



B2G

(Boot to Gecko)

nsIDOMHTMLMediaElement

New Attribute:
Audio Stream Type



Outline

- Why?
- How?



Why?



Use Case

- In smart phone product, there is an ability for user to adjust volume on different audio stream types (ex: system, voice_call, music...etc).
- Alarm Use Case:
 - User tried to mute all volumes but just keep alarm loud so he can expect no any sound can annoy his sleep. But the alarm still can wake him up.
- Music Use Case:
 - User want to enjoy the music but avoid the sound from system tone (ex: key tone) when he surf on the device in the same time.
- And others (voice_call, FM, notification ...etc.)



Result

- We need a way to categorize audio streams to different types.
- In order to be flexible on extend audio stream types, plan to use DOMString as attribute type.
- Ex: SYSTEM (key tone), ALARM (alarm ringing), Audible (camera shutter sound), MUSIC (music/video player), VOICE_CALL (phone call), RING (phone ringing), FM (FM radio),
- For supporting different naming standard, we can map other strings in Gonk layer.

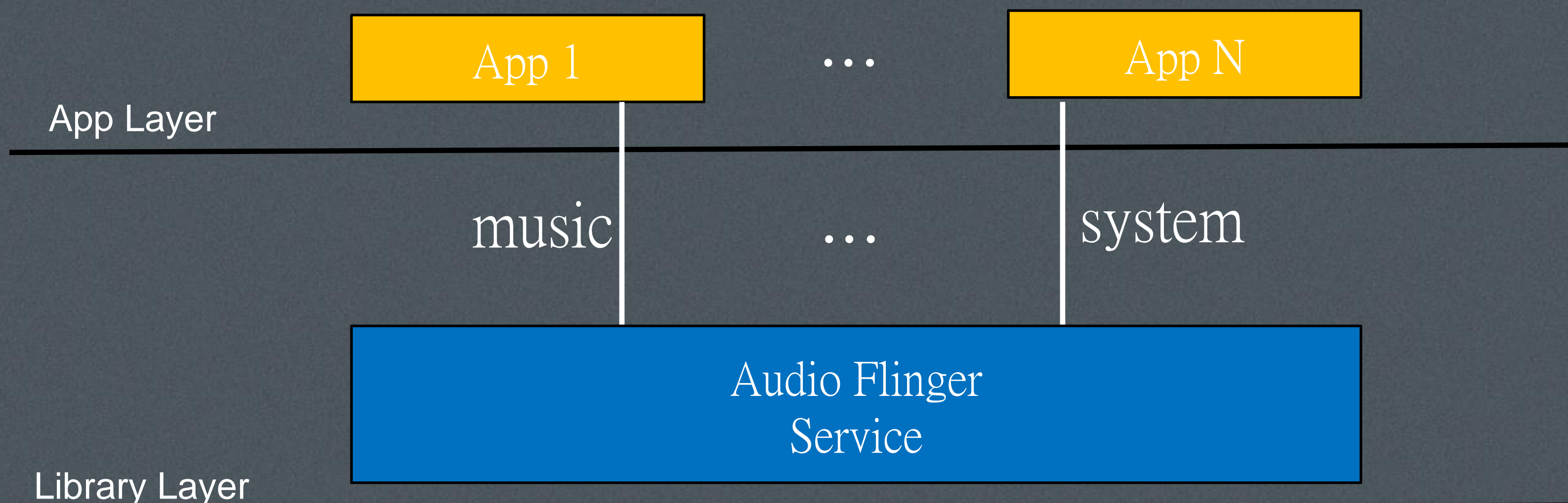


How?

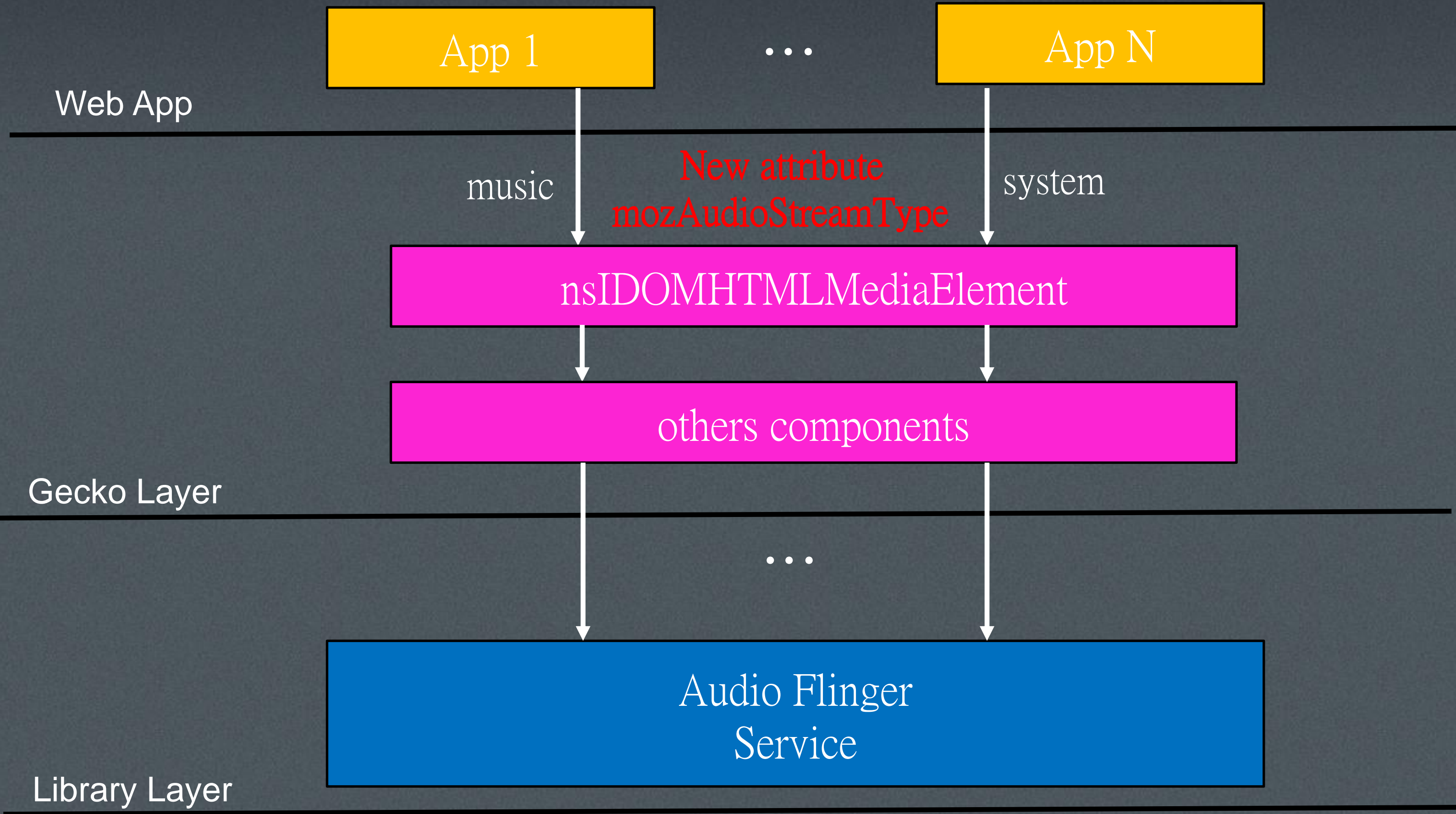


Refer to Android

- App:
 - for each audio streams, app needs to assign a stream type to it. Or default will be assigned.
- Audio Flinger:
 1. Here will store the volume settings for each stream types.
 2. Here will do the job of mixing streams to one then inject to HW.
 3. During the mixing process, here will refer to each volume settings then apply to each streams by different types.
 4. The default stream type will be changed to music.



B2G Leveraged Audio Flinger



Code Flow of Web App

■ Case 1:

- `var audio = new Audio();`
- `audio.mozAudioStreamType = 'MUSIC';`
- `audio.src = uri;`
- `audio.play();`

■ Case 2:

- `var player = document.createElement("video");`
- `player.mozAudioStreamType = "MUSIC";`
- `player.src = uri;`

■ Case 3:

- `var audio = new Audio();`
- `audio.mozAudioStreamType = 'SYSTEM';`
- `audio.mozSetup();`
- `audio.mozWriteAudio();`



Support Existing Web App

- Initial value of `mAudioStreamType` (reflect to `mozAudioStreamType`) in `nsHTMLMediaElement` is “DEFAULT”.
- And maybe re-map “DEFAULT” to “MUSIC” or “SYSTEM” in gonk layer.



<http://www.mozilla.org/en-US/>

