



DVMD & Stream Explorer™ DVMD-B1

Remote Control of STREAM EXPLORER™ via OLE Interfacing

The present application note describes the possibilities of the Stream Explorer to be remotely controlled by some peripheral program via OLE. Extensions are also discussed, widening the fields of application of such a Client-Server architecture.



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1 Overview

The well known Stream Explorer, working in pair with the DVMD, is a software which is able to deliver a detailed analysis of a MPEG-2 transport stream.

The present application's goal is to perform an interaction with the Stream Explorer in order to control it or to gather information from it, for later display or processing.

The user is then free to personalise at his convenience an application around the DVMD and the Stream Explorer.

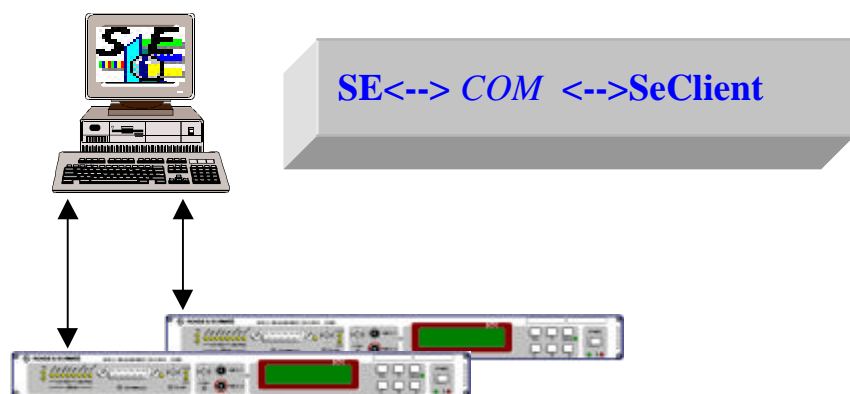
The architecture of the system is a Client-Server one. The exchange of data, i.e. queries from the Client (SeClient) and notifications from the Server (Stream Explorer), is carried out by means of the COM-DCOM protocol (Microsoft).

2 Architecture / Principle of Operation

COM-DCOM makes it possible to state the following cases.

- **One computer operation (COM) :**

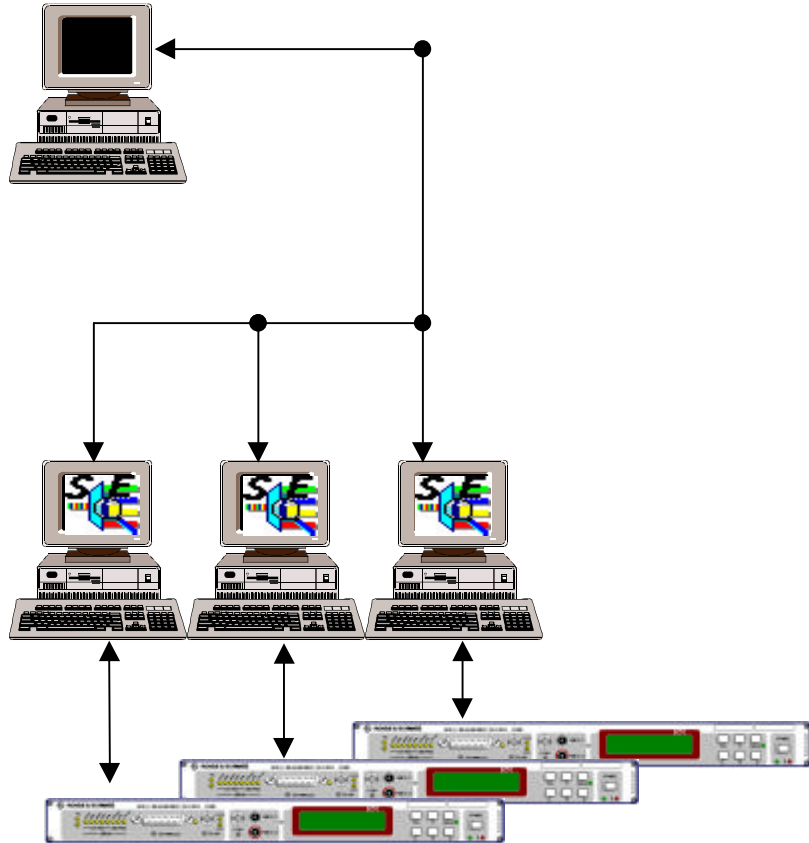
CASE 1 : The client controls several Stream Explorers on an unique computer.



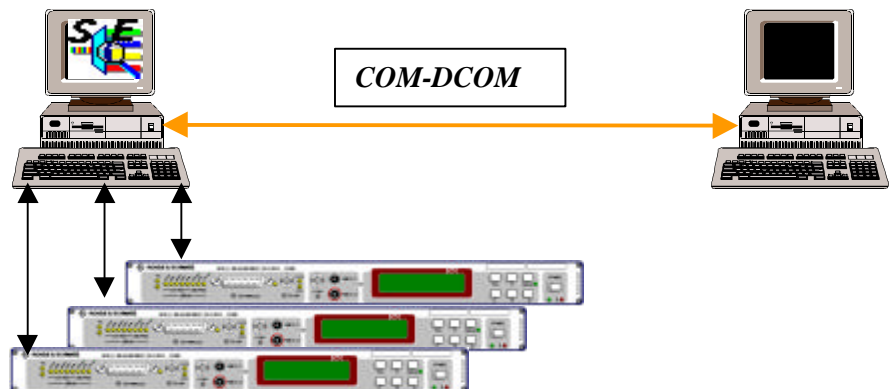
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- **Network operation (DCOM) :**

CASE 1 Bis : The client controls several copies of Stream Explorers running on different computers (not tested yet).



CASE 2 : On PC1, the/several Stream Explorer(s), on PC2, the client which remotely controls several Stream Explorers (not tested yet).



3 Hardware and Software Requirements

Hardware Requirements

PC 486 or higher

Software Requirements

Windows 95 or NT

DCOMCNFG.EXE required for Windows 95 (import from Microsoft WEB pages)

4 Theory about COM-DCOM

Acronyms :

- OLE : Objet Linking and Embedding. A part of COM.
- Component : In COM an object (component) is a piece of compiled code that provides some service to the rest of the system.
- COM : Component Object Model.
- DCOM : De-coupled Component Object Model

What is it ?

COM: Software architecture, communication method between software components. The aim : to build systems made of heterogeneous standards. COM tells you what the objects look like and what they do.

COM is an object oriented communication protocol, which

- Is standardised and programming language independent
- Allows an application to drive another one, on the same computer
- Enables **DCOM** technology, which allows an application to dialog with another application, resident on another machine (even with different platforms).

COM is an integration technology which enables a mixing (in run time) of different software modules.

- Allows a developer to write open and compatible software without caring about the language.

The communication is carried out thanks to the *interface* mechanism. This is only a small series of functions which starts the communication process.

How does it work ?

COM searches for the right ID in the registry table of Windows. Just register the class in the registry before execution.

Stream Explorer includes OLE Automation : this is an "applied COM", an interface which allows C++ applications to communicate with VBA applications or others.

Automation components and automation clients : easy to apply

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- C++ programmers write re-usable modules (already included in Stream Explorer)
- High level users or application programmers: (language Visual Basic, VBA, Script for WEB) use these modules by inserting them in their own applications.

VBA is a programming standard for applications. Word, Excel, VB,... are automation compatible.

Stream Explorer is also a compatible automation component which can be connected to the above programs. For example, a Visual Basic client can use Stream Explorer and Excel during its execution.

The Stream Explorer client is an application (written in VB or VC++,...) which can utilise capabilities of Stream Explorer, Word, Excel, during run time.

5 Ordering information

MPEG2 MEASUREMENT DECODER

DVMD Rohde & Schwarz 2068.8597.02

STREAM EXPLORER[™]

DVMD-B1 Rohde & Schwarz 2068.9406.02



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