

## Pre-Survey

- Create or Open Project
  - File -> Project Manager -> Open Existing or Create New Project
- Define Geodetic Parameters
  - Preparation -> Geodetic Parameters
- Configure Hardware
  - Preparation -> Hypack Hardware
  - Add Devices -> Select what data you want from Device
    - GPS NMEA 0183
      - Position
      - Speed
      - Use only GGA and VTG under advanced set-up tab
    - Depth Sounder: NMEA 0183
      - Depth
  - Define Connection Parameters
  - Test
  - Define Offsets
    - No Offset for NMEA 0183 if it is directly above the transducer
    - Positive Z offset for Sonarmite Echosounder (bottom of transducer to water surface)
- Plan Survey
  - Import Background File
    - Right click on Background Files -> Add File and Copy
  - Create Border
    - Preparation -> Editors -> Border Editor
      - Create Border around Survey Area
      - Right Click inside of Border
  - Create Matrix
    - Preparation -> Editors -> Matrix Editor
      - Size Matrix to encompass Survey Area
      - Change Cell Width and Height to resolution wanted
  - Create Planned Lines
    - Preparation -> Editors -> Line Editor
      - Define First Line -> Offsets -> Offset lines to cover survey area
    - Clip Lines to Border (if used)
      - Select Clip -> Load Border File
  - Mark Targets (if needed)
    - Preparation -> Editors -> Target Editor
    - You can double click on your Map while surveying to mark targets

## Survey

- **Click Survey**

- Load Matrix
  - Matrix -> Load -> Select MTX File
- Load Lines
  - Line -> Select File -> Select Line File you want to run
- Use Hotkey Commands
  - Ctrl+S
    - Start Logging
  - Ctrl+E
    - End Logging (automatically goes to next line)
  - Ctrl+I
    - Increment ahead one Line
  - Ctrl+D
    - Decrement to Previous Line
  - Ctrl+W
    - Swap Travel Direction of Line
- Collect Survey Data

## Post Processing

- Create Tide File
  - Processing -> Tides -> Manual Tides
    - Enter Time & Tide values
    - OR download a NOAA Tide File
- Create SV File (if SV cast was done)
  - Processing -> Sound Velocity -> Sound Velocity
    - Enter Depth
    - Enter Velocity Value
- Import RAW Files into Single Beam Editor
  - Processing -> Single Beam Editor
  - File -> Open
    - Select Log File
    - Select RAW Files you want to Process
    - Load Tide File
    - Load SV File
    - Check Device Selections and Offsets
- Clean Data
  - Click Right Arrow to Move to Next Line
  - Right click in Echogram to change display settings
  - Use eraser or delete above/below line to clean out bad points
  - Select to interpolate OR delete removed depths
- Save Each Line as EDT File when Clean
  - File -> Save
- Save XYZ Files
  - File -> Save to XYZ
- Bin (thin) Data in Mapper
  - Processing -> Sounding Selection -> Mapper
  - Open Matrix
    - File -> Open Matrix
      - Do not load soundings from Matrix
      - Select Survey Depth
      - Add Soundings to Matrix
      - Update with XYZ File (In Sort Folder)
  - Select Soundings to Use
    - Options -> Data Selection

- Need to Negate all Z Values IF going into AutoCAD
  - Save Binned Soundings to XYZ
    - File -> Save Soundings -> Save XYZ Format
- Bring XYZ into TIN Model
  - Final Products -> TIN Model
  - File -> New -> Input File -> Select XYZ
  - Change Color Band
    - Modify -> Colors
  - Generate Model
    - Either 2D or 3D
  - Export to DXF (or other file)
    - Export ->DXF
      - Choose export type
      - Check Solid Area and Contours for color coded Fill Area with contours
      - Define Contour Step and Attributes
      - Check Show Picture and Define output file
      - Export
- Create Plotting Sheet
  - Preparation -> Editors -> Plotting Sheet Editor
  - Resize Sheet around Survey Area (leave a decent buffer zone)
- Create Map in Hyplot
  - Final Products -> Hyplot -> Select Plotting Sheet
  - Select what you want to display using Folder Trees to the left
  - Add Information to your map
    - Settings -> Control Panel
- Print/Save/Export Map
  - File -> Print
  - File -> Save (for later editing)
  - File -> Export -> Select needed format