GEM2MISB
User Guide

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GEM2MISB User Guide

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Preface

Who is this guide for?

This User Guide is for anyone capturing videos with lightweight COTS cameras such as GoPro, Android tablets, or cell phones, and needs a way to convert those videos to a MISB-compliant full motion video format. For example, you might be:

- An ESRI user whose camera does not create geotagged videos for viewing with the ESRI Full Motion Video Add-in.
- A Red Hen Systems GeoVideo user whose GEM videos cannot be decoded by ESRI 10.X.
- "A customer who wants to use a Smartphone or off-the-shelf video camera and GPS to produce MISB geotagged videos."

Why read this guide?
This guide provides you with simple step-by-step instructions for using GEM2MISB.

Section 1. Introducing GEM2MISB

The GEM2MISB desktop application lets you import your Red Hen geotagged videos and convert those GEM files to KLV-encoded MISB format. Red Hen Systems GEM videos come in a variety of formats, all of which are encoded with GPS and sensor metadata collected during the video capture.

These are the GEM video formats that GEM2MISB supports as input:

- .mpg/.mpeg
- .mts
- .mp4
- .mov

GEM2MISB also imports any video with an XML sidecar file. Video-XML sidecar pairs typically exist if you:

- Used another Red Hen application (isWhere, GeoVideo, MediaMapper) to decode your GEM video.
- Used Red Hen MediaGeotagger to geotag video collected with a COTS camera and GPS.
- Used your Smartphone, running the Red Hen MediaMapper Mobile application, to collect your video.

GEM2MISB converts the GEM video or video/XML sidecar pairs to produce output that is a KLV-encoded MPEG-2 Transport Stream, conforming to Motion Industry Standards Board (MISB) standards. We refer to this output video as **MISB-compliant Full Motion Video**, or **MISB-compliant FMV**, for short.

Section 2. Getting Started with GEM2MISB

This section offers step-by-step instructions for installing GEM2MISB and exploring the user interface.

Before you begin: Make sure to transfer your geo-tagged videos from MediaMapper Mobile or the VMS-333 to your computer and note the folder they are in.

2.1 Locate geotagged videos

Transfer your geotagged videos from Red Hen Systems MediaMapper Mobile or the VMS-333 to your computer and note the folder they are in.

Make sure your videos are in one of the following formats that GEM2MISB supports:
- .mpg/.mpeg
- .mts
- .mp4
- .mov

2.2 Install and start up GEM2MISB

1. Before you install the software, make sure your computer meets these minimum requirements:

Operating System	Windows 7 or above (make sure you have installed the most recent Windows updates)
RAM	2 GB
Hard drive space	The software occupies less than 70 MB; however, you need enough space to store all your photos and videos (this varies according to your situation)

2. Click the download link you received from Red Hen Systems.
3. The installer starts running and checks for prerequisite software (.NET Framework 4.5, Visual Studio 2010 Redistributables).

   a. Respond to the installation prompts as they appear.

   b. When the installation completes, you will receive a message and the GEM2MISB icon will appear on your Desktop.
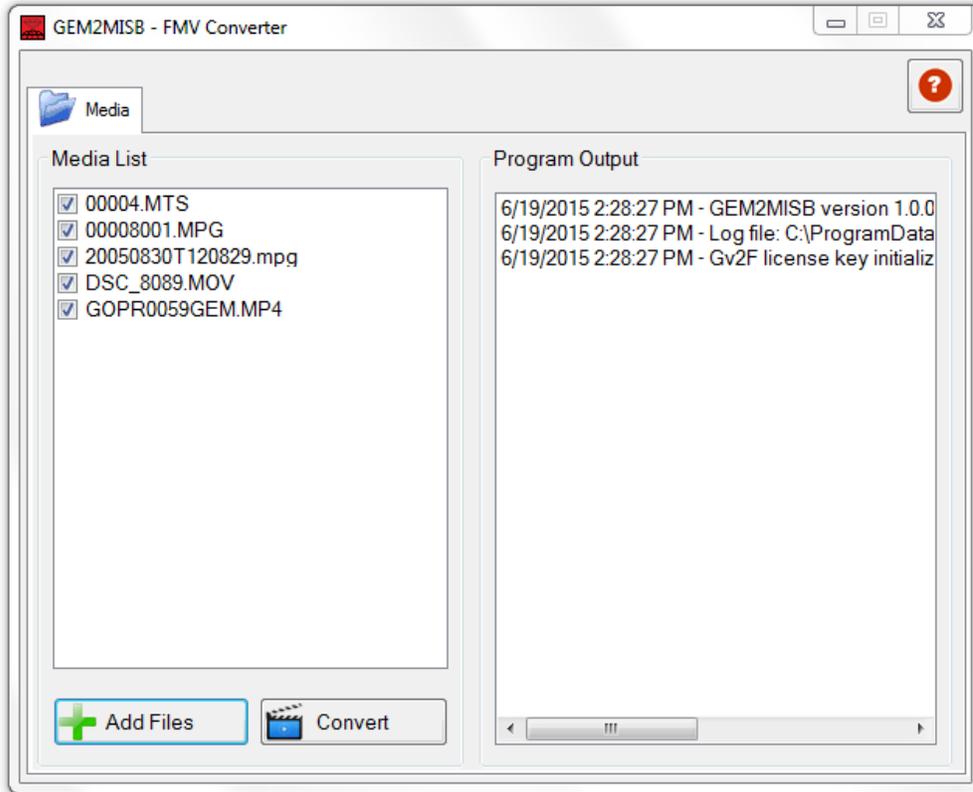

   c. Double-click the icon to start GEM2MISB.

2.3 Get familiar with the GEM2MISB interface

Once you start up GEM2MISB, it's a good idea to get familiar with the user interface before you continue.

1. Double-click the icon to start GEM2MISB: .
2. The GEM2MISB interface consists of two tabs. The first tab, **Media**, is the one you will use most often.

3. Each tab and button lets you do the following:

Icon	Tab or Button	Description
	Media	Load geotagged media and convert it to KLV format.
	Help	Access the *isWhere User Guide* in PDF format or get information about support and the latest release.
	Add Files	Add files to the media list.
	Convert	Convert the files in the media list to KLV format.

Details follow regarding the tasks you can perform with the items on the screen.

3. Converting GEM Videos

The "heart" of GEM2MISB is the **Media** tab. This is where you load GEM video files and convert them to KLV format.

3.1 Add videos to the Media List

The media list in the **Media** tab consists of a list of GEM media files. These are files you eventually want to convert to KLV format. When you first open GEM2MISB, there will be no files in the list and you will need to add the files.

1. Open the **Media** tab.
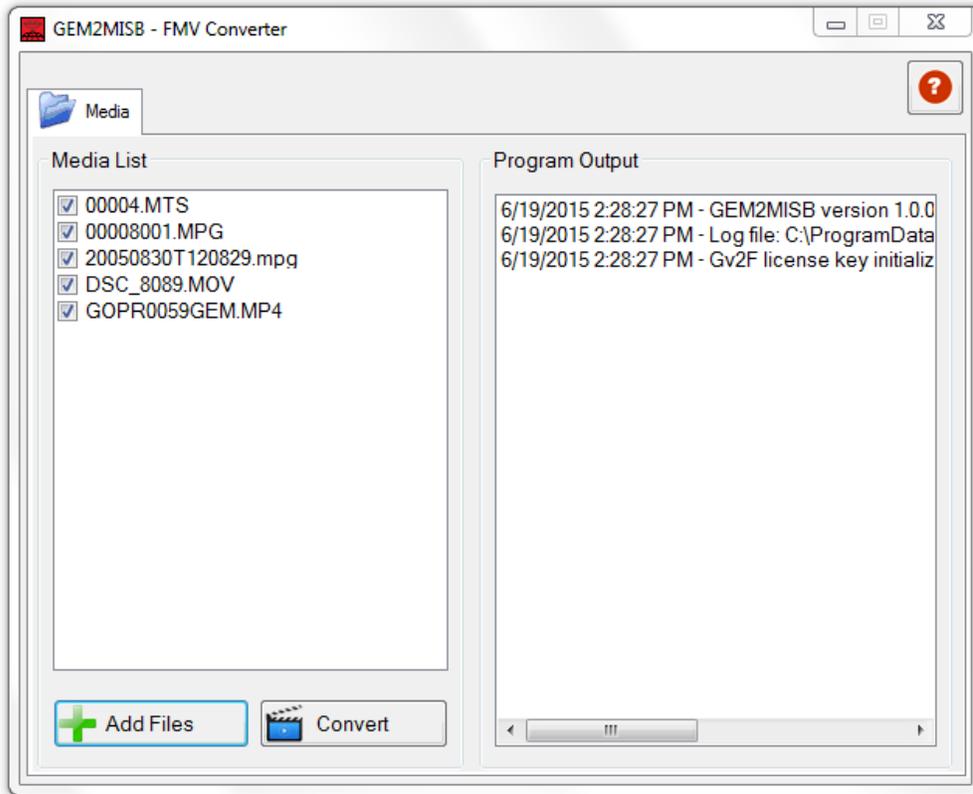
2. Click the **Add Files** button.

   a. When the Select Media for Converting to MISB dialog appears, navigate to the folder containing the videos of interest.
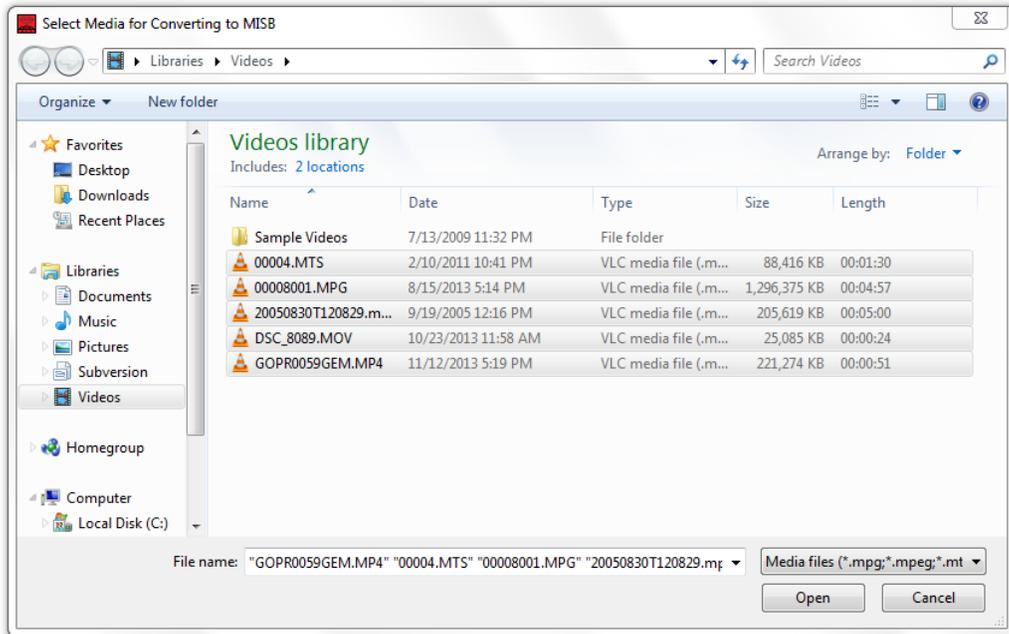

   b. Select one or more videos from the folder. The videos you select must be Red Hen Systems geospatially-enabled videos that (a) have GPS information embedded in it (Red Hen Geospatially-Encoded Media (GEM) format) or (b) have an associated *.**xml** file with the same name that contains the GPS information (you do not have to select the .xml file; only the video). **Note:** To select multiple files, press the **Ctrl** key as you select the videos or press the **Shift** key and select the first and last file to select all files between them.

   c. Press **Add** to close the Add Media dialog and return to the **Media** tab.

3. As soon as you select the files, GEM2MISB will analyze them. If a video file has a companion .xml file, GEM2MISB will accept it. If a video does not have a companion .xml file, GEM2MISB will try to decode it as Red Hen GEM, resulting in an .xml output file.

All selected (and accepted) geotagged video files will now appear in the media list. The media files are listed in alphabetical order.

3.2 Select and convert the files.

1. The files you imported in the **Add Files** step are selected by default for conversion. If you decide not to convert a file, simply uncheck it.

2. Click **Convert**. This initiates the conversion to MISB-compliant Full Motion Video.

   Note: The video conversion operation may take some time. It can also be computation-intensive, depending on the type of source video. Please be patient.
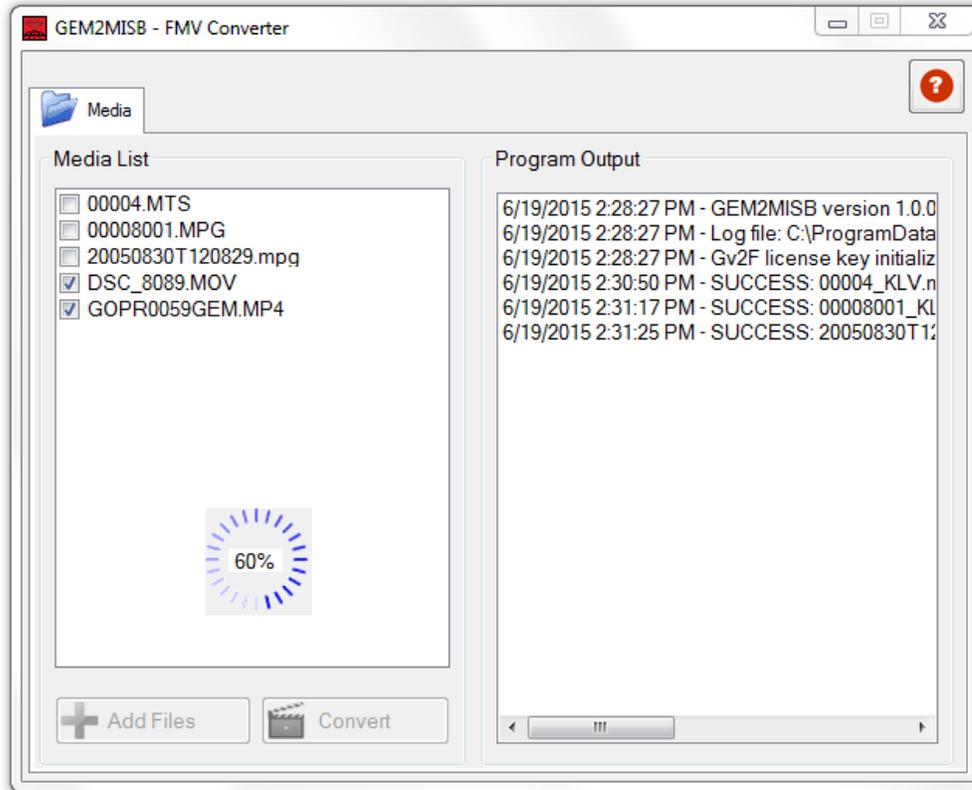
3. As each video conversion completes, output text appears in the **Program Output** pane, listing the name and location of the output video file.

   Each converted output video is placed in the same directory as the original file; however, its name is slightly different: *[video_name]*_KLV.*[extension]*.

   For example:

   - If the original file name is **DSC8089.mp4**
   - The converted file name is **DSC8089_KLV.mpg**

   Note: The converted file will have KLV geo-data embedded in the transport stream.

4. The program output will also be saved to a log file, for viewing later. This is helpful when processing many files. The default location for the log file will be C:\Program Data\Red Hen Systems\GEM2MISB.

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