

IARPA N2N Challenge NIST Image Standards

The images shall:

- Be in lossless PNG format.
- Be usable as-is with existing commercial template generation and template matching algorithms.
- Contain 8- or 16-bits per channel.
 - 1—7 bits per channel shall be padded to 8-bits per channel.
 - 9—15 bits per channel shall be padded to 16-bits per channel.
- Contain *at least* 500 pixels per inch.
- Contain a PNG *pHYS* chunk indicating the capture resolution in pixels per meter.
 - 19 685 ppm \cong 500 ppi.
- Contain an image header (IHDR) containing width, height, bit depth (8 or 16), color space (grayscale), compression (deflate), filter method (none), and interlacing (none).
- Be encoded in the grayscale color space without any form of transparency.
- Not use palette (PLTE) colors.
 - 0x0 is black (friction ridges).
 - 0xFF (8-bit) and 0xFFFF (16-bit) is white (ridge valleys).
- Not make use of interlacing.
- Not rely on ancillary chunks (*bKGD*, *cHRM*, *gAMA*, etc.) to alter the visual appearance of the image.
 - All pixel information should be encoded directly into IDAT grayscale scanlines.
- At least 128x128 pixels at 500 ppi.

Please refer to the sample image specifications supplied with this document that demonstrates no gamma/chroma correction, 500 ppi resolution, 8-bit depth grayscale, and a MD5 checksum of dd8c4f74abed47e2ef2b4cc0cb6db026 for the decompressed image.

Participants are **highly encouraged** to make use of the [beImageInfo](#) utility to ensure that decompressed versions of their images will render correctly on NIST systems.

Please note that many commercial template generation algorithms, including the default algorithm for this challenge, may down-sample images to 500 ppi, 8-bits per channel, and/or grayscale.