Abstract This paper describes the application “Carletto the spider” in terms of the mapping with the canonical processes of media production. “Carletto the spider” is a character-based guide to a historical site and implements the Dramatour approach for the design of drama-based interactive presentations. Dramatization makes presentations more engaging, thus improving the reception of the content by the user. The major technical issue of the approach is the segmentation of the presentation into audiovisual units that are edited on-the-fly in a way that guarantees dramatic continuity while adapting to the user response. We describe the workflow of the application and its mapping to the canonical processes of media production, envisaging possible standardizations for the application portability.

1 Introduction

This paper describes the implemented application “Carletto the spider” in terms of the canonical processes of media production [7]. “Carletto the spider” presents information about a historical site in a dramatized form. The presentation is delivered by a virtual character, adapting the content to the user’s location on-the-fly. “Carletto the spider” is an example of the Dramatour approach for building drama-based information presentations [2].

The Dramatour approach merges production methods for dramatic media [3], such as television or cinema, and formal annotation techniques to build information presentations. The assumption underlying the methodology is that the dramatization of the exposition enhances the effectiveness of the communication through the user’s engagement in the emotions displayed by the characters [11]. The emotions of a character result from the conflicts she/he engages in with her/himself or with other external entities during the drama performance. In a plot designed by a drama author, such conflicts increase in number and intensity until they find some resolution [9]; so, the drama features a rising then falling emotional course (often called dramatic arc [4]).

Differently from linear (non-interactive) drama, the author of an interactive dramatic plot must accommodate the reactions of the user, and manage the conflicts arising from the interaction between the user’s reactions and the emotional course of the plot. The solution is to employ some form of flexible drama scripting [8].

In the simpler case of single-character interactive presentations for visit guidance to a historical location, such as the case of “Carletto the spider”, the users’ (in our case, visitors) reactions are limited to the implicit or explicit manifestation of different degrees of interest for the topic addressed by the presentation at some point. Her/his input influences
the subsequent selection of topics operated by the character and the way they are presented. The presentation is segmented into atomic audiovisual units, annotated according to the topic they deal with, and assembled on-the-fly in response to the user’s input to form a presentation that is compliant with the drama tenets sketched above. The character’s presentation must address both the task of providing information to the visitor and the task of building a bond with the visitor for emotional engagement.

In the next section we describe how we have developed the application “Carletto the spider”; then, we describe the mapping with the canonical processes; finally, we provide some conclusions.

2 The Making of “Carletto the spider”

The application “Carletto the spider” is a virtual guide for the historical location of Palazzo Chiabise in Turin, Italy. This baroque palace hosts the former royal apartments of the Savoy family. Carletto, an anthropomorphic spider (Fig. 1), lives hidden on the walls and the ceilings of the apartment. His image is captured by a webcam and delivered to the visitor’s mobile device (a PDA) via a wireless network. As it emerges along the presentation, he is the last descendant of a noble family of spiders, inhabiting the palace for centuries; his ancestors have been annotating the relevant facts about the palace in a web, where he himself files his memories. When he needs to find out some forgotten detail, he consults the web. A visitor is free to stroll inside the apartments. Carletto uses the network to localize the visitor and adapts his presentation to the visitor’s behavior: the informative content he provides depends on the room where the visitor is located at some point and on how long the visitor has remained inside that room (and on the overall duration of the visit). The installation of “Carletto the spider” was open to the general public for one week in April 2006. We carried out an evaluation of the system performance by surveying about 300 anonymous questionnaires that demonstrated people liked Carletto, were emotionally engaged with him, and preferred him to the standard plain audioguide [1].

The presentation given by Carletto has been written by a drama author with the support of an expert in the historical and artistic aspects of the location. Carletto experiences a personal conflict between the role of a “guide”, who exposes facts orderly and plainly according to the topology of the location (like a human guide usually does), and the desire to be a “landlord” of the palace, who recounts all the trivia and the anecdotes he knows—most of which involve him or his family personally. This approach meets the requirement of centering the presentation on an internal conflict of the character to gain the emotional engagement of the visitors [9]. Moreover, Carletto engages in an external conflict with the cleaners, who would like to get rid of him to clear the palace from his webs. After some time in a room, Carletto becomes uneasy, and tries to induce the visitor to move to another room, in order to “prevent the cleaners from trapping him” (the real constraint is that the total duration of the visit ought to be under 30 min). Carletto keeps the control of the interaction with the visitor, politely directing her/his attention to the significant items in the rooms and reporting the historical facts, always in a dramatized style. However, the visitor can take control at any time, either implicitly, by moving to another room, or explicitly, by pausing or stopping the presentation.

The character “Carletto” was designed and realized by a 3D graphics production team, following the specifications given by the author. The author wrote the units that contribute to the presentation together with indications for the audiovisual production. Each unit, lasting between 15 and 50 s, either accounts for some topics concerning the location or achieves some communicative function from Carletto to the visitor. Content topics and communication functions constitute the metadata for annotating the units. The example unit in Fig. 2 is split between the dramatic content (a) and the annotation (b). The dramatic content is expressed in textual form and is subdivided into tripartite sections (five in this example): (i) Carletto’s acting is encoded into an identifier that the animator interprets (e.g., C4 means that Carletto speaks with the right hand leaning on his chin); (ii) camera control and scene content (indications for direction) are encoded with a 5-tuple (refer to Fig. 1 for a frame of the third section): type of shot (LS = Long Shot, MS = Medium Shot, CU = Close Up), character orientation (0 = Front, -90 = Left side), position of the character in the frame (RIGHT_POS and CENTRE_POS are self-explanatory), camera motion (FIXED_CAMERA = camera in a fixed position, CENTRED_CAMERA = camera keeping the character in the center), presence of the spiderweb in the background (NO_WEB, WEB); (iii) the words uttered by Carletto. The annotation metadata in Fig. 2b are subdivided into three sets: the communicative function

![Fig. 1 “Carletto the spider” on the device screen](image-url)