Title : Data Description for Supporting Information

1. Data Collection and Preprocessing

- Recording settings :

- Sampling frequency: 24 kHz
- System gain: 12 dB
- High-pass filter: 40 Hz cutoff (hardware)
- Raw storage: Acoustic recordings were stored as one WAV file every 10 minutes, yielding a total of 1,572 files.

2. Preprocessing Pipeline

- Spectrogram generation :

- Window type: Hamming window (1 second length, 50% overlap)
- FFT applied with 1 Hz frequency resolution
- Spectrogram features: Time-frequency representations (Short-Time Fourier Transform, STFT) were derived for visualization and classification.

- Transform spectrogram to image :

- Spectrograms were converted into images with values scaled to the range 0-255, and reshaped into size (224, 224, 3) for model input.
- From the generated spectrograms, data were segmented at 1-second intervals within the 0-1000 Hz frequency range

- Data types :

- The dataset includes signals from 21 ships, consisting of cargo, tankers, and container ships.

3. Raw Data Availability

All raw acoustic recordings are stored locally at [Your Lab / Institution].
Due to file size limitations, only pre-processed spectrogram data and representative samples are provided within the Supporting Information files.
The complete raw dataset is available from the corresponding author upon reasonable request.