Title	Carry out routine maintenance and fault location, and restore faulty complex network systems to normal operation
Level	4	Credits	20

Purpose	This standard is intended for technicians who work on complex telecommunications networks. People credited with this unit standard are able to: carry out routine maintenance and fault location for complex network systems; and restore faulty complex network systems to normal operation.

Classification	Telecommunications > Telecommunications - Service Delivery

Available grade	Achieved

Guidance Information

1   Learning and assessment within this unit standard must be carried out in accordance with the following legislation, guidelines, and codes of practice, as relevant to role, and any subsequent amendments:
  – New Zealand Telecommunications Forum Inc., Customer Complaints Code, available from https://www.tcf.org.nz/industry/resources/publications/industry-standards-guides/;
  – Health and Safety at Work Act 2015;
  – Privacy Act 2020;
  – Resource Management Act 1991;
  – Telecommunications Act 2001, all available from http://legislation.govt.nz/.

2   Definitions
  Complex refers to three or more components and/or services used together in networks or enterprise solution systems.
  Customer refers to internal and external customers to the organisation and may include but are not limited to vendors/suppliers, business partners, the public, government, service providers, team members, network owners.
  Industry practice refers to practices that competent technicians within the industry recognise as current industry best practice.
  Specifications refer to detailed job specifications, drawings, instructions, manufacturer's specifications and instructions or any employer or company specifications.

3   For the purpose of this unit standard, assessment can take place in a core network, access network, or wireless technology telecommunications work environment.

4   Range
        Evidence for three different worksites is required.

Outcomes and performance criteria

Outcome 1

Carry out routine maintenance and fault location for complex network systems.

Performance criteria

1.1   Preparation tasks for routine maintenance and fault location are completed prior
        to leaving for the site, and in accordance with specifications.

        Range   preparation tasks may include but are not limited to – collection of
                    fault information, system performance, site access including
                    permits and consents, health and safety requirements, obtaining
                    spares, remote log in and alarm checking, other site alarm checks.

1.2   Restoration methods and procedures are identified in accordance with industry
        practice.

1.3   Site arrival procedures are carried out in accordance with customer
        requirements.

        Range   procedures may include but are not limited to – work permits,
                    onsite login, visual inspection of site for damage, visual inspection
                    of alarms, determine appropriate diagnostic procedure, health and
                    safety procedures.

1.4   Visual inspection and maintenance checks are carried out on arrival in
        accordance with industry practice and specifications.

        Range   may include but are not limited to – equipment integrity, corrosion,
                    bonding and earthing, cable management, weather proofing,
                    connections, dust, equipment or ventilation system filters, air flow,
                    connector condition, fibre hygiene.

1.5   The cause of the faults is identified in accordance with industry practice.

        Range   may include but is not limited to – alarms, half split, step by step,
                    flowcharts, manufacturers' diagnostic procedures, resetting
                    modules.

1.6   Tests are completed in terms of reducing the impact on the performance of
        existing services.

1.7   Test results are interpreted to identify faulty system components in accordance with specifications.

Range   may include but is not limited to – modules, cables, components, configuration, cooling systems, power and backup systems.

Outcome 2

Restore faulty complex network systems to normal operation.

Performance criteria

2.1   Repair or replacement of faulty system components is completed in accordance with industry practice.

2.2   Operational and performance verification tests are carried out after repair in accordance with industry practice.

Range   tests may include but are not limited to – physical and software configuration, replacement of modules and/or components, associated services and equipment, evaluation of system status, evaluation of system performance, fault monitoring, hand back of service.

2.3   Site departure procedures and post job tasks are completed in accordance with customer requirements.

Range   procedures and tasks may include but are not limited to – alarm checks, systems restored to automatic, alarm services restored to National Operation Centre, ventilation systems restored to normal, arrange faulty unit repairs, log and file information, customer reports, close out job tasks in management systems.

2.4   Maintenance records are updated in accordance with customer requirements.

Planned review date	31 December 2025

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	23 May 2019	N/A
Rollover and Revision	2	25 January 2024	N/A

Consent and Moderation Requirements (CMR) reference	0101

This CMR can be accessed at http://www.nzqa.govt.nz/framework/search/index.do.

Comments on this unit standard

Please contact Waihanga Ara Rau Construction and Infrastructure Workforce Development Council qualifications@waihangaararau.nz if you wish to suggest changes to the content of this unit standard.