

# ALMA Science

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## What are the restrictions on multiple spectral setups within a single science goal?

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Only one spectral setup is allowed per Science Goal. A spectral setup is defined as a combination of an observing mode (spectral line/continuum/spectral scan), a polarisation option (XX, Dual, Full), and a set of user-input frequencies that determine the arrangement of basebands and spectral windows.

For each spectral setup, up to 5 frequency tunings are allowed, and all must fall into the same ALMA receiver band. The individual tunings are either created such that they cover a frequency range entered as part of a spectral scan, or as a spectral line setup that contains sources with different velocities. In the latter case, the OT has an algorithm that tries to determine the smallest number of tunings required to observe all sources - if this is greater than 5, a validation warning will be produced. The line width entered in the Source Properties in the Field Setup editor is used when deciding whether two sources can share the same tuning.