FUTURE
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6-7 OTT '16 / MILANO
IN PARTNERSHIP WITH:
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#FutureDecoded

[i]Beacons for everyone

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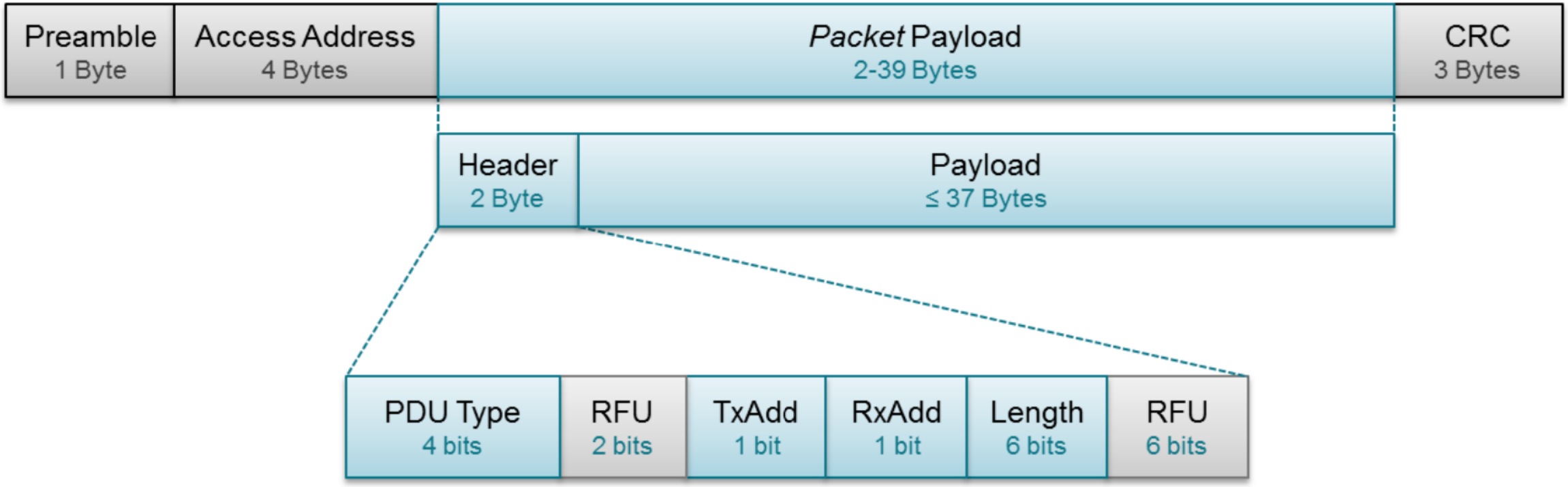
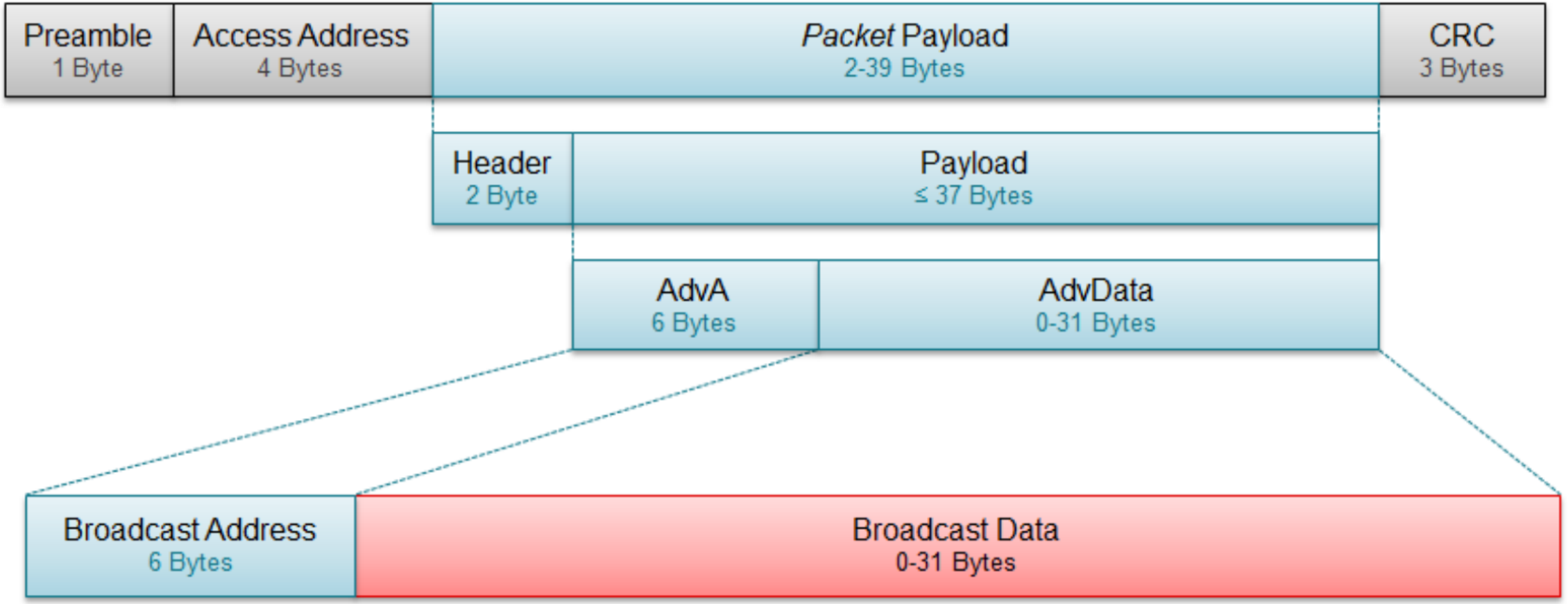
WHAT DO YOU DO WHEN YOU WANT TO START SELLING SOMETHING?

Bluetooth Low Energy Data Packet

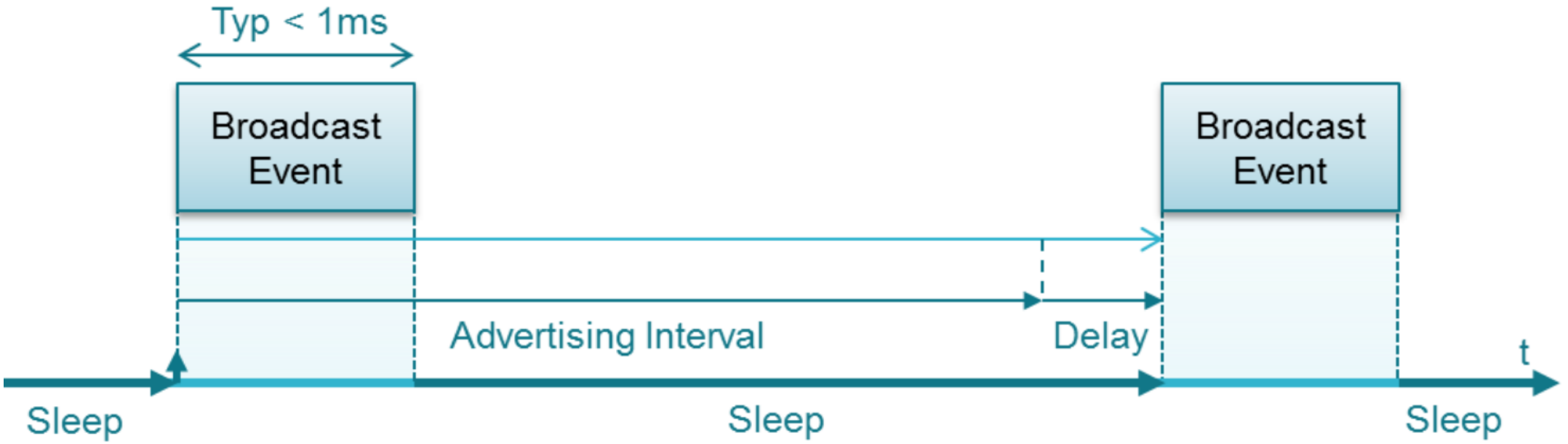


http://www.ti.com/lit/an/swra475/swra475.pdf

Bluetooth Low Energy Data Packet



Advertising Interval



Battery Life

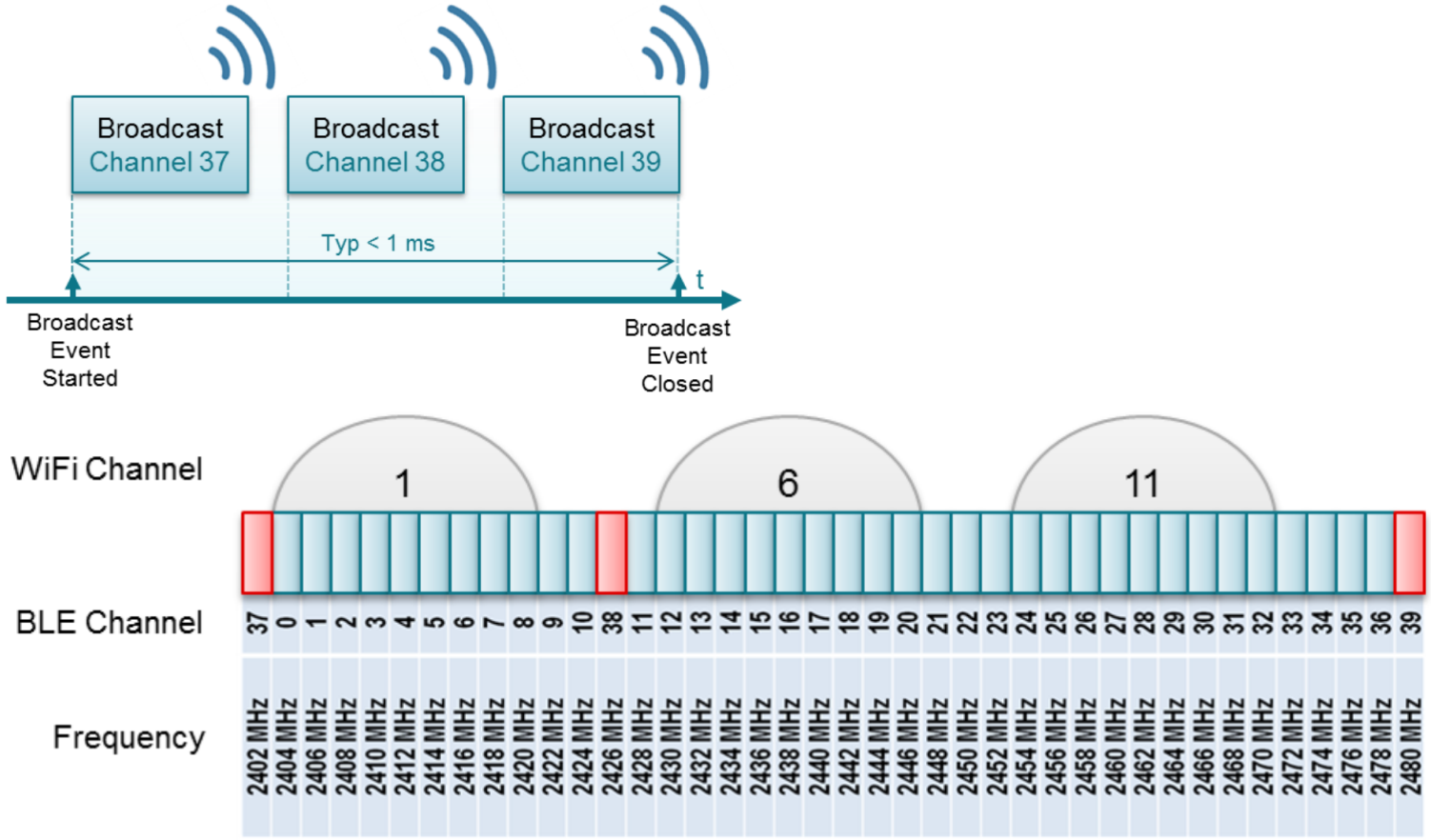
http://www.aislelabs.com/reports/beacon-guide/

Chipset Battery LIfe

Aislelabs

		cr2032 small 240mah	cr2450 medium 620mah	cr2477 big 1000 mah
Chipset	**Advertisement Interval**	**Est. Battery cr2032**	**Est. Battery cr2045**	**Est. Battery cr2477**
Gimbal	100ms	1.0 month	2.5 month	4.0 month
Gimbal	645ms	n/a	n/a	n/a
Gimbal	900ms	n/a	n/a	n/a
Nordic	100ms	1.1 months	2.8 months	4.5 months
Nordic	645ms	5.4 months	13.9 months	22.4 months
Nordic	900ms	11.0 months	28.7 months	46.3 months
Bluegiga	100ms	0.6 months	1.6 months	2.6 months
Bluegiga	645ms	5.8 months	15.1 months	24.3 months
Bluegiga	900ms	13.9 months	35.8 months	57.1 months
TI CC254x	100ms	0.7 months	1.8 months	2.9 months
TI CC254x	645ms	4.3 months	11.2 months	18.0 months
TI CC254x	900ms	5.6 months	14.3 months	23.1 months

Coexistence



CONTEXT

- Retail Industry
- Hospitality Industry
- Tourism and tourist attractions
- Education Industry
- Travel
- Personal

Standard

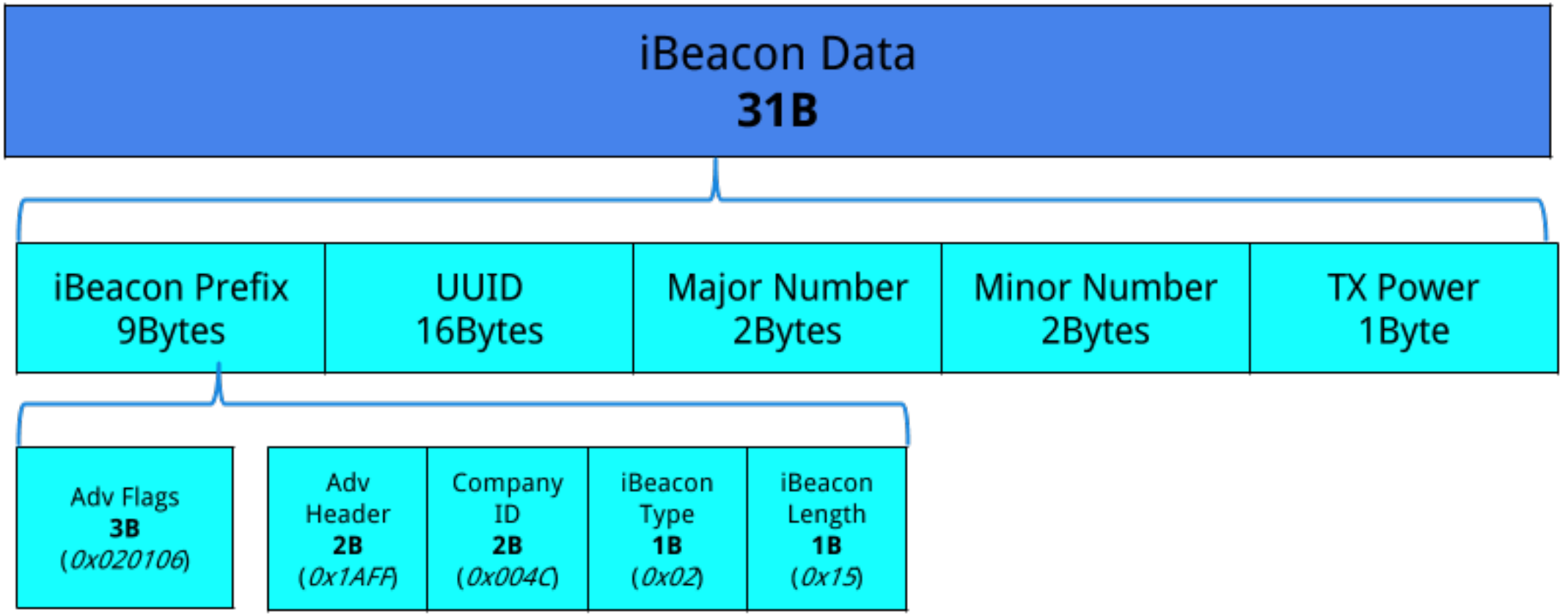
- iBeacon

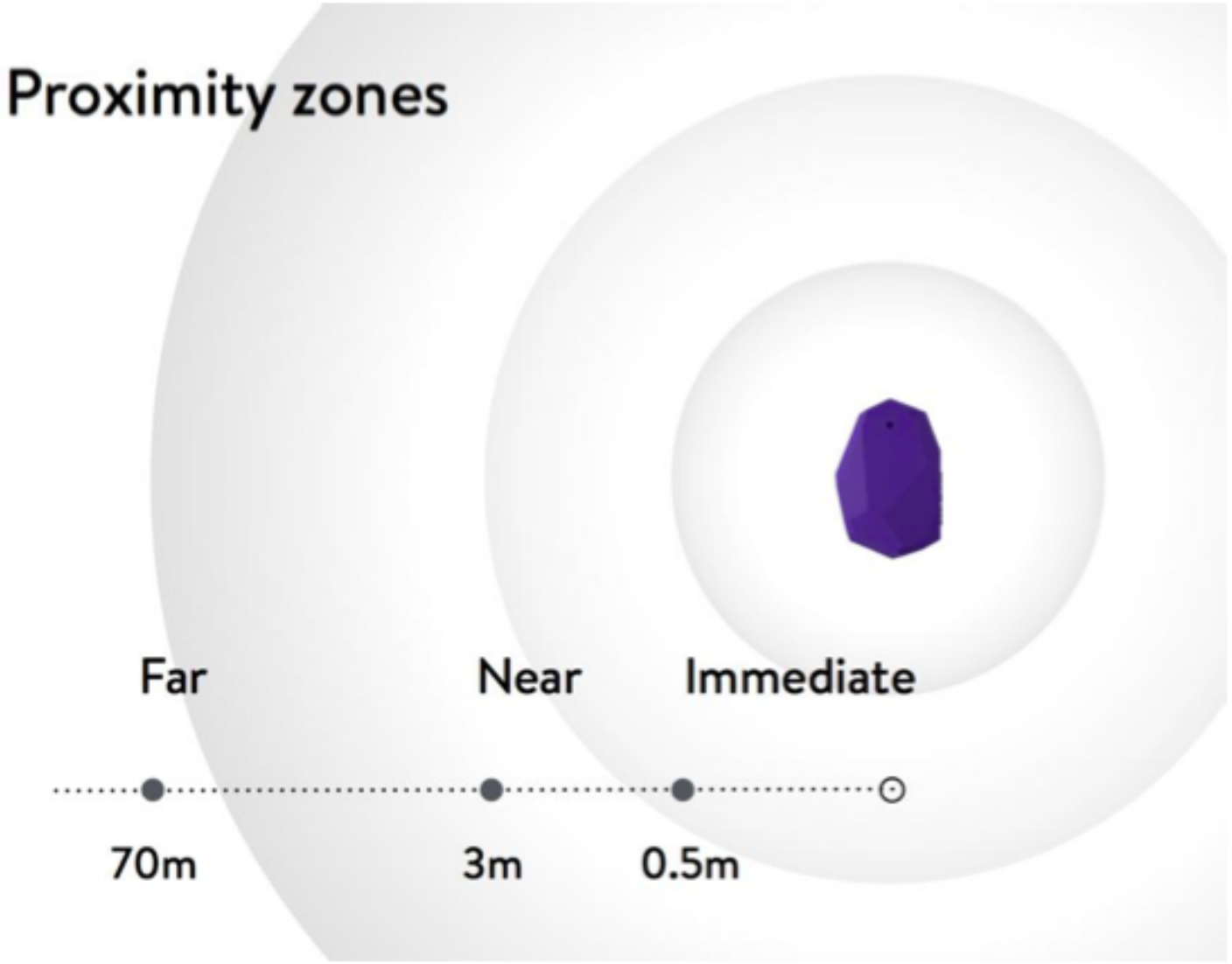
https://developer.apple.com/ibeacon/

- EddyStone

https://github.com/google/eddystone

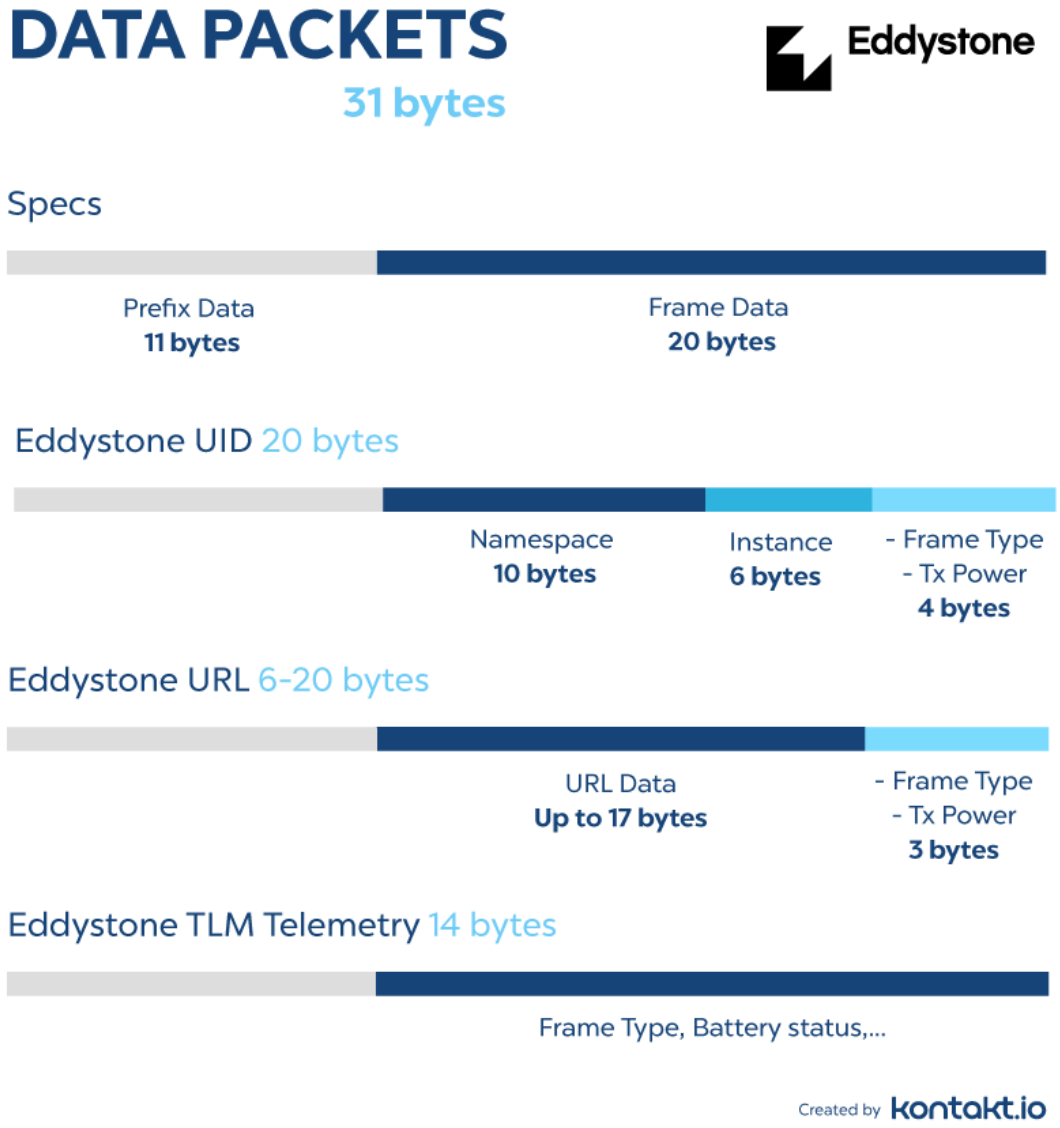
iBeacon

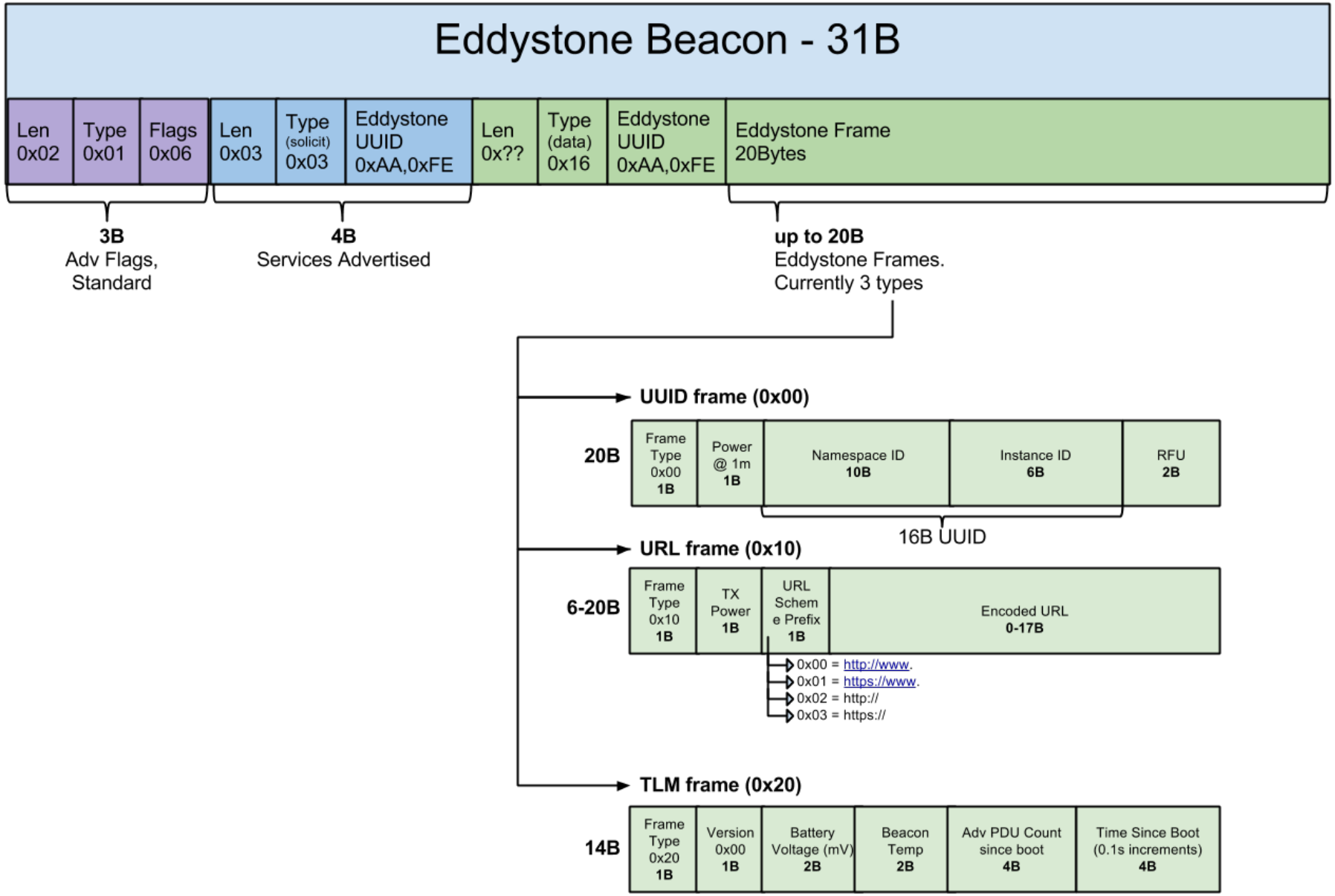

iBeacon Data
31B
iBeacon Prefix
9Bytes
UUID
16Bytes
Major Number
2Bytes
Minor Number
2Bytes
TX Power
1Byte
Adv Flags
3B
(0x020106)
Adv
Header
2B
(0x1AFF)
Company
ID
2B
(0x004C)
iBeacon
Type
1B
(0x02)
iBeacon
Length
1B
(0x15)


Proximity zones
Far
Near
Immediate
70m
3m
0.5m

EddyStone

- UID: Unique Identifier
- EID: Ephemeral Identifier
- TLM: Telemetry
- URL: A short URL




Eddystone Beacon - 31B
Len 0x02
Type 0x01
Flags 0x06
Len 0x03
Type (solicit) 0x03
Eddystone UUID 0xAA,0xFE
Len 0x??
Type (data) 0x16
Eddystone UUID 0xAA,0xFE
Eddystone Frame 20Bytes
3B
Adv Flags, Standard
4B
Services Advertised
up to 20B
Eddystone Frames. Currently 3 types
UUID frame (0x00)
20B
Frame Type 0x00 1B
Power @ 1m 1B
Namespace ID 10B
Instance ID 6B
RFU 2B
16B UUID
URL frame (0x10)
6-20B
Frame Type 0x10 1B
TX Power 1B
URL Scheme Prefix 1B
Encoded URL 0-17B
0x00 = http://www.
0x01 = https://www.
0x02 = http://
0x03 = https://
TLM frame (0x20)
14B
Frame Type 0x20 1B
Version 0x00 1B
Battery Voltage (mV) 2B
Beacon Temp 2B
Adv PDU Count since boot 4B
Time Since Boot (0.1s increments) 4B

Eddystone EID

10 bytes

iBeacons with Xamarin.iOS

- CLLocationManager
- CLBeaconRegion
- CLBeacon

iBeacons with
Xamarin.iOS
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iBeacons with Xamarin.Android

- Low Level
- Nearby Messages API

https://developers.google.com/beacons/

- 3rd party SDK's:
  - Estimote SDK
    https://components.xamarin.com/view/estimotesdkandroid
  - Android Beacon Library (AltBeacon)
    https://components.xamarin.com/view/android-altbeacon-library
    https://github.com/AltBeacon/android-beacon-library

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iBeacon with UWP

- BluetoothLEAdvertisementWatcher

- BluetoothLEAdvertisementWatcherTrigger

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UWP
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Materiale su
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