AAC Audio ES Viewer User's Guide

LEGAL NOTICE

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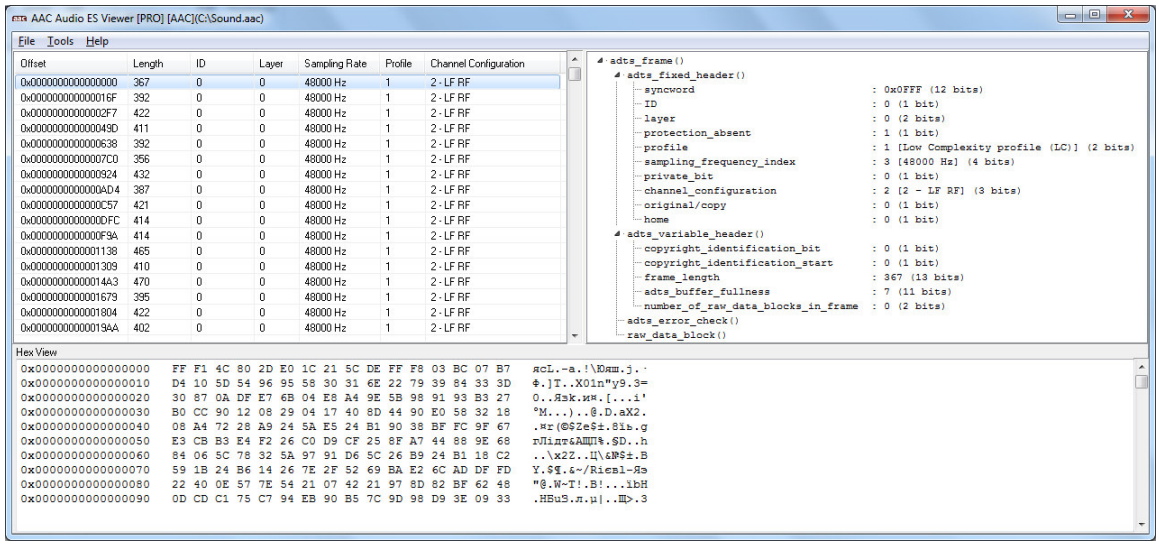
1. Overview

AAC Audio ES Viewer application provides a visual representation of the structure of Advanced Audio Coding (AAC) audio elementary stream (ISO/IEC 13818-7), MPEG-2 (ISO/IEC 13818-7) and HE AAC audio streams. The AAC audio frames sequence can be investigated along with the most common parameters of each audio frame in the application's list view. Detailed AAC audio frame headers information is available in the application's tree view. Hexadecimal representation of the AAC audio elementary stream file is available in the Hex View module. Along with the presentation capabilities, the AAC Audio ES Viewer Pro can perform AAC stream validation. The Pro version also supports import from multiplexed MP4, MPEG-2 Program Stream and MPEG-2 Transport Stream media files.



AAC Audio ES Viewer solution is useful for detailed Advanced Audio Coding (AAC) elementary streams investigation, error detection and validation.

1.1 General Features

- Visual representation of Advanced Audio Coding (AAC) audio elementary stream
- ADTS frames list view representation
- ADTS frames tree view representation
- ADTS fixed header tree view representation
- ADTS variable header tree view representation
- Hex data representation of the file
- Automatic hex positioning of the selected audio frame
- Hex data editing of the selected AAC audio frame
- Stream Frame Graph presentation
- ADTS AAC audio elementary stream validation – available in AAC Audio ES Viewer Pro
- AAC audio elementary stream loading from MP4 container – available in AAC Audio ES Viewer Pro
- AAC audio elementary stream loading from MPEG-2 Program Stream – available in AAC Audio ES Viewer Pro
- AAC audio elementary stream loading from MPEG-2 Transport Stream – available in AAC Audio ES Viewer Pro

1.2 Supported Structures

- AAC audio elementary stream – ADTS sequence
- ADTS fixed header
- ADTS variable header

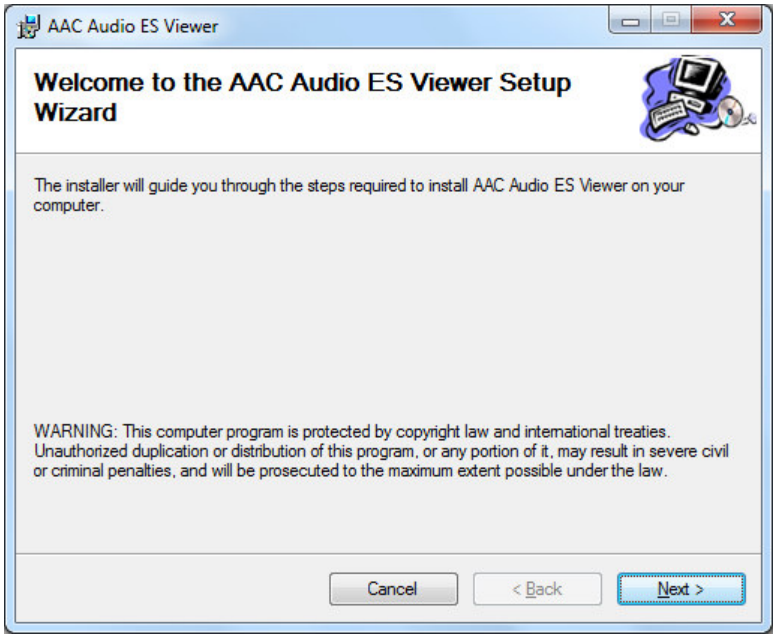
2. Installation

2.1 Installing AAC Audio ES Viewer

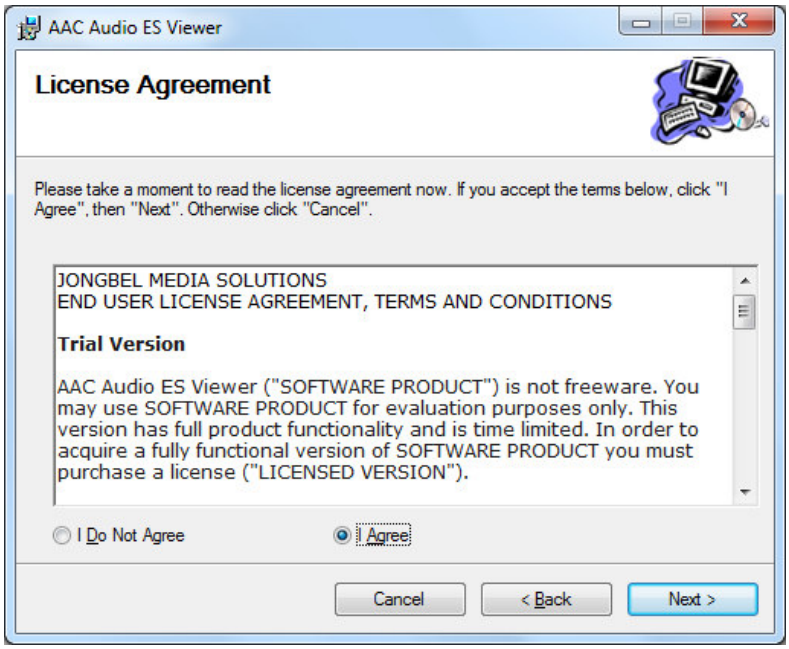
Before installing the **AAC Audio ES Viewer** solution, make sure that any previous version of the product has been uninstalled refer 2.2.

The installation package of **AAC Audio ES Viewer** is distributed in msi file. After downloading the file from the official Jongbel Media Solutions web site – www.jongbel.com, execute the installation by starting the msi file.

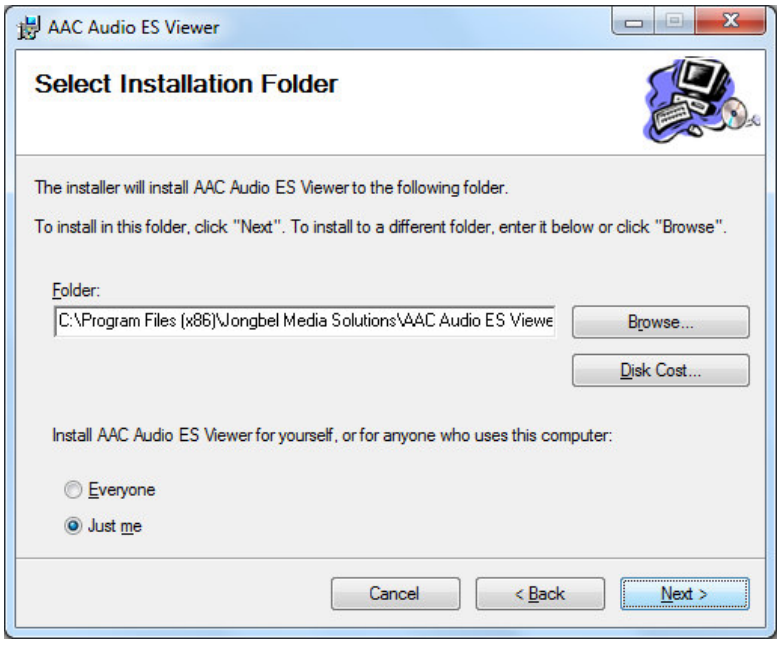
First a Welcome dialog pops up. Click "Next" in order to proceed.



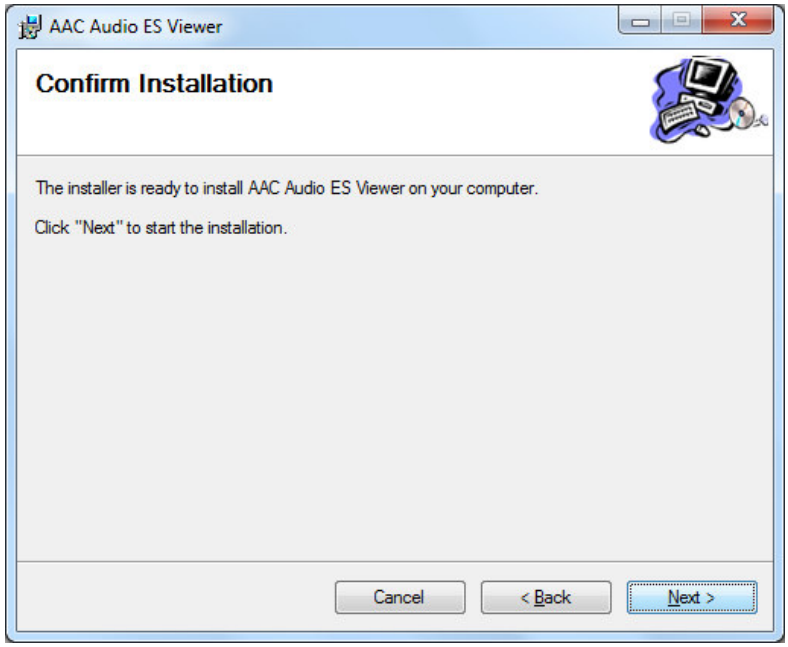
After this a License Agreement dialog pops up. Read the agreement carefully, select "I Agree" if you agree all the terms and click "Next" to proceed.



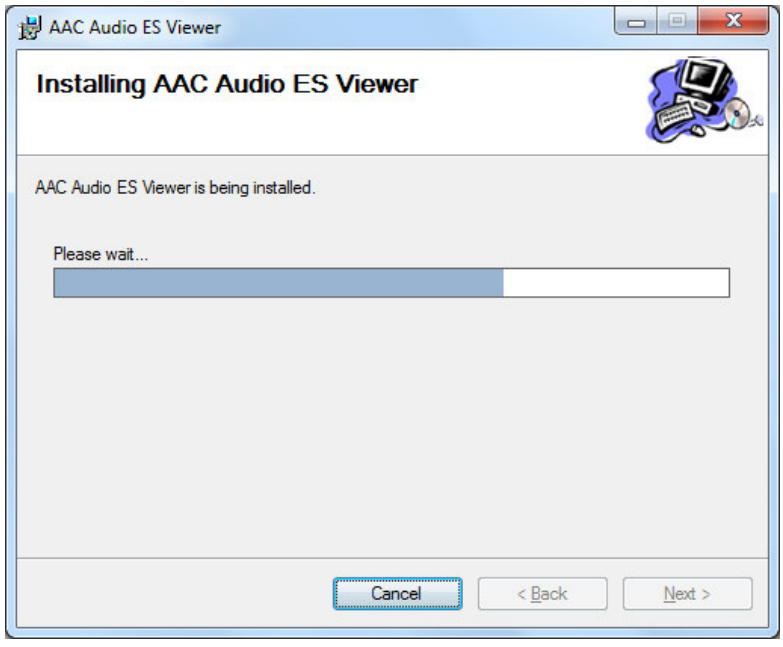
The next window shown specifies the installation product location and user access to the product. Change the destination product folder and user access if needed and click "Next" to proceed.



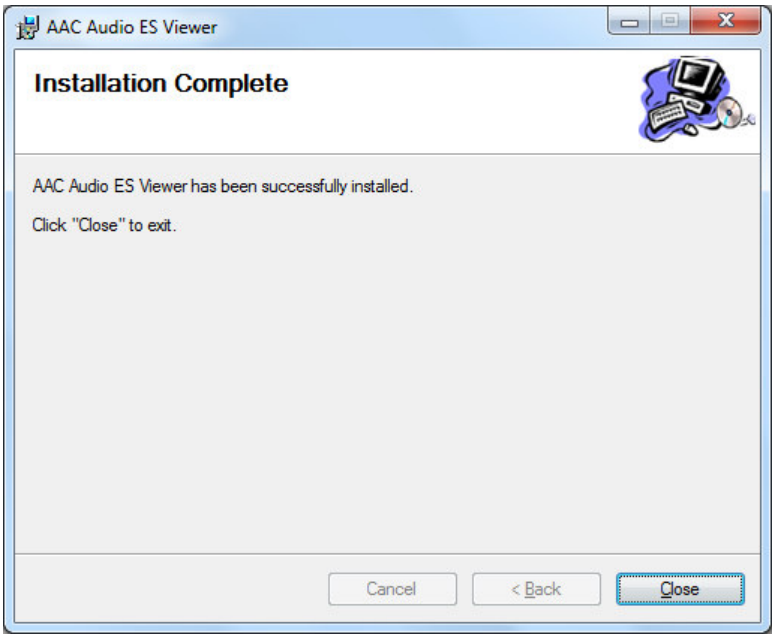
The next dialog is a confirmation dialog. Confirm by clicking "Next" in order to start the installation procedure.



While the product is being installed an "Installing" window shows the installation progress. Wait until the product is being installed.



At the end an "Installation Complete" dialog pops up, which denotes the successful AAC Audio ES Viewer installation. Click "Close" to finalize the process.



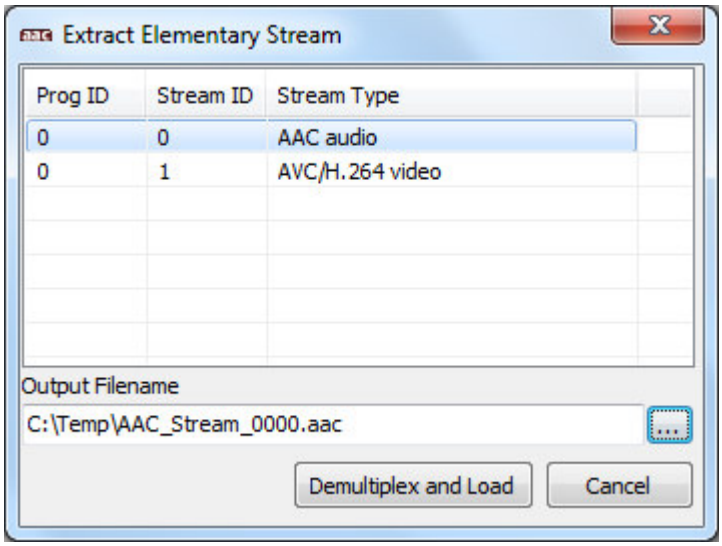
2.2 Uninstalling AAC Audio ES Viewer

The application can be removed opening the Control Panel – Programs and Features. Select the **AAC Audio ES Viewer** application and click Uninstall.

3. Functions

The following functions are available from the application **File** menu.

Open – Opens a file open dialog box for selecting media file for loading. AAC Audio ES Viewer supports AAC ADTS sequence audio elementary streams, MP4 multiplexed AAC audio streams, MPEG-2 Program Stream multiplexed AAC audio streams and MPEG-2 Transport Stream multiplexed AAC audio streams. Demultiplex and import of AAC audio streams from multiplexed media files is available only in AAC Audio ES Viewer Pro. In case of multiplexed media file loading Extract Elementary Stream dialog opens.



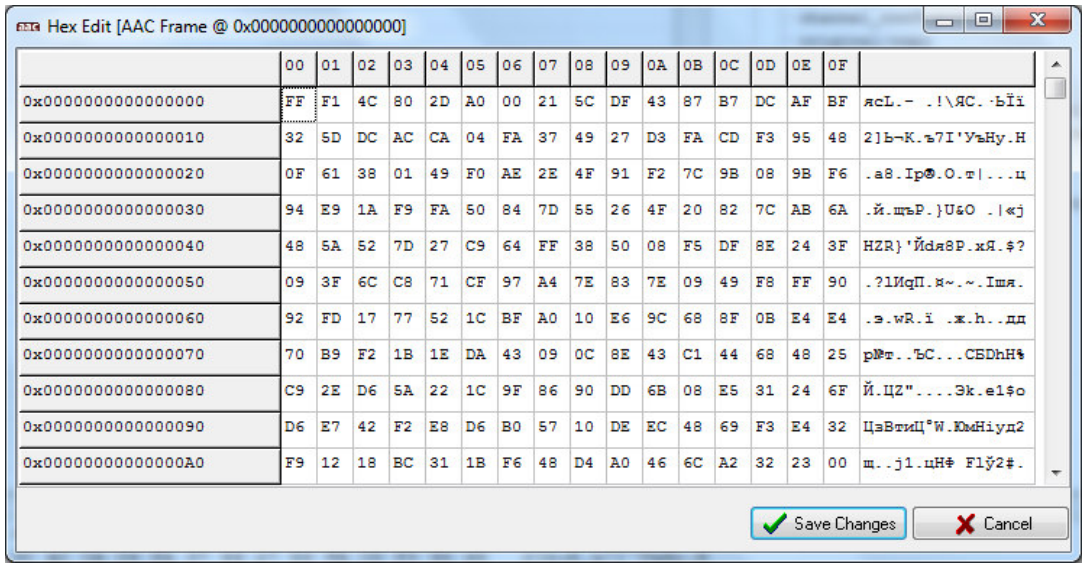
The dialog lists all elementary streams in the selected multiplexed media file with its internal program ID information, stream ID information and elementary stream type. "Output File Name" denotes the output folder and file name which will be used as a destination for the elementary stream demultiplexing. "Demultiplex and Load" button performs the elementary stream extraction and loading into the AAC Audio ES Viewer Pro.

Close – Closes the opened file and clears the tree and hex views.

Exit – Closes the application.

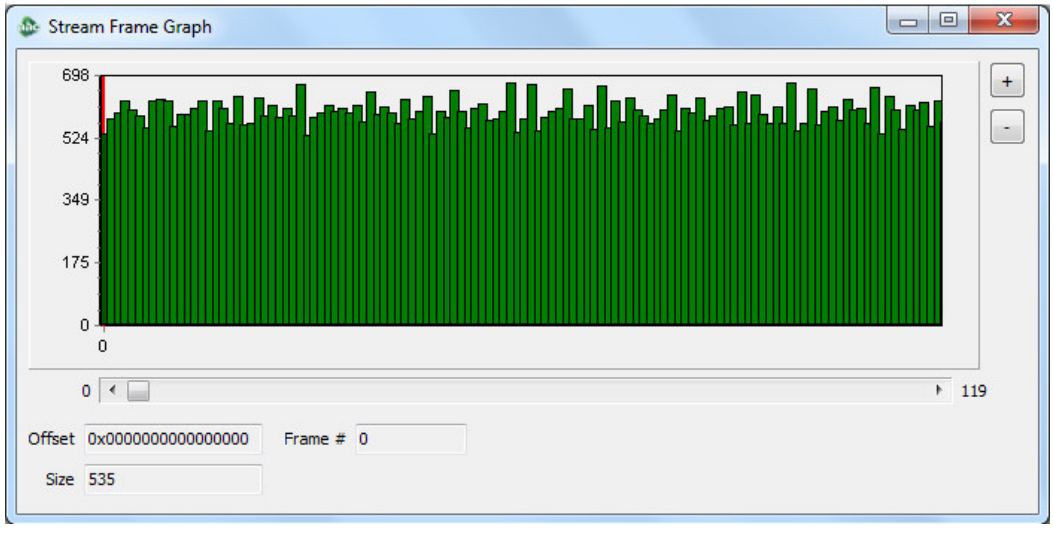
The following functions are available from the application **Tools** menu.

Hex Edit Selected Frame – Opens a Hex Exit dialog box for byte hex manipulating the binary data of the selected ADTS AAC audio frame from the list view.



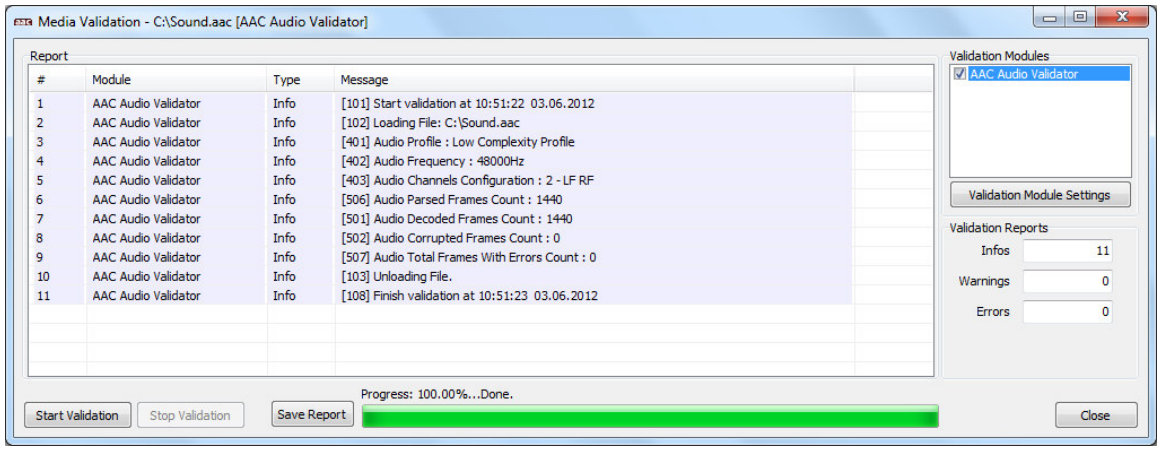
By double-clicking on the byte cell, the form will enter into byte editing mode, making it possible to change the value of the selected byte cell. The byte cells with values different from the values of the original file are marked in red. **Save Changes** button will save the altered bytes to the original file. **Cancel** button will exit the form, without altering the original file.

Stream Frame Graph – Shows the Stream Frame Graph form. The form shows the loaded AAC audio elementary stream frames into a graph.



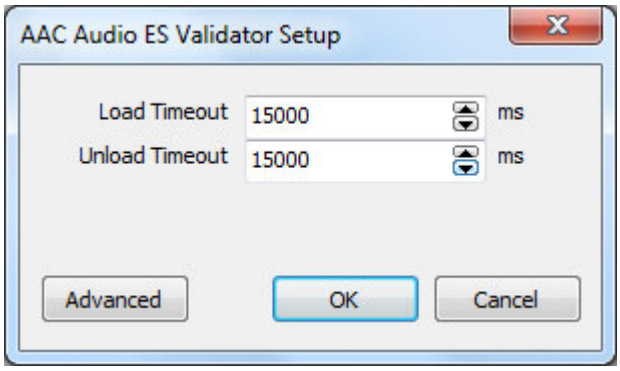
At the center of the form is placed the chart, where all the frames from the loaded audio elementary stream are located with their sizes. The scroll box below the chart can control the current samples stream position. The "Offset" specifies the frame offset in bytes, from the beginning of the file. The "Size" specifies the sample size in bytes. The "Frame" specifies the frame number in the stream. It is possible to zoom-in and to zoom-out the samples chart with the "+" and "-" buttons on the right side of the chart.

Validation – Performs validation and verification of the ADTS AAC audio elementary stream. The function opens the media validation dialog from where the validation process can be started.



Once the Media Validation dialog is opened, the validation process can be started by pressing the "Start Validation" button. During the validation, the process can be stopped by pressing the "Stop Validation" button. The validation Report table contains four columns. The first column is the index of the validation report starting from 1. The second column denotes the validation module name. At this point AAC Audio ES Viewer supports only "AAC Audio Validator" module. The third column denotes each report type, which can be "Info" for informational report, "Warning" for warning report and "Error" for error report. The fourth column contains the Validation ID and the report message. The button "Save Report" saves the current report into a XML validation report file. The XML validation report file can be used for integration with third-party systems. "Validation Reports" box represents the information about the total informational, warning and error reports in the current validation.

The button "Validation Module Settings" opens the validation module settings dialog.

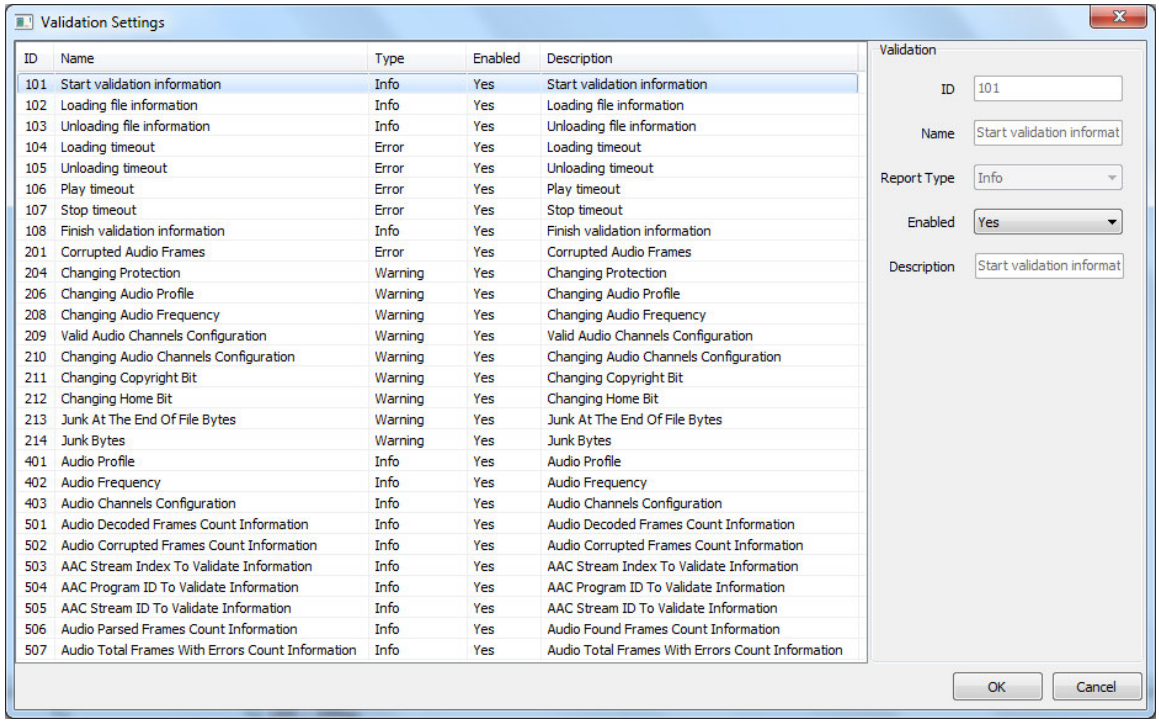


From the validation module settings dialog it is possible to control the loading and unloading timeout.

Load Timeout denotes the timeout, in milliseconds, for the media file loading process.

Unload Timeout denotes the timeout, in milliseconds, for the media file unloading process.

The advances settings are also accessible from this dialog by pressing the "Advanced" button.



From the Validation Settings dialog it is possible to control all validation procedures. All validation procedures can be Disabled/Enabled and the report type of some can be switched to "Info", "Warning" or "Error" depending on each custom workflow. The validation customization allows easy integration of the product in every workflow.

For more information about the validation checks go to Chapter 4.

The following functions are available from the application **Help** menu.

Registration – Opens the product registration form. This function is available only in the full licensed version of the product.

Check For Updates – Enables/Disables automatic check for updates.

About – Opens the About dialog box of the product.

4. Validation

AAC Audio ES Viewer Pro can perform validation of the ADTS AAC audio elementary stream. Incorrect header structure can be detected by this validation module. The supported AAC streams are AAC elementary streams with ADTS headers according to the ISO/IEC 13818-7 specification.

The following validation checks are available for this module:

ID : 101
Name : 'Start validation information'
Type : Info
Description : Reports information on file validation start.

ID : 102
Name : 'Loading file information'
Type : Info
Description : Reports information on file load.

ID : 103
Name : 'Unloading file information'
Type : Info
Description : Reports information on file unload.

ID : 104
Name : 'Loading timeout'
Type : Error
Description : Reports load timeout if the loading time is greater than the maximum loading time specified in the main property page of the validation module.

ID : 105
Name : 'Unloading timeout'
Type : Error

Description : Reports unload timeout if the unloading time is greater than the maximum unloading time specified in the main property page of the validation module.

ID : 106
Name : 'Play timeout'
Type : Error
Description : Reports validation start timeout.

ID : 107
Name : 'Stop timeout'
Type : Error
Description : Reports validation stop timeout.

ID : 108
Name : 'Finish validation information'
Type : Info
Description : Reports information on file validation finish.

ID : 201
Name : 'Corrupted Audio Frame Number'
Type : Error
Description : Reports each corrupted AAC audio frame number.

ID : 204
Name : 'Changing Protection'
Type : Warning
Description : Reports changing Protection Absent bit value throughout the AAC audio elementary stream.

ID : 206
Name : 'Changing Audio Profile'
Type : Warning
Description : Reports changing Profile value throughout the AAC audio elementary stream.

ID : 208
Name : 'Changing Audio Frequency'
Type : Warning
Description : Reports changing Audio Frequency value throughout the AAC audio elementary stream.

ID : 209
Name : 'Valid Audio Channels Configuration'
Type : Error
Description : Reports invalid audio Channels Configuration value.

ID : 210
Name : 'Changing Audio Channels Configuration'
Type : Warning
Description : Reports changing audio Channel Configuration value throughout the AAC audio elementary stream.

ID : 211
Name : 'Changing Copyright Bit'
Type : Warning
Description : Reports changing Copyright bit value throughout the AAC audio elementary stream.

ID : 212
Name : 'Changing Home Bit'
Type : Warning
Description : Reports changing Home bit value throughout the AAC audio elementary stream.

ID : 213
Name : 'Junk At The End Of File Bytes'
Type : Warning
Description : Reports junk data block at the end of the AAC audio elementary stream. The report includes the size of the junk data block.

ID : 214
Name : 'Junk Bytes'
Type : Warning
Description : Reports Junk data block in the AAC audio elementary stream.

ID : 401
Name : 'Audio Profile'
Type : Info
Description : Reports the audio Profile value of the AAC audio elementary stream.

ID : 402
Name : 'Audio Frequency'
Type : Info
Description : Reports the audio Frequency value of the AAC audio elementary stream.

ID : 403
Name : 'Audio Channels Configuration'
Type : Info
Description : Reports the audio Channel Configuration value of the AAC audio elementary stream.

ID : 501
Name : 'Audio Decoded Frames Count Information'
Type : Info
Description : Reports the count of the successfully decoded AAC audio frames.

ID : 502
Name : 'Audio Corrupted Frames Count Information'
Type : Info
Description : Reports the count of the corrupted AAC audio frames.

ID : 503
Name : 'AAC Stream Index To Validate Information'
Type : Info
Description : Reports the stream index of the AAC audio elementary stream, which is being validated in case of multiplexed media file.

ID : 504
Name : 'AAC Program ID To Validate Information'
Type : Info
Description : Reports the program ID of the AAC audio elementary stream, which is being validated in case of multiplexed media file.

ID : 505
Name : 'AAC Stream ID To Validate Information'
Type : Info
Description : Reports the stream ID of the AAC audio elementary stream, which is being validated in case of multiplexed media file.

ID : 506
Name : 'Audio Parsed Frames Count Information'
Type : Info
Description : Reports the count of the parsed AAC audio frames in the elementary stream.

ID : 507
Name : 'Audio Total Frames With Errors Count Information'
Type : Info
Description : Reports the count of the total frames with errors.

ID : 508
Name : ' Demo Restrictions Information'
Type : Info
Description : Reports the 30 seconds limitation in case of trial mode of the validation module.

ID : 509
Name : ' Average Bitrate Information'
Type : Info
Description : Reports the average bitrate of the audio stream.

ID : 510
Name : 'Minimum bitrate Information'
Type : Info
Description : Reports the minimum bitrate of the audio stream.

ID : 511
Name : 'Maximum bitrate Information'
Type : Info
Description : Reports the maximum bitrate of the audio stream.

ID : 512
Name : ' Average Framesize Information'
Type : Info
Description : Reports the average audio frame size.

ID : 513
Name : ' Minimum Framesize Information'
Type : Info
Description : Reports the minimum audio frame size.

ID : 514
Name : ' Maximum Framesize Information'
Type : Info
Description : Reports the maximum audio frame size.

ID : 515
Name : ' File Duration Information'
Type : Info
Description : Reports the file duration.

ID : 516
Name : 'Initial ADTS Frame Information'
Type : Info
Description : Reports the initial AAC ADTS frame information.