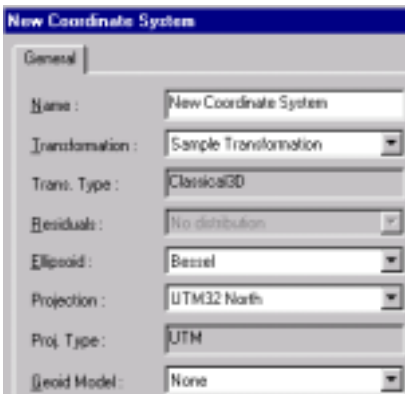


Co-ordinate Systems in SKI-Pro

Newsletter No. 21 detailed how co-ordinates are actually converted between the different co-ordinate types. This newsletter describes how to create a **Co-ordinate System** and how a Co-ordinate System is used within SKI-Pro.

What is a Co-ordinate System?

A Co-ordinate System itself is simply the definition of up to four elements used to convert between the different co-ordinate types. These elements are the **Transformation**, an **Ellipsoid**, a **Map Projection** and **Geoid Model** (geoid models will be covered in detail in a future newsletter).



These elements can be specified when creating a Co-ordinate System in the **Co-ordinate System Management** component of SKI-Pro.

Note, there may be certain dependencies between the elements. For example, some customised map projections have a fixed ellipsoid; or the transformation may already specify the ellipsoid, or as described in Newsletter No. 21, a **One-Step Transformation** does not even require an ellipsoid or a map projection.

The big advantage of using a Co-ordinate System is that

you only have to select the Co-ordinate System itself and not all the individual elements. This applies when using a Co-ordinate System on the sensor, attaching a Co-ordinate System to a SKI-Pro Project or during ASCII or GIS\CAD export in SKI-Pro.

What does a Co-ordinate System do?

The Co-ordinate System allows the conversion of co-ordinates from **WGS84** co-ordinates (Cartesian or Geodetic) to **Local** co-ordinates (Cartesian, Geodetic or Grid) and back. Of course, the co-ordinate values that are computed depend on the elements defined with the co-ordinate System.

In Newsletter No. 8, it was described how one Co-ordinate System is always active and attached to a job on the sensor, even if it is the **WGS84 Co-ordinate System**. The same is true for SKI-Pro, there is always one co-ordinate system attached to a SKI-Pro project (again it could be simply the WGS84 Co-ordinate System which is the default when you create a new project).

If only the WGS84 Coordinate System is attached to a project, no conversion between WGS84 and Local co-ordinates is possible. If a Co-ordinate System other than the WGS84 is attached, it is then possible to convert between WGS84 and local co-ordinates in both directions.

Projects and Co-ordinate Systems

Co-ordinate Systems can be attached to a project in one of the following ways:

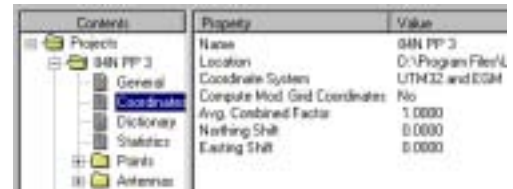
1. During the import of surveyed data (if a co-ordinate system was used in the field).

2. Whilst manually creating a new project.

3. After having computed a transformation in Datum/Map.

It is also simple to change the co-ordinate system that is attached to a project. Within **Project Management**, you can “in-line edit” the Co-ordinate System in the report view, or click to view the Properties of a project and change the Co-ordinate System within the Co-ordinates tab view. Note, that the project does not have to be closed to change the attached Co-ordinate System.

When a project is open, the



Status Bar at the bottom of the screen shows which Co-ordinate System is currently attached to a Project.



Note that in SKI-Pro, all co-ordinate systems are stored separately from the projects. This is why it is not included when a project is transferred using Sensor Transfer or if a project is registered from another drive.

Remember

- A Co-ordinate System is the definition of the elements which are used to convert co-ordinates between the different co-ordinate types.
- There is always one Co-ordinate System attached to a Project.
- The Co-ordinate System attached to a Project can be changed – even when the Project is open.