

TargetPro

In TargetPro there is now an option to use navigation from an Isis Coverage Map when generating a contact. Coverage map navigation is used to solve the position differences that exist between contacts generated using the unprocessed XTF navigation and the processed navigation used to compute the mosaic.

NOTE: This feature can only be used when a coverage map has been generated in Isis and the “Use Nav from Coverage Map” option is checked in the Triton Mosaic window during mosaic processing. The box is now checked by default when creating a mosaic using Isis.

Background

Target, and later TargetPro were originally conceived as “Real-Time” applications; meaning that they were an add-on to Isis that could be used during an XTF logging session to grab targets directly from the Isis waterfall while the data were being logged. Given that the typical size of the Target or Contact was only few meter in size this limited the number of navigation updates that were available to compute accurate positions from the TargetPro imagery, at normal survey speeds only a few navigation updates (<10) were available for processing. It was also found that the use of any type of heading sensor typically found in a sidescan towfish gives very unpredictable results because these sensors are magnetic and prone to large errors (anything between 5 and 40 degs). At normal sidescan sonar ranges this represents a large error in the computed position of an object on the seabed. It has been shown that under most conditions a better solution is to compute heading from Course Made Good (CMG). CMG is also now the default setting in TargetPro.

Initially some work was done to improve the nav processing in TargetPro – including a better estimate of heading from CMG, this gave an improvement, but with some types of navigation (especially acoustic towfish tracking) with slow updates and erratic positions the results could sometime be a long way off.

Solution

It was decided to solve the problem by having TargetPro use the same navigation that was used for the creation of the mosaic. The information is available when the navigation is processed in the Isis Coverage Map and the processed nav is saved as an ASCII text file. There is a new check box and browse button in the TargetPro configuration dialog so the user can select the text file. Tests have shown that the processed navigation file can be generated relatively quickly for even quite large (50GB) data sets, and also that the search routines in TargetPro to find the correct position within that file are very quick. There may be some room for optimization. If the file or the part of the file that TargetPro needs cannot be found TargetPro reverts to using the XTF navigation after a warning to the user.