

Table 2.2: Technical Specifications of the BLE Standard

Name	Description	Specification
Package Size	The size data packages that can be sent between devices	64-bit (min) 216-bit (max)
Transfer Rate	Typical rate of data transfer between devices	1 Mbps
Security	Data encrypted with "shared key"	128-bit AES
Latency	Time between start of transmission and data being transferred. (Aka network lag)	6 ms
Power Consumption	Power required join and operate on a piconet	0.01 W (min) 0.5 W (max)

The BLE GATT profile consists of 138 active service specifications that can be found on the official website of BSIG. Each service specification defines and specifies various sub-services and characteristics that focus on some specific application. Each characteristic forms a collection of values and descriptors that contain specific data in a specified format. Figure 2.3 gives an overview of the specification structure. Each step in the structure contains an Universal Unique Identifier (UUID), grants certain permissions and has a specified value. (Bluetooth® Service Specification)

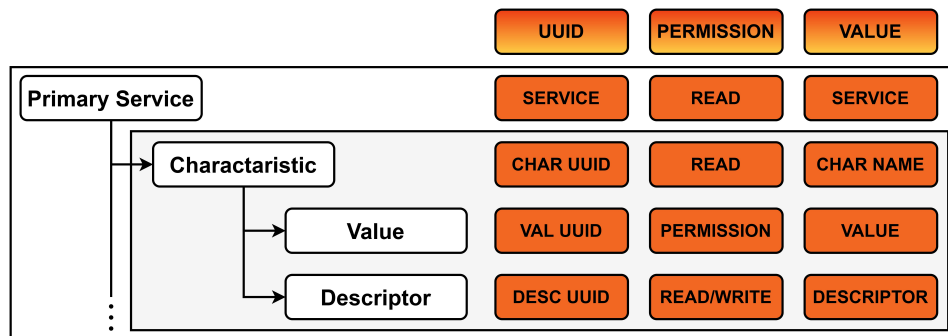


Figure 2.3: BLE Specification Structure

(Adapted from Townsend *et al.*, 2014, chap. 4)

When a connection with the Zwift application is established over BLE, the FTMS service is implemented for communicating with training platforms and was thus investigated in further detail.