



Australian Government

ICTDRE305 Develop integrated digital reception systems

Release: 1

ICTDRE305 Develop integrated digital reception systems

Modification History

Release	Comments
Release 1	This version first released with ICT Information and Communications Technology Training Package Version 2.0.

Application

This unit describes the skills and knowledge required to develop integrated digital reception system applications, topologies, devices and capabilities, and system programming methods; as well as use diagnostic tools and documentation of developed systems.

It applies to cablers who install emerging digital reception equipment and cabling systems for domestic and small to medium enterprise information technologies.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Telecommunications – Digital Reception Technology

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare to develop an integrated system	1.1 Determine types and location of loads and control devices from project specifications and customer requirements 1.2 Determine number of control bus networks and current requirements from load calculations for devices on the system 1.3 Determine appropriate placement of system devices to optimise bus network power and load parameters, and maintain system stability 1.4 Develop an integrated system to comply with regulator, safety and manufacturer requirements 1.5 Document take-off of the number of devices and accessories required for the system, using manufacturer's title and ID for each

ELEMENT	PERFORMANCE CRITERIA
	1.6 Download required programming and diagnostic tools to a compatible PC and check for correct operation and safety
2. Program integrated system devices	2.1 Follow work health and safety (WHS) risk control measures and procedures 2.2 Apply correct modes of programming to develop an integrated system according to manufacturer's programming software instructions 2.3 Follow manufacturer's instructions and recommendations when programming system devices to project requirements 2.4 Program parameters for operation of loads to project requirements and within manufacturer's designated range 2.5 Save and backup the programmed system database according to manufacturer instructions
3. Load and test integrated system	3.1 Follow WHS risk control work measures and procedures 3.2 Transfer database of integrated system program to network 3.3 Test all functions of the integrated system for compliance with project requirements and manufacturer specifications 3.4 Use diagnostic tools to locate system faults, defects and anomalies 3.5 Correct defects and anomalies to comply with project requirements and manufacturer specifications 3.6 Provide copy of documentation of integrated system at handover to customer

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

Skill	Performance Criteria	Description
Reading	1.1, 1.3-1.5, 2.2, 2.3, 3.3	Reads and interprets plans, specifications, computer program interface, and other documentation from a variety of sources, and consolidates information to determine requirements
Writing	1.5, 2.4, 3.2	Develops procedural material for a specific audience using clear and detailed language to convey explicit information, requirements and recommendations

Oral Communication	1.1	Effectively participates in verbal exchanges using collaborative and inclusive techniques including active listening and questioning, and reading of verbal and non-verbal signals to convey and clarify information
Numeracy	1.1-1.3	- Calculations required for determining design specifications - Performs mathematical calculations to check, interpret and confirm results of system tests
Navigate the world of work	1.4, 2.1, 3.1	Understands rights and responsibilities in complying with standards and regulatory requirements
Get the work done	1.3, 1.6, 2.2-2.5, 3.2-3.4	- Takes responsibility for planning, sequencing and prioritising tasks and own workload for efficiency and effective outcomes - Makes routine decisions and implements standard procedures for routine tasks, using formal decision-making processes for more complex and non-routine situations - Addresses less predictable problems and initiates standard procedures in response, applying problem-solving processes in determining a solution - Uses familiar digital technologies and systems to access information, search and enter data and code, present information and communicate with others, cognisant of data security and safety

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
ICTDRE305 Develop integrated digital reception systems	ICTDRE3249A Develop integrated digital reception systems	Updated to meet standards for Training Packages	Equivalent unit

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a53af4e4-b400-484e-b778-71c9e9d6aff2>

Assessment Requirements for ICTDRE305 Develop integrated digital reception systems

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Performance Evidence

Evidence of ability to:

- Comply with standards, regulations and work health and safety (WHS) procedures and practices when developing an integrated system
- communicate with customers
- determine the full scope of specifications for an integrated digital reception system
- use calculations to correctly determine the number of network and current requirements
- place system devices appropriately in system scheme
- apply and check appropriate modes of programming and diagnostic tools in the design
- program devices and set load operating parameters according to manufacturer specifications
- use diagnostic tools to locate and correct system defects, faults and anomalies
- document and backup system during appropriate stages of the project.

Note: If a specific volume or frequency is not stated, then evidence must be provided at least once.

Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must:

- describe the applications and advantages of integrated systems
- identify the bus system cable type, polarity, length and acceptable topologies
- describe the process of controlling digital system integration (DSI) and communicating with digital addressable lighting interface (DALI) electronic ballasts
- identify factors that affect control bus stability, including number of units on a network, and current drawn by devices in relation to current output of power supplies
- define the operating parameters of integrated systems and programming to an extent indicated by:
 - importance of project documentation and backup

- importance of location of output and input devices and control bus power supplies
- describe lighting dimmer capabilities and selection
- determine the low voltage (LV) supply overcurrent and surge protection
- describe multiple network connectivity
- identify the software used for system and device programming, monitoring and control
- explain system and device programming, encompassing:
 - addressing conventions for networks, devices, applications, output groups, types of control and outputs, which include 'on', 'off', a specific level, and over a specific time
 - PC programming tools and methods (programming includes configuring network database using addressing tools and objects, function objects, editing, altering and transferring the database to network)
- identify and describe system fault-finding processes
- determine the system components, encompassing:
 - support devices for control bus supply and control
 - support devices for programming, interconnection between networks and integration with third party systems
- describe the types and capabilities of input and output devices.

Assessment Conditions

Gather evidence to demonstrate consistent performance in conditions that are safe and replicate the workplace. Noise levels, production flow, interruptions and time variances should be typical of those experienced in the Telecommunications – Digital Reception Technology industry and include access to:

- a typical contemporary dwelling into which a digital system will be developed
- availability of all functional requirements of a modern home
- access to contemporary digital equipment
- access to all current standards, codes and regulations.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

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