



Australian Government

Department of Education, Employment and Workplace Relations

CUFBRD301A Perform basic transmission operations

Revision Number: 1

CUFBRD301A Perform basic transmission operations

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to prepare material for transmission and to monitor and switch television or radio transmission signals. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.
------------------------	--

Application of the Unit

Application of the unit	<p>The skills and knowledge described in this unit are applied in small-scale broadcasting facilities with minimal feeds and switches, for example, community radio and television stations or independent production houses that produce and supply content.</p> <p>Broadcast or transmission operators at this level arrange connections and links between external and internal sources, but on a limited basis. Other duties may include compilation and sequencing of content to match transmission schedules.</p> <p>While the role entails a degree of responsibility, broadcast operators at this level generally work under the supervision of a more experienced operator or enterprise manager.</p> <p>In a television context, they are often responsible for ingesting or recording source materials received in a range of formats and ensuring that these comply with transmission standards and specifications. These skills are covered in:</p> <ul style="list-style-type: none"> • CUFBRD303A Prepare video material for television transmission.
--------------------------------	---

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
-----------------------------	--

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
---	--

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
Plan transmission control resources	<ol style="list-style-type: none"> 1. Prepare or review transmission schedules and ensure information is accurate in consultation with relevant operational and production personnel 2. Organise transmission control scheduling and prioritise resources according to production requirements 3. Liaise with relevant operational and production personnel to resolve conflicting issues, problems or required changes 4. Ensure communications are maintained with operational and production personnel, including originators of incoming and outgoing feeds where applicable 5. Check functionality of equipment required for transmission operations to ensure correct performance during transmission 6. Prepare and distribute documentation as required by enterprise procedures
Prepare materials for transmission	<ol style="list-style-type: none"> 7. Receive incoming signals and arrange appropriate conversion according to enterprise protocols and standards 8. Measure signal parameters before and after conversion using appropriate testing equipment 9. Collate program components intended for transmission ensuring they are accurately identified, timed and sequenced in accordance with enterprise procedures 10. Insert appropriate time codes and cue points where applicable, ensuring breaks are scheduled and programmed correctly 11. Connect equipment and switch relevant feeds according to production requirements
Monitor incoming and outgoing transmissions	<ol style="list-style-type: none"> 12. Assess technical quality of transmissions and feeds and identify from written or verbal instructions sequences of materials to be transmitted or recorded 13. Use appropriate equipment to verify that transmitting signals comply with specifications 14. Accurately diagnose nature and causes of faults and take appropriate actions to resolve them 15. Maintain communication with relevant operational and production personnel to facilitate efficient switching of up-links and down-links
Provide general technical	<ol style="list-style-type: none"> 16. Liaise with relevant operational and production

ELEMENT	PERFORMANCE CRITERIA
support	<p>personnel throughout and switch feeds into and out of transmission control as requested</p> <p>17. Provide assessment of transmission levels and respond with correct information and documentation as applicable</p> <p>18. Ensure appropriate back-up systems are available in the event of breakdowns or failures of equipment or line feeds</p> <p>19. Retain contact with <i>feed provider</i> to ensure ongoing technical quality and delivery of required switching of up-links and down-links</p> <p>20. Undertake safe working practices and monitor safety and security of work area and equipment</p>

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- communication and teamwork skills sufficient to:
 - liaise with operational, production and client personnel
 - deliver clear and viable communications between disparate centres and personnel, including the effective use of two-way communication devices
 - demonstrate flexibility and reliability
 - work collaboratively in a team environment
 - liaise with relevant satellite and land-based service providers
- technical skills sufficient to:
 - operate computer hardware and software in the context of transferring files between servers, archiving broadcast material and completing routine workplace documentation
 - achieve accurate timing of switches and feeds
 - assess quality of audio or vision signals and sources
 - judge picture-to-sound synchronisation (television only)
 - use communication systems to send and receive messages efficiently and effectively
 - operate basic transmission control equipment
- problem solving skills sufficient to:
 - check equipment is working to specifications
 - identify problems and faults in equipment
 - arrange basic maintenance requirements, e.g. functional testing
- self-management skills sufficient to:
 - prioritise work tasks and meet deadlines
 - seek expert assistance when problems arise
- literacy and numeracy skills sufficient to:
 - compile and interpret transmission schedules and information
 - interpret equipment specifications
 - produce fault reports as required
 - implement timings and switches according to transmission schedules
 - accurately record durations of incoming and recorded source materials

Required knowledge

- industry knowledge, including:
 - roles and responsibilities of personnel in broadcast operations and production

REQUIRED SKILLS AND KNOWLEDGE

- types of programs, e.g. pre-recorded, live, commercials, sponsorship announcements
- sources of advice, information and technical support
- basic understanding of:
 - radio or television delivery methods - cable, terrestrial, microwave, satellite
 - satellite delivery systems, e.g. earth stations, up-links and down-links, transponders, satellite receiving dishes, satellite footprints
 - the features and capabilities of radio or television broadcasting facilities and equipment
 - characteristics of television standards - PAL, NTSC, SECAM (television only)
- familiarity with specific transmission operating equipment in use
- broadcast terminology
- OHS standards as they apply to working in broadcast operations

Evidence Guide

EVIDENCE GUIDE	
<p>The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.</p>	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	<p>Evidence of the following is essential, in either a television or radio context:</p> <ul style="list-style-type: none"> • effective verbal communication with a range of individuals, including effective use of talkback/intercom communication devices • collaborative approach to work • attention to detail • ability to work to deadlines • television, e.g.: <ul style="list-style-type: none"> • effective quality checking of vision and audio feeds • ability to judge picture and sound distortion • radio, e.g.: <ul style="list-style-type: none"> • effective quality checking of audio feeds • ability to judge sound distortion.
Context of and specific resources for assessment	<p>Assessment must ensure:</p> <ul style="list-style-type: none"> • practical demonstration of skills through the monitoring of incoming and outgoing signals in a basic broadcast transmission facility on more than one occasion • access to material to be prepared for broadcast • access to appropriate learning and assessment support when required • use of culturally appropriate processes and techniques appropriate to the language and literacy capacity of learners and the work being performed.
Method of assessment	<p>A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:</p> <ul style="list-style-type: none"> • direct questioning combined with review of portfolios of evidence and third-party workplace reports of on-the-job performance • evaluation of a range of material prepared for

EVIDENCE GUIDE	
	<p>transmission by the candidate</p> <ul style="list-style-type: none"> • observation of the candidate monitoring incoming and outgoing signals in a basic broadcast transmission facility • written or verbal questioning to test knowledge as listed in the required skills and knowledge section of this unit.
Guidance information for assessment	<p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example:</p> <ul style="list-style-type: none"> • CUFBRD303A Prepare video material for television transmission • CUFPOS201A Perform basic vision and sound editing.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

<p><i>Operational and production personnel</i> may include:</p>	<ul style="list-style-type: none"> • editors • head of department • other specialist personnel • presentation personnel • presenters • station manager • supervisor • technical personnel • transmission operators • video operators.
<p><i>Resources</i> may include:</p>	<ul style="list-style-type: none"> • audio and video recorders • DVD/CD playback facilities • incoming feeds • outgoing feeds • playback machines • pre-recorded content, e.g. video, DAT • servers • test equipment.
<p><i>Feeds</i> may include:</p>	<ul style="list-style-type: none"> • analogue • audio/video replay machines • cable • data • digital • fibre optics • live-to-air broadcasts • outside broadcast input/output • pre-recorded material • sound • studio output/input • vision • vision and sound.
<p><i>Equipment</i> may include:</p>	<ul style="list-style-type: none"> • audio phase vector scope

RANGE STATEMENT	
	<ul style="list-style-type: none"> • control panels • digi-carts • down-links from satellite • fibre optics • headset/microphone combination • headsets • intercom • landlines • microwave links • noise and distortion meters • open speaker • oscilloscopes (scopes) • servers, e.g. transmission, archival • switchers • talkback and two-way communication devices • test tone generators • up-links to satellite • video/audio recorders • video/audio replay machines • VU and peak program meters • waveform and picture monitor • waveform monitors.
Documentation may be:	<ul style="list-style-type: none"> • computer generated • contact numbers • equipment manuals • fault reports • in barcode format • manually written • network maps • production information • production schedules • timelines • traffic requirements • transmission schedules.
Signals may include:	<ul style="list-style-type: none"> • broadcasts from studios • down-links from satellite • internal lines • landlines • live-to-air broadcasts • minimal multiple feeds

RANGE STATEMENT	
	<ul style="list-style-type: none"> • pre-recorded material • single feeds • telephone lines • up-links to satellite.
<i>Conversion</i> may include:	<ul style="list-style-type: none"> • analogue • aspect ratios, e.g. 4:3, 16:9 • AVI • compressed formats, e.g. MPEG2 • DAB • digital • FM/AM • HDTV DVD/CD • MP3 • NTSC • OGG • PAL • WMA.
<i>Signal parameters</i> may include:	<ul style="list-style-type: none"> • ATSC - Advanced Television Systems Committee, U.S • audio signal, e.g.: <ul style="list-style-type: none"> • frequency spectrum • noise • dynamic gain • signal level • DVB - Digital Video Broadcasting, Europe • ISDB - Integrated Services Digital Broadcasting, Japan • PAL/NTSC/SECAM • video signal, e.g.: <ul style="list-style-type: none"> • digital • analogue • colour accuracy • differential gain/phase • distortion • colour bars • horizontal/vertical scans • frame rates • interlacing.
<i>Breaks</i> may include:	<ul style="list-style-type: none"> • advertisements

RANGE STATEMENT	
	<ul style="list-style-type: none"> • community announcements • insertion of live transmissions • station promotions.
<i>Production requirements</i> may include:	<ul style="list-style-type: none"> • events • landline links • live and pre-recorded radio broadcasts • live and pre-recorded television broadcasts • live feeds • outside broadcasts • satellite-linked interviews • studio productions • syndications • test viewings.
<i>Transmission</i> sources may include:	<ul style="list-style-type: none"> • analogue tape • any digital media • audio sources • cameras • character generators • combination of vision and audio • computer hard drive • digital tape • remote sources • satellite feeds • still stores • tape machines, e.g. video and audio playback • vision.
<i>Faults</i> may include:	<ul style="list-style-type: none"> • blocking/pixellation • cable faults • colour degradation • ghosting • image tears • impulsive noise • line breakdown • no audio • no image • picture distortion • picture freeze • picture out of synchronisation with sound • satellite occlusions, e.g. thunderstorms • signal interruptions

RANGE STATEMENT	
	<ul style="list-style-type: none"> • sound distortion.
<i>Feed providers</i> may include:	<ul style="list-style-type: none"> • archives • businesses • internet • outside broadcasts • post-production suites • production houses • program distributors • radio stations • studios - radio and television • television stations.

Unit Sector(s)

Unit sector	
--------------------	--

Competency field

Competency field	Media and entertainment production - broadcasting
-------------------------	---

Co-requisite units

Co-requisite units		