



The Mopria™ Alliance: Bringing the Freedom of Simple Printing to Mobile Users

Mobile devices have revolutionized the world by freeing users from their PCs to choose where and how they live and work. With the cloud, users now have access to all the applications and content they need. One of the final pieces remaining to completely cut the tether to the PC is printing.

Today, most people can't print from their mobile devices, not just because they don't know how but because the process to connect to a printer can be confusing as well as downloading and deploying print apps. This has forced consumers that want to print to go back to their PC, nullifying many of the convenience and productivity benefits mobility offers.

The difficulties with implementing mobile printing arise from the driver-based approach inherited from the PC. Printer OEMs need to work directly with each device OEM and then together maintain a plethora of print files and connection methods. Mobile software application developers face a similar burden to support printing in their applications.

In the past when major device and printer OEMs have invested in enabling mobile printing, compatibility has been limited, difficult for consumers to set-up, and overtime a burden for all to maintain.

Even if print files were available for all printers and devices, they would unreasonably consume mobile device memory. The solution is to eliminate the need for brand specific printer drivers by standardizing mobile printing.

Enter the New Standard for Mobile Printing

The Mopria Alliance provides freedom and flexibility to mobile users to print from their devices in a way that is simple, intuitive, cost-effective, and doesn't require complex configuration. Founded by industry leaders Canon, HP, Samsung, and Xerox, the Mopria Alliance establishes consensus support for a single platform that enables innovation from mobile device OEMs, printer manufacturers, and application developers.

Enabling industry-wide compatibility for mobile printing requires a standard that itself is built upon many standards. By utilizing established and proven technologies, the Mopria Alliance aims to assure compatibility and a simple, common user experience across the industry.



In addition, the Mopria Alliance has created an easily recognized brand and logo, Mopria, to reduce market confusion and help consumers identify devices that can connect wirelessly and print without a PC or installation of special apps (drivers). This logo leverages the market strength of the Alliance members to accelerate consumer awareness and adoption.

Standardizing mobile printing also frees OEMs to focus development resources on innovation and new features by eliminating the overhead of having to continuously maintain a library of printer drivers simply for core printing capabilities. In addition, new devices can be introduced with long-term compatibility assured with minimal on-going effort.

How it Works

The Mopria Alliance standard defines four key components that must come together to facilitate mobile printing:

- 1 **Connection:** Users can connect to printers in a variety of manners, including:
 - being on the same network as a printer;
 - via Wi-Fi™ Direct to connect peer-to-peer to a printer (i.e., neither a PC nor wireless access point is required);
 - Ethernet;
 - Or Near Field Communications (NFC) is supported as an optional means to connect that further simplifies the user experience.
- 2 **Print System:** The Print System is built into the mobile operating system, no special apps are required. It is based on the industry standard Internet Printing Protocol and Wi-Fi Direct Services (WFDS) Print. WFDS Print specifies the Page Description Languages (PDLs) used to send and accept print jobs between an application and printer. The PDLs allow content to be formatted to the paper size rather than the width of the device screen. Over time, the standard will expand the PDLs to encompass more file types.

The Print System also allows printers to be discovered before establishing the peer-to-peer network connection to a particular printer. Printers on established network connections may be discovered using the Bonjour protocol.

- 3 **User Experience (UX):** Guidelines define minimum requirements - i.e., to keep user interfaces simple, consistent and intuitive across devices and applications. The Print user interface consists of a list of printers available, a Print button provided upon printer selection, a minimum set of Print options, and is designed to be in sync with the mobile user's lifestyle.



- 4 **Open Application Programming Interface (API):** A simple Open API allows Mobile App developers to integrate the print function in their apps with minimum effort.

Enjoying the Benefits of Mobile Printing

The real benefit of enabling printing on mobile computing platforms is to raise the productivity level to be on par with what users expect from their PCs. For example, with Mopria certified devices, you will be able to bypass the PC and print your e-mail or an attachment from your mobile device to read, edit, or collaborate. Salespeople can quickly print out contracts at customer sites from their phone or tablet. A consumer can print the recipe they found on their phone without reverting to their PC to print.

The Mopria Alliance standard offers direct benefits across the entire ecosystem:

- **Consumers:** Users can immediately utilize mobile printing without having to manually connect to a printer or install special software. In addition, they can count on an intuitive and simple user experience that is consistent across their mobile devices and printers.



- **Businesses:** IT Managers can allow employees to use their mobile devices with the workplace print devices without increasing the burden for help desk support.
- **Mobile Device OEMs:** The standard eliminates the need to align with particular printer OEMs while efficiently providing printing capabilities to third-party applications.
- **Printer OEMs:** The availability of simplified mobile printing improves customer satisfaction and increases pages printed from mobile devices.
- **Application Developers:** Introducing printing to applications is simplified through SDKs and APIs. This increases the value and productivity of mobile applications to users, as well as enables the development of new applications and workflows that integrate printing.
- **Service Providers:** The Mopria Alliance standard enables new revenue streams by making it possible for hotels, coffee shops, and libraries to cost-effectively provide print services.

The Mopria Alliance will bring together the entire industry to ensure interoperability, streamline

...it is only a matter of time before consumers and IT buyers will standardize on devices with the Mopria logo.

qualification processes, and provide an improved user experience. Primary responsibilities of the Mopria Alliance include influencing the development and adoption of selected standards, providing support to application developers in deploying print functionality, advancing innovation and new user experience standards, certifying products to carry the Mopria logo, and educating consumers and business customers on the value and ease-of-use of mobile printing.

Mobile printing is an essential element for truly supporting Bring Your Own Device (BYOD) capabilities. The Mopria Alliance serves to bring the industry together to create a true ecosystem of interoperability so users can take full advantage of the freedom and flexibility of mobile computing. With the large percentage of market already covered by the founding members, it is only a matter of time before consumers and IT buyers will standardize on devices with the Mopria logo.

Table 1: Key Specifications of the Mopria Standard

as of September 2013	
OS	Android
Platform	Open
Certification	Self-certification based on Mopria Alliance testing requirements
NFC	Optional, Mopria Alliance execution guidelines
Network interface	Wi-Fi™, Wi-Fi direct
Protocols	MDNS (Bonjour), IPP 2.0,
IPV4, IPV6,	PCL-M (PDF standard from Adobe), PWG raster (from the Printer Working Group standards body)
Page Description Languages	WiFi Direct Services Print includes PCL-m, PWG Raster
Standard Document Exchange Format	JPEG, .png, PDF (future)
Mobile device manufacturer	See www.mopria.org
Printer Models Supported	See www.mopria.org
Application developer	SDK & API