IEC 62379

Common control interface for networked digital audio and video products

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
3.2 Blocks and Ports

- Each unit is composed of entities called “blocks”
- Blocks have inputs and/or outputs and parameters to get/set the internal state.
- “Ports” are a special type of block that provide connections to other units
- A port may correspond to a physical connection (analog I/O, AES/EBU I/O) or network connection (P1722 AVB stream)
4 Audio Blocks

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

- Mixer

![Mixer Diagram](image-url)
• 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)
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/](http://webstore.iec.ch/)
- [www.iec62379.org](http://www.iec62379.org)
- Drafts of parts 3..5 courtesy of IEC62379 project leader, John Grant from Nine Tiles (UK), [www.ninetiles.com](http://www.ninetiles.com)