



Side-Load Basemaps & Mobile Map Packages



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8/25/2022

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Overview

This document provides instructions on how to copy multi-scale Basemap products onto an Android mobile device for use with the S1 Mobile Mapper application.

While sharing basemaps via ArcGIS Online (AGOL) is often the easiest way to distribute user-generated basemaps to multiple devices, but if the basemap is very large in file size or network connectivity is unreliable, it can take a long time to download to a device.

Basemaps often are large files that take considerable time and require adequate network speed to download over a cellular (4G) or WiFi network. For this reason, it may be faster to copy the basemap from a network PC to a connected mobile device via USB cable; this process is called **side-loading**.

Side-Loading File Types into S1 Mobile Mapper Application

The S1 Mobile Mapper application for Android supports two kinds of side-loading: Basemaps and Mobile Map Packages (.mmpk).

Basemaps (User Created)

Basemap types that can be side-loaded onto the S1 Mobile Mapper include Tile Packages (.tpk, .tpkx), Vector Tile Packages (.vtpk), and GeoTiff. While suggested, it is not required to use WGS 1984 Web Mercator (auxiliary sphere) as the coordinate system.

The S1 Mobile Mapper application for Android v5.3 supports multiple basemaps displayed in the S1 main map view without a constraint that the “map data” must overlap the underlying basemap; unlike earlier versions. ([See Agency User Guide p. 22](#))

Note: *When downloading from AGOL, basemaps are automatically added to the map view when the download is complete. If the map is side-loaded, the user must manually add it to the map view using the Manage Map Layers menu. See [Managing Downloaded Content in the Agency User Guide p. 44 for more information.](#)*

Agency Authored Basemaps

The Agency Authored Basemaps are a collection of basemap products produced and distributed by the Bureau of Land Management (BLM) and the U.S. Forest Service (USFS). S1 Mobile Mapper can store many basemaps on a device at a time (limited only by available storage

space on device) and the user can set the visibility for all downloaded basemaps for their current viewing needs in S1. ([See Agency User Guide p. 26](#)).

The Agency Authored Basemaps can be used as offline basemap downloads in the S1 Mobile Mapper application. The basemaps are multi-scale cached tile packages (.tpk), which can quickly display image tiles appropriate for the current map scale and extent.

They can be **downloaded to mobile devices over Wi-Fi or cellular networks** or can be manually copied to a mobile device by [side-loading](#).

These basemaps are available for download from two publicly available ArcGIS Online (AGOL) groups.

- USFS Agency Basemaps:
<https://usfs.maps.arcgis.com/home/group.html?id=1c9d890b197c4b2f9d72604b77ea43cb>
- BLM Agency Basemaps:
<https://blm-egis.maps.arcgis.com/home/group.html?id=a809e5714093455d8a7370bd08ffad4e>

Mobile Map Packages (MMPK)

Mobile Map Packages (MMPK) An MMPK is a standalone file that contains one or more map definitions, including the basemap layers, data layers, layer content, layer styles and pop-up definitions. These files are authored in ArcGIS Pro specifically for downloading and viewing assets and S1 Mobile Mapper supports some, but not all functionality available with these files. For example; An MMPK can include data to support geocoding, place search, and routes and directions, however S1 does **not** yet support the “esri locators” that can be included with an mmpk. They also **cannot** be used for offline data collection as they are not editable offline. They are essentially just for reference and not all that useful really.

MMPKs are side-loaded into a different folder than basemaps. See [MMPK Side-loading](#) directions below.

MMPKs are listed under Map Data in S1 instead of in the basemaps area, like the [basemap file types](#) listed above. Also, since MMPKs are categorized as Map Data in the S1 Mobile Mapper app, you have the option to view other downloaded basemap(s) with the MMPK in the main map view.

Instructions on Side-Loading Basemaps

Below are two sets of instructions, one on where to copy the basemaps onto the mobile device, two is where to copy Mobile Map Packages (.mmpk) onto the device.

Assumptions:

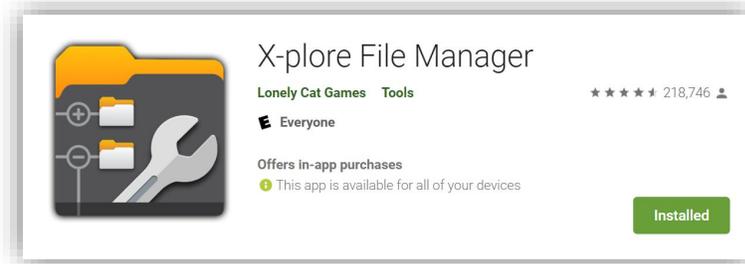
- Have an Android mobile device.
- S1 Mobile Mapper application installed on the mobile device.
- USB or USB-C cable to connect the mobile device to computer.
- Basemap and/or Mobile Map Package (.mmpk) saved on the desktop computer.

Basemaps onto Android Mobile Device

Follow instructions below to copy basemaps onto the mobile device. Basemap types that can be side-loaded into the S1 Mobile Mapper application include Tile Packages (.tpk, .tpkx), Vector Tile Packages (.vtpk), and GeoTiffs.

Note: There are several caveats related to file storage location to be cognizant of:

- If the mobile device is running Android Version 11 Operating system and has an SD card inserted the Scoped storage location, (essentially where S1 must store files) is not accessible to view manually with the file explorer application on the mobile device or when connected via USB cable and windows file explorer. So sideloading (copying) to this location can be tricky. All other common Android operating system versions “should” be able to see the sd card scoped storage location for sideloading workflows.
- Here are a few tips:
 - *It is recommended that you do not use an sd card if your device is running Android 11 if you plan to do any side-loading of basemaps or grabbing S1 waypoints tracklogs or sketches off the mobile device via usb connection.*
 - *If the device is not running a mobile device management application Maass360 for BLM, MOM for the Forest Service, then you can remove the SD card from the mobile device and insert into a card reader connected to your computer and navigate to the folder below and copy your basemaps there, and then reinsert the SD card in the device, and it should show up in S1 basemap options.*
 - *However, if the device is running an mdm app for mobile device management, most likely that SD card is encrypted and cannot be used if removed from the device.*
 - *There is a potential workaround with a third-party mobile app called “X-plore”.*

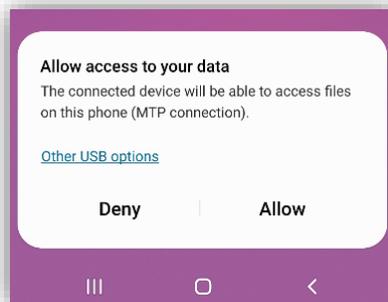


*Installing this application will allow you to see and navigate to the scoped storage location (**on the mobile device**) that is not visible in the native mobile file explorer application. So, essentially you can copy the basemap file to a file location on the mobile device internal storage that you can access and then with the Xplore app, you can move it to the SD card location shown below. This will allow you to use the space on your SD card instead of internal storage space which can quickly be used up depending on the internal storage size.*

1. On the desktop computer, open the **File Explorer** app.



2. **Navigate** to the file location where the basemap to be copied to the mobile device is saved.
3. **Select** the basemap file(s) that will be side-loaded onto the mobile device. Right click and select **Copy**.
4. **Connect** the mobile device to the computer via USB or USB-C cable. Allow access to the data on your device.



5. Using **File Explorer**, navigate to one of the following file locations on the mobile device:

Devices with SD Card:

`\Card\Android\data\gov.s1.s1mobile\Reference_Data\Offline_Base_Ma`

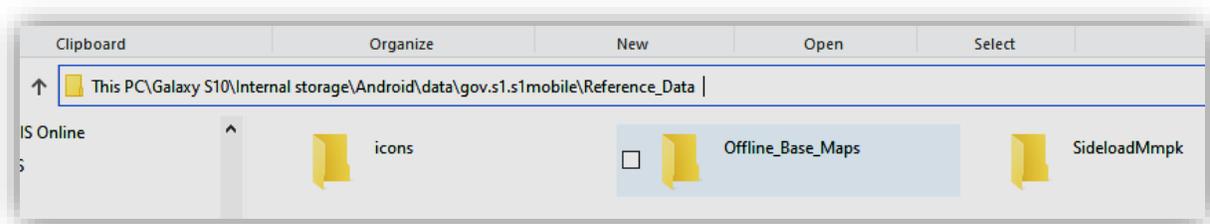
ps

Devices without SD Card:

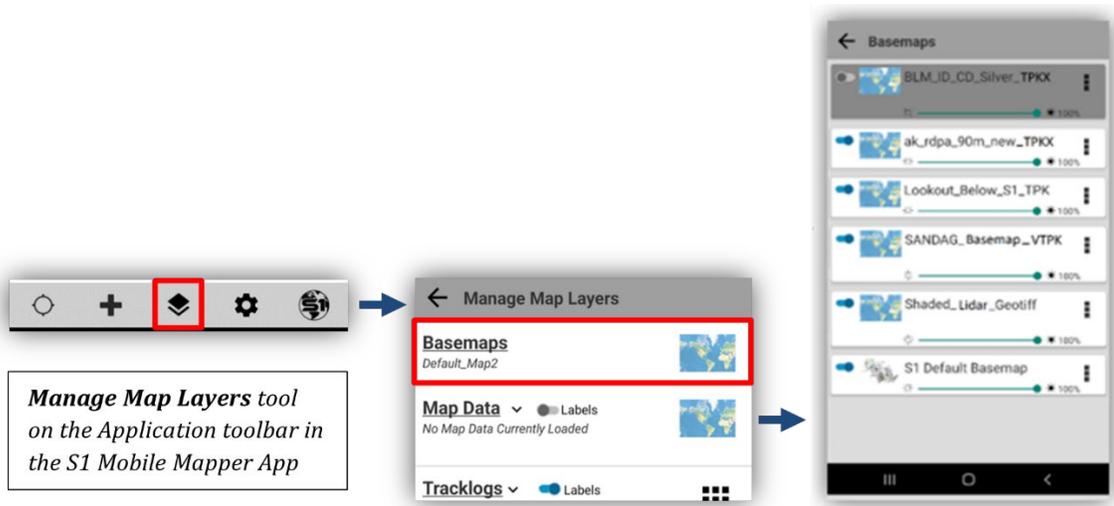
`\Phone\Android\data\gov.s1.s1mobile\Reference_Data\Offline_Base_Maps`

This is the folder where all downloaded and side-loaded basemaps must be stored. Basemaps include tile packages (.tpk or .tpkx), vector tile packages or GeoTIFFs.

6. Double click on the folder **Offline_Base_Maps** to open it and paste your basemap files there. This is the directory where all downloaded and side-loaded Offline Basemaps reside.

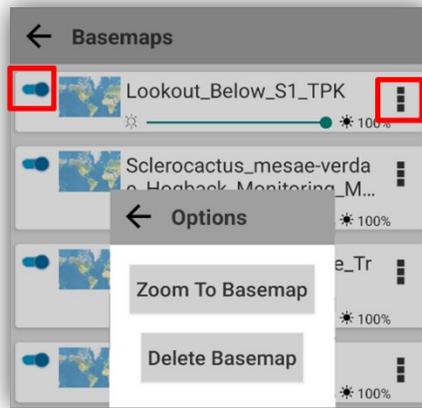


7. Right-click in the file window where the basemaps will be saved and select **Paste**.
8. **Open** the S1 Mobile Mapper application. The basemaps that were added to the Offline_Base_Map folder will be listed on the basemap page from the **Manage Map Layers** tool.



9. Toggle on () the basemap side-loaded to the device to display it in the **map view**. You could also **Zoom to Basemap**

via tapping on the vertical ellipses for the basemap options tools.



Note: Multiple Basemaps can be added to the map view. Basemaps can also be rearranged in overlay order by long pressing on the basemap title and moving it up or down on the list in the S1 Mobile Mapper app.

Side-Loading Mobile Map Packages (.mmpk)

There is no limitation of a Mobile Map Packages (.mmpk) file size except for the available storage space on the device.

1. Follow the same steps, #1-4 listed above, for downloading Basemaps.
2. Using **File Explorer**, navigate to one of the following file locations on the mobile device:

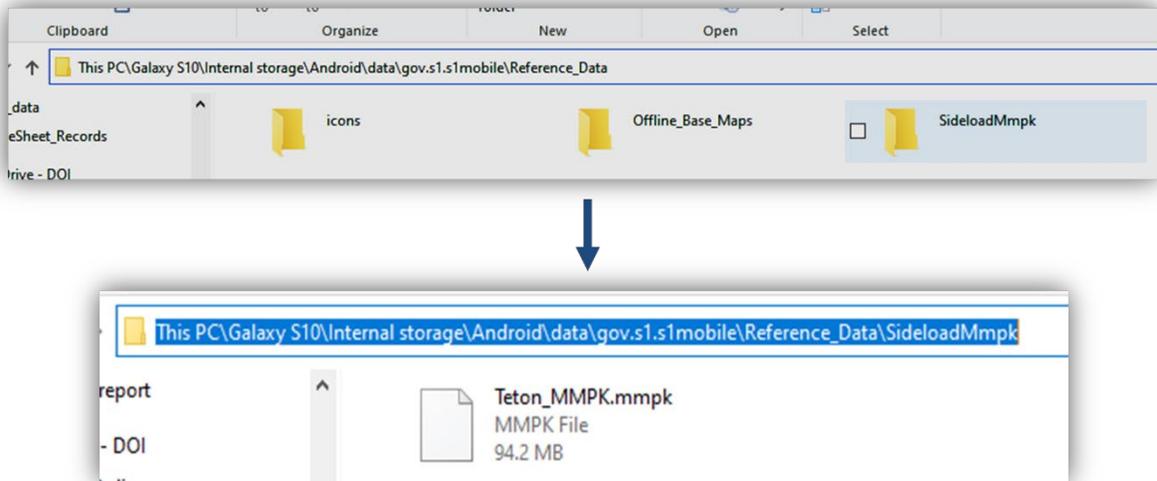
Mobile Device with SD Card:

Card\Android\data\gov.s1.s1mobile\Reference_Data\SideloadMmpk

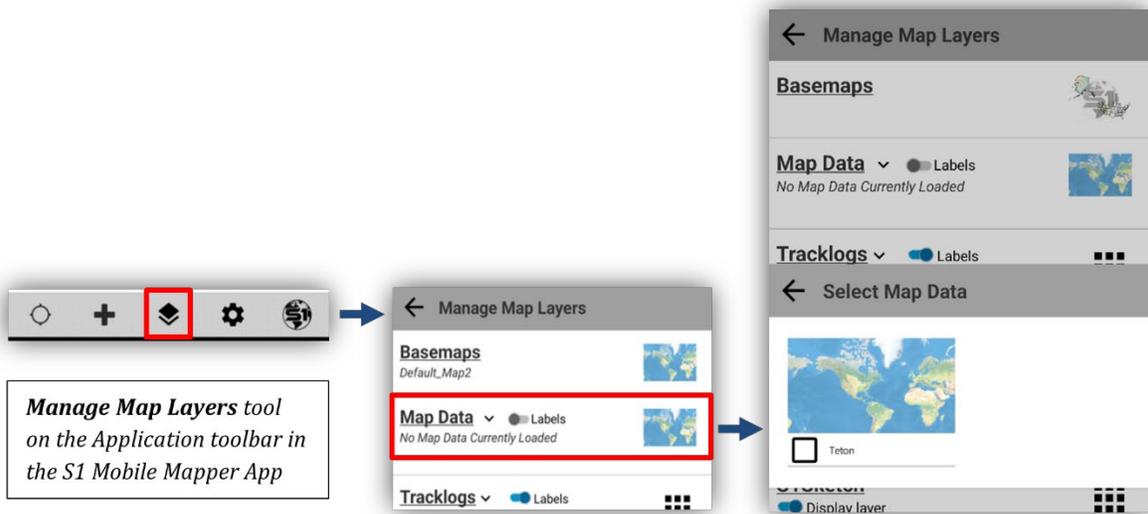
Mobile device without SD Card:

*Internal storage \ Android \ data
\gov.s1.s1mobile\Reference_Data\SideloadMmpk*

3. Double click on the folder **SideloadMmpk** to open it and paste your MMPK files there.



4. In the S1 Mobile Mapper app, the Mobile Map Package(.mmpk) added to the **SideloadMmpk** folder, will be listed on the Map Data page from the Manage Map Layers tool.



5. Tap the **Map Data** (Mobile Map Package) side-loaded to the device to display it in the **map view**.



[S1 Mobile Mapper website](#)