How NARA's Introduction of a Modern Textual Records Definition Affects FADGI Compliance

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INTRODUCED AS PART OF NARA'S DIGITIZATION REGULATIONS, MTR OFFERS A VIABLE OPTION TO FADGI 3-STAR SCANNING

By now, all U.S. Federal agencies, as well as service bureaus working with them, should be familiar with the acronym FADGI. It stands for the Federal Agencies Digital Guidelines Initiative and was launched in 2007. FADGI's mission is to "articulate common sustainable practices and guidelines for digitized and born digital historical, archival cultural content."

This includes a Four-Star rating system developed by FADGI's Still Image Group, which has received increased visibility as a result of a 2019 memorandum issued by the National Archives Records Administration (NARA) and the White House Office of Management and Budget (OMB) calling for Federal Agencies to transition to electronic records. One assertion in the memorandum, known as M-19-21, is that

all permanent records being submitted to NARA after a certain date will have to be in an electronic format. This means that federal agencies (or contracted service bureaus) will be responsible for scanning several million records per year which have previously been submitted to NARA on paper.

FA DGI Federal Agencies Digital Guidelines Initiative

Almost immediately after the memorandum was issued, discussion began that compliance with a FADGI 3-Star rating or above would be required by NARA for scanned records. However, in May 2023, when NARA finally released its regulations for submitting electronic records, it introduced its own standards, which are based on FADGI 3-Star parameters but do not equate to them. One major difference is allowing the use of grayscale files, which is not permitted under FADGI 3-Star guidelines. There is also additional leeway in image quality measurements for a specific type of document defined by NARA as Modern Textual Records (MTR).

In addition to the NARA regulations, in May 2023, the FADGI Still Image Working Group published an updated version of its *Technical Guidelines for Digitizing Cultural Heritage Materials.* It also includes a newly defined material type labeled MTR, which aligns with NARA's MTR definition. MTR is the only material type for which the FADGI guidelines recommend using scanners with ADFs (automatic document feeders).

The introduction of MTR could significantly affect the market for hardware utilized in the conversion of paper permanent records for submission to NARA, which has set a deadline of June 30, 2024, after which it will no longer accept analog submissions. Previous to MTR being introduced, most of the focus has been on how to convert paper records to FADGI 3-Star compliant digital records for submission. That focus can now shift to the MTR format. In this paper, we will discuss why this is important and potentially beneficial to Federal agencies and service bureaus.

THE SIGNIFICANCE OF MTR

When M-19-21 was issued, it had called for a Dec. 31, 2022, deadline for federal agencies to comply with NARA's requirements. This meant that after that date, all permanent records being submitted to NARA had to be electronic. In addition, the memorandum called for agencies to manage all their temporary records in electronic format and to close all agency-operated records storage facilities by the deadline. As part of M-19-21, NARA promised that it would issue official digitization guidelines and standards by Sept. 30, 2020.

Then, in early 2020, the COVID-19 pandemic hit. This delayed planning and activities related to implementation of M-19-21, not just on the agencies' part but also on the part of NARA, and no digitization guidelines were issued during 2020 or 2021. Finally, in December 2022, NARA and the OMB issued M-23-07, which pushed back the deadline for compliance until June 30, 2024. NARA also promised before that date to provide updated regulations containing guidance on electronic records formats.

In the meantime, we started to see a number of vendors bring to market scanners advertised as FADGI 3-Star compliant. This means they are able to capture images that meet the 3-Star parameters defined by the FADGI Still Image Working Group and described in its *2016 Technical Guidelines for Digitizing Cultural Heritage Materials.* To prove compliance, testing is done using Digital Imaging Conformance Evaluation (DICE) software and a test target. The most popular DICE testing system is branded GoldenThread and developed and sold by Image Science Associates.

Meeting FADGI 3-Star requirements involves evaluating a number of scanning characteristics including tonal response, white balance, lightness uniformity, color accuracy, special frequency response, reproduction scale accuracy, sharpening and noise. To pass testing, scanner vendors have had to reconfigure their imaging technology, which can be an expensive process. As a result, there has been a significant premium attached to purchasing a FADGI 3-Star compliant scanner. In addition, several thousand dollars have to be invested in the DICE testing software and targets. These costs have so far limited the market to mostly higher-priced production scanner models.

THE SPECIFICS OF MTR

Some requirements of FADGI 3-Star compliance can be considered too stringent for the majority of permanent records being archived by NARA. Permanent records include items like minutes from board meetings, legal opinions, formal directives, research studies, and organization charts. These items are typically black-and-white documents created on office paper with modern printers.

Yes, there are items like manuscripts, rare documents, maps, posters, newspapers and photographs that are best captured under FADGI 3-Star or even FADGI 4-Sar parameters, but NARA and the FADGI Still Image Working Group have created MTR specifically for a certain type of record, which is also the type most efficiently captured using scanners with ADFs.

NARA introduced MTR as part of Federal Regulation i36CFR 1236, Subpart E – Digitizing Permanent Federal Records, which was published in May 2023. Section 1236.50 lays out "requirements for digitizing permanent paper and photographic print records." It describes MTR documents as having "well-defined printed type (such as typeset, typed, laser-printed), and with moderate to high contrast between the ink of the text and the paper background."

For these types of records, NARA lays out a set of digitization requirements that are more tolerant than FADGI 3-Star in areas like tone response, sharpening and color definition. In addition, "for other paper records such as manuscripts, illustrations, graphics, and documents with poor legibility or diffuse characters (such as carbon copies or Thermofax)," NARA lays out requirements that are closer to FADGI 3-Star but still permit grayscale imaging.

The FADGI working group's *Technical Guidelines for Digitizing Cultural Heritage Materials*, also published in May 2023, introduces MTR as a new type of Unbound Document, in addition to the previously defined Unbound Document categories: "General Collections" and "Manuscripts and Other Rare and Special Materials." In addition to using the same phrases as NARA to describe MTR, the FADGI document adds that "Textual records generally refer to documents created on modern office paper." FADGI's specifications for digitizing MTR documents align with what NARA has published.

In previous Technical Guidelines editions, documents now defined as MTR fell under FADGI's Documents (Unbound) General Collections category, and this was the only category for which ADF scanners were recommended (along with planetary scanners, digital cameras, and flatbeds). The 2023 Technical Guidelines update transfers the recommendation of ADF scanners solely to the MTR category and while the General Collections category still covers "new, clean and easy to handle materials to extremely brittle materials which may have poor legibility," ADF scanners are specifically listed as not recommended for use. Recommended output for the General Collections category still adheres to the FADGI Star system.

In its regulations, NARA does not make any hardware recommendations except to say, "The equipment used to digitize Federal records must be appropriate for the media type, and capable of achieving documented project objectives without damaging the source records."

However, it seems clear that the FADGI working group is recommending the use of the MTR standard for documents captured using ADF scanners.

COMPLIANCE IS A PROCESS NOT A PRODUCT

It's important to remember that FADGI compliance, while enabled by scanning hardware, requires a testing process performed by the agency or service bureau doing the scanning. NARA instructs users to regularly test equipment for optimal performance, to perform additional tests when problems are detected, and to test equipment after any changes to a workflow. The DICE software and test target are used for this testing, and the newest GoldenThread version includes settings for both FADGI Star-level compliance and M-19-21 or M-23-07 compliance. This M-19-21 or M-23-07 testing is aligned with MTR standards.

In addition, after scanning is completed, there must be a quality control inspection, with visual inspection conducted using a calibrated graphics workstation and files checked against specifications for qualities like tone, brightness, contrast, and color accuracy. MTR's less stringent requirements in these areas should allow for a wider range of images to pass and help reduce the need for re-scans, reducing overhead.

ADVANTAGES OF MTR

Related to that, the biggest advantage of scanning records to meet the MTR standard instead of FADGI 3-Star should be reduced cost. In addition to potentially reducing overhead, we've already discussed the extra investments that hardware vendors have had to make in their scanners to make them FADGI 3-Star compliant. The less stringent imaging requirements of MTR in certain areas should reduce that investment and therefore reduce the price of compliant hardware for agencies and service bureaus.

Reduced development and upgrade costs to reach compliance could also help bring the technology downstream into lower-volume models, enabling agencies with lower volumes of paper records to invest in their own scanning technology.

Compliance with MTR also increases the feasibility of using the same scanning devices and processes for temporary, as well as permanent records. (Temporary records actually make up more the 95% of all federal records.) This could benefit agencies that are being forced to close their internally operated paper records storage facilities. Even though NARA hasn't issued any regulations on the format of electronic temporary records, using a single scanning system for both temporary and permanent records should simplify processes and reduce overhead.

Another important characteristic of the new NARA regulations, including MTR, is that they permit the use of grayscale files, as long as records do not contain color characteristics that are necessary for interpretation. Without compression, color file sizes can be approximately three times as large as

grayscale, which not only can increase the cost of storage, but also creates additional burden on workflows.

Both MTR and FADGI 3-Star allow for multiple file formats. They both offer TIFF, JPEG 2000 and PDF/A options, and MTR also allows for PNG. The FADGI Technical Guidelines document approves Lossless compression, such as LZW and JPEG 2000 (wavelet) across file types, while, for MTR both NARA and the FADGI guidelines allow for up to 20:1 visually lossless compression with the use of JPEG 2000 part 1. DEFLATE (ZIP) compression is also allowed under the MTR guidelines for TIFF, PNG, and PDF/A files.

MARKET HEATING UP

As recently as May 2024, many federal agencies had yet to finalize their plans for compliance with M-23-07. As the initiative is unfunded, NARA doesn't have any real enforcement power. That said, in a 2022 NARA survey of Senior Agency Officials for Records Management at Federal agencies, 96% expressed confidence that they would meet the goals of M-23-07 by the June 30, 2024 deadline (see graphic below).
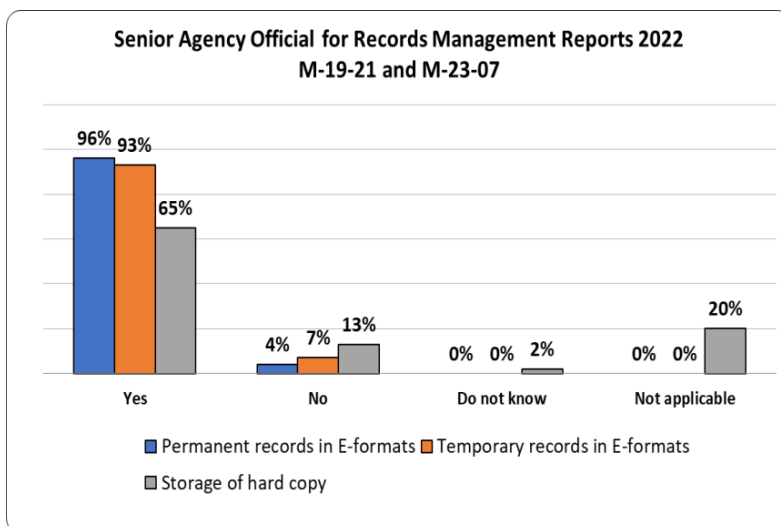
Source: Federal Agency Records Management, 2023 Report, NARA

One reason for the delay in action may have to do with the budgeting process. After multiple delays, the 2024 Federal Budget was not finalized until late March. It runs through Sept. 30, so spending against the 2024 budget is gaining momentum.

Another reason may be the introduction of the MTR standard at a fairly late date. Ever since M-19-21 was introduced in 2019, discussion around imaging compliance for permanent records had focused on FADGI 3-Star. Prior to the publication of NARA's Federal regulations i36CFR 1236, Subpart E, in May 2023, several scanner vendors had introduced products marketed as FADGI 3-Star compliant. While FADGI 3-Star images certainly meet NARA's requirements, they are not required.
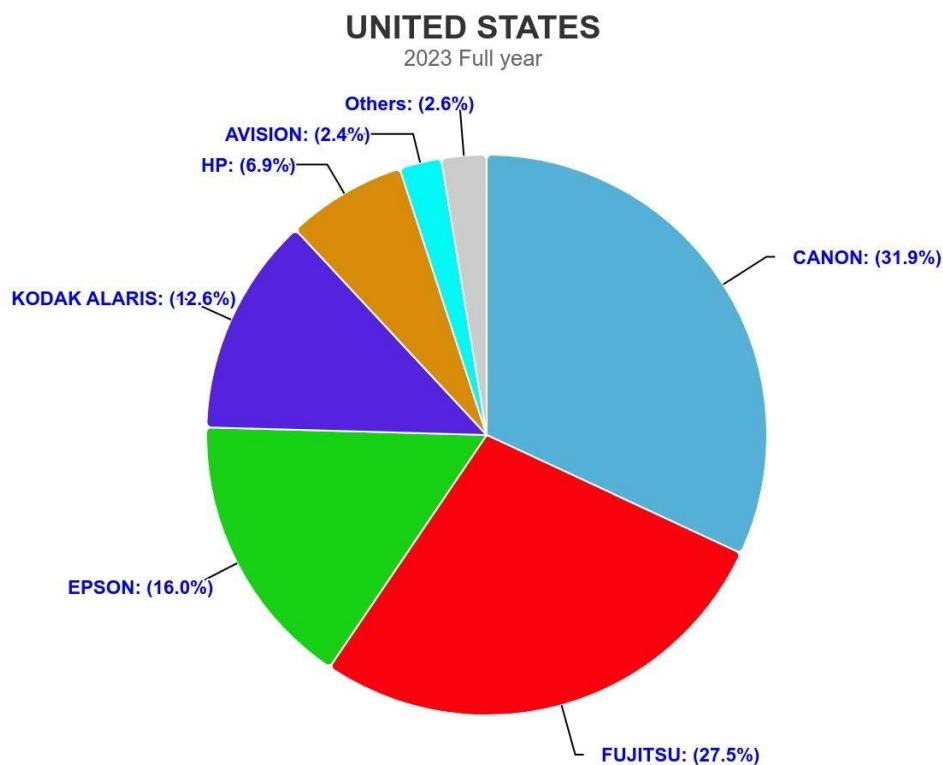
There are multiple factors to consider for agencies and service bureaus looking for a scanning solution to meet the requirements of NARA's M-23-07. Speed, price, paper-handling, reliability, ergonomics, and vendor support all factor into the decision. Whether a scanner is marketed as MTR or FADGI 3-Star compliant could affect several of these factors.

To date, there has been a lot of material published on FADGI 3-Star, but MTR is just coming to the forefront. Here are some MTR-specific points to consider when making a decision on a scanner:

- MTR was created specifically to address imaging being done in batch scanning applications utilizing ADFs.
- MTR compliance has the potential to be less expensive up front and simpler to maintain than FADGI 3-Star.
- Testing software for compliance with M-23-07 regulations supports MTR.
- MTR allows for grayscale imaging, which can reduce storage and workflow burdens.

SPONSOR

Canon USA sponsored this white paper. Canon is Infosource's U.S. market leader for low-to-mid-volume production scanners (66-150 ppm, $3,000-$30,000).

UNITED STATES
2023 Full year

Pie chart: CANON: (31.9%), FUJITSU: (27.5%), EPSON: (16.0%), KODAK ALARIS: (12.6%), HP: (6.9%), AVISION: (2.4%), Others: (2.6%)

Canon also has a strong business with the Federal Government and is listed on the GSA schedule and several other Federal Blanket Purchase agreements. Canon offers a FADGI Compliance Installation Package for two MTR-capable models, the low-volume production imageFORMULA DR-G2110 (110 ppm) and the mid-volume production DR-G2140 (140 ppm). Both list for under $10,000 (USB-only versions are available for use within confidential scanning environments). The FADGI Compliance Package can be purchased with new scanners or added to models already in use. Once the package is installed, it is covered as part of Canon's regular and extended warranty program for the length of the hardware coverage in place.

For more information on Canon's FADGI solution:
https://www.usa.canon.com/business/scanning/fadgi-technical-guidelines-for-digitization

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This paper was authored by Raph Gammon, Senior Analyst, Infosource USA. Infosource (https://www.info-source.com/) is a global analyst firm headquartered in Geneva, Switzerland. Its team of analysts covers the office automation market including printing and scanning hardware and Capture & IDP software. Infosource Software provides in-depth analysis and guidance involving solutions used to automate business processes.

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