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U.S. Department of Defense Visual Information Lifecycle

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Abstract

Defense Media Activity (DMA) is the Department of Defense's (DoD) direct line of communication for news and information to U.S. forces worldwide. The agency informs DoD audiences, entertains DoD audience overseas, trains Public Affairs and Visual Information professionals, and manages the DoD's visual information.

Defense Imagery Management Operations Center (DIMOC) operates the Department of Defense (DoD) Visual Information Records Center (DVIRC), which receives imagery from all the U.S. Military Services and in many formats, such as still and motion digital, film, audio, illustrations and more. DIMOC collects this VI on behalf of the DoD and in preparation for transfer to the U.S. National Archives and Records Administration (NARA), using the DoD VI Records Schedule as a guide to items of permanent historical value. The overall process from the point of creation by an individual, to its transfer to DIMOC, and consideration of the record's permanent historical value is called the Lifecycle Management of Visual Information (VI). This is a cradle to grave process and it starts with the VI Professional, as the photographer/videographer are called within the visual information community of the DoD. This paper will describe the lifecycle of visual information assets, both physical and digital.

Background

The DVIRC has been collecting DoD VI records for more than 20 years, with a focus on preservation and accessibility for the American public and DoD customers. DVIRC has 1.65 million physical media assets that are inaccessible given their analog state, and little to no associated descriptive metadata [1]. DIMOC possesses a total of 4.65 million assets, 3 million of which are digital.

Not only does DVIRC have an extensive climate-controlled storage facility, it also has an on-going mass digitization and storage contract designed to provide digital preservation of legacy content, while simultaneously providing greater accessibility. This is an unprecedented opportunity to digitize this previously inaccessible content. Prior to this contract, DIMOC could not independently afford mass digitization, digital storage, and industry-level digital asset management (DAMS). More importantly, this digitization initiative is preserving thousands of physical media assets that are deteriorating over time, and would otherwise be inaccessible. The contract objective is to get as many assets digitized, stored, and accessible as possible in five years. The service provider will digitize, store, transcode, manage and distribute the media. It is a cost-share solution that saves the government millions of dollars for a projected minimum of 550,000 digitized assets and approximately 1.4 million born-digital assets [2].

Personnel & Collaboration

DVIRC has Archivists, Media Managers, Public Affairs Specialists and Caption Editors with many years of experience and knowledge. The expertise applied by these individuals occurs at different points in the workflows. The duties and responsibilities of these individuals are described below, and will serve as a reference point for the workflow descriptions and processes that follow.

All of the DIMOC Media Managers have 20 to 40 years of experience in the VI career field. All have served in the military and four out of five were Combat Camera (COMCAM) specialists--photographers/videographers (PH/VG) specially trained to acquire the best documenting imagery, while also ready for combat situations to provide senior U.S. government officials with a direct imagery capability in support of strategic, operational and planning requirements during wartime operations, worldwide crises, contingencies, joint exercises and humanitarian operations. COMCAM is DIMOC's primary stakeholder and sends the majority of the VI that is used and accessioned to DIMOC.

The profound knowledge base of the Media Managers enables their management of both physical and digital imagery, metadata, imaging software, and digitization processes and standards. This group manages the lifecycle for both analog and born-digital media from the time it arrives at DIMOC until it is sent to NARA. The Media Managers make day-to-day decisions on the disposition of the VI records, create collections, edit for content, and assign workload to the appropriate workflow states to facilitate the complete record.

DIMOC Archivists also make disposition decisions, create collections, write the DoD VI Records Schedule, and regulate transfers to NARA, while working closely with NARA Archivists to create and maintain archival standards. DIMOC Archivists search for “hidden holdings” around the world in various DoD offices, organizations and units, and coordinate the efficient transfer of imagery to DVIRC to begin preservation and complete the VI lifecycle.

DIMOC Public Affairs (PA) Specialists are responsible for review and determination of assets that may contain sensitive subjects, which are not releasable to the general public but maintained for internal DoD use and for federal records management. These PAs keep up to date public affairs guidance (PAG) and work with Media Managers to assure the Defense Archival Framework (DAF) for release is applied [See Lee E. Thomas Archival Conference 2016 Paper: *Unlocking the Archive: The Defense Department's Plan to Make Unreleased Audiovisual Records Public*].

DIMOC’s contractor Caption Editors are a highly trained group with diverse professional experiences who enhance the metadata records for the VI assets/records. Their backgrounds include retired military photographers, journalists, historians, and writers. Many have been in the VI community for many years and some for more than 30. For metadata curation, they may perform extensive research on assets with no descriptive metadata, or enhance existing metadata for greater accuracy and accessibility within digital asset management systems.

Archival Support contractors have over 35 years of experience in the VI community and have extensive knowledge of the DVIRC's collection, metadata and various databases. They perform the incoming workflow process, including inspection and preparation of the physical media for digitization [3].

The government Media Managers, Archivists and Public Affairs Specialists provide guidance to the Military Services, who

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are the primary submitters or visual information creators. Each Service has its own unique way of handling analog and born-digital VI based on its format. ; However, for DIMOC the content or subject matter within of the format is more important.

As the central collection point for this content, DVIRC's role is to determine the permanent historical value. The DoD VI Records Schedule describes the various topics or subject matter of permanent records that they will transfer to NARA. The permanent value of this VI considers Military Service histories, as well as the overall Defense Department history [4]. DVIRC's role helps the Military Services achieve their records management responsibilities.

DIMOC accommodates Service preferences whenever possible before they submit content. DIMOC's Subject Matter Experts (SME) visit military units and Defense organizations to assist in assessing their content for records management purposes. DIMOC provides guidance on the historical or permanent record value and gives instruction on transferring these VI records to DVIRC. Early discussions of collections, digitization, increased accessibility, and organizational requirements with the Services and DoD personnel, prevent further issues later in the lifecycle. DIMOC personnel work with these originating content creators to connect accurate metadata to the records, ensuring the historical context.

Working with the originating PH/VG and considering their content requires a balance. VI assessment includes weighing the cost of spending taxpayer dollars for media research shipping costs, estimating the media volume enclosed in drawers, cabinets or rooms. These processes occur if time permits—usually when DVIRC has advanced notice of a discovered collection, or of an office's desire to transfer their physical records. Unfortunately, it is far more common for offices and organizations to forget the physical media and only concentrate on the digital. Whether due to easier handling or a generation more comfortable with digital, it is far more common for DVIRC to receive no warning of the volume of physical media on its way. In most instances, DVIRC is cornered and must take the media, in these cases federal records, without knowledge of its subject matter or even physical format. This leaves DVIRC in a reactive position when the media arrives at their facility.

As with all archives, DIMOC's ultimate goal is to preserve DoD VI records, provide discoverability, and enable accessibility. To achieve this goal, DVIRC has established workflows for nearly every media type.

Definitions

DIMOC receives and accessions media several different ways based on format and content. Utilizing different databases and workflows, DIMOC expedites all the processes in the VI lifecycle. The definitions below will serve as a reference point throughout this paper to understand the difference and similarities throughout the workflows, and archival decision points.

For many years DVIRC has preserved the VI or media in a climate-controlled system set to 55 to 60 degrees with 25% humidity, with an inventory system to assure the tracking and accountability of the physical and linked digitized assets at all times. This storage system, called the Automated Storage and Retrieval System (ASRS), currently stores approximately 1.65 million physical assets. Each asset is assigned a unique identification number and a barcode for tracking and accountability. The barcode is also used with the digital files' metadata in the DAMS to link the physical asset with the digital asset.

The ASRS database is part of the Media Inventory Management System (MIMS), which maintains basic information and 100% accountability of each physical asset. This information includes media ID, barcode, title, code, type and format, which allows search, storage, retrieval, inventory, research and shipping tracking. MIMS is used to retrieve physical media from the ASRS for digitization, view for content, fulfill customer requests and when transferring to NARA.

All media or VI records turned over to contractors or handled by government personnel are tracked using the barcode and MIMS. Shipping documents are created and the MIMS maintains the information associated with the shipping logistics, including the time stamps for shipments leaving and returning. If media is not returned in the shipment, it will be flagged by MIMS, and media managers will be notified.

Contractor ASRS and loading dock support personnel are experts in using the ASRS and MIMS data for inputting and storing media for accountability and preservation. These individuals pull all of the media upon request for use, and assist in the process during NARA transfer procedures or records management destruction of temporary records.

The Media Accessioning Tracking Evaluation Log (MATEL) is the overarching spreadsheet used to document information about an asset through the lifecycle at DVIRC from the reception point at the facility to the final transfer to NARA. Media Managers and the contractors use the MATEL to enter information related to each asset, as an additional tracking database, for records management decision-making, and to generate datasets to be ingested into other systems, most notably the DAMS for the physical assets that have been digitized.

One of these secondarily created datasets is acomma separated value (CSV) spreadsheet created to establish the filename of an asset in preparation for the asset's digitization, and to join the digitized asset with its metadata from both the MIMS and MATEL.

The DAMS is a contractor-run system for digitized and born-digital assets. The DAMS is used for ingestion, storage, transcoding, managing, and the distribution of media to DoD and public users. This system is where the majority of digital workflow and management occurs, to include completing metadata requirements for accessibility, and making electronic transfers to NARA. The system's configuration capabilities for workflow and metadata management permit greater management control, efficiency, reliability, and search functionality than DIMOC's previous system. This industry-level DAMS is the value-added to DIMOC's mass digitization and storage contract awarded in 2013. The DAMS is the system of record for DIMOC's federally mandated VI records management.

Term definitions:

Accession: When a VI record has been determined to be permanent per the DoD VI Records Schedule, as published by NARA [5].

Non-Accessioned: When a VI record has been determined to be temporary. And, will be removed from DIMOC's collection using the tiered approach within the temporary record items of the DoD VI Records Scheduled, as published by NARA [6].

Unaccessioned: When an asset 1) arrives into the DIMOC collection, *and* 2) is in a state where it has not been evaluated for disposition of permanent or temporary.

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Visual Information Lifecycle Management Workflows

In the journey of lifecycle management DIMOC has to consider many things with current and historical imagery. There are many different workflows for this media whether digital or physical, current or legacy/analog, before ingestion to the contractor-run DAMS or after, when it is made available to internal and external customers.

The Beginning: Content Creation

The VI creator is responsible for choosing or selecting the imagery that will be sent to DIMOC. The creator or photographer/videographer (PH/VG) is required to input metadata according to the Department of Defense (DoD) Captioning Style Guide [7]. After writing a caption, keywords, and other descriptive information, the PH/VG is required to have the content reviewed by a public affairs (PA) specialist within their office or Military Service. This PA will follow current guidance to determine the release instructions, which dictate the content's distribution to the public or limitation for internal use only, referred to as For Official Use Only (FOUO). Once this has been accomplished, the media is uploaded to Defense Video and Imagery Distribution System (DVIDS), which is the ingest point and system for current digital media being sent to DIMOC. The imagery goes through an approval process and may be sent back to the creator for additional information. The U.S. Army and Marine Corps work within the DVIDS system to add metadata to imagery acquired by their services. The Joint Combat Camera Center (JCCC), another organization within the DIMOC, works within DVIDS to locate joint (U.S. Military Service) interest imagery for immediate use for the Office of the Secretary of Defense (OSD) and the Chairman of the Joint Chiefs of Staff (CJCS). All imagery is automatically sent onto the digital asset management system.

Incoming Media (Physical) Workflow – Figure 1

DVIRC accepts all formats of media in both still and motion types. The media can arrive in individual assets or on several pallets. Immediate inspection of the media is completed upon arrival for any hazardous material, such as vinegar syndrome or rodent feces, and for any possible classified items that were not marked nor shipped according to the required policy and procedures.

Media that arrives will be immediately sent to ASRS storage if the format is not currently being digitized. For example, a pallet of MiniDV's will be sent direct to storage if the tape-based digitization is focused on BetaCam and Hi-8. Media may also require more scrutiny because of who sent it and the circumstances the submitter is (militarily) operating within or if the incoming workflow is backlogged. Media will be stored on the pallet in a cool area, in an un-accessioned status, until the incoming workflow is available for processing the asset by assigning a barcode, inputting the basic information into MIMS, and storage into the ASRS. This secondary storage area is not optimal for the lack of accountability (e.g. barcoding) and climate conditions; however, the volume of media greatly exceeds the resources available. The ideal scenario involves getting the media into the climate-controlled (55 to 60 degrees with 25% humidity) ASRS as soon as possible. Moving a physical asset as soon as possible into this environment can offer a brief stop or slow-down of any deterioration, until personnel and workflow are prepared to continue the lifecycle.

Moving an asset into the ASRS proceeds with an asset being assigned a barcode and Media ID number, both of which are unique alphanumeric identifiers for each asset, based on the type of physical media. These identifiers and the asset's Code, Type and Format are entered into the Media Inventory Management System (MIMS). The Code of an asset is the high-level description of physical media, Type is the next level down, and Format is the size of the media. For example, 16mm motion film with sound is Code OCN, Type P and Format 6, and BetaCam Video Tape with sound is Code VTO, Type, C and Format 2. These identifiers are used to retrieve assets from ASRS using the MIMS database.

DVIRC assigns media to the archival support contractor for preparation for storage and/or digitization. The contractor is responsible for logging, verification, inspection, labeling and barcoding. The assigned media may consist of boxes or pallets that may contain slides, negatives, videotapes, film, magazines, sound recordings, and associated documents. Identification of the media and logging any external information from the case, box or container is also completed at this stage, and sometimes serves as the only descriptive metadata provided by the submitter(s). These contractors research each asset. by viewing it for content, adding descriptive metadata, and inspection to record any damage or quality issues with the media and/or content. The researchers also verify and annotate any public release restrictions such as FOUO or copyright. All of this information is recorded in the MATEL for the Media Managers' decision-making process and analysis.

Media Managers will use all this information for cursory records management disposition decisions, and in order to determine if assets are to be immediately digitized or stored. Media Managers may pull unaccessioned motion media from ASRS and perform classification checks, examining the exterior of the media item and any documentation associated. The records disposition decisions, even cursory at this point, place the VI record into their accessioned or non-accessioned states. However, motion media records management decisions are made primarily in the asset's digitized form within the DAMS, occurring after the asset has been curated, when it has its descriptive metadata fully completed. This decision is based on temporary or permanent disposition (permanent being transferred to NARA), format, and content or customer demand, using the DoD VI Records Schedule [8].

Security

Due to security leaks in the past, which was the fault of ambiguous, hidden and/or inaccurate classification markings upon submission to DVIRC, (e.g. marked in the actual content and not on the exterior), DIMOC has installed numerous classification checks throughout the workflows. The government will document all exterior markings of classification upon assignment of media to the archival support contractor. However the internal content classified markings will be recorded and presented back to the government by the researchers and/or curators, who view or play the media. DIMOC does not digitized classified content per the parameters of the mass digitization and storage contract [9]. Media sent to DIMOC from the military Services is supposed to carry a full classification marking; however, many individual submitters only mark the classification within the content itself. For instance, a requirement for all motion media is a "slate" that includes various identifying metadata such as the unique identification number commonly referred to as the VIRIN, and the PH/VG's

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name, the title or subject matter, unit affiliation, and the release instructions for public use. This last field, release instructions, would include the classification marking. The slate is visible only during playback or viewing.

Once determined to be unclassified, the media manager generates a CSV spreadsheet based off the MATEL information with filenames comprised of a two or three-part identification number, still and motion media dependent. The barcode, media identification number, and for motion media the reel or tape number for film and videotape-based media are added. The media identification number is created with a unique identification number generated, and the reel or tape number is the number of the film/tape in a series of the same subject. Use of this three-part identification assures that when the MIMS data, using the CSV, is ingested into the DAMS, the data and the asset become linked.

Content & On-Demand

So far during this mass digitization contract, digitization has been managed by format. The digitization contractor has a facility or dedicated room configured for specific format digitization. With the exception of still imagery's digitization, all other formats – motion – are digitized in mass without major consideration of the content, simply to digitize as much of the physical records as possible during this brief five-year contract. In a future state, the digitization will be content driven by the DIMOC Archivists and Media Managers. Digitization by format can be adjusted for content needs and/or in an on-demand situation. Decisions to digitize immediately based on content could occur should have descriptive metadata for it to be discovered within the MIMS. The content could be of high research or historical value, or even in preparation for an upcoming anniversary such as 9/11, Pearl Harbor, or other events such as the U.S. Military Services' Birthdays, and for any other theme or message related to current events. Digitization on-demand is available when customers need accessibility before the scheduled digitization and queue permits. For example, when a customer was looking for footage of the WWII Japanese surrender in 1945, DIMOC was able to locate the footage, expedite digitization and send it to the customer for use in their production.

Film Digitization

Motion film is retrieved from the ASRS using the barcode or received from the researchers for immediate digitization after going through the incoming process. The film is sent to an inspection station to assess any physical and chemical deterioration including scratches, shrinkage, cinch marks, fluting, brittleness, color fading, fungi, stains and vinegar syndrome. If any of these things are present the media manager – government personnel – will be notified for a disposition decision, and coordination with NARA and/or destruction will occur. If the film is accepted at this station, the film is hand cleaned with black velvet, a head and tail leader may be added, repairs to poor splicing are made, and lastly, the film is wound properly. Each reel is viewed and all metadata associated with the film on the container, will be logged in the MATEL. The MATEL will include the list of assigned barcodes, which also occurs at this point in the handling of the film in preparation for digitization.

The film is placed in plastic containers or totes that are designed for moving physical media with the use of the barcodes for tracking and accountability. Motion media film is driven off-site to the contractor's Burbank, California facility. Once there, it is the film is digitized per contract requirements [10] and recorded to Linear Tape-Open 5 (LTO5) tapes are at 2K, and contain 4-5 films per tape. The tapes are sent to the digitization contractor's storage facility for the transcoding process. Using the three-part identification filename, the transcoding process renders both a high and web resolution file, linked to the metadata in the DAMS. This is stored in the cloud provided by the same contractor. An LTO5 tape is generated and picked up by Media Managers when in Burbank; these tapes are then stored in the ASRS for a third backup. The film digitization rotation occurs every two weeks for drop off and pick up. When the film returns to DVIRC, it is inventoried and stored in the ASRS.

Video Tape Digitization

Motion videotapes are retrieved from the ASRS using the barcode or received from the researchers for immediate digitization after the incoming process. The process for delivering the tape-based content is similar to the film, with the use of the plastic totes. The tape-based digitization is done at the DVIRC in a room designated specifically for the contractor's digitization work. Tape-based media is digitized using a System for Automated Migration of Media Assets (SAMMA) for bulk tape digitization. The use of the SAMMA system by the digitization contractor permits the government to conduct immediate digitization of tape-based content such as Betacam, U-matic, Hi8, DVCPRO, MiniDV, DVCAM, HDV, or VHS. For tape media the three-part identification number contains the barcode, media identification number and tape number, and is used to link MIMS metadata with the digitized asset in the DAMS. Any external metadata information found on the case or label of the tape is recorded in the CSV generated spreadsheet as well. This spreadsheet is given to the digitization contractor for ingestion during the tape digitization. Digitization of the tape-based media is done at the contract digitization specifications [11]. The tapes are returned to the government, inventoried, and stored in the ASRS.

The transcoding process is done onsite, including rendering the various resolution files. A dedicated 75/75 (up/down) circuit is used for transmission of thumbnails and mezzanine files, and LTO5 tapes of high resolution are sent to the digitization contractor's storage facility to be synched with the corresponding metadata, stored in the cloud, and ingested into the DAMS. An LTO5 tape is provided back to the government, which is stored in the ASRS, same as was done with the motion film.

Still Imagery Handling & Digitization

Still imagery is stored in the ASRS with a barcode on the original box or container. Application of one barcode on the original container or box is used to maintain the provenance and collection, as physical still imagery is usually submitted in bulk. The stills are retrieved from the ASRS using the barcode, and may include 35mm slides and negatives, 2 ¼, 70mm, 4x5 and 8x10 negatives, color and black and white prints, posters, magazines and illustrations. For example, recently DVIRC received a shipment of 100 boxes of still imagery of various formats including 35mm negatives and slides to 4x5" negatives. At the time it arrived, DVIRC did not have the capability to digitize any format larger than 35mm, and the Media Managers were already dedicated to preparing the 35mm for the digitization contractor. Therefore, based upon format, this newly arrived content was set aside until the digitization contractor could adjust to the larger formats, leaving the Media Managers time to go through the individual assets to determine its viability – records management disposition – for digitization.

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Still imagery is scrutinized more on the front-end while still in its physical format for permanent historical value than any other media type. Media Managers assess the stills for duplicates, damage, poor quality, and content subject matter to determine disposition. Simply, accessioning decisions are made in the physical and only those assets determined to be of permanent historical value will be digitized. Other considerations for disposition include excess acquisition ("shutter bug" or digital camera auto fire), poor quality photography, and inappropriate content according to DoD standards and classification markings. The assets go to the archival support contractor for 35mm film mounting, and are put in archival plastic sleeves and archival envelopes, and to acquire the media ID markings and barcode. A two-part identification number is created for still imagery from the media ID and barcode.

The Media Managers provide the stills to the same digitization contractor who conducts both the film and tape-based digitization. The still imagery is digitized at the DVIRC facility, in a separate designated room. The still media is scanned at 450dpi and saved into a JPEG quality of 12 [12]. The still imagery digitization rotation is based on format and contract requirements with no determined timing, as is the case with the film digitization, which occurs every two weeks. The various sizes of the still imagery, and the front-end preparation conducted by the Media Managers determine the volume of stills for digitization. When the stills are returned to the government, they are inventoried and stored in the ASRS.

The transcoding process for still imagery includes rendering the various resolutions, and a dedicated 75/75 (up/down) circuit is used for transmission of these thumbnails and mezzanine files, the same as for the tape-based media also digitized onsite at DVIRC. The high-resolution files are copied to LTO5 tape and shipped to the digitization contractor's facility to be linked with the connected metadata, stored in the cloud, and ingested to the DAMS. An LTO5 tape is provided to the government, in a similar method as with the tape and film digitization process.

Still 35mm film and graphics were digitized off-site in Hollywood, California, during the first year of the mass digitization contract by a sub-contractor. This is the only difference in the digitization process; everything else has been maintained. At the time of writing, the contractor is capable of scanning several different formats of film, prints, and graphics, and preparation for the digitization of the U.S. Military Services' magazine collection was beginning. These magazines (e.g. Airman, Soldiers, All Hands, and Marines) will be digitized at 600 to 800dpi using Optical Character Recognition (OCR) to offer greater search accessibility.

Garbage Management

The physical still imagery submitted predominantly is without metadata. DVIRC workflows are conducive to understanding the content submitted, and this serves the Media Managers to immediately recognize duplicates, poor quality, such as "monkey cam," lacking focus or those assets with no historic value to the collection. The Media Managers assess the still images looking at each individual frame, slide or print. This cuts back on digitizing useless assets that would have to be managed and deleted in DAMS. DVIRC locally calls this "garbage management." Scrutinizing the physical assets on the front end streamlines workflow and ensures we only pay to digitize assets that will be curated as permanent records.

Digital Workflow

DVIRC manages the VI lifecycle of all digital media to include digitized assets, digital original assets transferred from DVIDS or those arriving on physical media but in a digital state, e.g. DVDs, CDs, hard drives, etc., and are ingested into the DAMS.

Digitized assets are managed within the DAMS using Workflow States (WFS). Each WFS has a different requirement and is customized for maximum efficiency for the user and quickest route to accessibility onto the public portal. When an asset is ingested, automation begins to check assets for required information to move assets to pertinent corresponding WFS. If the asset passes the check, it becomes accessible to the public. If an asset fails, it will move to a "Hold" WFS for review by a media manager to determine the problem. There is a "Curation" WFS where metadata is added or enhanced and errors resolved by the contracting caption editors. Also, an "Archival" WFS will be used to input metadata relating to disposition, NARA accessioning number and other related information pertaining to the end of the lifecycle. Each WFS tracks every action performed on an asset, and this information is available within the system metadata.

Workflow within the prior WFS implemented early on in the contract by DIMOC was a cumbersome process. Use of the WFS at the time was a very lateral process. Assets had to meet certain metadata requirements to flow through each state and the ability to move assets outside the lateral WFS or to skip a state in the linear progression was very restrictive. For example, when a media manager would choose assets to be curated, only 50 assets were permissible per page and only this amount could be moved to the next WFS at a time. An additional restriction was an option to only assign assets to three out of the six WFS. This forces the media manager to walk the assets through every WFS in a 'save & submit' function in order for them to move out of a WFS into a complete status for greater access. There was automation configured but no consideration was paid to all aspects of potential rules or triggers to make the assets flow as intended, ignoring the greater functionality as a whole.

When DIMOC initially built these WFS, there was no real experience with the system or an understanding of the capabilities. It was a case where the contractor asked, "What do you want?" And, DIMOC replied, "Well, what do you have?" This back and forth existed for some time without each side understanding the mutual needs for a smooth workflow. Since DIMOC has been using the DAMS for nearly two and half years, with some limitations and heartache, crucial lessons were learned, which served DIMOC and the contractor well upon the breaking point.

DIMOC took a step back, under went an overall business process review and a major strategic planning process, and returned to its digital workflow with a different approach. Subject matter experts (SMEs) assigned to strategic planning initiatives were put into direct contact with the contractor's DAMS personnel, asking for the best processes and what could the system do for DIMOC's various requirements including: faster accessibility and an efficient workflow within the WFS. The DIMOC personnel met with the DAMS team in October 2015 and were made aware of the capabilities and performance of the system in full, of which the government personnel were completely unaware. A whole new relationship with the contracting developers and programmers had begun, with cognizance to ask the right questions and get the right answers. Communication changed everything, including creating a new workflow.

New workflow

After much collaboration with the DAMS team, the workflow was simplified, and many new options and automation were added for ease of use and quicker accessibility. Now, when a Media Manager does a search and chooses assets to assign to a WFS it can be done as a “select all” eliminating the need to do one page of 50 assets at a time. The new added ability to move an asset to any WFS from any WFS has had an immediate impact on the amount of assets being made accessible daily. Automation has been added upon ingestion to move assets through workflow for immediate public access based on certain criteria within the metadata and the corresponding rules. Now, not all assets will be assigned for curation. The assets will be made available using basic metadata ingested with the CSV spreadsheets that Media Managers created when media was digitized. The selection for curation will be based on content, collection, value and use, reflected in workflow figure 2.

DIMOC's digital workflow went from six to four WFS, with two being used for the majority of enhancing metadata, an optional and flexible choice, not a mandatory process. The WFS are “Curation," where contracting caption editors add metadata and keywords; the “Archival” WFS with access only available to Archivists and Media Managers, wherein disposition can be determined, and where creation of collections and any information related to transferring records to NARA occurs. A “Hold" WFS was established for assets that are found that may need a review by Media Managers, Archivists and Public Affairs Specialists, such as release status or assets having no historic value to DoD, and a “Delete” WFS which removes the assets from accessibility for most users (the asset is not really deleted from the system, but restricted to those with the certain specific viewing permissions).

DVIRC also manages the lifecycle of born-digital assets that have been uploaded to DVIDS. There is automation in place for the DVIDS assets to move to the DAMS, which is the official VI record system. Any copies at DVIDS are for distribution use. An automated check looks for release information and publishes the assets to the public access portal, which at the time of writing was still under construction. If the check fails, the assets move to the “Hold” WFS for review by a media manager. If an asset requires metadata enhancement or has an error, it will be moved to the “Curation” WFS for editing. Figure 2 depicts the flexibility of this new workflow.

Conclusion

DIMOC has its eye on the future with a DAMS system that has a reliable and scalable archive environment with a cost effective approach. The focus is on digitization of media to improve accessibility and discoverability to the widest possible audience. DIMOC will also continue to improve the VI lifecycle and workflows while processing these records. DVIRC will actively pursue physical media collections and organize the best media transfer methods for this accessioning.

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[8] National Archives and Records Administration, Records Schedule: DAA-0330-2013-0014, "DoD Visual Information Schedule," February 2015, http://www.dimoc.mil/documents/DoD/DoD-VI-Records-Schedule.pdf

[9] HQ0516-13-C-0007, Digitization and Storage, Defense Media Activity, Defense Imagery Management Operations Center contract, Awarded 26 August 2013.

[10] Ibid, Digitization Format Specifications.

[11] Ibid.

[12] Ibid.

Author Biography

April Alexander received her education and experience in the United States Air Force as a Combat Photographer and an Electronic Imaging Specialist. She has over 20 years experience in Visual Information. She is currently a Multimedia Manager for the Defense Imagery Management Operations Center, Defense Visual Information Records Center, Riverside, California.

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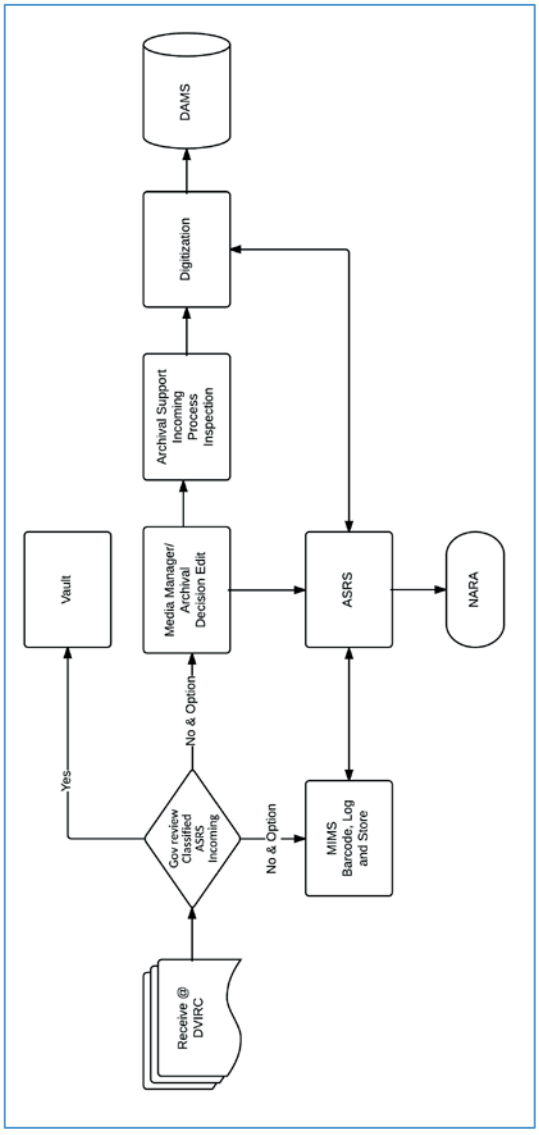

Figure 1, Incoming Media (Physical) Workflow

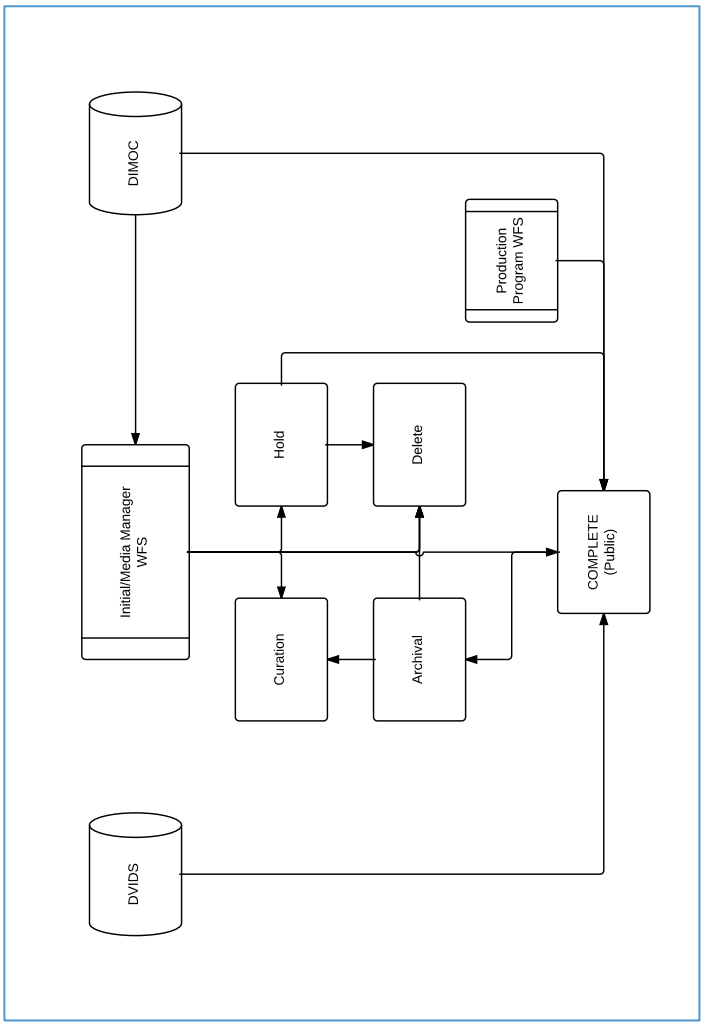

Figure 2, New Workflow (DAMS).