Te Mana Tūhono - Information Brief V1.0

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Te Mana Tūhono

We strive to connect schools to the world with a fit-for-purpose centralised ICT system that is reliable, resilient, safe, and secure. Te Mana Tūhono (which means the power of connectivity) is our long-term programme to upgrade school equipment and support schools to monitor, maintain and manage their networks.

This document provides schools with a clear understanding of the support offered through the Te Mana Tūhono programme.

Background to Te Mana Tūhono

The Ministry of Education has recently completed a 15-year project to upgrade schools' ICT network equipment and infrastructure, the School Network Upgrade Project (SNUP) and its descendent, the Wireless School Network Upgrade Project (WSNUP). Technology is always evolving, with new features and capability making most network equipment obsolete within five to seven years.

Under current Ministry policy, schools are responsible for the upgrade and maintenance of their ICT infrastructure. N4L's internet services to schools are fully funded by the Ministry of Education.

Through our work on SNUP and WSNUP, we regularly engaged with schools to ensure we were meeting their needs.

In 2015 we asked 544 state and state-integrated schools across New Zealand about their experiences with SNUP, ICT expenditure, procurement of ICT products and services, and ICT strategy.

It was clear that increasing ICT costs were putting significant financial pressure on schools. Schools believed SNUP was a major influence for their increased ICT expenditure, whilst also recognising the Ministry's investment in this area and in response heavily investing themselves.

Partnering with the Network for Learning (N4L)

Since 2013 the Ministry has contracted crown entity Network for Learning (N4L), a Schedule 4A Crown Company, to deliver the Managed Network, which is a managed internet service for schools.

All state schools are now connected to the Managed Network and more than 825,000 students and teachers use it every day, consuming more than 5.2 million gigabytes of data monthly. Te Mana Tūhono extends the reach of this service to provide additional support within each school.

A Master Services Agreement exists between the Ministry of Education N4L, enabling N4L to act on behalf of the Ministry for the purpose of delivering the Te Mana Tūhono programme. A practical example of where N4L are acting on the Ministry's behalf is:

Contract signing: Where a Principal opts into the programme by signing N4L's electronic web order form (the school is entering into a contractual arrangement with the Ministry).

Programme participation requirements

To deliver the programme, each school will be required to actively participate with N4L at all stages of the programme. This includes accepting and committing to:

- Actively participating in discovery, design and delivery stages including document review, carrying-out of pre and post onsite testing and on the day sign-off of deliverables etc.

- Access to full school site and assorted system credentials.

- Completing prerequisite requests from N4L, for example, in the Secure Access phase.

- Relinquishing the school's old network equipment to N4L when it is replaced with new equipment during Equipment Replacement.

- Beyond the initial Equipment Replacement, any panel visits for equipment installation or servicing (RMA etc.) are at the schools' expense and completed via a member of N4L's installer panel.

- To provide support through Te Mana Tūhono on behalf of the MoE, N4L requires authority to manage and delegate visibility, including administrative access to the network components and hosted services.

- N4L and MoE will monitor ongoing compliance against network standards and reserve the right to restore configurations when and where needed to ensure ongoing fit for purpose status and security of the network.

- Where a school wishes to purchase additional Ruckus CommScope equipment after their replacement (phase 2), N4L will facilitate this via a service request process and this equipment must be installed by an approved N4L panel installer. Applicable installation charges will be at the cost of the school.

- Obligations to notify N4L of any proposed changes to the schools installed equipment which may impact the network design. Noting that introducing mixed vendor equipment into the network could have negative implications, such as interoperability issues, impacted network performance and increased cyber security risk. Failure to notify N4L may result in a degradation of the Helpdesk Support that they can provide.

ZoneDirector Failures

- Transfer to Smartzone Controller (upon failure) – All access points provisioned for the school on the N4L Controller must always have an active support license. This is to ensure the equipment can be supported by N4L.

- Where the current ZD support licenses have more than one year remaining, we will be able to transfer the remaining support term to the N4L Controller at no cost.

- Where the current support licenses have less than one year remaining, or when these licenses expire, the school will either need to commit to the Ministry's Te Mana Tūhono programme (with associated annual contribution) or purchase new support licenses at their cost.

Designing a new service

We consulted with schools to help us understand how we could best support schools further in a rapidly evolving online environment.

Between 2016 and 2019, our partners N4L engaged extensively with a cross section of schools to understand what schools struggle with the most in the technology and learning space.

This involved several interviews and workshops with principals and the schools' ICT community to understand their different needs. Drawing on this feedback, we established a SNUP Helpdesk which ran for two years before it was replaced with N4L's Extended Helpdesk. Overall, however, our findings suggested that many schools would benefit from more support.

Findings

What we learned gave us real world context and understanding about the performance and reliability issues schools were experiencing with their ICT networks. Schools without a dedicated ICT staff member or maintenance contract in place were significantly reliant on the free SNUP and N4L Helpdesk services.

All schools experienced ICT performance and reliability challenges at some time or another, however the odds were greatly increased in schools where no preventative network maintenance was conducted. Even in schools with their own ICT providers, there was some demand for third-party engineers to assist with troubleshooting and resolving complex problems and issues.

The needs identified in our findings suggested the need for the following:

- Reliable fast and functional internet.

- Connectivity and coverage inside the classrooms.

- Access to quality ICT support on internal infrastructure.

- Improvement in safety and security of schools' online environment with individualised access and filtering policies.

- Access to online insights and user behaviour so interventions and education can take place.

- Digital citizenship promotion via the Reporting app and education around safety and security measures during device onboarding.

The Te Mana Tūhono programme has been designed to meet these needs in three phrases, starting with the simplest and most urgent work before progressing to more complex support features.

All state and state-integrated schools can opt-in to receive support through Te Mana Tūhono. As part of the package, schools have access to the three phases of support.

Delivering support to schools in three phases

(Phase 1) Equipment Support - If it is broken, we will either fix or replace it

When your SNUP network equipment (switches and access points) licences and warranties expire, we'll provide extended support and assistance. Additionally, if your equipment fails before it's been upgraded, we'll either fix or replace it.

You can expect to hear from N4L as your warranty expiry date approaches. This phase is designed as a temporary measure to ensure school networks continue to run until they undergo Equipment Replacement.

(Phase 2) Equipment Replacement - Replacing schools' aging SNUP network

We are replacing aging school network equipment including switches and wireless access points over the next four years, beginning with equipment in smaller schools with limited access to ICT support.

(Phase 3) Secure Access - Creating an identity aware network

We're setting up a way for schools to manage more securely who can access their network, and what they're able to do when they're on it. We're using a solution called Cloudpath by Ruckus for this.

Secure Access means users and devices signing onto your network will get unique login details, which identify which part of the network they can access and what they'll be able to do when they're on it. It also makes it possible to identify devices and users on the network that have been compromised with Malware.

Once the device is registered on the network ("onboarded"), it will be recognised from then on - meaning you only need to log on once as the user's device remembers it. It will even be possible to roam between different schools with the same device once each school has completed the Secure Access phase.

For a more in-depth breakdown on commonly asked questions please refer to the N4L's 'Upgrade of the Wi-Fi Network - Secure Access (Phase 3)

(Phases 1-3) Help and Support – One point of contact

We're connecting schools with fast, reliable, and safe internet via the Managed Network, which is fully funded by the Ministry of Education. The Managed Network gives schools access to robust internet filtering, threat protection and firewall, plus a dedicated Helpdesk team.

The Helpdesk supports schools with the N4L Fortinet router and outbound connectivity from the school, i.e. across the WAN (Wider Area Network).

Through Te Mana Tūhono, Help and support is now available for schools' internal network equipment. This will enable N4L to resolve issues impacting the performance of a school's LAN, i.e. down to the classroom level.

> *Note on privacy: The Ministry of Education's 0800 CALLICT (0800 225 542) is a general helpdesk for other ICT issues that are not network specific and is separate from N4L's Helpdesk. However, both must comply with the Privacy Act with regards to how they store, share and use school's information. You can find out more on the [Ministry of Education](#) website and in [N4L's Privacy Statement.](#)*

The Three Phases - What's included and excluded

(Phase 1) Equipment Support

We are aware that schools' network switches and wireless equipment are beginning to have their licenses expire, restricting how they can be used. In other cases, aging equipment is simply starting to fail. If the network equipment in your school is nearing its licence expiry, we will renew the licences for you. The Ministry and N4L introduced the Network Extension Support project in 2018 to support schools with expiring warranties. In the event of equipment failure, we will either fix or replace it.

We will continue offering this service as long as it's needed.

What is included?

- Extended support for Allied Telesis network switches until your switches have been replaced
- Extended support of your Ruckus or Aerohive wireless equipment until your wireless has been replaced
- A backup of each switch configuration, so they can be restored should a fault occur
- Ruckus schools will be migrated to an N4L hosted controller that meets industry security and privacy requirements, verified by third party security consultants
- A single point of contact for assistance with network switch and wireless equipment failures provided by N4L's Helpdesk:
  - Remote diagnosis and fault finding
  - Where found to be faulty, a new switch or wireless access point will be configured and upgraded to the latest Firmware
  - New switch or wireless access points will be dispatched and delivered to site by the next business day.

What is excluded?

- Additional configuration tasks such as Virtual LANs (VLANs)

- Installation and integration costs incurred because of fitting warranty replaced equipment back into the school network. Note, we will be able to do some integration work remotely but not in every instance. We will notify you if there are likely to be any extra costs incurred.

We also won't provide licence renewal or replacement for:

- Damaged equipment originating from misuse, improper installation or outside of recommended environmental operating conditions.
- Equipment damaged by Force Majeure events and any other events that are outside the vendor's control
- Equipment purchased on the second-hand market.
- Switch and wireless products not installed under SNUP/WSNUP, or other Ministry programmes of work.

(Phase 2) Equipment Replacement

We are continuing the replacement of aging school network equipment including switches and wireless over the next three years.

If you have not been contacted by N4L to schedule a replacement and your network switches and wireless warranties are expiring, we will extend your warranties to ensure you receive support for any equipment failures. In the event your equipment fails, we will either fix or replace it.

We are not just replacing network equipment as was done under SNUP. We know that poorly maintained network infrastructure is a barrier to teaching and learning and increases the risk of security breaches and cyber-attacks.

However, every school is unique and has different capacity and capability to maintain their networks. Therefore, it is our job to ensure that any service, product, or solution we provide to schools meets a recognised level of compliance, in line with industry cybersecurity standards.

This will be achieved through the Ministry Certification & Accreditation (C&A) process, which is a series of assurance activities that reviews the business processes and information systems that underpin the Te Mana Tūhono programme.

Our staff have expertise in industry best practice and security standards, including the New Zealand Information Security Manual (NZISM) conduct the process and oversee compliance. Any solution we provide to schools needs to be compliant with these finalised security requirements.

Scope of Equipment Replacement

Equipment Replacement must be followed by Phase 3 Secure Access to ensure network security standards are met.

The Ministry C&A process mandates all activities be executed by the Equipment Replacement and Secure Access phases of the project. Making the Ministry, N4L and N4L's Panel Suppliers responsible and accountable for installing, configuring, and maintaining secure networks in schools.

The next section describes what you will receive if you sign up to the programme and what a school's responsibilities are should they wish to pursue their own ICT strategy.

What's included?

Schools who opt-in to the programme will receive a:

- Desktop audit of current network makeup

- Replacement of network switching

- Replacement of the wireless network

- Equipment installation

- Systems testing and commissioning

- Copies of commissioned network design documentation

- Minimum five-year warranty across all replaced equipment

- A backup of each switch configuration, so they can be easily restored should a fault occur

- Help and Support accessible through a centralised Helpdesk to resolve issues impacting the performance of school's internal ICT networks

What is excluded?

- Certain prerequisites — these are outlined below under **Prerequisites for Network Replacement and Secure Access**

- Installation and integration costs incurred because of fitting warranty-replaced equipment back into the school network. Note, we will be able to do some integration work remotely but not in every instance.

- Installation cost for any new equipment purchased post install. This new equipment must be installed by an approved N4L Panel Supplier and at the school's expense.

- ICT support for 3rd party devices that require re-configuration after Equipment Replacement.

Costs to complete any prerequisites for the above exclusions are also at the school's expense.

Relinquishing Equipment

At the time of Equipment Replacement, the school's old network equipment will be taken away by the N4L Panel Supplier. Relinquished equipment can be deployed to support schools in need of equipment while they are waiting for their Equipment Replacement upgrade or a new equipment order to be supplied. Relinquished equipment that is no longer usable will be e-recycled.

(Phase 3) Secure Access

What is Secure Access?

See above definition of Secure Access.

What are the benefits of Secure Access?

Your school networks will be less vulnerable to security breaches and online threats, protecting your school's student data.

You'll be able to manage how different groups of students, teachers and guests access your school network, and what they'll be able to do when they're on it. This means you can customise your content filtering to match the permissions granted to each group. Students will also be able to use their Google & Microsoft 365 credentials to log into the network.

Secure Access also gives you the ability to further personalise your school's network into groups, meaning you could separate the student network into cohorts, class types etc. *Please note that if you choose to do this additional personalisation, this will have to be done by you and your IT provider and isn't done by N4L as part of the upgrade.*

Further information regarding what happens on the day of Secure Access and the role your IT Providers will play is described in N4L's FAQ Upgrade of the Wi-Fi Network - Secure Access (Phase 3).

What is included?

Configuration of Secure Access will provide the following value and functionality to your schools' network:

- Separation and segregation of Staff, Student and Guest traffic.

- Use of the Cloudpath onboarding system to simplify the enrolment of Staff and Student devices onto the school network.

- Provision of an Identity Aware network where staff and students log in as themselves (no shared passwords). Enabling:

  - Staff and student identities to be passed to the firewall so that the N4L reporting platform can provide more insightful data to schools.
  - Roaming enabled between schools who have completed their Secure Access migration.
  - Ability to identify devices and users on the network that have been compromised with Malware (N4L Security Services).

What is excluded?

Prerequisites detailed in Prerequisites for Equipment Replacement and Secure Access.

What is roaming? Also referred to as mobility. When moving around your school and between classrooms, students, teachers, and their devices will experience a consistent rate of Wi-Fi performance without disconnects.

Prerequisites for Equipment Replacement and Secure Access

For N4L to schedule Equipment Replacement and Secure Access there are prerequisites your school must complete at your expense. N4L will provide details of these in the Network Design document. Currently, the prerequisites are:
1) All school cabling needs to meet current Ministry of Education standards and be able to support, at a minimum, 1GBs connectivity. Any repair work required to achieve this for cabling that is not covered under warranty must be undertaken at the school's expense **(Phase 2)**
2) DNS Record Configuration **(Phase 3)**

3) School-owned Chromebooks must be enrolled in G-Suite **(Phase 3)**

Eligibility

All state and state-integrated schools and kura are eligible for the Te Mana Tūhono programme. This also includes schools that are hosted (Teen Parent units, satellite units, Te Kura sites, sensory and health schools). These schools will be included as part of their host schools' upgrade.

The initial priority of upgrading small and remote schools remains, but in the coming 12-18 months Equipment Replacement will start moving into larger (500+ student) schools as well. There is some focus on schools running Aerohive network equipment, to ease support costs for re-licensing. Where possible, Aerohive schools' Equipment Replacement will be timed ahead of their Hive Manager expiry dates

All state and state-integrated schools will have the opportunity to have their networks replaced over the next three years.

Costs

Te Mana Tūhono is a subscription-based service, and all three parts are heavily subsidised by the Ministry of Education. This means schools will pay an annualised subscription fee, currently set at $2.50 per student per year, upon commencement into the programme. Student count will be determined by the roll count on July 1st in the same year that the subscription fee is due.

Subscription will commence upon acceptance of the Order Form for Phase 1, Equipment Support (or Equipment Replacement, if this is the first phase for the school) and will be billed annually based on the school roll figures as of the anniversary date that the school signed up to the service.

Invoicing for the subscription fee will come from the Ministry of Education and needs to be paid to the Ministry of Education not N4L. Schools should budget for the subscription fee using their Furniture & Equipment funding.

There may be a need to review the subscription fee, for example if network equipment costs increased markedly over the four-year term. In the unlikely event this was to happen, any revised pricing would be communicated ahead of the change, and in annual budgeting guidelines.

As per the Terms and Conditions of the service, the maximum possible cost to schools is capped at $5.00 per student per year. The Ministry does not anticipate any future increases to the cost of the service, having negotiated and secured significantly discounted central educational pricing on the network equipment, licensing, and warranty support.

Shifting to an annualised subscription will make it easier for schools to budget. This provides schools

with an assurance that their ICT networks will continue to run seamlessly, remain fit-for-purpose and are reliable, resilient, safe, and secure.

Opting out of the Te Mana Tūhono programme

Schools who wish to pursue their own ICT strategy and choose to decline any aspect of the 'All or nothing' service will be classified as an 'opt-out' school.

This limits the Ministry and N4L's involvement in providing access to the heavily discounted network equipment and warranties, which the Ministry have negotiated on a volume discount basis.

The Ministry and the N4L will not:

- Provide a contribution to equipment only purchases: schools must fund 100% of the purchase.

- Provide a reference design or advisory services for network configuration.

- Be held accountable for the security and assurance of network upgrades, configurations and changes undertaken independently by a school or by its appointed ICT representative.

All schools, including those that opt out of the Te Mana Tūhono programme, have access to N4L's Help and Support service. However, N4L has limited access to a school's internal network until a school has been through Equipment Replacement (Phase 2)

- The level of support that N4L can provide to schools increases as schools advance through the phases of Te Mana Tūhono.

- The annual TMT subscription fee helps fund a centralised N4L support function which will proactively monitor and maintain the new school networks after they are installed. This will include ensuring network equipment is running up to date firmware versions, licenses are renewed as necessary, configuration is backed up for faster restoration, and that network designs are fit for purpose. N4L will monitor network performance, and as much as practicable, resolve Wi-Fi issues remotely.

- Onsite works such as the replacement of failed network equipment will require the services of local ICT technicians/installers, which schools will need to pay for (If the school does not have an ICT Provider, N4L will recommend one or more of N4L's ICT Panel members). However, if the hardware was part of Equipment Replacement, the cost of the equipment will be covered by manufacturer warranty.
- Where schools have ICT, staff employed to support the day-to-day management of the school network, N4L intends to roll out training programmes, network monitoring dashboards and restricted access to network management systems to allow them to continue to fulfil their day-to-day tasks.

Help and Support exclusions

- The service does not include sending an ICT provider to site. If N4L cannot resolve the issue remotely and an ICT provider must be deployed, all associated costs are the responsibility of

the school. This may include sending an installer to site to do audit checks or undertake warranty work on structured cabling issues.

- If a school has an ICT Provider, N4L will work with them to resolve the issue.
- If the school does not have an ICT Provider, N4L will recommend one or more of N4L's ICT Panel members for the school to engage for onsite support, however all costs will be the responsibility of the school.

- Schools must make every effort to resolve on site issues themselves before contacting the N4L Helpdesk.

Signing Up to Te Mana Tūhono

If your school agrees to proceed with the Te Mana Tūhono programme, you don't have to reach out to N4L or the Ministry to opt in. N4L will be in touch with every eligible school and will send out an Agreement to Proceed (ATP) form to start things off. Onboarding steps are outlined in the N4L Upgrade Brochure.

For further information contact: provision@n4l.co.nz