Bluetooth SDK 2.11.0 GA

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1 Release Highlights

- Bluetooth 5 periodic advertising for EFR32xG12 and EFR32xG13

- Bluetooth 1.2 privacy – whitelisting feature (central side only)

- 802.11 co-ex – PWM request mode

- Selected quality improvements and bug fixes (details in Chapter 6)

2 Added Items

2.1 New Features:

- Feature 3597: The Bluetooth stack supports periodic advertising feature for EFR32xG12 and EFR32xG13. See UG136 for the details.

- Feature 4611: The Bluetooth stack supports Bluetooth 1.2 privacy whitelisting on central role. This feature is not supported on peripheral role. See UG136 for the details.

- Feature 4944: New characteristic property types for the GATT configurator: encrypted_notify, authenticated_notify and bonded_notify.

2.2 New APIs:

- `gecko_cmd_le_gap_start_periodic_advertising` for starting periodic advertising

- `gecko_cmd_le_gap_stop_periodic_advertising` for stopping periodic advertising

- `gecko_cmd_sync_open` for establishing synchronizations with periodic advertising

- `gecko_cmd_sync_close` for closing a synchronization or cancel an synchronization establishment procedure

- `gecko_cmd_le_gap_enable_whitelisting` for enabling and disabling the whitelisting functionality

- `gecko_cmd_sm_add_to_whitelist` for adding devices to whitelist

- `gecko_cmd_system_set_identity_address` for setting the device's Bluetooth identity address

- `gecko_evt_sync_opened` for indicating that a synchronization has been established

- `gecko_evt_sync_closed` for indicating that a synchronization has been closed

- `gecko_evt_sync_data` for reporting the advertising data received on a synchronization

3 Changed Items

3.1 Extended Advertising

EFR32xG1 supports multiple advertising sets and scan request reports, but does not support advertising or scanning on secondary advertising channels.

3.2 API extensions:

- Parameter `scan_rsp` in command `gecko_cmd_le_gap_bt5_set_adv_data` supports a new type for setting periodic advertising data.

- Response `gecko_msg_le_gap_set_advertise_tx_power_rsp_t` has a new field for returning the actual selected maximum advertising TX power.

3.3 API changes:

- Command `gecko_cmd_sm_delete_bonding` has been extended for deleting the bonding or whitelisting of a device.

- Command `gecko_cmd_sm_delete_bondings` has been extended for deleting all bondings and the whitelist.

- Command `gecko_cmd_le_gap_set_advertise_tx_power` will select the actually allowed maximum TX power and return it to application if the given value is bigger than the global maximum TX power setting. In previous version this command will fail with invalid parameter error code in this situation.

- Function `gecko_init` and `gecko_stack_init` return `errorcode_t`. This error code can be used to verify whether the Bluetooth stack has been successfully initialized.

3.4 Changes in sample applications:

- soc-empty example is restructured to allow easier migration between SDK versions. For more details, see this knowledge base article.

4 Deprecated Items

4.1 Deprecated APIs:

- Command `gecko_cmd_system_set_bt_address` is deprecated. Replacement is `gecko_cmd_system_set_identity_address`.

5 Removed Items

5.1 Removed APIs

- Command `gecko_cmd_endpoint_close` is removed. Use command `gecko_cmd_le_connection_close` to close Bluetooth connections.

- Command `gecko_cmd_gatt_server_set_database` is removed. Use `gecko_cmd_gatt_server_set_capabilities` command to dynamically configure services and characteristics of the local GATT database.

- Command `gecko_cmd_hardware_enabled_dcdc` is removed. Use EMDRV or EMLIB for DCDC control.

6 Fixed Issues

- Issue 3840: GATT database XML does not support adding permissions to the write property of a characteristic client configuration descriptor.

- Issue 3894: Eventually out of memory error will be returned if application repeats closing a connection while a GATT procedure is outstanding.

- Issue 4295: Connection limit is reached too early in dual topology scenario

- Issue 4557: `cmd_gatt_server_send_characteristic_notification` returns invalid parameter error code if there is no open connection

- Issue 4677: Canceling an outstanding connection request does not complete if the device is scanning simultaneously.

- Issue 4945: `stack_schedule_callback` does not trigger for boot event

- Issue 4987: The PHY parameter is not fully validated when starting device discovery

- Issue 5251: Advertising timeout event is not always generated

- Issue 5311: Service changed indication is sent even if GATT database has not changed

7 Open Issues

- Issue 1835: With certain events, GCC breakpoints cannot be set.

- Issue 4521: Command `gecko_cmd_gatt_discover_primary_services_by_uuid` returns success in case of incomplete parameters.

- Issue 4559: Deleting a bonding of a device while the device is still connected causes the stack using outdated bonding data on the connection.

- Issue 5390: The `evt_sync_data` event does not report TX power.

8 Documentation Changes

- Issue 5009: Documentation improvements in UG136

- Issue 5159: Description for `system_halt` command has been clarified that this command can only be used for short time period.

- Issue 5268: Documentation for `gecko_cmd_system_linklayer_configure` command has been added

- Issue 5281: `gecko_cmd_le_gap_connect` documentation improvement regarding scanning parameters