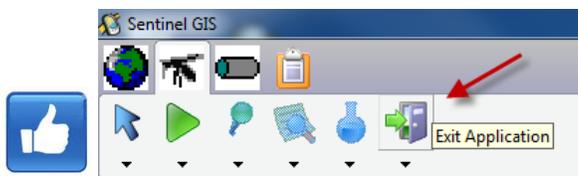


## Reason

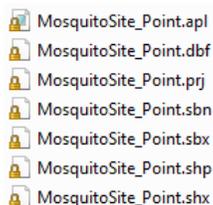
Sentinel GIS mobile tools record data into Esri shapefiles. These shapefiles are downloaded from the mobile device, and then merged into the Sentinel GIS geodatabase. During the DataLink Merge operation, occasionally an error occurs because a shapefile has been corrupted. The error message may be “Unable to open source feature class...” or “ERROR HRESULT E\_FAIL has been returned from a call to a com component” or “the index passed was not within the valid range.” All these errors indicate a possible shapefile corruption.

Shapefile corruption may be caused by:

- Exiting ArcPad improperly, e.g. using the red “X” button to close the application on a Windows tablet or laptop while data collection is occurring, rather than using the Sentinel GIS “Exit” button. This is particularly the case with Sentinel Adulticiding, which is often in the process of recording spray records when the “X” button is clicked, resulting in shapefile corruption.



- ArcPad crashing or locking up during data collection, requiring a reset.
- Battery going completely dead during data collection.
- File transfer being interrupted, resulting in a partial shapefile being transferred. A shapefile is a collection of files, so if there is a mismatch between parts of the shapefile, it could be corrupted. *Please note this does not occur with DataLink GIS v4.0, because it checks whether the shapefile is complete before finishing the transfer.*



- Portions of the shapefile being moved, renamed, or deleted.

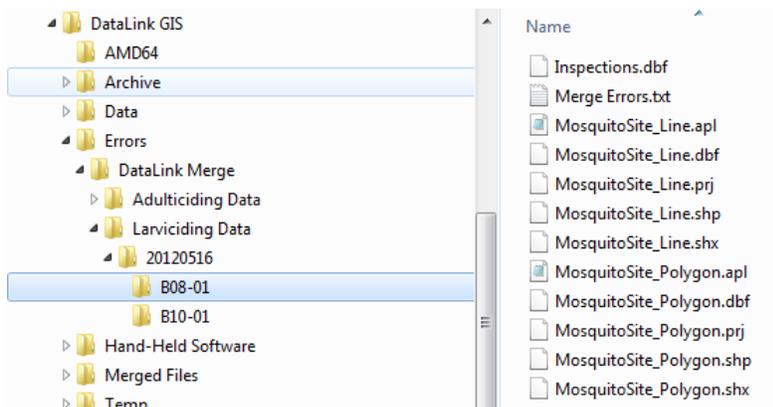
A shapefile must contain at least a .dbf, .shp, and .shx to be valid. The number of records in the .dbf and .shp must match. The .shx index file ties the shapes to the table records.

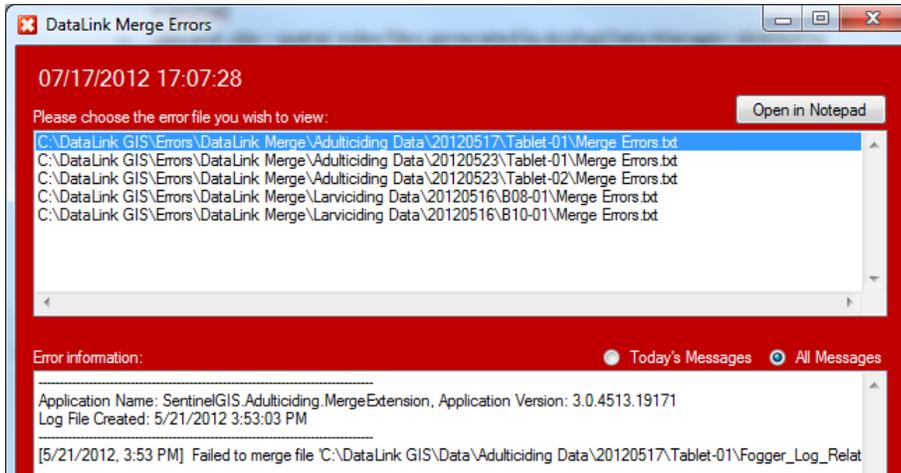
- .apl – ArcPad Layer file; contains symbology and form definitions for use in ArcPad; generated by ArcPad Data Manager
- .dbf – table; contains data records for features
- .prj – projection file; contains coordinate system and projection information for display in ArcPad
- .sbn and .sbx – spatial index files; generated by ArcPad Data Manager; deleted by ArcPad when editing occurs
- .shp – shape records; contains spatial information for features
- .shx – shape index file; contains index between .dbf and .shp

There are other reasons that Merge may fail. These include:

- Unable to locate the geodatabase feature class to merge data to. This could occur if the geodatabase is moved or renamed, or if the network path to the geodatabase is unavailable.
- Data source is unconfigured in the SCM.config file.
- Unable to acquire an edit lock on the geodatabase. This occurs if someone is already editing the geodatabase (unless a multi-editor SDE geodatabase is in use).

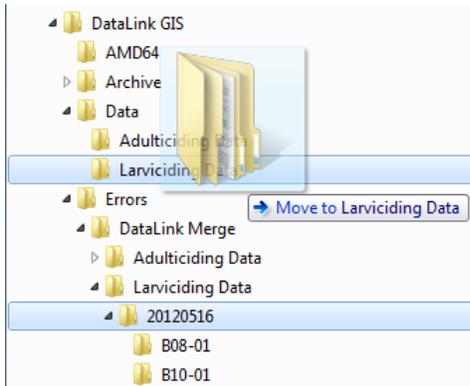
Whatever the reason for the merge failure, the offending data folder(s) are moved to the DataLink GIS “Errors” path, and the Merge Errors window displays at the conclusion of the Merge process.



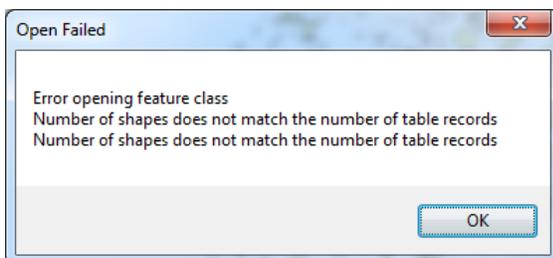


### Solution

First, look at the error message, either in the “DataLink Merge Errors” program or in the DataLink GIS Logs, to see if you can determine the cause of the merge error. If it looks like the cause is something other than shapefile corruption, rectify the issue, then move the data folder back into the DataLink GIS “Data” folder and re-merge.

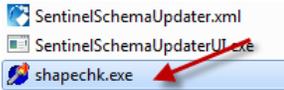


If the log messages seem to indicate shapefile corruption, this can be confirmed by attempting to preview the shapefile using ArcCatalog. If the following message occurs when the file is previewed, the shapefile is corrupt.

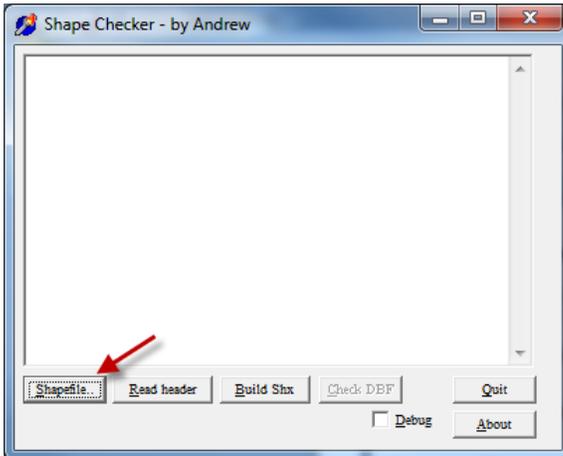


To repair the shapefile:

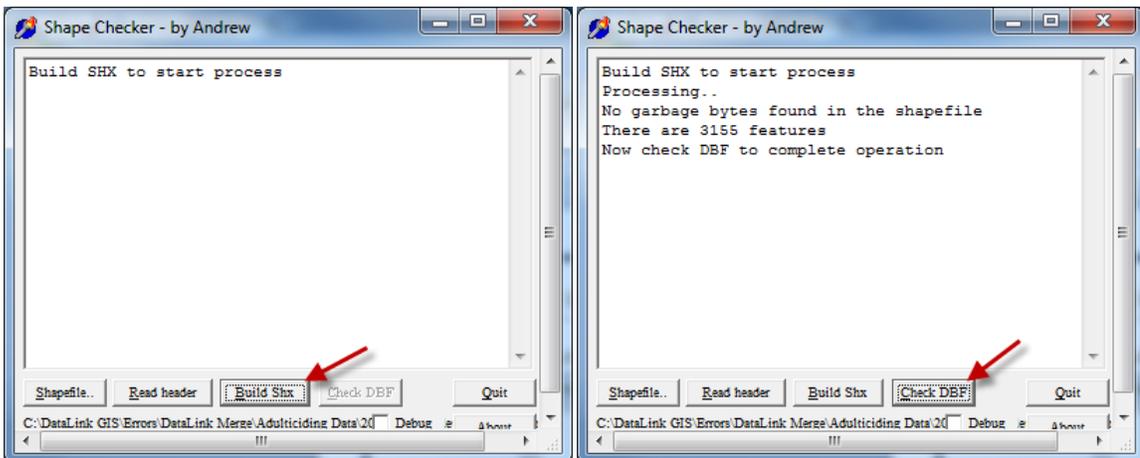
1. Open the Shapefile Repair Utility, **shapechk.exe**, found in the DataLink GIS “Home” path.



2. Press the “Shapefile” button and browse to the broken shapefile.



3. Follow the instructions on the screen to repair the shapefile.



4. Close the shapefile repair utility and ArcCatalog.
5. Run Merge again. Note – it is not necessary to move the repaired shapefile back to the “Data” folder – DataLink Merge will see that the file has been modified and will attempt to merge it again.

