# People BLE Protocol based on mmWave Platform v03.05

**Abstract:**
        This document dedicated description for BLE Protocol based on mmWave Platform
**Description:**
        The BLE Protocol structure includes two sections as followings,
        BLE Protocol: (more detail see Appendix A2 and A3)
        <FrameStructure> := <TitleSection> <DataSection> [<DataSection>]
        for example: one <FrameStructure> include only one <TitleSection> and
                        at least one <DataSection> per each Frame Period Time
**Appendix:**
(A1) Frame Period Time : 400 ms (based on mmWave board firmware v03.09)
(A2) <TitleSection>
//* syntax: h f F P T t
//* --------------------------------------------------------------------------

| //* Item | Name | Location | Length | Type | Description |
|------|------|----------|--------|------|-------------|
| //* 0 | h | 0 | 1 | '[' | Header (0x5B) |
| //* 1 | f | 1 2 3 4 5 6 | 6 | U8 array | "frame=" |
| //* 2 | F | 7 8 9 10 | 4 | U32 | FrameNumber |
| //* 3 | P | 11 12 13 14 15 16 17 | 7 | U8 array | "target=" |
| //* 4 | T | 18 | 1 | U8 | TargetNumber |
| //* 5 | t | 19 | 1 | ']' | End (0x5D) |

//* --------------------------------------------------------------------------
(A3) <DataSection>
//* syntax: h tid x y vx vy tid t
//* --------------------------------------------------------------------------

| //* Item | Name | Location | Length | Type | Description |
|------|------|----------|--------|------|-------------|
| //* 0 | h | 0 | 1 | '<' | Header (0x3C) |
| //* 1 | tid | 1 | 1 | U8 | TargetID |
| //* 2 | x | 2 3 4 5 | 4 | F32 | position x |
| //* 3 | y | 6 7 8 9 | 4 | F32 | position y |
| //* 4 | vx | 10 11 12 13 | 4 | F32 | velocity vx |
| //* 5 | vy | 14 15 16 17 | 4 | F32 | velocity vy |
| //* 6 | tid | 18 | 1 | U8 | TargetID(sameAsAbove) |
| //* 7 | t | 19 | 1 | '>' | Tail (0x3E) |

//* --------------------------------------------------------------------------
        Notes: type definition as followings,
        U8  := unsigned char      (1 bytes)
        U32 := unsigned long      (4 bytes in LittleEndian format)
        F32 := float              (4 bytes in LittleEndian format)
(A4) example on data logged in Real case