Converting RAW data into HAC format using HERMES

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Objective

In this tutorial, you will learn how to convert hydro-acoustic data in Simrad .raw format into HAC international format (McQuinn *et al.*, 2005).

Software requirements

In this tutorial, you will need :
- Simrad EK80 software, and some raw data files.
- Hermes software. Hermes can be freely downloaded on that website.

Principle

The raw files will be replayed using the Simrad EK80 software in server mode, in order to broadcast the raw datagrams. The Hermes software will be connected to the EK80 software to retrieve the raw datagrams and convert them into hac files.

Procedure

Step 1: setting up the softwares

- In the EK80 software :
  - select « replay mode » in the « Operation » tab. Select the raw files that you want to convert into HAC format ;
- In the Hermes software :
  - in the « Fichiers » menu, click on « Préférences » and select « English »;
  - click on "super user" in the File menu;
  - load or create an HERMES configuration corresponding to the acoustic instruments and settings used to generate the raw files (see the help in the "?" menu for details);
  - in the "record" tab: enter the date of the start of the survey in the "start date" field and the path where to save HAC files in the "Root folder" field. A "RUNXXX" folder will be created in this folder for each day of the survey since the "start date".
  - Enter the computer IP address in the following HERMES tabs:
    - Hardware\sounder\IP address
    - Acquisition\network settings (click on the small hand above the sounder name)
    - Broadcast\broadcast settings (click on the small hand above the sounder name)

Step 2: replaying and broadcasting raw data

- In the Hermes software "Hardware" tab, click on "Sounders/EK80", and then on the "connect" button to connect Hermes to the EK80 server;
  - A new 'Gestion des sondeurs' window will pop up, it should display a message saying that the connection is OK. If not, check the IP addresses in Hermes and EK80.
- In the 'Gestion des sondeurs' window, set the 'ActivePingStartStop' and 'ReloadBeamConfiguration' parameters to "false" (cf. figure 1)

- In the Hermes "Configuration" menu, click on "valid all" and answer "OK" or "no" in the eventual pop up windows

Step 3: recording HAC data

- Replay at least one ping in each EK80 channel
- Click on the "start emission" button in Hermes. (green triangle in the top left corner), a pop up "Hermes, acquisition monitoring" window will open
- Click on the "play" button in the EK80 software to replay raw files at full speed
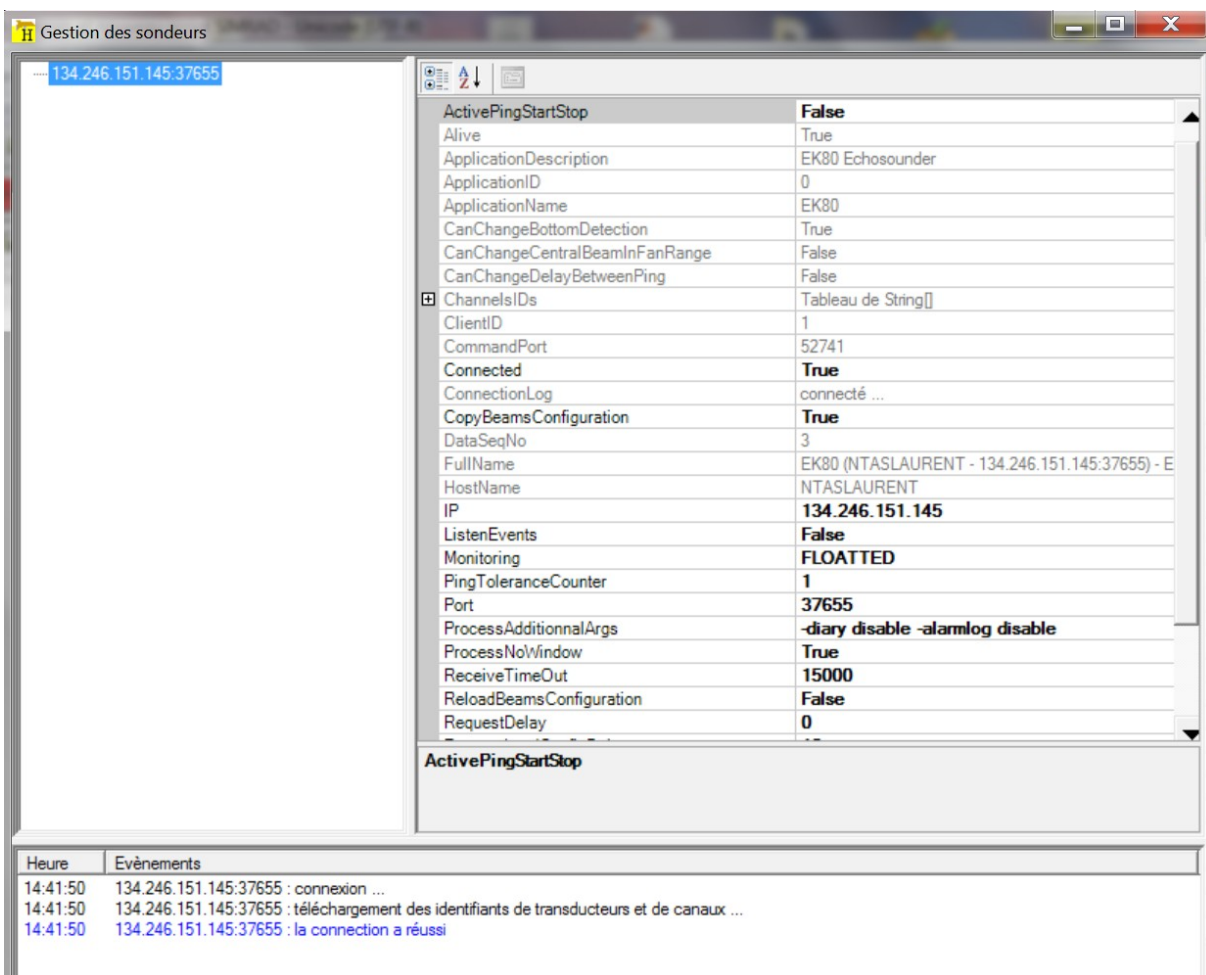- Check that the archiving is OK in the "Hermes, acquisition monitoring" window.

Figure 1: "Echosounder monitoring window"

References

McQuinn, I. H., Reid, D. G., Berger, L., Diner, N., Heatley, D., Higginbottom, I., Andersen, L. N., et al. 2005. Description of the ICES HAC standard data exchange format, version 1.60. ICES Coop. Res. Rep., 278: 86.