AES workshop 1989 Hamburg

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My name is Bert Rosenboom and I work with Stage Accompany where I'm involved in the development of the Blue Box and our network called SAnet.

As an introduction to our discussion I want to tell you something about SAnet and the reasons why we have developed just another network.

I also want to present you the main features of SAnet and some of its applications.

A few years ago we developed our Blue Box which is an active loudspeaker system that can be used to compose large PA systems.

During the development we were looking for an efficient way to control and monitor such a large amount of devices from one position.

We already had some experience with the well known MIDI interface because we used it on our parametric equaliser to recall presets remotely.

The problem with MIDI however, is that each Blue Box must have its own connection with the controller which is not an efficient way of wiring. We wanted something like a network in which the cable is wired from one device to another and so on.

Besides a network, we wanted distances up to 500 meters and a more reliable data transfer.

So we went looking for existing networks like Ethernet and Starlan but these appeared to be too complex and expensive.

Then we found a special 8-bit microcontroller from Intel with a serial interface unit which could be used as a basis for the network we wanted.

Besides the serial interface unit the Intel controller contains an industry standard 8051 controller which can be used to control the rest of the device.

(first sheet)

We called the network SAnet and as main features can be mentioned:

- up to 250 network devices,
- a high transmission speed,
- distances up to 500 meters,
- error free data transfer and
- efficient wiring

As you can see on the sheet, SAnet is controlled by a network controller that we implemented on a board that fits into a Personal Computer. (showing the PC board)

To interface the network devices only the Intel controller is used in combination with an inexpensive line driver.

(second sheet)

SAnet has numerous applications but I'll try to tell you what we are doing with it.

As I already mentioned we use SAnet in combination with a PC to control and monitor large PA systems with more than one hundred Blue Boxes.

The graphic capabilities of the PC's screen make system control a lot easier.

Presets which are created by storing total settings of the PA on disk, reduce the sound check time significantly.

Presets are also used in automated sound systems where they are synchronised by other computers, SMPTE or MIDI.

Another application of SAnet is the downloading of software to a network device.

All our processor controlled equipment is provided with reprogrammable memory, so software updates as well as specials can be programmed without dismounting the device.

Our equipment is also provided with an internal log-book that stores several system parameters like hours of operation, duration of overloads, etc...

These data can be accessed through SAnet and is used as a basis for maintenance system.

SAnet can also be used without a PC-based controller by letting a network device transmit its settings to other devices.

Using this feature one Blue Box may control all other Blue Boxes in a small PA system.

We developed SAnet to be used with our audio equipmemt but its use is not restricted to audio equipment only.

Any device that can be controlled by a micro computer can be provided with an SAnet interface.

Think for instance of lighting, video and motor equipment.

To support the use of SAnet by other manufacturers, we will provide them with PC device drivers and function libraries as well as network interface software.