Use Cases Discussion for Media and Entertainment Interest Group
DRAFT for Bullet Curtain: Version 0.5

Abstract

This document collects use cases, difficulties and suggestions for improving support for video playback or presence on the web, such as bullet screen, HD definition switch control, multi-language subtitles, cue events and 360-degree view.

Topic 1: Bullet Screen

1.1 Definition

Bullet subtitle/bullet screen/danmaku subtitles/barrage refers to the critical subtitles that pop up on the screen when the user watches the video on the network. It's called a barrage because when a large number of users send out critical subtitles, the screen looks like the effect of a large or small amount of artillery intensive shelling as it drifts across the screen.

1.2 Scenarios

- Real-time interaction: When viewing a video, users can interact and comment with other users on a hot scene and topic in the video.
- View other user reviews: When viewing the video, users can see other users, and view other user reviews for a hot scene and topic in the video.

1.3 Problems

It is difficult to develop. It is necessary to calculate the position of the screen, consider the synchronization between the screen and the video, the speed and animation of the screen, and avoid collision of different titles of the screen. If there are characters in the video, it is necessary to avoid bomb screen and character collision (AI related)

1.4 Current solution

Timed Text Markup Language (TTML 2). TTML2 supports animation and can control the display and animation of the bullet screen, but text collision or overlap cannot be detected. TTML is mainly used for video subtitles, and the content of subtitles is based on XML description. There is a lot of text generated in real-time for the bullet screen. We try to find a lightweight way rather than to use XML.

1.5 Suggestions

- Develop standard formats for bullet screen, such as text, color, style, duration and time offset.

- Add new file formats (vdt, Video Danmaku Track). The data format of VDT can refer to the above instructions. Introduced through the track tag under Video, Video automatically draws the barrage according to the content of vdt.