

Océ GIS Printing

Considerations for Printing GIS Applications

Canon GROUP

Introduction

As technology advances at an ever increasing pace, the demand for GIS information, such as topographic maps, population overlays and aerial photographs increases as well. Often times this demand is in the form of printed output such as maps and annotated aerial imagery.

But the print production process for these types of applications is often time consuming and unwieldy, which can lead to delays and mistakes. Now more that ever organizations that rely on printing these GIS related applications must ensure that they select the proper printing solution that maximizes productivity and reduces turnaround time while providing user friendly operation.

What goes into printing GIS applications

The majority of a GIS organization's time is spent in managing an array of information to create the desired output: a geographical representation of that information that is used for a variety of purposes, such as land management, construction planning and utility maintenance.

However, the final step of that process often times is the most daunting: printing that representation. Unlike printing a routine document to a common desktop printer, where almost all of the document preparation is handled automatically, the GIS operator has to select a variety of settings to ensure optimal output, depending on the intended use:



Printing method

For a single file, or multiple pages contained in a single file, files are usually submitted for printing from within an application such as ArcGIS® by use of a print driver. When larger scale print production is needed files are saved in print-ready formats, such as PDF or TIFF, and sent to the printer by use of a client or web-based print submission tool.

Output size

GIS information can be output to a variety of standard and custom sizes depending on the information represented and the intended use of the printed output. Most organizations have standardized on specific sizes, such as those found in the ANSI paper size specifications, while others have defined their own custom sizes such as 36"x 36", 36" x 60", or 42" x 60". Some applications in the utility sector require that the output be hundreds of feet long. If printing a set of files there may be a requirement to print on multiple sizes, which may need media of different widths to be used.

Quality

Choosing the correct document quality settings has an influence on the readability of the output, the media needed (see below) as well as the print time. Selecting a lower quality print setting, such as draft, will print quickly but the output may have some loss of information and become unusable. On the other hand selecting a higher quality print setting will take longer to print but will retain information and provide usable output.

Media

The print quality desired and intended use of the output will influence the media selection. While a print with light coverage or printed in draft mode can be output to an uncoated bond, heavy coverage and/or a higher quality may need a coated media or even a photo-based product. If the print will be used outdoors, the media must be able to withstand rain and snow without becoming unusable, making the ability to print on Tyvek[®] invaluable. Perhaps an adhesive-backed material will need to be used to mount the print to a board for use in a presentation.

Finishing

When printing multiple files (sets) or multiple sets users will benefit from output being neatly stacked and collated. If there are a large number of files, a stacker may need to be selected as the delivery destination to keep the prints in order. Some applications require the use of an online or offline folding solution to finish the prints into a folded package for storage, mailing or for use by field personnel.

These decisions are often influenced by the features and capabilities of the printing device(s) that the GIS organization uses.

Do the Capabilities of Your Printing Device Influence Your Decisions?

There are a wide variety of large format printing devices available on the market today, and while most share a set of common features and benefits, there can be differences in specific capabilities.

Sometimes, the limitations, or lack of, these capabilities influence the decisions that the GIS operator makes when printing maps. Or, these limitations affect the time it takes to produce the output, adding additional time to the project.

In general, there are three areas to consider when discussing printing capabilities:





Print submission

- Print drivers and print submission software tools must be compatible with the organization's applications and operating systems. The decision on whether or not to adopt new technology which can benefit the organization should not be limited by the print device.
- Print settings such as scaling, rotation and media selection can be adjusted from within the selected print tool to eliminate the need for creating print ready files at a specific size or sizes.
- Settings which can be applied to individual files within a set without affecting the other files. This will avoid the need for multiple print submissions for a single job.
- A preview is available to ensure that the file(s) will be printed at the proper size and orientation, avoiding unnecessary reprints.
- Large and complex files can be processed quickly and accurately without creating a bottleneck in the print production.

Media handling

- Capacity to have multiple rolls of different sizes and materials online to eliminate the time and change required to load different media during the printing operation.
- The media rolls are identified in the print driver or print submission tool by size and type for the building of print jobs that require multiple media types/sizes.
- End of roll detection is available to help prevent partial prints and reprints.
- The system can switch between rolls during a print job without user intervention.
- Media loading and unloading can be accomplished with a minimum of effort, eliminating the frustrations that users feel when the printer will not accept a roll of media, and provide automatic trimming of the leading edge as well as automatic width detection.

Finishing

- Multiple prints and/or multiple sets are neatly stacked and collated so prints are not mixed up and the end user does not have to manually collate the output.
- Stacking options are available for high volume print production, reducing or even eliminating the need to break up large print jobs or make frequent trips to the printer to keep the output area from overflowing.
- When multiple delivery destinations are available they can be selected from within the print submission tool, so that the printer itself does not have to be manually configured for each delivery destination.
- Automatic folding options are available to support folded output, eliminating additional manual work.

The stronger the capability of your printer is on each of these areas, the more productive your GIS printing workflow will be.

Other areas of Consideration

Often times, organizational support of a printing solution is overlooked when discussing capabilities. System uptime, ease of use, and the ability of the printer to be able to support technology and business advancements are critical to insuring maximum productivity.

This support can fall into 3 categories:

Usability

- The routine operation of the system is quick and easy to understand, reducing the learning curve for new employees and eliminating the need for print "experts".
- The systems can be seamlessly integrated into the organization's infrastructure without special modifications or configurations.
- Changes to the system configuration do not have to be made on the printer itself, allowing for remote administration from centralized location.
- The status of consumables and other indicators are communicated to the users without the need to visually inspect the system, eliminating delays and frustration due to an unavailable printer.
- Consumables are fast and easy to replace, reducing downtime and increasing productivity.

Maintenance

- The system requires minimal user maintenance and calibration, which otherwise could cause quality issues and increase downtime.
- Contracted and T&M manufacturer support is available for maintenance, repair and print application configuration to ensure worry-free operation and provide expert support.
- Consumables are included as part of the maintenance service provided by the manufacturer to eliminate the need to have additional funds committed to keep a stock of maintenance items on hand.

Beyond the Ordinary

Manufacturer support

- The manufacturer will provide support for the lifetime of the system to avoid "orphan" equipment – the printer operates fine until there is a maintenance issue and creates a critical situation.
- The organization will be given ample warning by the manufacturer before support is discontinued to allow time for planned obsolescence of the current printer and migration to a replacement.
- Supplies, maintenance and migration to replacement parts will be available for the lifetime of the system to avoid the need to purchase a new printer due to supply availability or minor malfunction.
- Firmware/software updates will be made available to newer versions of applications and operating systems.

Depending on the size and scope of the organization support can be the most critical factor in successful print production.

Summary

Whether you are a 2-person company or an organization of thousands, your choice of printing solutions for GIS applications should maximize your productivity, provide superior usability, and support your organization as new technology and processes become available.



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