

# iPad Condition Reporting v2.0

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## ABSTRACT

It's been a year since the publication of my first article for the WAAC newsletter on the condition reporting of artworks using tablet technology (Pozeilov 2011). In that article I mentioned that: "The time is right to experiment with newer technology and deliver in the promise of a truly portable solution that would allow for freestanding image marking and note taking while doing condition reporting in front of an object." Well, experimentation has turned into implementation and the promise is fulfilled. This article intends to review the development and approach followed by the Conservation Center at LACMA in the use of iPads for producing not only image-based condition reporting, as defined in the previous article, but its integration to a paperless document generated environment.

**Keywords** cultural heritage, tablet technology, conditioning reporting, art surveying

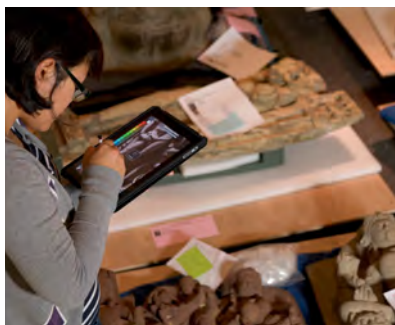
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"As with all art forms, we must accept the limitations of the medium as we revel in the advantages."

Ansel Adams, July 1978  
about the Polaroid process of instant photography.

## USING THE IPAD

Over the past year I observed how my colleagues in the Conservation Center embraced the use of the iPad from the day to day operation in the labs, to condition reporting various large outgoing exhibition loans. In some cases the iPad was used as a large repository of reference images, including high-resolution multiple view images for almost all the objects in a show, allowing for detail examination of artworks by conservators at the time of departure and arrival to and from different venues. Case in point was the "India's Universe" exhibition with more than 200 SouthEast Asian objects on tour through Mexico and South America.

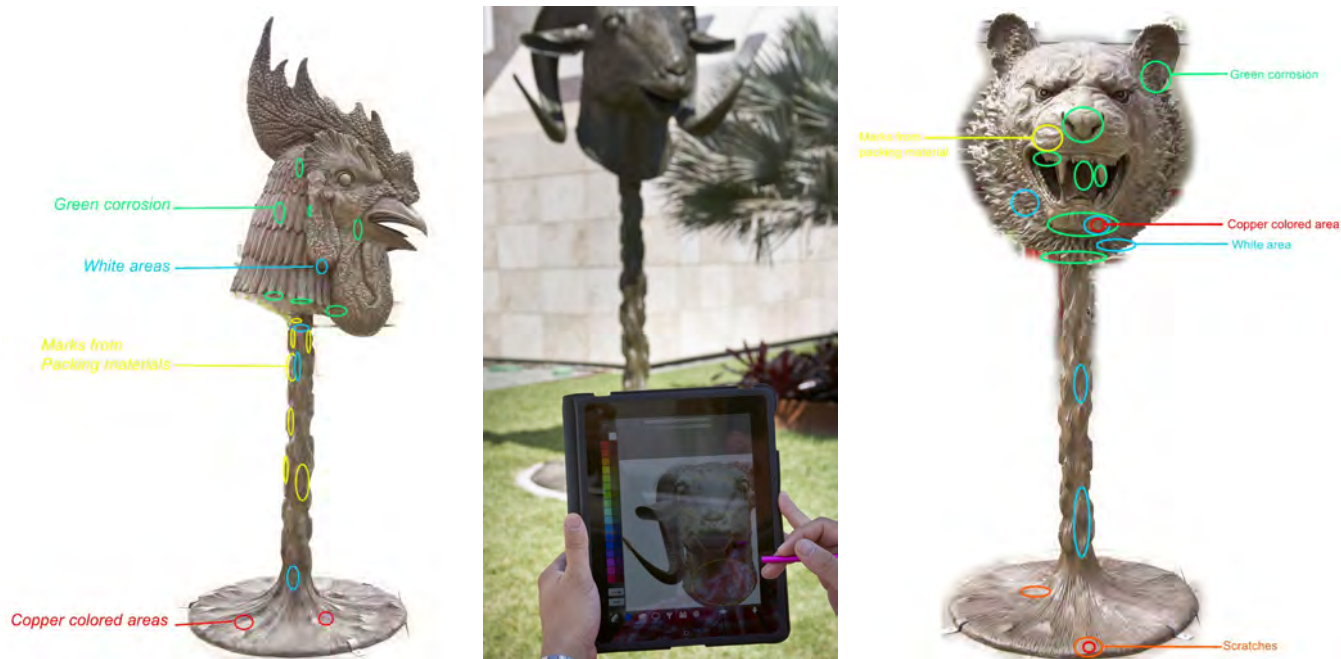


Having the ability to access hundreds of images on an iPad was of great value. Each object was represented, on average, by four views at a resolution of around 2100 pixels on the long side, allowing for zooming into an area of interest in the image and thus able to compare and determine if any changes had taken place in the condition of an object. This approach becomes even more attractive when several conservators have their own iPad at the time of performing the condition reporting. Each iPad can have the same amount of information without any extra cost and very little extra effort. It goes without saying that this approach avoids the bulky, costly and cumbersome (and some would say environmentally unfriendly) use of binders, which contained a limited amount of fixed images, and shortcomings that are well known by anyone reading this article.

Another heavy objects exhibition was "California Design" with over 150 objects. Since a multi-venue tour of exhibitions is programmed for this show, a large amount of photography was done during the deinstallation of the show. Images will be placed on iPads that will supplement the traditional loan binders that had been already generated by the Registration Department, and used during the inaugural installation. The images on these iPads will then be used to track changes, if any, on the objects and generate layered mapping information if needed on an object's image.

As a separate example the iPad was also used to track and document the condition of loaned artifacts to the museum, like in the case of Ai Wei Wei's "Zodiac Circle". These large bronzes presented conditions that were of concern to the conservators. In order to keep track of any possible changes, detailed imagery was generated and augmented with the addition of condition mapping using the iPad, in this way facilitating the artworks' periodic inspection and monitoring.

In the past year we have been able to corroborate the assumption, made in the previous article, that the iPad had an organic nature to its use. Having our finger and the sense of touch as the main means of interacting and inputting information into the tablet, makes the transition from pen and paper, to digital documents a very natural one. The use of the



tablet becomes very quickly second nature, so much so that many colleagues (including myself) find ourselves touching, unintentionally, the screen of our laptops hoping to move, open, pinch, or interact in any way with the inanimate screen that these devices have. So, yes we are the touchy-feely kind even if we don't like to admit it. Due to the easy transition the migration from paper forms to digital ones was satisfactory even to the most traditionalist in the Center.

## THE LOGISTICS AND HARDWARE

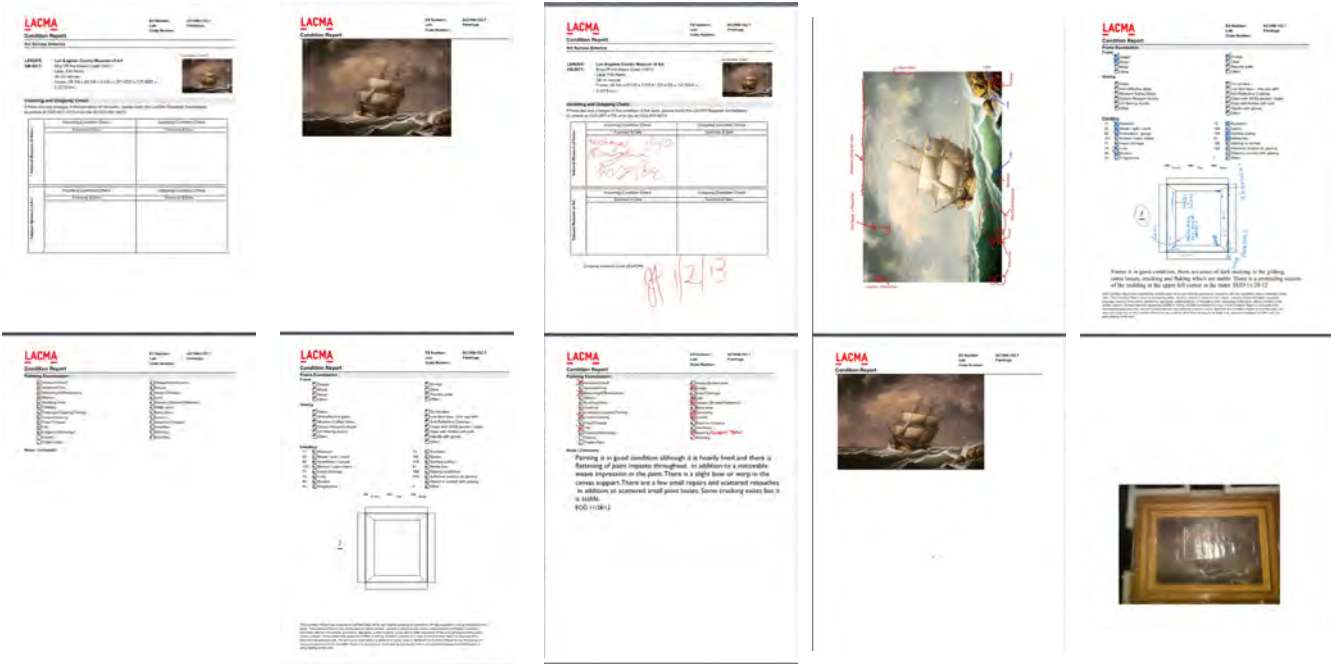
To get the necessary hardware we need to spend money, and the good news here is that the costs listed in last years article remain about the same for the iPad and peripherals, as well as for the applications (Apps). Although we really need to consider that the fourth generation iPad (the current at time of publication) has more than doubled the computing power and almost quadrupled the screen resolution than the first generation iPad, in effect this constitutes a reduction on price, viewed from the technological stand point. Continuous advancements in both the operating system by Apple (iOS), and the Apps we use by its developers, has made the use of the iPad a less cumbersome experience, and a more practical one too. The iPad since iOS v5.0 has become a computer-independent device (meaning that its set-up and use never requires a computer) capable of running various programs simultaneously in the background, known as multitasking.

An important part of the logistics is dealing with the administration and maintenance of the tablets on a multi iPad environment, like the one at our Center. The creation of an account under a credit card and email address, as explained in the first article, become impractical the minute we bought our sixth iPad; since Apple allows to share Apps on a maximum of five iOS devices (iPad, iPod and iPhone all included in this policy) to what they refer to as, "sharing on a household among family members." Although, yes, we are like a big family, this was not the right way to be managing our iPads.

Right about the time I was faced with dealing with the dilemma of the extra devices and providing them with the necessary software, Apple came up with a possible solution. Realizing that many corporations and institutions were adopting iPads as working tools and that all were facing the same problem of administration, Apple started offering the option of Corporate Accounts. These accounts are designed to be managed by the institutions' Information and Technology Departments allowing for the purchasing, licensing and distribution of the Apps for more (way more) than five devices. So I tried enlisting the help of our IS department to establish a corporate account, a process that should have taken a week to get accomplished dragged on for months, resulting in a worse situation since now we lost control over the iPads and were tied to the will and availability of the IS personnel to help with our needs. Needless to say this approach was a complete debacle and was abandoned. In an effort to regain control over the iPads, I took a page from a recent change in policy regarding mobile phones at LACMA, where the institution has given the device to managers, and provides a fixed monthly stipend to help cover the monthly expenses. In that same spirit I suggested to the head of the Conservation Center, Mark Gilberg, to mimic this policy in regards of iPads and conservators. In this way we could assign an iPad to a specific conservator, and in lieu of a recurrent monthly expense, the Center will reimburse the conservator for the one time cost of purchasing the necessary Apps needed for work. The only commitment from the conservator is to have the iPad ready and available for work by her or others in the lab. We are moving forward with this initiative and it should make life easier, at least I hope so.

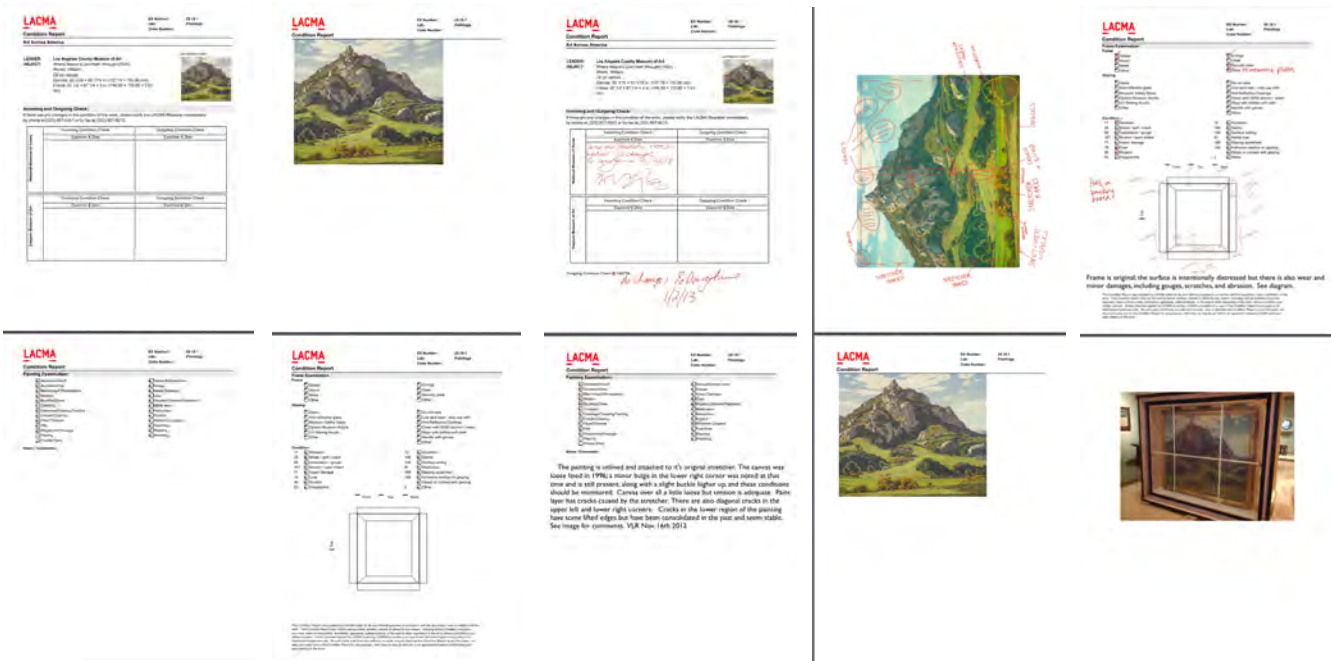
## THE APPS

The *Artstudio* App, continues to be at the center of our image-based condition reporting, or image mapping. This App though, has gone through a complete overhaul at the user interface level with the release of version 5.0, which also



Blank four page form from TMS

Incoming report first venue, filled eight page form All done in Notability



changed the inner workings of the program and the amount of memory and computing power that it uses (This meant for us that our first generation iPads would not be updated and would remain running *Artstudio* v.4.6). This latest version of *Artstudio* allows for higher resolution images and editable text, but at a cost in the amount of layers that are possible to be created on an image. We have gained a good amount of experience working with and using images for over a year, but when it comes to working with condition report forms, we were lagging behind. The LACMA Registration Department provides the conservators with the condition report forms on

paper and until recently this remained unchanged, until a few months ago when I established a workflow based on the use of a second App called *Notability*. This App let's us import a blank PDF form that contains only the tomb stone information for the object that needs to be conditioned. This form is generated directly from our newly established collection management software, the well known, TMS system. With *Notability* we can fill out the form as if we were doing it on paper (I was going to say "by hand", but actually that describes the iPad method much better). We can check boxes, mark diagrams using the pencil tool, we can also type editable text

(which beats handwriting), insert images, from a variety of sources, that can be resized, marked and captioned; we can also add extra pages to the document, record voice annotations and other useful functions. The end result is a professional looking condition report form on a PDF format, that we can export, print, email or archive.

## SHARING AND MANAGING INFORMATION

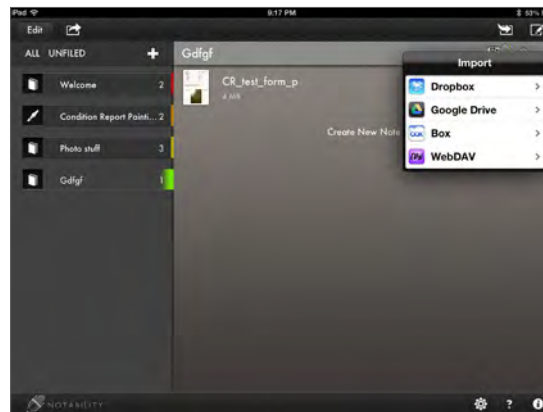
Having figured out the working logistics (Apps, workflows, etc.) inside the iPad, the next big challenge is getting information in and out the iPad. For many these two operations are the bottlenecks in the process of using the iPad for all that has been mentioned above. Because we are used to physically moving information from one device to the other and the iPad is designed to function mostly untethered to any device, moving information wirelessly over the air, we need to adapt to this new way of moving data. One of the easiest ways to share information with the iPad is via email, but this really works only when a limited amount of documents or images are being transferred. Its when we need to deal with a large amount of information that things get a little bit complicated, but not much thanks to different strategies that seem to work fine, although not flawlessly. The methods I'll discuss involved the use of: a wireless connecting device called *Airstash*, the use of a cloud based system like *Dropbox*, the attachment *Camera kit*, and the *iTunes* program. Depending on whether we are working with images or documents we will use a different approach for each one.

Let me first quickly explain what the *Airstash* is. It is a small (comparable to a large pack of gum) device capable of connecting to a computer's USB port functioning as a thumb-drive, its memory capacity is defined by the SD card that is inserted in it, allowing it to function as a card reader as well, lastly the *Airstash* has the ability to connect wirelessly through wifi to devices like the iPad, and not only that, it can connect to up to 8 devices at once all sharing information at the same time. A persistent complaint among people regarding the iPad is the fact that it does not have a USB port to connect thumb-drives to, well the *Airstash* gaps this deficiency letting us transfer images and documents from and to the iPad. The *Airstash* works using a protocol called *WebDAV* (Web Distributed Authoring And Versioning) which allows for writing of files over a wireless connection.



I should also offer a short explanation regarding “cloud storage services”, of which *Dropbox* belongs to. This kind of internet based service provides its members with a certain amount of storage space (the amount depends on the type of account we have), this is like having a virtual hard drive accessible from any where a wifi connection to the internet can be established. *Dropbox* is by no means the only cloud service out there, others are: *Box*, *Google Drive*, *SkyDrive*, *WebStorage* among others, all work similarly, their websites explain their differences.

To transfer a large amount of documents like PDF forms we can use *Dropbox* and the *Airstash* (via *WebDAV*) directly from inside the *Notability* App.



We can upload all the documents we wish to use via our computer station using the *Dropbox* Website via our internet browser. We can download the files to the iPad via *Dropbox* only when connected to the internet. The *Airstash* can be use anytime, the iPad and the *Airstash* are connected directly to each other wirelessly and the document should already be in the memory of this last one, just like we do with a thumb-drive.

To transfer images we can not use the *Artstudio* App directly since this app has not *Dropbox* or *WebDAV* capabilities. So if we have the images (uploaded via the website) on a folder in *Dropbox* we can use the free *Dropbox* App to access our account and access the folder that contains the images we want, unfortunately we can only download one image at the time. A better option is use the free *Airstash+* App and access the images in a folder inside the *Airstash*, from here we can download the full content of that folder making easier to download a large number of images. We can also download

images directly from a camera using the *Camera Kit*. In all these cases the images are saved inside the *Photos App (Camera Roll)* in the iPad. Lastly if we need to transfer a large number of images that are already separated in subfolders, the only way to keep this arrangement, in which the iPad will create an album per subfolder inside the Photos App is by syncing that folder via iTunes to the iPad. In this case we can connect physically the iPad to the computer using the USB cable included with the iPad.

Yosi has been implementing computational imaging techniques like Reflectance Transformation Imaging (RTI), enhanced multispectral imaging technology, and is establishing protocols to streamline condition reporting with the use of technology and imaging based systems such as the iPad.

## CONCLUSION

This Article is not intended as a step by step use of the iPad for condition reporting, but as mentioned in the introduction to give an overview of how we, at the Conservation Center at LACMA, have implemented a very satisfying workflow that is allowing us to move into a paperless condition report environment. The advantages of moving in this direction, as I see them, are the following: The iPad can hold a very large amount of images, and documentation that can very easily substitute the use of large, expensive and cumbersome binders. The iPad can hold the information of several binders for several exhibitions. The iPad generated documentation that looks professional and being in a digital format makes it easy to share and archive. The iPad is reusable and can be used by several people. There are still things that need to be ironed out, like: Standardize the image size in *Artstudio* to get a fair amount of layers. Establish an archiving protocol and workflow to include new CRs in the repository of Images. Establish protocols to connect and generate forms and information directly from TMS to the iPad.

## REFERENCES

"The iPad: Condition Reporting for the XXI Century or The use of the iPad as an image-base tool for condition reporting and location marking for scientific analysis" by Yosi Pozeilov (Posilev - in error), *WAAC Newsletter*, Vol. 33, Num. 1, Jan 2011.

## AUTHOR BIOGRAPHY

**Yosi Pozeilov** was born in Mexico City where he received a BS degree in biochemical and biotechnology engineering from the Metropolitan Autonomous University. He arrived in Los Angeles with a Fullbright-CONACyT-Garcia Robles scholarship in 1993. In 1995 he joined the staff of the History Visual Foundation - Shoah where he worked as a researcher and cataloguer. In 2000 he joined the Los Angeles County Museum of Art (LACMA) as a photographer in the Conservation Photo Studio. Later moving to Boston MA, where he worked in the Photo Services Department at the Museum of Fine Arts, Boston (MFA) and later at the Digital Imaging and Photo Studio at the Widener Library of the Harvard College Library. Yosi re-joined the LACMA Conservation Center as the Senior Conservation Photographer in 2003, where he continues to work. In 2004 he was invited by the American Institute of Conservation (AIC) to teach a workshop on digital photography for conservation, since then Yosi continues to teach his workshop online and at several venues, nationally and internationally, such as the UCLA/Getty conservation training program and at ICRoM-Rome. Most recently at LACMA,