

Calypso and the 6 degrees of Freedom



The 6 degrees of Freedom are:

3 - Rotations

Rotation about the **Z** axis **S**Rotation about the **Y** axis **R**Rotation about the **X** axis **A**

3 - Translations <⇒>

Translation along the **Z** axis **Translation** along the **Y** axis **Translation** along the **X** axis

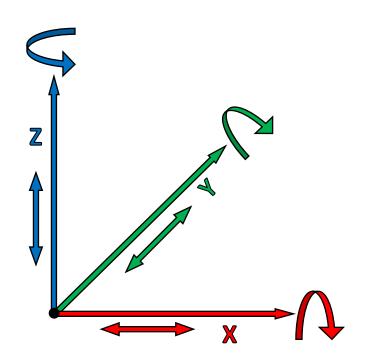
Alignments in Calypso have:

Rotation in Space - Locks in 2 Rotations **Planar Rotation** - Locks in 1 Rotation

X Origin - Locks in 1 Translation

Y Origin - Locks in 1 Translation

Z Origin - Locks in 1 Translation



Different feature types:

Lock in what degrees of freedom?
Can be used for what in an Alignment?

Planes:	Locks up to 2 Rotations and 1 Translation Can be used for Rotation in Space, Planar Rotation, X, Y, or Z Origin
Cylinders and Cones:	Locks up to 2 Rotations and 2 Translation Can be used for Rotation in Space, Planar Rotation, X, Y, or Z Origin
3d Lines: (Axis)	Locks up to 2 Rotations and 2 Translation Can be used for Rotation in Space, Planar Rotation, X, Y, or Z Origin
2d Lines: (on Surface)	Locks 1 Rotation and 1 Translation Can be used for a Planar Rotation, X, Y, or Z Origin
Circles: (Point Reducible)	Locks up to 2 Translation Can be used for an X, Y, or Z Origin
Points:	Locks up 1 Translation (along normal vector) Can be used for an X, Y, or Z Origin

Please Note: Prior to Calypso 2020 Rotation in Space was called Spatial Rotation