How to prepare DMI sensor with AU20 LiDAR System?

Prerequisites:

Hardware: AU20 LiDAR System
Software: CoPre2

Notes:

For a new setup AU20 LiDAR System with DMI sensor on vehicle, user need follow this FAQ to prepare three things:

1. Measure X, Y, Z direction values (by total station pr tape)

2. Measure vehicle wheel perimeter

3. Caculate DMI factor

Details please check below steps. When finished, user need send back above info to CHC

support team, and CHC support team will make a new .EP file to process data.

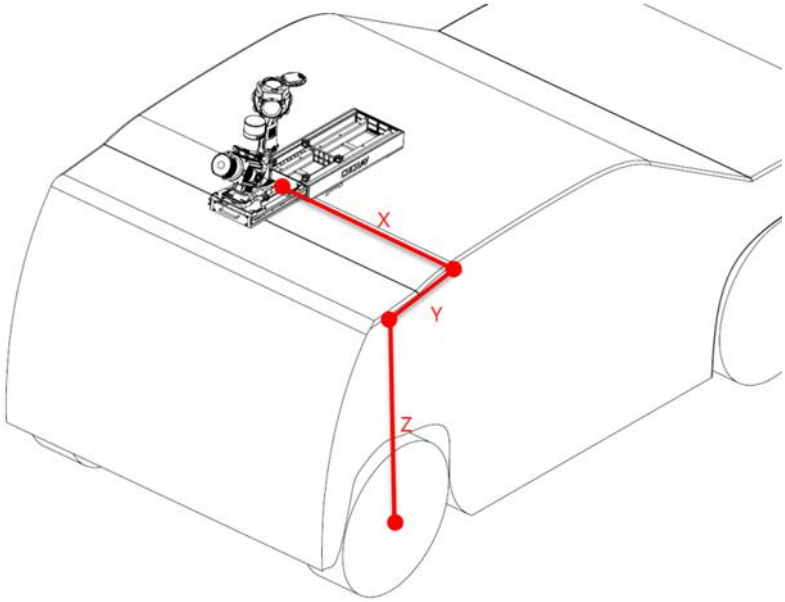
Steps:

➢ Measure X, Y, Z direction values

1. The reference point is on the corner of AP5, see below picture as an example.

2. Measure the offset from the reference point to the DMI as shown in below figure, and record it.

Note that the direction of the axes makes a difference between positive and negative values.



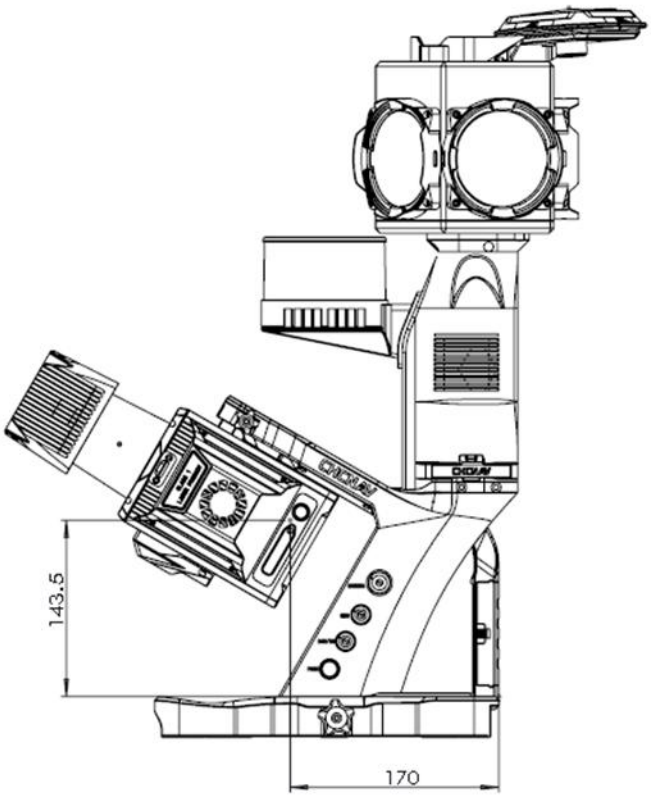
3. According to the offset from IMU to the reference point as shown in below figure, caculate the offset from IMU to the DMI sensor.

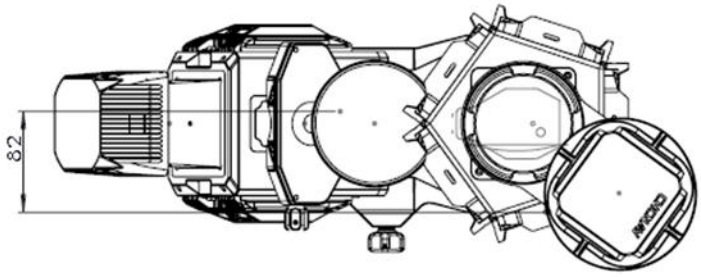
The offset from IMU to the reference point: X0=0.082m, Y0=0.170m, Z0=-0.1435m.

For example:

The offset from the reference point to the DMI sensor: X1=0.600m, Y1=-0.510m, Z1=-1.700m.

The offset from IMU to the DMI sensor: X=X0+X1=0.082+0.600=0.682m, Y=Y0+Y1=0.170+(-0.510)=-0.340m, Z=Z0+Z1=-0.1435+(-0.170)=-1.844m





➢ Measure vehicle wheel perimeter

User need measure wheel diameter. And then caculate wheel perimeter.

Perimeter=3.14*diameter.

➢ Caculate DMI factor

DMI factor=4096/wheel diameter.

Finally, send CHC support team X, Y, Z values & wheel diameter & DMI factor. We will prepare a new EP file to process data.

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