Jabra Browser Integration

Revision 0.4

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1 SDK overview

This software package from Jabra helps developers to make solutions, where basic headset call control can be used from within a browser app using JavaScript. Since it is not possible to access USB devices directly from JavaScript, this library provides a solution of getting a route from the JavaScript to the Jabra USB device. The API is a JavaScript library with a facade that hides implementation details. Basic call control is defined by off-hook/on-hook, ringer, mute/unmute and hold/resume. With these features, it is possible to implement a softphone app on a website. Combined with the WebRTC[1] technology it is possible to create a softphone that only requires one small software component installed locally on the computer, while the business logic is implemented in JavaScript.

1.1 System requirements

With current internal implementation of this software package, the following systems are supported.

1.1.1 Jabra devices

All professional Jabra headsets and Jabra speakerphones are supported. I.e. the Jabra Evolve series[2], the Jabra Pro series, the Jabra Biz series, and the Jabra Speak series[3].

1.1.2 Operating system support

The following desktop operating systems are supported:

Operating system	Status
Windows 64 bit	Windows 7 or newer
Windows 32 bit	Windows 7 or newer
macOS	Sierra

1.1.3 Browser support

Google Chrome web browser - stable channel - 32 bit and 64 bit, if supported by the operating system.

1.2 Using the library

Developers must use the JavaScript library file: **jabra.browser.integration-0.2.js**

The library internally checks for dependencies – and will report this to the app using the library. An example: The Jabra library is initialized and an error callback function is called with this text and a link: **"You need to use this Extension and then reload this page"**. Note that a future version could change the internal implementation and that removes/adds new requirements.

[1] https://en.wikipedia.org/wiki/WebRTC
[2] http://www.jabra.com/business/office-headsets/jabra-evolve
[3] http://www.jabra.com/business/speakerphones/jabra-speak-series

1.2.1 SDK web site

A web site with documentation, developer tools and a softphone demo:

https://jabra-browser-sdk.azurewebsites.net/

1.2.2 The API

The JavaScript library must be initialized using this function:

jabra.init(onSuccess, onFailure, onNotify)

Function used for initialization. This function has three arguments: **onSuccess** – a callback reporting that the library has been successfully initialized and the library is ready for use, **onFailure** – a callback reporting errors during initialization, **onNotify** – a callback used for reporting events.

Example use of the library:

https://jabra-browser-sdk.azurewebsites.net/development

Basic functions:

	Description
jabra.ring()	Activate ringer (if supported) on the Jabra Device
jabra.offHook()	Change state to in-a-call
jabra.onHook()	Change state to idle (not-in-a-call)
jabra.mute()	Mutes the microphone (if supported)
jabra.unmute()	Unmutes the microphone (if supported)
jabra.hold()	Change state to held (if supported)
jabra.resume()	Change state from held to OffHook (if supported)

Callback values from the library (registered during library initialization):

	Description
jabra.requestEnum.mute	Request that the device state should be changed to muted. This must be acknowledged by a Mute command to mute the call.
jabra.requestEnum.unmute	Request that the device state should be changed to unmuted. This must be acknowledged by an Unmute command to unmute the call.

jabra.requestEnum.endCall	End an active call request. This must be acknowledged by an OnHook command
jabra.requestEnum.acceptCall	Accept an incoming call request. This must be acknowledged by an OnHook command.
jabra.requestEnum.rejectCall	Reject an incoming call request. This must be acknowledged by an OnHook command to reject the call.
jabra.requestEnum.flash	Flash request. This must be acknowledged by a hold or resume command.

Device management commands:

	Description
jabra.getActiveDevice()	Get the current active Jabra Device
jabra.getDevices()	List all attached Jabra Devices
jabra.setActiveDevice(id)	Select a new active device

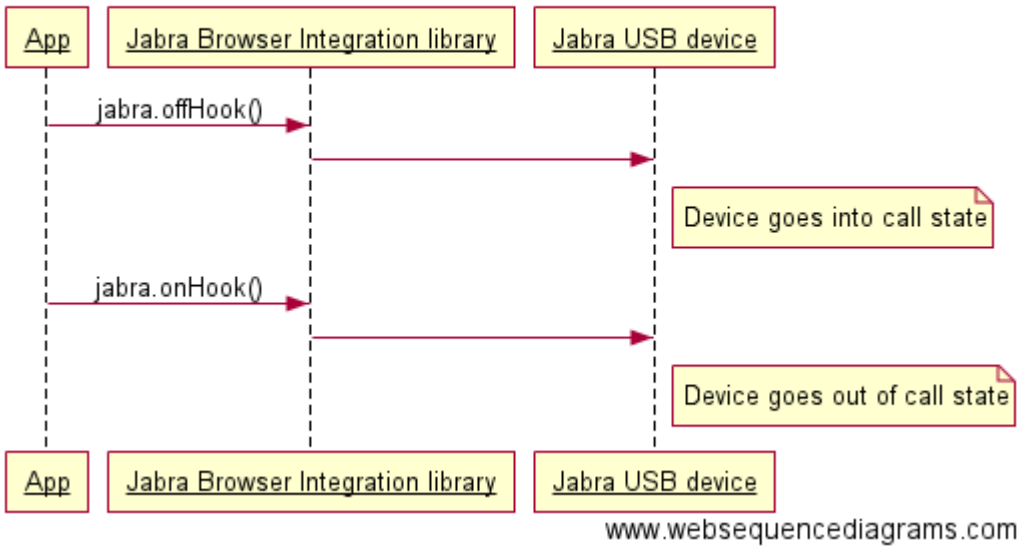
Device management callbacks:

	Description
jabra.requestEnum.deviceAttached	A device has been added
jabra.requestEnum.deviceDetached	A device has been removed

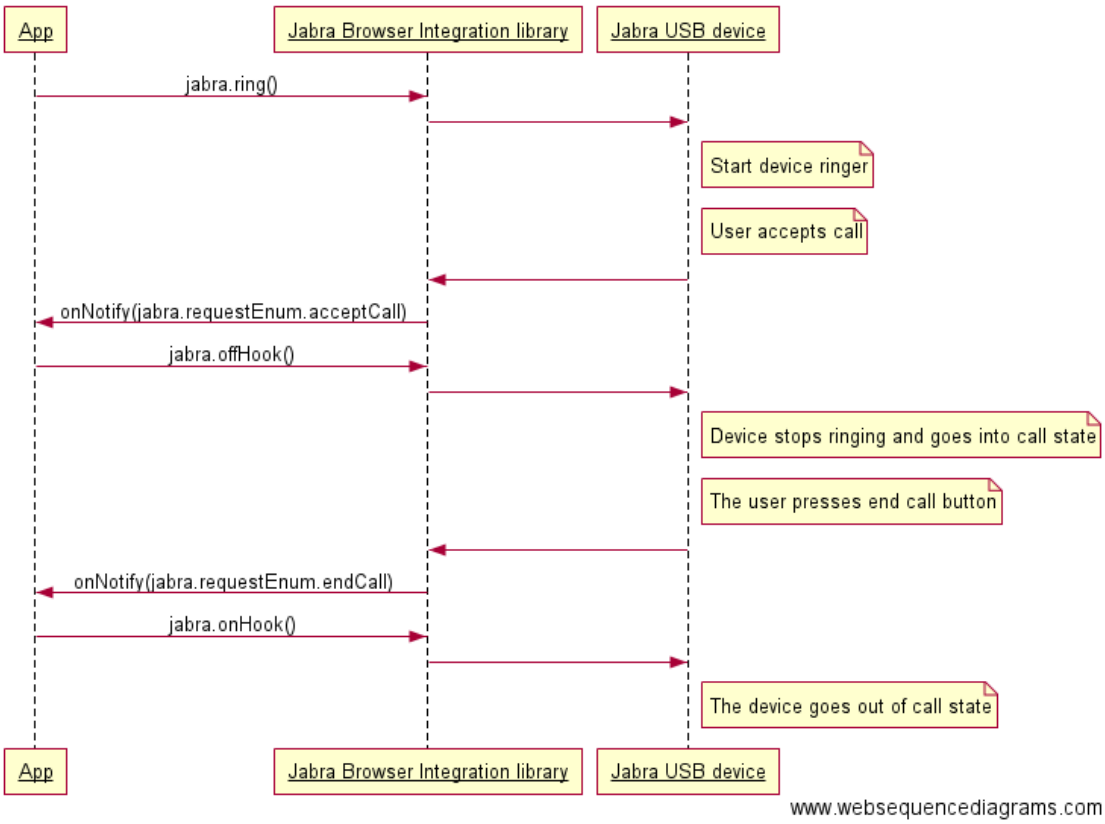
1.2.3 Sequence diagrams

These sequence diagrams shows typical use.

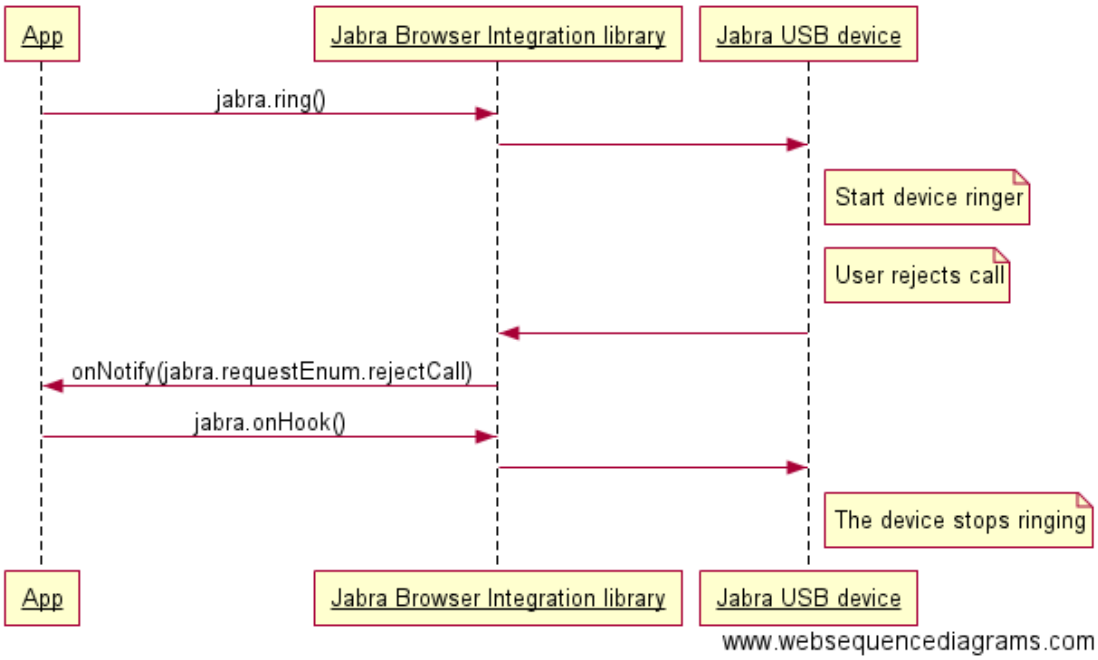
outgoing-call-then-end-call

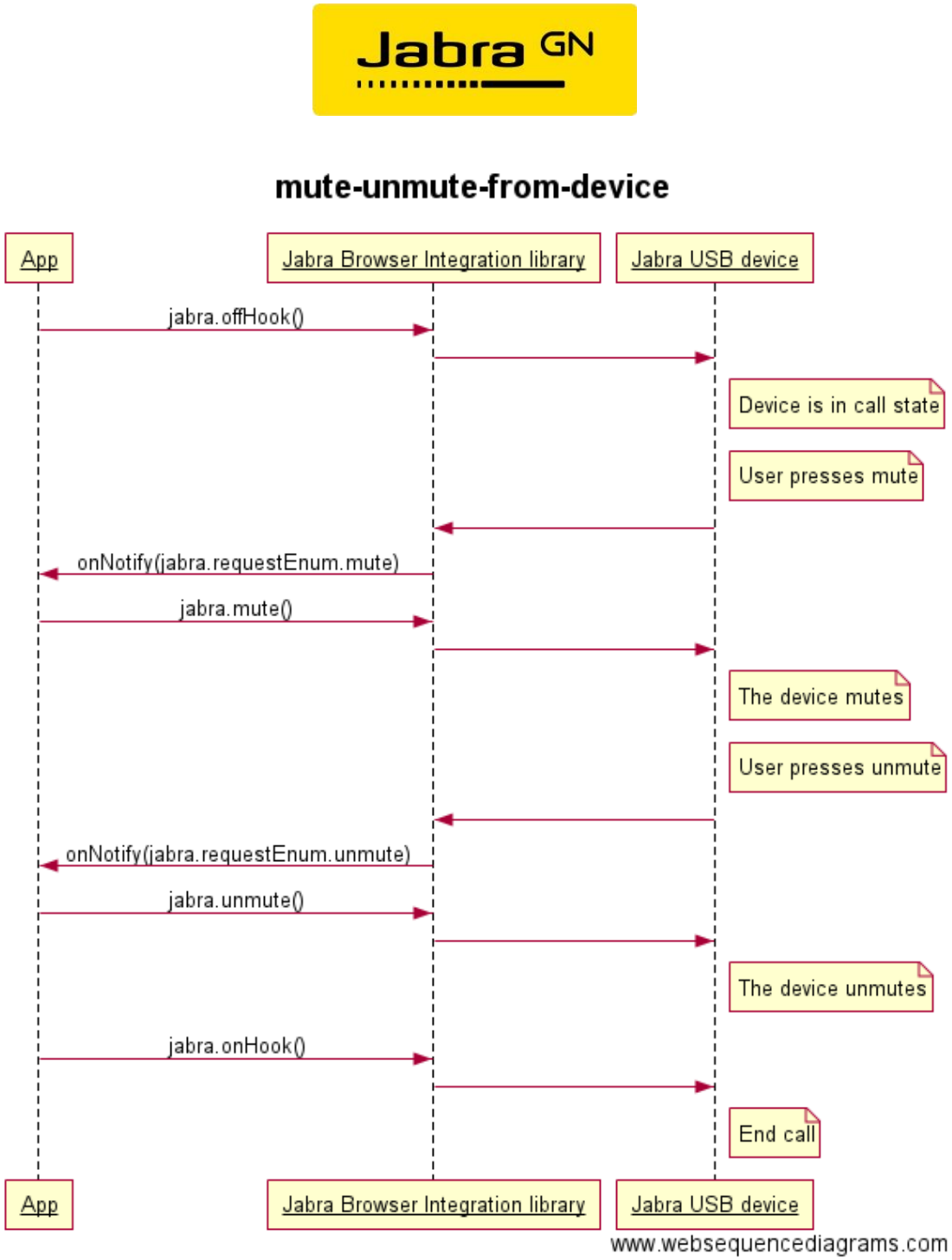


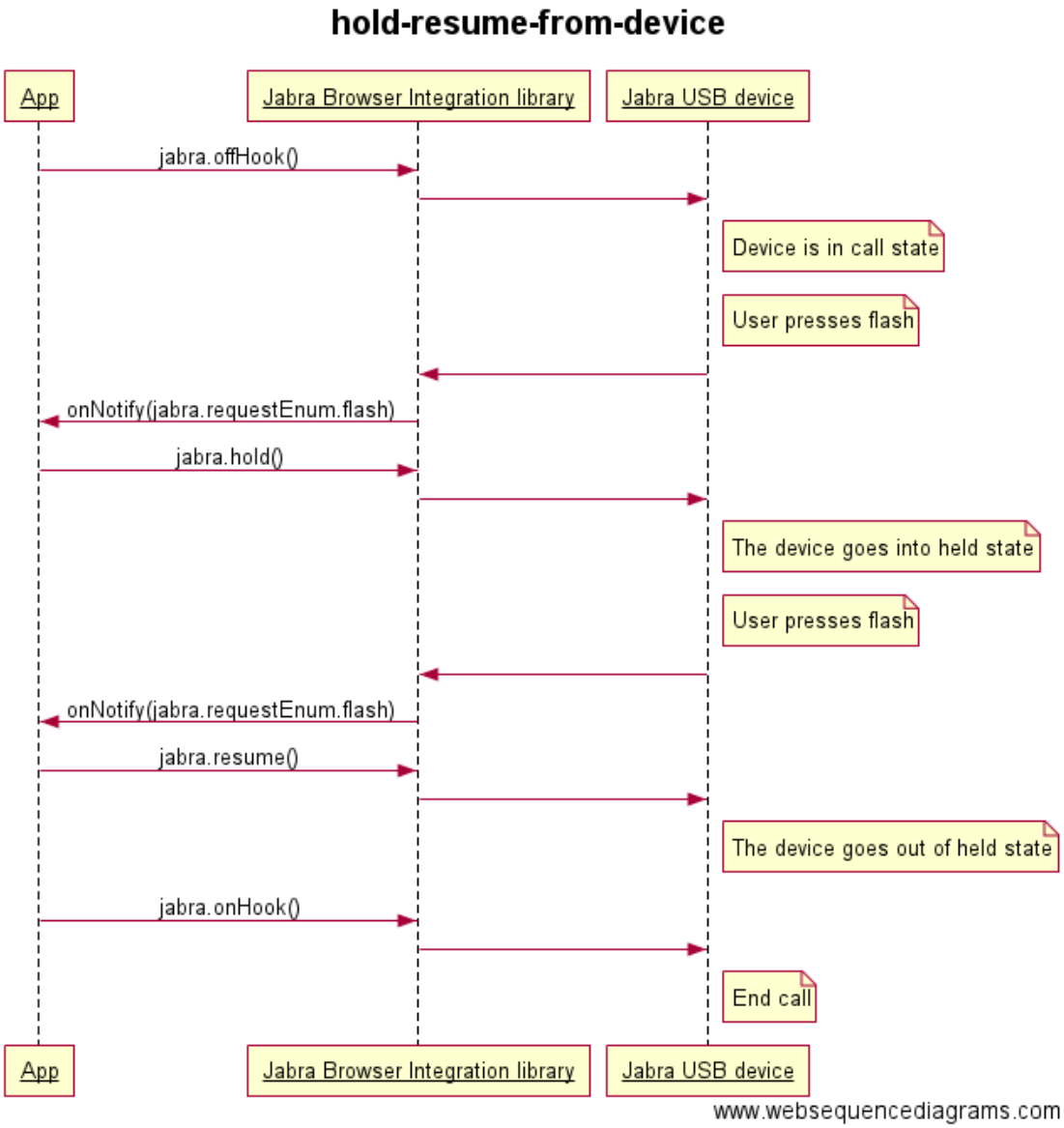
incoming-call-then-accept-on-device-then-end-call



incoming-call-then-user-rejects







1.3 Solution deployment

When deploying a site that uses this library (with the current implementation), the end-user need to handle two dependencies: 1) A Chrome extension that creates a route out of the browser (non-platform specific) 2) A Host component that needs to be installed on the end-user system that handles the USB communication (platform specific).

1.3.1 Deployment option 1: Use the public Jabra components

This option is the default used components from the library.

Use this Chrome extension:

https://chrome.google.com/webstore/detail/okpeabepajdgiepelmhkfhkjlhhmofma

In addition, these Hosts:

https://jabra-browser-sdk.azurewebsites.net/download/

Security concerns regarding Option 1. The public Chrome extension is configured to allow apps from any sites. This is a potential security issue since any site could access the library and i.e. start the ringer on a headset.

1.3.2 Deployment option 2: Customize the components

In this option, a new Chrome extension is made (either by the developer using the library or by Jabra) – and the only change is that this extension is only valid for a specific URL: I.e. https://www.organization.com/oursoftphone

This extension must then be published on the Chrome store – and then it gets an Id. This Id must then be added in a white list of allowed extensions in the Host applications. This will be done by Jabra – this will then trigger new releases of all Host implementations. Contact Jabra to get help: http://developer.jabra.com

Security concerns regarding Option 2. This option is more secure than option 1, since only applications on a specific URL will be able to use the library.