The Global Language of Business

GS1 Product Image Sharing/Delivery Guideline

outlines the global best practices and industry agreed recommendations for exchanging product images between trading partners

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Log of Changes

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1.0	Dec 2021	E.Braz & D.Buckley	WR Initial draft for discussion based on WRs 21-127, 21-176 & 21-193

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1 Introduction

1.1 GS1 Product Image Specification Standard

The GS1 Product Image Specification Standard *establishes rules for the **storage** of digital images associated to products. … [It] **does not** specify how the images should be delivered via electronic commerce."*

This guideline aims to provide the best practices and recommends on Product Image delivery in a global and technological agnostic manner. The reader of this guideline is assumed to be familiar with the GS1 Product Image Specification Standard and the product images for sharing are assumed to be compliant in terms of:

■ Aspect ratio

■ Image quality

■ Naming conventions

■ And all other requirements except the format (e.g., TIFF, JPEG, etc.)

1.2 Sharing product images

Before turning to the technical recommendations, at a high level it is assumed that:

■ An image provider will want to share the same product images with multiple image recipients.

■ An image recipient will want to receive multiple images from multiple image providers.

■ Both image providers and image recipients may work with images inhouse or with the support of a dedicated image service provider.

In such an environment, global standards for the product image helps reduce costs and complexity by defining a common framework for all stakeholders. The two basic models to achieve this are summarised below.

✓ **Note**: Image recipients **do not** assume ownership of a product image which has been shared with them. While the image can be used, product image shall not be manipulated unless explicitly permitted.

1.2.1 Store one high-quality product image, and generate format required

Widely used for product recognition (e.g., reuse on websites where the product is listed for sale). This is primarily used for images that can be used without further permissions.

Figure 1-1 Show process flow below
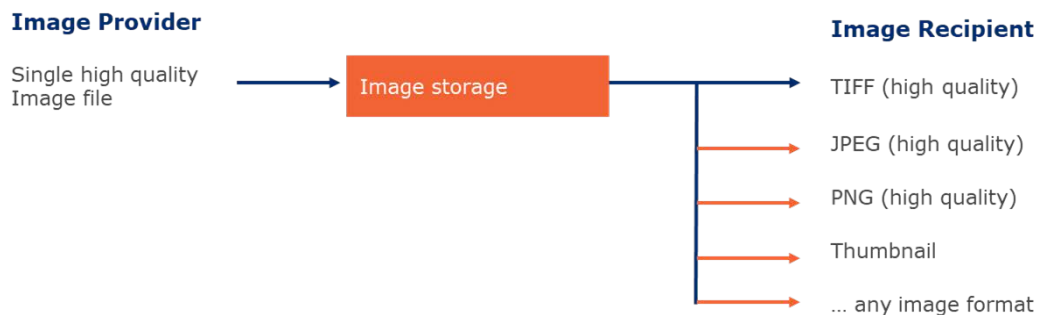
1.2.2 Bespoke create of product image by provider based on recipients needs

Commercial images (e.g., product images used for advertisement, promotion, or other promotional needs) where the individual image has specific usage requirements (by country, by retailer, by region, etc.) Product Images.

Figure 1-2 Show image of bespoke process flow here
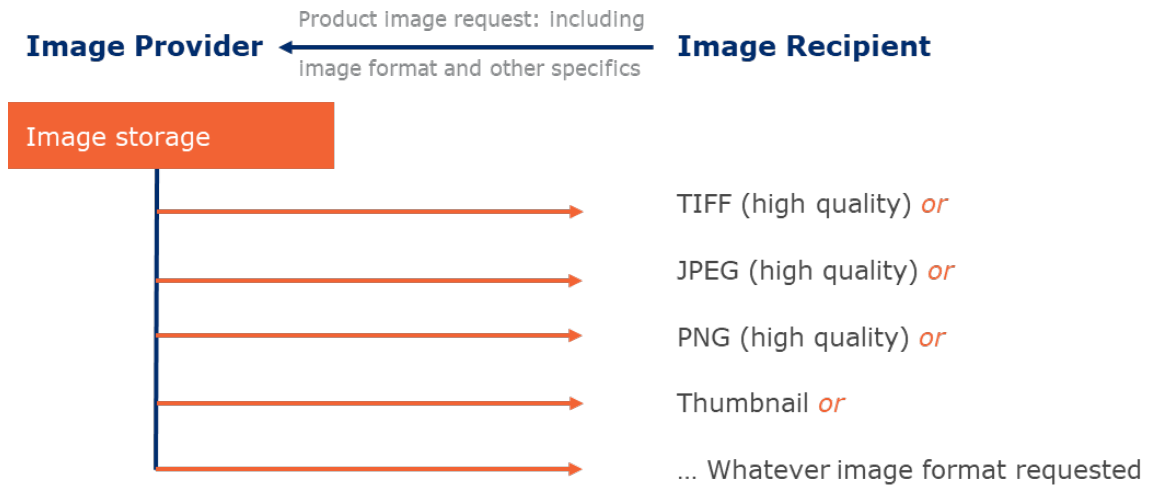
2 Regulatory/legal and usage rights

Product Image Providers usually own the image rights of the GS1 compliant Product Images that they share or shared by their Solution Provider. While the intent is often for Product Image Recipients to reuse the images (on websites, in print, for product confirmation systems, etc.) there are limits to how images can be shared. While individual images will have their own specific requirements the table below provides a summary:

Table 2-1 Synopsis of usual product image usage rights

Image Recipients CAN	Image Recipients CAN NOT
Resize the image, respecting the aspect ratio	Extract any component of an image (for example removing the background of a mood or style shot)
Add a white or transparent background	Change any text on the image or change language except as explicitly stated by the Image Provider
Convert the format (e.g., TIFF to JPEG to EPS ..)	Use in a country/territory for which the product is not intended
Add additional information, such as promotional statement, in close proximity (e.g., 20% off)	Use the image before its release date/after its use by date in a consumer facing environment
	Modify a full page layout for a global campaign

3 GS1 Product Image Naming

■ The GS1 Product Image Specification Standard provides a best practice for naming conventions for Product Images. This includes all the GTIN based naming & GDTI identification for Product Images. Please note, however, that the industry is increasing moving toward the use of Metadata, rather than product image file name, to communicate attributes of the image. Please see: https://www.gs1.org/standards/gs1-product-image-specification-standard/current-standard#7-Identification-and-Metadata+7-1-Identification

4 Best practices for sharing Product Images by application area

Before turning to the sharing recommendations by application area, at a high level it is assumed the following notes for each image format regarding the path/background specifications:

Table 4-1 Image format characteristics

Image Format	Image Path/Background
TIFF (from photography)	Standards TIFF should have a white background with a clipping path (Path 1) as recommended in Standard. No extra layers - layer to be locked as background to reduce file size. Use LZW compression **NOTE**: When a transparent background and/or multiple layers are used, file size is increased, in such situation clipping path can be optional to extract subject.
TIFF (from rendering)	Standards TIFF should have a white background with a clipping path (Path 1) as recommended in standard. No extra layers - layer to be locked as background to reduce file size. Use LZW compression. **NOTE**: When a transparent background and/or multiple layers are used, file size is increased, in such situation clipping path can be optional to extract subject.
JPEG	Always have background (Standard white) and should have clipping path (Path 1) to extract subject if required Compression quality should always be high (96 or 10).
PNG (from photography)	Can have a transparent background (layer 0), , subject can be extracted without manipulation clipping path is not supported. **NOTE**: If the background (no layer) is white subject (product image) can't be extracted without manipulation.
PNG (from rendering)	Can have a transparent background (layer 0), subject can be extracted without manipulation clipping path is not supported. **NOTE**: If the background (no layer) is white subject (product image) can't be extracted without manipulation
GIF	Can have a transparent background and does not support clipping paths (Path 1).

Note: A clipping path (Path 1) and white or a transparent background is preferred for sharing product images since they are more flexible and easier to be managed/used by the recipients.

4.1 Digital

Overview: Any product images used for display on websites. This includes eCommerce web, eCommerce Mobile, Social Media, Influencer, Lifestyle, etc.

Summary of Product Image requirements:

- **Views**: Straight-on, various angle and plunge, varietal composition, info-graphics
- **Formats**: JPEG/PNG
- **Path/Background:** Clipping path or transparent background (when supported by the format)

  Associated Data: All optional (e.g., trading partner specific items such as brand, quantity, unit of measure, etc.)

4.1.1 GS1 Mobile Ready Hero Images

Go see https://www.gs1.org/standards/Mobile-Ready-Hero-Image/1-0

4.2 Planogram/Space planning

Overview: Any product images used for planogram or retail shelf space planning management. This includes Planogram and Shelf Tags

- **Views**: Straight-on, all product sides
- **Formats**: JPEG/TGA/PNG
- **Background transparency**: Clipping path or transparent background (when supported by the format)
- **Associated Data**: All mandatory (e.g., dimensions)

4.3   Print Marketing

Overview: Any Product image used for print. This includes circulars, Product Catalogues, Free Standing Inserts, Coupons, Banners, Instore Signage, Sell Sheets, etc.

- **Views**: Straight-on, various angles and plunge, varietal composition, info-graphics
- **Formats:** JPEG/PNG/TIFF
- **Path/Background**: Clipping path or transparent background (when supported by the format)
- **Associated Data**: All optional

4.4   Provide one, front facing, image

Overview: The image provider provides one, high quality, image. This is normally a front facing image centred on the product. Such an image can be used or shared in many different ways: URL, GDSN, Verified by GS1, etc

- **Views**: Straight-on
- **Formats**: TIFF, JPG, PNG, GIF
- **Path/Background**: Clipping path or transparent background (when supported by the format)
- **URL links**: In the product data sheet, several URL links to the images of the product could be shared by the brand, only one of them should be the main image. To be sure to identify the correct main image, the brand will have the opportunity to specify it with the **Digital Asset Primary Indicator** equals "TRUE" (GDSN attribute name: **isPrimaryFile**) associated to only one **Digital Asset Type Code** (GDSN attribute name: **referencedFileTypeCode**). The brand could share several main images but linked to the period of validity. This means that GDSN subscribers (Retailers, Verified By GS1, etc.) should manage the start and end date for each instance of main images. Only one main image should be valid per:
    - **referencedFileTypeCode** (Mobile Hero Image, Product image, etc.)
    - for the same period (current and future)
    - CPV (Consumer Product Variant)
    - File format (TIFF, JPEG, ..)
    - The full list of applicable rules can be found in:
        - GDSN Validation Rules, latest release

✅ **Note:** If the image – or the images – are provided in a high quality format such as TIFF, the image recipient would be required to manipulate for the format they require, however, changes should be restricted to format and white/transparent background only.

5   Technical considerations

This guideline aims to be technology agnostic. However, the technology used to deliver or share product images between trading partners does need to be considered. The sections below aim to provide some tips and key considerations on using the main methodologies.

5.1   Shared URL

Image providers can make their product images available via a URL that can be shared with multiple image recipients.

A very simple example is a single product shot, created and named in line with the GS1 Product Image Specification Standard, that is the primary front on image, square aspect ratio, white background, using GTIN-naming, etc as outlined in section 4.4. For example:

- https://www.gs1.org/docs/images/09504002100016_A.jpg

However, the exact same process can be used for sharing any type of product image. For example an image that is compatible with the GS1 Mobile Ready Hero Image Guideline:

■ https://www.gs1.org/docs/images/09521234567806_B1C1_0622_s01.jpg

While the shared URL is, in principle, very simple and scalable to multiple images of single product the following best practices should help image providers:

URL Management: Automated image sharing requires valid URL for each image being shared. The following are known issues that must be avoided:

- □ Broken links
- □ Image files that are corrupted or of low quality
- □ Image formats that are not supported (e.g., doc, ppt, html, etc.)
- □ A URL that is password protected
- □ A URL that requires manual navigation or shows multiple images that requires manual navigation
- □ Etc.

GS1 Product Images shared via URL ideally do not require specific permissions to be reused, but if the brand owner has any restrictions on the use of the image (see section 2), these should be listed on a higher-level page.

The scope of this document does not cover meta-data, but once an image is loaded on its own unique URL by the brand owner, required meta-data can be associated with each image.

5.2   Global Data Synchronisation Network (GDSN) and other systems

Within the GDSN network, product images are not shared directly. Links are provided to the URL where the product images can be found (see section 5.1). It is important to consider the needs of the recipient. Many recipients will be receiving images from several providers, so it is important to provide an image that recipients can use without overloading their servers or requiring interventions for converting or editing the file.

The recommended file type of full quality TIFF files are excellent inventory for the image provider. This rich format enables the creation of any other format or size for downstream purposes. However, as this TIFF format was created for print purpose originally, full quality TIFF files can be very large which can be challenging for the recipient to manage and pass between servers depending on the use.

If one, front facing, image is provided as stated in section 4.4, by providing the files in TIFF format, the recipient has all flexibility to create internally all required, different file types, resolutions, backgrounds (white or transparent) etc. The lighter JPEG and PNG images, which comply more with web requirements, can easily be created from the master TIFF and still contain the pixel ranges provided in the GS1 Product Image Specification Standard.

5.3   Send Product Image File

There are a variety of attributes that need to be populated in order to effectively send an image to a recipient.

A lot of images could be shared for the same product, and the goal of this section is to help users to identify the main image for each product. The provider could identify the main image that he wants to use and it is up to the recipient to use it or to define another one according to its usage. It is essential that all of these attributes are consistent with each other in the transaction.

■ **referencedFileTypeCode:** This attribute will be used to specify referenced file type links to the primary file that should be used.

■ **uniformResourceIdentifier:** This attribute refers to a resource on the internet, URLs may refer to documents, resources, people, etc. It will facilitate the exchange of information through an URL.

■ **isPrimaryFile:** This attribute will help to indicate which asset is/are the main asset(s). For the same consumer product variant, same period, and same file format, we can only have one main asset with isPrimaryFile sets to true.

6   Glossary

Please refer to the www.gs1.org/glossary for the latest version of the glossary.

Term	Definition
Image provider	Any organisation that makes available Product Images for reuse by multiple Image Recipients. Typically, brand owners, manufactures or other organisations selling products via 3rd parties to end consumers.
Image recipient	Any organisation that accepts Product Images for reuse from multiple Image Providers. Typically, retailers, eTailers or other organisations selling directly to consumers.
Solution provider	In the context of this guideline, any organisation that facilitates the sharing of images between multiple trading partners.

7   References

Document	Autor / Date
GS1 Product Image Specification Standard	GS1, latest
GS1 Mobile Ready Hero Images Guideline	GS1, latest
Global Data Synchronisation Network	GS1, latest