USB Host HID (Human Interface Device) Driver, Migration Guide, v0.0.1 draft
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USB Host HID (Human Interface Device) Driver

## Migration Guide from v.1.0.x to v2.0.x

About

This document describes the architectural changes from v1.0.x to version v2.0.x. In the end of the document there are some tips to make the migration process from v1.0.x more easy.

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Architecture Description

Driver v1.0.x

Main Events Handling
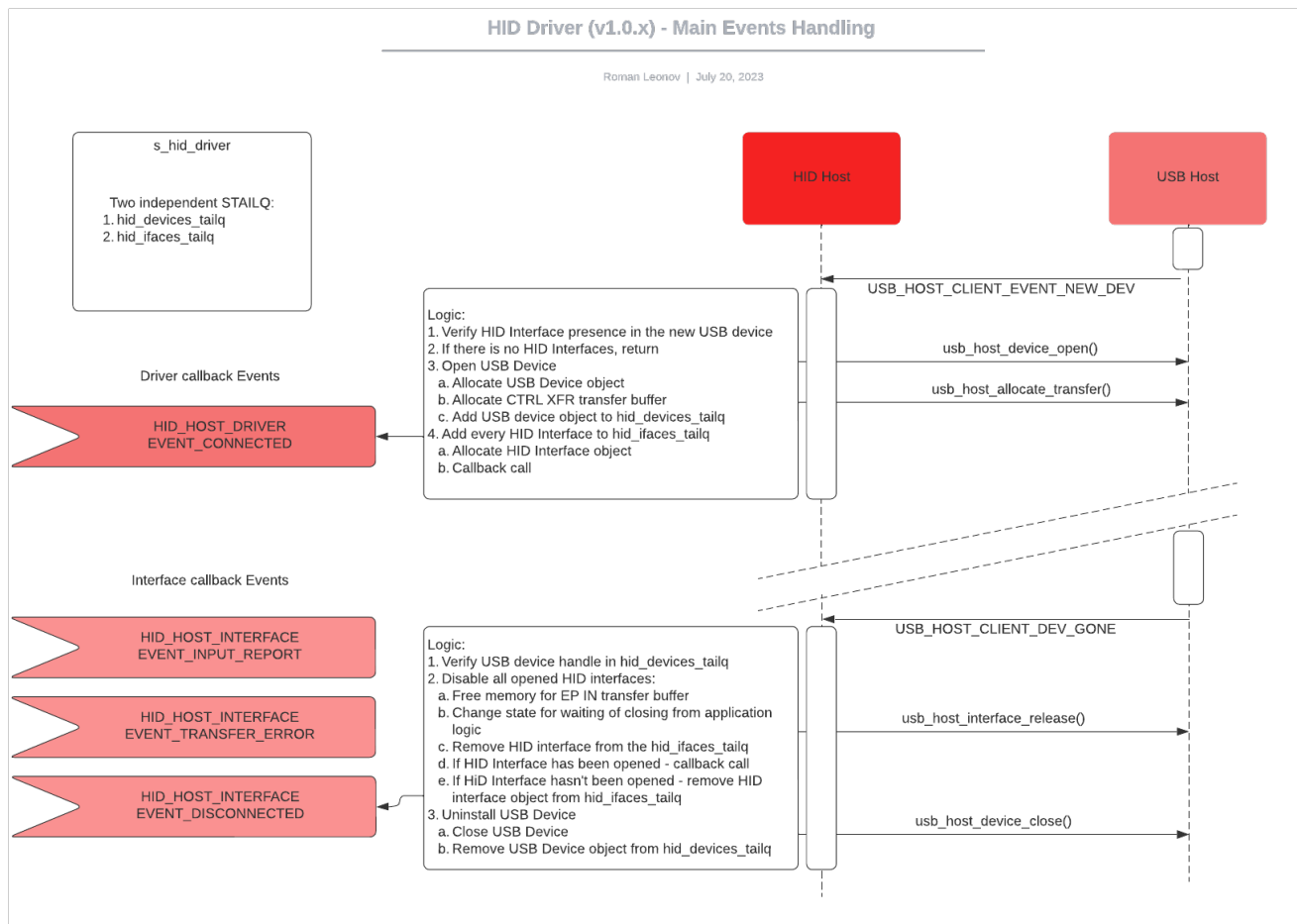
Advantages

There is only one advantage:

1. After USB HID Device is connected and opened it is ready to work and be claimed from the application logic.
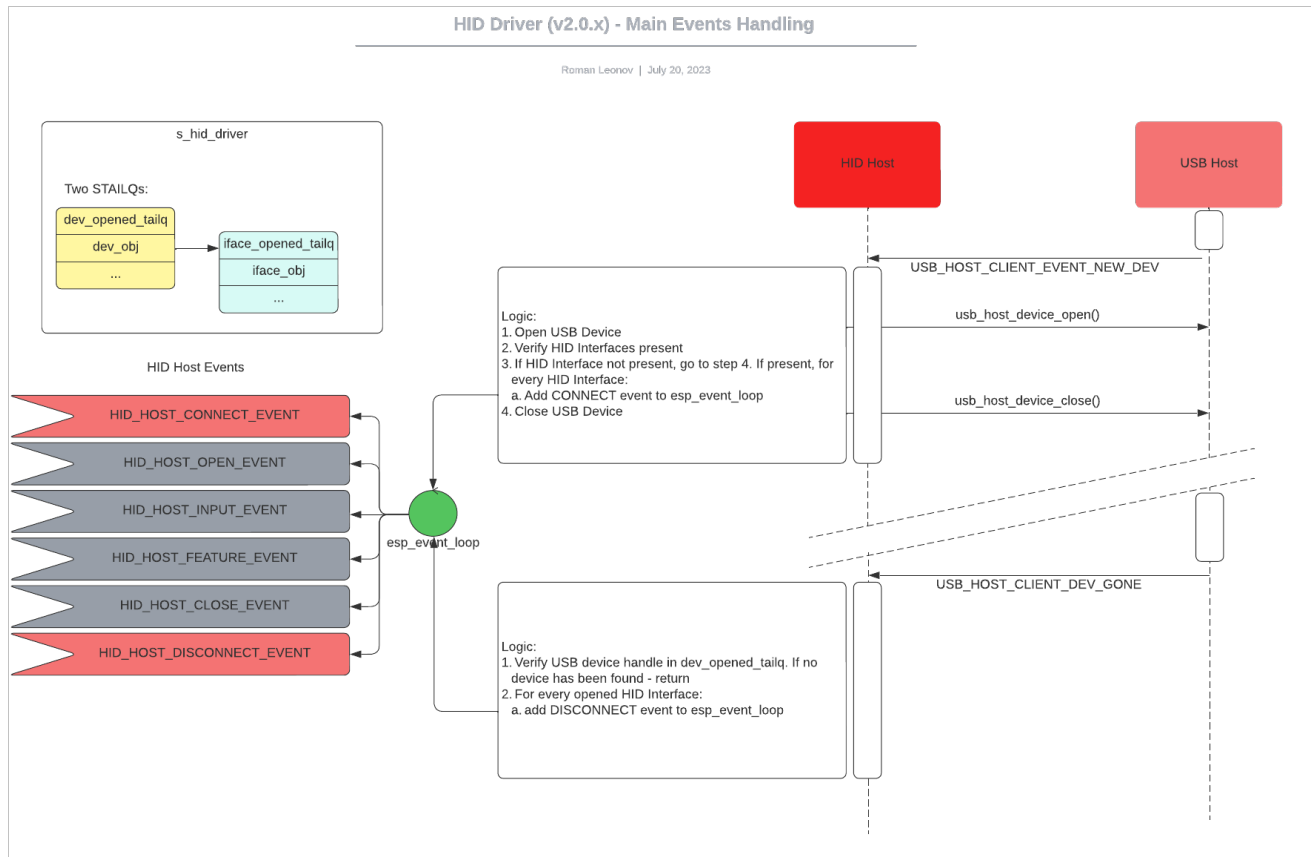
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Disadvantages

There are several disadvantages:

1. Complex and heavy logic during event USB_HOST_CLIENT_EVENT_NEW_DEV (device creation, adding to the tail queue, memory allocation …);

2. Memory allocation was made even if the HID Device is not used in application logic;

3. Complex logic during device closing while device has been opened or hasn't been opened;

4. Complex and heavy logic during event USB_HOST_CLIENT_DEV_GONE (device removing, working with tail queues, …)

5. Requires to use the specific task in application logic to interact with HID device.

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Driver v2.0.x

New Device/Dev Gone Events Handling

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Open/Close Events Handling

Advantages

There are several advantages:

1. No memory usage if HID device was not opened from application logic;

2. Event driven. There are only a callbacks to the application logic which are throwing via event_loop from HID Driver. No any additional logic during the callbacks from the levels underneath.

3. Simpler logic during device closing (we do not need keep the state of device in the driver).

4. Usage of event_loop let the application logic do not use specific thread and queue for HID Driver events handling.

Disadvantages

1. Usage of esp_event_loop (?)

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Migration Tips

API changes

TBD

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