Angry Birds 2: How Audio Changes Everything

Filip Conic
Technical Sound Designer
Rovio

GAME DEVELOPERS CONFERENCE
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ROVIO


BATTLE
BAY


BATTLE
BAY


ANGRY BIRDS
Match


BATTLE
BAY


ANGRY BIRDS
Match


ANGRY BIRDS
Dream
Blast


ANGRY BIRDS™ 2

Angry Birds Classic

2009

Angry Birds Classic

2009

Angry Birds 2

2015

Angry Birds Classic

2009

Angry Birds 2

2015

Angry Birds The Movie

2016

Angry Birds Classic

2009

Angry Birds 2

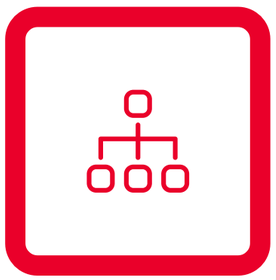
2015

Angry Birds The Movie

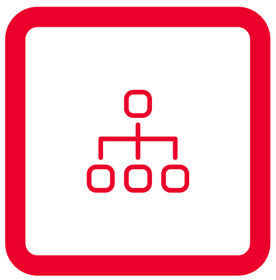
2016

Filip Conic

2017



Scalability



Scalability

Ownership

Scalability

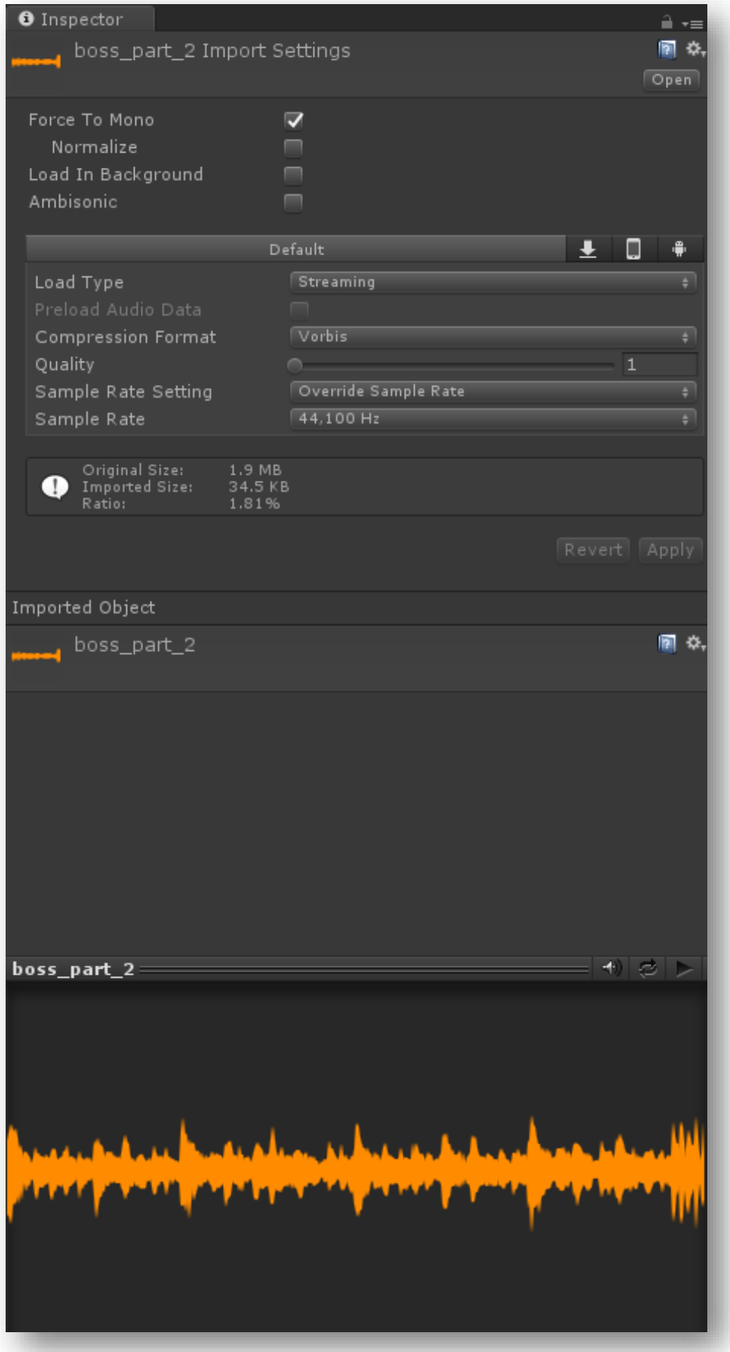
Ownership

Value

10 MB

46 MB

What changed?



```cs
using UnityEngine;
using UnityEditor;


public class AudioSourceImporter : AssetPostprocessor
{
    AudioClip importedAudioClip;
    AudioImporterSampleSettings audioImporterSampleSetting;

    void OnPreprocessAudio()
    {
        importedAudioClip = (AudioClip)AssetDatabase.LoadAssetAtPath(assetImporter.assetPath, typeof(AudioClip));
        var audioImporter = assetImporter as AudioImporter;
        AudioImporterSampleSettings sampleSettings = new AudioImporterSampleSettings();

        if (importedAudioClip != null)
        {
            if (importedAudioClip.name.Contains("music_"))
            {
                audioImporterSampleSetting.compressionFormat = AudioCompressionFormat.Vorbis;
                audioImporterSampleSetting.loadType = AudioClipLoadType.Streaming;
                audioImporterSampleSetting.quality = 1;
            }
            else if (importedAudioClip.name.Contains("ambience_"))
            {
                audioImporterSampleSetting.compressionFormat = AudioCompressionFormat.ADPCM;
                audioImporterSampleSetting.loadType = AudioClipLoadType.CompressedInMemory;
            }
            else
            {
                if(importedAudioClip.length > 1.5f)
                {
                    audioImporterSampleSetting.compressionFormat = AudioCompressionFormat.ADPCM;
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                }
                else
                {
                    audioImporterSampleSetting.compressionFormat = AudioCompressionFormat.ADPCM;
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                }

                // Default settings for assets.
                audioImporter.preloadAudioData = false;

                // Apply SampleSettings to imported asset.
                audioImporter.defaultSampleSettings = sampleSettings;
            }
        }
        else
        {
            // Save assetImporter settings if assetImporter is dirty.
            assetImporter.SaveAndReimport();
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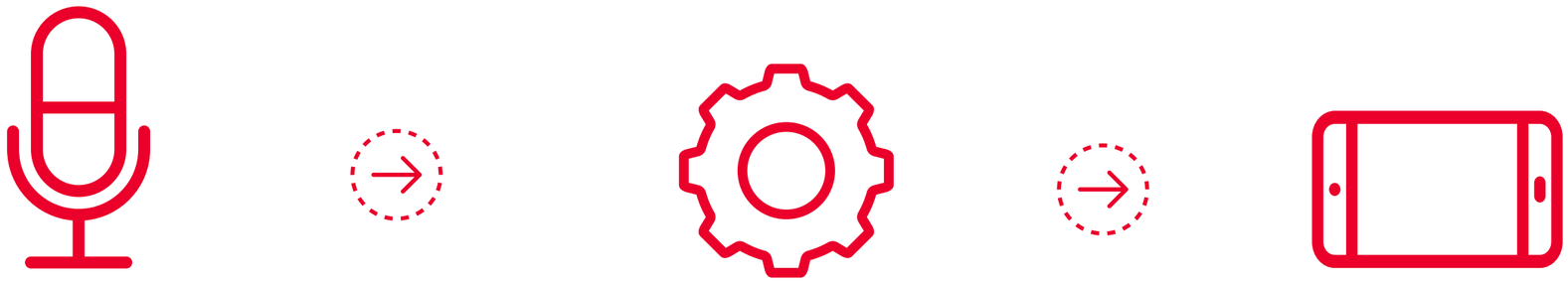
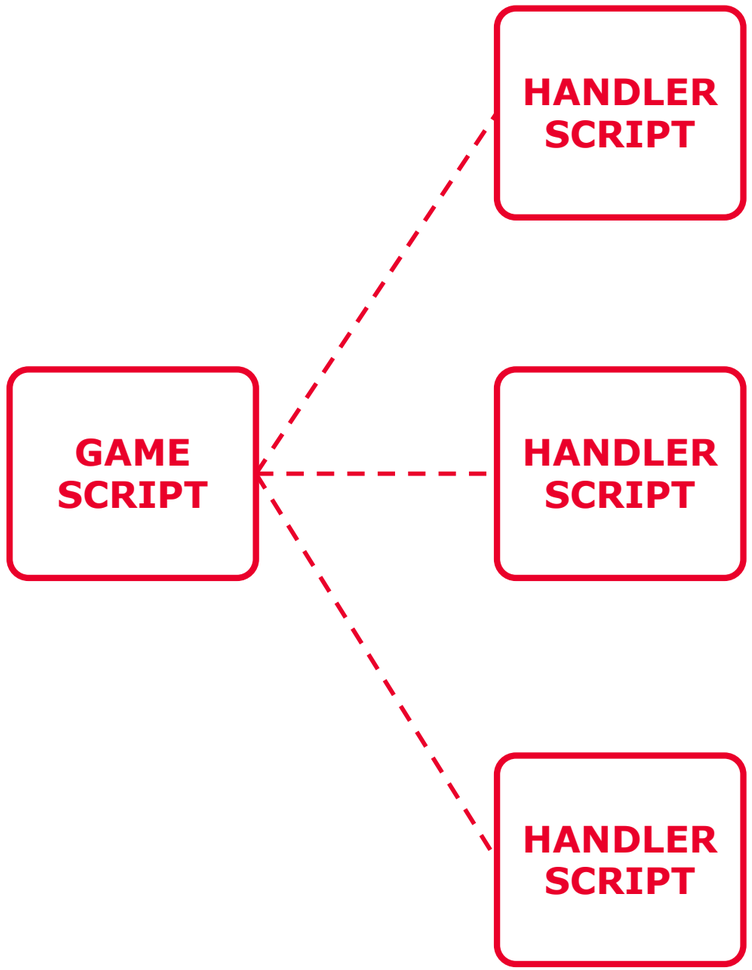
Owning the Audio Pipeline



GAME
SCRIPT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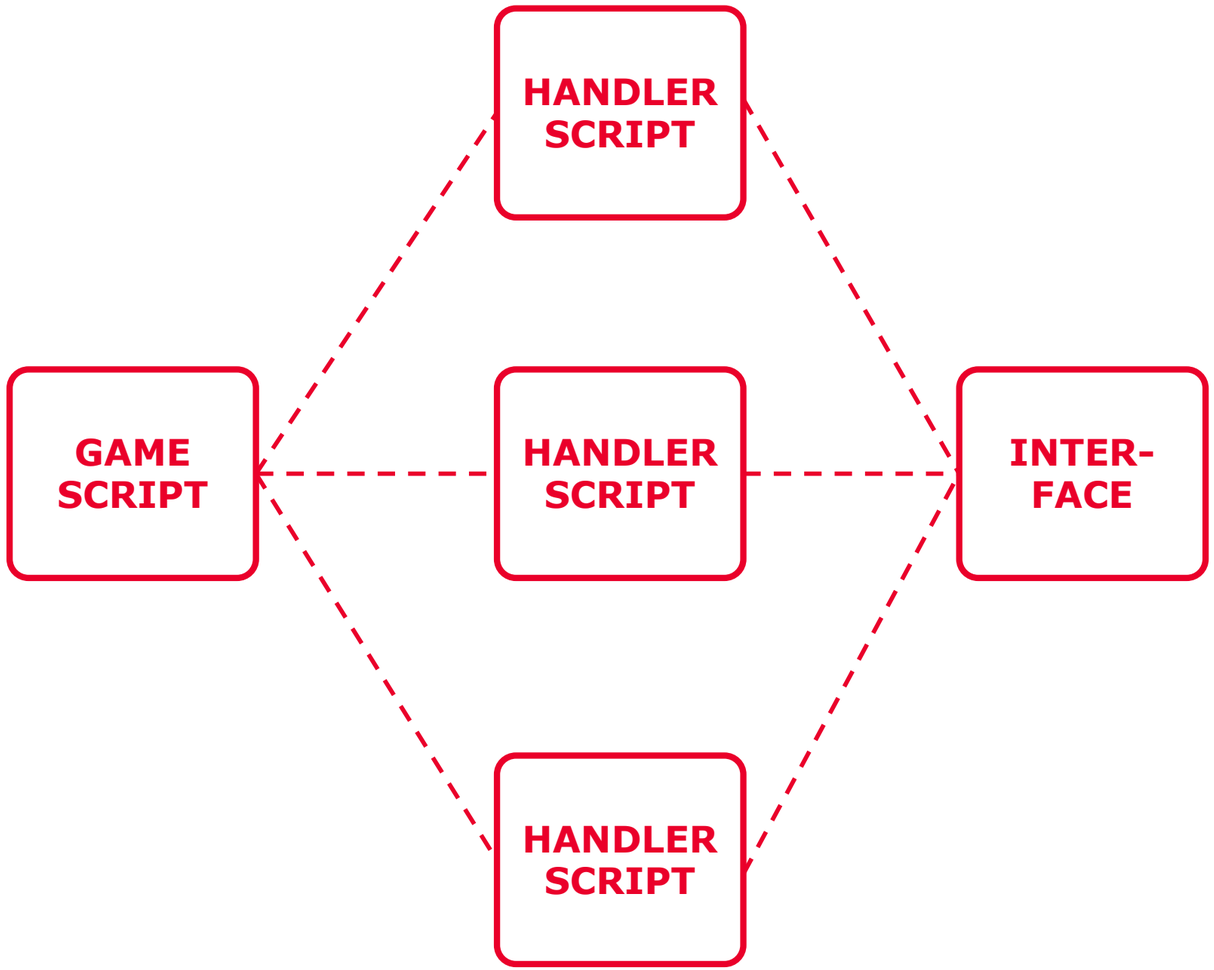
GAME SCRIPT
HANDLER SCRIPT
HANDLER SCRIPT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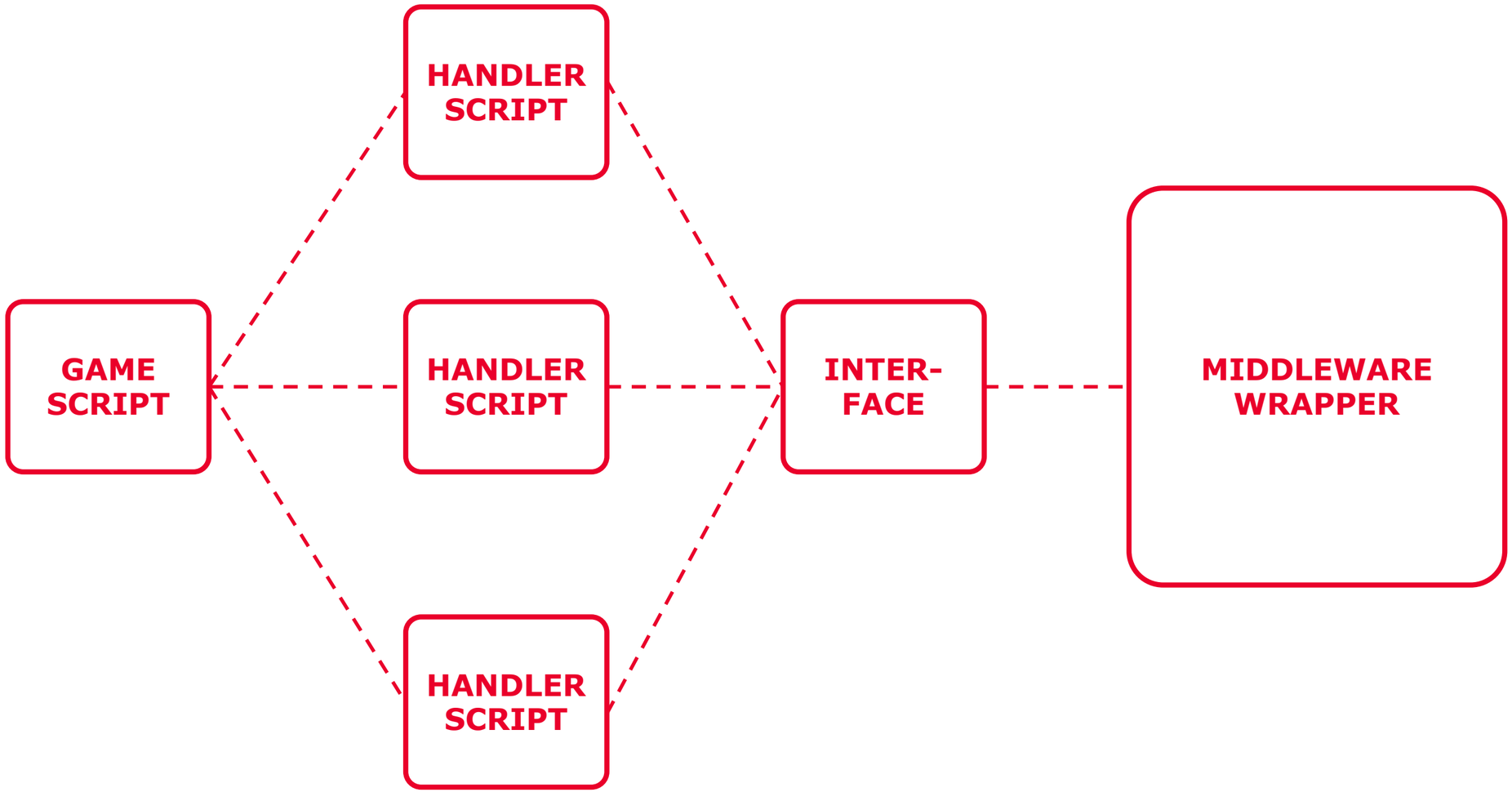
INTER-FACE
HANDLER SCRIPT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INTER-FACE
MIDDLEWARE WRAPPER
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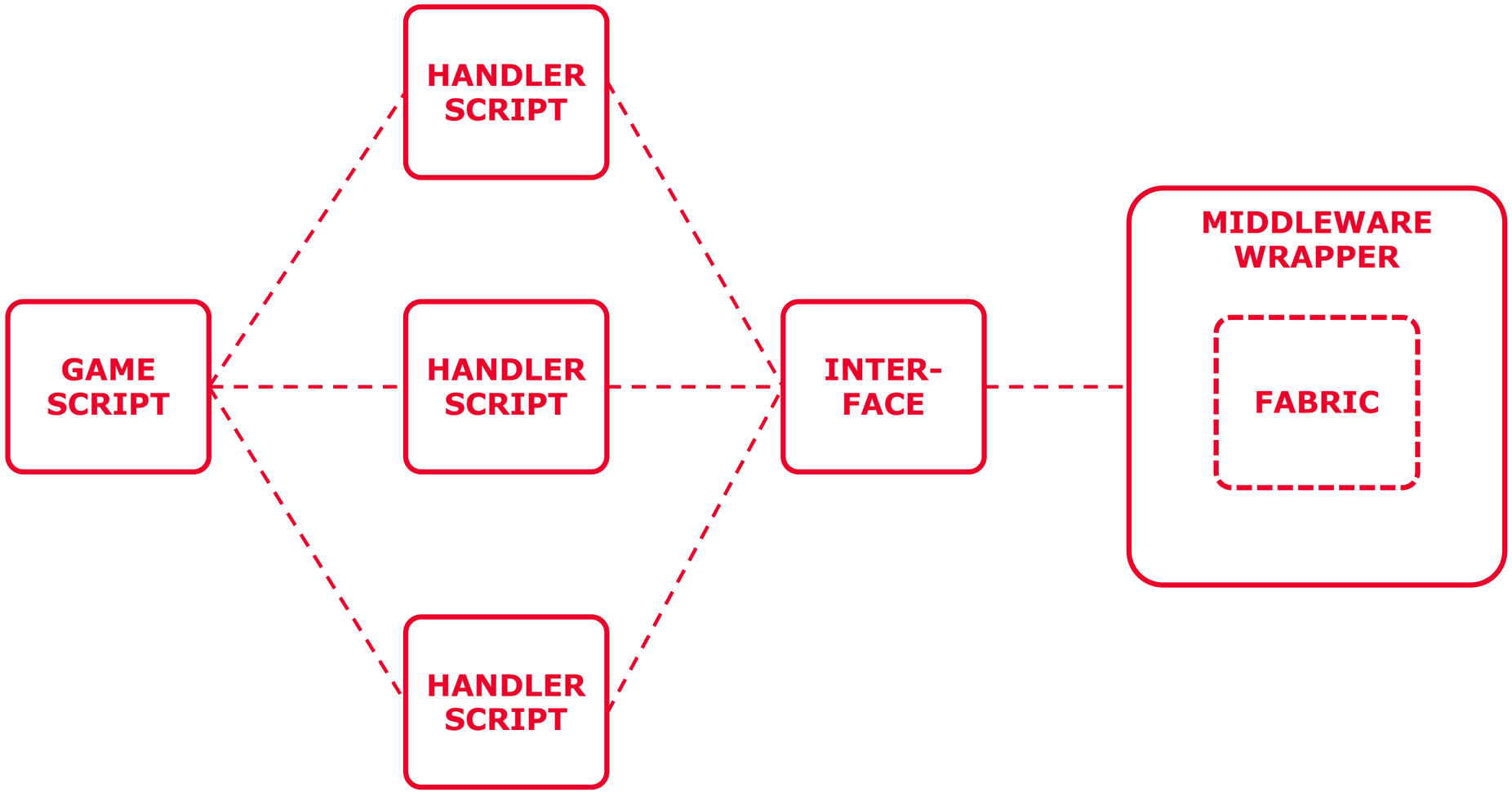
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HANDLER SCRIPT
INTER-FACE
MIDDLEWARE WRAPPER
FABRIC
HANDLER SCRIPT


SCORE: 433
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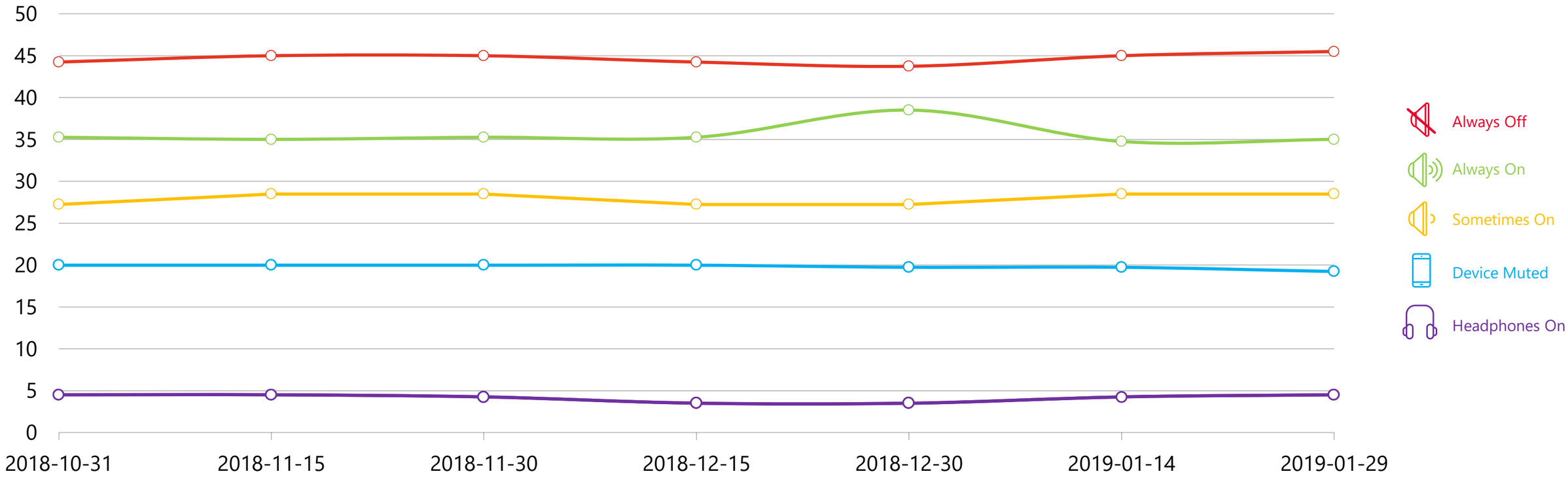
TIMESERIES OF AUDIO USAGE (SHARE OF DAU)



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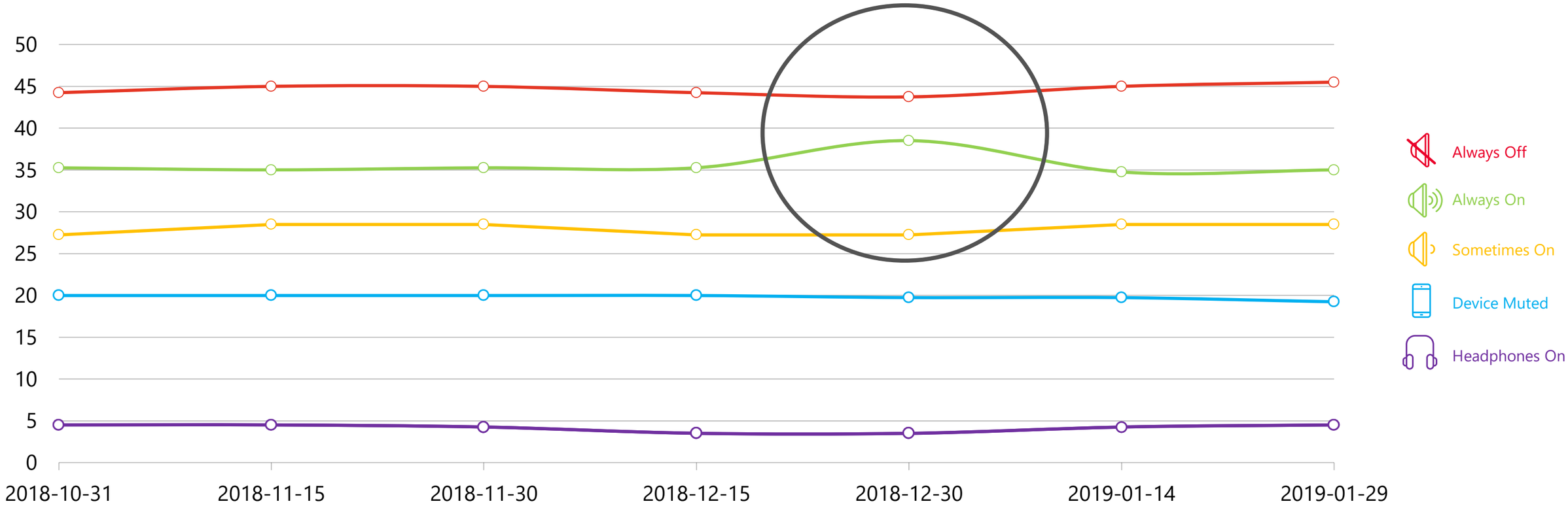

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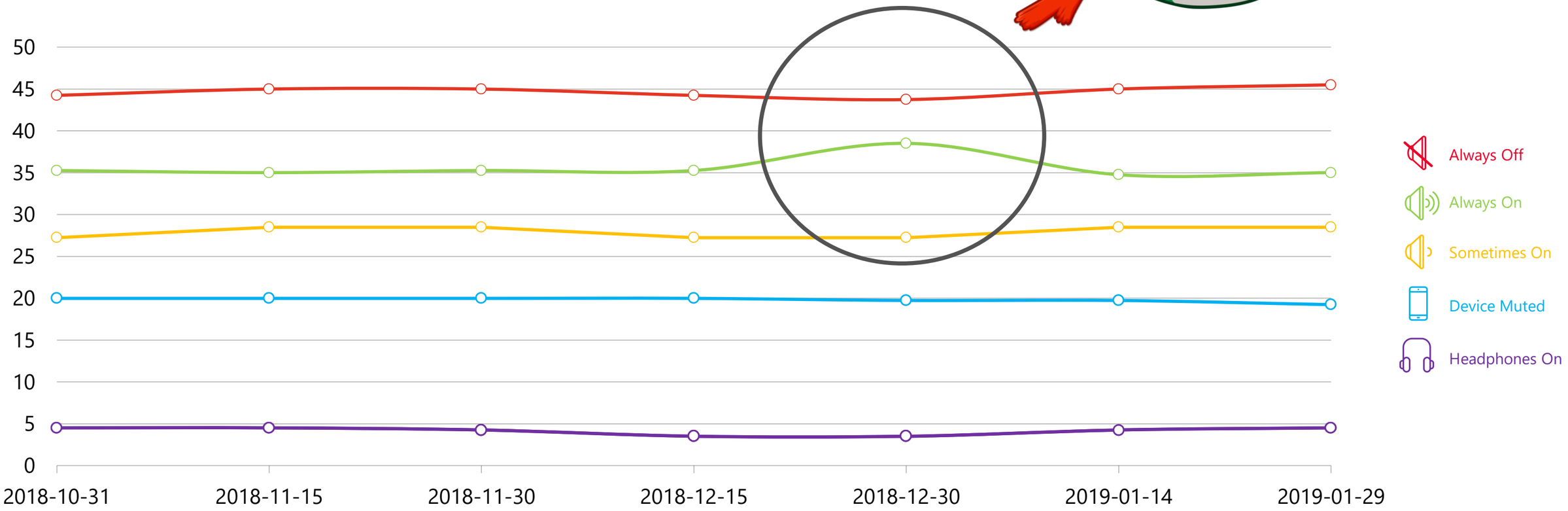

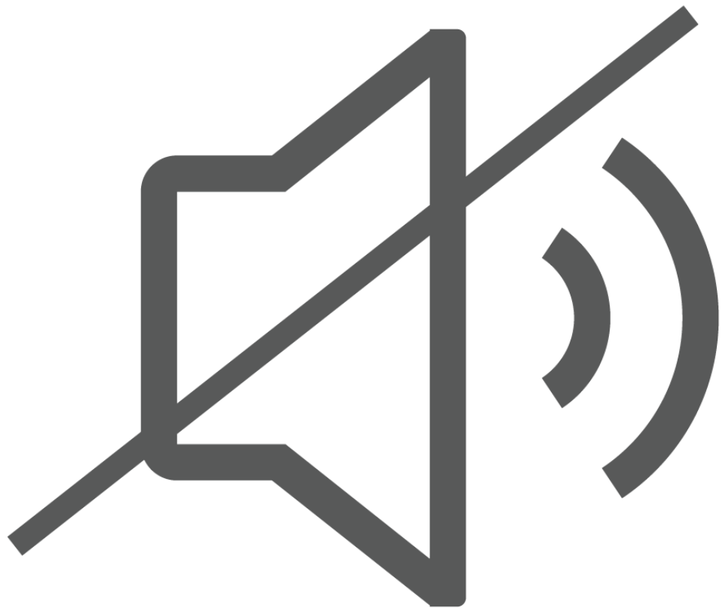

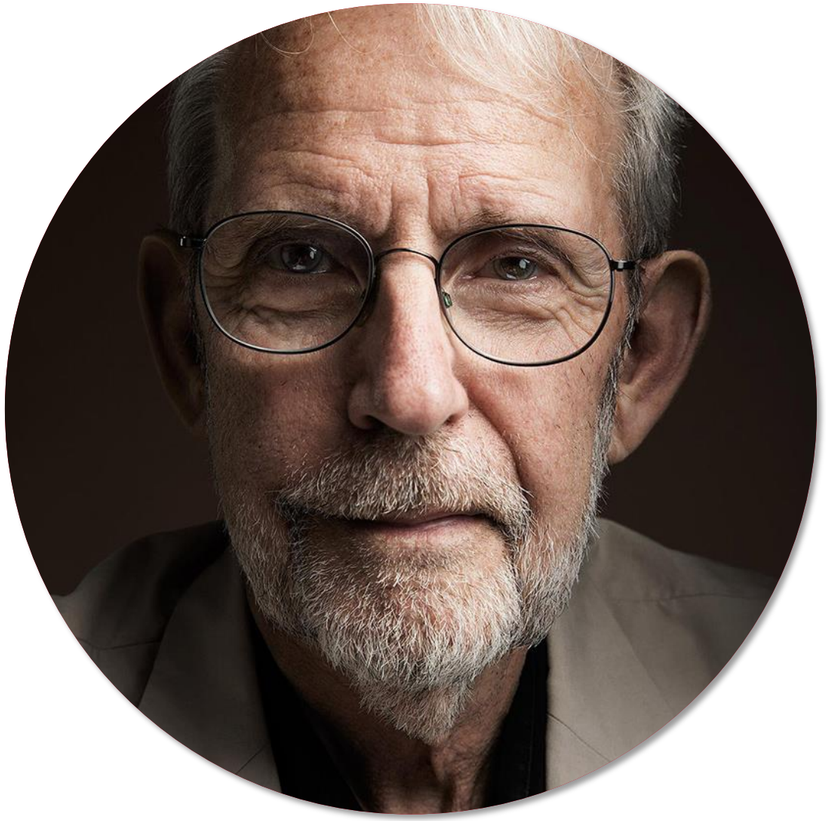

Walter Murch

Dense Clarity – Clear Density

Language
Encoded

Violet Yellow Red

Language
Encoded

Sound Effects
Encoded - Embodied

Music
Embodied

Violet

Yellow

Red

Warm toned sounds

Cool toned sounds

Key engagement sounds

Scalability

Ownership

Value

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ROVIO