



Australian Government

Department of Education, Employment and Workplace Relations

CUFBRD501A Operate master control

Revision Number: 1

CUFBRD501A Operate master control

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to monitor and switch incoming and outgoing television or radio transmission signals using master or network control equipment. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.
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Application of the Unit

Application of the unit	The skills and knowledge outlined in this unit apply to senior operators working in large-scale or network broadcasting facilities. Master control is where traffic flows of incoming and outgoing signals are managed, monitored and assessed. Consequently, senior broadcast or transmission operators working in master control are expected to manage complex operational activities incorporating a high level of responsibility, including the management of a broadcast operations team. Specifically they evaluate multiple sources of incoming and outgoing data to and from master control. They are required to assign signals of vision, sound and data to appropriate external and internal destinations. In addition, they need to ensure that the best technical quality of program sources and signals is achieved, which may involve workarounds when faults or equipment failures occur.
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
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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.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
Plan master or network control resources	1. Analyse production and transmission requirements to determine overall master or network control requirements 2. Ensure schedule information is accurate and resolve identified problems in close collaboration with relevant operational and production personnel 3. Ensure access to required input and output feeds are available to meet transmission and production requirements in accordance with available equipment and signal pathways 4. Communicate with relevant operational and production personnel on a needs basis and in sufficient time to resolve potential issues, problems and required changes 5. Suggest creative and technical solutions to complex situations in collaboration with relevant operational and production personnel
Schedule feeds and equipment requests	6. Organise appropriate line connections and switching for incoming and outgoing feeds according to transmission and production requirements 7. Ensure that equipment is connected according to transmission and production requirements and that it is in good working order 8. Measure signal parameters before and after conversion to ensure converted product meets required standards 9. Switch feeds and up-links and down-links as required according to production and transmission requirements 10. Complete workplace documentation as required and in accordance with enterprise protocols
Monitor incoming and outgoing feeds	11. Check that feeds are correct and of a suitable quality to meet required technical standards of the enterprise 12. Use appropriate equipment to verify that signals are operating within required specifications, and that there is no distortion 13. Accurately diagnose nature and causes of faults and problems and take appropriate actions to resolve them 14. Adjust systems as needed to ensure signals are within specification and utilising appropriate reference test signals 15. Communicate with feed providers to maintain required technical quality of material and provide solutions to overcome operational issues as needed

ELEMENT	PERFORMANCE CRITERIA
	16. Maintain contact with relevant feed providers to facilitate efficient switching of up-links and down-links
Provide general technical and operational support	17. Liaise with relevant operational personnel throughout production or transmission processes to provide required feed switches 18. Provide assessment of transmission levels and advise relevant operational personnel of problems with the quality of the feeds 19. Switch feeds into and out of master control as requested by relevant operational and production personnel and ensure appropriate communications are maintained at all times 20. Where appropriate, ensure that incoming signals are recorded or ingested to required formats, including delivery to relevant <i>transmission and production destinations</i> 21. Organise alternate fail-safe and back-up signal paths in the event of breakdowns or failures of designated prime sources 22. Identify and diagnose problems with equipment and take action to remedy or refer to maintenance crew for resolution

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

- communication skills sufficient to:
 - liaise with a wide range of operational, production and client personnel
 - deliver clear and viable communication between disparate centres and personnel, including effective use of two-way communication devices
 - negotiate solutions to problems and conflicts
 - manage a team of operational personnel
- self-management and planning skills in the context of:
 - working under pressure and to tight deadlines
 - scheduling and planning complex transmission activities
 - managing work calmly and effectively to achieve goals and results
 - addressing and solving problems in a timely and collaborative manner
- technical skills sufficient to:
 - operate specific master control operating equipment
 - achieve accurate timing of switches and feeds
 - assess quality of audio and vision signals and sources
 - judge picture-to-sound synchronisation
 - check equipment is working to specifications
 - diagnose problems and faults in equipment and undertake basic maintenance requirements, e.g. functional testing
- initiative and enterprise in the context of demonstrating:
 - original and innovative approaches in the use and organisation of transmission facilities
 - flexibility and reliability
- learning skills in the context of keeping up to date with technological changes affecting master control operations
- literacy and numeracy skills sufficient to:
 - interpret written and computerised information, e.g. schedules, resource allocation
 - complete workplace documentation and reports
 - interpret and manage allocated budgets
 - note, calculate and implement specific timings for transmissions and production needs

Required knowledge

- industry knowledge, including:

REQUIRED SKILLS AND KNOWLEDGE

- roles and responsibilities of personnel in broadcast operations and production
- sound understanding of the characteristics of television standards, e.g. PAL, NTSC, SECAM, DVB
- sound understanding of radio or television broadcast systems and transmission facilities
- sound understanding of the features and capabilities of satellite delivery equipment: earth stations, up-links, transponders, satellite receiving dishes, satellite footprints
- sound understanding of radio or television delivery methods: cable, terrestrial, microwave, satellite
- understanding of technical and artistic elements involved in production
- sources of advice, information and technical support
- issues and challenges that arise in the context of operating complex master control facilities
- concept and judgement of image and audio broadcast quality
- OHS standards as they apply to working in broadcast operations

Evidence Guide

EVIDENCE GUIDE

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.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- correct interpretation of transmission schedules
- accurate and timely switching of feeds according to production and transmission requirements
- ability to check quality of vision and/or sound feeds
- collaborative approach to work, including the ability to supervise team members
- effective verbal communication with a range of individuals, including use of talkback/intercom communication devices.

Context of and specific resources for assessment

Assessment must ensure:

- practical demonstration of skills through directing incoming and outgoing signals according to real or simulated schedules
- access to a range of complex master control equipment used in broadcasting facilities
- 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

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:

- direct questioning combined with review of portfolios of evidence and third-party workplace reports of on-the-job performance
- observation of the candidate operating master control in a large-scale or network broadcast facility
- written or verbal questioning to test knowledge as listed in the required skills and knowledge section of this unit.

Guidance information for

Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended,

EVIDENCE GUIDE**assessment**

for example:

- BSBWOR502A Ensure team effectiveness.

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.

Production and transmission requirements may include:

- action replays
- back-ups
- compiles
- dubs/copying, e.g.:
 - copying from tape to tape in the same format
 - copying from a source tape in one format to a destination tape in another format, e.g. from analogue to digital
 - copying from a tape to disk
 - copying from tape to computer hard drive
- edits
- recordings
- replays
- transfers.

Operational and production personnel may include:

- camera operators
- editors
- floor manager
- head of department
- ingest operators
- news editor
- presentation operators
- producer
- technical/specialist personnel
- station manager
- supervisor
- tape operators
- technical director
- transmission operators.

Feeds may include:

- analogue
- audio/video replay machines
- cable

RANGE STATEMENT	
	• data • digital • fibre optics • live-to-air broadcasts • multiple feeds • outside broadcast input/output • pre-recorded material • single feeds • sound • studio output/input • vision • vision and sound.
Equipment may include:	• audio phase vector scope • CCUs • colour monitors • control panels • digi-carts • down-links from satellite • fibre optics • frame stores/still stores • landlines • microwave links • noise and distortion meters • oscilloscopes (scopes) • servers, e.g. transmission, archival • switchers • talkback/two-way communication devices • test tone generators • up-links to satellite • UPS (uninterrupted power supply) • video/audio recorders • video/audio replay machines • VU and peak program meters • waveform and picture monitor • waveform monitors.
Signals may include:	• analogue • audio • combination of vision and audio • data • digital

RANGE STATEMENT	
	• NTSC • PAL • SECAM • test signals • vision.
Conversion may include:	• 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.
Documentation may include:	• budget information • computer generated • contact numbers • equipment manuals • fault reports • in barcode format • manually written • network maps • production information • production schedules • timelines • traffic requirements • transmission schedules.
Faults and problems may include:	• blocking/pixellation • cable faults • colour degradation • data entry errors • ghosting • image tears • impulsive noise • line breakdown

RANGE STATEMENT	
	• link fades • machine breakdown • overruns • picture distortion • picture freeze • picture out of synchronisation with sound • power or transmission signal loss • satellite occlusions, e.g. thunderstorms • sound distortion • tape machine faults.
Feed providers may include:	• archival organisations • clients, e.g. channel owners • outside broadcast productions • private operators • program distributors • radio stations • studio productions • television stations.
Transmission and production destinations may include:	• audio suites • design department • homes • outside broadcast • point to point, e.g. live satellite interviews • post-production suites, e.g. Dolby suites, editing suites • presentation booths • schedule monitors • studio • syndication stations.

Unit Sector(s)

Unit sector	
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Competency field

Competency field	Media and entertainment production - broadcasting
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Co-requisite units

Co-requisite units		