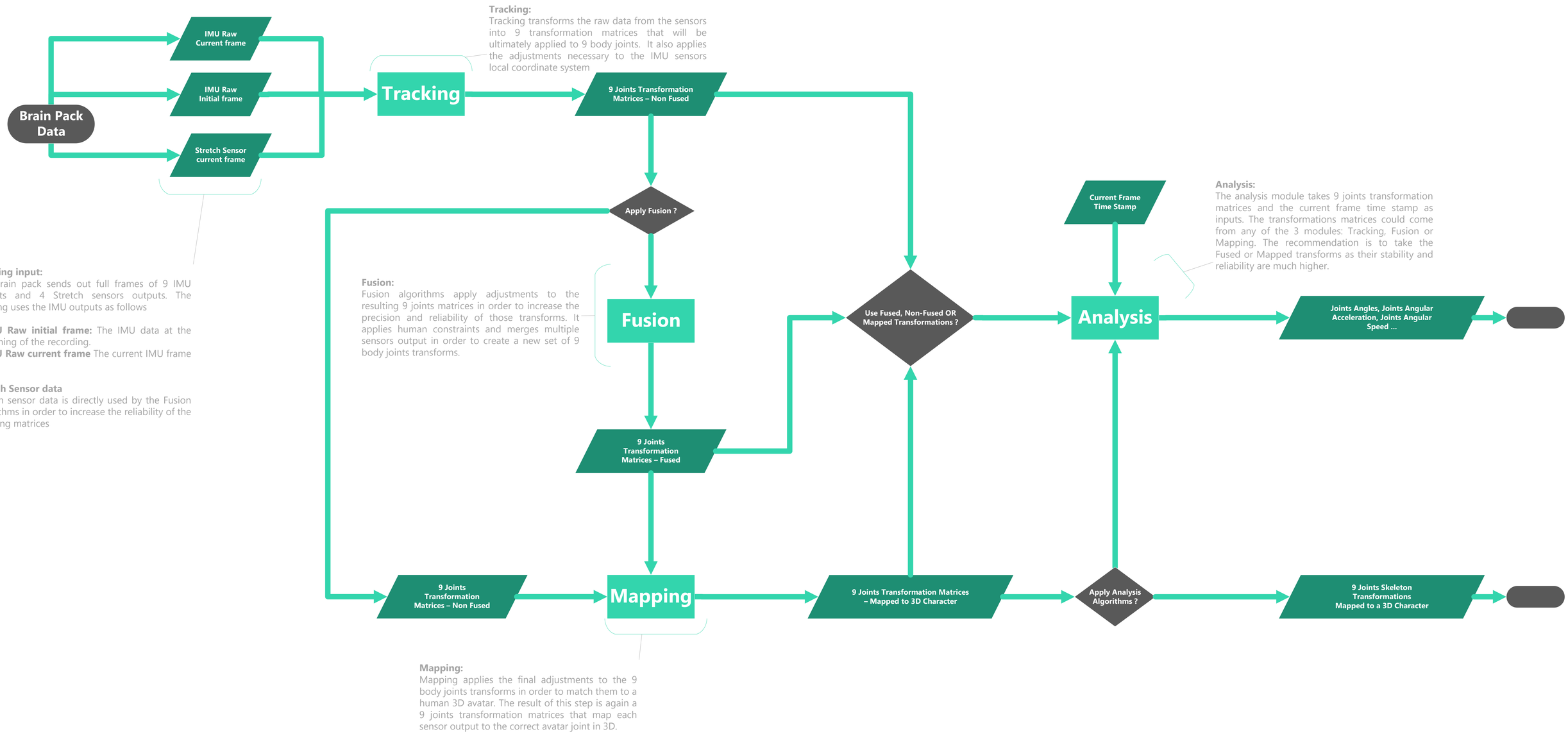

Tracking:
Tracking transforms the raw data from the sensors into 9 transformation matrices that will be ultimately applied to 9 body joints. It also applies the adjustments necessary to the IMU sensors local coordinate system

Tracking input:
The brain pack sends out full frames of 9 IMU outputs and 4 Stretch sensors outputs. The tracking uses the IMU outputs as follows

1-IMU Raw initial frame: The IMU data at the beginning of the recording.
2-IMU Raw current frame The current IMU frame data.

Stretch Sensor data
Stretch sensor data is directly used by the Fusion algorithms in order to increase the reliability of the resulting matrices

Fusion:
Fusion algorithms apply adjustments to the resulting 9 joints matrices in order to increase the precision and reliability of those transforms. It applies human constraints and merges multiple sensors output in order to create a new set of 9 body joints transforms.

Mapping:
Mapping applies the final adjustments to the 9 body joints transforms in order to match them to a human 3D avatar. The result of this step is again a 9 joints transformation matrices that map each sensor output to the correct avatar joint in 3D.

Analysis:
The analysis module takes 9 joints transformation matrices and the current frame time stamp as inputs. The transformations matrices could come from any of the 3 modules: Tracking, Fusion or Mapping. The recommendation is to take the Fused or Mapped transforms as their stability and reliability are much higher.