Auto Publishing to FMINTERACT

## Introduction

This is a user guide for using AutoCAD scripts to automatically take a drawing that is linked to FM-Interact, and automatically format the drawing, create a proper title block, and publish to FM-Interact. The following guide and relevant scripts were made mostly by Kevin’s old assistant manager Jay, with most parts assembled and edited later by an intern drafter (me). Parts of this document with dark blue headers were part of the original set of instructions. Sections with light blue headers are part of the new set of instructions.

Using the scripts require that several conditions are already met:

* The related drawings are properly prepared and linked to the database.
* The drawing are named in the standard format: ####-##
* You have access to both the Y: drive (or wherever the current scripts are), and the Z: drive (or wherever the PDF’s are to be published to).
* You have autocad and scriptpro 2.0 (for doing batch publishing).
* You have the scripts loaded into you startup settings for autocad, and have the folder with the current scripts included in your autocad’s trusted files paths.

# Required setup

1. User must have the FM AutoCAD features installed
2. The following drives must be mapped on the computer from which the drawings are being published and the user must have read/write access:
   1. Drive letter Z: \\simsweb8.ci.northwestern.edu\Data\inetpub\wwwroot\FMInteract 8\FMInteract
   2. Drive letter Y: \\simsdb8.ci.northwestern.edu\sims-cad

The file “FMNWUS.UDL” must be at Y:\CAD-Supplemental\Scripts and Lisps\Sql connections\FMNWUS.UDL .

There is a backup file (as of 7/10/2017) in the directory: K:\CADD\Scripts and Lisps\Sql connections. This file can also be recreated, if necessary, by creating a new FMNWUS.UDL file with Notepad. Place the following lines of text inside the new file:

[oledb]

Provider=SQLNCLI.1;Password=fm!user7;Persist Security Info=True;User ID=fmuser;Initial Catalog=NW\_FMI8\_FY2013;Data Source=simsdb8.ci.northwestern.edu

**\*\*\*\*This file will need to be updated when/if the name of the database changes. \*\*\*\***

1. Load the necessary LISP application files into AutoCAD:
   1. In AutoCAD go to Manage>Load Application
   2. In the Startup Suite section of the dialogue box click “Contents”
   3. Click “Add”
   4. Navigate to: K:\CADD\Scripts and Lisps\AW Scripts\Publishing PDFs 2.0
   5. Add each of the lsp files in that location (“Publish-PDF AW.lsp”, “Update Custom Fields.lsp”,”recolor.lsp” and “Update Areas.lsp”)
      1. This method can also be used to automatically load any lisp files that are in the “Scripts and Lisps” folder that you would like to automatically be added to your autocad.
2. Set the scripts and lisps folder to your trusted locations so you can properly run the scripts in-batch\*:

\*There are multiple ways to do this. For other options, see:

[Lee-Mac Programming on Loading Programs Automatically](http://www.lee-mac.com/autoloading.html)

* 1. Go to (or type in) Options.
  2. Go to the “Files” tab.
  3. Expand (click on the “+” sign to the left of) the “Trusted Locations” branch
  4. Click on the “Browse” section (some versions of autocad require you click on “Add” before “Browse).
  5. Navigate to the folder: K:\CADD\Scripts and Lisps\AW Scripts\Publishing PDFs 2.0 (or wherever the current scripts are being held).
  6. Click “OK”.
  7. When finished, “Close”.
  8. Loading files to the trusted locations may cause windows to give you a security warning. It is fine to ignore this, as long as we can assume there are no malevolent hackers with access to the K: drive.
  9. Restart AutoCAD

## Publishing Single PDFs

1. Open the drawing that is to be published.
2. Navigate to K:\CADD\Scripts and Lisps\AW Scripts\Publishing PDFs 2.0
3. Drag the file “Publish-PDF AW.scr” into the autocad window.
   1. This should run the script in most cases. There are some cases where the script will terminate with the command line giving you a prompt (such as “are you sure you want to proceed? Y/N.” In that case, press “Enter” until the command line is satisfied.

# Publishing Multiple PDFs

1. Open the ScriptPro 2 program. NOTE: ScriptPro 2 can be downloaded from the Autodesk website. As of 4/2/2013, the URL for the download site was: <http://usa.autodesk.com/adsk/servlet/item?siteID=123112&id=4091678&linkID=9240618>
2. Click “Load”
3. Navigate to Y:\CAD-Supplemental\Scripts and Lisps\ScriptPro DWG Lists
4. Select from the available lists
   1. Alternatively, go to “Add Files” in the ribbon, and manually add any drawings you want to run the scripts on.
5. In the “Script File” section click “Browse”
6. Navigate to K:\CADD\Scripts and Lisps\AW Scripts\Publishing PDFs 2.0
7. Select “Publish-PDF AW”
8. Click on “Settings”
9. Under “AutoCAD Application to Use,” click “Browse
10. Navigate to C:\Program Files\Autodesk\AutoCAD 2017\acad.exe (or to the location of your most current AutoCAD version)
    1. This step only needs to be done the first time Scriptpro is run.
11. Set the Process Timeout to 60 seconds
12. Click “OK”
13. Make sure all drawings are checked.
14. In the “Run” section of the menu Ribbon, select “Checked”
15. After the script has run through all of the drawings in the list, if there are any that show “Failed” in the “Status” column, click “Failed” in the “Run” section of the menu Ribbon to try those drawings again.
16. If any drawings persistently fail, you may need to increase the Process Timeout (see step 11 above) or just open the drawing and run the script as under the section “Publishing Single PDFs” above. Sometimes there may be something in the file itself that is causing scripts to fail. One way to address this potential issue is to use the WBLOCK command to create a new file from the drawing.
    1. Turn on and unlock all layers
    2. WBLOCK
    3. Select all elements in model space
    4. Save new file to the appropriate building drawing location.
    5. Unregister the old drawing from SIMS
    6. Delete the old drawing
    7. Rename the new drawing with the old drawing’s name
    8. Register the new drawing in SIMS
    9. Relink all the room polylines in SIMS

# Creating a new Drawing List

NOTE: From time to time, it will be necessary to update the drawing lists to capture new buildings/drawings that may have been added. Follow the steps below to create a current drawing list:

1. Open FM:Interact and sign in
2. Navigate to Space Management>Reports>2.53 Drawing List for PDF Publishing
3. After the report has run, in the “Select a Format” drop down box, choose “CSV (no header)” and click “Export.”
4. Open the new CSV file using Notepad. Select everything and copy.
5. Navigate to Y:\CAD-Supplemental\Scripts and Lisps\ScriptPro DWG Lists
6. Open one of the “CompleteDWGList” files.
7. Replace everything between “[DWGList\_Start]” and “[DWGList\_End]” with the list copied in step 4 above.
8. Save the new drawing list. You may choose to save it with a new date to indicate when it was last updated. You can also save new drawing lists with excerpts from the data exported in step 3 as desired.

Be aware that this process assumes that the dataset for the FM:Interact reports is current. It may be advisable to open the FMI8 Space Mgmt Reports solution in BIDS (on the SIMSDB8 server) and confirm this.

* + - 1. In BIDS, in the Solution Explorer on the right hand side of the screen, open the FMI8 shared dataset by double clicking on it.
      2. In the Connection String section, make sure the Initial Catalog is pointing to the most current fiscal year database. If not, click edit and make the changes needed.
      3. If the FMI8 dataset is pointing to the correct database, right click on the FMI8 shared dataset in the solution explorer and select “Deploy.”

## How it works

This instruction set is written for the updated scripts made in early July, 2017. There are 3 “lisp” files that load custom instructions into autocad to be used withing the main script. Plotting is done via a “.scr” file that formats the drawing, and uses the 3 lisp files to automatically generate the titleblock and publish the drawing. The steps that are done by the script, in order:

* Navigate to the “Model” layout in the drawing.
* Deletes any existing FMINTERACT layouts
* Cleans the files with “fmclean.lsp”
  + Overkills everything
  + Purges everything
  + Switches all hatches to a solid pattern
  + Runs “recolor.lsp”
    - Navigates to model layer
    - Sets the colors of all the standard layers
    - Freezes all non-standard layers and certain standard layers
  + Runs “stddims.lsp”
    - Reformats all the dimensions to a semi-standardized format
  + Runs “pclose.lsp”
    - Closes all polylines on the A-Polyline, A-Polyline-Int, and A-Polyline-Ext layers
* Loads the FMINTERACT layout currently saved within the filepath: "Y:\CAD\Templates\NU\_TITLE\_STANDARD LAYOUTS.dwt"
* Navigates to the FMINTERACT layout and sets the viewing window to the extents of the drawing
* Runs “Update Fields.lsp”:
  + Fills out the Building information for the drawing that is used in the titleblock, less the GSF, obtained from the FML0 and FMB0 databases
* Runs “Update Areas.lsp”
  + Fills out the GSF field by calculating the total area of all closed polylines on the “A-POLYLINE-EXT” layer.
* Saves
* Runs “Publish-PDF AW.lsp”
  + Gets the building name from the FMB0 database
  + Publishes the drawing to the folder: Z:\fminteract 8\fminteract\<buildingsitecode>\<floornumber>, where the words in <> are auto-generated based on the drawing.
* Saves and terminates

***For more information on changing values in the scripts, see “Script and Lisp Details”***

# Drawing List for PDF Publishing

I created this SSRS report in BIDS in the “FMI8 Space Mgmt Reports” solution. It generates a drawing list in the simple format required by ScriptPro from the DWGDIR and DWGNAME fields in the FML0 table. The list is limited to the drawings that have been granted “ANONYMOUS” security access. It also excludes the Parking Lot drawings. Below is the SQL select statement used.

SELECT RTRIM(FML0.DWGDIR) AS DWGDIR, RTRIM(FML0.DWGNAME) AS DWGNAME

FROM fmRole INNER JOIN

fmL0Grant ON fmRole.RoleID = fmL0Grant.RoleID RIGHT OUTER JOIN

FML0 ON fmL0Grant.Auto\_Key = FML0.auto\_key

WHERE (fmRole.Name = 'ANONYMOUS') AND (FML0.DWGNAME NOT LIKE 'L%')

ORDER BY DWGNAME

# Things to Remember

1. The Universal Data Link (.UDL) file will need to be updated if
   1. The server name (simsdb8.ci.northwestern.edu) changes
   2. The database initial catalog (NW\_FMI8\_FY2013) changes
2. The following fields in the FMB0 table must be populated and kept up to date:
   1. BLDGDESCL (the full official name of the building…check with University Relations if unsure of the exact proper name)
   2. STREET
   3. CITY
   4. STATE
   5. ZIP
3. The FLOORDESC and ASSIGNABLE field in the FML0 table must be populated. FLOORDESC must be populated according to the following format: 21st Floor…or Basement…etc… Do not spell out the numbers. This field is used in FM:Interact as well, and there is limited space to display the text.
4. The security settings on each drawing must be kept up to date in FM:Interact. Any drawing that granted “ANONYMOUS” access will be published; any that do not have that role will not be published when using the drawing lists and ScriptPro. (They can still be published individually according to the section “Publishing Single PDFs” above.
5. Remember that the FMINTERACT layout will be deleted from the drawing and recreated. Do not use the FMINTERACT layout for any projects if you need to retain your work in that layout. It will be deleted.
6. The same thing goes for the custom properties. They have been added specifically for the purpose of publishing PDFs. Any extra custom properties will be deleted, unless the “Update Custom Fields.lsp” command is rewritten to include them.
7. The ReportServer shared dataset for the “FMI8 Space Mgmt Reports” solution must be kept up to date. When I tested this it was still pointing to the previous year’s database. Assuming that is correct, it must be deployed to capture recent changes in the data (frequently, I would imagine). Otherwise the information in the Drawing List for PDF Publishing report will be suspect (not to mention all other FM:Interact reports).