PI Hexapod

VATT (starting summer of 2017) Uses a PI hexapod to precisely position the secondary mirror.

PI Coordinate System

A full description of the coordinate system can be found here. I will summarize below.

Hierarchies

The PI coordinate systems for the hexapod are created in a hierarchy. Each higher level adding to the lower level. THe lower levels should be permanent when the mount and orientation has been properly characterized.

Each level also has different possible types which can be user defined or left as the PI default. You can read the details of those types in the coordinate system manual

the hierarcies are: {lower} → {higher} Leveling → Orientational → Operating

Leveling

Permanent corrections to the alignment of the hexapod

Orientational

permanent Rotation of the XYZ axes if necessary

Operating

Described in detail below with sub types.

Work-Tool Concepts

The cener of rotation always lies at the origin of the tool coordinate system.

Work Coordinate System:

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  X, Y and Z directions are always spacially fixed
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Tool Coordinate System:

> X, Y and Z directions are prermanently connected to the moving
> platform of the hexapod ie it moves with the platform.

Operating Coordinate System

> The operating coordinate system is the "highest level"
> meaning it inherits properties from the lower
> level coordinate systems ie Orientational and Leveling
> The operating coordinate system has two Types KSD and KSF

KSD:

> The work and the Tool coordinate systems are aligned
> at ZERO position only

KSF

> The Work and the tool coordinate systems are aligned
> at the current position of the platform. Work Coordinate
> system stays at that position for any future moves ie
> you can move the work coordinate system away from
> the zero point to the current position.

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