Metalith 9.00

User Guide

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Introduction

Metalith

Metalith is an easy-to-use yet powerful metadata editor.

The main feature of the program is the ability to simultaneously edit any number of files.
Metalith supports various metadata standards, as well as various file formats.

About metadata

Metadata is data that describes the characteristics or properties of a document. It can be distinguished from the main contents of a document. For example, for a word processing document, the contents include the actual text data and formatting information, while the metadata might include such properties as author, modification date, or copyright status.
Metadata allows users and applications to work more effectively with documents. For example, an image file might contain metadata such as its working title, description, place, date and time.
Accessing the metadata makes it easier to perform such tasks as associating images with file names, locating image captions, or determining copyright clearance to use an image.
File systems have typically provided metadata such as file modification dates and sizes. Other metadata might or might not be stored as part of the file it is associated with.
Metadata, often referred to as “data about data,” provides interesting information that supplements the primary content of digital documents. Metadata has become a powerful tool to organize and search through the growing libraries of image. This is especially important in the area of digital photography where, despite the increased quality and quantity of sensor elements, it is not currently practical to organize and query images based only on the millions of image pixels. Instead, it is best to use metadata properties that describe what the photo represents and where, when and how the image was taken.

Metadata structure

There are metadata of different types in the image. Each type of the metadata described in the appropriate standard, which defines tags, the method of their implementation in the file, data type, length, and some of their other properties, such as the allowability of arrays or availability of subtags.
The main types of the metadata:

- TIFF - Tagged Image File Format
- EXIF - Exchangeable image file format for digital still cameras
- IPTC - IPTC-NAA Information Interchange Model
- XMP - Extensible Metadata Platform

TIFF metadata type is located in TIFF IFD (Image File Directory), in the TIFF file (.tif, .tiff) each image has its own IFD (IFD0, IFD1, IFD2) etc. in conformity with the number of images in the file , in JPEG files (.jpg, .jpeg, .jpe, .jps) main image is IFD0, preview IFD1. Metalith displays TIFF IFD0 as IFD0, TIFF IFD1 as IFD1 etc. Additional images and their metadata can also be located in the subdirectories (SubIFD0, SubIFD1, ...).
IPTC metadata type can be of two types (IPTC1 and IPTC2), which differ in the method of their implementation, there may be one or both of them in file. As a rule, in files of type JPEG and MPO, IPTC1 is used, and in files of type TIFF and DNG - IPTC2.

In RAW files, IPTC is usually not used, and XMP data is embedded in separate *.xmp files, in which case the name of the image file and the metadata file must be identical, for example, 123.raf and 123.xmp.
MPF (Multu-Picture Format) metadata type contains common data to all images (MPF0) and data for each image (MPF1, MPF2, ...).
Other types of metadata embedded in file as a single copy.

Basic TIFF metadata structure				
Level 1	*Level 2*	*Level 3*	*Level 4*	*Metalith*
IFD0			IFD0 tags	IFD0:Tag
	EXIF		EXIF tags	EXIF:Tag
		Interoperability	Interoperability tags	Interoperability:Tag
	GPS		GPS tags	GPS:Tag
	IPTC2		IPTC2 tags	IPTC2:Tag
	XMP		XMP tags	XMP:Tag
	IRB		IRB tags	IRB:Tag
		IPTC1	IPTC1 tags	IPTC1:Tag
	ICC		ICC tags	ICC:Tag
	XMP		XMP tags	XMP:Tag
	SubIFD		SubIFD tags	SubIFD:Tag
IFD1			IFD1 tags	IFD1:Tag
...			...	...
IFDn			IFDn tags	IFDn:Tag

Basic JPEG metadata structure						
Level 1	*Level 2*	*Level 3*	*Level 4*	*Level 5*	*Level 6*	*Metalith*
JPEG					JPEG tags	JPEG:Tag
APP0	JFIF				JFIF tags	JFIF:Tag
	JFXX				JFXX tags	JFXX:Tag
	...				...	...
APP1	EXIF	IFD0			IFD0 tags	IFD0:Tag
			EXIF		EXIF tags	EXIF:Tag
				Interoperability	Interoperability tags	Interoperability:Tag
			IPTC2		IPTC2 tags	IPTC2:Tag
		IFD1			IFD1 tags	IFD1:Tag
	XMP				XMP tags	XMP:Tag
	...				...	...
APP2	ICC				ICC tags	ICC:Tag
	MPF				MPF tags	MPF:Tag
		MPF1			MPF1 tags	MPF1:Tag
		MPF2			MPF2 tags	MPF2:Tag
		...			...	...
	...				...	...
...	...				...	...
APP13	IRB				IRB tags	IRB:Tag
		IPTC1			IPTC1 tags	IPTC1:Tag
...					...	...
APPn					...	...

Tag is the metadata container.
For each tag is defined the type of data (text, numeric, date, binary, ...) and other properties (such as the maximum

length of a text or numeric limits).
Some tags can use multiple values (arrays). Metalith separates values of an array with the sign **~**.
Some tags contain subtags. They are also arrays, but each value corresponds to its name. Subtags can also be arrays.
Some tags allow free input of values, others restrict the choice with the set of several options.

Metalith does not allow entering incorrect data values or modify data to invalid. You also could not change or delete a tag that affect the image.

About Metalith

Features

Supports all major standards of metadata: TIFF, Exif, IPTC, XMP etc.
Supports TIFF and JPEG files.
Provides full support of TIFF, JPEG, DNG, and MPO files.
Provides limited support of Sony ARW, Canon CR2, Nikon NEF, Olympus ORF, Pentax PEF, Fujifilm RAF, Panasonic RW2, and Samsung SRW files.
Provides XMP support for RAW files..
Provides reading of data tracks from GPX files.
Allows you to read, analyze, modify, delete, and create metadata.
Allows you to compare metadata of two files and copy data of tags from one to another.
Allows you to compare data of two identical tags in one file and sinchronize them.
Allows you to write GPS and shooting situation data from track into graphical files (Geotagging).
Displays descriptions of tags.
Displays thumbnails and full-screen images.
Provides processing entire directory trees.
Creates project files, including any number of files and directories.
Allows you to create and use profiles of tags..
Prepares metadata reports.
Prints reports to screen or printed with the ability to preview.
Creates a report file in HTML, XML and TIFF formats.
Allows you to view the track and the shooting point in **Google Earth** and the shooting point in **Google Maps**.
Allows you to export and import GPS data using KML files. Creates graphs for any tag.
Recognizes thousands of various tags.
Recognizes unknown XMP tags.
Allows you to delete all metadata from a file.
Allows you to replace all metadata from the data of another file.
Allows you to shift or equalize date and time for all the tags.
Allows you to rename files in accordance with the data of any tag.
Creates new tags and new types of tags.
Allows you to open any number of metadata project files in separate windows.
Tested on the files of thousands of different camera models.
Backs up the original files.
Has a customizable user interface.
Does not require the installation of any third-party programs.
Completely multi-lingual (currently supports Chinese (Simplified), Dutch, English, Italian, Russian, Spanish and Ukrainian) and can be easily extended to include more languages.
Runs in many operating systems: Windows 2000, Windows XP, Windows Vista, Windows 7, Windows 8 and Windows 10.

System requirements

Processor 2 GHz.
2 GB RAM.
Monitor at 1280 x 720 pixels.
Microsoft Windows ® 2000 or higher.
Internet connection for geotagging.
Installed Google Earth to view file location and track.

Metadata support

Supported file formats	
TIFF (tif,tiff)	Tagged Image File Format TIFF Revision 6.0 June 3, 1992 © 1986-1988, 1992 by Adobe Systems Incorporated
JPEG (jpg,jpe,jpeg,jps)	ISO/IEC IS 10918-1 1993(E) First Published as ITU-T Recommendation T.81 © 1993 International Telecommunication Union

Supported file formats	
DNG (dng)	Digital Negative (DNG) Specification Version 1.4.0.0 June 2012 Copyright © 2004-2012 Adobe Systems Incorporated
MPO (mpo)	Multu-Picture Format Established on February 4, 2009 © 2009 Camera & Imaging Product Association
ARW (arw)	Sony proprietary format, limited support
CR2 (cr2)	Canon proprietary format, limited support
NEF (nef)	Nikon proprietary format, limited support
ORF (orf)	Olympus proprietary format, limited support
PEF (pef)	Pentax proprietary format, limited support
RAF (raf)	Fujifilm proprietary format, limited support
RW2 (rw2)	Panasonic proprietary format, limited support
SRW (srw)	Samsung proprietary format, limited support

Supported metadata standards	
TIFF	Tagged Image File Format TIFF Revision 6.0 June 3, 1992 © 1986-1988, 1992 by Adobe Systems Incorporated
JPEG	ISO/IEC IS 10918-1 1993(E) First Published as ITU-T Recommendation T.81 © 1993 International Telecommunication Union
EXIF	Exchangeable image file format for digital still cameras Exif Version 2.21 April, 2002 Japan Electronics and Information Technology Industries Association
	Exchangeable image file format for digital still cameras Exif Version 2.3 Established on April 26, 2010 © 2010 Camera & Imaging Product Association
	Exchangeable image file format for digital still cameras Exif Version 2.31 Established on April, 2010 Revised on July, 2016 © 2010-2016 Camera & Imaging Products Association
DCF	Design rule for Camera File system Version 1.0 December 1998 Japan Electronic Industry Development Association
	Design rule for Camera File system Version 2.0 (Edition 2010) Established on April 26, 2010 © 2010 Camera & Imaging Product Association
DNG	Digital Negative (DNG) Specification Version 1.4.0.0 June 2012 Copyright © 2004-2012 Adobe Systems Incorporated

Supported metadata standards	
IPTC	IPTC - NAA Information Interchange Model Version No. 4 Rev 1 July 1999 © 1991,1993,1995,1997,1999 Comite International des Telecommunications de Presse Newspaper Association of America
	IPTC Core Schema for XMP Version 1.0 Document Revision 8 2005-03-15 © 2005 International Press Telecommunications Council
	IPTC Photo Metadata White Paper 2007 Document Revision 11 2007-05-30 Copyright © 2007 International Press Telecommunications Council
	IPTC Core Specification Version 1.1 IPTC Extension Specification Version 1.1 Document Revision 1 July 2010 Copyright © 2010 International Press Telecommunications Council
JFIF	JPEG File Interchange Format JFIF Version 1.02 September 1, 1992 Eric Hamilton, C-Cube Microsystems
ICC	Image technology colour management Specification ICC.1:2004-10 (Profile version 4.2.0.0) With errata incorporated, 5/22/2006 © 2004 International Color Consortium
IRB	Image resource blocks Adobe Photoshop File Formats Specification Version 6.0 Release 2 November 2000 © 1991–2000 Adobe Systems Incorporated
MPF	Multu-Picture Format Established on February 4, 2009 © 2009 Camera & Imaging Product Association

Supported metadata standards	
XMP	Extensible Metadata Platform Version 1.5 September 14, 2001 © 2001 Adobe Systems Incorporated
	XMP Specification Version 1.5 September 2005 © 2000–2005 Adobe Systems Incorporated
	Adobe XMP Specification Part 2: Additional Properties July, 2010 Copyright © 2010 Adobe Systems Incorporated
	Exif 2.3 metadata for XMP Established in January, 2012 © 2010 Camera & Imaging Products Association
	Extensible Metadata Platform (XMP) Specification Part 1, Data Model, Serialization, and Core Properties April, 2012 Copyright © 2012 Adobe Systems Incorporated
	Adobe XMP Specification Part 2: Additional Properties August 2016 Copyright © 2016 Adobe
	Adobe XMP Specification Part 3: Storage in Files August 2016 Copyright © 2016 Adobe
DC	Dublin Core Metadata Initiative DCMI Metadata Terms Errata 2008-06-09 Copyright © 2009 DCMI (Dublin Core Metadata Initiative)
PLUS	Picture Licensing Universal System Version 1.2.0 © 2009 The PLUS Coalition, Inc.
PRISM	Publishing Requirements for Industry Standard Metadata PRISM Specification Version 2.1 Errata 2009 06 01 Copyright © International Digital Enterprise Alliance, Inc.

Supported tracks	
GPX (gpx)	GPS eXchange format GPX 1.1 schema was released on August 9, 2004

Languages

Supported code pages, character sets, and languages		
Code page	*Character set*	*Language*
1252	Western	English
		Dutch
		Italian
		Spanish
1251	Cyrillic	Russian
		Ukrainian
936	Chinese	Chinese (Simplified)

To display the data correctly, the code page of image files and software must be the same. If your image files in a single language (or in your language and English), you do not need to change any settings. If the language of the data in the files is different from your language, you must select this language (or language with the same code page and character set) in the **Options** window.
Information in English always displayed correctly, regardless of the language settings of the program. It is recommend to create all the metadata in English or in any other language using a transliteration in the corresponding code page 1252 (for the Slavic languages see GOST 7.79-2000 System B or ISO 9-95).

Transliteration of Slavic alphabets on system B					
Cyrillic letter	*Latin transliteration in languages*				
	Russian	*Belorussian*	*Ukrainian*	*Bulgarian*	*Macedonian*
А	a	a	a	a	a
Б	b	b	b	b	b
В	v	v	v	v	v
Г	g	g	g	g	g
Ѓ	—	—	—	—	g`
Д	d	d	d	d	d
Е	e	e	e	e	e
Ё	yo	yo	—	—	—
Є	—	—	ye	—	—
Ж	zh	zh	zh	zh	zh
З	z	z	z	z	z
Ѕ	—	—	—	—	z`
И	i	—	y`	i	i
Й	j	j	j	j	—
Ј	—	—	—	—	j
І	i, i’	i	i	i, i`	—
Ї	—	—	yi	—	—
К	k	k	k	k	k
Ќ	—	—	—	—	k`
Л	1	1	1	1	1
Љ	—	—	—	—	l`
М	m	m	m	m	m
Н	n	n	n	n	п
Њ	—	—	—	—	n`
О	o	o	o	o	o
П	p	p	p	p	p
Р	r	r	r	r	r

Transliteration of Slavic alphabets on system B					
Cyrillic letter	*Latin transliteration in languages*				
	Russian	*Belorussian*	*Ukrainian*	*Bulgarian*	*Macedonian*
С	s	s	s	s	s
Т	t	t	t	t	t
У	u	u	u	u	u
Ў	—	u’	—	—	—
Ф	f	f	f	f	f
Х	x	x	x	x	x
Ц	cz, c	cz, c	cz, c	cz, c	cz, c
Ч	ch	ch	ch	ch	ch
Ц	—	—	—	—	dh
Ш	sh	sh	sh	sh	sh
Щ	shh	—	shh	sth	—
Ъ	```	—	—	a’	—
Ы	y’	y’	—	—	—
Ь	`	`	`	`	—
Э	e`	e`	—	—	—
Ю	yu	yu	yu	yu	—
Я	ya	ya	ya	ya	—
’(апостроф)	’	’	’	’	’
Ѣ (ять)	ye	—	—	ye	—
Ѳ (фита)	fh	—	—	fh	—
Ѵ (ижица)	yh	—	—	yh	—
Ѫ (юс)	—	—	—	o’	—

Unicode not supported, because not all metadata standards support it.

Limitations

There is no support for some file formats, such as Adobe PSD, Leica RWL, Sigma X3F.
It is impossible to view RAW images.
It is impossible to create missing tags in RAW files.
It is impossible to increase the length of text data in RAW files.
It is impossible to read and write proprietary tags in MakerNote.
The saving of the MakerNote tag in the file not guaranteed. By default, these tags removed from the files.
Names and descriptions of tags in English only, regardless of the language settings of the program.

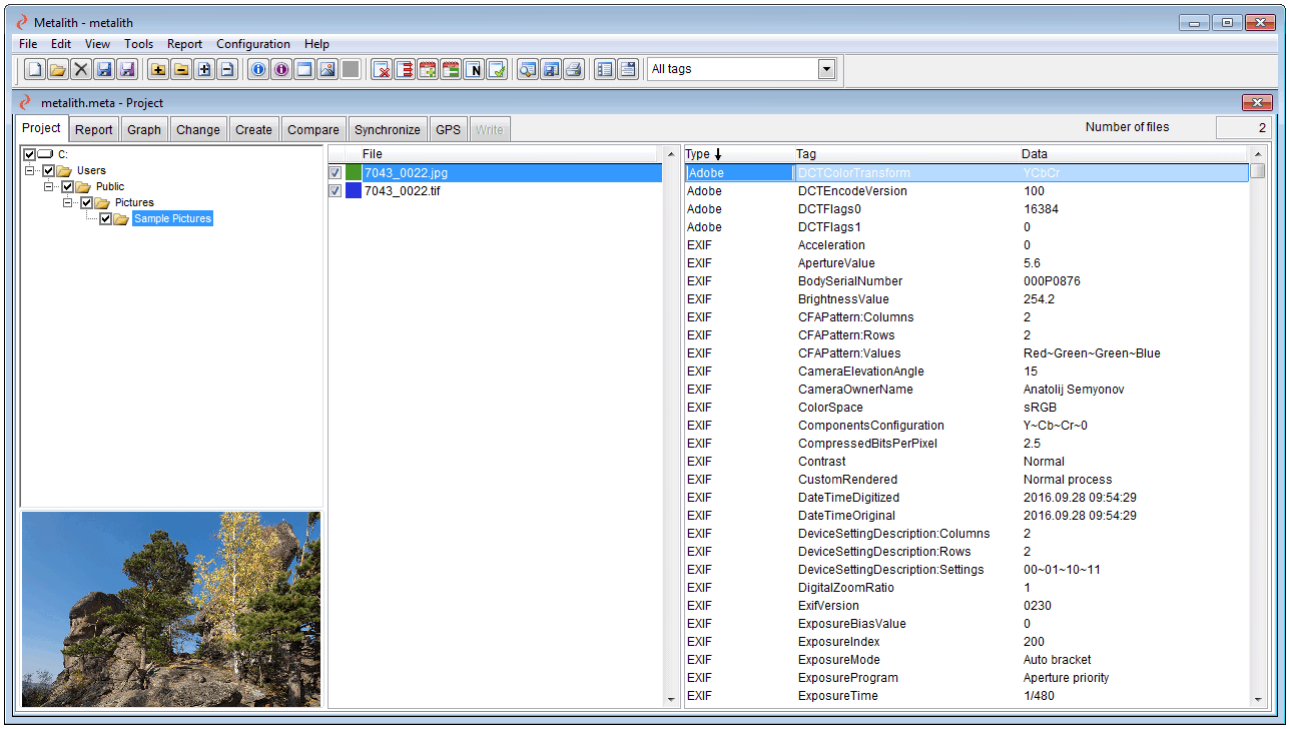
Limitations will fixed in subsequent versions of the program.

Getting started

Installation

There are no special installation requirements. Just run the installer. After installation, you can run the program **Metalith**, choose a shortcut on the desktop or **Start** menu. To delete the program use uninstall shortcut in **Start / All Pograms / Metalith** or open **Add / Remove Programs** in **Control Panel** and double-click **Metalith** in the list.

Quick start

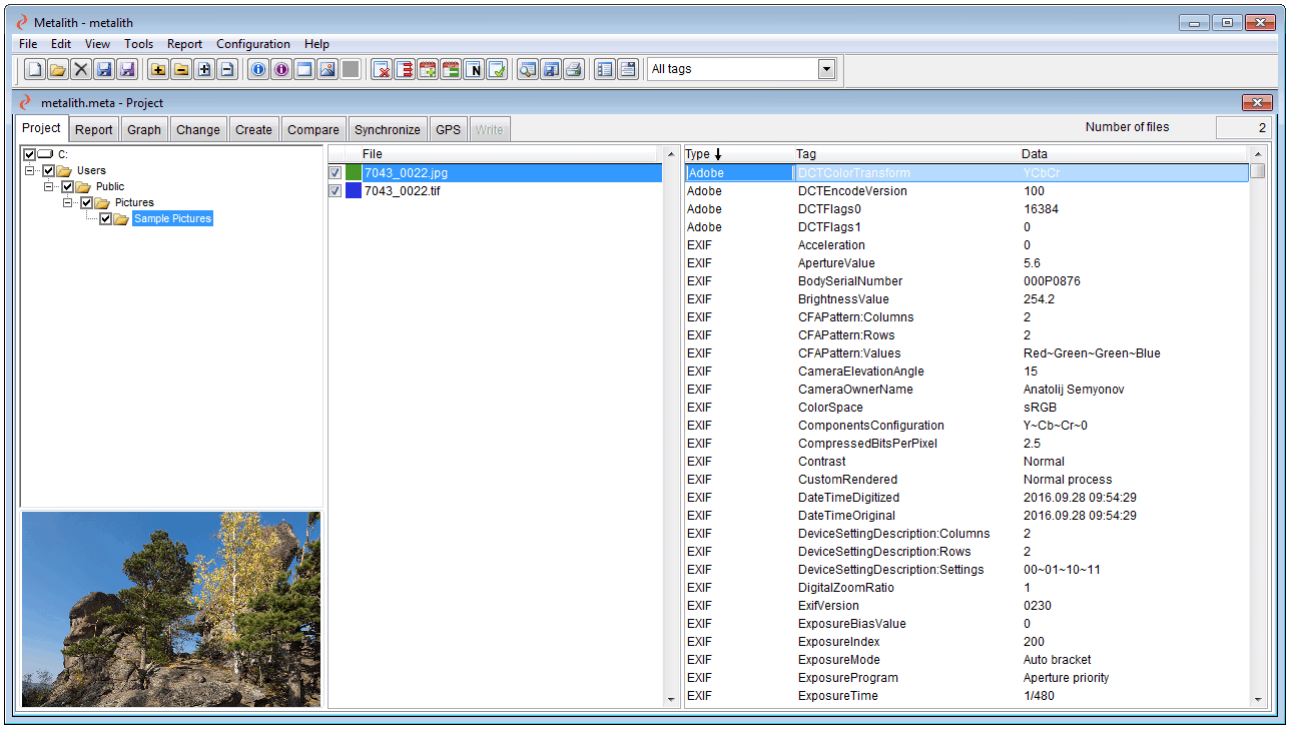


Create a new file by clicking **New** .
Click **Add directory** or **Add file** and select the directory or file.
The **Directory** field will display a directory tree. **Data** grid will display the metadata of selected file.
To view the metadata report for all files go to **Report** pageframe.
To view the graphs for tags go to **Graph** pageframe.
To save the project file click **Save** , later you will be able to open it for editing.
To close file click **Close** .

To include files of subdirectories set the **Include subdirectories** in the **Configuration - Options** window.

To create new project on startup set the **Create a new project file on startup** in the **Configuration - Options** window.

Using



Metalith software reads metadata from files and allows you to analyze and edit them.
Metalith has its own file format (.meta). The file contains the metadata extracted from one or more image files and data of their location. It is possible to add or delete metadata of any file. The project file can contain an unlimited number of image files, but the work with very large files, as usual, will be slow. For optimal performance, the project file should contain no more than 100 image files.

The metadata file can be opened with **File - Open** , or from **Explorer** with double-click on the file. Opening the second file will start a second instance of the program with the new file. You can also run two or more instances of the program and in each of them to create or open a separate file.
The main tool of metadata analyze is a report that contain ranked data from all files. Reports can be displayed either in **Report** page or outputted to print that can be previewed or saved to a file HTML, XML or TIFF.
Graphical representation of metadata for any tag displayed on the **Graph** page.
To change, remove and create new metadata, use **Change** and **Create** pages. To compare metadata, use **Compare** and **Synchronize** pages.
To manage GPS data and geotag files use **GPS** page.
In the process of editing all data will changed in the project file only. After editing, you can write the edited data into files in **Write** page.
Quick change of the metadata is possible from the **Tools** menu. You can delete all of the metadata, replace metadata from another file, perform shift or equalize date and time for the corresponding tags, rename files according to the data of any tags. You even can create new tag.
To determine the amount of output data apply profiles. Profile is a list of tags to displayed or used to generate the report.

Controls

There are controls on the main menu and toolbar. Every menu option has corresponding button in the toolbar.

File menu allows working with project files and has options:

New	creates a new metadata file
Open	opens the saved metadata file
Close	closes the current metadata file
Save	saves the current metadata file
Save As	saves the current metadata file with a different name
Exit	closes the program

Edit menu used to add and delete files from database and has options:

Add Directory	adds metadata from files of selected directory into the current metadata file
Remove Directory	removes metadata of selected directory from the current metadata file
Add File	adds metadata from the selected image file into the current metadata file
Remove File	removes metadata of selected image file from the current metadata file

View menu allows to view file data and has options:

Type	displays a description of the current type of tags in a separate window
Tag	displays a description of the current tag in a separate window
Data	output data of the current tag in a separate window
Image	opens the image file in a separate window
Graph	outputs graph in a separate window

Tools menu provides access to the tools to quickly edit the metadata and rename files and has options:

Delete metadata	deletes all metadata or metadata for specific types
Replace metadata	replaces metadata of files with the data of any file
Shift Date/Time	shifts the date/time for the tags
Equalize Date/Time	equalize the date/time for the tags
Rename files	rename files according to the tags
Tags management	allows to create new tag

Report menu designed to work with metadata reports and has options:

View Report in Browser	opens the metadata report in the browser
Export Report	saves the metadata report to HTML, XML or TIFF file
Print Report	displays the metadata report in a preview window and print it

Configuration menu used to control the tags and parameters of the program and has options:

Options	opens the application settings
Profiles	opens a window that allows you to create or delete profile

Help menu has options:

Help	opens help
Website	opens the program home page in the web browser
E-mail	prepares a message to the author in the mailer
Register	allows to register Metalith
About Metalith	Opens the splash screen

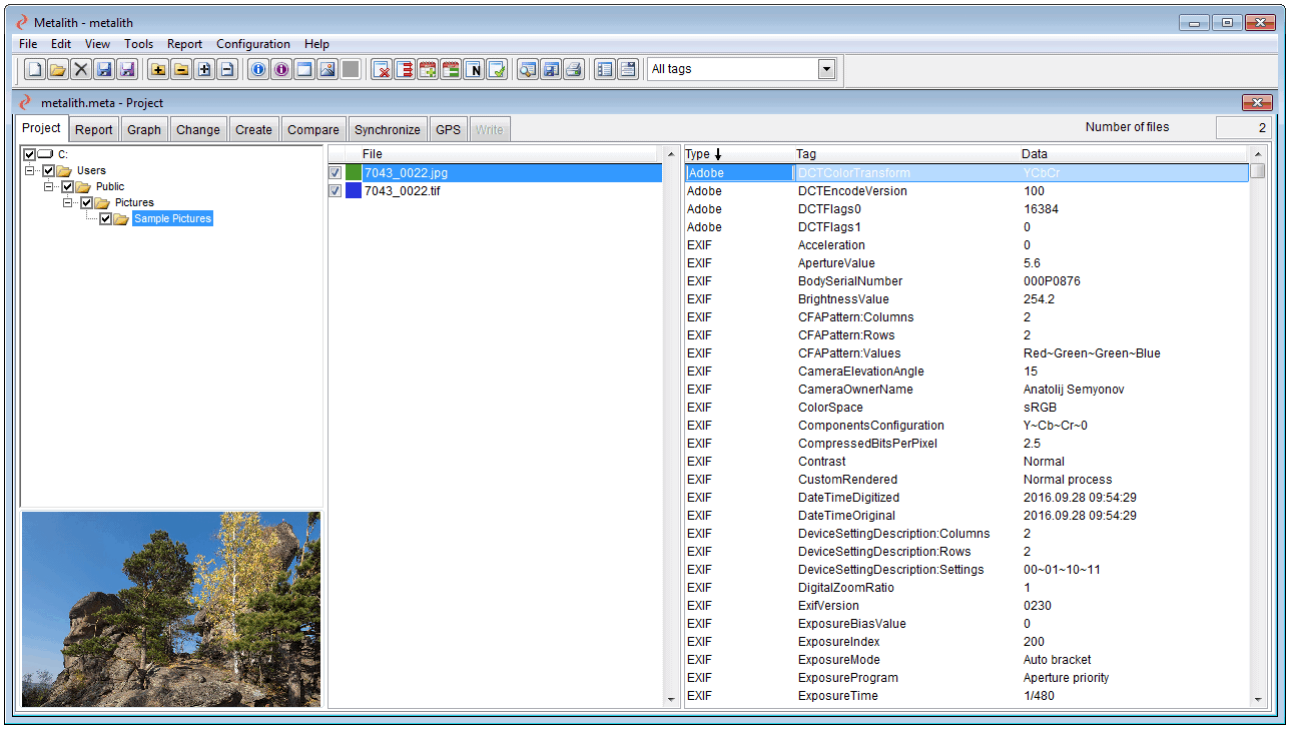
Profiles listbox allows to choose profile.

User interface

Pages

Project

Project page opened by default.



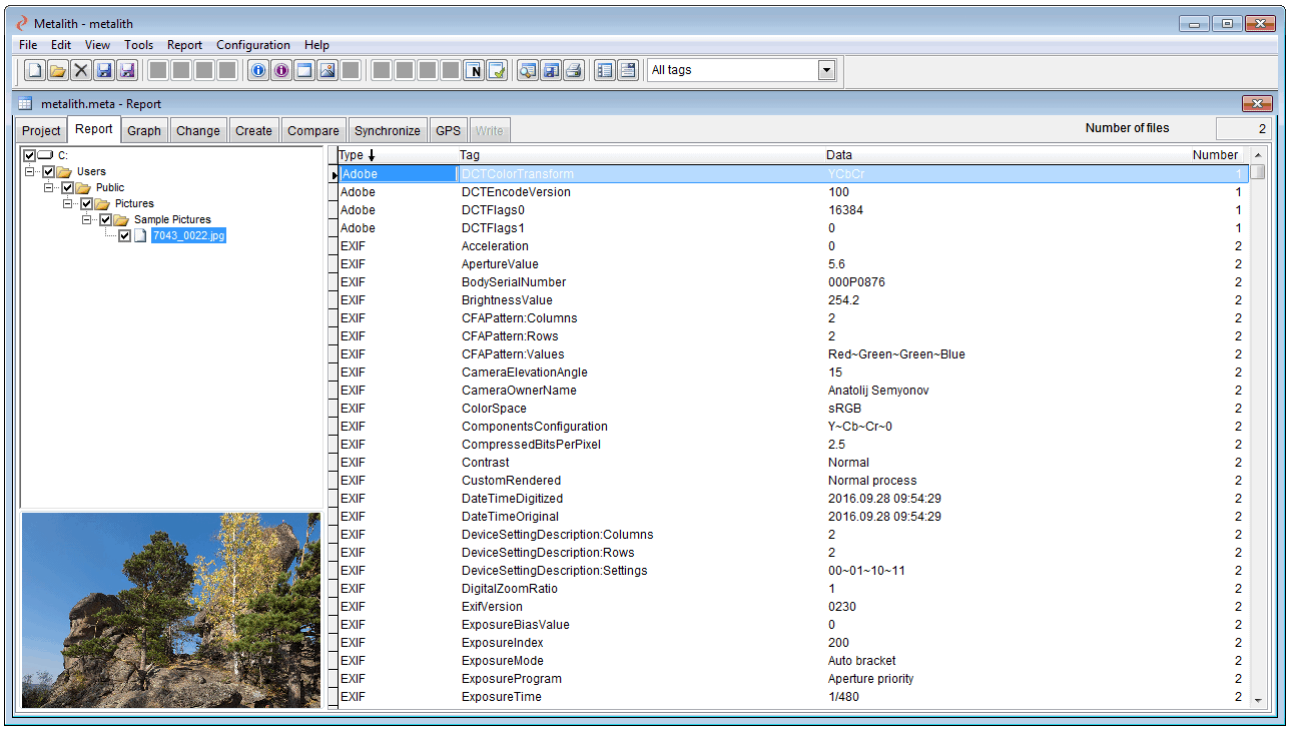
There are following fields in **Project** page:

- Directory - tree of added directories
- File - list of files in current directory
- Data - the metadata of the current file
- Image - image of the current file (optional)

To add or remove directories and files use **Add directory**, **Remove directory**, **Add file** and **Remove file** options from the **Edit** menu or an appropriate buttons.
Add directory window displays the current directory, the progress of the current directory and the overall progress in percent, as well as the number of added files, and the time until the operation is complete.
The files with errors in the metadata highlighted with red, minor errors - yellow.
There is the metadata in **Data** grid. Changed data shown in blue, deleted in red. The data shown if it is no longer, then 120 characters. Otherwise, there is the string “Binary or long string”. Such string highlighted with blue. To view this data double-click the field.
For tags that do not contain any data, the string “Empty string” displayed.
Double click on the **Tag** field displays the description of the selected tag in a separate window.
Double click on the **Data** field displays the data of the selected tag in a separate window.
An arrow in the column header indicates the key field on which the data was sorting.
Checkboxes allow you to select files and folders to remove.
There is the total number of image files of the project in the upper right corner.
When you open the project file, if the image file has deleted or moved, you will see the message and the image will not displayed.
If the language of metadata file does not match the language of the program there is in the top of the form a red warning on the file code page. To display the data correctly, switch to the language, using the appropriate code page.

Report

To view report open **Change** page.



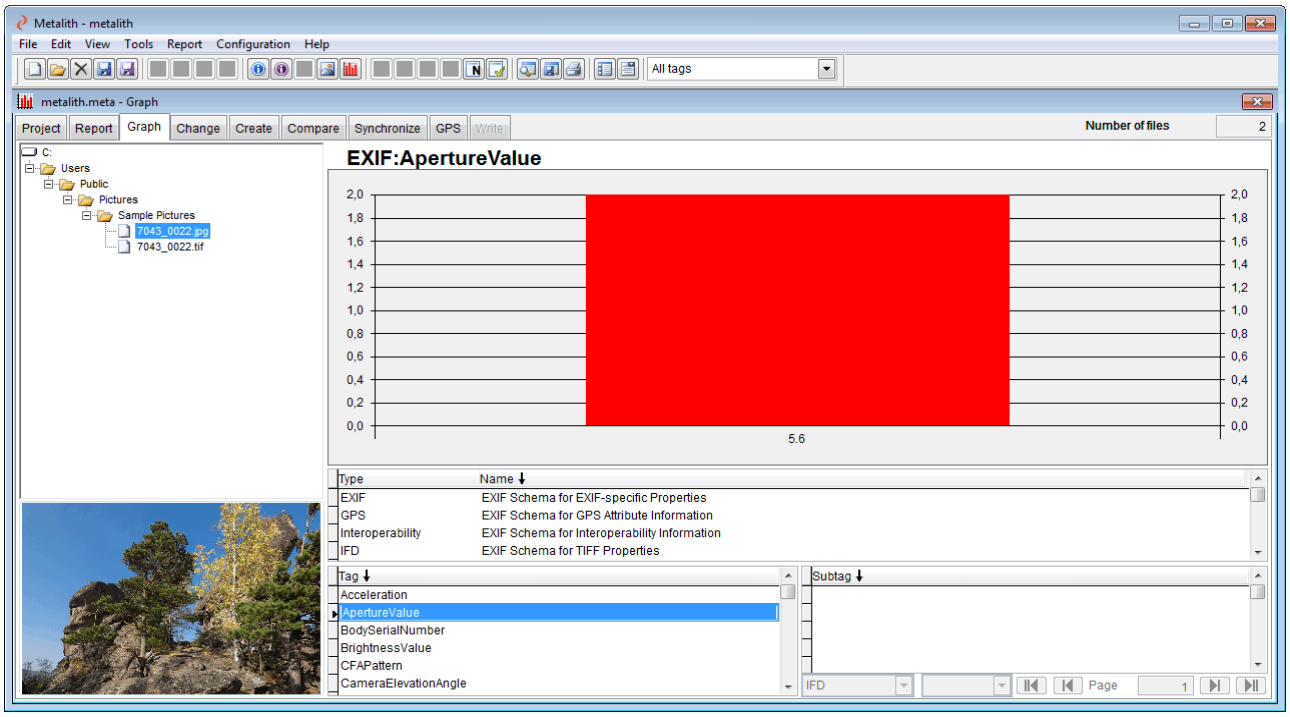
There are following fields in **Report** pagefreame:

- Data - the list of tags and their data
- Tree - tree of files containing current tag
- Image - the image of the file selected in **Files** tree

Reports enable you to compare the metadata of files. Using reports you get the metadata statistics and can quickly find different data.
A report executed for tags defined by the current profile.
The report displays all found tags and their data, and the number of files containing this data.
Changed data shown in blue, deleted in red. String “Binary or long string” is highlighted with blue.
Checkboxes allow you to select a file to view binary or long data.
An arrow in the column header indicates the key field on which the data was sorting.
Double click on the field **Tag** displays a description of the selected tag in a separate window.
Double click on the field **Data** displays the data of the selected tag in a separate window.

Graph

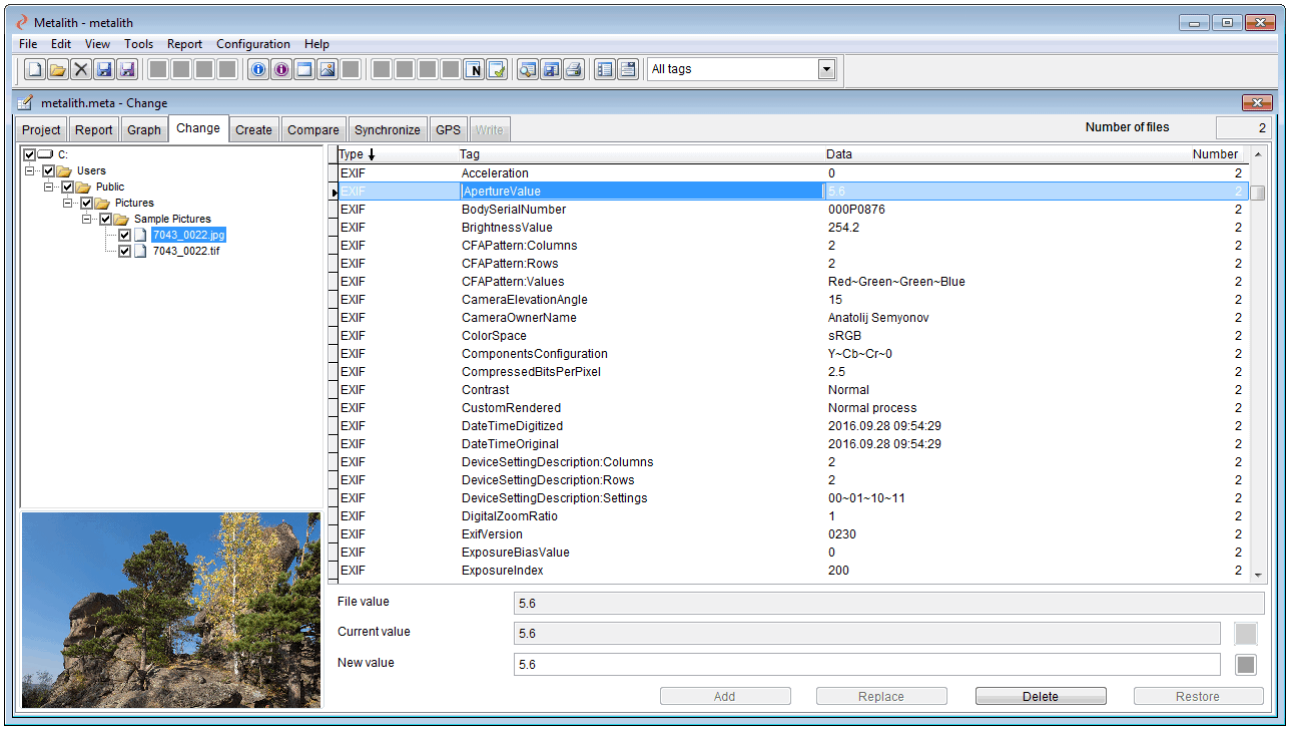
To view the statistics for tags open the **Graph** page.



There are **Type**, **Tag**, **Subtag** grids, **Graph** and **Image** fields, and **Files** tree in **Graph** page.
Type, **Tag** and **Subtag** grids contain a list of tags.
Files tree contains a list of files with the selected tag.
Graph field shows graph for selected tag.
Image field shows the image of the file selected in **Files** tree.
Drop-down lists **IFD** and **#IFD** allows you to select IFD (Image File Directory) to input. They are available only for types, which can support IFD.
Navigation buttons allows you to move through the graph pages if there are several pages in the graph.

Change

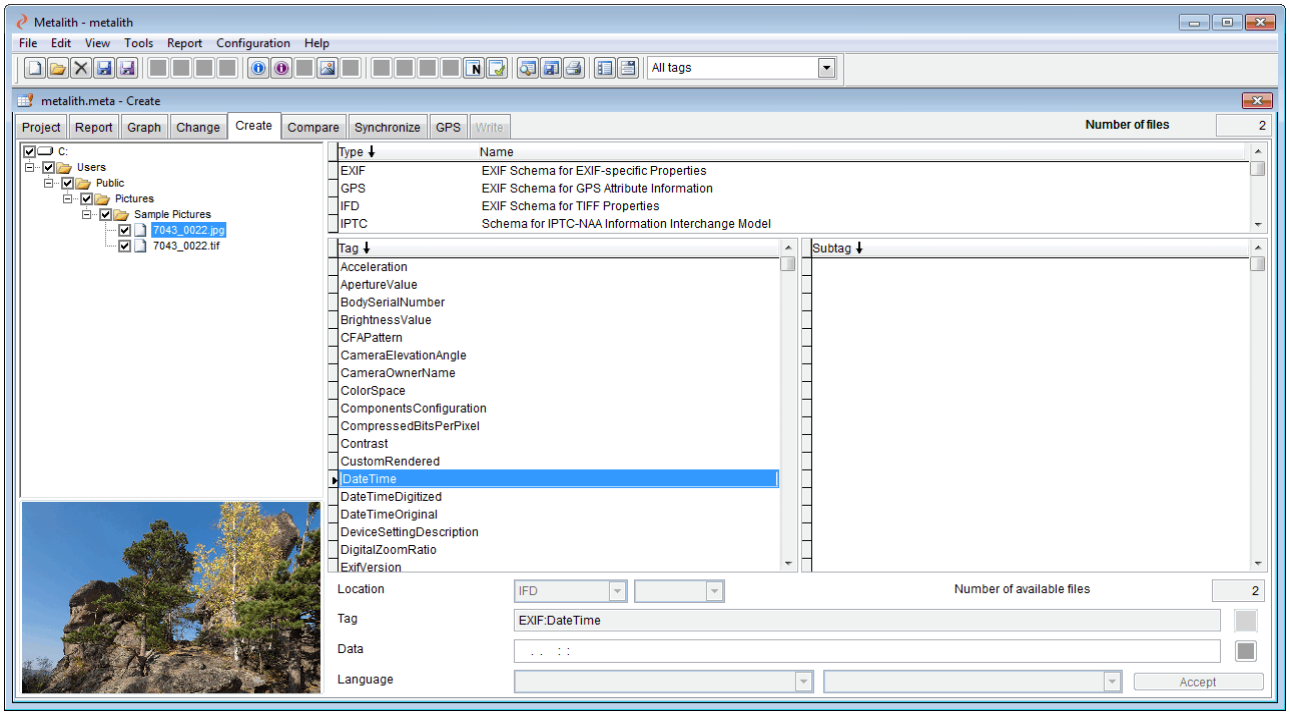
To change the metadata open **Change** page.



There are **Data** grid, **Files** tree, and **Image** field in **Change** pagefreame.
Data grid contains all the metadata available to change.
Files tree contains a list of files with the selected tag.
Image field shows the image of the file selected in **Files** tree.
Changed data shown in blue, deleted in red. String “Binary or long string” is highlighted with blue.
File value field shows the data of the file.
Current value field shows data of the current tag, they differ from the data of a file in that case if they modified but not written to the file.
~ shows that the current tag supports arrays of data consisting of several values. Values must be separated by **~**.
To change data of the tag, check needed files in the tree, edit the data in the **New value** field and click **Replace**.
To add data to the current, input additional data in the **New value** field and click **Add**.
In cases where a tag value must be chosen from a list, text box is replaced with a drop-down list.
If the length of the text field is not enough to introduce all the data, click **Expand**, and enter data in the immediate window, close the window and click **Replace** or **Add**.
To remove a tag, click **Delete**.
To restore data to the original, click **Restore**.

Create

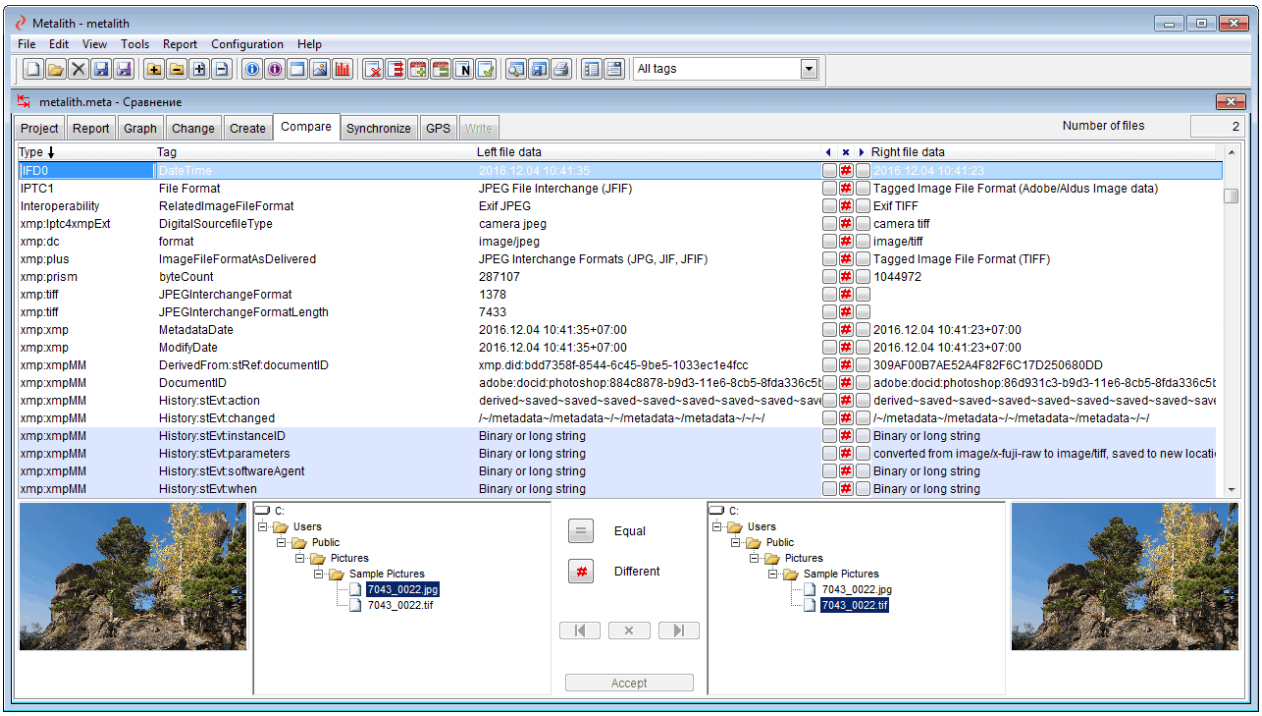
To create a metadata tag that is missing in the file, open **Create** page.



There are **Type**, **Tag**, **Subtag** grids, **Files** tree and **Image** field in **Create** page.
Type, **Tag** and **Subtag** grids contain a list of tags available for inclusion.
Files tree contains a list of available files.
Image field shows the image of the file selected in **Files** tree.
Drop-down lists **IFD** and **#IFD** allows you to select IFD (Image File Directory) to input. They are available only for types, which can support IFDs.
Number of available files box, displays the number of files available for creation the current tag.
Tag field displays the full name of the current tag.
~ shows that the current tag supports arrays of data consisting of several values. Values must be separated by **~**.
To input a tag select it in **Type**, **Tag** and **Subtag** grids, if necessary, change IFD in drop-down lists **IFD** and **#IFD**, edit the data in **Data** field, check needed files in the tree, and click **Accept**. In cases where a tag value must be chosen from a list, text box is replaced with a drop-down list. If the length of the text field is not enough to input all the data, click **Expand** , and enter data in the edit window, close the window and click **Accept**.

Compare

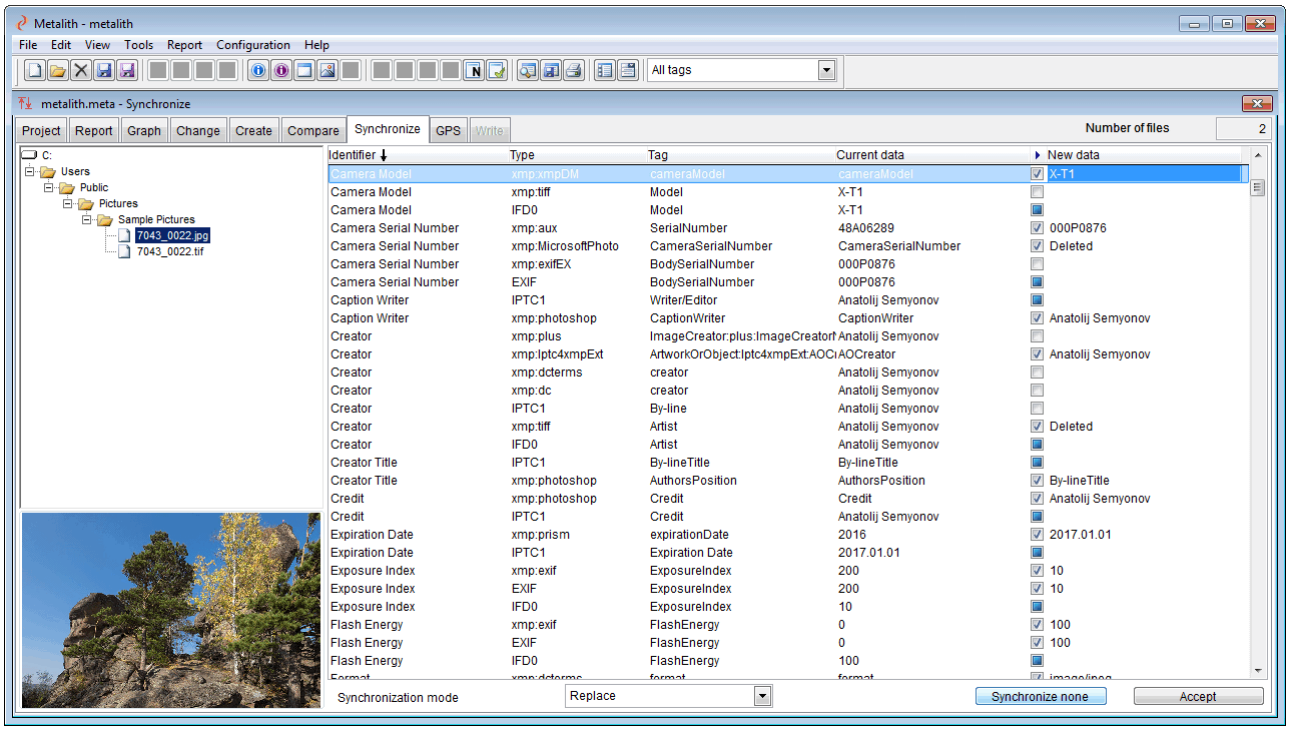
To compare the metadata of two files open **Compare** page.



There are **Data** grid, two **Image** fields, and two **Files** trees in **Compare** page.
There are a list of tags and their data in **Data** grid,
Files trees contain a list of files.
Image fields show the images of selected files.
Select file in each **File** tree and check tags to copy. Arrows show direction of the copying.
Equal = and **Different** # buttons allows you to display such tags.
Left arrow and **Right arrow** buttons check all tags, which can be copied in such way. **Cross** × button deletes all checks.
Click **Accept** for every pair of files and go to **Write** tab to overwrite files.

Synchronize

To synchronize data of different tags, which must contain the same data open the **Synchronize** page.



There are **Files** tree, **Data** grid, and **Image** field in **Synchronize** page.
Files tree contains a list of available files.
Data grid contains a list of tags, which must contain the same data but contain different.
Image field shows the image of the file selected in **Files** tree.
Synchronization mode box allows you to select a mode:

- Delete - deletes dublicating tags
- Replace - replace data in dublicating tags with the data from the main

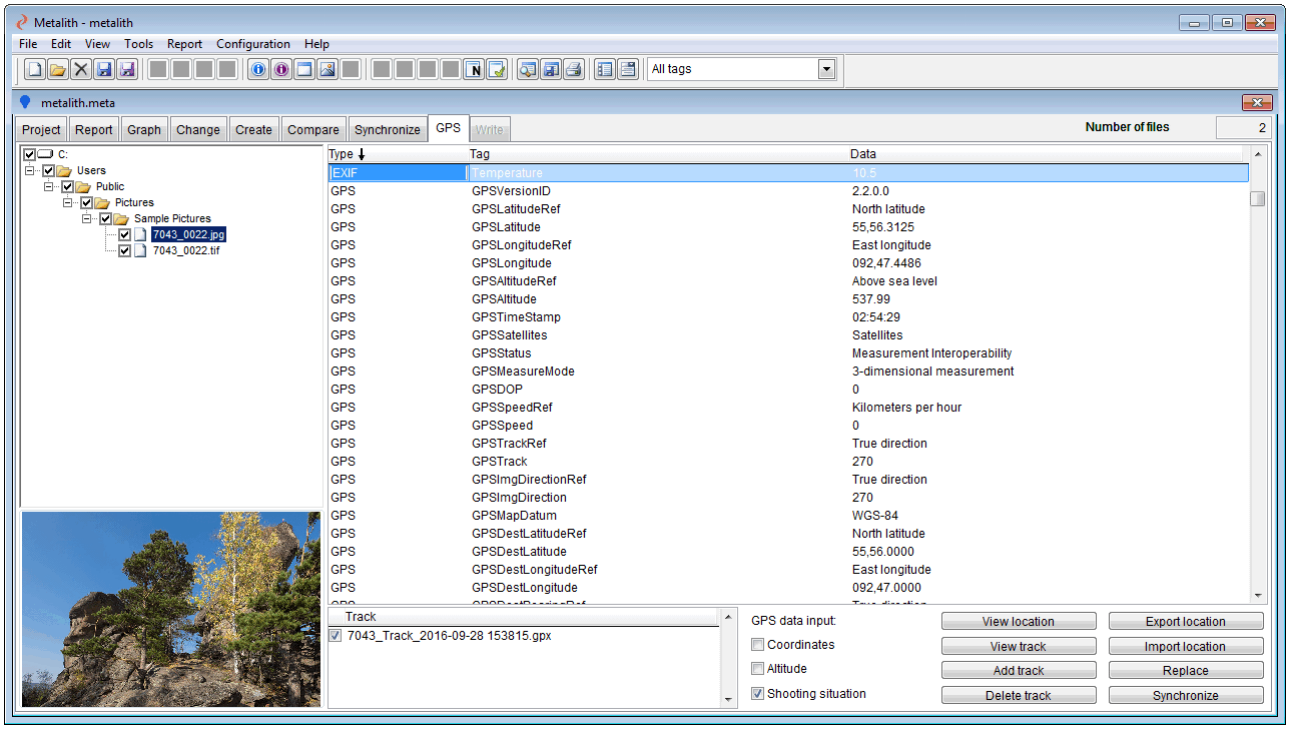
Synchronization is available at once for one file only. To continue with another file and do not loose data first click **Accept**.
Select file in the **Files** tree and check tags to change. Click **Accept** for every file and go to **Write** tab to overwrite files.

Tags supported for synchronization see in **Annex**.

XMP tags in the national languages (with the language attribute other than “x-default”), are not synchronized.

GPS

To manage GPS data open **GPS** page.



There are following fields in **GPS** page:

- Files - the list of files and directories
- Data - GPS and shooting situation data
- Tracks - the list of tracks
- Image - image of the file selected in **Files** tree

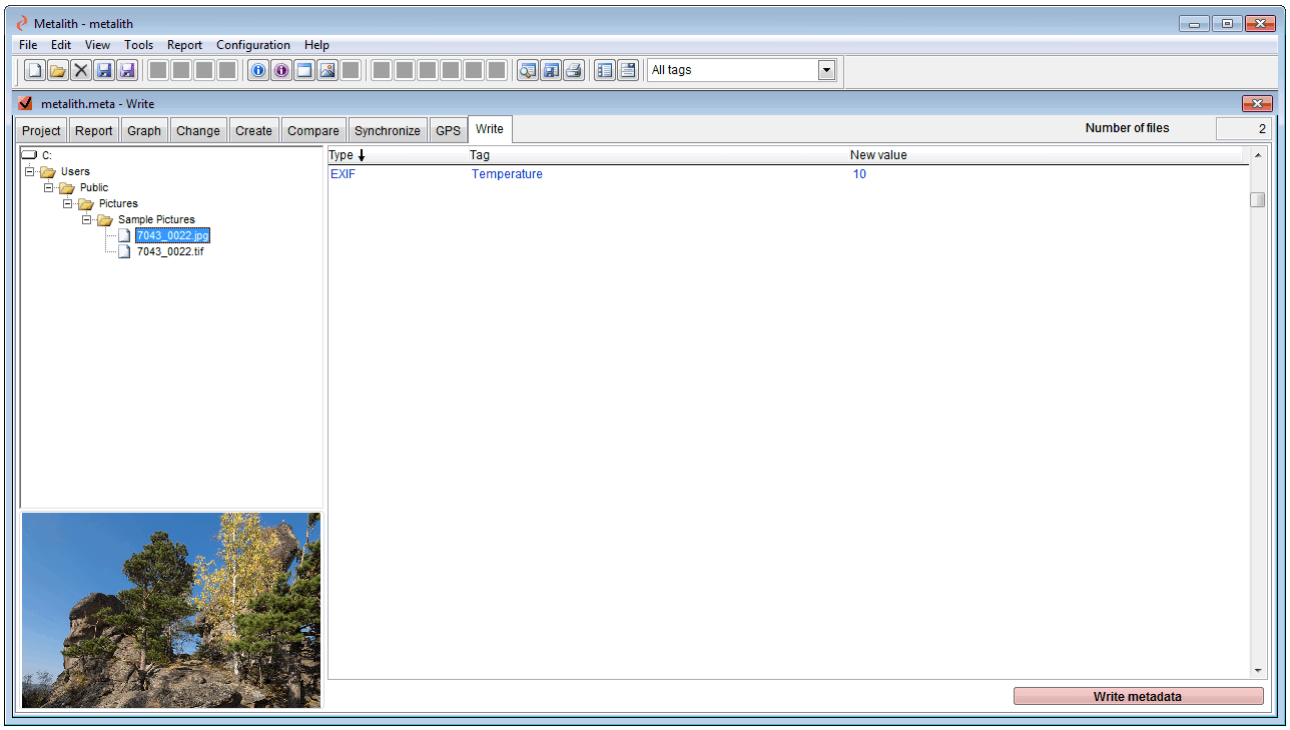
To add or remove track use **Add track** and **Delete track** buttons.
There are GPS and shooting situation data of the current file in **Data** grid. Changed data shown in blue, deleted in red.
Double click on the **Tag** field displays the description of the selected tag in a separate window.
Double click on the **Data field** displays the data of the selected tag in a separate window.
An arrow in the column header indicates the key field on which made sorting the data.
To add the track information into the files, click **Synchronize** button. The following tags can be created:

- EXIF GPS tags (Coordinates, altitude etc.)
- XMP GPS tags (Coordinates, altitude etc.)
- Shooting situation tags (Temperature, pressure etc.)

Altitude data requested over the internet. In the absence of connection taken from the track.
Other data from the track, of course, if any.
Checkboxes allow you to select files to input the GPS data.
Using the **GPS data input** selector, you can choose to add only part of the data. The same selector available in the **Options** window.
It is possible to view the track and the shooting point in **Google Earth**, you just need to select the file and click **View track** or **View location**.
It is also possible to view the shooting point in **Google Maps**, it is also executed, but with the corresponding **Options** setting.
To export or import the GPS data of the current file, use the **Export location** and **Import location** buttons. A KML file is used to save the data.

Write

To write the modified or created metadata, open **Write** page.



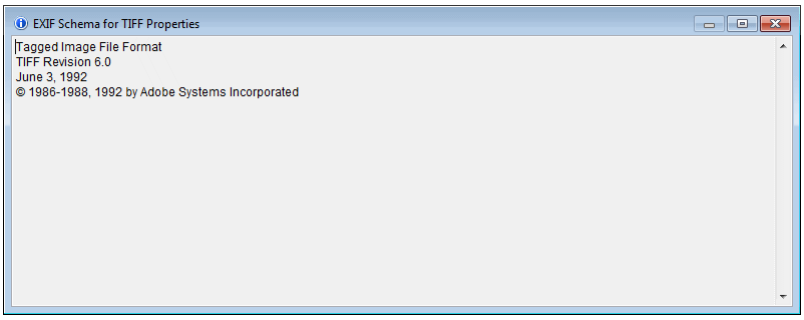
There are **Files** tree, **Data** grid, and **Image** field in **Write** page.
Files tree contains a tree of overwritten files.
Data grid is a list of overwritten tags for current file.
Image field shows the image of the file selected in **Files** tree.
To start writing click **Write Metadata**.
The files will overwritten in accordance with current changes. Project data will overwritten from new files.
Each file will backed up in file, which has the same name as the original file, but with the extension .bak. This feature can disabled in **Options**, but it is not recommended.

Metadata operations

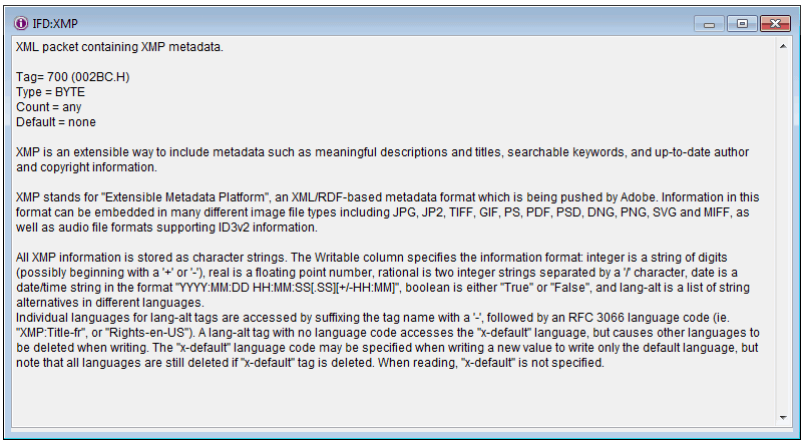
View

There are the are buttons **Type**, **Tag**, **Data**, **Image** and **Graph** to view files and tags data.
In addition, these functions can be accessed from the menu, available when you right-click on the fields of **Data** grids or by double clicking the same fields. The use of any of them opens a separate window with the appropriate content.

Type window contains the description of tags type.



Tag window contains the description of tag.



Data window is intended primarily for viewing the large length data that will not fit in the normal field and displayed as “Binary or long string”.

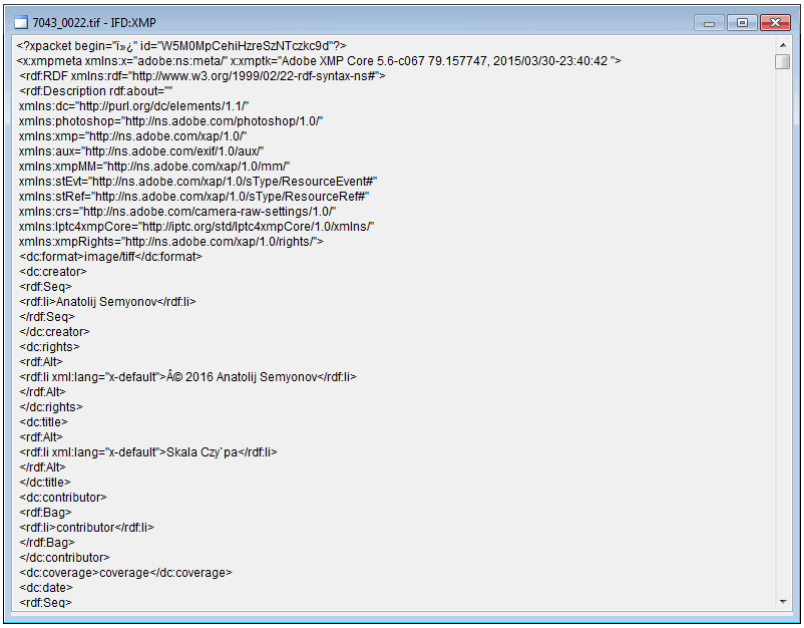
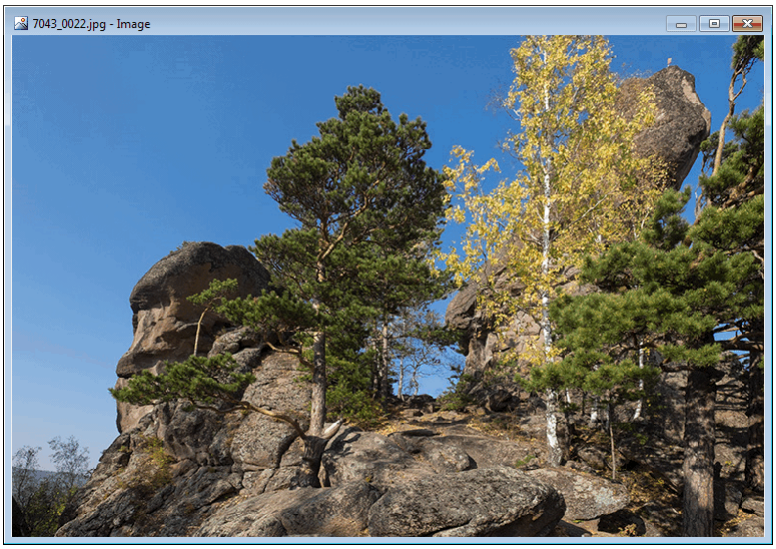
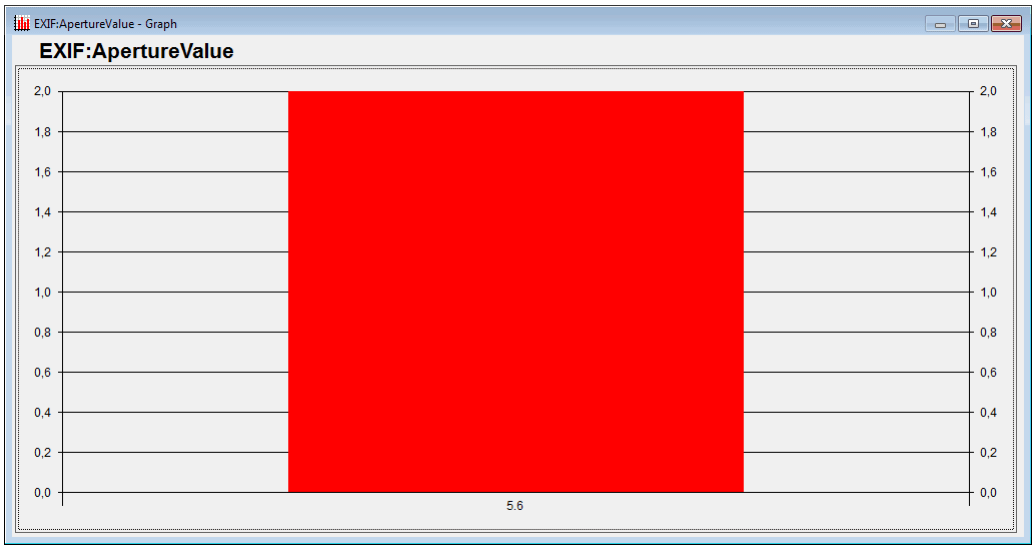


Image window contains the same image as the **Image** field, but it is larger and sizeable.



Graph window contains the same image as the **Graph** field in the **Graph** pageframe, but larger and sizeable.



These windows are modal, that is, before they close any other operations in the program are not available. Closing these windows is possible as in the usual way, and with a double click.

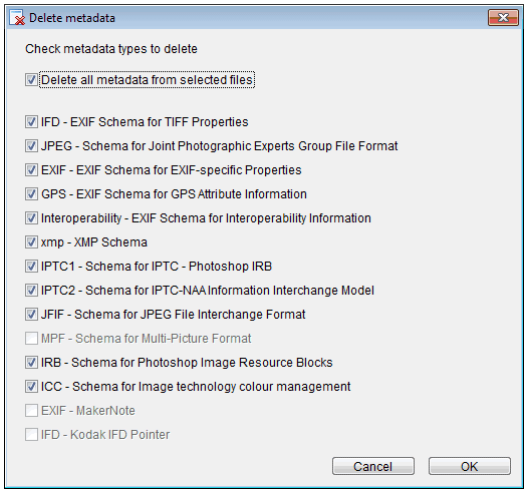
Export

Export is executing for reports.
The report can be viewed in your browser, by using option **Report - View Report in Browser**.
The report can be printed and saved in a separate file by using the options **Report - Print Report** and **Report - Export Report**. You can save the report in HTML, XML or TIFF files.
Sort the data in the report in accordance with the sorting of the **Data** grid in the **Project** page.
To print or save the report your system must have installed printer. If you have not a printer install any virtual one.

Tools

Delete metadata

To remove metadata check files and select the menu option **Tools - Delete metadata** in Main menu.



Available options:

Delete all metadata from selected files
IFD - EXIF Schema for TIFF Properties
JPEG - Schema for Joint Photographic Experts Group File Format
EXIF - EXIF Schema for EXIF-specific Properties
GPS - EXIF Schema for GPS Attribute Information
Interoperability - EXIF Schema for Interoperability Information
xmp - XMP Schema
IPTC1 - Schema for IPTC - Photoshop IRB
IPTC2 - Schema for IPTC-NAA Information Interchange Model
JFIF - Schema for JPEG File Interchange Format
MPF - Schema for Multi-Picture Format
IRB - Schema for Photoshop Image Resource Blocks
ICC - Schema for Image technology colour management
EXIF - MakerNote
IFD - Kodak IFD

Check metadata types to delete and click OK.
The files will overwritten immediately.

Replace metadata

To replace metadata of one or more files with the data of any file do the following:

Check destination files for copying metadata.
Set cursor to the source file from which metadata will copied.
Run command **Tools - Replace metadata** in Main menu.

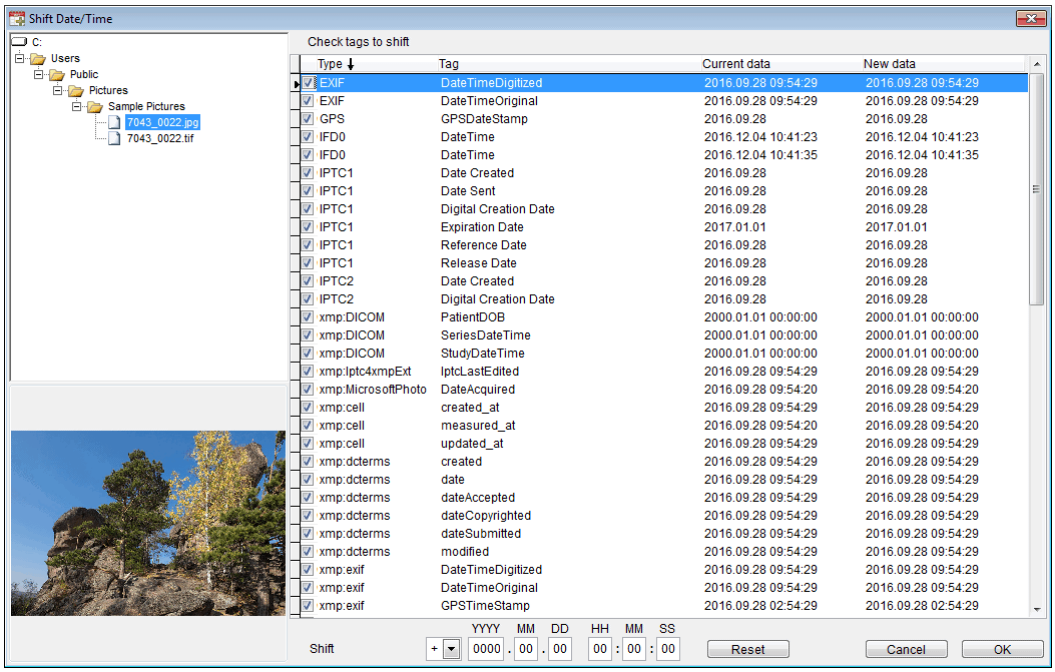
All checked files will overwritten with the metadata from the source file. Tags missing in the source file will deleted.
Tags missing in the destination file will inserted.
Exceptions:
Tags affecting the image will not be replaced.
Tags will not inserted if they not supported by format of the destination file.
Unsupported **JPEG** tags will not replaced in JPEG files.
Tags will not replaced for the third and subsequent images in the multi-page TIFF files.
Tags **ICC** and **IRB** will not be replaced. If there is no such tag in the source file, it will deleted from the destination file.
Tags **MakerNote** and **Kodak IFD** will deleted.

The files will overwritten immediately.

The destination file will not overwritten if the Metalith detects the error in the metadata file. Such file is highlighted in red.

Shift Date/Time

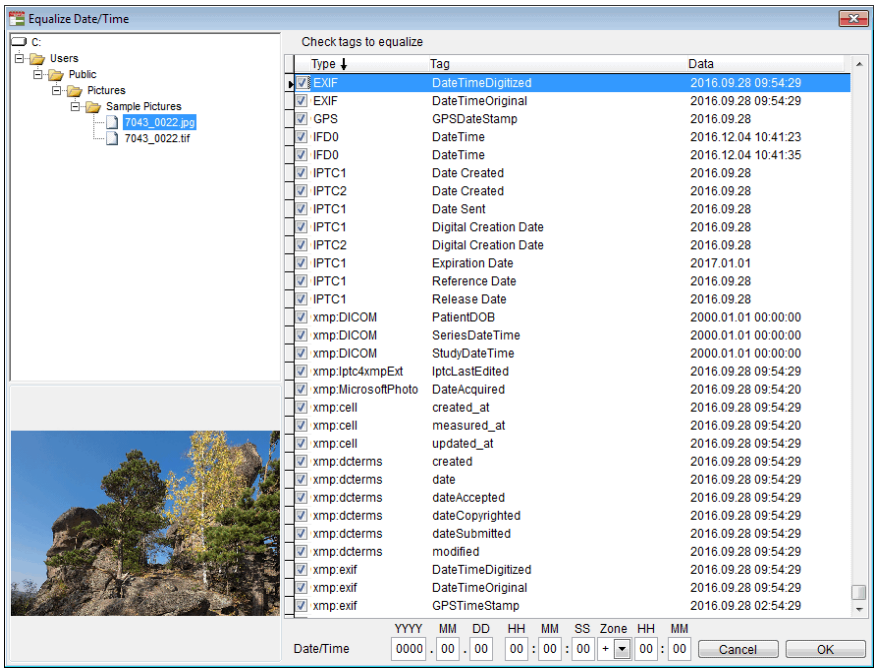
To shift Date/Time in metadata check needed files and select the menu option **Tools - Shift Date/Time** in Main menu.



You can shift date/time data for any tags.
There are list of files with the selected tag in **Files** tree.
Image field shows the image of the file selected in **Files** tree.
To shift Date/Time select required tags in the **Tags** grid and set the value of the shift date and time. New date must be between 01.01.0001 and 31.12.9999.
Click **OK**.
The files will overwritten immediately.

Equalize Date/Time

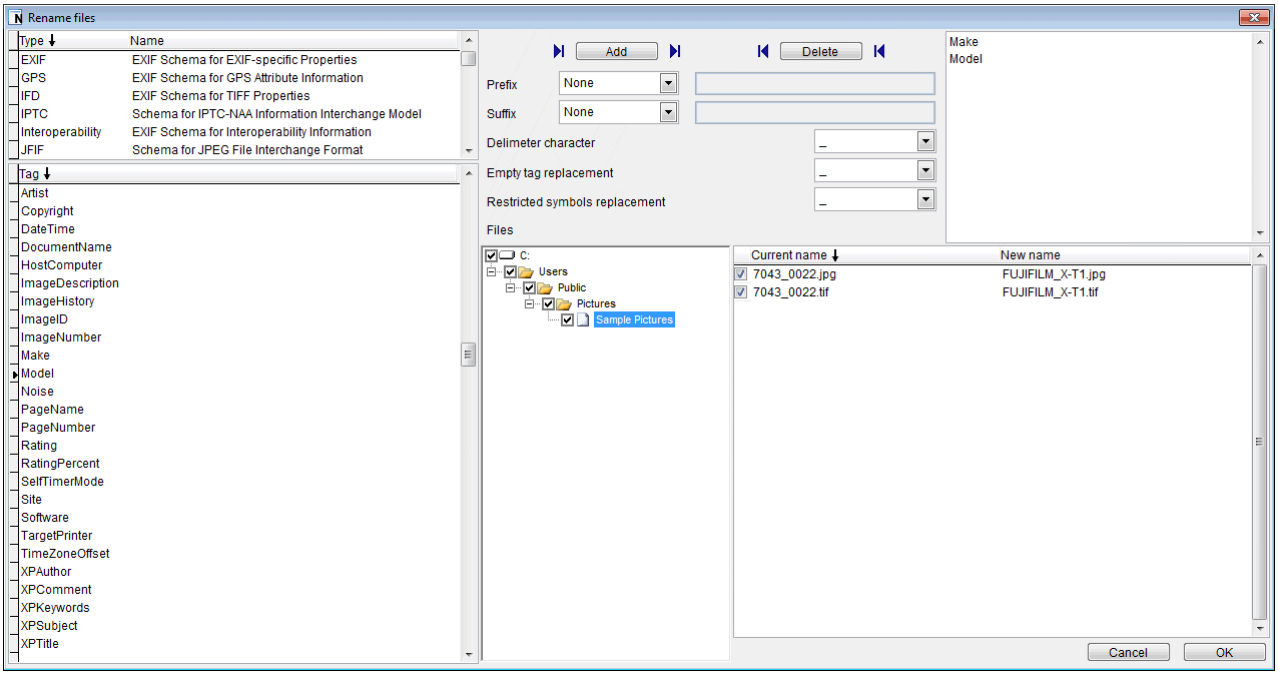
To equalize Date/Time in metadata of files check them and select the menu option **Tools - Equalize Date/Time** in Main menu.



You can equalize date/time data for any tags.
There are list of files with the selected tag in **Files** tree.
Image field shows the image of the file selected in **Files** tree.
To equalize Date/Time select required tags in the **Tags** grid and set the date, time and time zone to which you want to modify current data. You can choose any date between 01.01.0001 to 31.12.9999.
Click **OK**.
The files will overwritten immediately.

Rename files

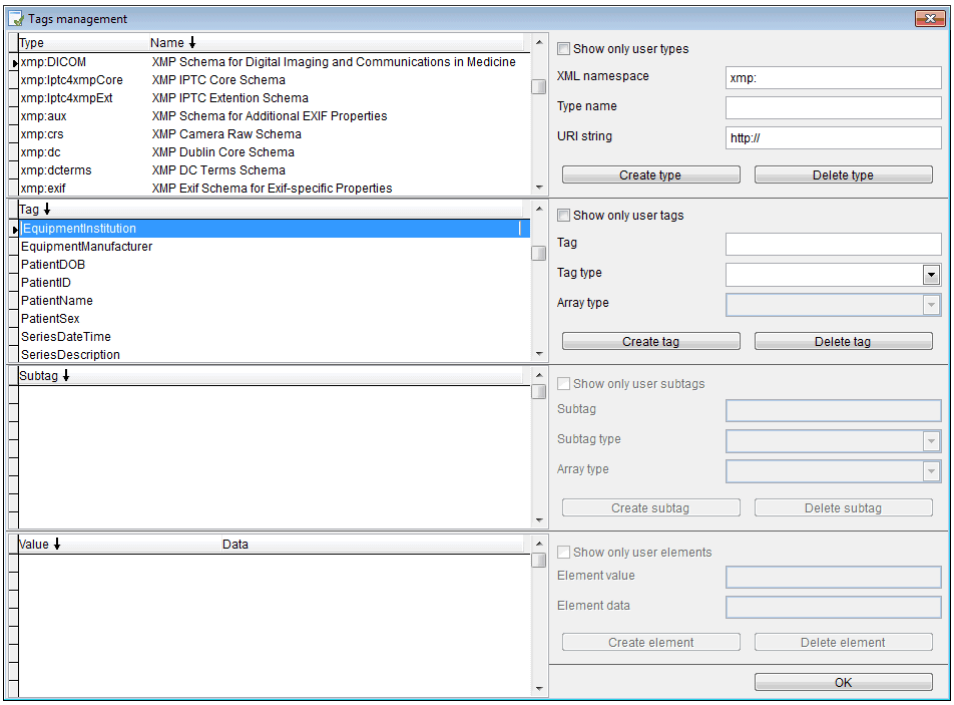
To rename files check them and select the option **Tools - Rename files** in Main menu.



You can rename files with the data of any tags.
Select the required tag in the **Type** and **Tag** grids and press **Add**. The name of the tag will appear in a **List of tags**. Repeat as needed. To remove a tag from the list, select it and click **Delete**.
Drop-down list and the field **Prefix** contain data that placed in front of the file name.
Drop-down list and the field **Suffix** contain data that placed after the file name.
The prefix and suffix may not be (None), to be the original file name or include any string of characters that allowed in file names.
Drop-down list **Delimiter character** specifies the character that separates the different tags of each other.
Drop-down list **Empty tag replacement** specifies the character that entered in the file name in the event that there is no such tag in the file.
Drop-down list **Restricted symbols replacement** defines the character that is used in the file name instead of character that is in the tag data, but are not allowed in file names.
There are the current names and the new names of files in the **Files** tree and grid.
If tag data of different files in one directory are the same, the sequence number in parentheses added to the file name.
To rename files, click **OK**. All selected files will renamed.

Tags management

To create new metadata tag or delete it, select the menu option **Tools - Tags Management** in Main menu .



There are **Type**, **Tag**, **Subtag** and **Value** sections in **Tags Management** form.
There are a list of available tags and identical controls in every section.
You can create new type or new tag in any type of tags. You can even create subtags and values for arrays.
To create item enter data in all fields for this item and click **Create**. Subtags creation is only available if the **Tag type** is “Structure”, values creation is only available if the **Tag type** or **Subtag type** is “Array”. You can delete only user defined tags. To delete select item and press **Delete**.
User defined items are highlighted with green.
If you want your tags would be visible in third party programs create your own type and tags in it.

Types of data	
Character	A Unicode string.
Numeric	A numeric value of arbitrary precision. Consists of a decimal numeric string with an optional single decimal point and an optional leading “+” or “–” sign.
Logical	Allowed values are True or False (the strings should spelled exactly as shown).
Rational	To represent EXIF rational values, they must converted to text.
DateTime	A date-time value, which is represented using a subset of ISO RFC 8601 formatting. The following formats are supported: YYYY YYYY:MM YYYY:MM:DD YYYY:MM:DD hh:mm:ss
Time	A representation of a time value as hh:mm:ss.
Array	An array consists of a set of values.
Structure	A structured property consists of one or more named fields.

Types of arrays	
Unordered Array	List of values whose order does not have significance.
Ordered Array	List whose order is significant.
Alternative Array	Set of one or more values, one of which should be chosen.

Types of arrays	
Language Alternatives	Language alternatives allow the text value of a property to be chosen based on a desired language. Each item in a language alternative array is a simple text value, which must have a language qualifier associated with it.

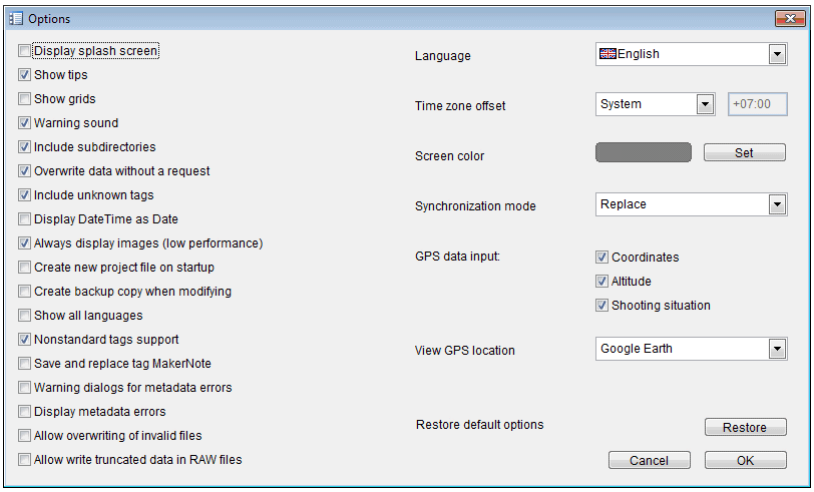
Example of your own type:

XML namespace - xmp:mytype
Type name - My Type
URI string - http://www.mysite.com/mytype

Configuration

Options

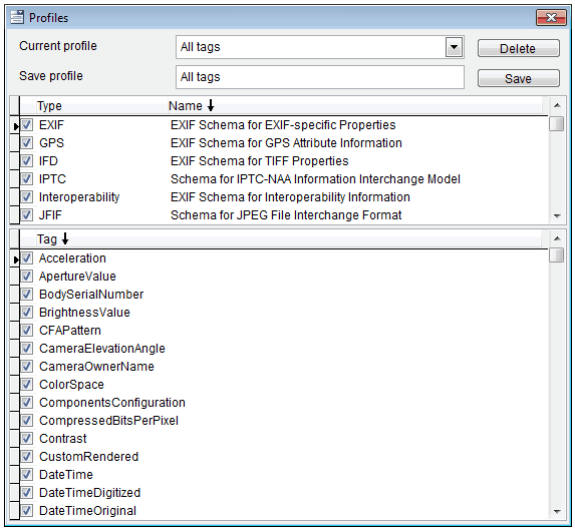
To set, select the menu option **Configuration - Options** in Main menu .



Available options:

Option	*Default*
Display splash screen on startup	On
Show tips for controls	On
Show lines in grids	Off
Warning sound on input errors	On
Include subdirectories when reading	On
Overwrite data without a request when the file is reading again	On
Include unknown tags XMP	On
Display DateTime as Date	Off
Always display images	On
Create a new project file on startup	Off
Create backup copy when modifying	Off
Show all languages when selectling XMP data language	Off
Nonstandard (user defigned) tags support	Off
Save and replace tag MakerNote when you overwrite files	Off
Warnung dialogs for metadata errors	Off
Display metadata errors in data grids	Off
Allow overwriting of invalid files	Off
Allow write truncated data in RAW files	Off
Language of interface and data	System locale
Time zone offset	System
Screen Color	Gray
Sinchronization mode	Replace
GPS data input	All on
View GPS location	Google Earth
Restore default options	Restore

Profiles



Profile is a set of tags that are used to output data. Profiles applied to the data in the reports and in all tabs except **Synchronize**, **GPS** and **Write**. Profiles shall not apply to data processed by automated tools (**Menu-Tools**) which handle all the data.
To apply the profile, select it in the drop-down list **Profile** on the toolbar.
To manage profiles, open the profiles window using **Configuration - Profile** option.
To create a profile check the appropriate tags in the **Profile** window, type the name of the new profile and click **Save**.
To delete a profile, select it from the drop-down list box of **Profile** window and click **Delete**.
You can create an unlimited number of profiles.
Profiles are not stored in the metadata project file.

Terms of use

Getting help

To get Metalith help do one of the following:

- Select **Help - Metalith Help** in the main menu;
- Press **F1** on the keyboard.

Registration

Your downloaded demo is free of charge.
If you have not tried the software yet, please download and try it before purchasing. The demo is the same as the licensed software, except that it could not write metadata to the image files.
To write your data purchase Metalith. Your license key emailed to you after your payment is authorized.
To register your copy of Metalith select **Help - Register** in the main menu.

Enter the registration key and click OK.

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Annex

Tags supported for synchronization	
Description	IFD:ImageDescription
	IPTC:Caption/Abstract
	xmp:dc:description
	xmp:dcterms:description
	xmp:tiff:ImageDescription
Software	IFD:Software
	xmp:tiff:Software
	xmp:xmp:CreatorTool
Creator	IFD:Artist
	IPTC:By-line
	xmp:dc:creator
	xmp:dcterms:creator
	xmp:tiff:Artist
	xmp:Iptc4xmpExt:ArtworkOrObject:Iptc4xmpExt:AOCreator
	xmp:plus:ImageCreator:plus:ImageCreatorName
Copyright	IFD:Copyright
	IPTC:Copyright Notice
	xmp:dc:rights
	xmp:dcterms:rights
	xmp:tiff:Copyright
Keywords	IPTC:Keywords
	xmp:dc:subject
	xmp:pdf:Keywords
Date Original	EXIF:DateTimeOriginal
	xmp:exif:DateTimeOriginal
Date Digitized	EXIF:DateTimeDigitized
	xmp:exif:DateTimeDigitized
Date Created	IPTC:Date Created
	xmp:dc:date
	xmp:dcterms:date
	xmp:xmp:CreateDate
	xmp:photoshop:DateCreated
	xmp:prism:creationDate
	xmp:Iptc4xmpExt:ArtworkOrObject:Iptc4xmpExt:AODateCreated
Date Modified	IFD:DateTime
	xmp:tiff:DateTime
	xmp:xmp:ModifyDate
	xmp:pdf:ModDate
	xmp:prism:modificationDate
Expiration Date	IPTC:Expiration Date
	xmp:pur:expirationDate

Tags supported for synchronization	
Country Shown	IPTC:Content Location Code
	IPTC:Content Location Name
	xmp:photoshop:Country
	xmp:Iptc4xmpCore:CountryCode
	xmp:Iptc4xmpExt:LocationShown:Iptc4xmpExt:CountryCode
	xmp:Iptc4xmpExt:LocationShown:Iptc4xmpExt:CountryName
Country Created	IPTC:Country/Primary Location Code
	IPTC:Country/Primary Location Name
	xmp:Iptc4xmpExt:LocationCreated:Iptc4xmpExt:CountryCode
	xmp:Iptc4xmpExt:LocationCreated:Iptc4xmpExt:CountryName
State	IPTC:Province-State
	xmp:photoshop:State
	xmp:Iptc4xmpExt:LocationShown:Iptc4xmpExt:ProvinceState
City	IPTC:City
	xmp:photoshop:City
	xmp:Iptc4xmpExt:LocationShown:Iptc4xmpExt:City
Language	xmp:dc:language
	xmp:dcterms:language
Title	IPTC:Object Name
	xmp:dc:title
	xmp:dcterms:title
	xmp:pdf:Title
	xmp:Iptc4xmpExt:ArtworkOrObject:Iptc4xmpExt:AOTitle
Source	IPTC:Source
	xmp:dc:source
	xmp:dcterms:source
	xmp:photoshop:Source
	xmp:Iptc4xmpExt:ArtworkOrObject:Iptc4xmpExt:AOSource
Location	IPTC:Sub-location
	xmp:xmpDM:shotLocation
	xmp:Iptc4xmpCore:Location
	xmp:prism:location
Image Width	IFD:ImageWidth
	xmp:tiff:ImageWidth
Image Length	IFD:ImageLength
	xmp:tiff:ImageLength
Bits PerSample	IFD:BitsPerSample
	xmp:tiff:BitsPerSample
Compression	IFD:Compression
	xmp:tiff:Compression
Photometric Interpretation	IFD:PhotometricInterpretation
	xmp:tiff:PhotometricInterpretation
Camera Maker	IFD:Make
	xmp:tiff:Make

Tags supported for synchronization	
Camera Model	IFD:Model
	IFD:Model2
	xmp:tiff:Model
	xmp:xmpDM:cameraModel
Orientation	IFD:Orientation
	xmp:tiff:Orientation
Samples Per Pixel	IFD:SamplesPerPixel
	xmp:tiff:SamplesPerPixel
X Resolution	IFD:XResolution
	xmp:tiff:XResolution
Y Resolution	IFD:YResolution
	xmp:tiff:YResolution
Planar Configuration	IFD:PlanarConfiguration
	xmp:tiff:PlanarConfiguration
Resolution Unit	IFD:ResolutionUnit
	xmp:tiff:ResolutionUnit
Transfer Function	IFD:TransferFunction
	xmp:tiff:TransferFunction
White Point	IFD:WhitePoint
	xmp:tiff:WhitePoint
Primary Chromaticities	IFD:PrimaryChromaticities
	xmp:tiff:PrimaryChromaticities
YCbCr Coefficients	IFD:YCbCrCoefficients
	xmp:tiff:YCbCrCoefficients
YCbCr Subsampling	IFD:YCbCrSubSampling
	xmp:tiff:YCbCrSubSampling
YCbCr Positioning	IFD:YCbCrPositioning
	xmp:tiff:YCbCrPositioning
Reference Black White	IFD:ReferenceBlackWhite
	xmp:tiff:ReferenceBlackWhite
Exposure Time	EXIF:ExposureTime
	xmp:exif:ExposureTime
F Number	EXIF:FNumber
	xmp:exif:FNumber
Exposure Program	EXIF:ExposureProgram
	xmp:exif:ExposureProgram
Spectral Sensitivity	EXIF:SpectralSensitivity
	xmp:exif:SpectralSensitivity
Photographic Sensitivity	EXIF:PhotographicSensitivity
	xmp:exif:ISOSpeedRatings
	xmp:exifEX:PhotographicSensitivity
Exif Version	EXIF:ExifVersion
	xmp:exif:ExifVersion
Components Configuration	EXIF:ComponentsConfiguration
	xmp:exif:ComponentsConfiguration
Compressed Bits Per Pixel	EXIF:CompressedBitsPerPixel
	xmp:exif:CompressedBitsPerPixel

Tags supported for synchronization	
Shutter Speed Value	EXIF:ShutterSpeedValue
	xmp:exif:ShutterSpeedValue
Aperture Value	EXIF:ApertureValue
	xmp:exif:ApertureValue
Brightness Value	EXIF:BrightnessValue
	xmp:exif:BrightnessValue
Exposure Bias Value	EXIF:ExposureBiasValue
	xmp:exif:ExposureBiasValue
Max Aperture Value	EXIF:MaxApertureValue
	xmp:exif:MaxApertureValue
Subject Distance	EXIF:SubjectDistance
	xmp:exif:SubjectDistance
Metering Mode	EXIF:MeteringMode
	xmp:exif:MeteringMode
Light Source	EXIF:LightSource
	xmp:exif:LightSource
Flash Fired	EXIF:Flash:Fired
	xmp:exif:Flash:exif:Fired
Flash Function	EXIF:Flash:Function
	xmp:exif:Flash:exif:Function
Flash Mode	EXIF:Flash:Mode
	xmp:exif:Flash:exif:Mode
Flash Red Eye Mode	EXIF:Flash:RedEyeMode
	xmp:exif:Flash:exif:RedEyeMode
Flash Return	EXIF:Flash:Return
	xmp:exif:Flash:exif:Return
Focal Length	EXIF:FocalLength
	xmp:exif:FocalLength
Subject Area	EXIF:SubjectArea
	xmp:exif:SubjectArea
User Comment	EXIF:UserComment
	xmp:exif:UserComment
Flashpix Version	EXIF:FlashpixVersion
	xmp:exif:FlashpixVersion
Color Space	EXIF:ColorSpace
	xmp:exif:ColorSpace
Pixel X Dimension	EXIF:PixelXDimension
	xmp:exif:PixelXDimension
Pixel Y Dimension	EXIF:PixelYDimension
	xmp:exif:PixelYDimension
Related Sound File	EXIF:RelatedSoundFile
	xmp:exif:RelatedSoundFile
Flash Energy	IFD:FlashEnergy
	EXIF:FlashEnergy
	xmp:exif:FlashEnergy

Tags supported for synchronization	
Focal Plane X Resolution	IFD:FocalPlaneXResolution
	EXIF:FocalPlaneXResolution
	xmp:exif:FocalPlaneXResolution
Focal Plane Y Resolution	IFD:FocalPlaneYResolution
	EXIF:FocalPlaneYResolution
	xmp:exif:FocalPlaneYResolution
Focal Plane Resolution Unit	IFD:FocalPlaneResolutionUnit
	EXIF:FocalPlaneResolutionUnit
	xmp:exif:FocalPlaneResolutionUnit
Exposure Index	IFD:ExposureIndex
	EXIF:ExposureIndex
	xmp:exif:ExposureIndex
Subject Location	EXIF:SubjectLocation
	xmp:exif:SubjectLocation
Sensing Method	IFD:SensingMethod
	EXIF:SensingMethod
	xmp:exif:SensingMethod
File Source	EXIF:FileSource
	xmp:exif:FileSource
Scene Type	EXIF:SceneType
	xmp:exif:SceneType
Custom Rendered	EXIF:CustomRendered
	xmp:exif:CustomRendered
Exposure Mode	EXIF:ExposureMode
	xmp:exif:ExposureMode
White Balance	EXIF:WhiteBalance
	xmp:exif:WhiteBalance
Digital Zoom Ratio	EXIF:DigitalZoomRatio
	xmp:exif:DigitalZoomRatio
Focal Length In 35mm Film	EXIF:FocalLengthIn35mmFilm
	xmp:exif:FocalLengthIn35mmFilm
Scene CaptureType	EXIF:SceneCaptureType
	xmp:exif:SceneCaptureType
Gain Control	EXIF:GainControl
	xmp:exif:GainControl
Contrast	EXIF:Contrast
	xmp:exif:Contrast
Saturation	EXIF:Saturation
	xmp:exif:Saturation
Sharpness	EXIF:Sharpness
	xmp:exif:Sharpness
Subject Distance Range	EXIF:SubjectDistanceRange
	xmp:exif:SubjectDistanceRange
Image Unique ID	EXIF:ImageUniqueID
	xmp:exif:ImageUniqueID

Tags supported for synchronization	
Camera Serial Number	EXIF:BodySerialNumber
	IFD:DNG CameraSerialNumber
	xmp:aux:SerialNumber
	xmp:exifEX:BodySerialNumber
	xmp:MicrosoftPhoto:CameraSerialNumber
Lens Specification	EXIF:LensSpecification
	IFD:DNG LensInfo
	xmp:aux:LensInfo
	xmp:exifEX:LensSpecification
Lens Model	EXIF:LensModel
	xmp:aux:Lens
	xmp:exifEX:LensModel
	xmp:MicrosoftPhoto:LensModel
Lens Serial Number	EXIF:LensSerialNumber
	xmp:aux:LensSerialNumber
	xmp:exifEX:LensSerialNumber
GPS Version ID	GPS:GPSVersionID
	xmp:exif:GPSVersionID
GPS Latitude	GPS:GPSLatitude
	xmp:exif:GPSLatitude
GPS Longitude	GPS:GPSLongitude
	xmp:exif:GPSLongitude
GPS Altitude Reference	GPS:GPSAltitudeRef
	xmp:exif:GPSAltitudeRef
GPS Altitude	GPS:GPSAltitude
	xmp:exif:GPSAltitude
GPS Satellites	GPS:GPSSatellites
	xmp:exif:GPSSatellites
GPS Status	GPS:GPSStatus
	xmp:exif:GPSStatus
GPS Measure Mode	GPS:GPSMeasureMode
	xmp:exif:GPSMeasureMode
GPS DOP	GPS:GPSDOP
	xmp:exif:GPSDOP
GPS Speed Reference	GPS:GPSSpeedRef
	xmp:exif:GPSSpeedRef
GPS Speed	GPS:GPSSpeed
	xmp:exif:GPSSpeed
GPS Track Reference	GPS:GPSTrackRef
	xmp:exif:GPSTrackRef
GPS Track	GPS:GPSTrack
	xmp:exif:GPSTrack
GPS Img Direction Reference	GPS:GPSImgDirectionRef
	xmp:exif:GPSImgDirectionRef
GPS Img Direction	GPS:GPSImgDirection
	xmp:exif:GPSImgDirection

Tags supported for synchronization	
GPS Map Datum	GPS:GPSMapDatum
	xmp:exif:GPSMapDatum
GPS Dest Longitude	GPS:GPSDestLongitude
	xmp:exif:GPSDestLongitude
GPS Dest Latitude	GPS:GPSDestLatitude
	xmp:exif:GPSDestLatitude
GPS Dest Bearing Reference	GPS:GPSDestBearingRef
	xmp:exif:GPSDestBearingRef
GPS Dest Bearing	GPS:GPSDestBearing
	xmp:exif:GPSDestBearing
GPS Dest Distance Reference	GPS:GPSDestDistanceRef
	xmp:exif:GPSDestDistanceRef
GPS Dest Distance	GPS:GPSDestDistance
	xmp:exif:GPSDestDistance
GPS Processing Method	GPS:GPSProcessingMethod
	xmp:exif:GPSProcessingMethod
GPS Area Information	GPS:GPSAreaInformation
	xmp:exif:GPSAreaInformation
GPS Differential	GPS:GPSDifferential
	xmp:exif:GPSDifferential
Supplemental Category	IPTC:Supplemental Category
	xmp:photoshop:SupplementalCategories
Contributor	xmp:dc:contributor
	xmp:dcterms:contributor
Coverage	xmp:dc:coverage
	xmp:dcterms:coverage
Format	xmp:dc:format
	xmp:dcterms:format
Identifier	xmp:dc:identifier
	xmp:dcterms:identifier
Publisher	xmp:dc:publisher
	xmp:dcterms:publisher
Relation	xmp:dc:relation
	xmp:dcterms:relation
Type	xmp:dc:type
	xmp:dcterms:type
Creator Title	xmp:photoshop:AuthorsPosition
	IPTC:By-lineTitle
Caption Writer	xmp:photoshop:CaptionWriter
	IPTC:Writer/Editor
Category	xmp:photoshop:Category
	IPTC:Category
Credit	xmp:photoshop:Credit
	IPTC:Credit
Headline	xmp:photoshop:Headline
	IPTC:Headline

Tags supported for synchronization	
Special Instructions	xmp:photoshop:Instructions
	IPTC:Special Instructions
Transmission Reference	xmp:photoshop:TransmissionReference
	IPTC:Original Transmission Reference
Urgency	xmp:photoshop:Urgency
	IPTC:Urgency
Intellectual Genre	xmp:Iptc4xmpCore:IntellectualGenre
	IPTC:Object Attribute Reference
Rights Agent	xmp:prism:rightsAgent
	xmp:pur:rightsAgent
Lens Maker	EXIF:LensMake
	xmp:exifEX:LensMake
	xmp:MicrosoftPhoto:LensManufacturer
Gamma	EXIF:Gamma
	xmp:exifEX:Gamma
ISOSpeed	EXIF:ISOSpeed
	xmp:exifEX:ISOSpeed
ISOSpeedLatitudeyyy	EXIF:ISOSpeedLatitudeyyy
	xmp:exifEX:ISOSpeedLatitudeyyy
ISOSpeedLatitudezzz	EXIF:ISOSpeedLatitudezzz
	xmp:exifEX:ISOSpeedLatitudezzz
RecommendedExposureIndex	EXIF:RecommendedExposureIndex
	xmp:exifEX:RecommendedExposureIndex
SensitivityType	EXIF:SensitivityType
	xmp:exifEX:SensitivityType
StandardOutputSensitivity	EXIF:StandardOutputSensitivity
	xmp:exifEX:StandardOutputSensitivity
CameraOwnerName	EXIF:CameraOwnerName
	xmp:aux:OwnerName
InteroperabilityIndex	Interop:InteropIndex
	xmp:exifEX:InteroperabilityIndex
GPSHPositioningError	GPS:GPSHPositioningError
	xmp:exifEX:GPSHPositioningError