

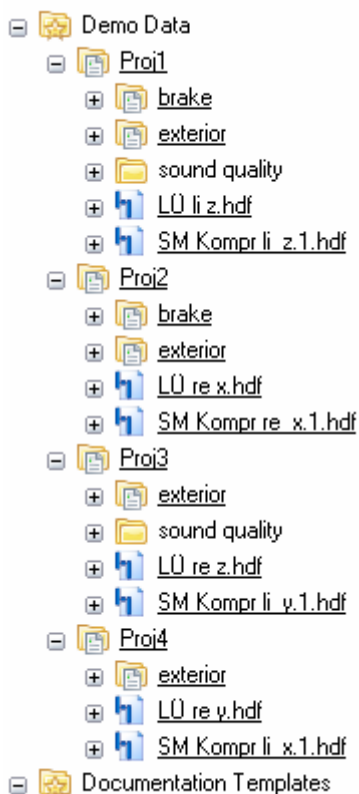
## Using the HEAD Data Portal

The HEAD Data Portal provides you with a convenient way to access to your data. Thanks to its great flexibility, you can use the HEAD Data Portal in exactly the way that fits you, your task and your data.

The first chapter of this Application Note describes an application example, which uses the example data provided on the Setup DVD. If you have copied these example data to your computer and indexed<sup>1</sup> them, you can follow the example on your PC.

The subsequent section “Simple Data Viewing” explains which functionalities of the Data Portal can be used immediately for viewing your own data, without the necessity to install an SQL server first.

### Data Structure



The example data are stored in four project folders with similar data structures. You can display these folders in the Desktop Navigator in the left part of the HEAD Data Portal interface.

The HEAD Data Portal automatically creates what is called inherent documentation, e.g. for HDF files, which is linked to a file or a file component. This documentation contains technical information about the file, such as channel names, number of channels and measurement units. For the majority of example data, additional user documentation has been created and saved. This type of documentation is either attached directly to a file or to a folder. You can recognize user documentation, for example, by the fact that the names of the files/folders are underlined (see figure 1). The example data not only contain time domain signals, but also analysis results of these signals (e.g. FFT spectra or loudness analyses) created and saved with ArtemiS.

Based on the stored documentation (user documentation and inherent documentation), you can perform a search in order to compile specific data.

In this application example, we want to find the results of the specific loudness analysis of all coast-down recordings made with a BHM (binaural head microphone).

Figure 1: Data structure of the example data

<sup>1</sup> For indexing the data, an SQL server is required – see last chapter of this Application Note “Copying and Indexing the Example Data”.

## Data Search

In order to find the desired data, open a search dialog by clicking on the magnifying glass icon. Once opened, the search dialog first allows you to enter a search term, which will be searched for in all text fields of the inherent documentation and the user documentation. By clicking on “Show more options”, you can refine the search. The search dialog then offers the additional possibility to enter different search terms for file names, folders and file types in the “File System” area. Furthermore, the “Field Search” area allows you to search for specific information in the user documentation and in the inherent documentation. In our application example, we will use the search settings shown in figure 2.

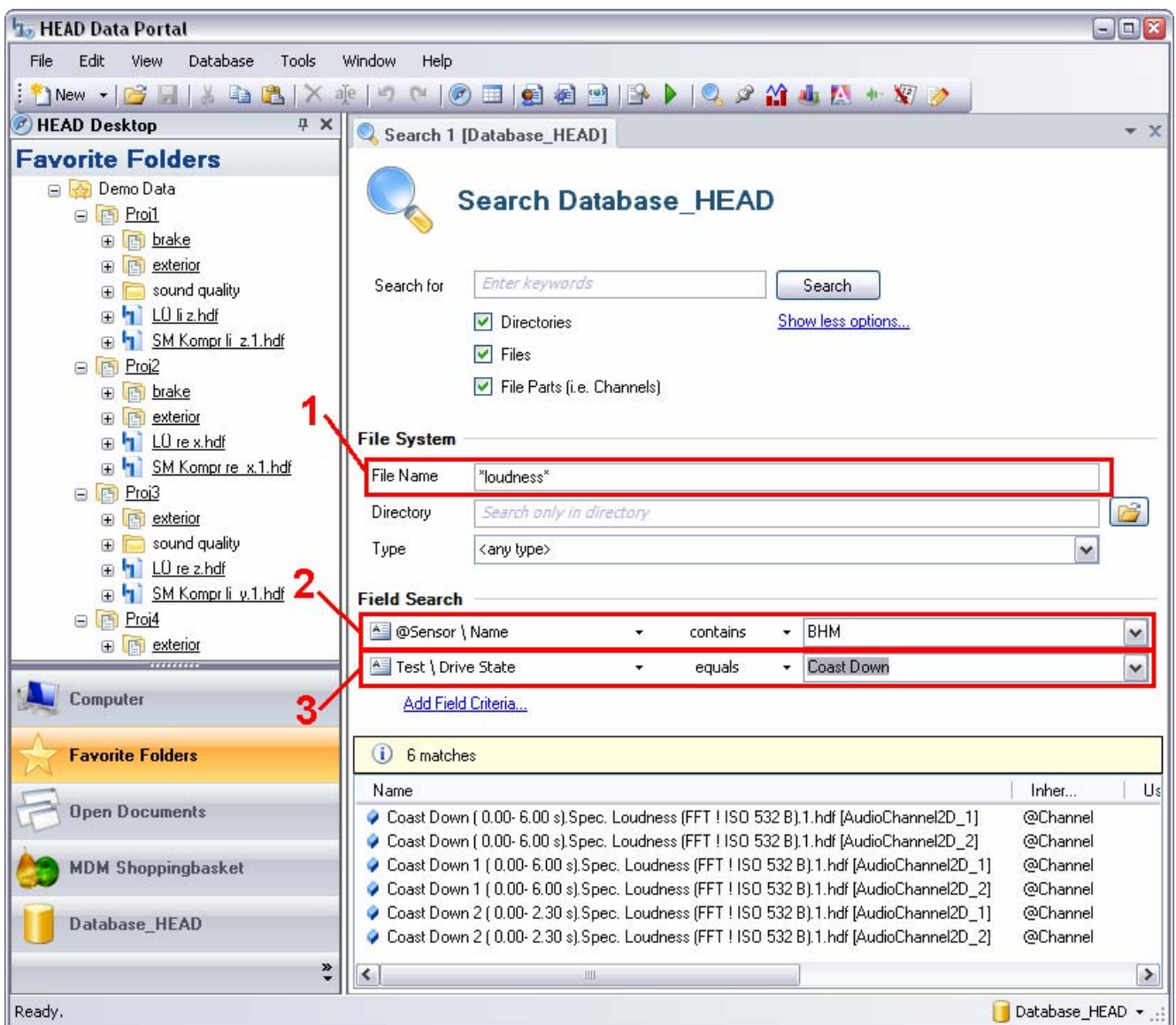


Figure 2: Search function in the HEAD Data Portal

For the search described above, the search dialog must be filled in as follows:

- 1) To restrict the search to files containing results of loudness analyses, you can enter, for example, the term “\*loudness\*” in the “File Name” field. The asterisks (wildcards) make sure that file names containing additional characters before or after the actual search term are included as well.<sup>2</sup>
- 2) With the second criterion, we want to find all files recorded with a BHM sensor. To achieve this, select the sensor name as a search criterion in the “Field Search” area. This information belongs to the inherent documentation, which is generated automatically for all audio files, and can be found in the “@Sensor” category (see figure 3).

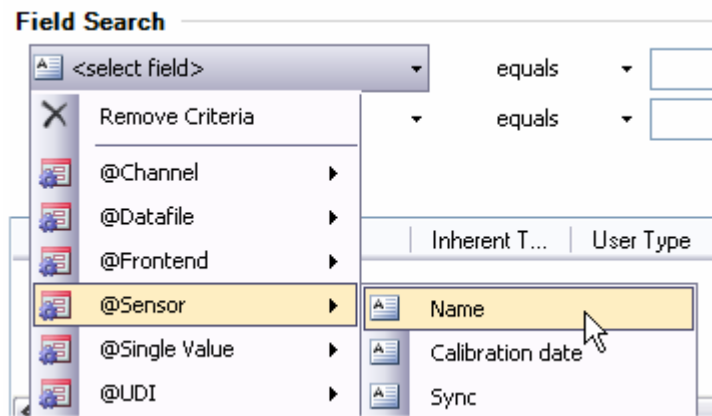


Figure 3: Selecting the sensor name as a search criterion

In the field on the right, you can then enter the text “BHM”. In order to find not only channels containing exactly the string “BHM”, but also text like “BHMleft” or “BHMright”, the operator must be changed from “equals” to “contains”. Click on “equals” to open a drop-down list, where you can select the new operator (see figure 4).

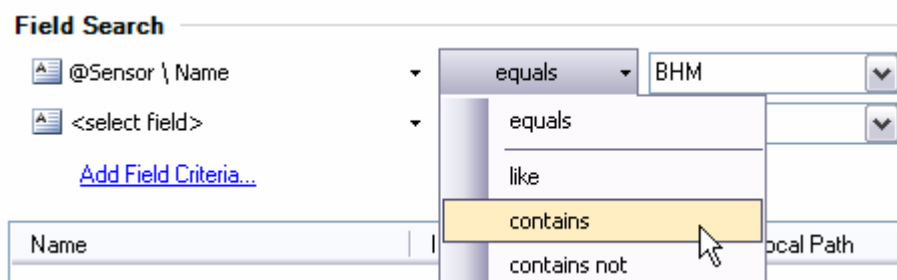


Figure 4: Changing the operator

- 3) The third criterion further restricts the search to files containing a coast-down recording. The custom user documentation created for the example data contains information about the

<sup>2</sup> The results of a loudness analysis can also be found via a search for files containing channels with the unit „some GF/Bark“. For demonstration purposes, a different search approach has been chosen here.

driving state during the recording in the field "Test \ Drive State". After selecting the corresponding entry in the left field, you can select the desired option from the list of available driving states in the right field (see figure 5).

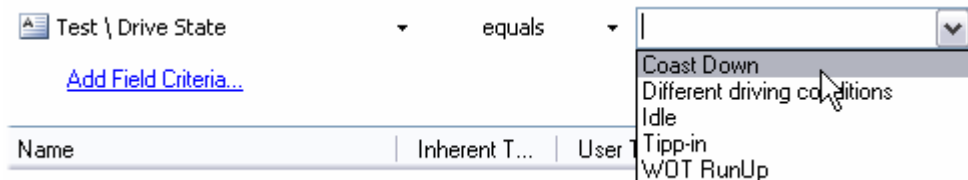




Figure 5: Selecting the driving state to be searched for

Now you can start the search by clicking on the "Search" button. The data matching the specified search criteria are shown at the bottom in the "Search Results" field. These results can be viewed and analyzed in a number of ways. Furthermore, you can play back the audio signals found using the built-in player of the HEAD Data Portal.

### Display and Statistical Evaluation of Search Results

To view the results, open a Data Viewer by clicking on the corresponding icon , select one or several files from the results list in the search window and drag them onto the desired diagram in the Data Viewer. An example diagram showing the coast-down recordings is shown in figure 6.

You can also examine the search results with the statistics functions provided by the HEAD Data Portal. To do so, open the "Statistics" window , drag the files from the results list into the "Source Channels" folder and start the calculation by clicking on the "Calculate" button. The maximum, minimum and average values are calculated. By clicking on "Statistics functions", you can also select other functions. The results of your statistical analysis can be displayed as a scatter band as shown in figure 7. Furthermore, you can save the statistical results and display them, for example, in a Data Viewer along with other results.

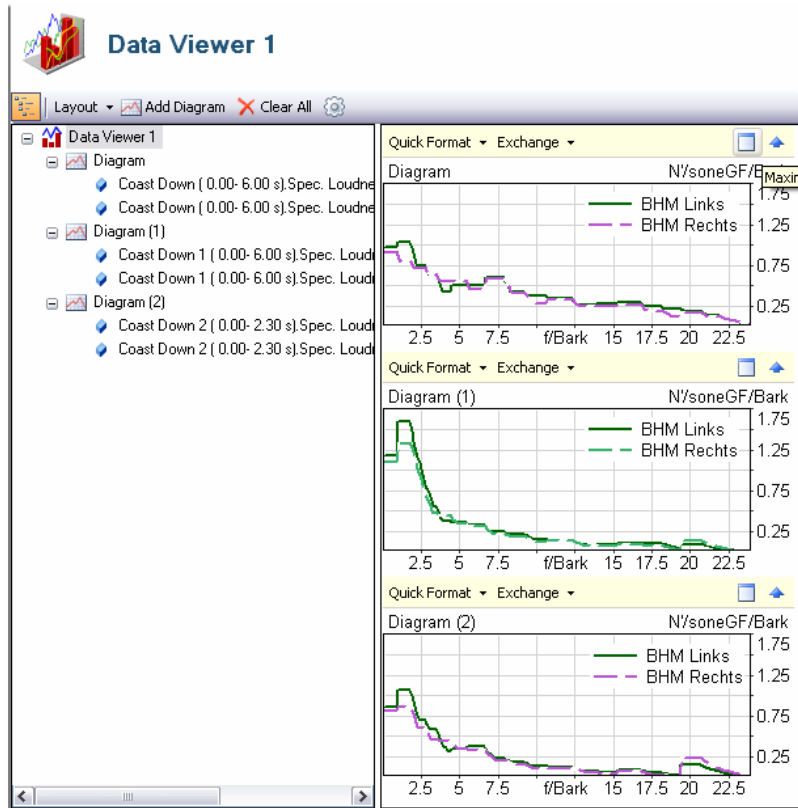


Figure 6: Display of search results in a Data Viewer

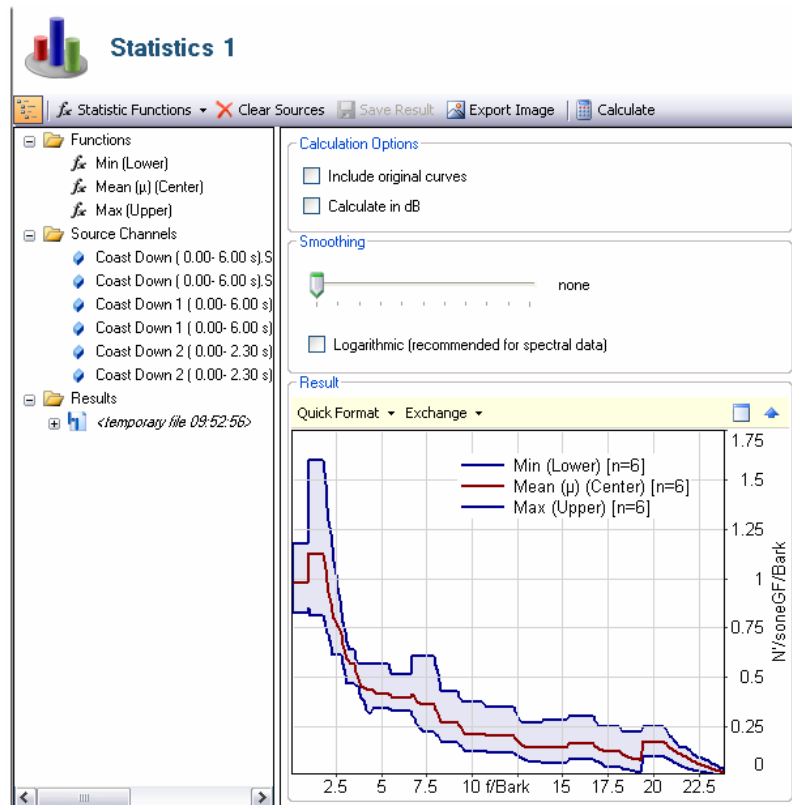


Figure 7: Statistical evaluation with scatter band

## Simple Data Viewing (without SQL Server and without User Documentation)

The following functions of the HEAD Data Portal can be used to view your data even without installing an SQL server and without creating user documentation.

For browsing and viewing your data, use the Desktop Navigator for selection and the tools described below for displaying and listening to the files. To do so, first you need to open the desired display window by clicking on the corresponding tool icon. Afterwards, you can select the files to be displayed in the Desktop Navigator.

### File Viewer:

With the File Viewer, you can display, among others, files in the following formats:

- HEAD acoustics files with the extensions HDF and DAT,
- Image files, such as BMP, EMF, GIF etc.
- Text files, such as PDF, HTM and DOC

Under “Tools” -> “Options” you can see all supported formats. Here you can also activate the desired formats to be displayed. For example, Word files are excluded from being displayed by default, so they must first be activated in this selection window.

### Inherent Documentation:

This display tool allows you to view the inherent documentation of an audio file. This includes, for example, the number of channels and their measurement units.

### Data Viewer:

The Data Viewer displays time domain signals, as well as analysis curves generated, for example, with ArtemiS, in a diagram configuration of your choice. You can simply drag the files from the Desktop Navigator onto the desired diagram. Via the context menu of the diagrams in the tree view, you can save the generated Data Viewer diagrams as image files.

### Statistics:

The statistics function allows you to evaluate saved analysis results. Various statistical functions are provided, including median, mean value, min/max etc. After dragging the files to be examined into the “Source Channels” folder and selecting the desired statistics functions, click on the “Calculate” button to start the calculation. You can save the statistics results as HDF files or image files, and you can display them as a scatter band.

### Player:

With this playback function, you can play HDF files directly in the HEAD Data Portal. The integrated playlist allows a direct comparison between different sound files.

### Signal Editor:

By means of the Signal Editor complete signals or single channels can be cut or changed in respect of the signal level. Moreover, it is possible to fade out signal sections and to compose new signals from already existing signals.

 Table View:

In the Table View signals and analysis results can be displayed in tabular form, so that the data can easily be copied into an Excel® sheet (e.g. via Copy&Paste) or saved in an XLM file by means of the “Export XML” command.

## Copying and Indexing the Example Data

The online help of the HEAD Data Portal explains in detail how to copy the example data to your computer. Open the “Help” menu, click on “Install Demo Data” and follow the instructions on the screen. You need your setup DVD for this procedure. Besides the example data for the HEAD Data Portal, additional files are copied from the setup DVD to the target folder (e.g. ArtemiS Demo Projects, ArtemiS Flow Control Samples etc.).

Once the files have been copied to your computer, you can immediately view them with the HEAD Data Portal. This is explained in the online help section mentioned above, too.

In order to perform a search on the data, they must first be indexed in a database. If there is no SQL server installed on your computer yet, you can do this using the installation routine contained on the setup DVD. To do so, click on “Browse CD content” in the selection window that appears after you insert the DVD. This will open an HTML page containing the link “Microsoft SQL Server 2008”. Click on this link to start the installation (see figure 8).

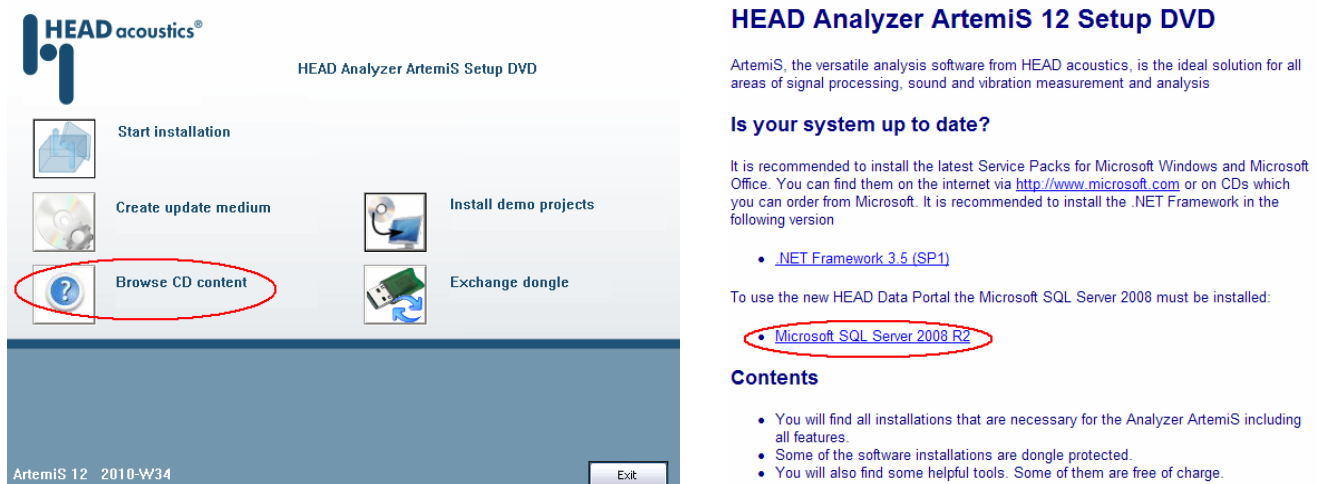


Figure 8: Links for installing the SQL server

When the SQL server is installed on your computer, a database must be created. To do so, click on the link “Connect or create a database” in the “Getting started” window of the HEAD Data Portal and afterwards on the “Create database” button. The rest of the procedure for setting up the database is described in detail in the online help section “Database Connection / Create Database”.

Once the new database is set up, you can index the example data. This procedure creates a “table of contents” for these data, which allows, for example, a convenient and quick search within the data. To index the data, right-click on the “Data Portal Demo” folder that has been copied to the

“Demo Projects” folder on your computer during the installation of the demo projects. From the context menu, select “Add to Database” as shown in figure 9.

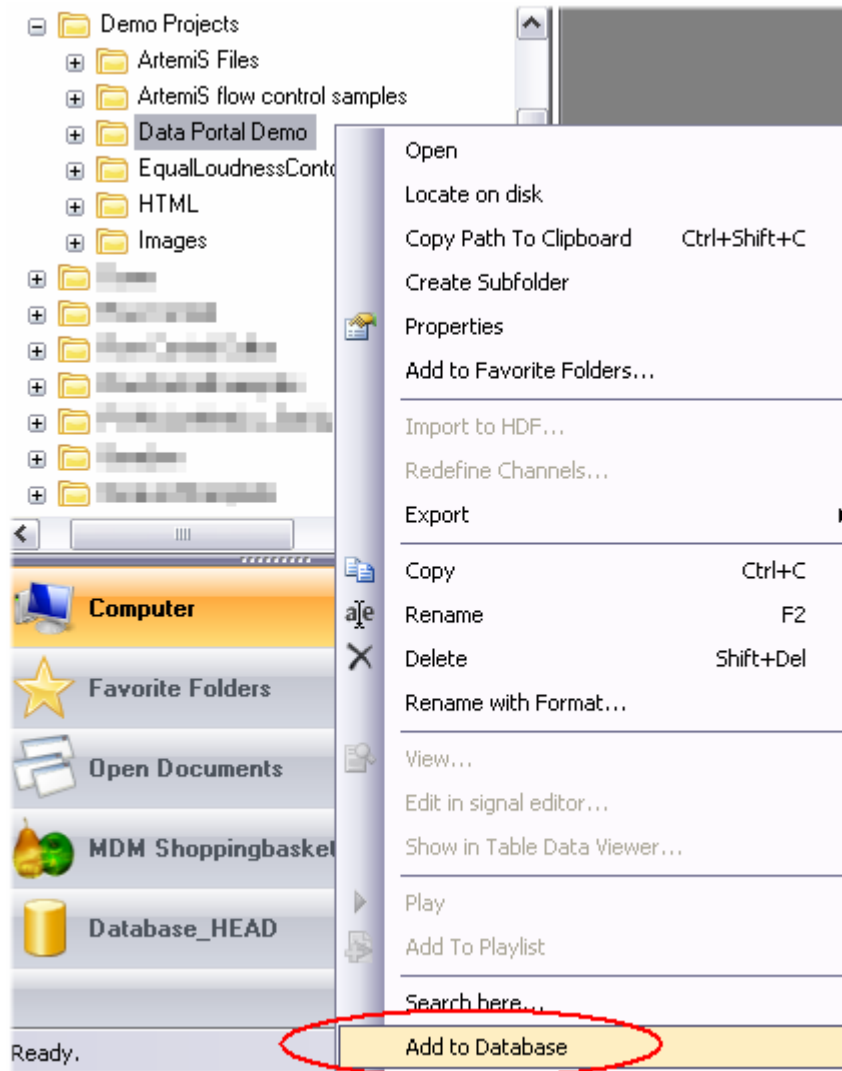


Figure 9: Indexing the example data

The indexing process will take some minutes. Afterwards, you can reproduce the application example described above on your computer.