IEC 62379

Common control interface for networked digital audio and video products

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1 Introduction

- Protocol for controlling audio and video products

- Uses SNMP

- Developed for use in radio studios using ATM networks.

- Extended for use with video and audio, consumer and professional.

- No commercial implementation exists at present (that I am aware of). The BBC may have "work in progress"

- Sources for this presentation – Parts 1 & 2, www.iec62379.org

2 Parts

IEC62379 currently contains 5 parts

- Part 1 – General (Published 8/2007)
- Part 2 – Audio (Published 8/2007)
- Part 3 – Video (Draft)
- Part 4 – Data (Draft)
- Part 5 – Transmission over networks with separate subpart for each network type (Draft)

- This presentation mainly deals with Parts 1 and 2 and is given from an audio equipment point of view.

- It deals with the last "C" of P1722.1 DECC.

- Part 5 may deal with E & C (needs more research)
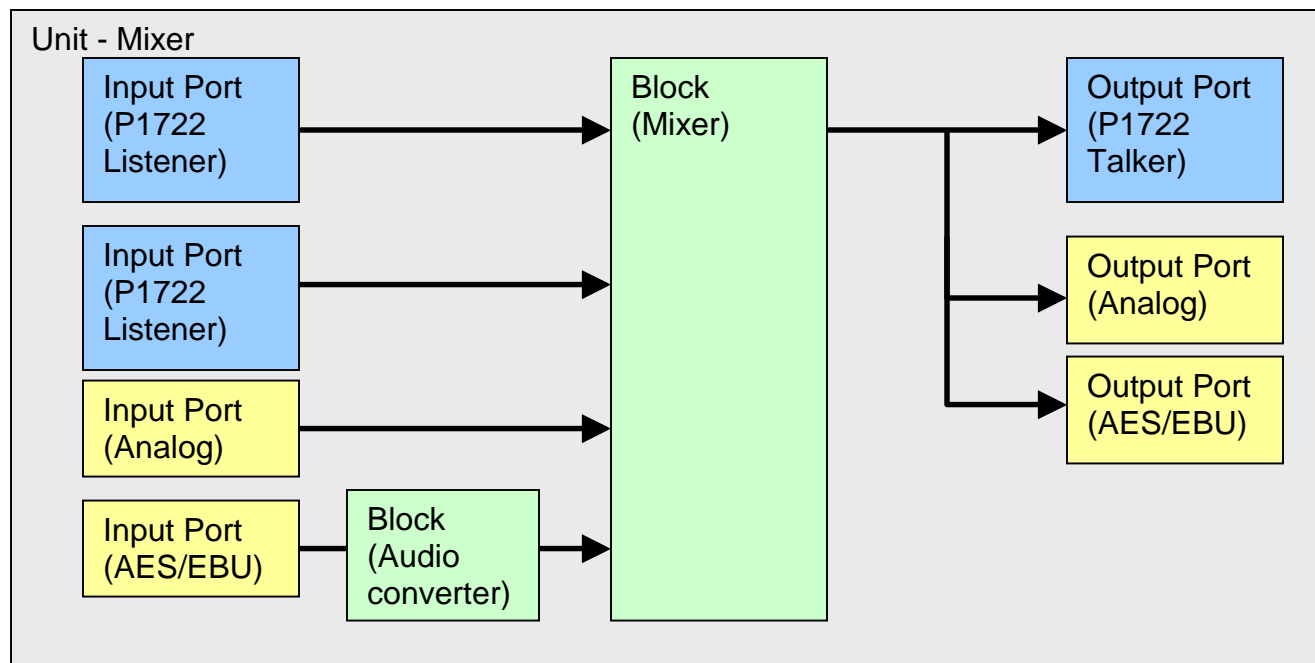
3 Equipment Model

3.1   Unit

- Each piece of equipment is called a "unit"
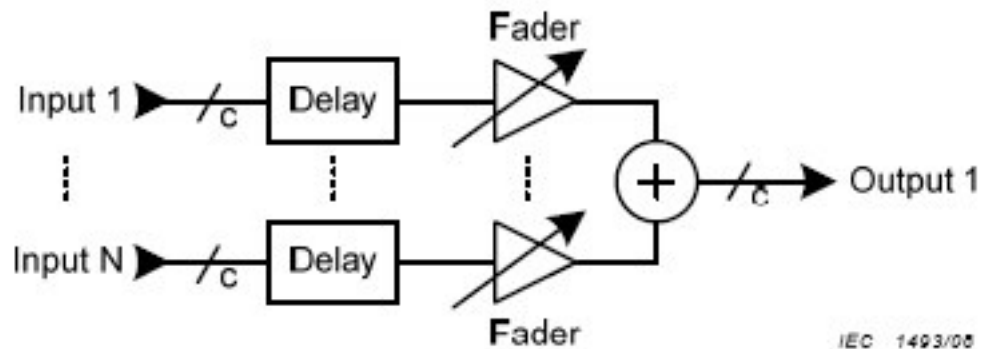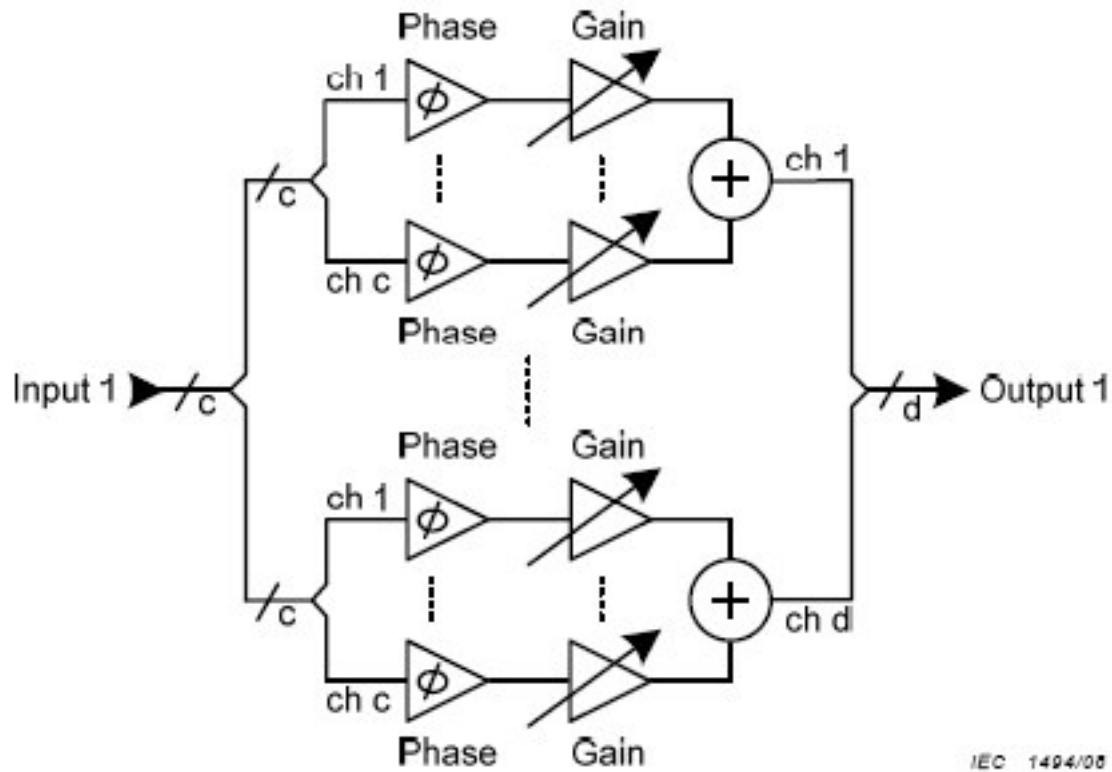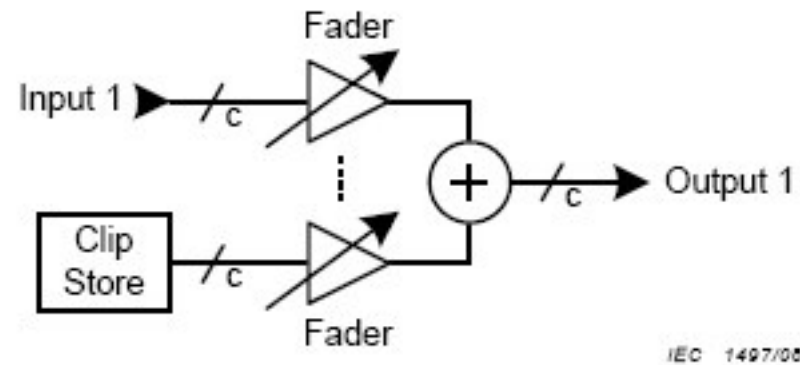- Units are controlled and monitored via SNMP
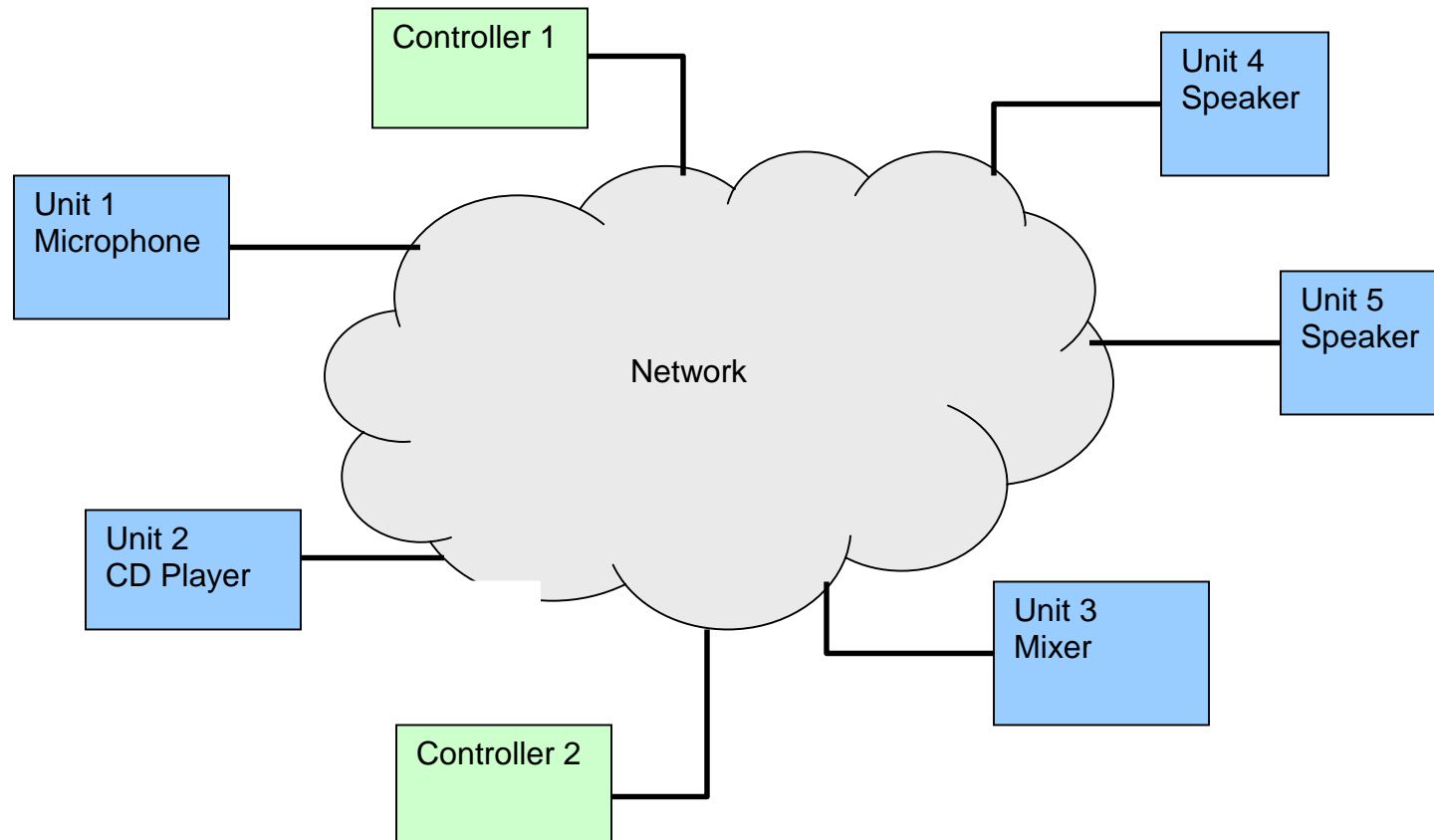
4 Audio Blocks

- Defined in Part 2
- Complex products can be described using these simpler pieces of functionality

- Mixer

- Crosspoint

- Clip player

- Limiter

- Format converter

5 Control using SNMP

- Each unit, the blocks within and the connections between blocks are described by SNMP objects
- iso(1) standard(0) IEC62379(62379) general(1) generalMIB(1) unit-information(1)

```
unitName(1)
unitLocation(2)
unitAddress(3)
unitIdentity(4)
unitManufacturerName(5)
unitProductName(6)
unitSerialNumber(7)
unitFirmwareVersion(8)
unitUpTime(9)
unitResetCause(10)
unitReset(11)
unitPowerSource(12)
unitPowerSourceTable(13)
|
SEQUENCE OF
UnitPowerSourceEntry
 └unitPowerSourceEntry(1)
 ├psNumber(1)
 ├psType(2)
 ├psStatus(3)
 ├psChargeLevel(4)
 └psChargeTime(5)
unitAlarmsEnabled(14)
   unitAlarmsRaised(15)
```

- Each block and connections between blocks are described by a group of SNMP objects

- iso(1) standard(0) IEC62379(62379) general(1) generalMIB(1) block-framework(2)

```
blockTable(1)
|
SEQUENCE OF
BlockEntry
└blockEntry(1)
├blockId(1)
└blockType(2)
connectorTable(2)
|
SEQUENCE OF
ConnectorEntry
└connectorEntry(1)
├connRxBlockId(1)
├connRxBlockInput(2)
├connTxBlockId(3)
└connTxBlockOutput(4)
modeTable(3) SEQUENCE OF ModeEntry
└modeEntry(1)
├mBlockId(1)
├mBlockOuput(2)
├mMediaFormat(3)
└mEnabled(4)
```

6 Unit/Block status over SNMP

- Unit and blocks have one status source each
- The status source can broadcast one or more status pages
- This can be one time or at regular intervals
- Transport of status is network specific (not SNMP?)

- Basic unit status page

OUI `unitIdentity.oui`
Manufacturer ID `unitIdentity.manufacturerId`
Product ID `unitIdentity.productId`
Modification level `unitIdentity.modLevel`
Alarms raised `unitAlarmsRaised`
Alarms enabled `unitAlarmsEnabled`
MAC address `unitAddress`
Up time `unitUpTime`

7 Other SNMP Objects (General)

- Real time clock:
- iso(1) standard(0) IEC62379(62379) general(1) generalMIB(1) time(3)

- Reference Clock
- iso(1) standard(0) IEC62379(62379) general(1) generalMIB(1) clock(4)

- Firmware upload
- iso(1) standard(0) IEC62379(62379) general(1) generalMIB(1) software(5)

8 Other SNMP Objects (Audio)

- Audio port:
- iso(1) standard(0) iec62379 audio(2) audioMIB(1) audioPort(1)

- Various Audio Blocks
- iso(1) standard(0) iec62379 audio(2) audioMIB(1) audioMixer(2)
- iso(1) standard(0) iec62379 audio(2) audioMIB(1) audioCrosspoint(3)
- iso(1) standard(0) iec62379 audio(2) audioMIB(1) audioClipPlayer(4)
- iso(1) standard(0) iec62379 audio(2) audioMIB(1) audioLimiter(5)
- iso(1) standard(0) iec62379 audio(2) audioMIB(1) audioConverter(6)

9 Privilege levels

Four privilege levels are defined:

- Listener – monitoring only
- Operator – change operation of units
- Supervisor – change connections between units
- Maintenance – update firmware, enter diagnostic mode

10 IEC62379 and Zeroconf

- Unit gets IP address using DHCP or AutoIP

- Advertise unit name and SNMP service using mDNS

_snmp._udp.unit-1.local

- Controller uses SNMP from here to discover the blocks and connections inside the unit.

11   More Info

- IEC62379 parts 1 & 2 from IEC web store - http://webstore.iec.ch/
- www.iec62379.org
- Drafts of parts 3..5 courtesy of IEC62379 project leader, John Grant from Nine Tiles (UK), www.ninetiles.com