

Another Modality for Presenting the Uses Instructions of a Product

Gheorghe Marian*, Ileana Hamburg**, Nicolae Enescu*, Marius Marian***

**Computer and Communication Engineering Department
Faculty of Automation, Computers and Electronics
Bvd. Decebal, Nr. 107, 200440, Craiova, Dolj, ROMANIA
(e-mail: marian@cs.ucv.ro, nenescu@cs.ucv.ro)*

***Institute for Work and Technology, FH Gelsenkirchen, Germany
Munscheidstr. 14, D-45886 Gelsenkirchen, Germany
(e-mail: hamburh@iat.eu)*

****Automatic Control Department
Faculty of Automation, Computers and Electronics
Bvd. Decebal, Nr. 107, 200440, Craiova, Dolj, ROMANIA
(e-mail: marius.marian@cs.ucv.ro)*

Abstract: To realize the multimedia presentation for a product is necessary to know some programming languages that permit multimedia description. For description of the functionality of a product only by using mouse, without programming knowledge's, was created, using Borland Delphi as IDE, the software program named XMLCreator. The program generates a XML file which contains the description of a product. The XML file resulted from XMLCreator is interpreted by XMLInterpreter program created in FLASH technology.

Keywords: Delphi, XMLCreator, XMLInterpreter, XML, FLASH, multimedia.

1. INTRODUCTION

Multimedia means the capacity of a system to communicate/present the information through many simultaneous presentation environments, such as: text, graphics, photos, animation, sound, video clip, etc.

The implied compositions in multimedia applications are:

- The text which is the traditional environment for communication of information.
- The images (graphics) which can be equivalent with many pages of text, and they have the advantage of sending instantaneously the information to user.
- The animation elements which are used when we want to capture the attention on a certain particular portion from a multimedia application (DeHaan, 2004))
- The sound which is the oldest and subtlest of all communication environments and could be used to create a favourable atmosphere for presentation.
- Video productions which are in fact the most representative and complete environment from the entire presentation environment and incorporate all described environments, based on dynamic imagines.
- Interactivity which is the facility through which the user can intervene and modify the flow of application depending on his desire.

There are programs with big complexity that permit assembling and execution of some multimedia

applications like: Macromedia STUDIOMX 2004, ADOBE STUDIO, Windows Media Player etc.

We created a program which can work with all multimedia elements and can be used by any user without be necessary to has special knowledges for programming.

2. XMLCreator

2.1. Requirements

The main requirement is to realize a software application that allows the description of instructions and user manuals for varied categories of products through multimedia presentation.

We propose the following considerations to take into count all the implementations of the creator for multimedia presentation:

- transposition in multimedia presentation of the instructions of use, described in user manual of a product; that will be done in plane (2D);
- the whole functionality of the product is to be describe by files with a general format easy to interpret. For easiness, we use XML files (Bean, 2003)
- to describe the functionality of product is realized a template divide in three areas:
 - the area for description the product,
 - the area of the menu,
 - the area used for display the all text messages.

2.2. Used Technologies

The whole project is realized in Pascal language and for that was used Borland Delphi.

The technology used for creating, editing and parsing the XML files was DOM (Document Object Model).

3. GENERAL DESCRIPTION OF THE PARTS

The interface of generator is depicted in Fig. 1.

The parts of the menu are:

- i. New – creates a new project for description of a product
- ii. Save – saves in XML format all information for presenting a product
- iii. Open – loads the description of a product from the XML file saved before
- iv. Add -adds a new form, action or other object on the current selected face
- v. Copy - copies the selected object in the memory
- vi. Past - pastes the object from memory on the current selected face
- vii. Delete - deletes selected object
- viii. Draw - draws a new form or image on the current selected face
- ix. Move - moves the selected object on the current selected face
- x. Preview - is used to view the description realized up to that time.

Initially, at the opening of the application, is presented definition section of the template, thereby providing the user the opportunity to define areas of the product description, the description of the menu and the presentation of text messages.

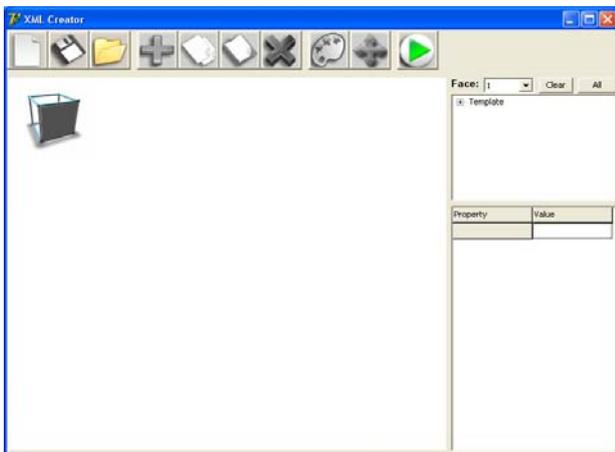


Fig. 1. Main screen of the application

Defining areas template and their properties are simply selecting the area you want to describe from the tree which is in the right upper side, select draw option from

the menu and through execution of click on the left button mouse. In Fig. 2 is defined area for product description.

From the window Properties is specified the corresponding area properties drawn.

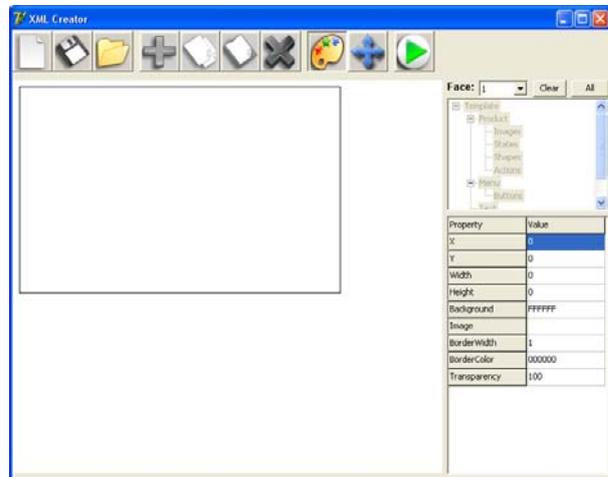


Fig. 2. Defining area for product description

As for the template and areas description of the product and menu and display text messages can change the following properties: border colour, border width, fill colour, background picture, id and transparency.

An example of a template description in the XML format is the following:

```
<Template X="22" Y="43" Width="482" Height="489"
Background="#FDF5E6" Transparency="100" Image=""
BorderWidth="1" BorderColor="000000">
  <ProductRegion X="7" Y="10" Width="362"
Height="377" Background="FFFFFF"
Transparency="100" Image="productZone.jpg"
BorderWidth="1" BorderColor="000000" />
  <MenuRegion X="373" Y="10" Width="104"
Height="376" Background="FDF5E6"
Transparency="78" Image="menuZone.jpg"
BorderWidth="1" BorderColor="000000" />
  <MessageRegion X="18" Y="400" Width="444"
Height="74" Background="FFFAF0"
Transparency="100" Image="" BorderWidth="1"
BorderColor="000000" />
</Template>
```

After Template defining and its areas component shell proceed to describe itself of the product or the menu by selecting the corresponding area from the tree which is in the right upper side.

The workspace is represented by: Face1, Face2 ..., Face6 and represents the 6 sides of the product you are describing.

Area description of the product is described in the Fig. 3:

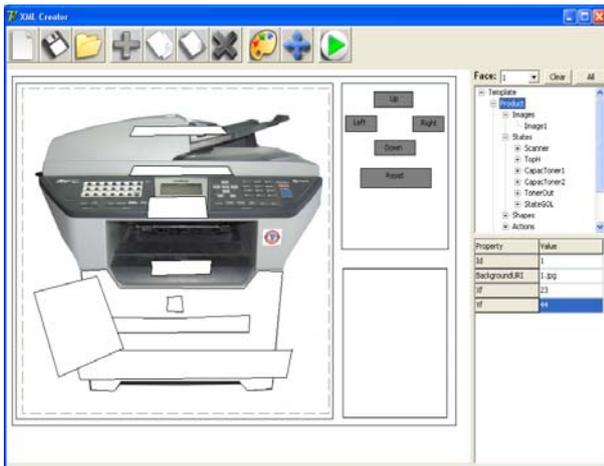


Fig. 3. Area description the product

Zone "Properties" is used to describe different properties of "Shapes", "Images", "Actions" and "States".

Forms ("Shapes") - are objects that can be applied on the workspace for mark different areas of presentation, Fig. 4.

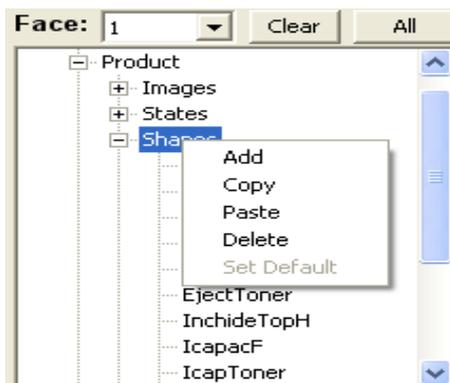


Fig. 4. Drawing shapes on faces

The shapes may have the following properties:

- ID: Id
- The type of the form: Type (Ellipse, Rectangle, Pollligon)
- Relative coordinates given by the vector of points ((ID1, x1, y1), (id2, x2, y2), ..., (idn, Xn, yn))
- Background color: FillColor
- Face that is defined: Face
- Border Color: BorderColor
- Border Width: BorderWidth
- Transparency: Transparency

An example of saving in XML format of a shape is:

```
<Shape Type="Ellipse" Id="button" Face="1"
BorderWidth="1" BorderColor="FFFFFF"
FillColor="FFFFFF" Transparency="59">
  <Points>
    <Point Id="0" X="219" Y="207" />
    <Point Id="1" X="219" Y="236" />
    <Point Id="2" X="247" Y="236" />
```

```
<Point Id="3" X="247" Y="207" />
</Points>
</Shape>
```

Initially, a set of predefined forms (ellipse and rectangle) is available in the Type property. Other forms can be drawn with the Polygon, Fig. 5.



Fig. 5. Select a polygon form for drawing

Already defined forms can be copied by selecting and pressing button Copy and Past from menu or be removed by selecting and pressing button Remove from menu.

The "Images" - are objects that can be applied on the workspace to mark the different areas of the presentation that need to be change the image depending on the operations carried out, Fig. 6.

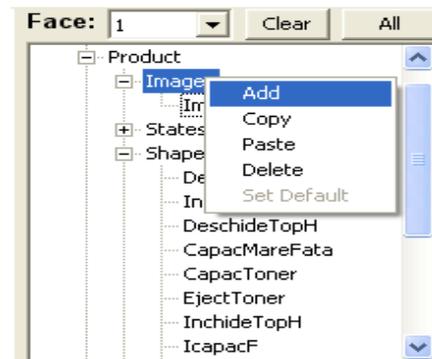


Fig. 6. Defining images on faces

The images may have the following properties:

- ID: Id
- Relative coordinates given by: X, Y, Width and Height
- Background color: FillColor
- Face that it defined: Face
- Border color: BorderColor
- Border width: BorderWidth
- Transparency: Transparency

An example of saving in XML format is a form:

```
<Image Id="flash" Face="1" X="121" Y="123"
Width="34" Height="45" />
```

Images can be copied defined by selecting and pressing the Copy and Past buttons from menu or can be erased by selecting and pressing Remove button from menu.

Actions (Actions) - are events that are triggered in the execution of operations of the mouse or press the keys on the forms or images defined, Fig. 7.

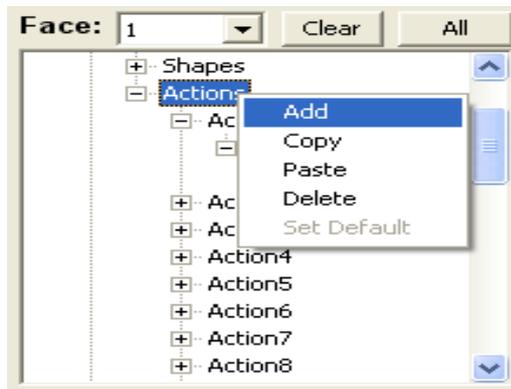


Fig. 7. Defining actions on faces

The action determines the modality that can be reached from a state to another.

The events used to launch actions are the following, Fig. 8:

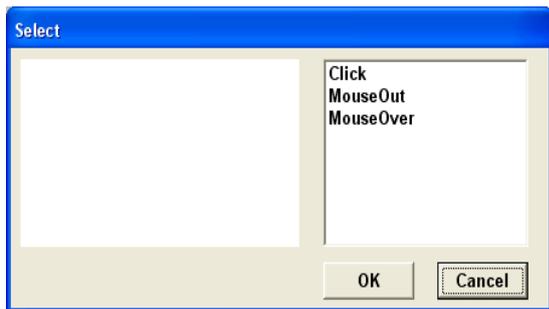


Fig. 8. Select the action event

An action can have the following types:

- ActivatetShape - allows activation of a set on a certain face of the product, enabling involves changing the transparency color of shape
- SelectShape - allows selection of a shape on a certain face of the product, selection involves selecting a certain color and thickness of the border form
- ChangeState - allows the change of the current state
- DisplayText - displays in the text area a message with the following property: text, color and font
- ChangeCursor - allows changing the cursor of the mouse when is triggered the event defined on a shape from a certain face of the product, the possible cursor types are: crosshair, default, e-resize, help, move, ne-resize, n-resize, nw-resize, pointer, se-resize, s-resize, sw-resize, text, wait, w-resize

Adding an action type is done by clicking type property, Fig. 9.

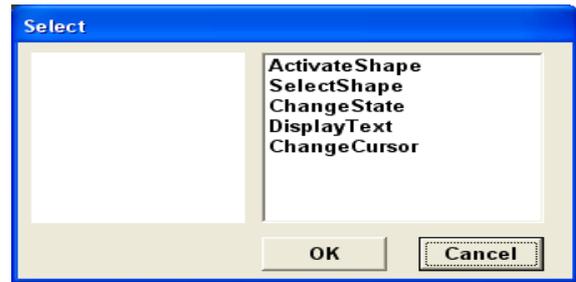


Fig. 9. Select an action type

An action must have the following properties:

- the state that applies in
- the face that is applied
- the form or the image that is applied
- the event that occurs
- list of types of actions occur

An example of saving in XML format of an action is:

```
<Action State="1" Face="5" Shape="modeDial"
Event="MouseOver">
  <Handler Type="DisplayText" Text="Mode Dial "
Color="400040" Font="italic 14px Broadway" />
  <Handler Type="ActivateShape" Transparency="4"
Shape="modeDial" />
</Action>
```

States – presents the description of the product at a certain moment, Fig.10.

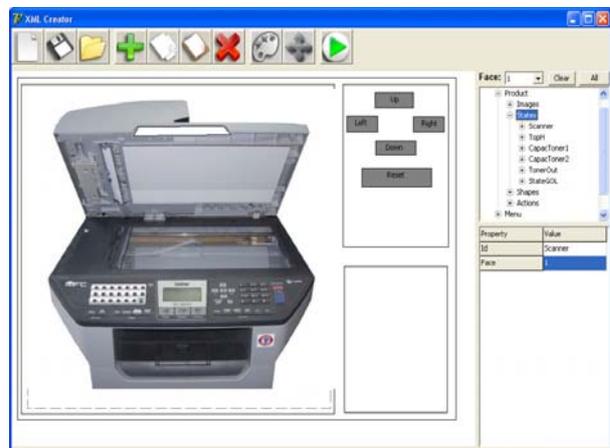


Fig. 10. The list of states from a face

State means the modifying of the original image on the face of a certain product after an action or event.

To add a new state click Add button from menu after selected the State node from the Product root.

A state must contain the following properties:

- ID status
- Face that belongs
- List of images that change
- The list of the disabled forms

A state can be removed by clicking the Remove button from menu.

We can select the images for a state by clicking Image property, Fig. 11.



Fig. 11. Select the image for a state

4. STEPS NEEDED TO DESCRIBE A PRODUCT

To describe in multimedia way the use of product using XMLCreator, are presented through the following necessary steps, Fig. 12.

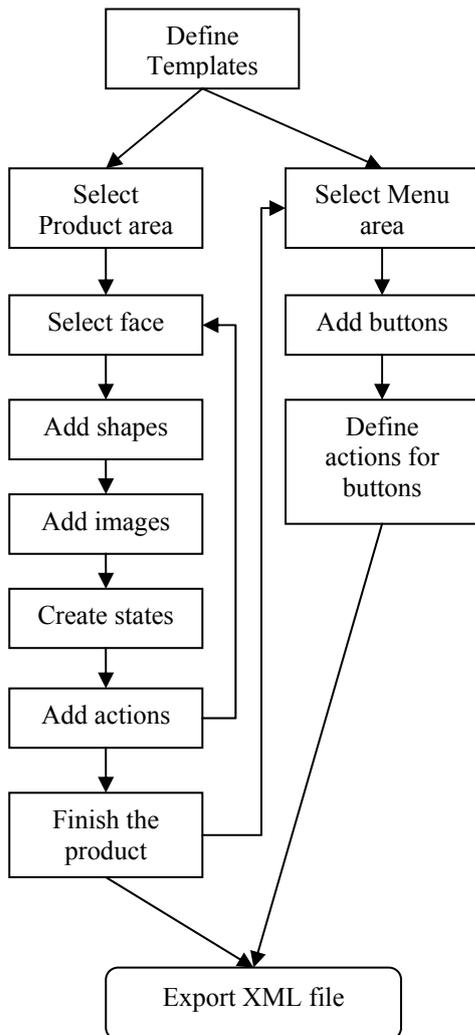


Fig. 12. How describe a product

1. define the template areas for description
2. select the face that is made the description
3. adding shapes
4. adding images
5. creating all possible states on the face chosen
6. adding actions on the shapes and images described
7. repeat steps 2 - 6 to full description of all faces
8. exporting the product description in the XML file

5. XMLInterpreter

5.1. Requirements

The main requirement is to realize a software application that allows learning a product which has the description of instructions and user manuals through a XML file that is created by XMLCreator program.

We propose the following considerations to take into count all the implementations of the interpreter for multimedia presentation:

- transposition in multimedia presentation of the instructions of use, described in user manual of a product;
- the whole functionality of the product is to be describe by XML files;
- the description shell be available on internet

5.2. Used Technologies

The whole project is realized in FLASH technology and for that was used Macromedia.

The technology used for creating, editing and parsing the XML files was DOM (Document Object Model).

We present an image with the multimedia description of a printer, Fig. 13.



Fig. 13. How is described a printer through XMLInterpreter

6. CONCLUSIONS

The realization of a creator for multimedia presentation of some categories of products will permit the description, in multimedia mode, of the functionality of the product from the user manual (Marian *et al.*, 2008 a,c).

Using the XMLCreator program any user can description the functionality of a product only by using mouse, without programming knowledge's.

This description will be accessible for a wide range of people.

A number of products described with XMLCreator can be view at <http://www.smartstripes.ro/licenta/>

REFERENCES

- Bean, J. (2003). *XML for Data Architects Designing for Reuse and Integration*. Morgan Kaufmann.
- Curtis, H. (2000), *Flash Web Design: The Art of Motion Graphics*, New Riders.
- DeHaan, J. (2004). *Animation & Effects With Macromedia Flash Mx*. Macromedia Press
- Jacobson (2001), *Flash and XML: A Developer's Guide*, Addison-Wesley.
- Varlan, C. (2004). *Macromedia Flash. Concepte, Exemple, Studii de caz*. Ed. Polirom, Bucuresti.
- Marian, Gh., Enescu, N.I., and Dumitraşcu, E. (2007). The implementation of a Multimedia Presentation Generator for Varied Categories of Products. *Proceedings of the 6th RoEduNet Int. Conf.*, Craiova, Romania, 23-24 Nov. 2007, pg. 167-170.
- Marian, Gh., Enescu, N.I., Marian, M., and Dumitraşcu E. (2008a). System for XML Description of Functioning for Technical Products. *Proceedings of 9th Int. Carpathian Control Conf. ICCC' 2008*, Sinaia, Romania, May 25-28, 2008, pg 400-403, SITECH Ed.
- Marian, Gh., Enescu, N.I., Marian, M., and Dumitraşcu E. (2008b), Generator for Multimedia Presentations, *The 3rd Int. Multi-Conference on Computing in the Global Information Technology, 2008. ICCGI '08*, July 27-Aug. 1, 2008, pp. 85 – 90.
- Marian, Gh., Enescu, N.I., Marian, M., and Dumitraşcu E. (2008c). Form Editor Used to Define Shapes in GENMMX Application. *Proc. of 7th WSEAS Int. Conf. on Education and Educational Technology (EDU'08)*, Venice, Italy, Nov. 21-23, 2008, pp. 163-166.