

	Unit ID: 2274
Domain	TELECOMUNICATION AND WIRELESS TECHNOLOGY
Title:	Demonstrate an understanding of systems and mediums of communication used in transmission
Level: 3	Credits: 7

Purpose

This unit standard is intended for those who demonstrate an understanding of systems and mediums of Communication used in transmission. People credited with this unit standard are able to demonstrate an understanding of digital microwave radio systems in transmission, demonstrate an understanding of wireless technology, demonstrate an understanding of wireless network and security standards, demonstrate an understanding of basic satellite transmission, demonstrate an understanding of fibre network and demonstrate an understanding of copper network.

This unit standard is intended for those who work in the information and communication technology environment.

Special Notes

1. Entry information:
Prerequisite:
 - None
2. This unit standard is to be delivered and assessed in the context of information and communication technology
3. Assessment evidence may be collected from a real or a simulated workplace in which telecommunication and wireless technology operations are carried out.
4. Performance of all elements in this unit standard must comply with industry standards.
5. Basic troubleshooting includes faulty power supply and cable connections.
6. Specifications 'refers to any, or all of the following: manufacturer's specifications, recommendations, specific instructions and specific task requirements.
7. Regulations and legislation relevant to this unit standard include the following:
 - Labour Act 2007(Act no 11,2007)
 - Workplace specific policies and regulations.
 - Regulations relating to the health & Safety of employees at work under Schedule 1 (2) of the Labour Act No.11 of 2007 and all subsequent amendments

Quality Assurance Requirements

This unit standard and others within this sub-field may be awarded by institutions which meet the accreditation requirements set by the Namibia Qualifications Authority and the Namibia Training Authority and which comply with the national assessment and moderation requirements. Details of specific accreditation requirements and the national assessment arrangements are available from the Namibia Qualifications Authority on www.namqa.org and the Namibia Training Authority on www.nta.com.na

Elements and Performance Criteria

Element 1: Demonstrate an understanding of digital microwave radio systems in transmission

Range

The scope of this element includes but is not limited to radio theory, point to point and point to multipoint.

Performance Criteria

- 1.1 Basic radio concepts and principles are explained.
- 1.2 Free space concepts and principles are explained.
- 1.3 Basic radio transmitter and receiver hardware functions are explained.
- 1.4 Feeder and antennae design are interpreted.
- 1.5 Radio link reliability is explained.
- 1.6 Radio interference is explained.

Element 2: Demonstrate an understanding of wireless technologies

Range

Wireless technologies may include but are not limited to Bluetooth and infrared.

Performance Criteria

- 2.1 Basic wireless communication technologies are explained and described.
- 2.2 Types of wireless technologies are outlined with respect to their frequencies.

Element 3: Demonstrate an understanding of wireless network and security standards

- 3.1 Cellular network concept is explained.
- 3.2 Evolution from GSM to UMTS is explained.
- 3.3 Wireless security threats are outlined.
- 3.4 Wireless security protocols are explained.

Element 4: Demonstrate an understanding of basic satellite transmission

Performance Criteria

- 4.1 Satellites are classified and explained.
- 4.2 Satellite transmission hardware components are identified.
- 4.3 Concept of satellite footprint is explained with reference to satellite theory.

Element 5: Demonstrate an understanding of fibre network

Performance Criteria

- 5.1 Plesiochronous Digital Hierarchy (PDH) and Synchronous Digital Hierarchy (SDH) optical principles and concepts are presented.
- 5.2 Principles of optical transport media and systems are explained according to transmission theory.

Element 6: Demonstrate an understanding of copper network

Performance Criteria

- 6.1 Unshielded Twisted Pair (UTP) and Shielded Twisted Pair (STP) principles and concepts are presented.
- 6.2 Bandwidth capacity of copper transport media is explained.

Registration Data

Subfield:	Information and Communication Technology
Date first registered:	30 July 2020
Date this version registered:	30 July 2020
Anticipated review:	2025
Body responsible for review:	Namibia Training Authority