

# The DEFENDEX-ESPGX [ABSTRACT]

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The DEFENDEX-ESPGX combines real-time audio and video synthesis processing with physical interaction. The challenge in developing this work is providing a meaningful interface that connects the virtual and physical.

The DEFENDEX-ESPGX is a fiction. The fiction is tied to how the medium is changed by being historically contextualized as 1950's technology. This contextualization affects the user's manner of interacting with the medium. The device has a familiarity of a past era where technologies were seemingly simpler and less abstract. The device may have compelling nostalgic value, but is interweaved with modern technology.

The message is redefined through this contradictory medium. Parallels between past and current technologies and the eras they represent resolve this contradiction. These parallels are reflected in the content fed back to the user by the virtual system. The content is not meant to be pedantic, but it draws on nostalgic reference to bring about implied comparisons between Cold War Era culture of fear and contemporary War on Terror culture of fear in the United States.

Because technology has a history, we are able to draw upon iconic physical objects to create the simulation of older technology. The nostalgic nature of the DEFENDEX-ESPGX is compelling and draws the user to interact with the device. The user has an understanding of how to use the controls even though they are not aware of the virtual system behind the interface. Because of this the continuum between the physical and the virtual becomes transparent. Using an art object as intermediary between the virtual and physical planes infuses meaning into the human-computer interaction.

Physically, the DEFENDEX-ESPGX is a stand-alone unit approximately 5' tall with a surveillance camera mounted above and a microphone attached. It has 24 faders in two rows of 12, three master faders, and several switches, buttons, and knobs. At head height, there is a monitor providing the user a visual interface. Additionally, speakers are mounted to the sides of the DEFENDEX-ESPGX providing stereo sound. Haptic feedback is provided via vibrating motors located within the DEFENDEX-ESPGX.

The components are chosen according to a design that seeks to evoke 1950's era machine aesthetic. The shaping of the medium enables the message to be tailored. Decisions concerning the physical interface design encompass both utilitarian and artistic

needs. The user, through interaction with the device, interfaces both the direct controls and the fiction of the art object. The physical aesthetic has implications in the virtual plane, both 'inside and outside the skull' [Meadows 2003].

The virtual plane is experienced by the user through the system response. The system response is delivered via images on a display, haptic feedback (vibration), robotic motion, and auditory feedback. The virtual plane consists not only of these things, but also of the simulated space created inside the mind of the user.

Contemporary technological culture is embedded in new forms and methods of information storage, retrieval, and communication. These new forms and methods are, unlike traditional methods, non-linear and interactive. They change the way we navigate information. If one were to think of art as a narrative, then the media art narrative of contemporary technological culture manifests itself non-linearly.

The auditory and visual display of the virtual plane of the DEFENDEX-ESPGX consists of pre-recorded political, military, and other footage, as well as audio and video streamed from the sensor space via an external video camera and microphone. Control data is derived from direct user interaction with the physical device, motion detection, and audio information, while the content can be displayed with or without transformative processing.

The system encompasses more than the DEFENDEX-ESPGX itself, but also the entire space in which it is contained (the sensor space). Using the physical interface components, the user navigates through around twenty different modes constructed in a non-linear narrative.

There are three classes of modes contained within the virtual space, the entry mode class, action mode class, and consequence mode class. The DEFENDEX-ESPGX rests in an entry mode until engaged by a user. Once engaged, the DEFENDEX-ESPGX moves to an action mode. In the action mode the user must complete tasks to move to another mode. After leaving the action mode, the user may go to another action mode or a consequence mode. If the user goes to a consequence mode, the results of the completed tasks in the previous action mode affect the resulting content of the current consequence mode.

Navigation through the modes on the DEFENDEX-ESPGX determines a narrative. The narrative is an open form where the route for each user will be unique. The way modes connect in this form is dynamic and dictated by a set of rules and weighted probabilities based on the individual user's interaction.

Meadows, Mark. 2003. *Pause and Effect*. New Riders Press.