MPV Implementation Guidelines for Camera

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MPV Camera Profile WG
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Current user’s situation

- Print & share
- Store & playback
- On line photo sharing
- View slideshow on TV
Background

- The spread of the digital cameras and cell phone cameras
- Its memory size keeps on increasing
  - Hundreds of Mbytes and lately thousand of Mbytes
- The number of personal digital content is increasing dramatically
- It becomes hard to organize, manage and search those content
- Users need more diversified way of utilizing the content
  - e.g. Not only viewing it on PC but also viewing it on TV

MPV is the possible solution to such digital camera users problems
Scope

- Assist developers who want to learn **how to implement MPV into digital cameras**
- Summarize the **key points of MPV-IS spec**
- Provide as many “how to” and best practice examples as possible from the following point of view
  - What kind of features need to be supported?
  - Which specs need to be referenced in order to realize them?
  - Is the goal of the implementation to maximize interoperability or maximize features?
Contents of the Guidelines

- Chapter 1: Introduction
- Chapter 2: Why is MPV-IS spec necessary?
- Chapter 3: Summary of MPV-IS compliant manifest
- Chapter 4: Details of MPV-IS compliant manifest
- Chapter 5: Summary of Advanced MPV manifest
- Chapter 6: Details of Advanced MPV manifest
- Chapter 7: Consideration of Processing Flows
- Chapter 8: Error Handling
Summary of MPV-IS compliant manifest

Manifest Structure

```xml
<?xml version="1.0" encoding="UTF-8"?>
<file:Manifest ...
  <nmf:Metadata>
    <file:ManifestProperties>
      <file:ProfileBag>
        <file:Profile>http://ns.osta.org/mpv/basic/1.0/</Profile>
        ...
      </file:ProfileBag>
    </file:ManifestProperties>
    ...
  </nmf:Metadata>
  ...
  <mpvp:Album>
    ...
    <mpvp:Foreground>
      <mpv:StillRef mpv:idRef="IMG_0005"/>
      ...
    </mpvp:Foreground>
    ...
  </mpvp:Album>
  ...
  <mpv:AssetList>
    ...
    <mpv:Still mpv:id="IMG_0005">
      <mpv:LastURL>DCIM/100ABCDE/IMG_0005.JPG</mpv:LastURL>
      ...
    </mpv:Still>
    ...
  </mpv:AssetList>
  ...
</file:Manifest>
```

This part provides information regarding the manifest itself.

This part provides definition regarding "mpvp:Album".

This part provides definition regarding "mpv:AssetList".
Summary of MPV-IS compliant manifest

Implementation Example 1 (Cont’d)

Photo Album

- Xmas Party
- Cherry Blossom Viewing

Root

DCIM

100ABCDE

INDEX.PVM (MPV file)

ALBUMS

ALBUM001.PVM
ALBUM002.PVM

Reference to MPV manifests

Corresponding Sub MPV file

Reference to file assets

IMG_0001.jpg
IMG_0002.jpg
IMG_0003.jpg
IMG_0004.jpg
IMG_0005.jpg
IMG_0006.jpg
AUD_0006.WAV
VID_0007.MPG

Directory
This part provides information regarding the manifest itself

This part provides definition regarding assets
This part provides information regarding the manifest itself

This part provides definition regarding assets
Details of MPV-IS compliant manifest

- Elements and attributes are explained in detail
- Those explanations are written in the following manner
  - Summary
  - MPV-IS Requirement related to an individual element or attribute
  - Points to note
  - References
  - Example
Details of MPV-IS compliant manifest

- `<mpv:Still>`
  - **Summary**
    - This element specifies a single still image.
  - **MPV-IS Requirement related to this element**
    - PLW100-14: Requirement regarding metadata related to image size
  - **Points to note**
    - Each still image must be defined using this element
    - Derivative image and thumbnail can be defined by adding an element called `<mpv:Rendition>`
  - **References**
    - MPV-Core specification
  - **Example**
    ```xml
    <mpv:AssetList>
    <mpv:Still mpv:id="IMG_0001">
      <mpv:LastURL>DCIM/100ABCDE/IMG_0001.JPG</mpv:LastURL>
    </mpv:Still>
    ...
    </mpv:AssetList>
    ```
Details of MPV-IS compliant manifest

- `<file:Manifest>`
  - Namespace
- `<nmf:Metadata>`
  - `<file:ManifestProperties>`
  - `<file:Profile>`
  - `<file2:AboutManifestMPVDoc umnetID>`
  - `<file2:WrittenBy>`
- `<mpv:AssetList>` Cont’d
  - `Simple Asset`
    - `<mpv:Still>`
    - `<mpv:Audio>`
    - `<mpv:Video>`
    - `<mpv:Document>`
    - `<mpv:ManifestLink>`
- `<mpv:AssetList>`
  - `Composite Asset`
    - `<mpv:StillWithAudio>`
    - `<mpv:StillMultishotSequence>`
    - `<mpv:StillPanoramaSequence>`
    - `<mpv:LastURL>`
    - `<mpv:Rendition>`
    - `mpv:id`
    - `mpv:filesystem`
    - `mpv:idref`
- `<mpvp:Album>`
  - `<mpv:Foreground>`
  - `<mpv:Background>`
Future activities of the Camera WG

- **Implementation Guidelines**
  - Complete the final draft of the guidelines in November
  - Board approval and will be available in December

- **Develop a camera specific new Profile**
  - Just start discussing use cases
  - **Invitation to Participate**

Please contact to participate!

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Thank you for your attention!