Lessons in Dialogue System Deployment

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New Dimensions in Testimonies

- Holocaust survivor Pinchas Gutter
- Deployed for the last 2 years
  - Illinois Holocaust Museum & Education Center
  - Neuberger Holocaust Center in Toronto
  - Houston Holocaust Museum
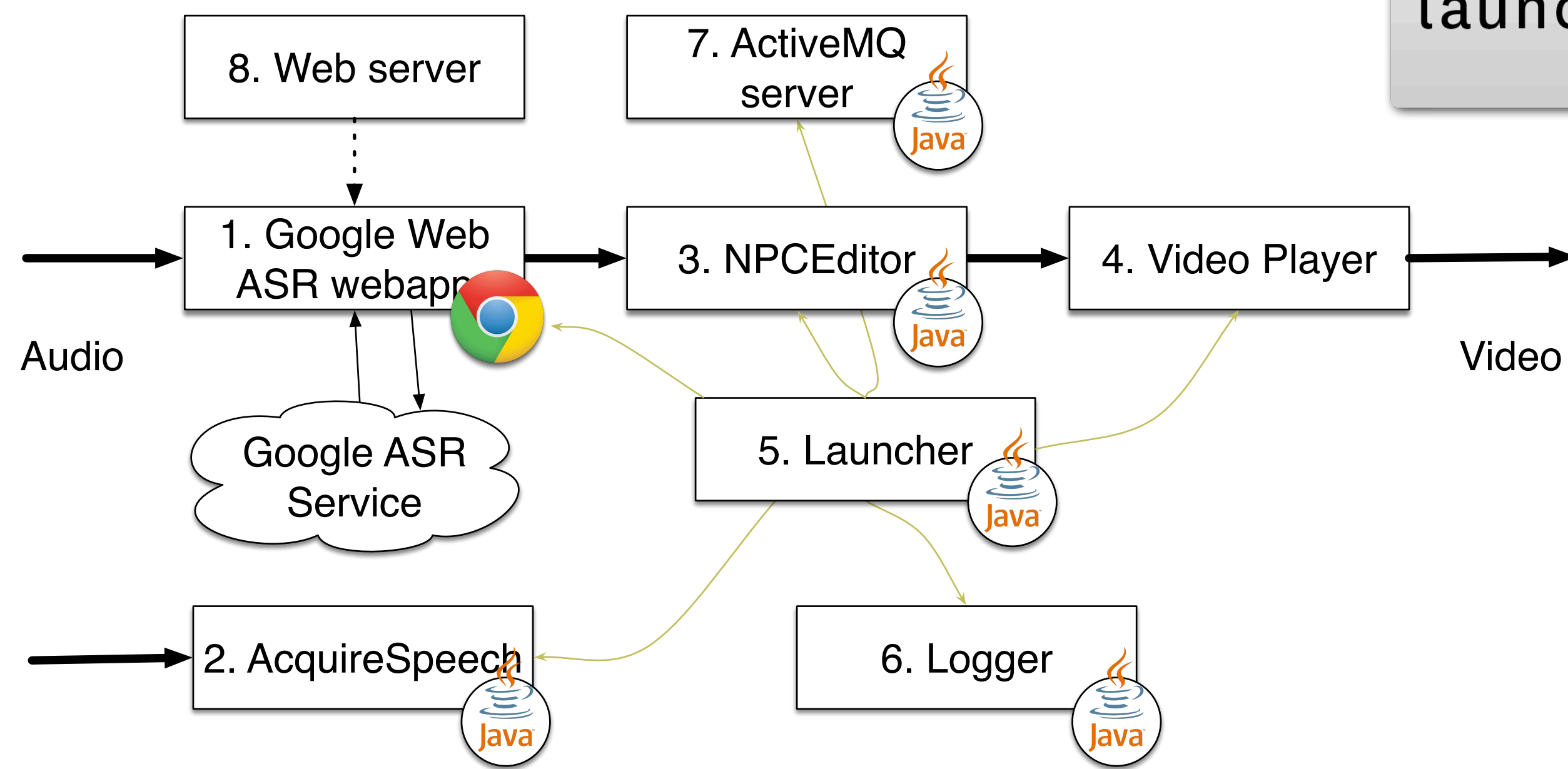 - USA Holocaust Memorial Museum (late summer/fall 2016)

Requirements

- Many characters
- Many installations
  - simplified installation and update process
  - simplified and consistent UI
  - resolve performance issues
  - reliable and automatic data collection and crash reporting
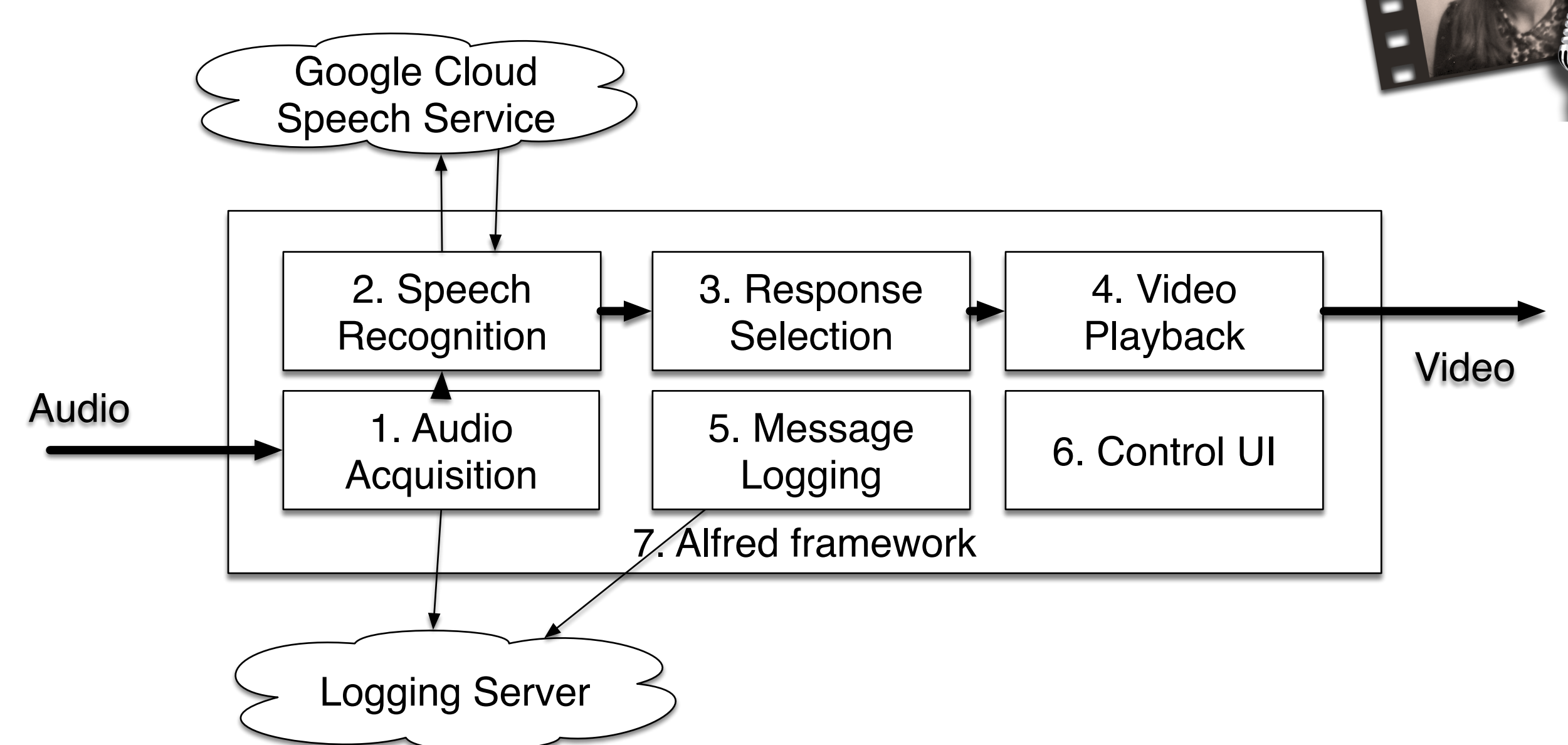
System Architecture

Components from the USC Virtual Human Toolkit
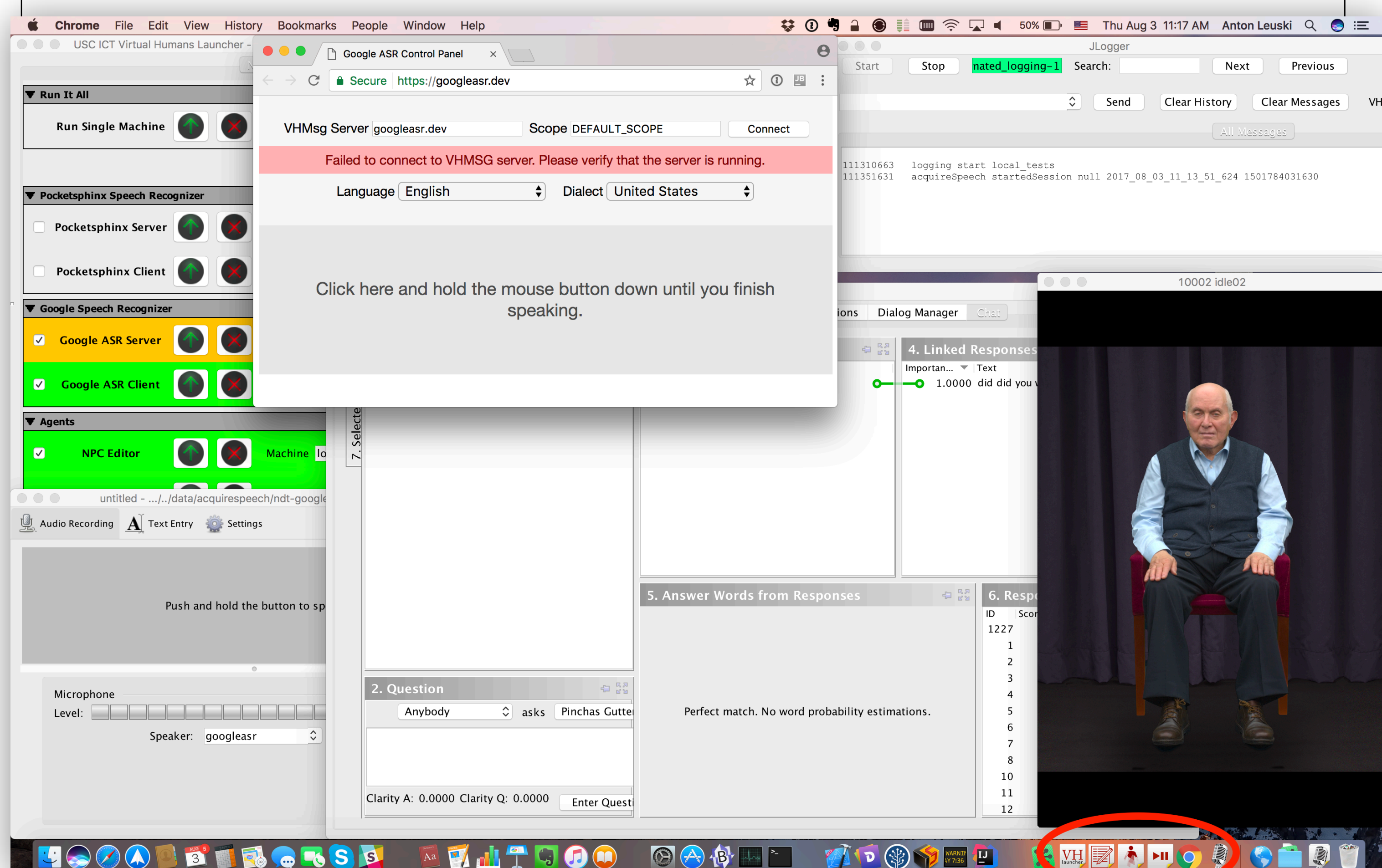

New NDT System – Alfred

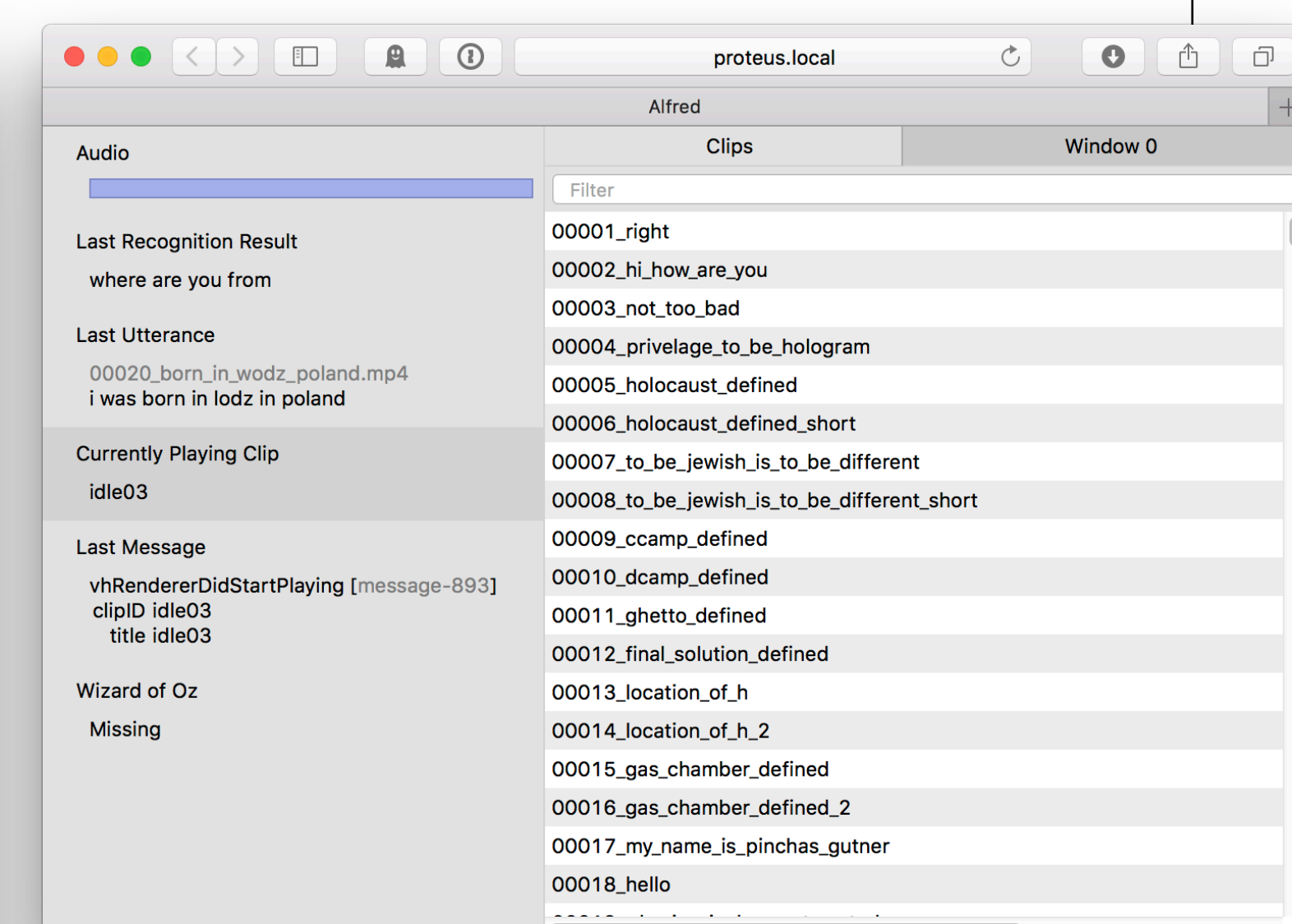Plugin-based architecture

Deployed System Issues

- **Installation & Maintenance**
  - Need 3rd party components – Java & Google
  - Installer modifies OS-level settings
  - 3rd party components have their own update mechanism. Unexpected changes in the system

- **Performance**
  - Freezes due to Java garbage collection
  - Video playback hiccups due to inefficient video decoding library
  - ASR outputs different English dialects depending on the computer location

- **User Interface**
  - Too many windows
  - Too much information
  - Too disorganized

- **Data Collection**
  - Data is difficult to access because of firewalls and computers being often off-line

- **Multiple Characters (New Requirement)**
  - System was not designed to support multiple characters – data and code was packaged together

New Design Features

- **Installation & Maintenance**
  - Installation via traditional drag & drop
  - No 3rd party components to maintain and support
  - Integrated auto-update mechanism

- **Performance**
  - Native code – efficient
    - video decoding, hardware acceleration
    - text classification & response selection
  - Google cloud API – robust, reliable & native

- **User Interface**
  - Video playback window only
  - Expert UI window available on request only
    - UI Plugins for code plugins
    - Summary/detail presentation
    - Organized and compact
  - Remotely observable over http

- **Data Collection**
  - Data uploaded to the central server automatically whenever the connection is available

- **Multiple Characters**
  - Separation of code and data
  - Each character is a "document"

- **Future Work**
  - More domains, more installations
  - Mobile version

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