

## REACTIVE SYSTEM

Doug Goodwin

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### contact

Doug Goodwin

dgoodwin@calarts.edu

135 E Holly #207 Pasadena, CA 91103

626 844 0483

### abstract

The Reactive System is a framework designed to support real-time interactive art-works involving synthetic actors. RS promotes the simulation of conversation over limited-bandwidth media including email, sms texting, IRC chats, faxes, threaded discussions, voicemail, and webcams. RS operates either synchronously or asynchronously, and maintains emotional state over extended periods of interaction. RS is modular, so it may facilitate communication with any number of actors and people. Ultimately it should be possible to assemble a cast of characters each with their own emotional state and conversational abilities. The system should be able to interact with any number of peer applications including other instances of the RS. Equally important is the development of a persistent emotion engine that could respond to the quality of interaction.

### basis

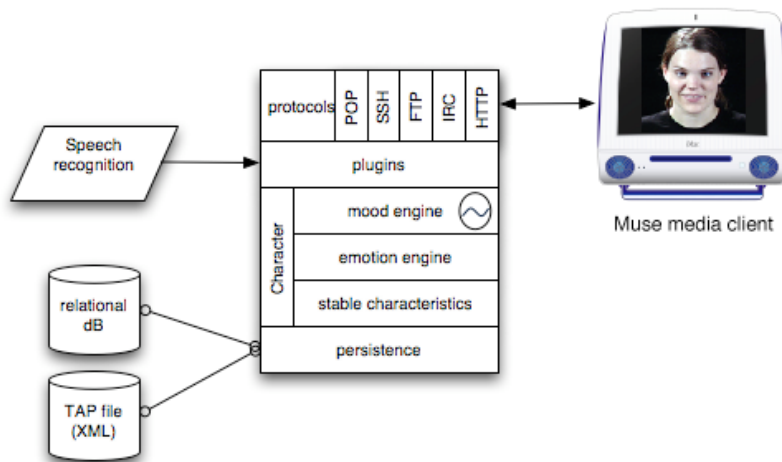
I needed a a reliable, persistent, modular, reusable and ubiquitous framework for managing synthetic actors. The framework needed to have a well-defined interface that could be used as the foundation for a wide variety of specialized projects whose nature I could not initially predict. Ideally it would be able to communicate asynchronously (email, faxes, etc.) and synchronously (SMS, IRC and video chat). Client applications connect to RS over network sockets, using standard protocols. Instances of RS may also communicate using XML-RPC. Currently RS may converse in many popular protocols including http (the web), POP/SMTP (email), IRC (chat) and NNTP/RSS (newsreaders).

The emotion engine maintains long-term emotional states as well as immediate reactions. The general emotional state is driven by the accretion of past interactions plus a general mood. The general mood is calculated in much the same way as Biorhythms, popular in the late 1970's.

### first prototype: RS::Muse

The prototype for RS (called Muse) has three interfaces: speech recognition, a database for storing state between sessions, and a media client.

**Reactive System :: Muse**  
system overview



People interact with RS::Muse by speaking into a microphone placed in front of the media client. When the speech recognition program receives a known word, Muse interrupts what she's doing and repeats that word. During a successful interaction, longer and longer sentences are produced, and Muse becomes increasingly excited. More typical exchanges show Muse becoming amused by your inability to say words that she understands. Muse becomes vexed by fruitless conversation, responding appropriately.

