Survey and Spatial New Zealand CADASTRAL

CADASTRAL CORNER

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EQUIPMENT TYPES IN A CSD

As discussed in the November 2019 Landwrap article, the type of equipment used to undertake an observation must be recorded in a CSD. The equipment is described in the survey report and the specific type used is captured against the relevant vector in the Landonline Vector Capture screen.

Equipment type is required to assist in error analysis (least squares/prevalidation) and is also useful for others if they need to evaluate specific observations. For example, why does an old mark not fit mathematically when there is no evidence of physical disturbance? Knowing the equipment used to measure existing vectors can help assess the potential for error in the previous measurements.

Capture of equipment type was mandated by standard 4.2 of the Standard for lodgement of cadastral survey datasets in 2013, and the Cadastral Survey Rules 2021 (CSR 2021) now state the equipment requirements in rules 72 and 78(d).

You may have noticed the two amendments in a recent Landonline release that updated the drop-down selections available for equipment type:

- GPS has been updated to GNSS
- Theodolite/EDM has been updated to Total Station

These have been amended to better represent today's situation however please note that the least squares adjustments are evaluated in the same manner.

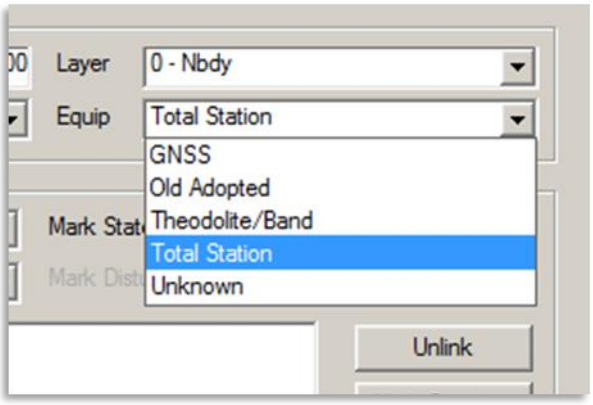

Figure 1: Equipment type options

Other drop-down options include

- Theodolite/band
- Unknown
- Old adopted

You may be interested to know the difference between Unknown and Old Adopted.

Unknown is used for calculated or adopted vectors when it is uncertain how the measurement was derived.

Old Adopted is a rarer option used where the adoptions do not fit the current accuracies and you know they were derived from older survey equipment – for example, *Gunter's chain and* vernier theodolite (or perhaps some scaled distances). Old Adopted is a method to slightly down-weight the adoptions and help allow better testing of the remaining vectors. Generally, this option is not selected for adoptions that meet the current accuracies.

For further information see:

KB 941 - GNSS vectors
KB 935 - Reporting on equipment