



STATEMENT OF  
PERFORMANCE  
EXPECTATIONS  
2018/19

REANNZ

# CONTENTS /

OUR VISION AND MISSION	2
INTRODUCTION	3
ABOUT REANNZ	4
RESEARCH AND EDUCATION NETWORKS	6
MAJOR INITIATIVES FOR 2018/19	10
1. Revised business model	11
2. Tailored services for research and education	12
3. A rich and interconnected research and education ecosystem	13
4. High-performance network platform	14
5. High-performance organisation	15
6. Deep understanding and support of our members' needs	16
PERFORMANCE FRAMEWORK	17
ASSESSING OUR PERFORMANCE	20
- Tracking our outcomes	20
- Forecasting and measuring our impacts	21
- Monitoring our output	26
EXPECTED REVENUES AND PROPOSED EXPENSES	30
PROSPECTIVE FINANCIAL STATEMENTS	31
- Nature and purpose of financial statements	34
- Statement of significant assumptions	34
- Notes to the prospective financial statements	36

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## Statement of Responsibility

This Statement of Performance Expectations is submitted by the Board of Directors of Research and Education Advanced Network New Zealand Limited (REANNZ), pursuant to the Crown Entities Act 2004. It sets out the service expectations for REANNZ for the period 1 July 2018 to 30 June 2019.

REANNZ's Board is responsible for the prospective financial statements and statement of performance expectations contained in this document, including the appropriateness of the assumptions underlying them. It is also responsible for internal control systems, which provide reasonable assurance as to the integrity and reliability of financial reporting.



Ross Peat  
Acting Chair

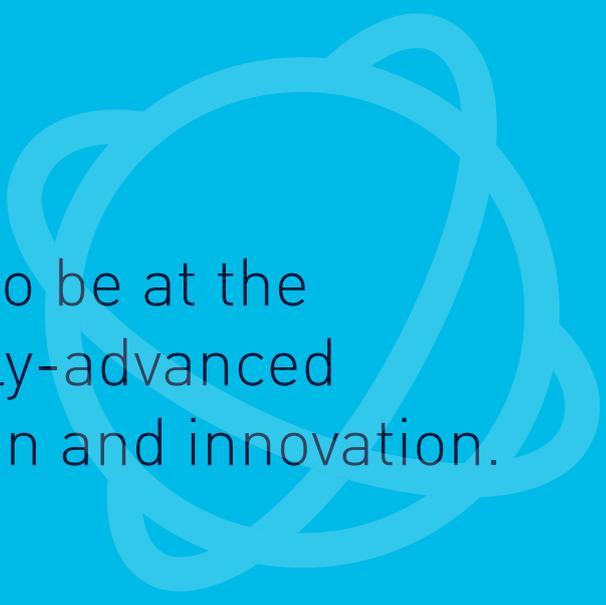


Steve Weaver  
Director

1 July 2018

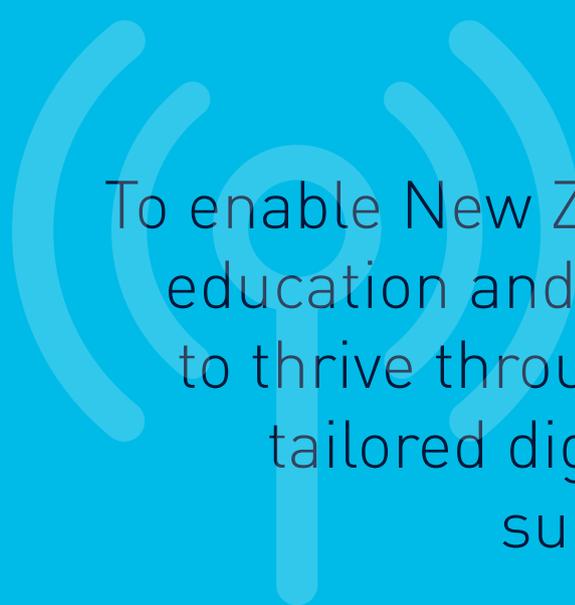
## OUR VISION /

For New Zealand to be at the forefront of digitally-advanced research, education and innovation.



## OUR MISSION /

To enable New Zealand's research, education and innovation sectors to thrive through the provision of tailored digital infrastructure, support and services.



# DATA DRIVES MODERN ECONOMIES /

Data drives modern economies. While goods, manufacturing and finance were the hallmarks of the global economy in the 20th century, the 21st century is being defined by global flows of data and information.<sup>1</sup> Communities that share and convert data into knowledge will thrive.

REANNZ is New Zealand's Crown-owned digital infrastructure, services and support provider that enables New Zealand to be at the forefront of digitally-advanced research, education and innovation. We're part of a world-wide network of research and education infrastructure that supports the global flow of data and information between researchers, educators and innovators, connecting them at speed to the tools, people, applications and resources they need to be successful in their fields - wherever they may be.

When our members have access to the research, education and innovation infrastructure required to pursue and achieve excellence, this creates a ripple effect, attracting more funding, more talent, greater international collaboration and new breakthroughs. This positive cycle delivers benefits for all New Zealanders through improved educational, social, economic and environmental outcomes.

Access to this infrastructure also provides a platform on which transformational change takes place. It creates opportunities to disrupt the way education is delivered, to revolutionise research methods, to improve scientific outcomes and to increase productivity in unprecedented ways.

A national research and education network (NREN) is essential to the success of a digital nation. High-performance connectivity is a pre-requisite for both collaboration and competition in a world where success requires access to resources on a global scale. New Zealanders need not be constrained by their physical location on the planet. With the local and global infrastructure in place New Zealand's scientists, researchers and innovators can realise their ambitions and take their place on the world stage.

<sup>1</sup> Digital Globalisation: The New Era of Global Flows, McKinsey Global Institute, March 2016

# ABOUT REANNZ /

REANNZ's members are New Zealand's universities, Crown Research Institutes, institutes of technology/polytechnics and other research, education and innovative organisations.

The impact of our high-performance network extends beyond our members to the collaborative research initiatives in which they participate. These include the National Science Challenges, Centres of Research Excellence and programmes funded by grants from the Marsden Fund, Royal Society of New Zealand, Health Research Council, and Ministry of Business, Innovation and Employment (MBIE) contestable funding.

We are funded through a mix of membership fees for network access and services, and Crown funding which supports our unique role.

Over recent years, changes in funding and the changing needs of our members have stimulated a need to revise our service structure and pricing model. Our current model has been in place for ten years, and we will work with our members to have a new model in place by December 2018; one that is fit for the future and designed to encourage maximum participation in data-intensive research, education and innovation.

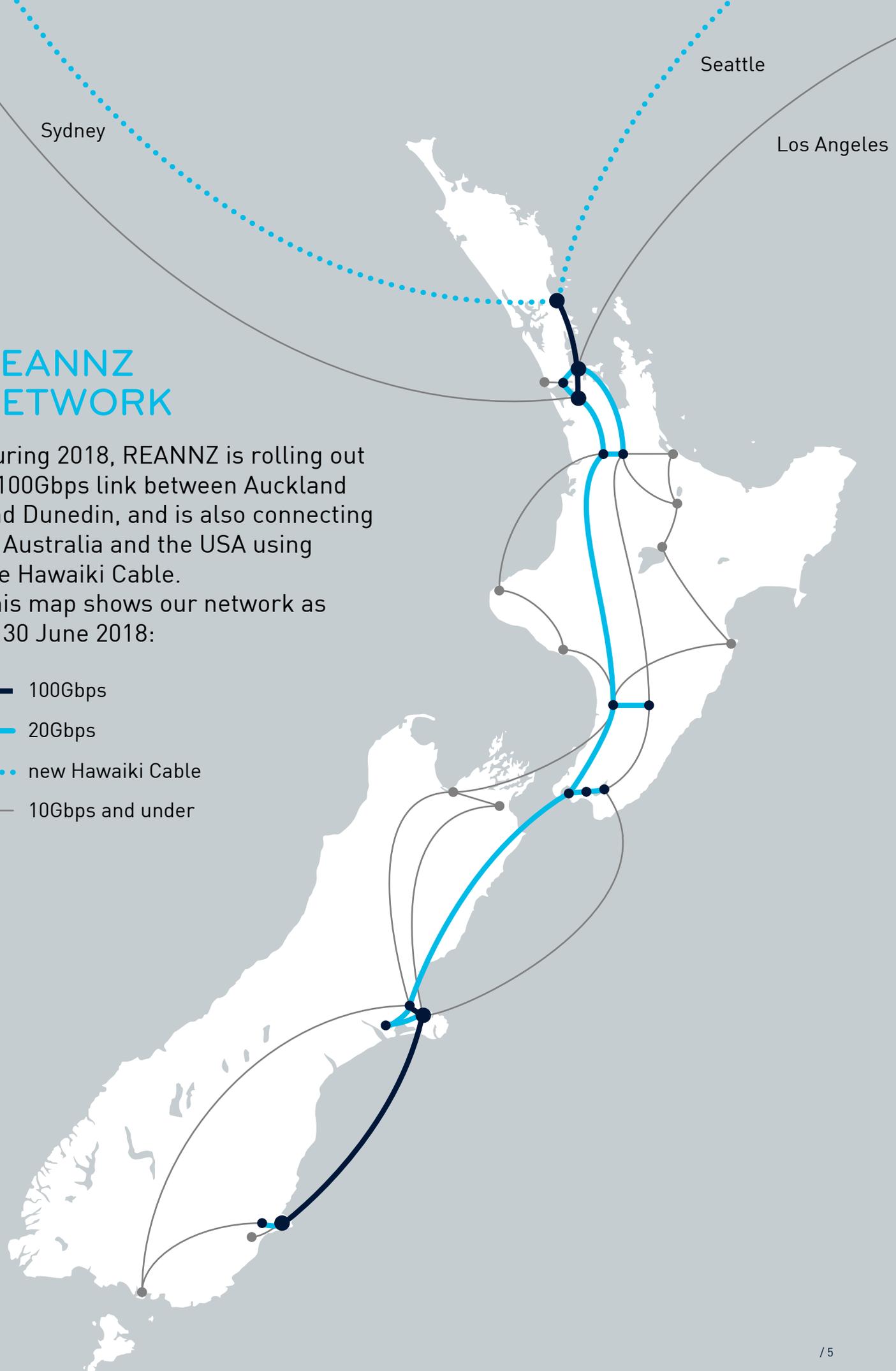
REANNZ will also be working with MBIE over the coming year as they undertake a separate review, to look at the future business model of REANNZ and opportunities to ensure the long-term sustainability of the essential digital research and education platform that we provide. Our Statement of Performance Expectations, and if necessary our Statement of Intent, will be updated in due course to reflect any changes that arise out of this review.

In the coming year, REANNZ's financial performance is impacted by a number of one-off costs that are funded through prior year surpluses, as planned. Earnings before interest, tax, depreciation and amortisation, as well as these one-off items is positive.

# REANNZ NETWORK

During 2018, REANNZ is rolling out a 100Gbps link between Auckland and Dunedin, and is also connecting to Australia and the USA using the Hawaiki Cable. This map shows our network as at 30 June 2018:

- 100Gbps
- 20Gbps
- ... new Hawaiki Cable
- 10Gbps and under



# RESEARCH AND EDUCATION NETWORKS /

Globally, research and education networks are “closed systems”. A limited number of participants contribute to and utilise a long-term infrastructure base. The specific needs of this small customer base requires us to manage our infrastructure for optimal performance, supporting the high-end requirements of New Zealand’s researchers, as well as the needs of teaching, learning and innovation.

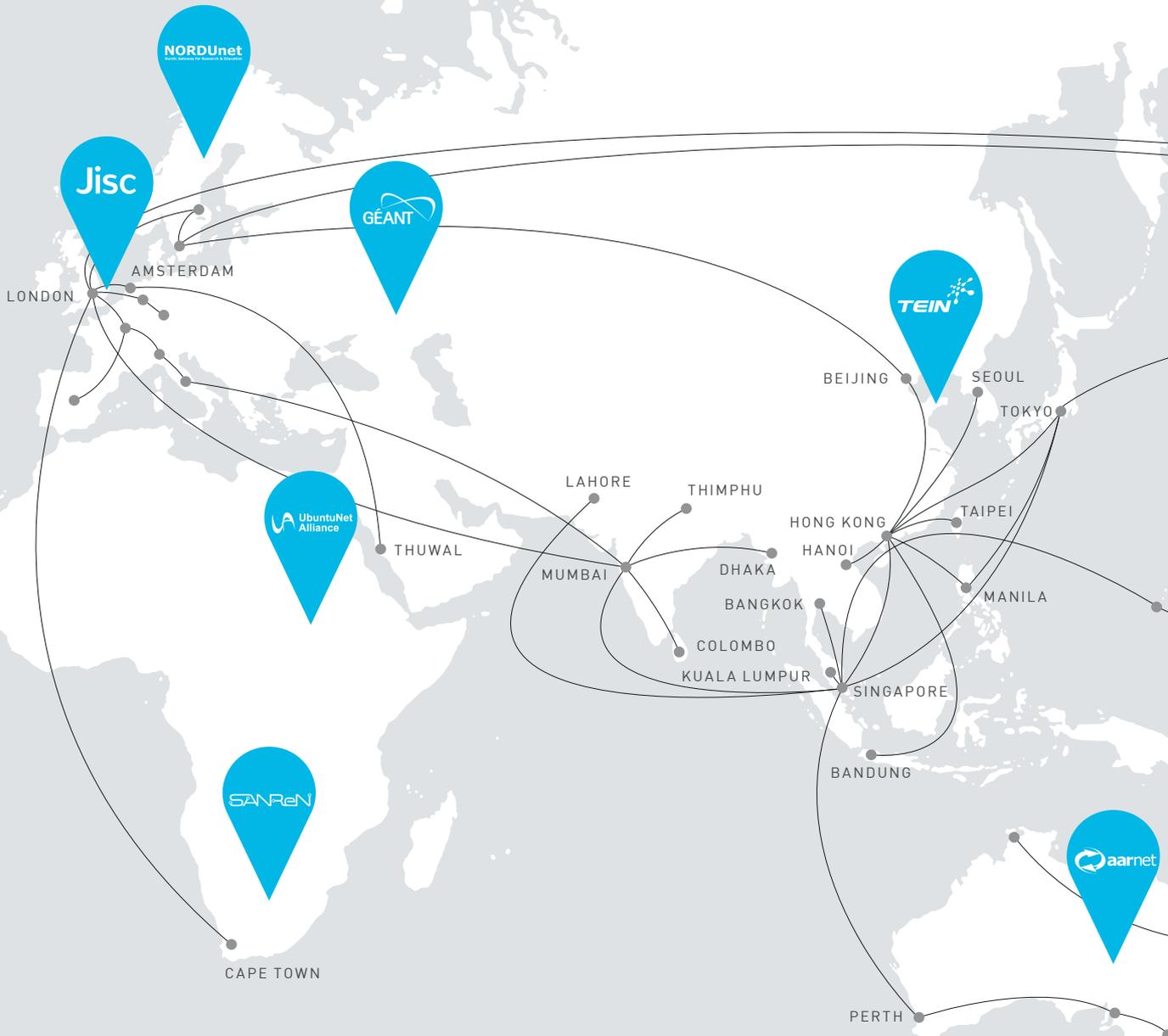
Our network is deliberately architected and managed to deliver optimal, high-performance for our users. This means:

- › the network backbone is managed to accommodate large but unpredictable bursts in traffic, from the most demanding of scientific applications. As a result, the network is not congested, allowing all users to gain benefits from high-capacity and high-speed network performance;
- › we focus on transfer performance – this means managing network equipment to ensure there is no packet loss (which can arise from congestion or poorly configured network equipment), and minimal latency and jitter (the time taken for a packet of data to get from one point to another and the consistency of that experience). This is essential for both transfer speed and for transfer quality (getting everything there fast and complete);
- › our network is highly-reliable, designed to be resilient and highly-available;
- › we are part of a global partnership of over 120 national research and education networks (NRENs) that have the same commitment to high-performance; allowing our users to collaborate with their peers worldwide as part of a global fabric and ensuring their connectivity experience is seamless from source to destination;
- › we work closely with our members to help ensure that high-performance is possible from their front door, by managing their access connections and devices - tuning them for maximum performance;
- › we look to provide tailored services that meet the unique needs of research, education and innovation users and their communities. These are services that are not available, or are cost-prohibitive, in the open market;
- › we invest in talent, so we can provide our members with quality advice, expertise and technology leadership.

## 2016/17 saw:

- 99.99% National network availability
- 100% International network availability
- 65% increase in national traffic volumes
- 36% increase in international traffic volumes





**REANNZ IS PART OF A  
GLOBAL NETWORK OF NRENS,  
CONNECTING RESEARCHERS  
ACROSS THE GLOBE TO SHARE  
INFORMATION AND IDEAS.**



REANZ

# MAJOR INITIATIVES FOR 2018/19

## 1 /

### Revised business model

**GOAL:**

Redesign REANNZ's business model, including network participation, investment, services structure and pricing models to ensure REANNZ is fit for the future.

## 2 /

### Tailored services for Research and Education

**GOAL:**

Broaden services and grow uptake to increase productivity and effectiveness for members.

## 3 /

### A rich and interconnected Research and Education ecosystem

**GOAL:**

Grow participation in and membership of the REANNZ community and increase the number of resources our members have access to.

## 4 /

### High-performance network platform

**GOAL:**

Deliver world-class National Research and Education Network services to all members.

## 5 /

### High-performance organisation

**GOAL:**

REANNZ is a high-performing organisation, with a cultural focus on continuously improving quality, efficiency, cost effectiveness, communication, collaboration and innovation.

## 6 /

### Deep understanding and support of our members' needs

**GOAL:**

To truly serve the unique needs of our community, we need to know our members'.

# 1 /

## Revised business model

### GOAL:

Redesign REANNZ's business model, including network participation, investment, services structure and pricing models to ensure REANNZ is fit for the future.

### PURPOSE:

REANNZ's business model has been in place for over ten years. We must ensure it remains fit-for-purpose, reflective of the changing and growing needs of our members and New Zealand's science and innovation strategy. This will help ensure the success of digitally-advanced research, education and innovation in the years to come.

In the coming year we will work with our members and MBIE to finalise and implement REANNZ's sustainability strategy including:

- › a new Services Structure and Pricing Model in place by 31 December 2018;
- › contributing to and supporting MBIE's review;
- › identifying and implementing operational cost savings;
- › growing participation in the network to increase revenues and gross margin;
- › achieving positive earnings before interest, tax, depreciation, amortisation and planned one-off items (which are funded through prior years' surpluses).

# 2 /

## Tailored services for Research and Education

### GOAL:

**Broaden services and grow uptake to increase productivity and effectiveness for members.**

### PURPOSE:

Our strategy is to deepen our relationships with our members and continue to grow our service offering, both as a way to deliver increasing value for members to better support their unique and developing needs, and to diversify our revenue streams.

In the coming year, REANNZ will work with our members to:

- › explore and implement new service offerings of value to the research and education community, including cloud research storage options and turnkey on-premise solutions for research data transfers;
- › expand our cyber and network security offerings for members, including DDoS mitigation enhancements and access to global research network security best practices;
- › revise the Tuakiri identity and access management offerings, focusing on service enhancements to grow the value proposition, future expansion and sustainability of the services.

# 3 /

## A rich and interconnected Research and Education ecosystem

### GOAL:

Grow participation in and membership of the REANNZ community and increase the number of resources our members have access to.

### PURPOSE:

Increased membership and access to major resources increases the value of the network as a whole (the network effect) and helps foster a productive research and education community. Our members can interact more effectively with each other and have access to the tools and resources they need to be successful, whether they are located in New Zealand or internationally.

In the coming year REANNZ will:

- › support access to domestic and global research and education platforms and infrastructures, including the National eScience Infrastructure project (NeSI), Genomics Aotearoa, the signalled big data and analytics platform and key overseas facilities;
- › grow membership of REANNZ;
- › maintain New Zealand's reputation internationally as a highly capable and interconnected research and education ecosystem.

# 4 /

## High-performance network platform

### GOAL:

**Deliver world-class National Research and Education Network (NREN) services to all members.**

### PURPOSE:

Our network must remain high-performing: reliable, accurate, uncongested and able to manage the demands of often bursty research and science traffic. Keeping the network at its best requires constant planning, care and maintenance. It also requires REANNZ to remain expert in emerging technology trends, particularly the activities of the global research and education network community of which we are a recognised contributor.

In the coming year REANNZ will:

- › execute network capacity upgrades so growing network use is well supported, and features of the high-performance network are maintained in a cost-effective way, including:
  - › upgrade key national network links to 100Gbps;
  - › launch of our new international network, in partnership with Hawaiki Cable;
  - › plan and execute international network capacity for resiliency;
  - › maintain network performance including availability, burst capability and low thresholds for packet loss; and
- › ensure REANNZ remains well equipped to support the next generation of research and education activity by continuing to keep pace with international developments and R&D in new technologies and industry advancements.

# 5 /

## High-performance organisation

### GOAL:

REANNZ is a high-performing organisation, with a cultural focus on continuously improving quality, efficiency, cost effectiveness, communication, collaboration and innovation.

### PURPOSE:

REANNZ is an evolving organisation, diversifying our services and continuing to deepen the relationships with our members. An organisation that is high performing will attract and retain the talent needed to innovate more rapidly and deliver better results for our stakeholders.

In the coming year REANNZ will:

- › support our team by retaining our specialised talent, developing our people and embedding a high-performance culture driven by excellence in leadership;
- › drive operational efficiency by automating routine processes where possible and delivering cost-effectiveness by maintaining a focus on value-for-money at all procurement and resourcing decision points.

# 6 /

## Deep understanding and support of our members' needs

### GOAL:

To truly serve the unique needs of our community, we need to know our members' IT and research needs better than anyone.

### PURPOSE:

We are a member-focused organisation, specialising in meeting the unique needs of our community. To do this effectively, we must have close relationships with our members, to tailor solutions and support for optimal results. Our work delivers value not only through the specialist network services that support users at individual institutions, but the communities of practice we foster by bringing people together across sectors and disciplines to solve research and education challenges.

In the coming year REANNZ will:

- › increase awareness of our high-performance network and the opportunities it creates for members, the value of participation and the broader benefits to New Zealand through a targeted science engagement strategy;
- › support our members to build capability and solve data-transfer challenges, to further increase use of the network and accelerate our users work, through strong technical engagement;
- › ensure we are adaptive and responsive to members needs by creating a Strategic Advisory Group, as well as specialist member groups for specific projects and product development activities;
- › grow uptake of services that support our members goals.

# PERFORMANCE FRAMEWORK /

This performance framework shows how our output, the advanced network and related tools, enables research and education that leads to a strong research ecosystem and growing economy.

## OUR VISION /

For New Zealand to be at the forefront of digital

**OUTCOMES**  
to succeed

### Outcomes

#### Sector Outcome

Grow the NZ economy to deliver greater prosperity and opportunity for all New Zealanders.

#### REANNZ Outcome

To enable NZ's research, education and innovation sectors to thrive through the provision of tailored infrastructure, support and services.

**IMPACTS**  
that enable

### Measuring Our Impacts

#### Researchers across all fields are to conduct data-intensive research

##### Impact measures

- > Total traffic flows increase 12% YoY
- > Traffic to international research networks increase 5% YoY
- > > 80% users consider REANNZ network essential or valuable to their work.

**OUTPUTS**  
deliver

### Monitoring our Output

#### Quality measures

- > National network availability > 99.90%
- > International network availability > 99.90%
- > Packet loss < 0.0001%

#### Quantitative

- > Network capacity
- > Points of presence
- > New services
- > eduropa

## OUR OUTPUT /

The advanced research and education network

## ally-advanced research, education and innovation

### OUTCOME SUCCESS MEASURES /

#### Sector Outcome

- › Maintain position in the Top 500 Universities per GDP in the OECD Science, Technology & Industry Outlook
- › NZ maintains its ranking for “university-industry collaboration in R&D” in the WEF global competitiveness index
- › Maintain NZ ranking for “capacity for innovation” in the WEF global competitiveness index.

#### able ch

#### Collaboration between science, education and innovation is enhanced

##### Impact measures

- › Total international traffic volumes increase 15% YoY
- › National traffic volumes increase 10% YoY

#### Users have access to the content and tools they need

##### Impact measures

- › Subscriptions to other services increase by 10%

#### ty measures

ork capacity  
of presence  
service offering increase  
m™ usage

#### Timeliness measures

- › > 80% members consider any issues resolved in a timely manner

#### Cost-effective measures

- › Membership base is maintained

## and supporting services

# ASSESSING OUR PERFORMANCE /

Our suite of performance indicators track trends in our high-level outcomes. Our indicators measure the impact we have and the quality, quantity, timeliness and cost-effectiveness of our output - the advanced research and education network and supporting services.

## Tracking our outcomes

REANNZ is one of many contributors to a high-performing and globally competitive research, education and innovation system. For this reason we track trends for this outcome using external, publicly available indicators of the performance of New Zealand's research education and innovation system, but we do not forecast specific changes in the trend indicators.

### REANNZ Outcome

To enable NZ's research, education and innovation sectors to thrive through the provision of tailored digital infrastructure, support and services.

### Trend Indicators

New Zealand progresses its position in the Top 500 Universities per GDP, as shown in the OECD's "Comparative performance of national science and innovation systems", published in the OECD Science, Technology and Industry Outlook every two years.

New Zealand maintains its ranking for 'University-Industry collaboration in R&D' in the World Economic Forum global competitiveness index.

An improvement in New Zealand's ranking for 'capacity for innovation' in the World Economic Forum global competitiveness index.

# Forecasting and measuring our impacts

## Impact 1: Researchers across all fields are able to conduct data-intensive research

A number of science initiatives with large data requirements are being conducted that could not occur without the reach, reliability and speed of an advanced network.

Examples include high-performance computing applications, for example: climate and geological science facilitated by the National eScience Infrastructure project (NeSI); genomics work with international collaborators; and radio astronomy data analysis related to the international SKA project.

All of these involve scientific instruments that generate massive datasets. These datasets need to be transported quickly and accurately from the instruments to hosting or processing centres, and to be shared across the globe with scientists and researchers.

Indications of the amount of data-intensive science occurring are represented by the amount of data flowing over the network.

Measurements are in Petabytes (PB).

### Impact measure: Total traffic flows increase

12% year-on-year

	Actual 2013/14	Actual 2014/15	Actual 2015/16	Actual 2016/17	Estimate 2017/18	Forecast 2018/19
Total traffic flows increase	+46% +3.12 PB	+84% +8.3 PB	+52% +9.37 PB	+54% +14.84 PB	+17% +7.35 PB	+ 12% YoY growth
<b>Total</b>	<b>9.87 PB</b>	<b>18.17 PB</b>	<b>27.54 PB</b>	<b>42.38 PB</b>	<b>49.73 PB</b>	

Increases in the total amount of network traffic indicate more research and education services, applications and collaboration is being conducted and supported.

This year, we have forecast 12% year-on-year growth. This is the equivalent of 20% annual growth in traffic from members who have chosen to renew their REANNZ membership in 2018/19.

20% annual growth is in line with maturing research and education networks internationally, who are growing at rates between 20% and 30% per annum.

During the year REANNZ has also improved the way we measure traffic flows. A new system will be used to report traffic growth from the start of the 2018/19 year.

### Impact measure: Total traffic to international research networks increases 5% year-on-year

	Actual 2014/15	Actual 2015/16	Actual 2016/17	Estimate 2017/18	Forecast 2018/19
Total traffic destined for other research and education networks	+37% +0.28 PB	+7% +0.07 PB	+1% +0.01 PB	+85% +0.95 PB	+5% +0.10PB
<b>Total</b>	<b>1.04 PB</b>	<b>1.11 PB</b>	<b>1.12 PB</b>	<b>2.07 PB</b>	<b>2.17 PB</b>

## What this measures

Together, increases in the total amount of traffic flowing internationally between REANNZ members and the members of global NRENs, coupled with an understanding of the traffic profile, are indicators of the value of our international NREN partnerships, and how they are used to facilitate inter-institutional collaboration.

This measure does not include research and education activity that utilises other private research and education services, for example Amazon Web Services or Microsoft Azure (which include activities such as computing, storage and analytics). Growing use of these services is captured in our total international traffic volumes, shown later in this report.

## Our forecast

A vibrant research environment produces and shares more and more data with international collaborators and utilises data and services from global repositories and research platforms. We have forecast 5% growth in traffic volumes in the next year. The exceptional growth in 2017/18 set a new benchmark which we anticipate will be followed by moderate growth, further impacted by members delaying new initiatives while REANNZ's long-term business model is worked through during 2018/19.

Continued growth is reliant on:

- > changes in drivers for researchers and institutions to undertake data intensive research programmes with international participants and/or use of international research infrastructures;
- > increases in the capability (both technology and skills) of our members to support the transfer of data inside their institutions; and
- > providing confidence for members to make investments in data-intensive science and infrastructure on the basis of that the long-term future of the REANNZ digital research infrastructure is assured.

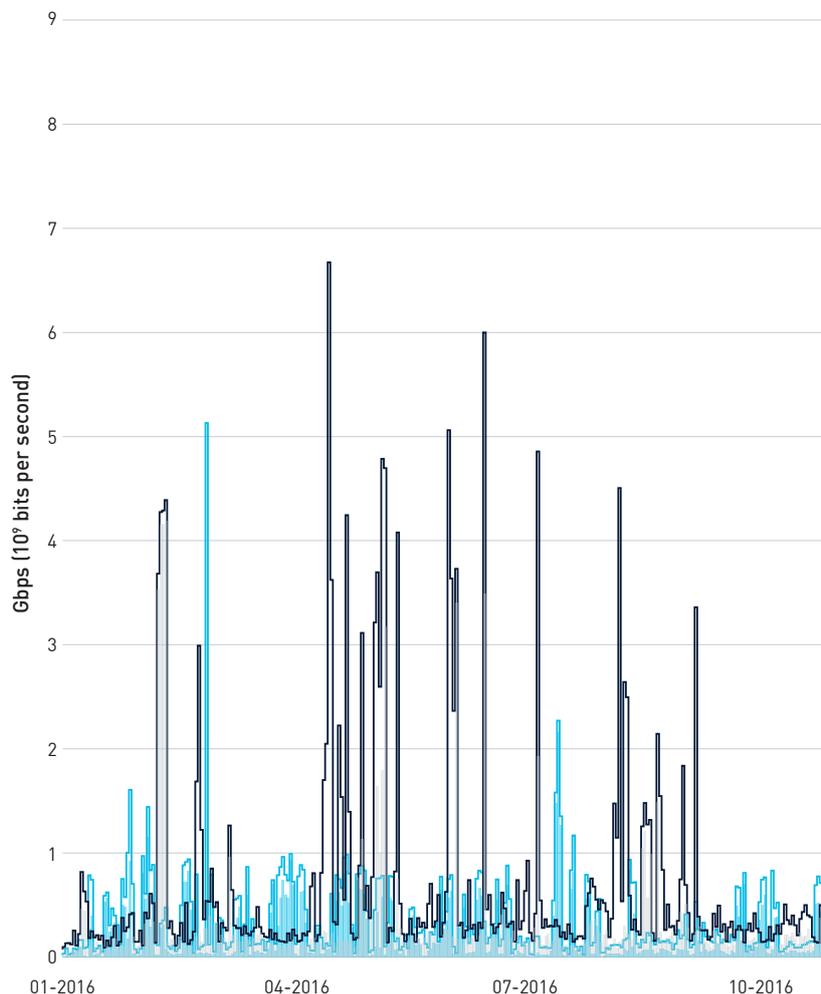
## Traffic profiles

Total traffic alone does not present the full value of high-performance, international connections. It treats all traffic as equal, ignoring the performance features of the networks that make it possible for large datasets to be transferred over long distances. Therefore, an increasing or decreasing total volume of traffic transferred is not, of itself, the only representation of the value of the connection. The profile of the traffic being sent is important to fully understand the value and utilisation of this capability - the ability for traffic to be sent all at once is more valuable than the same amount of traffic sent over a longer timeframe.

Traffic profiles are impossible to set performance targets or trends for; instead we show a trend graph of the traffic profile over time. The graph shows international research traffic from January 2016. The 'spikes' are data-intensive research and science activity.

## All members, daily traffic rates for international R&E

January 2016 to April 2018 (max and 95th percentile)

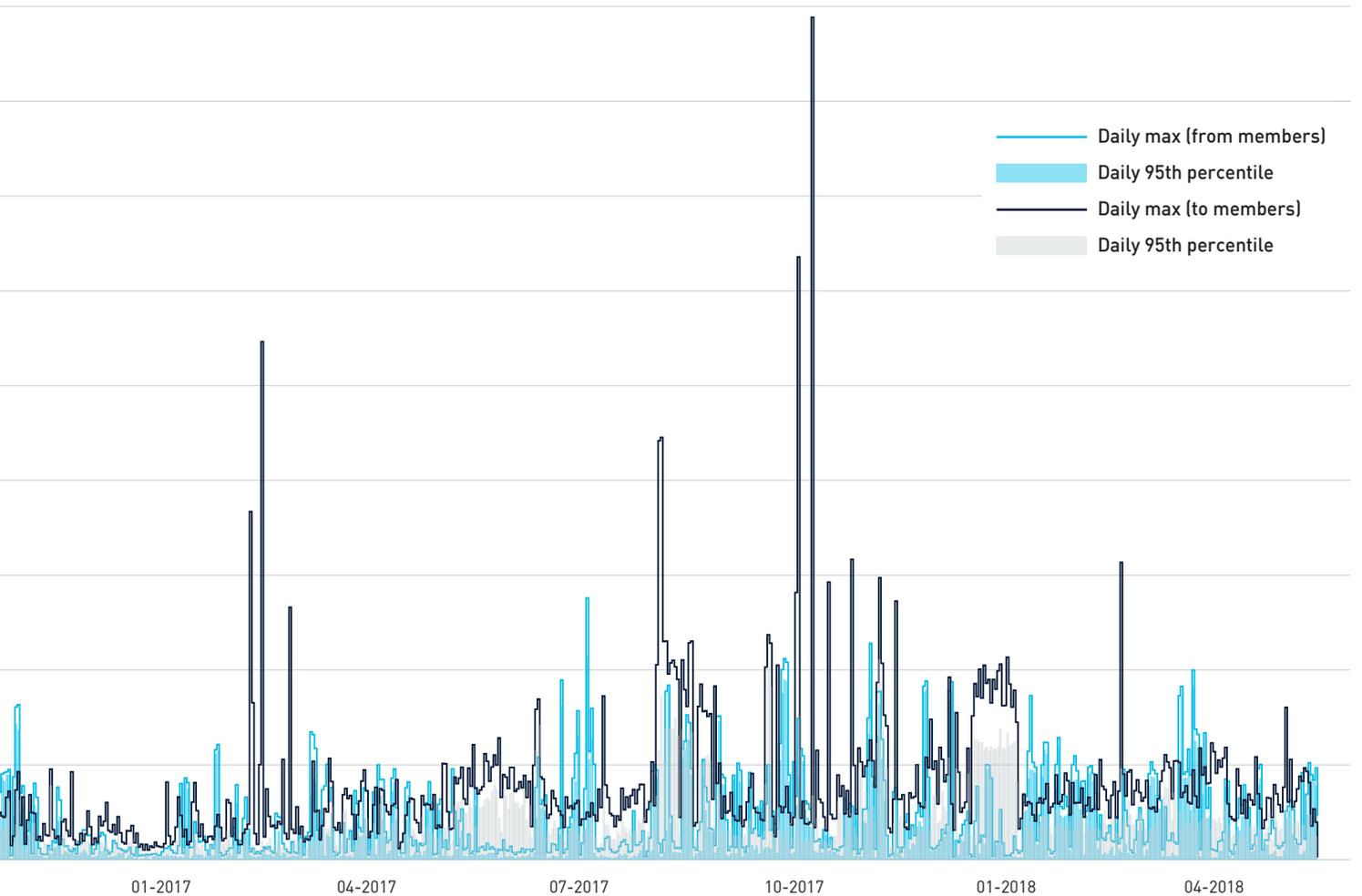


## Impact measure: >80% users consider the REANNZ network essential or valuable to their work

	Actual 2012/13	Actual 2013/14	Actual 2014/15	Actual 2015/16	Actual 2016/17	Estimate 2017/18	Forecast 2018/19
Users consider the REANNZ network essential to their work	44%	69%	74%	80%	81%		
Users consider the REANNZ network valuable to their work	32%	25%	25%	16%	13%		
<b>Total</b>	<b>76%</b>	<b>94%</b>	<b>99%</b>	<b>96%</b>	<b>94%</b>	<b>&gt;80%</b>	<b>&gt;80%</b>

As the capability of our end users to undertake data-driven research, and the areas which rely on complex data sets or instrumentation have increased, so too has the importance of being able to store, share and analyse that data.

Over the last five years, the range of services we provide has become increasingly critical to our users, with year-on-year increases in survey respondents who have said the network is essential to the work they do, alongside increases in uptake and revenues from other services. We expect to maintain a result over 80% in the coming and following years.



## Impact 2: Collaboration between science, innovative business and education sectors is enhanced

Collaboration takes many forms: it can be as simple as having a conversation over a videoconference, or as complex as the multistep process of turning one scientist's research project into a commercial product. REANNZ enables these collaborations by providing the connectivity and tools to make collaboration easier and more effective.

International and national traffic is an indirect indicator of the amount of collaboration enabled by REANNZ.

### Impact measure: Total international traffic volumes increase 15% year-on-year

	Actual 2013/14	Actual 2014/15	Actual 2015/16	Actual 2016/17	Estimate 2017/18	Forecast 2018/19
International traffic volume	+95% +1.17 PB	+143% +3.43 PB	+85% +4.95 PB	+36% +3.91 PB	+18% +2.66 PB	<b>+15% YoY Growth</b>
<b>Total</b>	<b>2.4 PB</b>	<b>5.83 PB</b>	<b>10.78 PB</b>	<b>14.69 PB</b>	<b>17.35 PB</b>	

### Impact measure: Total national traffic volumes increase 10% year-on-year

	Actual 2013/14	Actual 2014/15	Actual 2015/16	Actual 2016/17	Estimate 2017/18	Forecast 2018/19
National traffic volume	+35% +1.94 PB	+65% +4.87 PB	+36% +4.42 PB	+65% +10.93 PB	+17% +4.69	<b>+10% YoY Growth</b>
<b>Total</b>	<b>7.47 PB</b>	<b>12.34 PB</b>	<b>16.76 PB</b>	<b>27.69 PB</b>	<b>32.38 PB</b>	

Increasing amounts of traffic flowing through our network indicate that more collaboration with both national and international participants is taking place. REANNZ experienced exceptional growth over the last few years. Annual compound growth rates are now normalising at around 20% percent per annum.

This year, we have forecast 15% and 10% year-on-year growth. This is the equivalent of 20% annual growth in traffic from members who have chosen to renew their REANNZ membership in 2018/19, in line with research and education networks globally.

### Impact 3: Users have cost-effective access to the content and tools they need

REANNZ continues to develop services that meet the unique needs of our members, across research and academia, and teaching and learning.

We partner with our members to deliver services that add value by:

- › leveraging the investment made in our high performance network infrastructure;
- › developing customised solutions where there is a unique need with a solution not available in the market;
- › procuring third party services where we can add value through aggregated pricing, better terms, interoperability and support; and
- › creating communal resources that can leverage or create an economy of scale for our member community.

Today, such services include eduroam™, Tuakiri identity and access management, security services, technical advisory services, managed network services, high-quality internet, caching, cloud and data centre connectivity. These additional service offerings help improve the productivity and capability of our members, leveraging our existing infrastructure and talent and creating an even stronger value proposition.

### Impact measure: Subscriptions to services increase by 10%

	Actual 2013/14	Actual 2014/15	Actual 2015/16	Actual 2016/17	Estimate 2017/18	Forecast 2018/19
Subscriptions to services increase	+39%	+75%	+51%	+26%	+12%	<b>+10%</b>
<b>Number of Subscriptions</b>	<b>53</b>	<b>93</b>	<b>140</b>	<b>177</b>	<b>199</b>	<b>219</b>

This measure demonstrates REANNZ's ability to deliver services that are relevant and value-for-money to our members. It compares the number of members subscribed to REANNZ services at the start of the year, with the number of members subscribed to REANNZ services at the end of the year.

# Monitoring our output

## Output: The advanced research and education network and supporting services

REANNZ benchmarks and monitors the performance of our network on the dimensions of quality, quantity, timeliness and cost effectiveness.

### Output Measures: Quality

	Actual 2012/13	Actual 2013/14	Actual 2014/15	Actual 2015/16	Actual 2016/17	Estimate 2017/18	Target 2018/19
National network availability	99.96%	99.99%	99.99%	99.99%	99.99%	<b>99.99%</b>	<b>99.90%</b>
	12 month rolling average	<b>12 month rolling average</b>	<b>12 month rolling average</b>				

	Actual 2012/13	Actual 2013/14	Actual 2014/15	Actual 2015/16	Actual 2016/17	Estimate 2017/18	Target 2018/19
International network availability	99.87%	99.93%	100.00%	100.00%	100.00%	<b>99.99%</b>	<b>99.90%</b>
	12 month rolling average	<b>12 month rolling average</b>	<b>12 month rolling average</b>				

National and international network availability measures the reliability of the network. Network downtime includes faults and other connectivity or hardware outages, but excludes planned maintenance outages. 99.90% network availability is standard for research and education networks internationally. Our goal is to maintain this high level of reliability. REANNZ aims for network reliability to be as high as reasonably possible, given the need to balance the costs associated with each magnitude increase in network reliability.

	Estimate 2017/18	Target 2018/19
Packet loss	<b>&lt; 0.00001%</b> <b>(less than 1 packet lost per 100,000 sent)</b>	<b>&lt; 0.0001%</b> <b>(less than 1 packet lost per 10,000 sent)</b>

Poorly tuned networks - ie networks that are experiencing hardware or software faults or networks that are congested - will drop packets, referred to as packet loss. This directly effects the quality of the user experience and the integrity of the information transferred.

Commercial vendors accept packet loss. The amount that is acceptable depends on the type of traffic being sent. As an example, many consider 2.5% to 1% packet loss "acceptable" for streaming video (that's one to three packets lost per 100 packets sent). This manifests as buffering, skipping or out-of-sync audio. However, a major differentiator of research and education networks is our aim to eliminate packet loss as it is catastrophic for large data transfers typical of our user groups. We set our packet loss targets well beyond the levels of an ordinary telecommunications provider.

As an example of the impact of packet loss, a 100 Terabyte (TB) dataset transferred over a dedicated, 10 Gbps (Gigabytes per second) connection with 0% packet loss takes 1 day to transfer. If it suffered only 0.002% packet loss, the transfer could stretch out to 215 days – making work impossible.

Because of this, packet delivery is a key element of network quality and one of the defining features of research and education networks. Each additional decimal place has an exponentially positive impact on the ability for data-intensive work to be done.

## Output Measures: Quantity

The speed of our national and international network backbone and the total number of PoPs (Points of Presence) is an indicator of the quantity of network services and capability that we provide.

	Actual 2016/17	Estimate 2017/18	Target 2018/19
Core national backbone capacity (speed)	10 Gbps	<b>20 Gbps</b>	<b>100 Gbps</b>
Core international network capacity (speed)	26 Gbps	<b>34 Gbps</b>	<b>54 Gbps</b>
Number of Points of Presence (national and international)	26	<b>26</b>	<b>30</b>

Increasing network capacity (speed) supports a higher number of connections, increased traffic levels and more collaborative work. We must continually balance the need to keep the network slightly ahead of our members demands while remaining cost effective, to ensure the service remains capable of supporting the most demanding data-intensive collaborations.

Another measure of the quantity of our output is the addition of new services for our members.

New services added	Actual 2014/15	Actual 2015/16	Actual 2016/17	Estimate 2017/18	Target 2018/19
Service offerings increase	Not achieved	Data Centre Connect services to members	One security service added	<b>Cloud Connect services added</b>	<b>One new service added</b>

REANNZ is working with members to develop relevant service offerings that support improved security and access to cloud services. We are also focused on improving the effectiveness of existing services such as Tuakiri and euroam™. Our service portfolio is driven by the needs of our members.

eduroam™, is a service that allows participants to automatically join the Wi-Fi networks of any other participating institution, anywhere in the world. Use of this service is another indicator of the quantity of services provided and their value to both our members and visitors to New Zealand from within the global research and education community.

	Actual 2016/17	Estimate 2017/18*	Target 2018/19
Total Visitors - Number of device connections in NZ made via eduroam™.	44,536	53,973	54,000
Total Visitors - Number of different institutions the visitors came from	1,906	2,298	2,300
Overseas Visitors - Device connections made via eduroam™ in NZ	31,248	34,716	34,800
Overseas Visitors - Number of countries these came from	62	65	65
NZ Travellers - Number of device connections made to eduroam™ by NZ Users at other sites in NZ or Overseas	36,168	50,411	50,500

\* 2017/18 is based on 327 days partial-year data, extrapolated to 365 days

For data on consumption of our network services, refer to impact measures on traffic growth discussed under our impact measures.

## Output Measures: Timeliness

Member survey of Helpdesk users	Actual 2013/14	Actual 2014/15	Actual 2015/16	Actual 2016/17	Estimate 2017/18	Target 2018/19
Users consider reported issues to be resolved in a timely manner	84%	100%	100%	97%	80% <sup>2</sup>	80% <sup>2</sup>

The speed at which we identify and resolve faults and other network performance issues is not only a measure of the quality of our customer service, but also a measure of the timeliness of our network management activity. We actively manage the network to identify issues before they affect our members, and proactively advise of issues rather than simply being reactive to member calls.

As well as this, the REANNZ Helpdesk logs incident reports from users. Although we have target resolution times agreed with our suppliers and are in most cases able to resolve transfer or performance issues ourselves, the true test of our timeliness is our members' opinion of our responsiveness to their challenges.

<sup>2</sup> Our target of 80% of responses resolved in a timely manner represents an appropriate balance between responsiveness and the cost of resourcing to increase responsiveness. Falling below this target would indicate that we had not adequately resourced the Helpdesk facility.

## Output Measures: Cost-effectiveness

The cost-effectiveness of the REANNZ network for our members is best demonstrated by our membership base and growing overall membership. If we are not cost-effective in providing valuable networking solutions or able to obtain funding to support the specialist network services we provide at a level that keeps prices affordable for members, our members will make choices about their participation in data-intensive research and membership of REANNZ.

Cost-effectiveness for members	Actual 2013/14	Actual 2014/15	Actual 2015/16	Actual 2016/17	Estimate 2017/18	Target 2018/19
REANNZ maintains its core membership base	8/8 Universities 7/7 CRIs 1/1 ATI 11/18 ITPs 1/3 Wānanga	8/8 Universities 7/7 CRIs 1/1 ATI 12/18 ITPs 1/3 Wānanga	8/8 Universities 7/7 CRIs 1/1 ATI 12/15 ITPs 1/3 Wānanga	8/8 Universities 7/7 CRIs 1/1 ATI 12/16 ITPs 1/3 Wānanga	<b>5/8</b> <b>Universities</b> <b>7/7 CRIs</b> <b>1/1 ATI</b> <b>9/16 ITPs</b> <b>1/3 Wānanga</b>	<b>7/8*</b> <b>Universities</b> <b>7/7 CRIs</b> <b>1/1 ATI</b> <b>10/16 ITPs</b> <b>1/3 Wānanga</b>
Total Members	34	37	42	44	40	43

\* Ideally 8/8 Universities

REANNZ addresses a niche market that commercial networks cannot - the provisioning of the unique services that meet the needs of science, research and education. Comparisons of cost with commercial telecommunications providers are misleading, as not only is our network designed to support time-sensitive and bursty traffic flows globally, but the network has other performance attributes, such as very low packet loss thresholds and low latency and jitter, which commercial networks are not designed to support.

Early this year, MBIE was asked by the Minister of Science and Research to conduct a review on the long-term sustainability of the essential research and education network platform that REANNZ provides.

As REANNZ member contracts were due to expire, REANNZ offered members a six-month contract extension to allow time for the MBIE review. A small subset of less research-intensive members chose not to renew, citing continued uncertainty over the future REANNZ membership and pricing models.

REANNZ is committed to working with stakeholders through both the MBIE review and REANNZ's own services, structure and pricing model review, to ensure the essential data-intensive research services are available to the broadest number of New Zealand's researchers, academics and students.

REANNZ attracted two new members to the network during 2017/18 and the target for 2018/19 is to reattract two universities and one other major member, with a stretch target of all three universities re-joining as members.

# EXPECTED REVENUES AND PROPOSED EXPENSES /

Output: The advanced research, education and innovation network and related tools

	2018/19 \$ 000
<b>Revenues</b>	
International cable grant	3,000
Strategic Science Investment Fund	3,000
Network revenue	6,441
Other revenue	5,125
<b>Total Revenue</b>	<b>17,566</b>
<b>Expenses</b>	
Amortisation and depreciation	2,463
Network expenses	16,421
Operating expenses	4,826
<b>Total Expenditure</b>	<b>23,710</b>
<b>Surplus/(Deficit)</b>	<b>(6,144)</b>

# PROSPECTIVE FINANCIAL STATEMENTS /

Research and Education Advanced Network New Zealand Limited

## Prospective Statement of Comprehensive Revenue and Expense for the Year Ending 30 June

Forecast 2018 \$ 000		2019 \$ 000
	<b>Revenue</b>	
	Grant revenue	
3,000	Strategic Science Investment Fund	3,000
5,250	International Cable Grant	3,000
	Network revenue	
8,012	Membership fees	6,441
4,445	Other revenue	4,584
737	Interest revenue	541
<b>21,444</b>	<b>Total Revenue</b>	<b>17,566</b>
	<b>Network Expenses</b>	
1,656	Depreciation and amortisation	2,239
2,292	Employment expenses	2,550
8,209	Network operating expenses*	13,871
<b>12,157</b>	<b>Total Network Expenses</b>	<b>18,660</b>
<b>9,287</b>	<b>Gross Surplus / (Loss)</b>	<b>(1,094)</b>
	<b>Less:</b>	
	<b>Operating Expenses</b>	
45	Audit	35
203	Depreciation and amortisation	224
126	Directors fees	129
2,216	Employment expenses	2,319
820	Other operating expenses	1,204
314	Professional services	518
215	Operating leases	258
227	Travel expenses	363
<b>4,166</b>	<b>Total Operating Expenses</b>	<b>5,050</b>
<b>5,121</b>	<b>Surplus / (Deficit) excluding gains / (losses)</b>	<b>(6,144)</b>
852	Foreign currency gains / (losses)	-
<b>5,973</b>	<b>Surplus / (Deficit)</b>	<b>(6,144)</b>
-	Other comprehensive revenue	-
<b>5,973</b>	<b>Total Comprehensive Revenue and Expense</b>	<b>(6,144)</b>

\* This year network expenses increase temporarily as we transition to a new international cable service. They reduce in following years.

The Statement of Significant Assumptions and Notes  
to the Prospective Financial Statements form part of  
and are to be read in conjunction with these financial statements

Research and Education Advanced Network New Zealand Limited

**Prospective Statement of Financial Position  
as at 30 June**

Forecast 2018 \$ 000		2019 \$ 000
<b>Assets</b>		
<b>Current Assets</b>		
7,208	Cash and cash equivalents*	3,263
3,199	Receivables and debtors	3,252
21,000	Investments	14,000
232	Derivative financial instruments	46
426	Prepayments	1,177
1,039	Prepaid network expenses	848
<b>33,104</b>	<b>Total Current Assets</b>	<b>22,586</b>
<b>Non-Current Assets</b>		
13,372	Property, plant and equipment	12,525
6	Intangible assets	3
46	Derivative financial instruments	-
14,737	Prepaid network expenses	17,464
<b>28,161</b>	<b>Total Non-Current Assets</b>	<b>29,992</b>
<b>61,265</b>	<b>Total Assets</b>	<b>52,578</b>
<b>LIABILITIES</b>		
<b>Current Liabilities</b>		
1,522	Accounts payable and accrued expenses	1,855
86	GST payable	254
183	Employee entitlements	183
5,807	Revenue in advance	2,782
17	Deferred lease incentive	17
<b>7,615</b>	<b>Total Current Liabilities</b>	<b>5,091</b>
<b>Non-Current Liabilities</b>		
47	Deferred lease incentive	28
<b>47</b>	<b>Total Non-Current Liabilities</b>	<b>28</b>
<b>7,662</b>	<b>Total Liabilities</b>	<b>5,119</b>
<b>53,603</b>	<b>Net Assets</b>	<b>47,459</b>
<b>EQUITY</b>		
16,001	Contributed capital	16,001
37,602	Accumulated surplus / (deficit)	31,458
<b>53,603</b>	<b>Total Equity</b>	<b>47,459</b>

\*Cash and cash equivalents Forecast 2018 includes \$3.724m Hawaiki funds held in escrow.

Research and Education Advanced Network New Zealand Limited

**Prospective Statement of Cash Flows  
for the Year Ending 30 June**

Forecast 2018 \$ 000		2019 \$ 000
<b>CASH FLOWS FROM OPERATING ACTIVITIES</b>		
	Cash was provided from (applied to)	
3,000	Strategic Science Investment Fund	3,000
7,819	Network revenue	6,420
4,504	Other revenue	4,534
852	Interest received	651
104	Net GST	392
(12,432)	Payments to suppliers & employees	(18,058)
(6,799)	Prepayments for network connectivity	(6,061)
<b>(2,952)</b>	<b>Net Cash Flow from Operating Activities</b>	<b>(9,122)</b>
<b>CASH FLOWS FROM INVESTING ACTIVITIES</b>		
	Cash was provided from (applied to)	
(2,767)	Purchase of plant & equipment	(1,713)
6,699	Funds transferred from escrow	3,723
(699)	Term deposit investments	7,000
<b>3,233</b>	<b>Net Cash Flow from Investing Activities</b>	<b>9,010</b>
<b>CASH FLOWS FROM FINANCING ACTIVITIES</b>		
	Cash was provided from (applied to)	
	<b>Net Cash Flow from Financing Activities</b>	
<b>281</b>	<b>Net Increase/(Decrease) in Cash Held</b>	<b>(112)</b>
3,094	Cash at beginning of the year	3,375
<b>3,375</b>	<b>Cash at end of year</b>	<b>3,263</b>
	Represented by:	
<b>3,375</b>	<b>Cash at Bank</b>	<b>3,263</b>
21,000	Investment term deposits	14,000
<b>24,375</b>	<b>Total Cash and Investments</b>	<b>17,263</b>

# Nature and purpose of prospective financial statements

The prospective financial statements have been prepared to the best of our knowledge and belief as an indication of REANNZ's future financial performance. Actual financial results achieved for the period covered, may vary from the information presented, potentially in a material manner.

The purpose of the prospective financial statements is to inform readers of this Statement of Performance Expectations of REANNZ's best estimate of its future financial performance at the date of publication, and to comply with REANNZ's specific reporting and disclosure obligations. The statements may not be suitable for other purposes.

## Statement of significant assumptions

The prospective financial statements have been prepared on the basis of the following key assumptions:

### Revenues

Early this year, the Ministry of Business, Innovation and Employment (MBIE) was asked by the Minister of Research, Science and Innovation to conduct a piece of work to identify solutions for the long-term sustainability of the essential research and education network platform that REANNZ provides.

As REANNZ member contracts were due to expire, REANNZ offered members a six-month contract extension to allow time for MBIE to complete its review. A small subset of less research-intensive members chose not to renew, citing continued uncertainty over future REANNZ membership and fee structures. REANNZ is running a service structure and pricing model review this year and is committed to working with stakeholders to ensure the essential data-intensive research services are available to the broadest number of New Zealand's researchers, academics and students.

This Statement of Performance Expectations reflects projected network revenues based on current committed membership and fee structures. Over the next year, REANNZ is able to cover its expected operational costs (as shown by the EBITDA line in the following table), but will fund capital expenditure from reserves during 2018/19.

<sup>3</sup> One-off international crossover costs arise from the crossover period with existing and new primary international connectivity providers, and have been planned to be paid for out of surpluses accumulated over prior years.

	2019 \$ 000
<b>Expected revenues and proposed expenses</b>	
Operating Revenue	14,025
Less: Expenses	(13,334)
<b>EBITDA and other unusual items</b>	<b>691</b>
<b>Non Cash Items</b>	
<b>Depreciation &amp; Amortisation</b>	
Depreciation	(2,463)
Amortisation of prepaid expenses	(3,527)
<b>International Cable Grant Recognition</b>	<b>3,000</b>
<b>Cash Items</b>	
<b>Interest Income</b>	<b>541</b>
<b>Other Unusual Items (one off)</b>	
International Connectivity crossover costs <sup>3</sup>	(4,386)
<b>Net Surplus / (Loss)</b>	<b>(6,144)</b>

To manage costs and cashflow over this period, REANNZ has made decisions to enter into shorter-term opex agreements rather than the capital / long-term prepayments originally planned. This has allowed REANNZ to free up short-term cash to manage the impact of the changes in Government funding and reduced member revenues resulting from the uncertainty regarding future fee structures.

REANNZ has strategies to address the decrease in revenue over the medium term, with changes to the services structures and pricing models designed to retain members, reattract former members and encourage broader participation. REANNZ is also exploring sustainable ways to reduce costs while ensuring the needs of science policy and our members continue to be met. Once changes to REANNZ's services structure and pricing model are complete, and the results of the MBIE review known, REANNZ will update its forward financial projections to reflect the new sustainable strategy and model.

## Network Infrastructure Investment Expenditure

REANNZ owns and operates infrastructure to deliver its high-performance network services. As with most infrastructure-based businesses, REANNZ operates on medium-to long-term infrastructure investment cycles and with restrictions which means it must currently save in advance and build reserves to fund infrastructure investment.

REANNZ is an anchor tenant on Hawaiki, a new submarine cable system. The initiative supports the government's policy objective of encouraging an alternative international cable to New Zealand for the purpose of telecommunications market competition, and a Crown grant of \$15M was provided from Vote Communications in support of this goal. REANNZ has also committed its own operational budgets over the term of the contract, to ensure the service meets REANNZ's growing international capacity needs over the long term, at affordable prices. This cable is on track to be in service by July 2018, and costs associated with the service will be recognised from this date.

The Crown grant has been recognised as revenue in line with key milestone payments made during the construction of the cable. One final payment is forecast to be made during the 2018/2019 financial year in July 2018.

## Infrastructure Investment highlights

- › Planned national network investment: During FY2018, REANNZ responded to growth in network usage by commencing upgrades to the national backbone capacity to 100Gbps on some segments. This was a planned upgrade and is expected to be completed during the 2019 year. The new infrastructure assets have useful lives of between five to seven years and refresh plans are factored as part of our ten-year investment plan.
- › Planned international network investment: REANNZ has made investments in international network infrastructure during FY2018 to prepare for the Hawaiki cable; establishing new Points of Presence (PoPs) and backhaul services to connect the existing network to the new international cable.

- › Regional network assets refresh: During FY2019 and FY2020 allowances have been forecast for a regional asset replacement, as they reach end-of-life. Provision has also been made for smaller capacity upgrades and server infrastructure replacement – essential for network management.
- › Managed services and security capex is based on the revenue pipeline for these two services. Expenditure will vary based on service uptake.
- › As in previous Business Plans, a replacement of the national network is budgeted for FY2023 (outside the projection shown in this plan) as contracts expire and assets reach end-of-life. This is a major investment point.

# Notes to the Prospective Financial Statements

The reporting entity is Research and Education Advanced Network New Zealand Limited ("REANNZ"), a Crown entity as defined by the Crown Entities Act 2004 and a New Zealand incorporated company. As a Crown entity, REANNZ's ultimate parent is the New Zealand Crown.

REANNZ's primary objective is to establish, own and operate a high-speed data network for the research and education sector. As such, REANNZ's aim is to provide services for the ultimate benefit of the New Zealand public, on a not-for-profit basis.

Accordingly, REANNZ has designated itself as a public benefit entity ("PBE") for the purposes of Public Benefit Entity (PBE) accounting standards with reduced disclosures.

## Basis for preparation

### Statement of compliance

The prospective financial statements have been prepared in accordance with Crown Entities Act 2004 and with generally accepted accounting practice in New Zealand (NZ GAAP).

These prospective financial statements comply with PBE accounting standards, that includes PBE FRS 42 Prospective Financial Statements.

REANNZ elected to report in accordance with Tier 2 PBE Accounting Standards with reduced disclosure requirements and is eligible to report as a Tier 2 reporting entity on the basis that it does not have public accountability and is not large.

### Preparation and rounding

The prospective financial statements are presented in New Zealand dollars, rounded to the nearest thousand (\$000). The functional currency of REANNZ is New Zealand dollars.

## Significant accounting policies

Accounting policies are selected and applied in a manner that ensures that the resulting financial information satisfies the concepts of relevance and reliability. REANNZ accounting policies, therefore, are designed to report the substance of the underlying transactions undertaken by the entity.

The following significant accounting policies have been adopted in the preparation and presentation of the prospective financial statements:

### Revenue

The specific accounting policies for significant revenue items are explained below:

#### Grant revenue

REANNZ is funded in part by the Crown. Where a grant is provided to partially fund the operation of a high-speed communication network for the research and education sector, REANNZ considers there are no conditions attached, and the grant is recognised as revenue at the point of entitlement.

Other grants are recognised as revenue when they become receivable unless there is an obligation in substance to return the funds if conditions of the grant are not met. If there is such an obligation, the grants are initially recorded as deferred revenue in the Statement of Financial Position, and recognised as revenue when conditions of the grant are satisfied.

#### Network and other revenue

Revenue is measured at the fair value of the consideration received or receivable. All transactions are exchange transactions.

#### Interest revenue

Interest revenue is recognised by accruing the interest due for the investment on a time proportion basis.

#### Foreign currency transactions

Transactions in foreign currencies, including those for which forward foreign exchange contracts are held, are translated to New Zealand dollars (the functional currency) at the spot rate on the date of transaction.

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 Statement of Comprehensive Revenue and Expense.

## Operating leases

An operating lease is a lease that does not transfer substantially all the risks and rewards incidental to ownership of an asset to the lessee. Lease payments under an operating lease are recognised as an expense on a straight-line basis over the lease term.

Lease incentives received are recognised in the Statement of Comprehensive Revenue and Expense as a reduction of rental expense over the lease term.

Where the leased items are not in use, the operating lease payments will be treated as a prepayment in the Statement of Financial Position. Once the items begin to be used in deriving revenue, these prepayments are released to the Statement of Comprehensive Revenue and Expense on a straight-line basis over the period of the remaining operating lease term.

## Finance leases

A finance lease is a lease that transfers to the lessee substantially all the risks and rewards incidental to ownership of an asset, whether or not title is eventually transferred.

At the commencement of the lease term, prepaid finance leases where REANNZ is the lessee are recognised as an asset in the Statement of Financial Position at the fair value of the leased item.

The amount recognised as an asset is depreciated over its useful life. If there is no reasonable certainty as to whether REANNZ will obtain ownership at the end of the lease term, the asset is fully depreciated over the shorter of the lease term and its useful life.

## Receivables

Accounts receivable are recognised at fair value. A provision for impairment of accounts receivable is made where there is objective evidence that REANNZ will not collect all amounts due according to the original terms of the receivable. When this occurs, the receivable is recorded at amortised cost, less provision for impairment. When the receivable is uncollectible, it is expensed in the Statement of Comprehensive Revenue and Expense.

## Investments

### Bank term deposits

Investments in bank term deposits are initially measured at the amount invested. Interest is subsequently accrued and added to the investment balance.

### Derivative financial instruments

REANNZ enters into derivative financial instruments, including forward foreign exchange contracts, as part of its normal operations to manage its exposure to

foreign exchange rate risk. REANNZ does not hold or issue derivatives for trading purposes. REANNZ has not adopted hedge accounting.

Derivatives are initially recognised at the fair value on the date a derivative contract is entered into and are subsequently revalued at each balance date, with the resulting gain or loss recognised in the Statement of Comprehensive Revenue and Expense.

A forward foreign exchange derivative is classified as current if the contract is due for settlement within 12 months of balance date. Otherwise the full fair value of forward foreign exchange derivatives are classified as non-current.

## Property, plant and equipment

Property, plant and equipment asset classes consist of six classes, which are measured as follows:

- › Leasehold improvements, at cost less accumulated depreciation and impairment losses.
- › Routers, switches and optical equipment, at cost less accumulated depreciation and impairment losses.
- › Information technology equipment, at cost less accumulated depreciation and impairment losses.
- › Office equipment, at cost less accumulated depreciation and impairment losses.
- › PoP equipment, at cost less accumulated depreciation and impairment losses.
- › Fibre and fibre housing, at cost less accumulated depreciation and impairment losses.

## Additions

The cost of an item of property, plant and equipment is only recognised as an asset when it is probable that future economic benefits or service potential associated with the item will flow to REANNZ and the cost of the item can be measured reliably.

Work in progress is recognised at cost less impairment and is not depreciated.

In most instances, an item of property, plant and equipment is initially recognised at cost. Where an asset is acquired through a non-exchange transaction, the asset will be recorded at fair value at the date of acquisition.

Costs incurred subsequent to initial acquisition are capitalised only when it is probable that future economic benefits or service potential associated with the item will flow to REANNZ and the cost of the item can be measured reliably.

The costs of servicing property, plant and equipment are recognised in the Statement of Comprehensive Revenue and Expense as they are incurred.

## Disposals

Gains and losses on disposals are determined by comparing the proceeds of disposal with the carrying amount of the asset. Gains and losses on disposal are included in the Statement of Comprehensive Revenue and Expense.

## Depreciation

Depreciation on property, plant and equipment (excluding work in progress) is calculated on a straight-line basis, from the time the asset is in the location and condition necessary for its intended use. This basis allocates the cost or value of the asset, less its residual value, over its estimated useful life.

The depreciation method, estimated useful lives and residual values of property, plant and equipment are reviewed annually to assess appropriateness.

The following estimated useful lives are used in the calculation of depreciation:

Leasehold improvements	6 years
Routers, switches & optical equipment	3-8 years
Information technology equipment	3 years
Office equipment	5 years
PoP equipment	8 years
Fibre and fibre housing	20 years

Leasehold improvements are depreciated on the basis of estimated useful life or the remaining lease term, whichever is shorter.

## Intangible assets

Software is a finite life intangible and is recorded at cost less accumulated amortisation and impairment. Amortisation is charged on a straight-line basis over the estimated useful life of the intangible asset.

Costs associated with maintaining computer software are recognised as an expense when incurred.

Staff training costs are recognised as an expense when incurred.

Costs associated with the development and maintenance of the REANNZ website are recognised as an expense when incurred.

The useful life and associated amortisation rates of major classes of intangible assets have been estimated as follows:

Software	3 years
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## Impairment of property, plant and equipment and intangible assets

REANNZ does not hold any cash-generating assets. Assets are considered cash-generating where their primary objective is to generate a commercial return.

## Non-cash generating assets

At each reporting date, assets are reviewed by the directors to determine whether there are any events or changes in circumstances that indicate that carrying amounts may not be recoverable. An impairment loss is recognised as the amount by which the asset's carrying amount exceeds its estimated recoverable amount.

If the carrying amount of an asset exceeds its recoverable amount, the asset is impaired and the carrying amount is written down to the recoverable amount. The impairment loss is then recognised as an expense in the Statement of Comprehensive Revenue and Expense.

Where an item of property, plant or equipment has been revalued, any impairment loss is recognised against the revaluation reserve for that class of asset. Where this results in a debit balance in the revaluation reserve, the balance is recognised in the Statement of Comprehensive Revenue and Expense.

Any reversal of an impairment loss is recognised in the Statement of Comprehensive Revenue and Expense. Impairment losses can only be reversed to the extent that the carrying amount of the asset matches the carrying amount as calculated under the cost less accumulated depreciation method.

For items of property, plant or equipment that have been re-valued, any reversal of impairment loss is credited back to the revaluation reserve. However, to the extent that an impairment loss for that class of asset was previously recognised in the Statement of Comprehensive Revenue and Expense, a reversal of impairment loss is also recognised in the Statement of Comprehensive Revenue and Expense.

## Payables

Short term payables are recorded at the amount payable.

## Employee entitlements

Employee benefits due to be settled within 12 months after the end of the year in which the employee provides the related service are measured based on the accrued entitlements at current rates of pay. These include salaries and wages accrued up to balance date, annual leave earned but not yet taken at balance date.

A liability and an expense are recognised for bonuses where there is a contractual obligation or where there is a past practice that has created a constructive obligation and a reliable estimate of the obligation can be made.

## Cash flow statement

The prospective Statement of Cash Flows is prepared exclusive of GST, which is consistent with the method used in the Statement of Comprehensive Revenue and Expense.

Definitions of the terms used in the Statement of Cash Flows are:

“Cash” includes coins and notes, demand deposits and other highly liquid investments readily convertible into cash used by REANNZ as part of its day-to-day cash management.

“Investing activities” are those activities relating to the acquisition and disposal of long-term assets and other investments not included in cash equivalents.

“Financing activities” are those activities relating to changes in equity of REANNZ.

“Operating activities” include all transactions and other events that are not investing or financing activities.

## Goods and services tax (GST)

These prospective financial statements have been prepared on a GST exclusive basis except for accounts receivable and accounts payable that are stated inclusive of GST.

The net GST paid to, or received from, Inland Revenue, including the GST relating to investing and financing activities, is classified as an operating cash flow in the Statement of Cash Flows.

Commitments and contingencies are disclosed exclusive of GST.

## Income tax

As a public entity under section CW 38(2) of the Income Tax Act 2007, the company is exempt from income tax. Accordingly, no provision has been made for income tax.





REANNZ