1. Introduction

During writing software to change dates in MP4/MOV files I had a lot of moments that I thought: how is this data stored? There are a lot of special cases that have probably grown during the development and merging with other standards. This document (for now) focuses on the atoms/boxes where metadata is stored. The idea behind this document to make things more clear and explain some of the knotty terminology with things often meaning the same (or not).

About this *webpage design*: there is none. I am currently updating this information in an HTML file that I edit MS Word, with the main aim to also make it printable on A4/letter format. There are Excel tables linked in this document that I want to 'keep on the page'. I realise that it looks sub-optimal in a browser... Please resize the browser to a small width, or: [pdf version here]

MP4 or Quicktime? What name to use: The MP4 format is based on the Quicktime format[1] but from here I will call it MP4 format since this has become more general.

2. Dates and data in MP4 files

This whole exercise started with the annoyance of having MP4 files wrongly dated because of wrong time-setting on the recording device and also by noticing strange sorting behavior during sorting in Google Photos and other applications. Simply, the first distinction is between the operating system file attributes (time created, modified, last opened) and the data stored within the MP4 file.

Table 1: Example of metadata atom that has no 'keys' section. (file had no metadata before, metadata inserted by Windows property editor). Note that metadata atom is a **full-atom here**. File:[2]

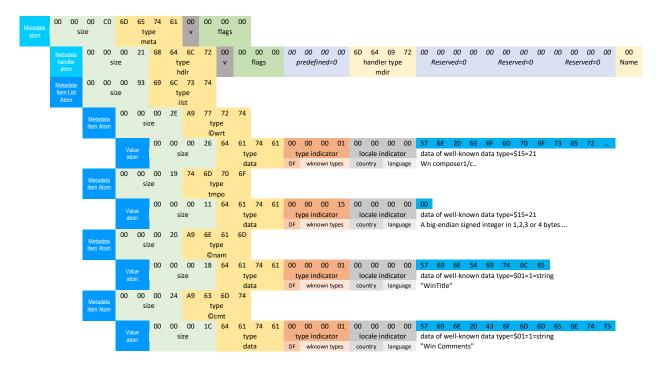
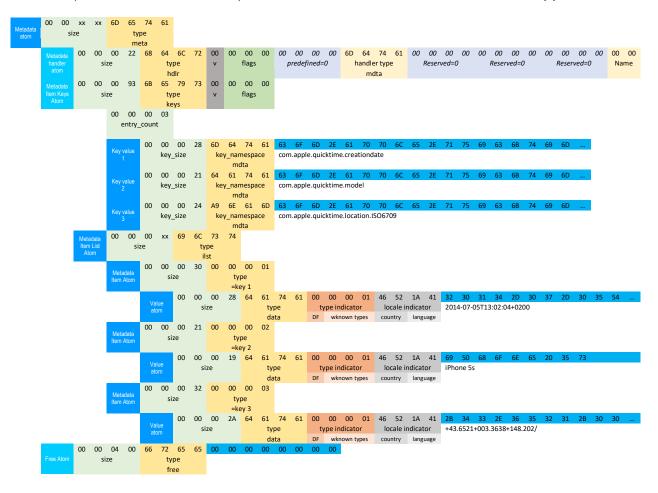


Table 2: Example of metadata atom that has a 'keys' section. Note that metadata atom is a non-full-atom here. File: [3]



¹ https://en.wikipedia.org/wiki/MPEG-4 Part 14#

² MOV 0234-windowscomments.mp4

³ Apple-Iphone5s.mov