Real-Time Multimedia and the Web workshop

VEMMI: a new On-line Client/Server Multimedia Protocol for the Internet

Author: Daniel MAVRAKIS
Company: Monaco Telematique MC-TEL
Address: 25, boulevard d'Italie, P.O. Box 225, MC 98004 Monte-Carlo Cedex, Principality of Monaco
Voice: +377 9216 8888
Fax: +377 9330 4545
Internet e-mail: mavrakis@mctel.fr

Date: September 12, 1996

Introduction: VEMMI, an European and International Standard for Multimedia On-line Services

VEMMI is a new international standard defining the user interface and client/server protocol for on-line multimedia interactive services.

This paper will introduce this new European (ETSI 300 382 and ETS 300 709) and international (ITU-T/CCITT T.107) VEMMI standard: "Enhanced Man-Machine Interface for Videotex and Multimedia/Hypermedia Information Retrieval Services" , and how it could be used right now to create on-line advanced multimedia services on the Internet, interworking with Web services.

VEMMI allows to create on-line multimedia and hypermedia services that could be accessed from any user owning a PC or Mac personal computer running a VEMMI client software, using any network (Internet, ISDN, videotex, and so on...) to access the multimedia server.
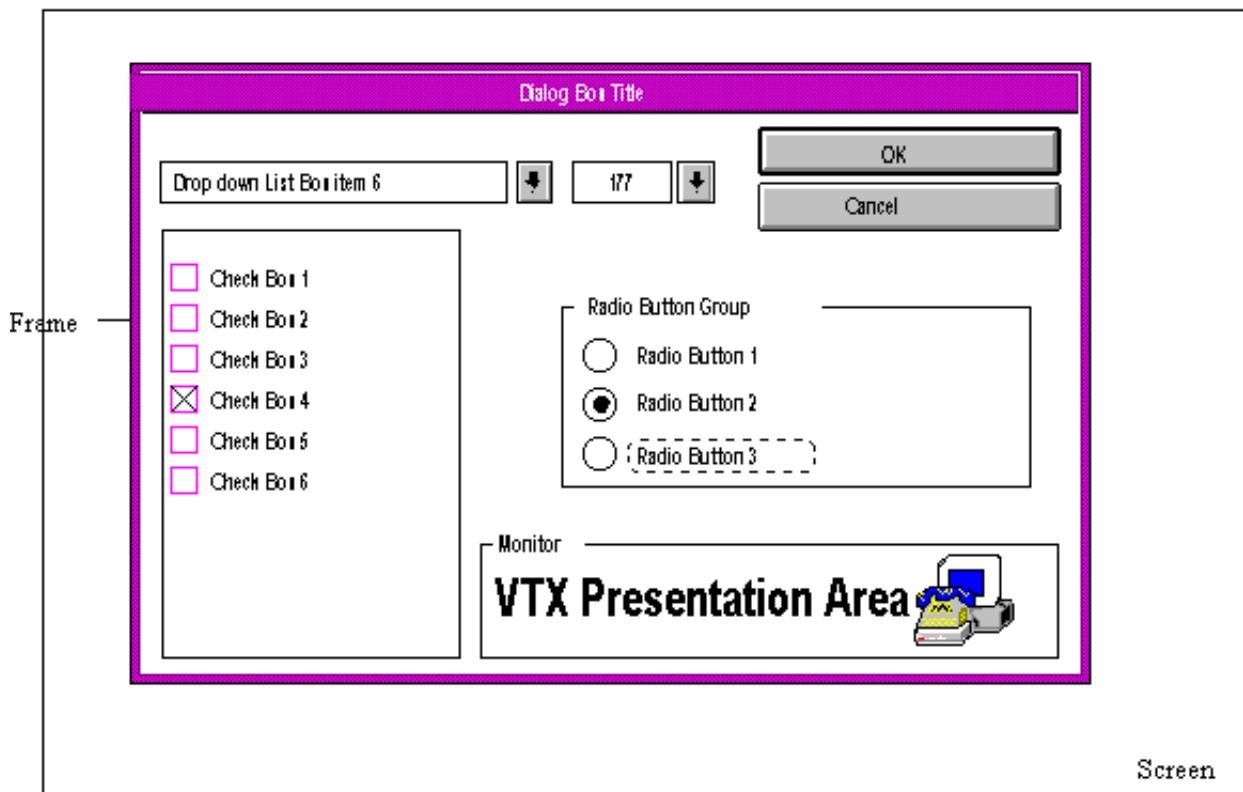
Figure 1: VEMMI defines and uses various objects (buttons, selectors, input fields, display areas for text, images, videotex or moving video) that are represented and managed in the user's terminal current operating system and graphic user interface. All the VEMMI objects are displayed as other objects of the current graphic user interface (Windows, Mac/OS, Motif, and so on...) and are managed in the same way. The multimedia VEMMI application could then be immediately used by any user that will see no difference between the user interactions of such an application or those of any local program executed by his personal computer.

VEMMI is a standardized on-line interactive multimedia protocol, allowing to create easily any multimedia on-line service, with the following features and facilities:

- *standardized and internationally recognized, this architecture warrants the information providers (and users) to be fully independent from any manufacturer and completely free of their choices. It allows the multimedia on-line services to be accessed from any system (personal computer, X-terminal, dedicated terminal,...) supporting VEMMI.*
- *VEMMI is currently promoted along HTTP/HTML by several European and non-European Telecom carriers (Deutsche Telekom, Austrian Telecom, Belgacom, and so on...) that recommend that the new multimedia applications created using their networks use either Web HTTP/HTML or VEMMI protocols.*
- *VEMMI is readily available on most personal computers (PC/Windows 3.1, 3.11, 95, Mac,...). It allows then the on-line multimedia services to be reached by anybody.*
- *from a technical standpoint, VEMMI offers all the features required by advanced today and tomorrow multimedia on-line services:*
  - *interactive multimedia session in the current user's terminal operating system and graphic user interface (Windows, MacOS, OS/2, Motif, and so on...).*
  - *object-oriented programming.*
  - *support of numerous data formats for text, sound, photo, moving video,...*
  - *bi-directional data transfer and local data and object storage on the personal computer.*

allowing to extend the VEMMI functionalities as needed.
- and so on...

It must be strongly pointed out that VEMMI does not compete with but instead is quite complementary to the HTTP/HTML protocols used on the Web: VEMMI is for example not well suited to the display of documents linked by hyperlinks. Instead, VEMMI is designed to allow to create complex, high-value added applications using advanced features (multi-windowing object-oriented interface, continuous dialog with the host computer, use of client PC local processing facilities, and so on...) that will complement the Web and could be started during a Web session. To have more information on this point, consult the part dealing with _VEMMI and Internet_. You could also consult _advanced technical information on VEMMI and Internet on http://www.mctel.fr/VEMMI/vemmi_internet.html_.

Here is an example of actual VEMMI application: Figure 2: the demo Yellow Pages multimedia electronic directory built for France Telecom and demonstrated at Telecom 95 exhibit: the object-oriented, event driven, multi-windowing interface allows for example to search for an hotel in Paris, and in the same time looking at maps in another part of France.

Introduction to VEMMI and its main features and facilities

An universal and network-independent standard

One of the main interest of VEMMI is that **it could be used on any network** and low layers communication protocols, as it is fully **independent of any network or transport layers**. Typically, once the communication is established between the VEMMI client (usually a personal computer running a VEMMI emulator) and the VEMMI server, the multimedia VEMMI session could start.

VEMMI could then be used on any network (STN, videotex and X.25, ISDN, and so on), but one of its main area of interest is of course the Internet and TCP/IP networks. VEMMI is particularly interesting in respect of Internet or Intranet, as it offers an interactive multimedia solution that is quite complementary to the ones already existing in the Internet, mostly based on HTTP/HTML protocol (and using products such Mosaic, Netscape and other Web browsers).

An object oriented programming

As the Graphical User Interfaces (GUIs) currently used on personal computers and workstations (Windows, OS/2, MacOS, Motif, and so on...), VEMMI is object-oriented and use objects and resources. The logical units which form the structure of VEMMI are:

- VEMMI **objects**;
- VEMMI **components**;
- VEMMI **component items**;
- VEMMI **resources**, that could be shared between several objects.

For the sake of simplicity, the term "VEMMI element" is a generic name used to designate an object, a
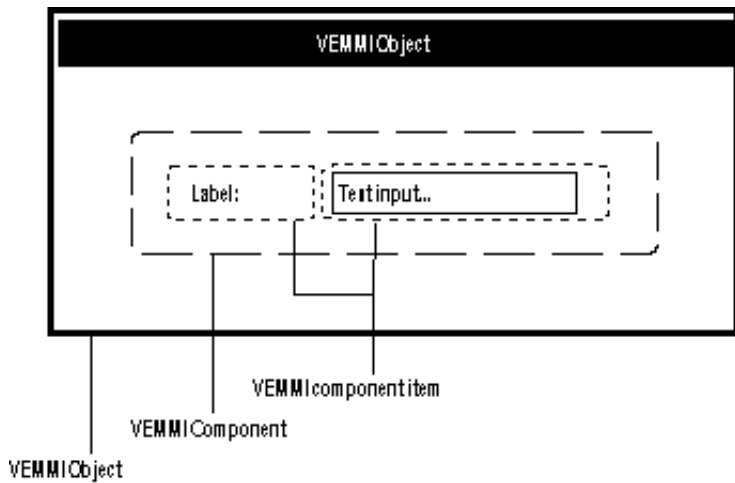
Figure 3: Example showing the relationships between VEMMI objects, components and component items.

The VEMMI Objects

The <u>VEMMI objects</u> *are the logical units used by the multimedia application to interact with the user. These objects are composed of several* <u>components</u>.

A fundamental VEMMI characteristics is the objects are only defined by their function, their size and their position on the terminal screen. The **actual object representation** *by the user terminal is not imposed and will be in practice* **the same that the one used by the graphical user interface running on the user terminal to display an equivalent object**. *This characteristic is of extreme importance, as it allows:*

- **a given VEMMI application may be accessed from any terminal supporting VEMMI**, *independently of its manufacturer, operating system and graphical user interface. In any case, the VEMMI objects will be displayed using the facilities of the current graphical user interface. A VEMMI object will appear in the same way than a Windows object on a PC/Windows, in the same way than a Mac object on a Macintosh, in the same way than a Motif object on a X/Motif workstation, and so on.*
- **the users will then be able to use immediately and instinctively any VEMMI application,** *as the objects managed by the application will appear to him as the familiar objects of his computer graphical user interface. In the extreme, it could even be difficult for the user to differentiate a VEMMI on-line multimedia application running in client/server mode to the execution of a local program on his personal computer.*

The VEMMI components and component items

The VEMMI objects includes several <u>components</u> *that belong to them. The VEMMI components could contain a* <u>data content</u>.

Some examples of VEMMI objects

The VEMMI objects includes all the objects used by most GUI:

- *main application bar, located on the top of the screen, athat llows the user to make a choice*

- *button bar.*
- *dialogue box, that is the object where the main interaction between the user and the VEMMI application takes place. Within the dialog box, various components may be used for example text or graphic presentation areas, push buttons, text input fields, list box, and so on...*
- *message box displaying information, not requested by the user, but sent by the VEMMI application in response to an unexpected event.*
- *operative object, that is an executable program run during the session. It could works in standalone mode, without interacting with the VEMMI application (for example, the Word program may be started) or directly interact with the remote server and the objects managed by the VEMMI client software.*
- *metacode object containing VEMMI commands that could be executed locally. This method provides an easy way to avoid unnecessary dialogue steps with the host multimedia application and improving response time.*
- *text, graphic, font, color, audio, video or multimedia resource object.*

The VEMMI resources

The <u>resources</u> *are elements which can be referenced by one or several VEMMI elements. They include:*

- *the **colour table**;*
- ***files stored in the terminal** (identified by their filenames) that could for example contains text, sound data, photo, video, executable programs, and so on...*
- ***character fonts** and their attributes;*
- ***bitmaps**;*

VEMMI elements data content

*VEMMI supports numerous **data formats** and is similar to Web regarding the variety and openness of supported datatypes. The VEMMI elements could have contents of various types:*

1. ***text** and its attributes;*
2. ***HTML**;*
3. ***bitmaps** (BMP, GIF, JPEG);*
4. ***colour table**;*
5. ***videotex**;*
6. ***sounds** (WAVE,MIDI);*
7. ***graphical data**;*
8. ***moving video**;*
9. ***VEMMI commands**;*
10. *character **fonts**;*

*As this in the case in Web world, numerous datatypes are supported but not in a mandatory way (for example JPEG pictures could be transmitted if the terminal VEMMI implementation supports this format). An interesting feature is that **the information provider could check the datatypes supported by the terminal** but also **provide a specific data decoder to the user** (on a floppy disk or on-line as required), or even **use any proprietary datatype by supplying the appropriate decoder**.*

Text

DOCKET ALARM

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts

Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research

With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips

Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.

fastcase
Smarter legal research.