in the world, and genomic collections of international importance such as the MGRB, Australian researchers are positioned to take a leading role in emerging genomics research.

"We might be doing the genome sequencing. But we're doing it on behalf of the genomics researchers of Australia. And we have a responsibility to them: to be able to say with regards to the challenges—be it storage, be it computing—we have addressed those. You do not need to worry about that. And that's really the big advantage to us."

What our customers are saying

"The reality is, we at Garvan are moving towards being very connected to the world and we see AARNet as the provider of the underlying fabric that makes it all happen."

DR WARREN KAPLAN, CHIEF OF INFORMATICS, GARVAN INSTITUTE OF MEDICAL RESEARCH

■ Opposite page: DNA molecules.

This page, left to right: Genomic sequencing laboratory, Garvan Institute of Medical Research, Sydney Australia, 2014.

Dr Warren Kaplan.

2015

- a year in review

Managing the network is our primary function

AARNet operates a world class IP network, equivalent to international "Tier One" ISPs, where our customers receive 100% backbone network reliability with no service degradation during outages, planned or otherwise.

However, continuity in performance over such vast geographic distances can only be delivered by a well-architected network. Our operations group are the engine room of our organisation. Network reliability again delivered 100% uptime over our own infrastructure and 99.98% in end to end performance. Faults and scheduled maintenance again went unnoticed by the user community as a result of deploying alternate paths to cover outages.

Our customers are increasingly valuing this reliability, commissioning us to build diverse paths into the network backbone.

This year there were several significant outages on the Sydney to Guam and Perth to Singapore links which impacted on network performance. Connectivity to the Asia network was preserved by deploying alternate paths through North America and our peering with other NRENs.

One of the distinguishing features of a research and education network is the careful capacity planning necessary to remain ahead of the demand curve. AARNet closely monitors all of its circuits to ensure sufficient capacity. The peak demands of the academic year determine the capacity for a highly available and diverse network. AARNet continually monitors the load, as a percentage of the capacity of the link rather than the absolute volume of traffic, to determine required network upgrades. 34% of all received traffic is from international destinations meaning Australian research and education is increasing its collaboration internationally and domestic peering now accounts for 69% of all traffic.

10Gbps international commodity upgrades to Seattle, San Jose, Palo Alto and Los Angeles

Not all international research and education partners are connected to their national NRENs, meaning their traffic must transit our commodity links rather than our research links on SXTransPORT.

AARNet has now some 4 commercial grade PoPs in the USA. This delivers diversity and redundancy and allows AARNet to safely drive all circuits to maximum capacity.

Black Spots Fibre benefits Broken Hills

One of the most beneficial programs from the Commonwealth Government has been the RBBP or Blackspots Program announced in February 2009.

The RBBP is separate to the NBN and AARNet has an IRU for services on all sections of the RBBP. This year we commissioned the Shepparton to Adelaide link creating diversity for South Australia and providing capacity into Broken Hill.



SXTransPORT provides vital research infrastructure to the USA

Southern Cross Cable Networks (SCCN) is a most valued partner for AARNet.

Now into its 12th year, the sponsorship capacity known as SXTransPORT plays a critical role in astronomy projects such as the Square Kilometre Array (SKA) and the Australian Square Kilometre Array Pathfinder (ASKAP) projects. These 40Gbps links to the US provide for 'big data' transport ahead of anticipated demand, and ensures that Australia continues to play an integral role in major research programs, such as genomics, radio astronomy, climate modelling and high energy physics. AARNet customers benefit greatly from optimised international unmetered use of the network regularly achieving data streams of 7Gbps.

Rolling out AARNet4

AARNet completed the rollout of AARNet4, the 4th generation of the network architecture.

This replaced the previous AARNet3 routed backbone with a distribution layer of 100Gbps-capable devices, capable of layer-2 and layer-3 VPN

services in addition to the current routed internet access. It is enabling the use of more economic customer equipment.

AARNet4 backbone network is now fully implemented, with a minimum of 2 core Peer-Edge (PE) routers at diverse locations in each state interconnected at a minimum of 100Gbps. The majority of Universities and major customers have now migrated to AARNet4 and are now taking advantage of the increased performance and new services available.

Building the last mile

While the network design builds in diversity and redundancy across all elements of the backbone, the last mile will continue to be a significant undertaking for AARNet.

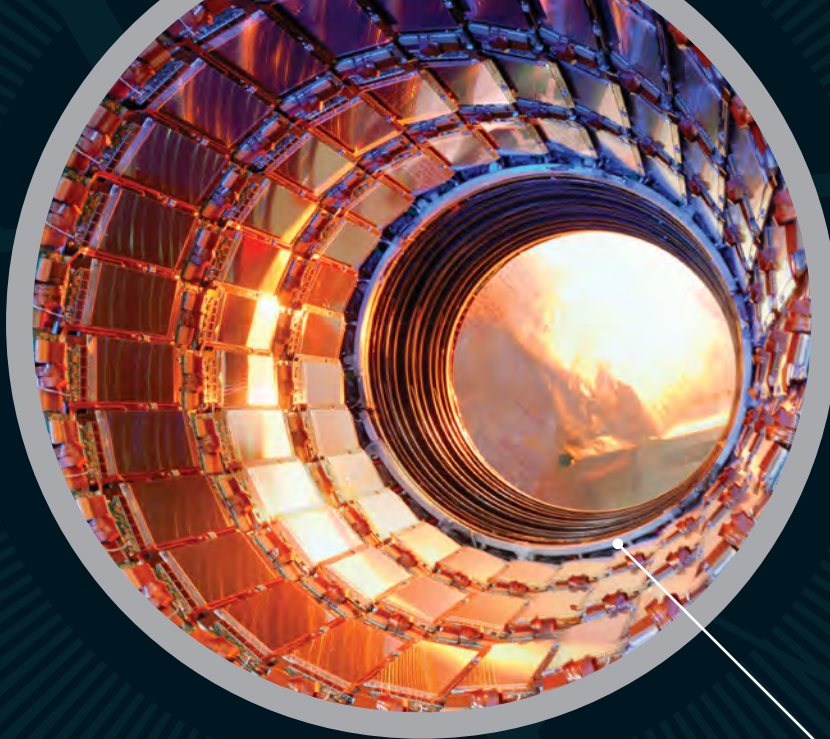
In 2015, AARNet completed many thousands of pair/kms increasing access to, and diversity for, the AARNet backbone network. AARNet gratefully acknowledges the Commonwealth Government, which through the Education Investment Fund (EIF), has allowed AARNet to build dark fibre in nearly every state.

Mt Gambia and Whyalla were significant undertakings and a great benefit for regional South Australia. All of these

fibre builds allowed AARNet to provision new services for many new and existing customers now within reach of the network.

Our customers' focus on data centre access for cloud services for Amazon Web Services, Microsoft Azure, Rackspace and many others has given rise to many new connections into the network. AARNet has also leveraged its new infrastructure to double the investment by exchanging fibre pairs with other carrier partners. This in turn has extended the AARNet reach to new customers and increased diversity for existing customers.





How the secrets of the universe are discovered

What are the basic forces that have shaped our Universe since the beginning of time?
How will they determine our fate?

These are the fundamental questions driving the ATLAS experiment at the Large Hadron Collider (LHC) at the CERN (European Organisation for Nuclear Research) laboratory in Geneva, Switzerland.

Physicists are recreating the conditions of the Universe just after the 'Big Bang'. They are searching for new discoveries in the head-on collisions of protons of extraordinarily high energy and these discoveries will change our understanding of energy and matter. Following the discovery of the Higgs boson, data from the ATLAS experiment allows in-depth investigation of the boson's properties and the origin of mass.

A global collaboration

Data processing for some 500 trillion collisions at the LHC requires fast and reliable research networks spanning the globe with processing facilities distributed over those networks. The day never ends for the ATLAS experiment – it is a true global collaboration involving thousands of scientists from more than 177 universities and laboratories worldwide.

Australia's involvement

Physicists are recreating the conditions of the Universe just after the 'Big Bang'.

The Australian Research Council Centre of Excellence for Particle Physics (CoEPP) based at the University of Melbourne is Australia's leading research centre in high-energy physics. The Centre is a collaborative research venture between the University of Melbourne, the University of Adelaide, the University of Sydney and Monash University.

Through its work on the ATLAS experiment at the LHC in CERN, CoEPP researchers contributed to the Higgs boson discovery in 2012 and provided valuable, and essential, resources to the Worldwide LHC Computing Grid (WLCG).



The WLCG consists of 170 computing centres in 42 countries, linking up national and international grid infrastructures.

The mission of the WLCG project is to provide global computing resources to store, distribute and analyse the ~30 Petabytes (30 million Gigabytes) of data annually generated by the LHC. The CoEPP research computing team provides grid-connected storage and computing resources via its ATLAS Tier 2 grid site.

"It's a very exciting time for physicists. The Higgs boson discovery is a milestone for the physics community, and for human understanding of the fundamental laws that govern the Universe. As scientific discoveries go, this is up there with finding a way to split the atom.

Australian research groups have been part of this for the best part of 25 years," says CoEPP Director Prof Geoffrey Taylor.

The role of networking

"The site's high availability and reliability has been achieved as a direct consequence of the stellar performance of the underpinning network connectivity between the Australian Academic Research Network (AARNet) and corresponding WLCG Tier 1 site at TRIUMF (Canada's national laboratory for particle and nuclear physics) across AARNet's trans-Pacific SXTransPORT link. Sustained transfer rates of High Energy Physics data sets greater than 7Gbps between North America and Australia are not uncommon," says Prof. Taylor.

AARNet provided CoEPP connectivity to the WLCG during the famous first run of the LHC and now for its second run, where even greater demands are placed on the underlying computing infrastructure.

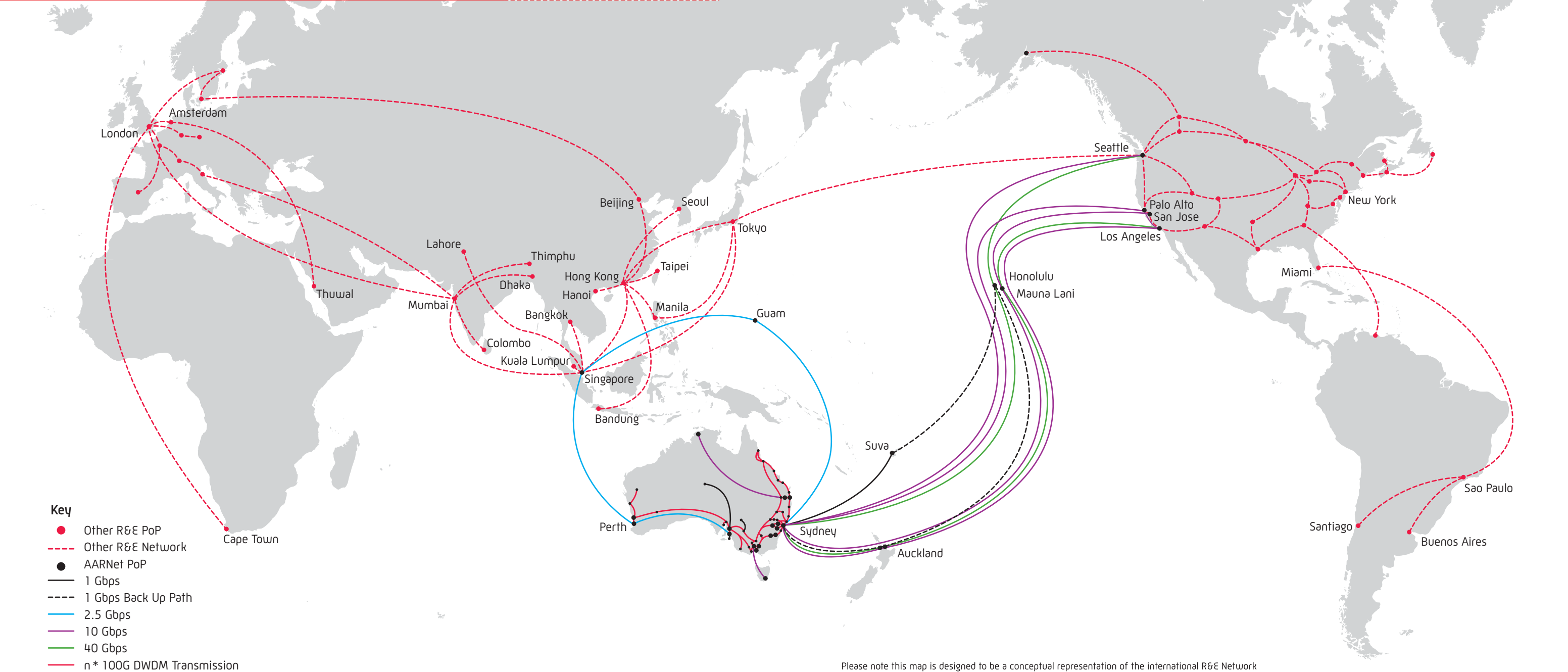
Dr Taylor says greater network bandwidths to Australia will be crucial in order for CoEPP to continue to provide meaningful contributions to the computational power needed for the physics analyses.

As CoEPP continues to achieve international recognition for Australia in the field of high-energy physics, its collaborative capacity and contribution to worldwide projects relies ever more on the capabilities of the networking infrastructure connecting Australian researchers and resources to the world.

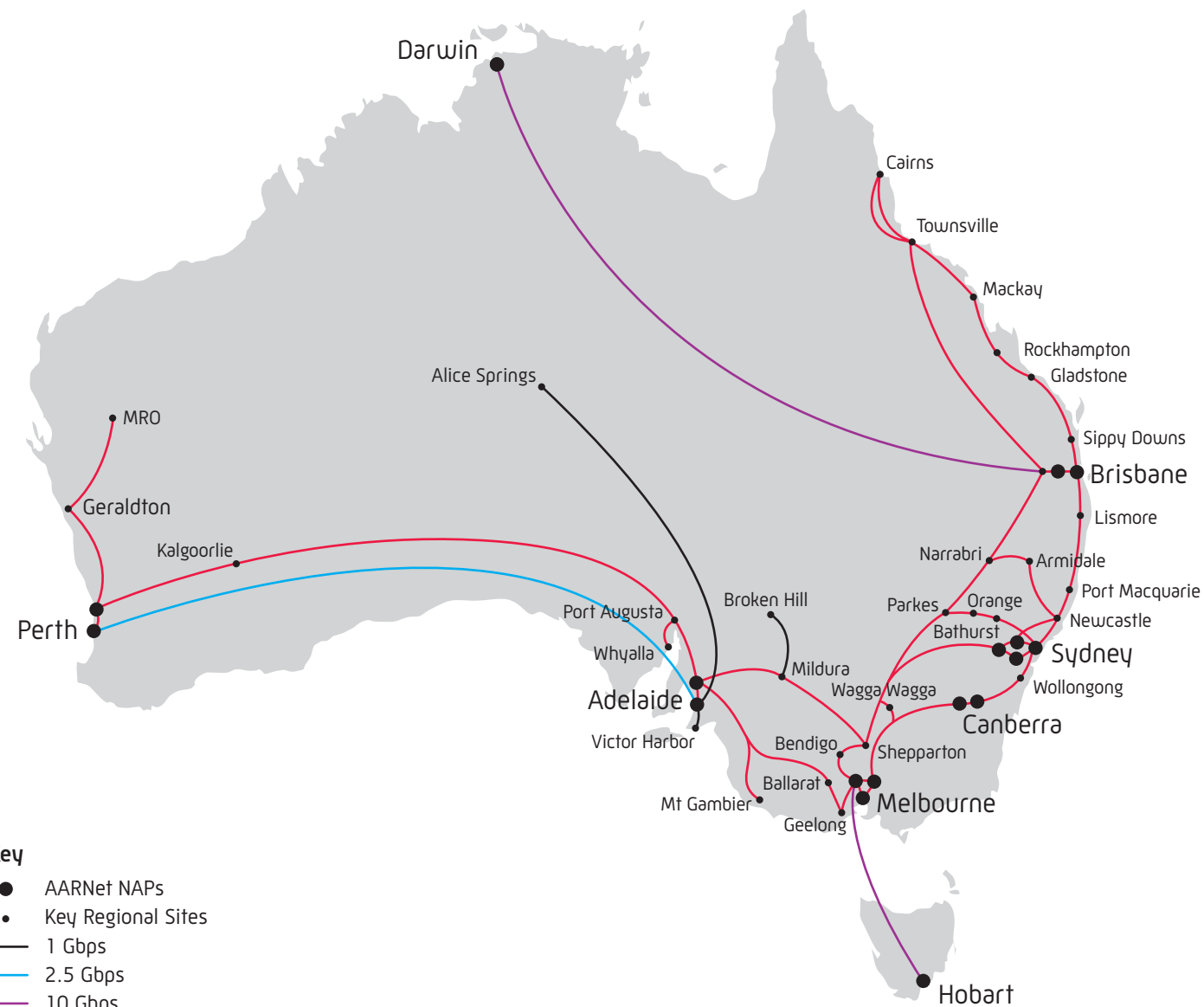
Opposite page: First half of the CMS inner tracker barrel.

This page: Workers assembling the ATLAS SemiConductor Tracker (SCT) at CERN.

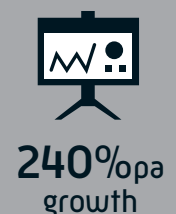
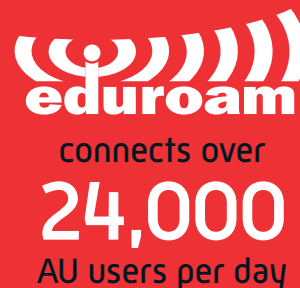
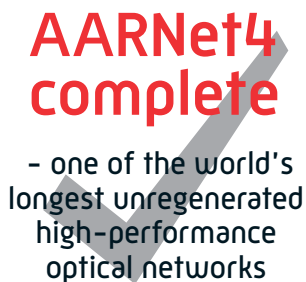
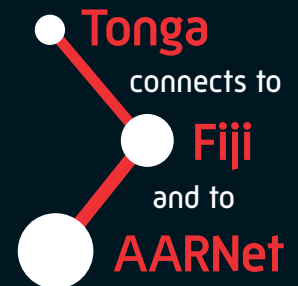
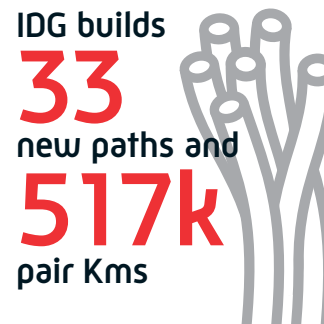
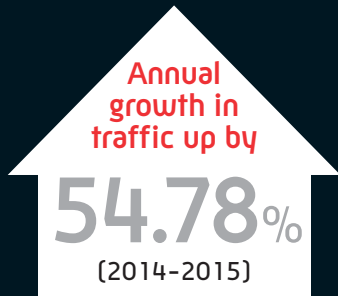
AARNet International Network



AARNet National Network



2015 Operational Highlights





Removing barriers to innovation for scientists in regional areas

A 10 Gigabit per second AARNet link is enabling animal scientists based at the CSIRO FD McMaster Laboratory near Armidale to share research data more efficiently with experts at other CSIRO facilities and partner institutions across Australia.

Electronic sensors and sensor networks used in agricultural research generate very large data sets. In the current research environment, members of large multidisciplinary research teams can be located hundreds or thousands of kilometers apart. The ability to transfer very large data files quickly and efficiently between team members at various locations is becoming increasingly necessary.

"Under the previous eight to ten megabit per second internet system, a video file of an animal's behaviour used to annotate sensor data took one hour and forty minutes to transfer from Armidale to Brisbane. This can now be done over AARNet in less than five minutes, a whopping twenty-fold increase in speed," said CSIRO's David Paull.

He says AARNet's high-speed file transfer capacity will lift the capability of this regional research centre by allowing researchers to share large data files in real time. Access to the network enables data analysis to be performed by staff with specific statistical expertise at different locations within a very short period of time.

For example, a new CSIRO and NSW Department of Primary Industries (DPI) research project aimed at estimating feed intake of individual grazing animals uses audio and motion sensors for capturing data related to feeding behaviours.

The sensors generate very large data sets that require a high level of annotation to deliver precise and accurate estimates of pasture intake for individual animals within a herd.



These data sets are transferred over the AARNet connection from where the experimental animals are located at CSIRO's FD McMaster Laboratory to scientists with specific statistical expertise located in Brisbane. The scientists in Brisbane then are also able to work with the raw data as an integral part of the research team to develop methods and prediction algorithms for the pasture intake of individuals within the herd.

Team leader, Paul Greenwood from NSW DPI says, new sensor technologies have the potential to become very useful research tools for future studies in animal science, particularly for grazing livestock.

"Sensor technologies give researchers the ability to record information from animals without constraining the expression of their normal behavioural patterns.

Capturing this information with a high level of precision and repeatability is extremely valuable for developing new breeding and precision management programs," he says.

The aim is to enable enhanced monitoring of livestock health and welfare in differing landscapes, and to make Australia's livestock industries more efficient and better adapted to our ever-changing environment.

What Our Customers Are Saying

"Handling and sharing the large data sets generated by sensor networks in a timely manner between sites would be extremely difficult or near impossible under the old network. Access to AARNet's high speed network opens up exciting new opportunities for agricultural science and industries that were not previously possible."

PAUL GREENWOOD, NSW DEPARTMENT OF PRIMARY INDUSTRIES

Opposite page: Steer with sensor on ear.
This page: CSIRO cattle grazing.

AARNet staff

Australian Capital Territory

08 

New South Wales

40 

Queensland

12 

South Australia

01 

Victoria

10 

Western Australia

09 

Netherlands

01 

Total
81 as at
December
2015

our team

The Organisation

AARNet Pty Ltd [ACN 084 540 518] is the not-for-profit company that operates the AARNet network, providing high-capacity Internet services to Australia's universities, research institutions including the CSIRO, DSTO and ANSTO, and other research and education organisations.

Shares in AARNet Pty Ltd [AARNet] are held by the thirty-eight Australian Universities and the CSIRO as listed in the enclosed AARNet Annual Report Appendix A. AARNet is a licensed Australian telecommunications carrier [#61 under the Telecommunications Act 1997 Cth].

The Chief Executive Officer reports to the Board of Directors listed in the enclosed AARNet Annual Report Appendix A. The AARNet Advisory Committee [AAC] represents the interests of the members and is a source of advice on policy and business matters. Regional Network Organisations, which are generally state based, elect one representative to the AAC.

The AARNet Board of Directors

The Board of Directors is responsible for the overall direction of AARNet and for providing benefits to the shareholders as required under the constitution.

For more than 20 years, AARNet has shared and exchanged expertise with our shareholders and customers in many ways, supporting national and international collaboration and innovation in research and education and networking.

AARNet has been effective in making representations to government on policy, legislation, strategy and programs to improve the telecommunications facilities and services available not only to the education and research sector, but to all Australians.

...and our team

The skill of our people and the culture they have created has resulted in a small and effective group of highly motivated, dedicated and expert staff.

The CEO, together with the Executive Management Team, with careful planning is continually striving to add depth to the AARNet experience.

This strategic plan has enabled our national research and education network to develop and maintain one of the largest operational footprints in the world.

During 2015, we welcomed a number of staff into our team. The total number of AARNet employees grew to 85. The growth in our numbers reflects the need to efficiently resource the organisation for improved customer service and infrastructure growth to meet the demands of our customers and shareholders. Owning and operating our own optical infrastructure has transformed AARNet into an asset owner and operator. With this capability AARNet requires skilled and competent network, operations and infrastructure resources, and the commercial expertise to continue to deliver to our customer freedom of connectivity not previously seen in Australia.

AARNet will continue to require higher financial resources and a greater number of expert and skilled staff for long-term planning and operation of the network to meet the growing dependence on networking technology, services and applications for research and education. In parallel AARNet will continue to foster and develop its technical and business staff and management who are working to deliver enhanced customer service, network and infrastructure growth to the Australian research and education community.



Vale Rob Ewin
AARNet 2005-2012

AARNet staff and many in the Higher Education Sector were shocked and saddened to hear of Rob Ewin's sudden passing. Rob was a dedicated and significant contributor to AARNet and he will be greatly missed.

Community participation

AARNet is enthusiastic about supporting STEM and further serving the community.

This year, an AARNet-sponsored team of high school students won a top spot in the inaugural Australia Regional FIRST Robotics Competition. AARNet also continues to sponsor conferences, conventions and community events with high-speed Internet connections in kind, examples being the annual QUESTnet conference; Museums and the Web Asia; e-Research Australia; the Adelaide Mini Maker Faire from which the ABC broadcast live radio across the AARNet connection; and RFLAN, an on-line computer hobbyist/enthusiast event held at the Sports Stadium, Curtin University.

A number of staff from AARNet, including the CEO Chris Hancock, participate in the Australian American Leadership Dialogue program, which is a private diplomatic initiative with the mission to broaden and deepen mutual understanding between Australian and American leaders and to enhance the framework for regional security in a manner that underwrites economic and cultural prosperity for Australian and American citizens.

Important Publications

Previous Annual Reports:
<http://www.aarnet.edu.au/about-us/publications.aspx>

AARNet's Access Policy:
<http://www.aarnet.edu.au/about-us/policies.aspx>

AARNet's Peering Policy:
<http://www.aarnet.edu.au/about-us/policies.aspx>

AARNet's Content Policy:
<http://www.aarnet.edu.au/about-us/policies.aspx>



Schools co-invest in infrastructure to meet future needs

AARNet works closely with schools to develop sustainable solutions for delivering the high-bandwidth and low-latency connectivity that provides staff and students with access to the digital tools and resources they need to thrive in the digital age. Co-investing in AARNet infrastructure is a cost-effective solution that has gained traction around the country in recent years.

■

The economics of sharing the capital costs mean that a fibre build can extend over a large footprint and connect more sites – co-contributing makes connectivity to AARNet cost-effective and therefore possible when the cost of an individual build is out of reach.

For schools in Australia today, connectivity to AARNet is not just about an Internet connection. It's about ensuring long-term access to a reliable, scalable, affordable, high-performing network that will support wireless access for thousands of devices and at the same time enable access to the cloud marketplace, data centres, Australian universities and research organisations, as well as online resources and digital tools for teaching and learning anywhere in the world.

One example of the application of the co-investment model involves seven non-government schools in the Kew area of Melbourne, VIC. These schools took advantage of their geographical proximity and formed a collaborative consortium to co-invest in fibre optic infrastructure with AARNet.

A dedicated optical circuit, initially lit up at 1 Gigabit per second (Gbps) and scalable up to multiple Gbps on demand, was deployed at each of the schools in the consortium. Even though the schools compete with each other, co-investing to ensure that future bandwidth needs could be met in a cost efficient way was an attractive proposition.

Janet Smith, Director of Technology and Curriculum at Methodist Ladies College, one of the participating schools, said the



shared-infrastructure idea became viable because other nearby schools had common learning and curriculum goals that would be advanced with the faster internet connection.

"The advantages for teachers and students are many, including the reliable high speed connectivity AARNet provides to an increasingly sophisticated suite of teaching tools used to support and enhance the classroom experience," she says.

Each of the schools involved identified their long-term bandwidth needs, factoring in the current growth of devices on their respective networks and the increasing availability of, and demand for, digital curriculum resources and services.

Mark Glover, Business Manager for Genazzano FCJ, another school in the consortium lists bandwidth, wireless

capacity and effective on-line learning management systems as critical for the delivery of education.

"A key challenge for schools today is to provide a solid, robust and high performing network that provides the students and staff with the tools to support their teaching and learning. It made economic and practical sense to collaborate to ensure we all benefited from a high speed and first class quality internet link for our schools," he said. "The cost efficiency was critical and it was so pleasing to see us all work together for a common outcome."

Trinity Grammar's IT Director Rob Flavell says that while AARNet delivering a fast connection at a price the school can afford is key, the relationships AARNet has with the broader research and education communities, including entities such as the CSIRO, are also of great interest and value.

He also says the collaboration is fostering other on-going mutual benefits for local schools.

"We've started discussing possible offsite backup solutions where we hand over part of our server room to another school in exchange for the same thing in their server room – mutually beneficial and cost effective," he said.

This shared-infrastructure model has been deployed to other school collaborative consortia, including Canberra Girls Grammar and Canberra Boys Grammar, ACT; Christchurch and Methodist Ladies College, WA; and St Hilda's and Iona, WA, with other deployments at various stages underway elsewhere across the country.

■
This page: Students from Methodist Ladies College.

Increasing
our

focus on cloud and professional services



Zoom dominates the video conferencing market for education

AARNet was one of the first customers to contract with Zoom when it was just a 4-person start-up.

It has been one of our most successful and beneficial services due to not only a great product, but also the very advantageous pricing and terms, which includes the location of Zoom servers in Australia for optimum video performance.

AARNet is very proud of Zoom's success. The Zoom product has made deep inroads into the Australian education market with customers purchasing more than 110,000 Zoom licences. This mirrors Zoom's success in the US higher education market with Zoom having a major presence in 86% of the top 200 national universities. Zoom's success is simply due to its quality, ease of use, and reliability. Zoom has worked closely with schools since day one to make sure that it has the features that educators need, such as video breakout rooms, co-annotation, remote control, recording, and LMS integration.

CloudStor a home grown phenomenon

CloudStor Sender, the web platform enabling researchers to transmit files too large to be sent using email, has grown into what can only be described as a phenomenon.

The platform was introduced in June 2010 and was developed by a co-operative of NRENs from across the globe. In five short years 28,000 users have flocked to the service in Australia alone, transferring an average of 500Mbps 24 hours a day, every day of the year. In fact, 150,000 files were transferred in the past year; one every 3 minutes.

These new users have brought with them many new ideas and AARNet, as part of the international community that developed the software on which CloudStor Sender is based, has turned them into a reality.

Users wanted to ensure file integrity; in effect a digital "seal". We are working with Australia's peak measurement body, the National Measurement Institute, and the Australian Government's VANGUARD program to provide cryptographic time stamping and verification to do just that.

The user community also identified security as an issue. Most systems

CloudStor™ "Personal Storage for Super Users" now provides 100 gigabytes of storage for some 19,287 individual researchers. Re-branded as simply CloudStor, the service currently stores some 29 million files with storage growing at 20% per month or 240% pa. Over the past year, more than 75 institutions have helped test the platform, entrusting the storage and transferring of more than 180 terabytes of data to the service. With the help of our customers, we are now progressively rolling out the service to researchers around the country.

Eduroam's footprint is increasing steadily in Australia. All, except one of the Australian universities and other research organisations including CSIRO, ANSTO, NICTA, AIMS and Intersect, participate in Eduroam AU.

Enterprise Services continue to grow in a number of consultancy areas. In Networking, the team has assisted a number of new non shareholder customers to smoothly migrate onto AARNet, for existing customers we have redesigned and reconfigured customer networks to be highly available across multiple campuses. Research related consulting featured prominently this year with market and sector reviews of research storage infrastructure.

A new security practice area was created this year which led to the launch of a joint security service offering with AUSCERT. The team saw significant growth in requests as independent technical advisors on a number of customer procurement panels where our consultants were able to question and validate proposed solutions in relation to institution's campus needs and AARNet carrier network services.

The Global CEO Forum launches "In the field"

Fascinating stories from around the world about people and projects connected by high-capacity research and education networks.

25



AARNet extends Eduroam into Asia

Eduroam is the very successful global wireless network access service that provides users (students, staff and faculty) in the research and education communities with mobility between participating institutions' wireless infrastructures, and removes the burden of institutional administration of guest network access. Data and privacy is protected. It is easy to use and provides a single solution for the mobile connectivity requirements of hundreds of participating institutions worldwide.

In an effort to share the knowledge, AARNet signed an Agreement in May with TEIN*CC for some €350,000 to deploy Eduroam in up to 7 of the current beneficiary countries throughout Asia.

The TEIN Eduroam project was established to extend the deployment of Eduroam into countries where there is limited or no existing Eduroam deployment. The countries selected to participate in the project are; Indonesia, Sri Lanka, Philippines, Pakistan, Bhutan, Nepal, and Malaysia. The project is designed to establish basic Eduroam infrastructure in the participating countries, and give participants the knowledge required to operate as an Eduroam National Roaming Operator (NRO) for their respective country.

The deployment will see the country's NREN becoming the National Roaming Operator (NRO) and 3 institutions within each country becoming Eduroam participants. Some countries already have basic Eduroam deployments (Malaysia, Philippines, Sri Lanka, Pakistan), whilst others have none (Bhutan, Indonesia, Nepal). The project will provide NROs with the equipment and knowledge required to operate a compliant Eduroam deployment that is consistent with established NROs. The expected date of completion of the project is 30th June 2016.

During the year AARNet organised three training sessions for NROs and institutions participating in the project. The training sessions were all held via Zoom AARNet's video conferencing service and designed to prepare participants for the two-day workshop to be held at APAN 41 in Manila, Philippines in early 2016.



Eduroam will be a great benefit for shared course delivery and co-location of students on participating campuses. This project is a model collaboration with the NRENs of New Zealand, Korea, Hong Kong and Singapore, all of whom are very pleased to be able to assist their near neighbours in Asia. All costs will be paid by TEIN*CC with European Commission funding.



Opposite page: TEIN meeting.
This page: TEIN meeting.
TEIN network.

Appendix A

List of Shareholders

The Australian National University
The Commonwealth Scientific and
Industrial Research Organisation
University of Canberra
Charles Sturt University
Macquarie University
Southern Cross University
The Australian Catholic University
The University of New England
The University of New South Wales
The University of Newcastle
The University of Sydney
University of Technology, Sydney
University of Western Sydney
University of Wollongong
Charles Darwin University
Bond University
Central Queensland University
Griffith University
James Cook University
Queensland University of Technology
The University of Queensland
University of Southern Queensland
University of the Sunshine Coast
The Flinders University of South Australia
The University of Adelaide
University of South Australia
University of Tasmania
Deakin University
La Trobe University
Monash University
RMIT University
Swinburne University of Technology
The University of Melbourne
Federation University Australia
Victoria University
Curtin University
Edith Cowan University
Murdoch University
The University of Western Australia

Board of Directors

Chairman: Emeritus Professor Gerard Sutton AO
Executive Director: Mr Chris Hancock (CEO)

Non-executive Directors

Mr Chris Bridge
Dr Christine Burns
(appointed 18 May 2015)
Mr Robert Fitzpatrick*
(appointed 18 May 2015)
Professor Linda Kristjanson
Mr Jeff Murray
Mr John Rohan*
Professor Deborah Terry
Emeritus Professor Mark Wainwright AM*
Dr David Williams
Professor Ian Young AO
(to 13 November 2015)

*Denotes independent director



www.aarnet.edu.au

AARNet Pty Ltd Financial Report 2015

for the year ended 31 December 2015

ABN 54 084 540 518

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Your Directors present their report on the Company, AARNet Pty Limited ("AARNet"), for the year ended 31 December 2015.

The following persons were Directors of AARNet during the whole of the financial year and up to the date of this report:

Emeritus Professor Gerard Sutton AO (Chair of the Board and Chair of the Nomination and Remuneration Committee)

Mr Chris Bridge

Mr Chris Hancock (Chief Executive Officer)

Professor Linda Kristjanson

Mr Jeff Murray

Mr John Rohan (Deputy Chair of the Board, Chair of the Audit, Finance and Risk Committee and member of the Nomination and Remuneration Committee)

Professor Deborah Terry

Emeritus Professor Mark Wainwright AM (member of the Audit, Finance and Risk Committee and the Nomination and Remuneration Committee)

Dr David Williams

Professor Ian Young AO was a director of the Company from the beginning of the financial year until his retirement on 13 November 2015.

The following persons were appointed as directors of the Company during the financial year and remain directors on the date of this report:

Dr Christine Burns (appointed 18 May 2015)

Mr Rob Fitzpatrick (appointed 18 May 2015)

Principal activities

AARNet is a not for profit, proprietary company in which 38 Australian universities and the Commonwealth Scientific and Industrial Research Organisation (CSIRO) have an equal shareholding.

AARNet's principal activity is the provision of internet and advanced network services to its shareholders ("Members") and to other relevant organisations. Services are provided in accordance with the AARNet Access Policy in order that Members and other customers may:

- (a) use AARNet's internet and other telecommunications facilities and services to provide educational programs and conduct research activities in an efficient and cost effective manner; and
- (b) collaborate with other parties (nationally and internationally) in furtherance of research and education objectives.

Other activities

In addition, AARNet:

- (a) facilitates the construction of connections (fibre tails) to the AARNet backbone and between campuses and other locations to facilitate services for Members and customers;
- (b) participates in the design and deployment of advanced network infrastructure, applications and services in partnership with network organisations in Australia and internationally, to develop national and global research and education networks; and
- (c) makes representations to all levels of government on policy, legislation and programs to improve the telecommunications facilities and services available to its Members and other customers.

Dividends

AARNet's constitution prohibits the payment of dividends or other distributions to its shareholders. Accordingly, no dividends have been paid, declared or recommended either during the financial year or in the period since that year ended (2014: nil).

Review of operations

Network Performance

During the year AARNet's network services again provided high levels of performance and availability. In particular:

- (a) Average network availability at 99.974% was marginally lower than in 2014 (99.989%) but still exceeded target (99.95%); and
- (b) the volume of traffic carried across the network increased by 53.4% (2014: 56.8%).

The growth in traffic experienced in 2015 is part of a long-term trend. Over the five years to 2015 traffic has grown at a compound annual rate of 49.6% per annum. The bulk of this growth stems from the increased usage by AARNet's Members (Member traffic has grown at an average annual rate of 43.3% over the same period and at 45.0% during calendar 2015).

Despite this significant and sustained growth in traffic, the amounts paid by Members in the form of subscriptions, access and traffic charges were \$456,449 lower in 2015 than the previous year (see further below).

Traffic for non-member customers has grown at a faster rate (87.5% over 2015) but from a much smaller base. This growth reflects both increased usage across the non-member customer base plus an increase in the number of customers using the network.

The growth in non-member traffic and related revenues (see below) allows AARNet to realise valuable economies of scale, which ultimately benefit Members and non-member customers alike.

Network Expansion

Over recent years AARNet has made significant investments in infrastructure and equipment to expand the reach and capability of the network. Much of this investment was assisted by funding from the National Research Network ("NRN") Program, an initiative of the Australian Government conducted as part of the Super Science Initiative and financed from the Education Investment Fund (see further under "Contributions and Other Incomes", below). Federal funding for such projects greatly assists AARNet and its Members.

Amounts received under the NRN and similar programs in 2015 were used to develop the network interconnecting the national Research Data Storage nodes, further extend AARNet's fibre rings in Brisbane, extend fibre infrastructure to Whyalla and Mount Gambier, commence upgrading services along the Queensland coast to 100Gb/s and support advanced networking requirements for several astronomical facilities.

During 2015, AARNet moved into the latter stages of the rollout of AARNet4, the next generation of technology on which the AARNet network is based. This project, which began in 2013, involves a technology refresh across most of the AARNet network.

Other Services

Zoom, the web-conferencing/video conferencing service introduced in 2014 in conjunction with Zoom Video Communications Inc. continues for grow with both Members and other customers signing up for Zoom services.

AARNet also continues to see ongoing growth in optical services, VPN and other transmission services provided to both Members and other customers alike.

Subscriptions and Telecommunications Revenues

AARNet's Members pay an access fee for connection to the network along with subscriptions and traffic charges for carriage of data across the network (to other research and education networks around the world and to the general internet).

During 2015 Members' access, subscription and traffic charges were 1.1% lower than in than in 2014 despite the growth in Members' traffic (both on-net and off-net) of 45.0% discussed above. The reduction in amounts paid by Members are principally due to reductions applied against Member subscription charges and a significant reduction in the off-net traffic rate during 2015.

	2015 \$	2014 \$	Increase/ (Decrease)
Members: Subscription, Traffic and Access	40,204,784	40,661,233	(1.1%)
Non-Member: Subscription, Traffic and Access	11,140,124	8,311,155	34.0%
Other Services	11,676,528	9,624,649	21.3%

Telecommunications Revenue	63,021,436	58,597,037	7.6%

Offsetting the reduction in Member subscriptions and allied charges, non-member subscriptions grew strongly with 2015 revenues up 34% on the previous year. This growth reflects the growth in non-Member customers connected to the network and their associated traffic (discussed earlier).

Growth in other telecommunications services (available to both Member and non-members) rose by 21.3% over 2014 levels due to increasing use of transmission services (optical services, VPN and other services) and other services such as video conferencing (Zoom).

Overall, subscriptions and service revenues increased by 7.6% from 2014.

Infrastructure Revenues

Infrastructure service fees (income from the provision and operation of fibre infrastructure to provide services over several years) rose very significantly in 2015 (65.6%) reflecting the value of infrastructure projects completed and brought into service – including projects which completed in the latter part of 2014 and which contributed a full year's income in 2015.

	2015 \$	2014 \$	Increase/ (Decrease)
Infrastructure Service Fees	7,000,799	4,227,801	65.6%
Infrastructure Project Construction Revenue	1,257,662	2,524,030	(50.2%)

	8,258,461	6,751,831	22.3%

Revenues from infrastructure construction and allied activities (where AARNet does not retain ownership of the infrastructure created) were down by almost 50% however, this income stream is significantly lower than the Infrastructure service fee arrangements, and overall infrastructure revenues were 22.3% higher in 2015 than 2014.

Contributions and Other Incomes

Over the last few years, AARNet's financial results have been significantly influenced by certain specific factors, some of which will not recur in future years.

In 2015 AARNet received a total of \$12,229,908 in funding under the National Research Network program and similar programs. This brings the total received over the years 2012-2015 from these programs to over \$38m. These contributions were employed by AARNet to fund construction of infrastructure and to acquire equipment, which together extend the reach and capacity of the network and the services AARNet is able to provide, for the benefit of Members and non-members alike.

Being a not-for-profit organisation, AARNet must take these contributions into income even though the funds concerned may be expended on the acquisition of assets, which are capitalised and therefore are not immediately expensed.

The receipt of these funds and the manner in which they must be accounted for has a significant impact on AARNet's financial results, as shown below. The NRN program is now complete and the significant boost to income provided by these contributions is therefore very unlikely to be repeated in 2016

	2015	2014	2013	2012
	\$	\$	\$	\$
NRN Contributions and similar taken to income	12,229,908	7,619,132	10,784,771	7,505,320
Costs associated with NRN Projects immediately expensed	-	-	(875,083)	-
Gain/(Loss) on foreign currency contracts	1,651,076	941,542	2,040,658	(1,112,599)
Payroll Tax Refunds	-	370,439	1,093,799	-
Aggregate Effect	13,880,984	8,931,113	13,044,145	6,392,721

In addition to these contributions, there are other, significant amounts of income, recognised in recent years, as shown in the table above.

AARNet has significant contractual commitments requiring it to make foreign currency denominated payments (mainly United States Dollars) for international transmission capacity. These commitments, many of which extend for periods in excess of five years, are included in note 2 to the financial statements.

In order to manage the exposure to exchange rate fluctuations with respect to these commitments (and other payments required in foreign currencies), AARNet arranges forward foreign currency purchases with its bankers and maintains holdings of foreign currency balances. These arrangements are discussed in note 24 to the financial statements.

During 2015 the Australian Dollar again depreciated against the United States Dollar with the result that AARNet recorded an accounting gain on the hedging arrangements it had in place. This gain amounted to \$1,651,076 (2014: \$941,542).

During 2013 and 2014 AARNet was granted exemption from payroll tax in various states and territories and received refunds of previously paid taxes in those years as shown in the table above. No further refunds of this type are anticipated.

Together, these various amounts represent a significant proportion of the income and surplus that AARNet has earned over the last few years

Telecommunication and Other Expenses

Telecommunications expenses increased by 6.4% to \$19,043,035 (2014: \$17,907,696). Increased costs were primarily attributable to:

- (a) increased traffic which results in higher charges to other telecommunication carriers for exchange of traffic;
- (b) the depreciation of the Australian Dollar which increased USD denominated costs including the cost of international capacity and the cost of traffic from international carriers;
- (c) higher maintenance charges driven by the progressive installation of new equipment under the AARNet4 rollout; and
- (d) costs paid to a third party to access capacity on that party's network for the benefit of certain AARNet customers (these costs are directly recovered from the customers concerned).

Offsetting these cash costs, AARNet benefited from a reduction in telecommunications depreciation and amortisation charges. The reduction was principally due to a key supplier of international transmission capacity extending the estimated service life of the infrastructure it operates, which had the effect of extending the term of the Indefeasible Right to Use (IRU) under which AARNet uses the infrastructure for international transmission. This has the effect of reducing the amortisation charge required on the IRU over the remaining term of the IRU. This effect is evident in note 21 to the financial statements.

Depreciation charges on infrastructure however were significantly (\$900,786 or 20.9%) higher than in 2014 reflecting the development of infrastructure to support infrastructure service as discussed in the section on infrastructure revenues above.

Accumulated Surplus and Reserves

In 2015 AARNet recorded a surplus of \$29,349,166 (2014: \$19,837,343).

In the Board's view, it is prudent for AARNet to aim to generate a surplus in order that investments in network capability and services may be funded without calling on Members to contribute further equity to the company.

Surpluses earned by AARNet cannot (by virtue of the terms of AARNet's constitution) be distributed to the shareholders.

Surpluses earned in recent years, aided by conservative financial management, have therefore been accumulated into significant holdings of cash and investments.

AARNet intends to use these funds to:

- (a) finance investments in:
 - (i) infrastructure and equipment to expand the reach and capability of AARNet's network; and
 - (ii) technology to enhance the delivery of services AARNet delivers to Members and other customers.
- (b) supplement Members' subscriptions and other income in future years; and
- (c) defray part of the significant financial commitments in respect of non-cancellable operating leases (principally rights to use the traffic paths of fibre cable systems constructed by other telecommunication carriers) which, at year end, exceeded \$92.3m (refer note 2 to the financial statements).

Net Assets

Net assets at 31 December 2015 were \$179,543,136 (2014: \$150,363,825). The increase represents the Surplus for 2015 plus the change in value of available-for-sale financial assets during 2015.

Significant changes in the state of affairs

Except for the matters discussed under the heading "Review of Operations" there were no significant changes in the Company's state of affairs during the financial year ended 31 December 2015.

Matters subsequent to the end of the financial year

Except for matters discussed under the heading "Review of Operations", no other matter or circumstance has arisen since 31 December 2015 that has significantly affected or may significantly affect:

- (a) AARNet's operations in future financial years;
- (b) the results of those operations in future financial years; or
- (c) AARNet's state of affairs in future financial years.

Likely developments and expected results of operations

AARNet expects that the rate of growth in network traffic will continue at significant levels during 2016, reflecting the historical trends experienced by the company. With the completion of the National Research Network program during 2015 future financial results will not include the significant income impact from that program as discussed in the section above entitled "Contributions from National Research Network Program and Other Incomes".

Environmental regulation

AARNet's operations are not adversely affected by any significant environmental regulation. AARNet believes its greenhouse gas emissions are substantially below the thresholds that are subject to the reporting requirements of either the *Energy Efficiency Opportunities Act 2006* and the *National Greenhouse and Energy Reporting Act 2007*.

Insurance for Officers

During the financial year, AARNet paid a premium of \$19,117 (2013: \$16,925) in respect of liability insurance for the company's Directors and Officers. The liabilities insured against are costs and expenses that may be incurred in defending civil or criminal proceedings that may be brought against the Directors and Officers in their capacity as Directors and Officers of AARNet, and any other payments arising from liabilities incurred by the Officers in connection with such proceedings, other than where such liabilities arise out of conduct involving a wilful breach of duty by the Directors or Officers or the improper use by the Directors or Officers of their position or of information to gain advantage for themselves or someone else or to cause detriment to AARNet. It is not possible to apportion the premium between amounts relating to the insurance against legal costs and those relating to other liabilities.

No known liability has arisen under these indemnities to the date of this report.

Agreement to indemnify Officers

Under the terms of its Constitution, AARNet provides indemnity to persons who are, or have been, an officer or auditor of AARNet, but only to the extent permitted by law and to the extent that the officer or auditor is not indemnified by Directors' and Officers' liability insurance maintained by AARNet. The indemnity is against liability incurred by that person as an officer or auditor of AARNet to another person and for costs and expenses incurred by the officer or auditor in defending such proceedings.

Separately, AARNet and each director of AARNet have entered into a Deed of Indemnity under which AARNet indemnifies each director against any liability:

- (a) to a third party (that is, other than to AARNet) unless the liability arises out of conduct involving a lack of good faith, and
- (b) for legal costs incurred in successfully defending civil or criminal proceedings or in connection with proceedings in which relief is granted under the *Corporations Act 2001*.

No known liability has arisen under these indemnities as at the date of this report.

Auditor

PricewaterhouseCoopers continues in office in accordance with section 327 of the *Corporations Act 2001*.

This report is made in accordance with a resolution of Directors.



**Emeritus Professor
GR Sutton AO**
Director



Mr CM Hancock
Director

Sydney
31st March 2016



Auditor's Independence Declaration

As lead auditor for the audit of AARNet Pty Ltd for the year ended 31 December 2015, I declare that to the best of my knowledge and belief, there have been:

- a) no contraventions of the auditor independence requirements of the *Corporations Act 2001* in relation to the audit; and
- b) no contraventions of any applicable code of professional conduct in relation to the audit.

A handwritten signature in black ink, appearing to read 'Rosalie Wilkie', written in a cursive style.

Rosalie Wilkie
Partner
PricewaterhouseCoopers

Sydney
31 March 2016

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Statement of Surplus/(Deficit)

For the year ended 31 December 2015

	Notes	31 December 2015 \$	31 December 2014 \$
Services revenue	8	71,279,897	65,348,868
Other revenue	9	4,591,913	4,441,243
Contributions – National Research Network Program	9	12,229,908	7,619,132
Total revenue		88,101,718	77,409,243
Telecommunications expenses		(19,043,035)	(17,907,696)
Depreciation and amortisation – Telecommunications	10	(12,072,858)	(13,829,068)
Employee benefits expense – Telecommunications		(11,106,836)	(10,287,230)
Administration – Telecommunications		(5,211,782)	(5,216,974)
Infrastructure project construction		(3,483,654)	(3,655,759)
Depreciation and amortisation – Infrastructure projects	10	(5,218,103)	(4,317,317)
Employee benefits expense – Infrastructure Development Group		(2,066,195)	(1,785,468)
Administration – Infrastructure Development Group		(494,376)	(474,858)
Other expenses (including finance costs)		(55,713)	(97,530)
Total expenses		(58,752,552)	(57,571,900)
Net surplus		29,349,166	19,837,343
Movement in the fair value of available-for-sale financial assets		(169,854)	180,283
Total comprehensive surplus for the year		29,179,312	20,017,626

The above statement of surplus/(deficit) should be read in conjunction with the accompanying notes.

Balance sheet

For the year ended 31 December 2015

09

	Notes	31 December 2015 \$	31 December 2014 \$
ASSETS			
Current assets			
Cash and cash equivalents	11	23,995,762	16,719,742
Receivables	13	38,134,475	35,995,844
Derivative financial instruments	24	444,229	1,329,377
Accrued income	14	1,590,348	2,027,846
Held-to-maturity investments	16	27,363,704	16,497,592
Total current assets		91,528,518	72,570,401
Non-current assets			
Receivables	19	609,564	72,979
Available-for-sale financial assets	18	11,220,446	10,205,217
Held-to-maturity investments	17	16,700,105	15,932,039
Derivative financial instruments	24	67,930	211,754
Other financial assets- Non-controlling investment in Smart Services CRC Pty Ltd		1	1
Property, plant and equipment	20	79,319,027	69,511,721
Intangible assets	21	69,725,680	70,985,536
Total non-current assets		177,642,753	166,919,247
Total assets		269,171,271	239,489,648
LIABILITIES			
Current liabilities			
Payables	3	10,500,239	12,840,392
Provisions	6	2,774,741	2,388,768
Other liabilities		49,266	101,533
Income in advance	4	45,064,676	46,679,814
Total current liabilities		58,388,922	62,010,507
Non-current liabilities			
Income in advance	5	30,494,896	26,434,346
Provisions	7	744,317	680,970
Total non-current liabilities		31,239,213	27,115,316
Total liabilities		89,628,135	89,125,823
Net assets		179,543,136	150,363,825
EQUITY			
Contributed equity	22	39,039	39,039
Reserves		488,034	657,888
Retained earnings	23	179,016,063	149,666,898
Capital and reserves attributable to owners of AARNet Pty Ltd		179,543,136	150,363,825
Total equity		179,543,136	150,363,825

The above balance sheet should be read in conjunction with the accompanying notes.

Statement of changes in equity

For the year ended 31 December 2015

	31 December 2015 \$	31 December 2014 \$
Total equity at the beginning of the financial year	150,363,824	130,346,199
Changes in the fair value of available-for-sale financial assets, net of tax	(169,854)	180,283
Net income for the year	29,349,166	19,837,343
Total recognised income and expense for the year	29,179,312	20,017,626
Total equity at the end of the financial year	179,543,136	150,363,824

The above statement of changes in equity should be read in conjunction with the accompanying notes.

Statement of cash flows

For the year ended 31 December 2015

	Notes	31 December 2015 \$	31 December 2014 \$
Cash flows from operating activities			
Receipts from customers (inclusive of goods and services tax)		93,988,850	73,822,041
Payments to suppliers and employees (inclusive of goods and services tax)		(48,045,572)	(42,330,295)
		45,943,278	31,491,746
Interest paid		(767)	(1,001)
Net cash inflow from operating activities	12	45,942,511	31,490,745
Cash flows from investing activities			
Payments for property, plant and equipment		(20,624,324)	(14,752,741)
Payments for intangible assets		(7,560,337)	(15,100,317)
Payments for available-for-sale financial assets		(2,524,889)	(1,772,968)
Payments for held-to-maturity investments		(32,525,417)	(40,072,792)
Proceeds from sale of available-for-sale financial assets		1,405,096	2,234,024
Proceeds from held-to-maturity investments		20,880,590	26,134,125
Dividends received		241,352	282,711
Interest received		2,041,438	2,025,054
Proceeds from sale of property, plant and equipment		-	8,344
Net cash (outflow) from investing activities		(38,666,491)	(41,014,560)
Net increase (decrease) in cash and cash equivalents		7,276,020	(9,523,815)
Cash and cash equivalents at the beginning of the financial year		16,719,742	26,243,557
Cash and cash equivalents at end of year	11	23,995,762	16,719,742

The above statement of cash flows should be read in conjunction with the accompanying notes.

1 Basis of preparation

These general purpose financial statements have been prepared in accordance with Australian Accounting Standards and interpretations issued by the Australian Accounting Standards Board and the Corporations Act 2001. AARNet Pty Ltd is a not-for-profit entity for the purpose of preparing the financial statements.

Historical cost convention

These financial statements have been prepared under the historical cost convention, as modified by the revaluation of available-for-sale financial assets and contributed assets at fair value, and the recording of held-to-maturity financial assets at amortised cost.

Income tax

AARNet is exempt from income tax under Section 50-5 of the Income Tax Assessment Act 1997 and therefore, no provision for income tax is included in these financial statements.

2 Commitments and contingencies

(a) Expenditure and capital commitments

	31 December 2015 \$	31 December 2014 \$
Within one year	3,390,703	8,848,606
Later than one year but not later than five years	822,807	1,028,628
Later than five years	250,188	412,003
	4,463,698	10,289,237

(b) Lease and capacity commitments: AARNet as lessee

	31 December 2015 \$	31 December 2014 \$
Commitments for minimum lease payments in relation to non-cancellable operating leases are payable as follows:		
Within one year	8,704,319	14,573,739
Later than one year but not later than five years	41,576,268	28,319,347
Later than five years	42,053,939	34,416,546
Commitments not recognised in the financial statements	92,334,526	77,309,632

(c) Contingent Liabilities

AARNet's bankers have issued bank guarantees in favour of the Company's landlords with a face value of \$499,469 (2014: \$575,584).

3 Current liabilities – Payables

	31 December 2015 \$	31 December 2014 \$
Current liabilities		
Trade payables	4,422,421	5,207,888
Other payables	6,077,818	7,632,504
	10,500,239	12,840,392

Trade payables and accruals are expected to be paid within 30 days.

These amounts represent liabilities for goods and services provided to AARNet prior to the end of financial year which are unpaid. The amounts are unsecured and are usually paid within 30 days of recognition.

Accounting Policy

The fair value of financial liabilities for disclosure purposes is estimated by discounting the future contractual cash flows at the current market interest rate that is available to AARNet for similar financial instruments.

4 Current liabilities – Income in advance

	31 December 2015 \$	31 December 2014 \$
Infrastructure projects	13,354,823	11,951,032
Other	1,346,243	4,245,001
Infrastructure service fees	3,656,879	3,368,247
Subscriptions	26,706,731	27,115,534
	45,064,676	46,679,814

Accounting Policy

The Accounting Policy for Income in Advance is described in note 8.

5 Non-current liabilities – Income in advance

	31 December 2015	31 December 2014
	\$	\$
Infrastructure service fees	25,622,315	20,162,449
Infrastructure projects	2,205,539	2,448,800
Other deferred income	2,667,042	3,823,097
	30,494,896	26,434,346

Accounting Policy

The Accounting Policy for Income in Advance is described in note 8.

6 Current liabilities – Provisions

	31 December 2015	31 December 2014
	\$	\$
Employee benefits	2,774,741	2,388,768

Accounting Policy***Wages and salaries and annual leave***

Liabilities for wages and salaries, including non-monetary benefits and leave entitlements expected to be settled within 12 months of the reporting date, are recognised in respect of employees' services up to the reporting date and are measured at the amounts expected to be paid when the liabilities are settled.

7 Non-current liabilities – Provisions

	31 December 2015	31 December 2014
	\$	\$
Employee benefits	505,113	441,766
Make good on leased premises	239,204	239,204
	744,317	680,970

Movements in provisions

Movements in each class of provision during the financial year, other than employee benefits, are set out below:

	Make good on leased premises	Total
	\$	\$
2015		

Non-current liabilities – Provisions

Carrying amount at start of year	239,204	239,204
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	Make good on leased premises	Total
	\$	\$
2014		

Non-current liabilities – Provisions

Carrying amount at start of year	210,745	210,745
Increase (decrease) in provision recognised	28,459	28,459
Carrying amount at end of year	239,204	239,204

Accounting Policy***Employee benefits***

These are liabilities for long service leave and annual leave not expected to be settled wholly within 12 months after the end of the period in which the employees render the related service. They are therefore recognised in the provision for employee benefits and measured as the present value of expected future payments to be made in respect of services provided by employees up to the end of the reporting period using the projected unit credit method.

Consideration is given to expected future wage and salary levels, experience of employee departures and periods of service. Expected future payments are discounted using market yields at the end of the reporting period of government bonds with terms and currencies that match, as closely as possible, the estimated future cash outflows. Remeasurements as a result of experience adjustments and changes in actuarial assumptions are recognised in profit or loss.

Make good on leased premises

Provisions for make good costs on leased premises are recognised when: AARNet has a present legal or constructive obligation as a result of past events; it is more likely than not that an outflow of resources will be required to settle the obligation; and the amount has been reliably estimated.

8 Service Revenue

	31 December 2015 \$	31 December 2014 \$
Telecommunications		
Members: Subscription, Traffic and Access	40,204,784	40,661,233
Non-Member: Subscription, Traffic and Access	11,140,124	8,311,155
Other Services	11,676,528	9,624,649
	63,021,436	58,597,037
Infrastructure & service agreements		
Infrastructure service fees	7,000,799	4,227,801
Infrastructure project construction revenue	1,257,662	2,524,030
	71,279,897	65,348,868

Accounting Policy

Subscriptions, Traffic and Telecommunications Services

Revenue from services delivered under a subscription charging arrangement is recognised over the period to which the subscription relates. Revenue from provision of other telecommunications services is recognised upon delivery of the services to the user.

Infrastructure and Service Agreements

Where a customer engages AARNet to provision infrastructure and deliver services to the customer across that infrastructure, with the infrastructure becoming the property of AARNet (referred to as a Service Agreement) revenue is recognised over the term of that Service Agreement.

Revenue from the provision of infrastructure where the infrastructure becomes the property of the customer is recognised on the percentage of completion method unless the outcome cannot be reliably estimated. Where a contract outcome cannot be reliably estimated amounts are recognised as revenue equal to the costs in the project to date.

In some cases the provision of infrastructure may involve the receipt of contributed assets - these contributed assets are accounted for as described in note 9.

Discounts and Taxes

Amounts disclosed as revenue are net of any discounts or taxes paid.

Income in Advance

Amounts received or due and receivable in respect of future subscription periods or for services which have not been delivered are recorded as Income in Advance and appear as a liability (refer notes 4 and 5).

Income in Advance is classified as either a current liability or a non-current liability depending on when the relevant subscription expires or the related service is expected to be delivered.

9 Other Revenue and NRN Contributions

In 2015 and 2014 AARNet recorded significant amounts of Other Revenue, NRN and Other Contributions.

These amounts are not the only material or variable components of income recognised by the Company in 2015 or 2014, but they represent a significant component of the Surplus recorded by the Company during 2015 and 2014, and are also a material factor in the increase in Surplus in those years compared to earlier years.

	31 December 2015 \$	31 December 2014 \$
Interest	2,288,046	2,068,067
Dividends	241,352	301,223
Gain on foreign currency contracts	1,651,076	941,542
Payroll tax refund	-	370,439
Other income	411,439	759,972
Other Revenue	4,591,913	4,441,243

Contributions- including National Research Network Program

12,229,908	7,619,132
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Gain of Foreign Currency Contracts

The company hedges a significant proportion of its exposure to foreign currency movements (refer note 24) and does not apply hedge accounting. The accounting policy adopted with respect to derivatives and hedging activities is described below. During 2015 movements in the Australian dollar produced a gain (including realised and unrealised gains) on the hedging instruments held during and as at the end of the year of \$1,651,076 (2014: \$941,542).

National Research Network Program

The Company benefited again during 2015 from receipts under the National Research Network Program (an initiative of the Australian Government conducted as part of the Super Science Initiative). Although the funds received under this program are expended on construction of network infrastructure, equipment and related activities, the receipts are accounted for as a contribution and recognised as income (refer to the accounting policy described below). The amount of contributions received from the National Research Network Program and similar programs in 2015 was \$12,229,908 (2014: \$7,619,132).

Accounting Policy*Interest Income*

Interest and dividend income is recognised as it accrues and dividends are recognised as revenue when the right to receive payment is established.

Foreign Currency Contracts

At year end, Foreign Currency Contracts are recognised at fair value as described in note 24 (see Derivative Financial Instruments). Realised and unrealised gain or losses on such contracts are brought into account each year in the Income Statement. AARNet does not apply hedge accounting.

Contributed Assets

Contributed assets (including the contribution of funds by government agencies or other persons to facilitate the construction of infrastructure for the AARNet network) are recognised at fair value when title and control of the asset passes or when the conditions to receive or retain funding are met.

10 Expenses

	31 December 2015	31 December 2014
Notes	\$	\$
Depreciation		
Office equipment	358,605	573,237
Leasehold improvements	142,211	185,118
Communication assets	7,901,146	7,027,921
Software	68,806	73,785
Total Depreciation	20 8,470,768	7,860,061
Amortisation		
Intangibles - Indefeasible Rights to Use traffic paths	8,820,193	10,286,324
Total depreciation and amortisation	17,290,961	18,146,385
Finance costs		
Interest and finance charges paid/payable	767	1,001
Amortised interest expense	45,602	75,658
Total finance costs	46,369	76,659
Loss on sale of available-for-sale financial assets	9,344	20,871
Rental expense relating to operating leases		
Minimum lease payments - premises	1,105,441	1,110,173
Superannuation expense	1,647,887	1,497,960

Unisuper Defined Benefit Division

Employer superannuation contributions for certain of AARNet's employees are held by the Unisuper Defined Benefit Division (DBD) which is a defined benefit plan under superannuation law but is considered a defined contribution plan under accounting standard AASB 119. The trust deed governing the DBD requires a monitoring process be undertaken by Unisuper if the DBD's actuaries consider that it may have insufficient assets to meet the expected future benefits payable to the DBD's members.

The monitoring process was instituted by the DBD in respect of several prior financial years. Additional information on the status of the DBD and the monitoring process can be found at <http://www.unisuper.com.au/dbdupdate/about-the-dbd>.

AARNet is not legally obliged to make additional contributions to the DBD in respect of any deficiency within the DBD. Accordingly, no provision has been made in AARNet's accounts for any potential shortfall in the DBD.

Accounting Policy

Depreciation and Amortisation

The accounting policy for depreciation and amortisation is described in notes 20 and 21 respectively.

11 Current assets – Cash and cash equivalents

	31 December 2015 \$	31 December 2014 \$
Current assets		
Cash at bank and in hand (AUD)	15,620,608	10,843,439
Cash at bank (USD and EUR)	2,341,170	232,334
Deposits at call – all denominated in AUD	6,033,984	5,643,969
	<hr/> 23,995,762	<hr/> 16,719,742

Cash at bank and on hand

Cash at bank and on hand is held at interest rates varying between 0.00% and 2.10% (2014: 0.00% and 2.35%). During the year, cash is transferred to or from term deposits to meet liquidity requirements.

Deposits at call

Interest bearing deposits at call attracted interest rates between 1.15% and 3.50% (2014: 2.50% and 3.81%). These deposits have an average maturity of 199 days.

Bank guarantee and credit facilities

AARNet has a \$650,000 Bank Guarantee Facility provided by the National Australia Bank. AARNet has drawn on this facility to provide bank guarantees in favour of the landlords for leased premises. AARNet has an unsecured credit card facility totalling \$300,000.

Accounting Policy

For the purpose of presentation in the statement of cash flows, cash and cash equivalents includes cash on hand, deposits held at call with financial institutions, bank overdrafts and other short-term, highly liquid investments with original maturities of three months or less that are readily convertible to known amounts of cash and which are subject to an insignificant risk of changes in value.

12 Reconciliation of net income to net cash inflow from operating activities

	31 December 2015 \$	31 December 2014 \$
Net income for the year	29,349,166	19,837,343
Depreciation and amortisation	17,290,961	18,146,385
Dividend income	(241,352)	(301,222)
Interest received	(2,041,438)	(2,025,054)
Net (gain)/loss on sale of investments	(79,928)	(31,645)
Net amortised interest expense	15,943	42,703
Net (gain) loss on sale of assets	9,344	(6,780)
Decrease (increase) in trade receivables	(1,720,624)	(17,513,559)
Decrease (increase) in accrued income	437,498	(352,505)
Decrease (increase) in prepayments and other debtors	(954,592)	41,117
Decrease (increase) in derivative financial instruments	1,028,973	(553,670)
Increase (decrease) in trade payables	6,095	4,721,029
Increase (decrease) in other operating liabilities	(52,267)	14,114
Increase (decrease) in provisions	449,320	282,695
Increase (decrease) in income received in advance	2,445,412	9,189,794
Net cash inflow (outflow) from operating activities	<hr/> 45,942,511	<hr/> 31,490,745

13 Current assets – Receivables

	31 December 2015 \$	31 December 2014 \$
Trade receivables	35,127,816	33,152,192
Provision for impairment of receivables	(255,000)	-
	34,872,816	33,152,192
Prepayments and Other Debtors	3,261,659	2,843,652
	38,134,475	35,995,844

Trade Receivables

Trade receivables are due for settlement no more than 30 days from the date of recognition.

At 31 December 2015, trade receivables included balances of \$823,765 (2014: \$1,151,907) which are past due but not impaired or considered uncollectable. These amounts have been outstanding for more than 90 days. These relate to a number of customers for whom there is no history of default.

Prepayments and Other Debtors

These amounts generally arise from transactions outside the usual operating activities of AARNet. Interest is not normally charged.

Fair Value

Due to the short-term nature of these receivables, their carrying amount is assumed to approximate their fair value.

Accounting Policy

Trade receivables are recognised at fair value, less provision for impairment.

Collectability of trade receivables is reviewed on an ongoing basis. Debts which are known to be uncollectible are written off. A provision for impairment of trade receivables is established when there is objective evidence that AARNet will not be able to collect all amounts due according to the original terms of the receivables. Significant financial difficulties of the debtor, probability that the debtor will enter bankruptcy or financial reorganisation, and default or delinquency in payments (more than 60 days overdue) are considered indicators that the trade receivable is impaired. The amount of the provision is the difference between the asset's carrying amount and the present value of estimated future cash flows, discounted at the original effective interest rate.

Cash flows relating to short-term receivables are not discounted if the effect of discounting is immaterial. The amount of the provision is recognised in the income statement in Administration-Telecommunications expenses.

The carrying value less impairment provision of trade receivables is assumed to approximate fair value due to the short-term nature of the receivables.

14 Current assets – Accrued income

	31 December 2015 \$	31 December 2014 \$
Current assets		
Infrastructure projects	314,624	767,587
Other	687,911	889,395
Accrued interest receivable	587,813	370,864
	1,590,348	2,027,846

15 Financial Assets and Investments

AARNet holds financial assets and investments (other than prepayments or trade receivables) including

- Held to maturity investments (see notes 16 and 17)
- Available for sale investments (note 18)
- Derivative financial instruments (shown on the Balance Sheet)

Accounting Policy

Held-to-maturity investments

Held-to-maturity investments are non-derivative financial assets with fixed or determinable payments and fixed maturities that management has the positive intention and ability to hold to maturity. If AARNet were to sell other than an insignificant amount of held-to-maturity financial assets, the whole category would be tainted and reclassified as available-for-sale. Held-to-maturity financial assets are included in non-current assets, except for those with maturities less than 12 months from the end of the reporting period, which are classified as current assets.

At initial recognition, AARNet measures a held-to-maturity investment at fair value plus transaction costs that are directly attributable to the acquisition of the investment. Held-to-maturity investments are subsequently carried at amortised cost using the effective interest method.

If a held-to-maturity investment has a variable interest rate, the discount rate for measuring any impairment loss is the current effective interest rate determined under the contract. As a practical expedient, AARNet may measure impairment on the basis of an instrument's fair value using an observable market price.

Purchases and sales of financial assets are recognised on the date on which AARNet commits to purchase or sell the asset. Financial assets are derecognised when the rights to receive cash flows from the financial assets have expired or have been transferred and AARNet has transferred substantially all the risks and rewards of ownership.

Available-for-sale financial assets

Available-for-sale financial assets are held at fair value with gains and losses recognised in other comprehensive income. Debt or equity securities that are not held for trading purposes are recognised as available-for-sale securities. They are included in non-current assets unless the investment matures or management intends to dispose of the investment within 12 months of the end of the reporting period.

At each reporting period, AARNet assesses whether any available-for-sale securities are impaired. Impairment exists if one or more events have occurred which have a negative impact on the security's estimated cash flows which can be reliably estimated.

If available-for-sale financial assets are impaired, the cumulative loss – measured as the difference between the original cost and the current fair value, less any impairment charge previously recognised in profit or loss – is removed from other comprehensive income and recognised in profit or loss.

Impairment losses on equity available-for-sale instruments previously recognised in profit or loss are not reversed in subsequent periods. If the fair value of a debt security which has been impaired increases, due to an event which has occurred after the impairment was recognised, the impairment charge is reversed through the income statement.

When securities classified as available-for-sale are sold, the accumulated fair value adjustments recognised in other comprehensive income are reclassified to profit or loss.

Derivatives and hedging activities

Derivatives are initially recognised at fair value on the date a derivative contract is entered into and are subsequently remeasured to their fair value at each reporting date.

AARNet has entered into forward exchange contracts which are economic hedges for foreign currencies to be traded at a future date but do not satisfy the requirements for hedge accounting. These contracts are fair valued by comparing the contracted rate to the current market rate for a contract with the same remaining period to maturity. Any changes in fair values are taken to the income statement immediately.

Fair value measurements

AARNet measures and recognises the following assets and liabilities at fair value on a recurring basis:

- Available-for-sale financial assets; and
- Derivative financial instruments.

AASB 13 Fair Value Measurement requires disclosure of fair value measurements by level of the following fair value measurement hierarchy:

- (a) quoted prices (unadjusted) in active markets for identical assets or liabilities (level 1);
- (b) inputs other than quoted prices included within level 1 that are observable for the asset or liability, either directly or indirectly (level 2); and
- (c) inputs for the asset or liability that are not based on observable market data (unobservable inputs) (level 3).

The following table presents the company's assets and liabilities measured and recognised at fair value at 31 December 2015 and 31 December 2014:

31 December 2015	Level 1	Level 2	Level 3	Total
	\$	\$	\$	\$
Assets				
Derivative financial instruments	-	512,159	-	512,159
Available-for-sale financial assets				
Equity securities	5,299,607	-	-	5,299,607
Bonds	5,920,839	-	-	5,920,839
Total assets	11,220,446	512,159	-	11,732,605

31 December 2014	Level 1	Level 2	Level 3	Total
	\$	\$	\$	\$
Assets				
Derivative financial instruments	-	1,541,130	-	1,541,130
Available-for-sale financial assets				
Equity securities	4,159,625	-	-	4,159,625
Bonds	6,045,592	-	-	6,045,592
Total assets	10,205,217	1,541,130	-	11,746,347

The fair value of financial instruments traded in active markets (such as available-for-sale financial assets) are based on quoted market prices at the end of the reporting period. These instruments are included in level 1.

The fair value of financial instruments that are not traded in an active market (such as derivative financial instruments) are determined using valuation techniques. These valuation techniques maximise the use of observable market data where it is available and rely as little as possible on entity specific estimates. If all significant inputs required to fair value an instrument are observable, the instrument is included in level 2.

16 Current assets - Held-to-maturity investments

	31 December 2015	31 December 2014
	\$	\$
Bonds (fixed and floating rates)	6,863,704	4,497,592
Term deposits	20,500,000	12,000,000
	27,363,704	16,497,592

17 Non-current assets - Held-to-maturity investments

	31 December 2015	31 December 2014
	\$	\$
Bonds (fixed and floating rates)	12,103,476	11,432,039
Term deposits	4,596,629	4,500,000
	16,700,105	15,932,039

18 Non-current assets - Available-for-sale financial assets

	31 December 2015	31 December 2014
	\$	\$
Non-current assets		
Bonds	5,920,839	6,045,592
Equity securities	5,299,607	4,159,625
	11,220,446	10,205,217

19 Non-current assets - Receivables

	31 December 2015	31 December 2014
	\$	\$
Prepayments	609,564	72,979

20 Non-current assets - Property, plant and equipment

	Leasehold improvements \$	Office equipment \$	Communication assets \$	Software \$	Total \$
At 1 January 2014					
Cost or fair value	2,020,078	4,116,610	78,881,719	815,234	85,833,641
Accumulated depreciation	(1,232,676)	(3,370,550)	(19,822,100)	(770,383)	(25,195,709)
Net book amount	787,402	746,060	59,059,619	44,851	60,637,932
Year ended 31 December 2014					
Opening net book amount	787,402	746,060	59,059,619	44,851	60,637,932
Additions	35,420	427,531	16,088,318	184,145	16,735,414
Disposals	-	(1,564)	-	-	(1,564)
Depreciation charge	(185,118)	(573,237)	(7,027,921)	(73,785)	(7,860,061)
Closing net book amount	637,704	598,790	68,120,016	155,211	69,511,721
At 31 December 2014					
Cost or fair value	2,055,498	4,514,288	94,925,964	999,379	102,495,129
Accumulated depreciation	(1,417,794)	(3,915,498)	(26,805,948)	(844,168)	(32,983,408)
Net book amount	637,704	598,790	68,120,016	155,211	69,511,721
Year ended 31 December 2015					
Opening net book amount	637,704	598,790	68,120,016	155,211	69,511,721
Additions	156,000	835,098	17,229,798	57,178	18,278,074
Additions (finance leases)	-	-	3,058,740	-	3,058,740
Disposals (finance leases)	-	-	(3,058,740)	-	(3,058,740)
Depreciation charge	(142,211)	(358,605)	(7,901,146)	(68,806)	(8,470,768)
Closing net book amount	651,493	1,075,283	77,448,668	143,583	79,319,027
At 31 December 2015					
Cost	2,206,095	5,331,932	110,634,744	1,056,556	135,117,056
Accumulated depreciation	(1,554,602)	(4,256,649)	(33,186,076)	(912,973)	(55,798,029)
Net book amount	651,493	1,075,283	77,448,668	143,583	79,319,027

Communication Assets- Finance Leases

During 2015, AARNet provided another party with rights to use components of AARNet's fibre and other infrastructure in return for that party providing AARNet with similar rights to use components of its fibre and infrastructure.

This arrangement is in the nature of two separate finance leases with each party acting as lessor and lessee. Each lease is treated as settled when both sides of the swap agreement come into force. Consequently, there is no lease finance cost or outstanding lease liability arising in respect of such transactions.

Assets in the course of construction

Included in the carrying amounts of the assets shown above are assets that were in the course of construction as at the end of the reporting period. The relevant amounts are as follows:

	31 December 2015 \$	31 December 2014 \$
Communication assets	15,987,994	15,447,154
Office equipment	314,228	49,444
Leasehold improvements	156,000	-
Total assets in the course of construction	16,458,222	15,496,598

Accounting Policy

Acquisition

Property, plant and equipment is stated at historical cost less depreciation. Historical cost includes expenditure that is directly attributable to the acquisition of the items.

Subsequent costs are included in the asset's carrying amount or recognised as a separate asset, as appropriate, only when it is probable that future economic benefits associated with the item will flow to AARNet and the cost of the item can be measured reliably.

Fibre and Infrastructure Swaps

AARNet may enter into arrangements granting other parties the right to use AARNet's fibre or infrastructure in return for receiving rights to use fibre or infrastructure owned by the other party ("swaps"). Where such swaps involve significant values of assets, AARNet records an asset disposal in respect of the assets used by the other party at the carrying value of the relevant assets at the time the swap becomes effective. AARNet then recognises an asset of equivalent value, being the right to use the fibre or infrastructure of the other party.

Depreciation

Property, plant and equipment is depreciated using the straight-line method to allocate cost, net of residual value, over each item's estimated useful life, as follows:

> Leasehold improvements	10 years
> Office equipment	3 years
> Leased communication assets	5 - 6 years
> Leased office equipment	3 years
> Communication assets	3 - 20 years
> Software	2 - 3 years

The assets' residual values and useful lives are reviewed, and adjusted if appropriate, at the end of each reporting period; such adjustments may result in a revised useful life shorter than that shown above.

Impairment of Assets

Assets that are subject to depreciation or amortisation are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognised for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs to sell and value in use. As a not-for-profit entity, value in use is calculated on the basis of the depreciated replacement cost, which represents the current replacement cost of an asset less, where applicable, accumulated depreciation calculated on the basis of such cost to reflect the already consumed or expired future economic benefits of the asset.

For the purposes of assessing impairment, assets are grouped at the lowest levels for which there are separately identifiable cash flows (cash generating units). The company has only one cash generating unit.

Gains and Losses

Gains and losses on disposals are determined by comparing proceeds with carrying amount. These are included in the income statement.

21 Non-current assets – Intangible assets

	Indefeasible right to use of capacity of traffic path \$	Total \$
At 1 January 2014		
Total payments	120,689,727	120,689,727
Accumulated amortisation on a straight line basis	(54,518,184)	(54,518,184)
Net book amount	66,171,543	66,171,543
Year ended 31 December 2014		
Opening net book amount	66,171,543	66,171,543
Additions	15,100,317	15,100,317
Amortisation charge	(10,286,324)	(10,286,324)
Closing net book amount	70,985,536	70,985,536
Total payments	135,790,044	135,790,044
Accumulated amortisation on a straight line basis	(64,804,508)	(64,804,508)
Net book amount	70,985,536	70,985,536
Year ended 31 December 2015		
Opening net book amount	70,985,536	70,985,536
Additions	7,560,337	7,560,337
Amortisation charge	(8,820,193)	(8,820,193)
Closing net book amount	69,725,680	69,725,680
At 31 December 2015		
Cost	143,350,382	143,350,382
Accumulated amortisation	(73,624,702)	(73,624,702)
Net book amount	69,725,680	69,725,680

AARNet's intangible assets are indefeasible rights to use (IRU) capacity on traffic paths across communication infrastructure owned by other parties.

During the year, additions to intangible assets totalled \$7,560,337. These additions were the result of recognising further payments for Indefeasible Rights to Use traffic paths.

Accounting Policy

The value of each IRU is amortised from the date each right becomes available for service and will continue to be amortised over the term of the right, which varies from 10 to 28 years.

Impairment

IRUs are also subject to impairment review as described in note 20.

22 Contributed equity

	31 December 2015 Shares	31 December 2014 Shares	31 December 2015 \$	31 December 2014 \$
Fully paid ordinary shares	78	78	39,039	39,039
	78	78	39,039	39,039

Movements in ordinary share capital

Date	Details	Number of shares	\$
1 January 2014	Opening balance	78	39,039
31 December 2014	Balance	78	39,039
31 December 2015	Balance	78	39,039

AARNet's shareholders are 38 Australian Universities and the Commonwealth Scientific and Industrial Research Organisation (CSIRO). Each shareholder holds two ordinary shares.

Holders of ordinary shares are entitled to one vote per share on resolutions put before the members. Holders of ordinary shares are not entitled to dividends and have no right to receive any distribution during a winding up.

23 Reserves and retained earnings

Retained earnings

Movements in retained earnings were as follows:

	31 December 2015 \$	31 December 2014 \$
Balance 1 January	149,666,897	129,829,555
Surplus for the year	29,349,166	19,837,343
Balance 31 December	179,016,063	149,666,898

24 Financial risk management

AARNet's activities are exposed to a variety of financial risks including:

- (a) market risk (including currency risk, interest rate risk and equity price risk);
- (b) credit risk; and
- (c) liquidity risk.

This note explains the Company's level of exposure to these risks, how these risks could affect the Company's future financial performance and how AARNet manages the impact of these risks.

AARNet's overall risk management program focuses on managing its liquidity and seeking to minimise potential adverse effects on financial performance. The Board, through the Audit, Finance & Risk Committee, is responsible for setting the overall objectives for risk management and provides specific policies where necessary.

The day to day risk management is carried out by identifying, evaluating and hedging financial risks. This is the responsibility of the Chief Executive Officer (CEO) and the Chief Financial Officer (CFO) and they are supported by operating management.

(a) Market risk

(i) Currency risk

AARNet operates equipment at international locations and deals with certain suppliers in foreign currencies and is impacted by changes in foreign exchange rates. The Company is primarily exposed to changes in the US dollar (USD) and to a smaller extent, the Euro (EUR). AARNet currently has monthly requirements in excess of USD200,000, for the purchase of international communications capacity and other services. These requirements are expected to increase over time.

Currency risk is measured using sensitivity analysis and cash flow forecasting, summarised below.

Currency risk is managed by holding foreign currency and entering into forward foreign exchange contracts. At year end, AARNet held USD1.5m (AUD2.1m) in USD denominated bank accounts and EUR0.12m (AUD0.18m) in a EUR denominated bank account. AARNet's risk management policy is to hedge at least 60% of anticipated short-term cash flows (mainly for the purchase of capacity from the US) in USD.

The following table summarises the sensitivity of the company's financial assets and financial liabilities to foreign exchange risk for the year.

	Carrying amount	-100 bps Profit	Other equity	+100 bps Profit	Other equity
	\$	\$	\$	\$	\$
At 31 December 2015					
Cash and cash equivalents	23,995,762	(260,130)	(260,130)	212,834	212,834
Trade Receivables	35,127,816	-	-	-	-
Derivatives - notional amount of cash flow hedges	512,159	(69,755)	(69,755)	57,072	57,072
Trade payables	4,422,421	(69,482)	(69,482)	56,849	56,849
	Carrying amount	-100 bps Profit	Equity	+100 bps Profit	Equity
	\$	\$	\$	\$	\$
At 31 December 2014					
Cash and cash equivalents	16,719,742	(36,224)	(36,224)	29,638	29,638
Trade Receivables	33,152,192	-	-	-	-
Derivatives - notional amount of cash flow hedges	1,541,130	(171,237)	(171,237)	140,103	140,103
Trade payables	5,207,888	(69,482)	(69,482)	56,849	56,849

(a) Market risk

(ii) Interest rate risk

AARNet's main interest rate risk arises from its cash at bank, cash in deposits and held-to-maturity investments.

The company's interest rate risk is monitored using sensitivity analysis and is reviewed by management and the company's external investment consultant.

The following table summarises the sensitivity of the company's financial assets and financial liabilities to interest rate risk for the year.

		Interest rate risk			
	Carrying amount	-10% Profit	Other equity	+10% Profit	Other equity
At 31 December 2015	\$	\$	\$	\$	\$
Financial assets					
Cash and cash equivalents	23,995,762	(202,007)	(202,007)	216,546	216,546
Held-to-maturity investments, term deposits	25,096,629	(250,966)	(250,966)	250,966	250,966
Held-to-maturity investments, term deposits	15,396,453	(153,965)	(153,965)	153,965	153,965

		Interest rate risk			
	Carrying amount	-10% Profit	Equity	+10% Profit	Equity
At 31 December 2014	\$	\$	\$	\$	\$
Financial assets					
Cash and cash equivalents	16,719,742	(164,874)	(164,874)	164,874	164,874
Held-to-maturity investments, term deposits	11,000,000	(110,000)	(110,000)	110,000	110,000
Held-to-maturity investments, term deposits	12,795,000	(127,950)	(127,950)	127,950	127,950

(a) Market risk

(iii) Available-for-sale assets (price risk)

AARNet's equity price risk arises from holding available-for-sale assets such as equity instruments, listed bonds and hybrid investments.

Price risk is measured and using sensitivity analysis and is monitored by management and the company's external investment consultant.

The following table summarises the sensitivity of the company's financial assets and financial liabilities to price risk for the year.

		Other price risk			
		-1%		+1%	
	Carrying amount	Profit	Other equity	Profit	Other equity
	\$	\$	\$	\$	\$
At 31 December 2015					
Financial assets					
Available-for-sale financial assets	11,220,446	(112,204)	(112,204)	112,204	112,204

		Other price risk			
		-1%		+1%	
	Carrying amount	Profit	Equity	Profit	Equity
	\$	\$	\$	\$	\$
At 31 December 2014					
Available-for-sale financial assets	10,205,217	(102,052)	(102,052)	102,052	102,052

(b) Credit risk

Credit risk arises where a debtor fails to make contractual payments to AARNet as and when they fall due. AARNet is exposed to credit risk on its holdings of cash and cash equivalents, term deposits, corporate bonds and loan notes, hybrid securities and derivative financial instruments. Further credit risk arises from credit exposures to customers in the form of outstanding receivables and committed transactions.

AARNet’s credit risk is mainly managed through the following measures:

Credit risk source	Management
Bank deposits and derivative financial instruments	<ul style="list-style-type: none">• Principally deal with highly rated financial institutions.
Investments in hybrid loan notes and bonds	<ul style="list-style-type: none">• Bound by an approved investment policy which stipulates minimum ratings or other criteria for investment funds.• Investment decisions based on recommendations from a licensed investment advisor.
Customers	<ul style="list-style-type: none">• Assessment of credit quality of the customer, taking into account its financial position, past experience and other factors.• Invoicing in advance for significant portion of income.

(c) Liquidity risk

Prudent liquidity risk management implies maintaining sufficient cash available to meet the needs of the business. Management monitors AARNet’s liquidity and cash and cash equivalents on a rolling forecast expected cash flow basis. This analysis is prepared in Australian Dollars. AARNet’s Board periodically considers longer range financial forecasts (5+ years) provided as part of the normal course of its deliberations. The Board also considers the expenditure commitments disclosed in note 2 when assessing the liquidity of the Company.

25 Critical accounting estimates and judgements

The preparation of financial statements requires the use of certain critical accounting estimates. It also requires management to exercise its judgement in the process of applying the Company’s accounting policies. Often, this involves estimates and assumptions concerning the future. The resulting accounting estimates will, by definition, seldom equal the related actual results. The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are discussed below.

(i) Useful life of intangible assets

The Director’s have assumed in the ordinary course of business that AARNet’s customers will continue to use AARNet’s services into the foreseeable future. The useful economic lives assigned for intangible assets are based on the contractual terms agreed for each indefeasible right to use.

(ii) Useful life of assets

AARNet is the owner of a significant amount of assets and infrastructure. Estimates are made as to the useful life of these assets which can affect the amount of depreciation and amortisation expense during the year.

26 Directors

The Directors of AARNet Pty Ltd during the financial year were:

(i) Chairman – non-executive

Emeritus Professor Gerard Sutton AO*

(ii) Executive Directors

Mr Chris Hancock, CEO

(iii) Non-executive Directors

Mr Chris Bridge

Dr Christine Burns (appointed 18 May 2015)

Mr Robert Fitzpatrick* (appointed 18 May 2015)

Professor Linda Kristjanson

Mr Jeff Murray

Mr John Rohan*

Professor Deborah Terry

Emeritus Professor Mark Wainwright AM*

Dr David Williams

Professor Ian Young AO (resigned 13 November 2015)

*Denotes independent director

27 Key management personnel disclosures**Key management personnel compensation**

The key management personnel are those who had authority and responsibility for planning, directing and controlling the activities of AARNet, directly or indirectly, during the year. The remuneration for key management personnel including directors is as follows:

	31 December 2015 \$	31 December 2014 \$
Short-term employee benefits	1,931,259	1,921,608
Post-employment benefits	251,692	245,451
	<u>2,182,951</u>	<u>2,167,059</u>

Transactions with key management personnel

A director, Emeritus Professor MS Wainwright AM, is Chair of Smart Services CRC Pty Ltd. AARNet owns one share and makes in-kind contributions to this company. The CEO, Mr C Hancock, is also a Director of this company.

Several directors (Messrs CM Bridge, J Murray and Dr C Burns) are members of the Council of Australian University Directors of Information Technology (CAUDIT) to which AARNet provides payroll bureau services. AARNet receives no consideration for this service.

Other directors represent, act for, or hold offices at certain of AARNet's shareholders and customers. AARNet provides services to these shareholders on arm's length terms.

28 Remuneration of auditors**PricewaterhouseCoopers***Audit and other assurance services*

	2015 \$	2014 \$
<i>Audit and other assurance services</i>		
Audit and review of financial statements	206,000	201,900
Other assurance services		
Audit of regulatory returns	-	9,500
Audit of special purpose finance reports	21,000	25,500
Total remuneration for audit and other assurance services	<u>227,000</u>	<u>236,900</u>
<i>Taxation services</i>		
Taxation services	1,382	39,797
Total remuneration of PricewaterhouseCoopers	<u>228,382</u>	<u>276,697</u>

29 Other significant accounting policies

New and amended standards adopted

AARNet has not applied any standards for first time in this reporting period.

AARNet has not early adopted any standards that have been issued but are not yet effective.

Foreign currency translation

Foreign currency transactions are translated into the functional currency using the exchange rates prevailing at the dates of the transactions. Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation at year end exchange rates of monetary assets and liabilities denominated in foreign currencies are recognised in the income statement.

Leases

Leases of property, plant and equipment where AARNet, as lessee, has substantially all the risks and rewards of ownership are classified as finance leases. Finance leases are capitalised at the lease's inception at the fair value of the leased property or, if lower, the present value of the minimum lease payments. The corresponding rental obligations, net of finance charges, are included in other short-term and long-term payables. Each lease payment is allocated between the liability and finance cost. The finance cost is charged to the income statement over the lease period so as to produce a constant periodic rate of interest on the remaining balance of the liability for each period. The property, plant and equipment acquired under finance leases is depreciated over the asset's useful life or over the shorter of the asset's useful life and the lease term if there is no reasonable certainty that AARNet will obtain ownership at the end of the lease term.

AARNet may, as described in note 20, enter into arrangements which are considered off-setting finance leases. Such leases are considered to be settled immediately after coming into effect with the result that no finance cost, or finance income is recognised, and no finance liability or receivable remains outstanding. Assets acquired under such arrangements are depreciated over the shorter of the asset's useful life or the lease term.

Leases in which a significant portion of the risks and rewards of ownership are not transferred to AARNet as lessee are classified as operating leases. Payments made under operating leases (net of any incentives received from the lessor) are charged to the income statement on a straight-line basis over the period of the lease.

Goods and Services Tax (GST)

Revenues, expenses and assets are recognised net of the amount of associated GST, unless the GST incurred is not recoverable from the Australian Taxation Office (ATO). In this case it is recognised as part of the cost of acquisition of the asset or as part of the expense.

Receivables and payables (except accrued expenses) are stated with the amount of GST included.

The net amount of GST recoverable from, or payable to, the ATO is included as a current asset or liability in the Balance Sheet.

Cash flows are included in the Statement of Cash Flows on a gross basis. The GST component of cash flows arising from investing and financing activities which are recoverable from, or payable to, the ATO are classified as operating cash flows.

Comparative figures

Comparative figures have been adjusted to conform to the presentation of the financial year, where required.

New accounting standards and interpretations

The AASB has issued a new standard for the recognition of revenue (AASB15) and the IASB has issued a new international standard on Leases (IFRS 16). AARNet is party to a range of complex customer agreements and arrangements with infrastructure and other suppliers. Consequently, both new standards may have a significant effect on AARNet. The company is still evaluating the effect of both these new standards.

In the Directors' opinion:

- (a) the financial statements and notes set out on pages 8 to 26 are in accordance with the *Corporations Act 2001*, including:
 - (i) complying with Accounting Standards, the *Corporations Regulations 2001* and other mandatory professional reporting requirements, and
 - (ii) giving a true and fair view of the entity's financial position as at 31 December 2015 and of its performance for the year ended on that date, and
- (b) there are reasonable grounds to believe that the Company will be able to pay its debts as and when they become due and payable.

This declaration is made in accordance with a resolution of Directors.



**Emeritus Professor
GR Sutton AO**
Director



Mr CM Hancock
Director

Sydney

31 March 2016



Report on the financial report

We have audited the accompanying financial report of AARNet Pty Ltd (the company), which comprises the balance sheet as at 31 December 2015, the statement of surplus/(deficit), statement of changes in equity and statement of cash flows for the year ended on that date, a summary of significant accounting policies, other explanatory notes and the directors' declaration.

Directors' responsibility for the financial report

The directors of the company are responsible for the preparation of the financial report that gives a true and fair view in accordance with Australian Accounting Standards and the *Corporations Act 2001* and for such internal control as the directors determine is necessary to enable the preparation of the financial report that is free from material misstatement, whether due to fraud or error.

Auditor's responsibility

Our responsibility is to express an opinion on the financial report based on our audit. We conducted our audit in accordance with Australian Auditing Standards. Those standards require that we comply with relevant ethical requirements relating to audit engagements and plan and perform the audit to obtain reasonable assurance whether the financial report is free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial report. The procedures selected depend on the auditor's judgement, including the assessment of the risks of material misstatement of the financial report, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial report in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by the directors, as well as evaluating the overall presentation of the financial report.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Independence

In conducting our audit, we have complied with the independence requirements of the *Corporations Act 2001*.

Independent auditor's report to the members of AARNet Pty Ltd

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For the year ended 31 December 2015 (continued)

Auditor's opinion

In our opinion, the financial report of AARNet Pty Ltd is in accordance with the *Corporations Act 2001*, including:

1. giving a true and fair view of the company's financial position as at 31 December 2015 and of its performance for the year ended on that date; and
2. complying with Australian Accounting Standards and the *Corporations Regulations 2001*.



PricewaterhouseCoopers



Rosalie Wilkie
Partner

Sydney
31 March 2016

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