

Free TV Australia Operational Practice OP-38 is a specification for Integrated Services Digital Network (ISDN) Codec Equipment Used for Communications Channels.

1. SCOPE

This specification covers the use of 64Kb Codec equipment to be used by television and radio stations for communications, as distinct from high quality program transfer.

2. APPLICATION

This use of ISDN is primarily as a replacement for copper order wires carrying communications between Outside Broadcast (OB) sites and station Master Control Rooms (MCR), between vehicles on OB sites and between the MCR's of various radio and television stations.

3. OBJECTIVES

Objectives for the establishment of an Operational Practice for ISDN Codec Equipment Used for Communications Channels by broadcasters are:

- a) Transparent interchange of communications between networks, and between service providers' facilities and networks.
- b) Ease and speed of set up of communications channels.
- c) Increased reliability of the ISDN service while operational.
- d) Minimizing non-compatibility of ISDN codec equipment.
- e) Increasing the availability of codec equipment compliant with the needs of Australian broadcasters.
- f) Avoidance of the use of "ISDN Exchanges" as may be required in other countries¹.

4. COMMUNICATION CHANNEL TYPE

The communications channels should occupy one 64 Kb/s ISDN service.

5. COMMUNICATION CHANNEL OPERATION

5.1 Configuration

The recommended configuration² for the communication channels are:

- a) One prime four wire talkback channel occupying 16Kb/s.
- b) Two secondary four wire talkback channels each occupying 12Kb/s.
- c) One phone channel.
- d) One fax, data or phone channel.

Channels allocated to applications (c) and (d) should occupy the remaining space, as required by the broadcaster.

The codec equipment should provide for configuration of an ISDN service from a remote site which includes:

¹ While the establishment of ISDN exchanges is to be avoided in Australia, this will not guarantee compatibility with ISDN codec equipment in overseas countries.

² It is recognised that some broadcasters use the following configuration:
Phone lines, 2 at 8Kb/s and 1 at 6.3Kb/s.
3 four-wire comms channels, each at 8Kb/s.
One data channel.

Configuration of the bandwidth of each channel.
Configuration of the dial to and dial from number.

5.2 Operation of the codec equipment

The remote units should dial into a node in a fixed unit at the receiving station.

Provision may have to be made to prevent unauthorised dial-ins or re-configurations from remote units.

Portable units³ should have several standard set-ups retained in a non-volatile memory within the unit. The portable unit should not require the use of a PC to access or enable these operational configurations. Alternatively, a PC should be built into the unit, and should contain a program suitable for the automatic configuration of the unit to one, or (preferably) a choice, of default configurations.

5.3 Power supplies in the codec equipment

Portable units should have an uninterruptable power supply (UPS) capable of maintaining communications for no less than five minutes in the event of a mains power failure. This power supply should, if practical, be contained in the unit. It should be possible to switch off the UPS to avoid discharging the battery when the van is not in use.

When the unit loses power, the selected set-up should be retained or should be reloaded automatically upon re-powering.

The delay before communications are resumed after a power break, should be as short as possible.

5.4 Connection to carrier circuits

The Terminal Adapter (TA) may be built into the portable main unit, thus requiring only a Cat 5 cable to the carrier's terminal adapter.

³ Units housed in a vehicle or those which are part of a "fly-away" satellite communications package.

6. REFERENCED STANDARDS

ISDN codec equipment should conform to ITU standards listed for their modes of operation.

- J.52 Covering the transmission of high quality audio using 1-3 64Kb/s channels per mono signal.
- G.722 7KHz audio coding within 64Kb/s
- G723.1 Covering dual rate speech coding in multimedia communications for transmission at 5.3 and 6.3 Kb/s.
- G.729 Coding of speech at 8Kb/s
- G.732 Covering Primary PCM coding in multiplex equipment at 2048 Kb/s
- G.704 Sync frame structures used at 1544, 6312, 2048, 8448, 44736 Kb/s.
- G.802 Interworking between networks that are based on different digital hierarchies and speech encoding laws.