BEST PRACTICES

DIGITAL ASSET GUIDELINES

REVISION 4 | REVISED 3/17/2022

Revision History

Each time this document is modified, increment the version number appropriately and add a new row to the table below. In the Comments column, make sure to document the changes that were made and any deficiencies or outstanding issue the document may still have.

Revision Number	Revision Date	Author	Notes
1	October 2005		First release of the Imaging Best Practices Guideline
2	April 2012		Second release of the Digital Asset Best Practices Guideline includes updated content from the Imaging Best Practices Guideline and new content for the digital asset types PDF, Video and Audio
3	April 2016		Third release of the Digital Asset Best Practices Guideline includes updated content and new content for the digital asset type 360 / 3D images
4	March 2022	M. Grimes	Fourth release of the Digital Asset Best Practices Guideline includes updated content, new content and recommendations for Americans with Disabilities Act (ADA) compliance

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1. Overview

1.1 Introduction

The goal of this best practices document is to inform, assist and provide recommendations on the creation, transmission, and display of digital asset online content for Auto Care Association members.

The scope of this document is intended to facilitate the implementation of the supplier's digital asset content by the receivers through the standardization of content and delivery.

This document reflects the most current information that is available as of the release date of the document.

This document should be updated whenever changes or corrections are discovered:

- Contents and/or format of information to be delivered or displayed

- New guidelines

- Expansion of the W3C Accessibility Guidelines (WCAG) 3.0 regarding web content in support of the Americans with Disabilities Act (ADA) Guidelines

    o Due to the fluidity of this standard, we will reference the most recent version available at the time this document was written

1.2 Definitions

For the purposes of this document, suppliers and receivers are referenced by the following:

- Suppliers – manufacturers, suppliers, distributors, and 3rd party software providers

- Receivers – retailers, wholesalers, distributors, internet mail order stores, marketplaces and 3rd party electronic catalog companies

2. What's New

2.1 Introduction

Welcome to revision 4 of the Best Practices - Digital Asset Guidelines. This version of the data and delivery specification is designed and tested to meet the aftermarket industry's evolving requirements for the exchange of digital assets and digital asset information.

2.2 Documentation Updates

- Updated Section 1 Overview

- Updated Section 3 Digital Asset Data Delivery Best Practices

    o Removed all references to the Digital Asset Delivery File and reference only the PIES delivery format

- Updated Section 4 Product Image Best Practices

- Updated Section 5 PDF Best Practices

- Reviewed and validated content in Section 6 Video Best Practices

- Reviewed and validated content in Section 7 Audio Best Practices

- Updated Section 8 360 Product Image Best Practices

- Removed all PIES Codes listed in the document and now point to the PCdb to find all valid codes

- Removed all educational content and focused content on best practices guidelines

- Added W3C Accessibility Guidelines (WCAG) 3.0 to the Appendix for reference regarding the Americans with Disabilities Act (ADA) standards compliance

3. Digital Asset Data Delivery Best Practices

3.1 Digital Asset Data Delivery Overview

The Digital Asset Data Delivery Guidelines are designed to provide the suppliers and receivers of the digital assets all the information they need to categorize and catalog the digital assets appropriately in their systems.

3.2 Digital Asset Naming Convention

Defining a specification for the naming convention of digital assets that satisfies both the digital asset creator and the digital asset receiver across the entire Aftermarket industry was not plausible. However, the following guidelines should be considered when creating the digital asset file names:

- The 'Digital Asset File Name' should only consist of alphanumeric characters

  o Spaces and any other special characters other than a dash or underscore should not be used

  o This would include special characters, codes, symbols or signs found on a standard U.S. QWERTY keyboard or those included in the ASCII or UTF-8 code references

- File names should include a unique identifier for the digital asset

  o Minimum values might include the part name, part number and/or orientation view

- File names must include the file extension; e.g., .jpg, .tif, pdf, eps, aif, wav, mp3, wma, ogg, aac, pcm, ac3, midi

- File naming may be case sensitive for some trading partners

  o Trading partners should discuss and agree on the file naming structure / format

The best approach to the file naming issue was to allow digital asset creators to name the file anyway they want as long as the file name was associated to the other relevant digital asset data. This association is accomplished by entering the digital asset data in the appropriate fields of the PIES file and sending that to the receiver along with the digital assets.

3.3 Digital Asset Data Delivery

It is a requirement that anytime digital assets are sent to a receiver that they must be accompanied by a PIES file.

If a supplier is unable to provide a PIES file to their trading partners, it is the supplier's responsibility to consult with their trading partners for the non-PIES delivery requirements.

PIES files do not contain actual digital assets. PIES only conveys meta-data about digital assets. There must be a side-channel for transmitting the actual data that makes up the digital asset files.

This is typically done by compressing all of the referenced asset files into a single ZIP file or posting them to a shared FTP or other shared service that is agreed upon by both the supplier and receiver.

The Digital Asset File Information Segment in the PIES standard is used to relay information about many different media types which support the item part number.

The Digital Asset Sub-Segment of the Market Copy segment in PIES has been designed to relay information about any media types that support the related Market Copy Segment reference codes.

Refer to the most current version of the PCdb for the PIES codes relevant to product images. The latest version of the PCdb can be downloaded at: https://autocarevip.com

The PIES file delivered by the suppliers replaces the Digital Asset Data Delivery file that was used in the past to provide receivers data on the digital asset files.

4. Product Image Best Practices

4.1 Overview

The imaging requirements in this Digital Asset Best Practices document apply to images used for electronic catalogs only. The specification defined in this document does not apply to product and lifestyle images used for print, including posters, full-page magazine ads, and other high resolution marketing materials. The image specifications for print are project-specific and should, therefore, be defined between trading partners.

The workgroup has developed image specifications for the following image types:

- Electronic catalog digital images

- Electronic catalog line art images

The tables in the next sections provide detailed specifications for each of these image types. These specifications have been accepted by most major trading partners. Although, it is advisable to consult with your trading partners prior to formatting images.

4.2 Electronic Catalog Digital Image Specifications

All digital images to be used in electronic catalogs and/or on trading partner's websites should be formatted according to the following specifications:

Plug-in		Notes
Format	TIFF, JPG	TIFF is preferred but JPG is also acceptable, check with your trading partners. (See note 1 below)
Size	Recommended size 2500 pixels on the longest side (height or width) Minimum size 1,500 pixels or larger on the longest side (height or width)	Recommended size is the agreed upon preferred size of an image to deliver to trading partners. Minimum size should only be used in cases where recommended size cannot be achieved. Always maintain your highest resolution image as your master and only downsize as needed for trading partner delivery. (See note 2 below)
White Space	On the longest side, white space should not exceed 5-15 pixels	If the white space is removed and an image falls below the minimum size standard, the image is NOT compliant. Does not apply to close-up images where only a section of the part is in the image. (See note 3 below)
Mode	RGB/sRGB	Grayscale images are not acceptable. Images saved as RGB/sRGB can have up to a 20% smaller file size. (See note 4 below)
Resolution	300 DPI	High resolution image file (See note 5 below)
Compression	None or LZW	Images with LZW compression can have a 35% smaller file size.
Image File Name	Please refer to section 3.2 Digital Asset Naming Convention	The image file is associated to the part number and other attributes via the PIES Data Delivery file. (See note 6 below)
Background	Pure White	RGB: 255, 255, 255 / sRGB: 1.0 / Hex: #FFFFFF unless the product is white; in this case

		background color, borders, or shadowing can be used.
Shadows	Removed	Some shadows are acceptable when used to define a white part on a white background.

Table Notes:

Formatting the images as TIFF allows trading partners to open, manipulate, and save the images for various uses without losing any image data (no quality loss)

1. The size specification has been updated in this version of the Digital Asset Product Images Guidelines and, therefore, only applies to images that are captured, processed, and distributed to trading partners after the release date of this document.

2. If a trading partner is requiring square images, it will be necessary to add white space to the image.

   o Consult with any trading partners prior to submitting square images to fully understand the white space requirements and impact on overall image size.

3. RGB/sRGB is the preferred format for digital viewing.

   o CMYK is the preferred format for print documents and has been removed from the product images portion of the document.

4. Formatting the images at 300 DPI allows trading partners to size images for all electronic catalog projects.

   o If images are of higher quality than preferred or recommended, it is a best practice to keep the higher resolution image as your master and downsize for trading partner delivery, if required. It is not recommended to downsize your master high resolution image to a lower quality image.

5. The 'Digital Asset File Name' should only consist of alphanumeric characters. Spaces and any other special characters other than a dash or underscore should not be used.

   o All image names must include the extension; e.g., tif.

4.3 Electronic Catalog Line Art Image Specifications

Depending on the product line and trading partner, line art images may be required in addition to digital images. In general, digital images are required for all parts, and line art images are only required for specific product lines. Because the list of part names that require line art images differs considerably between trading partners, it is best to check with your trading partners for their specific requirements.

All line art images that are being used in electronic catalogs and on trading partner's websites should be formatted according to the following specifications:

Electronic Line Art Image Specifications		Notes
Format	TIFF, EPS, PDF, JPG	(See note 1 below)
Size	4,000 pixels @ 800 DPI on the longest side (height or width)	Setting the maximum height or width to 4,000 pixels ensures that white space between the outer edge of the product and the outer edge of the image canvas is minimized. To illustrate this, a part that is long and thin could have an image canvas 4,000 pixels wide by 1,000 pixels high
White Space	On the longest side, white space should not exceed 5-15 pixels	Does not apply to close-up images where only a section of the part is in the image. If the white space is removed and an image falls below the minimum size standard, the image is NOT compliant.
Mode	Vector Black / White, Vector Color, Bitmap, Grayscale, or CMYK Color	
Resolution	800 DPI	
Compression	None or LZW	Images with LZW compression can have a 35% smaller file size. (only applicable to TIFF)
Image File Name	Please refer to section 3.2 Digital Asset Naming Convention	The image file is associated to the part number and other attributes via the

		PIES Data Delivery file. (See note 2 below)
Background	Pure White	RGB: 255, 255, 255 / sRGB: 1.0 / Hex: #FFFFFF: Unless the product is white; in this case background color, borders, or shadowing can be used.
Scale	Must be to scale	
General Quality	1) Proofed for artifacts and smears 2) Corners, edges, and lines must be sharp	

Table Notes:

1. Formatting the images as TIFF or EPS at 800 DPI allows trading partners to size the images for most print and electronic catalog purposes.

2. The 'Digital Asset File Name' should only consist of alphanumeric characters. Spaces and any other special characters other than a dash or underscore should not be used.

    a. All image names must include the extension; e.g., tif.

3. The above image specifications allow the 'receiver' of the images to create image files according to their needs as long as the image size does not exceed 4,000 pixels @ 800 DPI on the longest side (height or width).

4.4 Other Document Specifications

All other documents including MSDS, installation instructions, technical bulletins, and reference drawings should be formatted as an Adobe PDF.

5. PDF Best Practices

5.1 Overview

In the Aftermarket today, with the exception of product images, PDFs are distributed to trading partners more than any other digital asset. As is evident from the PDF Types listed in the PCdb, there are more than 30 types of assets that may be delivered as PDFs.

There are many PDF specifications that creators need to think about when creating, editing, and producing PDFs. The majority of these specifications can be addressed by either following a best practice or by contacting your trading partner to understand the specifications that they want you to follow when formatting PDFs. In general, the majority of PDF specifications are determined between trading partners; this document simply lists the specifications and provides a description of each one for your reference.

5.2 Types of PDFs

There are many different types of PDFs that suppliers will send to their receivers including, but not limited to: Technical Bulletins, Hazardous Materials Information Sheets, Material Safety Data Sheets, Technical Drawings, etc.

Refer to the most current version of the PIES documentation and the PCdb for the PIES tables, codes and fields relevant to digital assets.

5.3 PDF Specifications

All PDFs that are being used in electronic catalogs and on trading partner's websites should be formatted according to the following specifications. The table below provides details of the various PDF specifications:

PDF Specifications		Notes
File Name	Please refer to section 3.2 Digital Asset Naming Convention.	The PDF file is associated to the part number and other attributes via the PIES Data Delivery file. (See note 1 below)
Meta-Data	Meta-data includes title, author, subject, date, keywords, description, and copyright. Meta-data can be found in the: Document properties in Word, File properties in Adobe Acrobat, and the File information in InDesign.	The meta-data in the PDF concerns the PDF creator and not the PDF receiver. The creator has the right to include meta-data in the PDF including copyright information.
Bookmarks	Bookmarks automatically take readers to specific areas in the PDF. Bookmarks appear on the left-hand side of the PDF.	Bookmarks can be set up using various PDF creation applications.
Orientation	Creating your document in portrait or landscape orientation.	
Hyperlinks	Hyperlinks take readers to specific areas within the PDF or to external websites.	Hyperlinks can be set up using various PDF creation applications. Do not include external hyperlinks as PDFs with these types of links will not be accepted by trading partners.
Compatibility	When you export your PDF, you define what version of Adobe Acrobat your PDF will be compatible with.	In general, the default settings when you export or edit your PDF will be acceptable.
Security	When you edit your PDF in Adobe Acrobat you have the option to apply	Receivers do not accept PDFs that have security settings on.

	security to the document including controlling or password protecting opening, printing, editing, and other tasks.	
Initial View	You can control how the PDF is navigated; e.g., by pages only, bookmarks panel and pages, attachments panel and pages, and layers panel and pages.	Navigation is an advance function of PDFs.
Initial View	You can define how you want the page layout to appear to the user; as a single page or two-up.	The typical setting for PDFs is single page layout.
Initial View	You can edit your PDF such that it magnifies to a specific size or percentage when it is opened. Options include actual size, fit the page, or zoom to a percentage; e.g., 25%, 50%	It is common to format your PDF to open in its initial view such that readers can clearly see the entire page.
Initial View	You can define how the PDF appears on the screen; e.g., centered on the screen, resized to the original size, or displayed in full screen mode.	On screen options are advanced functions of PDF.
Initial View	You can control the PDF user interface by hiding menu and tool bars and window controls.	On screen options are advanced functions of PDF.
URL to PDF	PDF is hosted with the creator or a 3rd party hosting service and a link is sent to the receiver.	
Distribution	Please refer to section 3.3 Digital Asset Data Delivery.	It is a requirement that anytime PDFs are sent to a receiver that they are accompanied by a PIES file.
File Size	You can determine what file size you would like to format the PDF. Options range from high quality print, the	This PDF function is very important when your PDF has graphics and images. High quality print would result in

	largest high resolution file, to the smallest file size for online viewing.	a file far too large to transfer to your trading partners, whereas formatting the PDF to the smallest file size may result in poor quality images and graphics. It is recommended that you export your PDF in various file sizes to see which one strikes the best balance between file size and document quality.
Compression	You can define the quality of the images in the PDF by adjusting how they are compressed upon export. You can set images to color, grayscale, or monochrome and define their quality to minimum, low, medium, high, and maximum.	It is recommended that you experiment with various settings to see what the final PDF output looks like. As with the file size, you should try and strike a balance between quality viewing and file size.
Compression	You can also compress text and line art to reduce the file size.	As with the file size, you should try and strike a balance between quality viewing and file size.
Color Space	There are several export options for color space.	sRGB is a standard RGB color space created for use on monitors, printers, and the Internet.
Optimize	Allows various optimization settings to reduce the file size like optimizing images and graphics.	Completed after the PDF has been exported with Adobe Acrobat.

1. The 'PDF File Name' should only consist of alphanumeric characters. Spaces and any other special characters other than a dash or underscore should not be used.

   a. All PDF file names must include the extension; e.g., .pdf

6. Video Best Practices

6.1 Overview

The majority of businesses today are using or considering using video as a medium to market their products, services, brand, and/or company. Before spending the time and allocating the resources to producing videos, there are several issues to consider including:

- **Ensure that your target audience can view your videos:** The main goal when creating and publishing video is to ensure that your target audience is able to view your videos whenever they want. In order to achieve this goal, you will need to produce video that can play in all commonly used browsers and on various devices.

- **Cross-browsers compatibility:** Your target audience will be accessing your videos using a variety of browsers including Internet Explorer, Firefox, Safari, Chrome, and Opera. They will also be running various versions of these browsers.

- **Variation in devices used to view video:** Your target audience will be viewing your videos on a variety of devices including desktop and notebook computers, smartphones, and tablets. Devices play video differently.

6.2 The 3 Components of Video

When creating and publishing video, it is important to understand the components that make up video. These include containers, video codecs, and audio codecs.

Video Component	Description
Containers	Video container formats define how to store things within them.
Video Codecs	Video player decodes the video stream according to the video codec.
Audio Codecs	Algorithms by which audio stream is encoded.

Containers

Video container formats define how to store things within them. The table below includes some of the common video containers.

Container	Description
MP4	• MPEG-4 Part 14 or MP4 is a container format standard specified as a part of MPEG-4. It is most commonly used to store digital video and digital audio streams, especially those defined by MPEG, but can also be used to store other data such as subtitles and still images. • .mp4 is the global file extension for the official container format defined in the MPEG-4 standard. • To create MP4 files use audio and video formats covered by the MPEG-4 Standard. • Allows streaming over the Internet. • Common video codec is H.264. (See 'Video Codec' section) • Common audio codec is AAC. • Works on Apple devices and plays in QuickTime.
Ogg	• Ogg is an open standard and unencumbered by any known patents. • Firefox 3.5, Chrome 4, and Opera 10.5 support Ogg container without requiring a plug-in. • Ogg video is called Theora. • Ogg audio is called Vorbis. • .ogv extension
WebM	• WebM is a container format designed to provide royalty-free, open video compression for use with HTML5 video. • .webm extension • Development is sponsored by Google. • All users are granted a worldwide, non-exclusive, no-charge, royalty-free patent license. • The WebM project is dedicated to developing a high-quality, open video format for the web that is freely available to everyone. • WebM is supported by Mozilla, Opera, Adobe, Google and more than seventy other publishers and software and hardware vendors.

	• It is supported natively, without platform-specific plug-ins, in the latest versions of Chromium, Google Chrome, Mozilla Firefox, and Opera. • Adobe has also announced that a future version of Flash will support WebM video.
Flash Video	• Flash Video is a container file format used to deliver video over the Internet using Adobe Flash Player. • Flash Video content may also be embedded within SWF files. • There are two different video file formats known as Flash Video: FLV and F4V • Flash Video is viewable on most operating systems via the Adobe Flash Player and web browser plug-ins or one of several third-party programs. • Apple's iOS devices do not support the Flash Player plug-in. • Flash Player supports video compressed in H.264, audio compressed using AAC.
AVI	• Audio Video Interleave (AVI), is a container format introduced by Microsoft in November 1992 as part of its Video for Windows technology. • AVI files can allow synchronous audio-with-video playback. • It does not support features of recent container formats like embedded meta-data. • It does not even officially support most of the modern video and audio codecs in use today. • .avi extension

Video Codecs

Video players decode the video stream according to the video codec. The table below includes the 3 most important video codecs.

Codec	Description
H.264	• H.264 (MPEG-4 AVC) is a standard for video compression, and is currently one of the most commonly used formats for the recording, compression, and distribution of high definition video. • H.264 is one of the codec standards for Blu-ray Discs; all Blu-ray Disc players must be able to decode H.264. • Widely used by streaming internet sources, such as videos from Vimeo, YouTube, and the iTunes Store, web software such as the Adobe Flash Player and Microsoft Silverlight. • iPhone, iPod, iPad, Apple TV play H.264. • In 2009, the HTML5 working group was split between supporters of Ogg Theora, a free video format whose developers believe is unencumbered by patents, and H.264 which contains patented technology. • January 2011, Google announced that they were pulling support for H.264 from their Chrome browser and supporting both Theora and WebM / VP8 to use only open formats. • Designed for low and high CPU devices. • Patent encumbered
Theora	• Theora evolved from the VP3 codec. It is royalty-free codec and not encumbered by patents other than the original VP3 patents, which have been licensed royalty-free. • Theora video is developed by the Xiph.Org Foundation and distributed without licensing fees alongside their other free and open media projects, including the Vorbis audio format and the Ogg container. • Theora video can be embedded in any container format, although it is most often seen in an Ogg container. • Theora is a free lossy video compression format. • All major Linux distributions support Theora out-of-the-box, and Mozilla Firefox 3.5 includes native support for Theora video in an Ogg container.

VP8	• VP8 is an open video compression format created by On2 Technologies.
	• In 2010, Google purchased On2 and released a specification of the format under the Creative Commons Attribution 3.0 license; it is now royalty free.
	• The WebM Project was launched, featuring contributions from Mozilla, Opera, Google and more than forty other publishers, software and hardware vendors to use VP8 as the video format for HTML5.
	• In the WebM container format, the VP8 video is used with Vorbis audio.
	• Internet Explorer 9 will support VP8 video playback if the proper codec is installed.
	• Android is WebM-enabled.
	• Flash Player will support VP8 playback in a future release.

Audio Codec

Audio codecs are algorithms by which audio stream is encoded. The table below includes the 3 most important audio codecs.

Codec	Description
MP3	• MPEG-1 or MPEG-2 Audio Layer 3 (MP3), is a patented digital audio encoding format using a form of lossy data compression.
	• MP3 is an audio-specific format designed by the Moving Picture Experts Group (MPEG) as part of its MPEG-1 standard and later extended in MPEG-2 standard.
	• MP3 is a common audio format for consumer audio storage, as well as a de facto standard of digital audio compression for the transfer and playback of music on digital audio players.
	• MP3s can contain up to 2 channels of sound. They can be encoded at different bitrates: 64 kbps, 128 kbps, 192 kbps, and a variety of others from 32 to 320. Higher bitrates mean larger file sizes and better quality audio.
	• MP3 format allows for variable bitrate encoding, which means that some parts of the encoded stream are compressed more than others.
	• MP3s can also be encoded with a constant bitrate.
	• Because MP3 format is patent-encumbered, Linux cannot play MP3 files out of the box.
	• Most portable music players support stand-alone MP3 files.
	• MP3 audio streams can be embedded in any video container.

	• Adobe Flash can play both stand-alone MP3 files and MP3 audio streams within an MP4 video container.
AAC	• Advanced Audio Coding (AAC) is a standardized, lossy compression and encoding scheme for digital audio. • AAC was standardized in 1997, was chosen by Apple as their default format for the iTunes Store. • AAC was designed to provide better sound quality than MP3 at the same bitrate, and it can encode audio at any bitrate. (MP3 is limited to a fixed number of bitrates, with an upper bound of 320 kbps) • AAC can encode up to 48 channels of sound. • The quality for stereo is satisfactory to modest requirements at 96 kbit/s in joint stereo mode. • It is supported on Nokia, Android, BlackBerry, and webOS-based mobile phones. • The AAC format is patent-encumbered; licensing rates are available online. • The AAC format is designed to be playable in real-time on devices with limited CPU power. • All current Apple products, including iPods, iPhone, iPad, AppleTV, and QuickTime support certain profiles of AAC in stand-alone audio files and in audio streams in an MP4 video container. • Adobe Flash supports all profiles of AAC in MP4, as do the open source MPlayer and VLC video players.
Vorbis	• Vorbis is a free software / open source project headed by the Xiph.Org Foundation. • Vorbis project produces an audio format specification and software implementation (codec) for lossy audio compression. • Vorbis is most commonly used in conjunction with the Ogg container format, this is why it is often referred to as Ogg Vorbis. • Vorbis is not encumbered by any known patents and is therefore supported out-of-the-box by all major Linux distributions. • Mozilla Firefox 3.5 supports Vorbis audio files in an Ogg container. (or Ogg videos with a Vorbis audio track) • Android mobile phones can also play stand-alone Vorbis audio files.

- Vorbis audio streams are usually embedded in an Ogg or WebM container, but they can also be embedded in an MP4 or MKV container.
- Vorbis supports an arbitrary number of sound channels.

6.3 What Container and Video and Audio Codec to Use?

It is important that your target audience can view your videos using any browser or device. The issue is that browsers and devices do not support a standardized container, video codec, and audio codec combination.

At the time of writing this guideline, it is not possible to create a single video file that would be universally playable on all browsers and devices.

Therefore, in order for your video to play on all devices and browsers, you need to create multiple versions of the video.

There are 3 broad approaches to take when creating these video versions – minimum, moderate, and maximum (Source: Brightcove Inc.). With these approaches, the more video versions you create, the more devices and browsers the complete set of videos will play on.

A Minimum Approach:

This approach requires that you create 2 videos. This 2-video set will play on fewer devices and browsers when compared to the 'moderate approach' and the 'maximum approach'.

	Video 1	Video 2
Container	WebM	MP4
Video Codec	VP8	H.264 (Baseline Profile)
Audio Codec	Vorbis	AAC
Resolutions		640 x 480

1. Video 1: Formatted for HTML5

2. Video 2: Formatted for HTML5, Flash, and mobile

A Moderate Approach:

This approach requires that you create 3 videos. This 3-video set will play on more devices and browsers than the 'minimum approach' but fewer than the 'maximum approach'.

	Video 1	Video 2	Video 3
Container	WebM	MP4	MP4
Video Codec	VP8	H.264 (High Profile)	H.264 (Baseline Profile)
Audio Codec	Vorbis	AAC	AAC
Resolutions			480 x 360; 640 x 480

1. Video 1: Formatted for HTML5

2. Video 2: Formatted for HTML5, Flash

3. Video 3: Formatted for mobile

A Maximum Approach:

This approach requires that you create 6 videos. This 6-video set will play on the majority of devices and browsers.

	Video 1	Video 2	Video 3	Video 4	Video 5	Video 6
Container	WebM	Ogg	MP4	MP4	MP4	3GP
Video Codec	VP8	Theora	H.264 (High Profile)	H.264 (Baseline Profile)	H.264 (Main Profile)	MPEG4
Audio Codec	Vorbis	Vorbis	AAC	AAC	AAC	AAC
Resolutions				480 x 360	1280 x 720	320 x 240 177 x 144

1. Video 1 and Video 2: Formatted for HTML5

2. Video 3: Formatted for HTML5, Flash

3. Video 4: Formatted for mobile including coverage for older devices

4. Video 5: Formatted for older iOS devices

5. Video 6: Formatted for older mobile devices and non-smartphones

6.4 Distribute a Single Video to All Trading Partners

In order to avoid the complexities associated with creating multiple video formats, the majority of receivers in the Automotive Aftermarket are willing to accept a single video file from their suppliers. The receivers will then create versions of the video in order to satisfy their customer base.

This simplifies the video creator's process of distributing videos to their trading partners and leaves the formatting in the hands of the receivers.

Below is the specification for this single video format that video creators can send to their trading partners.

	Single Video
Container	MP4
Video Codec	H.264 (High Profile)
Audio Codec	AAC
Resolutions	1920 x 1080

7. Audio Best Practices

7.1 Overview

In many industries, audio is becoming a popular digital asset type. Audio is predominantly used for educational or informational content in the form of podcasts but can also be used to help promote products at the point of sale.

The process of creating and distributing audio is similar to video – you record your audio, edit it, and then export it in the formats that meet the needs of your business internally and your trading partners externally.

In the following, sections, the important aspects of creating, editing, and formatting audio files are detailed along with some important items to consider when creating and distributing audio files.

7.2 Audio Recording

Below are some considerations when recording high quality audio:

Overall Quality

Similar to recording video, it is best to record your source audio at the highest quality possible. This offers flexibility when it comes to formatting and exporting audio files for your specific uses in the future.

Equipment

If you want to produce good quality audio files you must invest in a good microphone. Your microphone has a significant effect on the quality of your audio recording.

Environment

It is important that you control the environment you are recording in as much as possible. Background noise can affect the audio quality considerably and should be eliminated, if possible. The clearer the audio is, the better experience your listeners will have.

Sample Rate

Sample Rate indicates the number of digital samples taken of an audio signal each second. A high sampling rate produces better quality sound, but it also produces a large file. For this reason, you will need to strike a balance between the sample rate and the file size of your recording.

Bit Depth

Bit depth describes the number of bits of information recorded for each sample. Bit depth directly corresponds to the resolution of each sample in a set of digital audio data. Higher bit depth provides greater dynamic range.

7.3 Audio Editing

When you have recorded your source audio, you will use audio editing software to adjust and fine tune the audio before you format and export individual audio files.

There are several key audio editing software applications, including Audacity, Audition, Logic Pro, Soundbooth, and Soundtrack.

The processes and techniques involved in audio editing is beyond the scope of this guideline.

7.4 Audio Formatting

As is the case with video, there are multiple audio formats to consider when formatting your source audio files. The table below lists some of the more popular audio formats:

Audio Format	Format Description
Audio Interchange File Format (.aif)	Apple format, not supported by all web browsers or all platforms.
Waveform Audio (.wav)	Microsoft, lossless, developed for PC, large file sizes.
MPEG-1 Audio Layer 3 (.mp3)	Compressed wav file (1/12th the size), compresses data at a constant bit rate.
Windows Media Audio (.wma)	MP3 format for Windows Media Player, compressed three times more than MP3s.
Ogg Vorbis (.ogg)	Open source, more compressed than MP3, variable bit rate compression; not accepted by many audio software.
Advanced Audio Coding (.aac)	Logical successor to MP3 for medium to high bit rate audio – advanced ways to compress audio.
Pulse Code Modulation (.pcm)	High fidelity, uncompressed digital sampling of an analog audio signal.
AC3 Audio (.ac3)	Known as Dolby Digital; this format is being replaced by AAC.
Musical Instrument Digital Interface (.midi)	MIDI files are extremely small and are supported by many different software applications and Internet browsers.

7.5 Audio Formatting Specifications

The table below lists some general recommendations for formatting your audio files:

Specification Category	Specification / Description
File Format	The file format you choose will depend on the use of the file and the trading partner the file will be sent to.
Sample Rate	8,000 Hz to 96,000 Hz
Sample Type	8 to 32 Bit & 32 Bit Float
Bitrate	16 Kbps to 320 Kbps
Frequency	5.5 kHz to 48 kHz
Mono or Stereo	This depends on the audio quality required, most audio will be in stereo.
Compression	Some formats offer several compression options when formatting.
Quality Mode	Best quality vs. fastest

8. 360 Degree Product Image Best Practices

8.1 Overview

This section of the guideline focuses on 360 degree product images. The first few sections provide a general overview of 360 degree product images. The last few sections provide details on how to format, name, and distribute 360 degree images.

Defining 360 Product Images

These digital assets are the final output from the 360 degree product photography process.

Here is a broad definition of 360 degree product photography:

"360 degree product photography is a process of capturing a series of still product images on specialized equipment that rotates the product on one or more planes. The images are edited, formatted and integrated with a 360 degree product image viewer that allows the consumer to interact with the product, rotating it from various angles and zooming into it to see the product detail."

The difference between Single Plane 360 and Multi-Plane 360 Product Photography

Single Plane 360 degree product photography is product photography on a single plane – the product rotates on a single plane while the camera takes pictures at specified degree intervals. For example, if you create a single plane 72 frame 360 degree image, the camera takes a picture every 5 degrees as the product rotates on the table.

Multi-Plane 360 degree product photography is product photography on more than one plane. For example, you capture 72 images as the product rotates on one plane, then move the camera above the product X degrees and take another 72 images and so on. When the images are edited, formatted, and associated to the image viewer, the consumer can rotate the product along the sides and the top – this is a Multi-Plane 360 degree product image.

Compared to Single Plane 360 degree images, Multi-Plane 360 degree images require additional specialized equipment, are only suitable for products that need to be viewed from all angles, and are much more expensive to create. For these reasons, more than 90% of rotating product images are Single Plane 360 degree images and we will not be addressing Multi-Plane 360 degree image requirements in this document.

The difference between still and 360 degree product photography

Still product photography involves capturing various static "views" of your product – front, top, back, bottom, side etc. These are taken using a standard table top product photography set up with camera and stand, strobe or continuous lights, backdrops, and laptop with image production management software. These images are edited and formatted for your websites and electronic catalogs and distributed to your customers.

360 degree product photography uses some of the same equipment as still photography including camera and stand, lights, and software and laptop, but it also involves equipment for rotating the products when they are laying on a platform or suspended from an overhead device. A viewer is also required so that the consumer is able to interact with the product during the buying process.

Still product photography is easier and less expensive compared to 360 degree product photography.

8.2 360 Degree Product Image Specifications

All 360 degree product images that are being used in electronic catalogs and on trading partner websites should be formatted according to the following specifications.

The table below provides details of the various 360 degree product image specifications:

360 Degree Product Image Specifications		Notes
Format	JPG	JPG format is the only recommended format for 360 degree product images.
Size	Do NOT resize the images. Send the master image files regardless of how large the file size is.	This gives the receiver the option to resize the images according to their needs and/or to publish the 360 degree images with maximum zoom. Resized images limit the percentage of zoom the viewer can allow. (See note 1)
White Space	Crop the images as a set allowing more white space than the still image counterparts. 20 pixels around the product in the image should ensure all images in a set have enough white space around the product. (See note 2)	If the White Space is removed and an image falls below the minimum size standard, the image is NOT compliant. Does not apply to close-up images where only a section of the part is in the image. (See note 3)
Mode	RGB/sRGB	Grayscale images are not acceptable. Images saved as RGB/sRGB can have up to a 20% smaller file size. (See note 4)
Resolution	300 DPI	High resolution image file (See note 5)
Quality	Do NOT lower the Quality setting.	When you send your 360 degree image frames or a container file with the frames (e.g., a ZIP file), the images should have a Quality setting of Maximum or higher.
Image File Name	[Standard Still Image Part Number] '_' plane (2 digits)(S for southern	[Standard Still Image Part Number] represents how you would name still

	hemisphere is necessary) '_'frame (3 digits) '.' file extension	images you are sending them to your trading partners. 2 digit plane number followed by S or N to designate the hemisphere if there are more than 1 plane in the image set. (01 indicates the plane is on the equator) 3 digit number that denotes the number of the image in the 360 degree sequence e.g., a frame number 012 refers to the 12th frame in a 360 degree product image. Example of the naming convention: 12345_01_022.jpg Part number: 12345 Plane: first, northern hemisphere Image Frame: 22nd Note: this is the standard naming convention for a 360 degree image (See note 6)
Background	Pure White	RGB: 255, 255, 255 / sRGB: 1.0 / Hex: #FFFFFF unless the product is white; in this case background color, borders, or shadowing can be used.
Shadows	Removed	Some shadows are acceptable when used to define a white part on a white background.
Product Images per Plane	24 images per plane is the recommended minimum.	36, 72, or 144 images per plane are optional. Higher counts affect rotating smoothness and image load times.

Table Notes:

1. The Size specification has been updated in this version of the Digital Asset Product Images Guidelines and, therefore, only applies to images that are captured, processed, and distributed to trading partners after the release date of this document.

2. The White Space specification is a generalization and the size and shape of the product may impact the number of pixels of white space that can be left in the 360 degree image frames.

3. If a trading partner is requiring square images, it will be necessary to add white space to the image.

   o Consult with any trading partners prior to submitting square images to fully understand the white space requirements and impact on overall image size.

4. RGB/sRGB is preferred format for digital viewing.

   o CMYK is preferred format for print documents and has been removed from the product images portion of the document.

5. Formatting the images at 300 DPI allows trading partners to size images for all electronic catalog projects.

   o If images are of higher quality than preferred or recommended, it is a best practice to keep the higher resolution image as your master and downsize for trading partner delivery if required. It is not recommended to downsize your master high resolution image to a lower quality image.

6. The 'Digital Asset File Name' should only consist of alphanumeric characters. Spaces and any other special characters other than a dash or underscore should not be used.

   o All image names must include the extension; e.g., .jpg

8.3 360 Degree Product Image Container

360 degree product image creators will often send these files in a container. Since receivers have their own 360 degree image viewer they do not need all the associated viewer files. Only send the individual image frames one-by-one or in a container (e.g., .zip file).

If you are sending the image frames in a container file, do not include any other files in the container, only the images.

The table below provides details of the 360 Degree Product Image Container specifications:

360 Degree Product Image Container Specifications		Notes
Image Container File Type	ZIP, RAR, and 7z files	
Container File Name	[Standard Still Image Part Number] '_' [Image Orientation View]'.' file extension	[Standard Still Image Part Number] – see the individual file naming convention section above. All separators will be an underscore '_' and not a dash '-'. [Image View Orientation] will be '360' as that is the image view name. Example of the naming convention: 12345_360.zip Part number: 12345 Image view orientation: 360

8.4 360 Degree Product Image Viewer

If you are considering adding 360 degree product images to your marketing it is important to understand what a 360 degree product viewer is, how it works, and how it displays images on your website.

A 360 degree product viewer is a software application that plays in a browser. The HTML code on the webpage loads the viewer and the viewer loads the product images. Both the viewer and the images reside on the web server. The consumer can interact with the product according to the viewer's built-in functionality. Common viewer functionality includes rotating the product on one or more planes, zooming in to areas for more detail, and clicking on hot spots to display additional images or textual content.

Appendix A: W3C Accessibility Guidelines (WCAG) 3.0

A.1 About WCAG 3.0

This introduction provides a brief background to WCAG 3.0. Detailed information about the structure of the guidelines and inputs into their development is available in the Explainer for W3C Accessibility Guidelines (WCAG) 3.0. That document is recommended reading for anyone new to WCAG 3.

This specification presents a new model and guidelines to make web content and applications accessible to people with disabilities. The W3C Accessibility Guidelines (WCAG) 3.0 support a wide set of user needs, use new approaches to testing, and allow frequent maintenance of guidelines and related content to keep pace with accelerating technology change. WCAG 3.0 supports this evolution by focusing on users' functional needs. These needs are then supported by outcomes and technology-specific methods to meet those needs.

Following these guidelines will make content more accessible to people with a wide range of disabilities, including accommodations for blindness, low vision, and other vision impairments; deafness and hearing loss; limited movement and dexterity; speech disabilities; sensory disorders; cognitive and learning disabilities; and combinations of these. Following these guidelines will also often make content more usable to users in general as well as accessible to people with disabilities.

WCAG 3.0 is a successor to Web Content Accessibility Guidelines 2.2 [WCAG22] and previous versions, but does not deprecate WCAG 2.X. It will also incorporate content from and partially extend User Agent Accessibility Guidelines 2.0 [UAAG20] and Authoring Tool Accessibility Guidelines 2.0 [ATAG20]. These earlier versions provided a flexible model that kept them relevant for over 10 years. However, changing technology and changing needs of people with disabilities have led to the need for a new model to address content accessibility more comprehensively and flexibly.

There are many differences between WCAG 2.X and WCAG 3.0. Content that conforms to WCAG 2.2 A & AA is expected to meet most of the minimum conformance level of this new standard but, since WCAG 3.0 includes additional tests and different scoring mechanics, additional work will be needed to reach full conformance. Since the new standard will use a different conformance model, the Accessibility Guidelines Working Group expects that some organizations may wish to continue using WCAG 2.X, while others may wish to migrate to the new standard. For those that wish to migrate to the new standard, the Working Group will provide transition support materials, which may use mapping and other approaches to facilitate migration.

A.2 WCAG 3.0 Guidelines

The individuals and organizations that use WCAG vary widely and include web designers and developers, policy makers, purchasing agents, teachers, and students. In order to meet the varying needs of this audience, several layers of guidance are provided including functional categories of disabilities, general guidelines, outcomes that can be tested, a rich collection of methods, resource links, and code samples.

The guidelines have been selected to show different types of content:

- Text alternatives - a direct migration from WCAG 2.X success criterion

- Clear words - new guidance that could not previously be included in WCAG 2.X. It is directly based on Making content usable for people with cognitive and learning disabilities [coga-usable].

- Captions - an example of adapting WCAG 2.X guidance to emerging technologies, such as web virtual reality

- Structured content - migration and merging of several previously unrelated WCAG 2.X success criteria

- Visual contrast of text - a migration of WCAG 2.X with substantial changes

- Error Prevention - a migration of WCAG 2.X with substantial changes

A.3 WCAG 3.0 Testing

WCAG 3.0 tests and scores outcomes. Outcomes are written as testable criteria that allow testers to objectively determine if the content they are evaluating satisfies the criteria.

Testing outcomes uses both views and processes to define what is being tested. Views include all content visually and programmatically available without a substantive change. Conceptually, it corresponds to the definition of a web page as used in WCAG 2.X, but is not restricted to content meeting that definition. For example, a view could be considered a "screen" in a mobile app.

Processes are a sequence of steps that need to be completed in order to accomplish an activity/task from end-to-end. When testing processes, the content used to complete the process as well as all of the associated views need to be included in the test. A process is a subset of a view or a group of views. It includes only the sections of the view needed to accomplish the activity or task.

Examples of a process include:

- Logging into a site and being recognized as an authenticated user;

- Ordering an item, in which case the process includes the entire set of tasks from searching for the item, adding it to the shopping cart, paying for it, and receiving confirmation;

- Submitting tax information, from start to end of the process; and

- Interacting with other users in a virtual reality environment.

A process is comprised of one or more views.

WCAG 3.0 includes two types of tests: atomic tests and holistic tests. Testing the outcomes using the atomic tests might involve a combination of automated evaluation, semi-automated evaluation, and human evaluation.

Although content may satisfy all outcomes using the atomic tests, the content may not always be usable by people with a wide variety of disabilities. The holistic tests address this gap by evaluating more of the user experience than atomic testing.

Technology specific testing

Each outcome includes methods associated with different technologies. Each method contains tests and techniques for satisfying the outcome. The outcome is written so that testers can test

the accessibility of new and emerging technologies that do not have related methods based solely on the outcome.

A.4 WCAG 3.0 Scoring

Each outcome has methods associated with different technologies. Each method contains tests and techniques for meeting that outcome. Testers can test the accessibility of new and emerging technologies that do not have related methods based on the outcome.

Scoring atomic tests

In most cases, testing individual objects will result in binary, pass / fail outcome for each element. This leads to either a pass / fail or a percentage rating depending on the test. A rating scale may be provided for some tests to allow the tester to assign a quality judgement of an element or block of content. Whether scoring is binary (pass/fail) or uses rating scales will depend on the method, outcome, and technology. Binary scoring works well when the unit being tested has clear boundaries and pass/fail conditions. Rating scales work better when the unit being tested does not have clear boundaries, when evaluating success requires a quality judgement, or when the test includes gradations of quality. Each of these results can then be assigned a percentage or averaged to inform the overall score of an outcome.

Test results for views:

- Tests that result in a pass or fail condition will be assigned a 100% or 0%

- Tests at the element level that can be consistently counted will be assigned a percentage (number passed / total number of instances)

- Tests that apply to content without clear boundaries will be scored using a rating scale. The rating scales may vary based on the test and may be presented as numeric scale, an adjectival rating or a rubric. Each of these can be converted into a percentage to make it easier to compare across tests.

In addition, critical errors within selected processes will be identified and totaled. Any critical errors will result in score of very poor (0)

Scoring outcomes

The results from the atomic tests are aggregated across views and used along with the number of critical errors to assign an adjectival rating to the outcome. Testers will then use the guidance provided in the outcome, along with reasonable judgement of the context that the errors occur in to assign an accessibility score of the outcome.

Potential thresholds for adjectival ratings of test results:

Very Poor (0) - Any critical errors or less than 50% of related tests pass

Poor (1) - No critical errors, approx. 50% to 79% of related tests pass

Fair (2) - No critical errors, approx. 80% to 89% of related tests pass

Good (3) - No critical errors, approx. 90% to 98% of related tests pass

Excellent (4) - No critical errors, approx. 99% to 100% of related tests pass

Overall scores

After all outcomes have been scored, the ratings are averaged for a total score and a score by the functional category (ies) they support. Conformance at the Bronze level requires no critical errors and at least 3.5 total score and at least a 3.5 score within each functional category.

Scoring holistic tests

The points from holistic tests do not affect the scores of atomic tests. Rather a minimum number of holistic tests will need to be met in order to reach a Silver rating and additional holistic tests will be needed to reach a Gold rating. Getting a Silver or Gold rating requires a Bronze rating.

A.5 WCAG 3.0 Conformance

You might want to make a claim that your content or product meets the WCAG 3.0 outcomes. If it does meet the outcomes, we call this "conformance." To conform to WCAG 3.0, your test results must show that your project is accessible.

If you want to make a conformance claim, you must use the process described in this document. Your content can conform to WCAG 3.0, even if you don't want to make a claim. You can still use this process to test your project's accessibility.

Conformance levels

WCAG 3.0 defines three levels of conformance: Bronze, Silver, and Gold.

User Generated Content

Web content publishers may include content provided by the users of their digital products. We refer to such content as "User Generated Content".

Examples of User Generated Content include:

- social media postings and comments,

- uploaded photographs

- uploaded videos or other multimedia

User Generated Content is provided for publication by visitors where the content platform specifically welcomes and encourages it. User-generated content is content that is submitted through a user interface designed specifically for members of the public and customers. Use of the same user interface as an authoring tool for publication of content by agents of the publisher (such as employees, contractors, or authorized volunteers) acting on behalf of the publisher does not make that content User Generated Content. The purpose of the User Generated Content Conformance is to allow WCAG 3 outcomes and methods to require additional or different steps to improve the accessibility of User Generated Content.

An important part of WCAG Conformance is the specific guidance that is associated with individual WCAG 3 guidelines and outcomes. Not all WCAG 3 guidelines will have unique outcomes and testing for User Generated Content. Unless User Generated Content requirements are specified in a particular guideline, that guideline applies as written whether or not the content is User Generated.

The web content publisher should identify all locations of User Generated Content (such as commentary on hosted content, product descriptions for consumer to consumer for sale listings, and restaurant reviews) and perform standard accessibility evaluation analysis for each. If there are no accessibility issues, the User Generated Content is fully conforming.

Steps to Conform

If accessibility issues are identified or if the website author wants to proactively address potential accessibility issues that might arise from User Generated Content, then all of the following must be indicated alongside the User Generated Content or in an Accessibility Statement published on the site or product that is linked from the view or page in a consistent location:

1. Clearly identify where User Generated Content can be found on the publisher's digital product (perhaps by id href)

2. Clearly identify the steps taken to encourage accessibility in User Generated Content such as prompting the user for ALT text for their uploaded images before they are accepted and the disallowance of text attributes except as they are part of semantic markup such as strong, headings, etc., as enumerated in Guideline Outcomes

Defining conformance scope

When evaluating the accessibility of content, WCAG 3.0 requires the outcomes apply to a specific scope. While the scope can be an all content within a digital product, it is usually one or more sub-sets of the whole. Reasons for this include:

- Large amounts of content are impractical to evaluate comprehensively using anything beyond automated evaluation of atomic tests;

- In many cases, content changes frequently, causing evaluation to be accurate only for a specific moment in time;

- Some content is more important to the majority of users than other content; and

- Content that mostly meets the requirements but has problems can interfere with the user's ability to complete a process begun elsewhere.

WCAG 3.0 therefore defines two inter-related ways to scope content: views and processes. Evaluation is done on one or more complete views or processes, and conformance is determined on the basis of one or more complete views or processes.

Conformance is defined only for processes and views. However, a conformance claim may be made to cover one process and view, a series of processes and views, or multiple related processes and views. All unique steps in a process *MUST* be represented in the set of views. Views outside of the process *MAY* also be included in the scope.

Conformance requirements

In order for technology to conform to WCAG 3.0, the following conformance requirements apply:

1. **Conformance level** - Content *MUST* meet the requirements of the selected conformance level.

2. **Processes and views** - Conformance (and conformance level) *MUST* apply to complete processes and views, and *MUST NOT* exclude any part of a process or view.

A.6 WCAG 3.0 Differences from WCAG 2

Outcomes

Outcomes are different from WCAG 2.X success criteria. Compared to success criteria, outcomes are written to be:

- In plain language;

- More understandable by people who are not experts in technology;

- More user-need oriented instead of technology oriented;

- More granular, so there will be more of them; and

- More flexible to allow more tests than the true/false statements of WCAG 2.X.

The design of outcomes allows more varied needs of people with disabilities than could have been included in WCAG 2.X.

Methods map approximately to WCAG 2.X Techniques documents.

Approximate mapping of WCAG 2 and WCAG 3 documentation

WCAG 2	WCAG 3
Success Criteria	Outcomes
Techniques	Methods
Understanding	How-to

A.7 WCAG 3.0 References

Informative references

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Appendix B: Supply Chain Participant Responsibilities

To facilitate the efficient creation and distribution of images throughout the Automotive Aftermarket supply chain, this Best Practices Guideline has defined the responsibilities of the supply chain participants.

B.1 The creator of the digital asset:

- The creator of the images is typically the manufacturer.

- They are responsible for creating and formatting their images according to one image specification accepted by all supply chain trading partners. This image specification is detailed in this document.

- They are responsible for formatting and including a PIES Digital Asset Data Delivery file when they deliver their images to trading partners. This PIES Digital Asset Data Delivery file is detailed in the current PIES documentation.

B.2 The receiver of the images:

- The receiver of the images is typically the retailer or electronic catalog provider.

- They will receive the images from the image creators formatted according to the image specifications detailed in this document.

- They will accept the PIES Digital Asset Data Delivery file as detailed in this document.

- Once they have received the images, they can format them according to their unique standards and purposes of use.

Appendix C: Acceptable Part Image View Definition

An acceptable image view of a part is an image view that displays the key physical characteristics of the part from the perspective of the persons who are viewing the image. The persons viewing the image should be able to clearly identify and determine that this image represents the right part satisfying their need and application. Specifically, an acceptable part image view should meet the following conditions;

- **Key Part Features:** The image view or views of the part should clearly display the important features and physical attributes of the part or parts.

- **Part Connectors:** If the part has connectors and these connectors are important for the viewer of the image to accurately determine whether the image represents the part they require, these connectors should be imaged at an angle offering the user a definitive view of the connectors so that they can confirm the image represents the part they require.

- **Installer / Fitment Views:** Image views of the part should be captured so that an installer can clearly see the features of the part that are important from the perspective of installing the part on a make / model / year vehicle.

Below are several examples of parts and their image views as well as descriptions of why these image views are important. This will help illustrate an acceptable image view.

C.1 Part Example #1: Radiator

Image Style	Image View	Part Attribute Highlighted
Photo - Primary	Front	Offers the viewer a full, wide angle straight-on view of the entire radiator positioned with the hose connector side up.
Photo - Close Up	Left	Offers the viewer a close-up view showing one side of the radiator cooler tank with the hose connector side up.
Photo - Close Up	Right	Offers the viewer a close-up view showing the other side of the radiator cooler tank with the hose connector side up.
Photo - Close Up	Top	Offers the viewer a close-up view showing the upper hose connector.
Photo - Close Up	Bottom	Offers the viewer a close-up view showing the lower hose connector.
Photo - Close Up	Angle	Offers the viewer a close-up 3/4 angled view showing the opening of the fill neck.
Photo - Out of package	Angle	Offers the viewer a close-up 3/4 angled view showing the opening of the drain.

C.2 Part Example #2: Compressor

Image Style	Image View	Part Attribute Highlighted
Photo - Primary	Top	Offers the viewer a full wide 3/4 side / top view showing the entire compressor.
Photo - Out of package	Connector	Offers the viewer a close-up view showing the terminals and indexing tabs of the electrical connector.
Photo - Close Up	Connector	Offers the viewer a close-up view showing the hose connection ports.
Photo - Close Up	Back	Offers the viewer a close-up view showing the back of the compressor with any mounting area details.
Photo - Close Up	Front	Offers the viewer a close-up front view slightly angled showing the front of the compressor with mounting area details.
Photo - Close Up	Side	Offers the viewer a close-up view showing the side of the compressor capturing the pulley groves and any mounting area details.

C.3 Part Example #3: Fuel Pump

Image Style	Image View	Part Attribute Highlighted
Photo - Primary	Top	Offers the viewer a full wide 3/4 side / top view showing the entire fuel pump.
Photo - Close Up	Connector	Offers the viewer a close-up view showing the terminals and indexing tabs of the electrical connector.
Photo - Out of package	Connector	Offers the viewer a close-up view showing the fuel line connector.
Photo - Close Up	Top	Offers the viewer a close-up view showing the full top of the part.
Photo - Close Up	Side	Offers the viewer a close-up view showing the full side view of the part.
Photo - Out of package	Kit	Offers a view showing the part with additional component parts included with the package.

C.4 Part Example #4: Fuel Injector

Image Style	Image View	Part Attribute Highlighted
Photo - Primary	Top	Offers the viewer a full wide 3/4 side / top view showing the entire fuel injector.
Photo - Close Up	Connector	Offers the viewer a close-up view showing the terminals and indexing tabs of the electrical connector.
Photo - Close Up	Side	Offers the viewer a close-up view showing the full side view of the part.
Photo - Close Up	Top	Offers the viewer a close-up view showing the top inlet end of the part.
Photo - Close Up	Bottom	Offers the viewer a close-up view showing the bottom outlet nozzle end of the part.

C.5 Part Example #5: Alternator

Image Style	Image View	Part Attribute Highlighted
Photo - Primary	Top	Offers the viewer a full wide 3/4 side / top view showing the entire alternator.
Photo - Close Up	Connector	Offers the viewer a close-up view showing the terminals and indexing tabs of the electrical connector.
Photo - Close Up	Front	Offers the viewer a close-up front view slightly angled showing the front of the part with mounting area details.
Photo - Close Up	Back	Offers the viewer a close-up view showing the rear of the part with mounting area details.
Photo - Close Up	Side	Offers the viewer a close-up view showing the side of the part capturing the pulley groves and mounting area details.

Appendix D: Representative Images

A representative image is a digital image that is an "exact likeness" of a part number, but it is not captured from the actual part number being described. Thus, to the naked eye, a representative image appears identical to one or more part numbers. The following conditions must be satisfied in order to qualify as a representative image. If any of these conditions are not met, a separate image of each part number is required.

- **Color:** The color of the part in the representative image must match the color of the actual parts exactly. The exception to this is if the representative image is accompanied by a color swatch. This color swatch can be a separate image file or as part of the representative image file. Text describing the color codes can also be included on the color swatch, positioned below each color e.g., 01 White, 02 Black etc.

- **Shape:** The shape of the part in the representative image must match the shape of the actual parts exactly.

- **Material:** The material of the part in the representative image must match the material of the actual parts exactly. The exception to this is if the representative image is accompanied by a material swatch. This material swatch can be a separate image file or as part of the representative image file. Text describing the material codes can also be included on the material swatch below each material sample e.g., 01 Smooth, 02 Ridged, etc.

- **Physical characteristics:** The human eye cannot discern any physical characteristic differences between the representative image and the actual parts.

- **Labels, stampings and part numbers:** If the labels, stampings, and/or part numbers on the part in the representative image match the labels, stampings, and/or part numbers of the actual parts exactly then they must not be removed from the representative image. If the color, shape, material, and physical characteristics conditions (points above) are met and the labels, stampings, and/or part numbers on the part in the representative image are different than the labels, stampings and/or part numbers of the actual parts, they must be removed from the representative image. Note: only remove the part attributes that are different; for example, if the labels and stampings are the same for all the actual parts that the representative image is representing but the part numbers are different on each actual part, remove only the part numbers from the representative image and do not remove the labels and stampings.

Appendix E: Image Protection, Copyright and Ownership

The issues regarding the protection, copyright, and ownership of images as they are traded throughout the supply chain is a concern to both the creator of the images and the trading partner who is using the images. The main area of concern is the use of the images for electronic purposes; online catalogs, Extranets, and e-commerce sites. Images published online are vulnerable to misappropriation. The image creator (the supplier) requires an assurance that their images are being reasonably protected while in use by their trading partners against theft and misuse. The receivers of the images (the retailers and eCat providers) require the flexibility to use the images in various marketing capacities in order to maximize their ability to sell parts. The following are the workgroup recommendations regarding image protection, copyright, and ownership;

- **Image Protection:** This issue involves protecting the creator's images while they are in use by the trading partner for both print and electronic purposes.

  - **Image Watermarks:** The majority of retailers and eCat providers feel that watermarks are a distraction to the viewer of the image and should, therefore, not be used. Although, in certain cases trading partners will accept watermarked images. It is recommended that before watermarks are applied each trading partner's policy regarding this issue is reviewed.

  - **Intended Image Use:** All retailers and eCat providers are using the images for the purpose of selling more of the right parts to the right customers. The workgroup consensus is that the image receivers will protect the images electronically to the best of their ability and they will discontinue using the images if the image creator no longer supplies the parts that the images represent to the trading partner.

  - **Legal Agreements:** Some retailers and eCat providers are prepared to enter into legal agreements with the image creators addressing the use, protection, and ownership of the images. The image creators should check with their trading partners to discuss possible legal agreements that protect the image creator's asset (the images).

- **Ownership and Copyright:** This issue addresses image copyright and ownership:

The issue of copyright and ownership involves determining whether or not the creator of the images owns the copyright to the images after they have been distributed to supply chain trading partners. In other words, does the copyright of the image transfer to the trading partner or is it retained by the image

creator? The workgroup's viewpoint is that ownership and copyright of the images is a legal issue between trading partners and, therefore, not within the scope of the workgroup's discussions. Ultimately, the ownership of and right to use an image will be governed by the agreement between the image creator and the trading partner.

Appendix F: Additions, Suggestions and Feedback Process

This document is the result of a collaborative effort between a diverse group of retailers, manufacturers, and electronic catalog and solution providers. Over time, and as a result of feedback from the industry, some of the recommendations in this guideline may be changed and updated. The workgroup encourages as much feedback as possible from the Automotive Aftermarket. To provide feedback to the workgroup follow the process below;

- Contact a member of Auto Care's Technology Standards Committee by writing to technology@autocare.org

- Explain the issue(s) or make a recommendation(s).

- The issue(s) or recommendation(s) will be brought up and discussed by the members of the workgroup at regularly scheduled meetings.

- The workgroup will make a recommendation(s) which will be included in the next updated version of the Digital Asset Best Practices Guideline.

- The recommendation(s) will be published by Auto Care in the latest version of the guideline.