

DJI Media File Metadata White Paper

Part 1: Overview

Version 1.0

2020-05-07



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Version History

Version	Date	Description
1.0	2020-05-07	First release version.

1. Introduction

DJI cameras provide descriptive metadata along with image and video data in media files. It is provided for users in analyzing, post-processing workflow, which is essential for pro users and developers to do in-depth post-work. This document set describe organization and technical standard of metadata within media formats, as well as guidelines in acquiring metadata in DJI products.

1.1 Organization of Document Set

The metadata whitepaper has three parts:

- *Part 1, Overview*, introduce the basic concept and organization of metadata in media files product by DJI. It's an overview of what kinds of metadata we provide and the basic representation model for metadata in media files.
- *Part2, Metadata in still-image*, describe metadata specifications and contents in the still-image. This part mainly contains metadata in Exif and XMP standards, both metadata follow industrial standards and extend by DJI to give more rich information.
- *Part3, Metadata in Video*, describe metadata in video contains both metadata for whole video (global metadata) and metadata carried on every video frame (timed metadata). DJI introduce our own data model and specification in this part for video timed metadata.

1.2 About This Document

This document, *DJI Media File Metadata Whitepaper Part 1: Overview*, provides the principles and overview on all media file types of DJI. From this document you can find that what kinds of metadata is provided in DJI's products and what can you gain from those metadata.

2. Overview of Metadata for Media Files

2.1 Motivation

In professional fields, metadata in the media files is as important as media file itself. DJI product various type cameras in both consumer and enterprise fields. On the one hand, we continuously enrich media file metadata to release more ability of our products. On the other hand, pro users and developers need more clearly and detailed description for metadata so that they can access and use metadata better. So we release this whitepaper to give a complete information and detailed reference about all aspects of metadata.

2.2 Media Files and Metadata

Commonly, media files produced by camera can be divided into still image file and video file. Metadata in a still image can describe information at you take the photo like exposure parameters, location and posture, camera settings, etc. DJI mainly use JPEG and Adobe DNG formats for still image file. Both this two formats can embedded metadata follow Exif standard (Adobe DNG also extends many metadata in Exif formats). We also use Adobe XMP format to record DJI defined metadata.

Video is more powerful to carry serial continuously changed metadata, which suitable for recording changing process like drone location and gimbal posture. DJI mainly use MOV and MP4 formats for video file. We record metadata both in MOV/MP4 native formats and our extended method.

2.3 Version and Compatibility Management

Compatibility is the most important attribute for metadata, we will maintain the compatibility for every metadata as possible as we could and be very cautious to make some incompatible changes.

To make a more clearly and traceable history, we use semantic versions to manage this whitepaper and metadata. Since metadata model in still image and video are quite different, we use whitepaper part2 (still image) and whitepaper part3 (video) to state respectively and assign individual version number to them. Both metadata in still image and video has data field to record the version as same as that of corresponding whitepaper. The version of this document (i.e. *DJI Media File Metadata Whitepaper Part 1: Overview*) is the main version of the document set, other part of whitepaper will refer to the main version. All versions are two segments format of "Major.Minor". Major segment of version increase means any incompatible changes happen. Minor segment of version increase means a compatible version released.