

EM Technical Note

Sector coverage and beam spacing modes for multibeam echosounders



KONGSBERG

EM Feature Explanation

Why is beam spacing important in multibeam surveying?

In order to guarantee controlled, dense and accurate soundings our EM multibeam echosounders are capable of maintaining high sounding densities with very close spacing even in deep waters, which is also possible due to the use of multi-sectors active yaw, pitch and roll stabilization, together with dynamically altering angular sectors; all performed in real time.

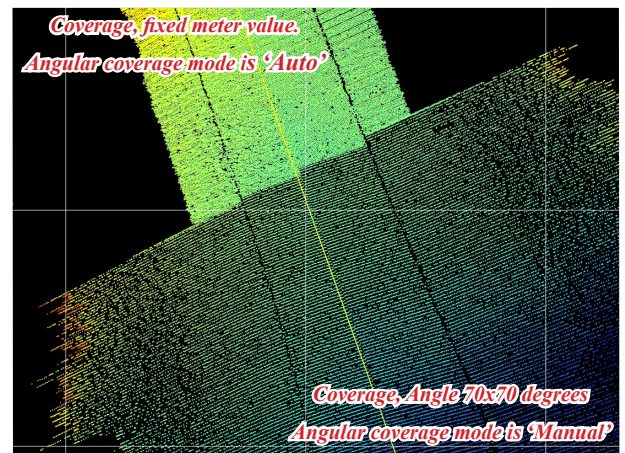
What do we need to know about Sector Coverage?

The **Angular Coverage mode** is located in the *Sounder Main* tab of the *Runtime Parameters* window in the *Kongsberg SIS* software.

Choose between **MANUAL** and **AUTO**.

- **Manual:** If Angular Coverage is set to 'Manual', the values defined as Max port and starboard angle above (in degrees) are used directly. The Max coverage port and starboard settings (in meters) are not used in this case. Be aware that the outermost beams may be lost if the angular coverage set is larger than the coverage capability at the current depth.

- **Auto:** If Angular Coverage is set to 'Auto', the maximum coverage (in meters) and the maximum angles will set the swathwidth limit. The most limiting of the two criteria will be used. If the system is not able to fulfil the above, it will reduce the swath width further and as a consequence nearly all the beams will be valid. You may observe this in the Numerical display of the SIS software, as the numbers of beams accepted should almost equal to the number of beams available.

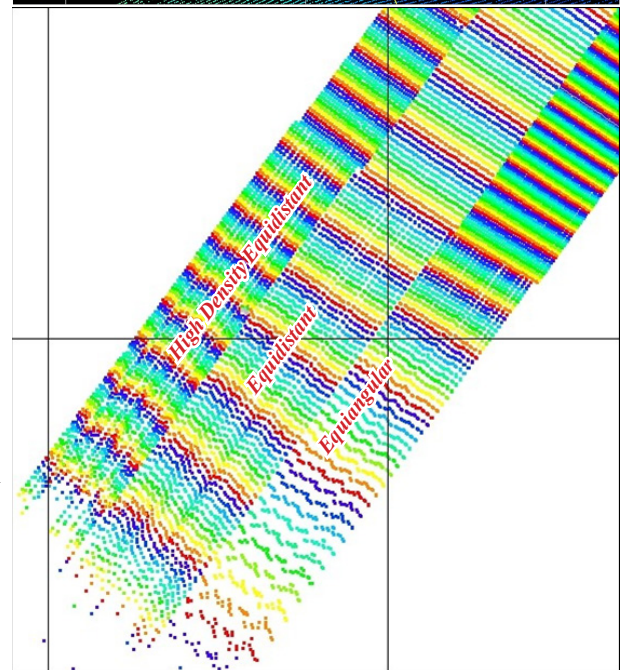


The beam spacing options in SIS

The **Beam Spacing** function is located in the *Sounder Main* tab of the *Runtime Parameters* window in the *Kongsberg SIS* software.

Depending on the purpose of the survey, you may define the distribution of the beams on the seafloor.

- **Equidistant:** The beam angles are adjusted to give a equal meter distance between depth points on the seafloor.
- **Equiangle:** All beams have an equal angular spacing. This gives many soundings close to the centre of the survey line, and few on the edge of the swath.
- **High Density Equidistant:** In this mode there are several soundings per beam. Beam angles are adjusted to give equal meter distance between all soundings.



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