



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **CUFBRD401A Coordinate television transmission operations**

**Revision Number: 1**

## CUFBRD401A Coordinate television transmission operations

### Modification History

Not applicable.

### Unit Descriptor

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|------------------------|--|
| <b>Unit descriptor</b> | <p>This unit describes the performance outcomes, skills and knowledge required to operate video recording devices for television transmission.</p> <p>No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.</p> |
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### Application of the Unit

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| <b>Application of the unit</b> | <p>Video operators apply the skills and knowledge described in this unit. Even though they may work directly to a supervisor, they frequently carry a high level of responsibility for their own activities and are often responsible for supervising others. Teamwork is, therefore, an essential component of the job.</p> <p>Duties include preparation and set-up of video equipment, management of video recordings and maintaining the technical quality of vision and audio signals.</p> <p>Video operators need to be proficient in the use of test equipment and the functional application of technical standards. Other specific skills include the ability to dub, transfer and edit content for transmission and production purposes. Skills associated with editing at this level are covered in:</p> <ul style="list-style-type: none"> <li>• CUFPOS401A Edit screen content for fast turnaround.</li> </ul> |
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## Licensing/Regulatory Information

Not applicable.

## Pre-Requisites

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| <b>Prerequisite units</b> |  |  |
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## Employability Skills Information

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| <b>Employability skills</b> | This unit contains employability skills. |
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## Elements and Performance Criteria Pre-Content

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| 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. |
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## Elements and Performance Criteria

| ELEMENT                                | PERFORMANCE CRITERIA  |
|--|---|
| Set up for video recording             | <ol style="list-style-type: none"> <li>1. Liaise with <i>relevant production personnel</i> to confirm <i>production and transmission requirements</i> and ensure accuracy of relevant <i>documentation</i></li> <li>2. Note timelines for <i>production</i> and transmission requirements and implement strategies and procedures to meet deadlines</li> <li>3. Identify and note specific instructions relating to addition of <i>time codes</i>, durations and cue points</li> <li>4. Ensure <i>equipment</i> is compatible with designated <i>video formats</i> and undertake <i>conversions</i> of <i>source materials</i> as required</li> <li>5. Contribute creative solutions to enhance best outcomes for productions and transmissions</li> <li>6. Align, connect and prepare equipment consistent with <i>recording protocols</i>, test for <i>faults</i> and take necessary steps to resolve where necessary</li> </ol>  |
| Capture and monitor feeds              | <ol style="list-style-type: none"> <li>7. Select or liaise with master control to access required <i>feeds</i> for recording broadcast materials and patch to appropriate equipment</li> <li>8. Record broadcast material as identified by production or transmission schedules or as advised by relevant production personnel</li> <li>9. Arrange ingestion of pre-recorded materials required from other sources, including insertion of time codes where applicable</li> <li>10. Monitor and adjust quality of vision and audio feeds against technical standards for relevant enterprise</li> <li>11. Liaise with relevant production areas during recording sessions to request changes to feeds and to advise of problems with quality of feeds</li> <li>12. Select required stock and <i>consumables</i> and ensure that supplies are sufficient to meet recording schedule needs</li> <li>13. Select and set time code type to meet post-production requirements and ensure time code is set to synchronise with other equipment where necessary</li> <li>14. Complete required video operations and store materials in logical sequence to facilitate production requirements</li> </ol> |
| Replay for transmission and production | <ol style="list-style-type: none"> <li>15. Review production or transmission documentation in collaboration with relevant production and transmission personnel to verify production and transmission requirements</li> </ol>   |

| <b>ELEMENT</b>            | <b>PERFORMANCE CRITERIA</b>  |
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|                           | <p>16. Ensure nominated replay segments are identified, labelled and stored in sequence and complete documentation according to enterprise procedures</p> <p>17. Cue tapes and recordings accurately according to transmission and production requirements</p> <p>18. Set replay parameters accurately and respond promptly to replay directions from relevant transmission or production personnel</p> <p>19. Record and rewind instant replays where applicable and in accordance with production and transmission requirements</p> <p>20. Maintain close monitoring of incoming and outgoing signals and adjust as needed</p> |
| Finalise video operations | <p>21. Finalise documentation and distribute to relevant production and transmission personnel according to enterprise procedures</p> <p>22. Dub duplicate recordings to designated media format for back-up or archival purposes according to enterprise procedures</p> <p>23. Ensure equipment remains in good working order, arrange for faults to be repaired and leave workplace in original or improved state</p> <p>24. Review and reflect on performance and note areas for improvement</p>  |

## Required Skills and Knowledge

### REQUIRED SKILLS AND KNOWLEDGE

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

#### Required skills

- communication and organisational skills sufficient to:
  - liaise with relevant production personnel, e.g. technical operators, directors, producers
  - supervise effectively members of a video operations team
  - plan and schedule relevant aspects of video processes
  - organise television and interactive media content logically and accurately
  - utilise relevant file management protocols for specified operating systems
- technical skills sufficient to:
  - use computer systems to capture, record and convert material for broadcast and for other purposes, such as EDLs, DLS, time codes
  - work in both non-linear and linear configurations
  - identify aspect ratio
  - judge picture-to-sound synchronisation
  - check and test that equipment is working to specifications
  - use intercom and two-way communication devices to send and receive messages efficiently and effectively
- initiative and enterprise in the context of achieving creative outcomes within technical constraints
- self-management skills sufficient to:
  - prioritise work tasks
  - work calmly under pressure and to tight deadlines
  - make decisions within level of own responsibility
  - seek expert assistance when problems arise
- literacy and numeracy skills sufficient to:
  - interpret scripts and other relevant documentation
  - prepare and write reports
  - document, log and file source and recorded/edited materials
  - implement and record time codes and copies

#### Required knowledge

- industry knowledge, including:
  - roles and responsibilities of personnel in broadcast operations and production
  - understanding of the characteristics of television standards, e.g.PAL, NTSC,SECAM
  - basic understanding of television broadcast systems and transmission facilities

**REQUIRED SKILLS AND KNOWLEDGE**

- nature, function and limitations of video recording equipment and materials
- nature and purpose of test signals and selection of tape types
- sources of advice, information, and technical support
- broadcast terminology
- issues and challenges that arise in the context of coordinating television transmission operations
- concept and judgement of image and audio broadcast quality
- video library procedures and protocols
- tape handling and care methodologies
- compression codecs and encoders
- file management protocols across a range of operating systems
- OHS standards as they apply to working in broadcast operations

## Evidence Guide

| <b>EVIDENCE GUIDE</b>  |   |
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| 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. |   |
| <b>Overview of assessment</b>  |   |
| <b>Critical aspects for assessment and evidence required to demonstrate competency in this unit</b>  | <p>Evidence of the following is essential:</p> <ul style="list-style-type: none"> <li>• efficient capturing of material for broadcast</li> <li>• ability to monitor quality of audio and video feeds according to production requirements</li> <li>• collaborative approach to work, including effective team leadership</li> <li>• correct interpretation of production schedules/instructions</li> <li>• ability to judge picture-to-sound synchronisation.</li> </ul>  |
| <b>Context of and specific resources for assessment</b>  | <p>Assessment must ensure:</p> <ul style="list-style-type: none"> <li>• practical demonstration of skills through the coordination of television transmission operations</li> <li>• access to material to be prepared for broadcast</li> <li>• access to broadcasting facilities</li> <li>• access to appropriate learning and assessment support when required</li> <li>• use of culturally appropriate processes and techniques appropriate to the language and literacy capacity of learners and the work being performed.</li> </ul>  |
| <b>Method of assessment</b>  | <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"> <li>• direct questioning combined with review of portfolios of evidence and third-party workplace reports of on-the-job performance</li> <li>• evaluation of a selection of material prepared for transmission by the candidate</li> <li>• observation of the candidate coordinating transmission operations on the job</li> <li>• written or verbal questioning to test knowledge as listed in the required skills and knowledge section of this unit.</li> </ul> |
| <b>Guidance information for</b>  | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended,  |



**EVIDENCE GUIDE****assessment**

for example:

- CUFBRD402A Vision mix television productions
- CUFBRD403A Transfer film to digital formats
- CUFPOS401A Edit screen content for fast turnaround.

## 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.

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|--|---|
| <p><b><i>Relevant production personnel</i></b> may include:</p>            | <ul style="list-style-type: none"> <li>• editors</li> <li>• floor manager</li> <li>• head of department</li> <li>• library personnel</li> <li>• master control operators</li> <li>• master control/master control operators</li> <li>• news editors</li> <li>• presentation operators</li> <li>• producers</li> <li>• specialist personnel</li> <li>• station manager</li> <li>• supervisor</li> <li>• tape operators</li> <li>• technical personnel</li> <li>• transmission operators.</li> </ul>  |
| <p><b><i>Production and transmission requirements</i></b> may include:</p> | <ul style="list-style-type: none"> <li>• action replays</li> <li>• back-ups</li> <li>• compiles</li> <li>• dubs/copying, e.g.:             <ul style="list-style-type: none"> <li>• copying from tape to tape in the same format</li> <li>• copying from a source tape in one format to a destination tape in another format, e.g. from analogue to digital</li> <li>• copying from a tape to disk</li> <li>• copying from tape to computer hard drive</li> </ul> </li> <li>• edits</li> <li>• recordings</li> <li>• replays</li> <li>• transfers.</li> </ul> |
| <p><b><i>Documentation</i></b> may include:</p>                            | <ul style="list-style-type: none"> <li>• barcode format</li> <li>• computer generated</li> </ul>  |

| <b>RANGE STATEMENT</b>                 |  |
|--|--|
|  | <ul style="list-style-type: none"> <li>• cue sheets</li> <li>• enterprise procedure manuals</li> <li>• equipment manuals</li> <li>• fault reports</li> <li>• logging sheets</li> <li>• manually generated</li> <li>• schedules, e.g. production, transmission</li> <li>• scripts</li> <li>• tape information sheets.</li> </ul>  |
| <i><b>Productions</b></i> may include: | <ul style="list-style-type: none"> <li>• advertisements</li> <li>• community announcements</li> <li>• live events</li> <li>• outside broadcasts</li> <li>• pre-recorded programs</li> <li>• promotions</li> <li>• studio productions.</li> </ul>   |
| <i><b>Time codes</b></i> may include:  | <ul style="list-style-type: none"> <li>• burned-in code</li> <li>• CTL</li> <li>• edge code/number</li> <li>• keyed-in code</li> <li>• MIDI (MTC)</li> <li>• SMPTE/EBU, e.g. VITC, LTC.</li> </ul>   |
| <i><b>Equipment</b></i> may include:   | <ul style="list-style-type: none"> <li>• audio phase vector scope</li> <li>• CCUs</li> <li>• colour monitors</li> <li>• computer hard drives</li> <li>• computers</li> <li>• control panels</li> <li>• digi-carts</li> <li>• disk players, e.g. DVD/CD</li> <li>• down-links from satellite</li> <li>• fibre optics</li> <li>• frame stores/still stores</li> <li>• landlines</li> <li>• microwave links</li> <li>• mobile phones</li> <li>• noise and distortion meters</li> <li>• oscilloscopes (scopes)</li> <li>• playback facility, e.g. EVS</li> <li>• servers, e.g. transmission, archival</li> </ul> |

| <b>RANGE STATEMENT</b>               |  |
|--------------------------------------|--|
|                                      | <ul style="list-style-type: none"> <li>• switchers</li> <li>• talkback/two-way communication devices</li> <li>• test tone generators</li> <li>• up-links to satellite</li> <li>• UPS (uninterrupted power supply)</li> <li>• video/audio recorders</li> <li>• video/audio replay machines</li> <li>• VU and peak program meters</li> <li>• waveform and picture monitors.</li> </ul>                       |
| <i>Video formats</i> may include:    | <ul style="list-style-type: none"> <li>• analogue, e.g.: <ul style="list-style-type: none"> <li>• Betacam SP</li> <li>• VHS</li> <li>• Digital8</li> <li>• U-Matic</li> </ul> </li> <li>• computer hard drive/server</li> <li>• digital media, e.g.: <ul style="list-style-type: none"> <li>• digi Beta</li> <li>• DVCPRO</li> <li>• Mini-DV</li> <li>• DVCAM</li> <li>• Digi-cart.</li> </ul> </li> </ul> |
| <i>Conversion</i> may include:       | <ul style="list-style-type: none"> <li>• AIFF</li> <li>• AVI</li> <li>• HDTV</li> <li>• kine</li> <li>• MIDI</li> <li>• MP3</li> <li>• MPEG-1, 2, 4</li> <li>• OGG</li> <li>• PAL to NTSC/SECAM</li> <li>• WAV</li> <li>• WMA</li> <li>• WMV.</li> </ul>   |
| <i>Source materials</i> may include: | <ul style="list-style-type: none"> <li>• analogue tape</li> <li>• any digital media</li> <li>• digital tape</li> <li>• direct live feeds</li> <li>• pre-recorded tapes, e.g. audio, vision</li> <li>• program content</li> </ul>   |

| <b>RANGE STATEMENT</b>                  |  |
|---|--|
|   | <ul style="list-style-type: none"> <li>• promotions/advertisements.</li> </ul>   |
| <i>Recording protocols</i> may include: | <ul style="list-style-type: none"> <li>• aspect ratios, e.g. 4:3, 16:9</li> <li>• audio levels, e.g. mono, stereo</li> <li>• black levels</li> <li>• burst phase</li> <li>• chrominance gain</li> <li>• closed captions</li> <li>• colour balance</li> <li>• colour bars</li> <li>• compression ratios/codecs</li> <li>• Dolby sound</li> <li>• loss/lossless</li> <li>• luminance</li> <li>• television standards:               <ul style="list-style-type: none"> <li>• PAL</li> <li>• NTSC</li> <li>• SECAM/MESCAM</li> </ul> </li> <li>• test patterns</li> <li>• tone.</li> </ul>                      |
| <i>Faults</i> may include:              | <ul style="list-style-type: none"> <li>• blocking/pixellation</li> <li>• cable faults</li> <li>• colour degradation</li> <li>• data entry errors</li> <li>• ghosting</li> <li>• image tears</li> <li>• impulsive noise</li> <li>• line breakdown</li> <li>• link fades</li> <li>• machine breakdown</li> <li>• overruns</li> <li>• picture distortion</li> <li>• picture freeze</li> <li>• picture out of synchronisation with sound</li> <li>• power or transmission signal loss</li> <li>• satellite occlusions, e.g. thunderstorms</li> <li>• sound distortion</li> <li>• tape machine faults.</li> </ul> |
| <i>Feeds</i> may include:               | <ul style="list-style-type: none"> <li>• analogue</li> <li>• audio/video replay machines</li> </ul>  |

| <b>RANGE STATEMENT</b>          |   |
|---------------------------------|---|
|                                 | <ul style="list-style-type: none"> <li>• cable</li> <li>• data</li> <li>• digital</li> <li>• fibre optics</li> <li>• landline</li> <li>• live-to-air broadcasts</li> <li>• master control</li> <li>• multiple feeds</li> <li>• outside broadcast input/output</li> <li>• pre-recorded material</li> <li>• satellite</li> <li>• single feeds</li> <li>• sound</li> <li>• studio</li> <li>• studio output/input</li> <li>• vision</li> <li>• vision and sound.</li> </ul> |
| <i>Consumables</i> may include: | <ul style="list-style-type: none"> <li>• cleaning materials</li> <li>• disks, e.g. DVDR/CD-RW, DAT</li> <li>• labels</li> <li>• spare parts, e.g. recorder heads</li> <li>• tapes, e.g. video, audio.</li> </ul>  |

## Unit Sector(s)

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| <b>Unit sector</b> |  |
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## Competency field

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|-------------------------|---|
| <b>Competency field</b> | Media and entertainment production - broadcasting |
|-------------------------|---|

## Co-requisite units

| Co-requisite units |  |  |
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|                    |  |  |