

**Bentley Mobile App Suite,
Product Preview v1.1**

BENTLEY SYSTEMS, INCORPORATED



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Contents

Bentley Mobile App Suite Overview	4
i-model Optimizer	4
ProjectWise i-model Packager	4
ProjectWise Explorer for the iPad	4
Bentley Navigator for the iPad	4
ProjectWise Mobile Access Server	4
Which Mobile Apps Do I Need?	5
Managed and Unmanaged Workflows	5
Viewing and Annotation Workflows	5
Direct Connection and Manual Transfer Workflows	6
Using the Mobile Apps to Optimize, View, and Annotate i-models	6
Step 1: Optimize i-models for Viewing and Annotation on the iPad	6
Step 2: (Optional) Create Packages of Optimized i-models and Other Documents Bound for the iPad	7
Step 3: Transfer Documents to the iPad	7
Step 4: View and Annotate Optimized i-models and Other Documents on the iPad	8
Step 5: Return and Unpack Annotation Packages in ProjectWise Explorer	8
Appendix: Bentley Mobility File Types	9

Bentley Mobile App Suite Overview

Bentley's mobile app suite lets users view and mark up *optimized* i-models and other formats on the iPad. There are five applications in the mobile app suite:

i-model Optimizer

Installs on top of MicroStation or Bentley i-model Composer. Use it to:

- create optimized i-models, which can be viewed or marked up on the iPad using Bentley Navigator for the iPad

ProjectWise i-model Packager

Installs on top of ProjectWise Explorer. Use it to:

- create packages (for the iPad) that contain optimized i-models and/or other documents
- unpack packages (from the iPad) that contain annotations of i-models and/or other documents

ProjectWise Explorer for the iPad

Installs on your iPad. Use it to:

- connect to ProjectWise
- open, view, mark up documents
- check out and check in documents
- add new files to the datasource
- create annotation packages

Logging in from the app gives you the same access rights to folders and documents that you normally have when logging in from the desktop. PDFs, Office documents, and some image formats can be viewed directly in the app; other document types are opened in other apps. Optimized i-models open in Bentley Navigator for the iPad.

Bentley Navigator for the iPad

Installs on your iPad. Use it to:

- view or mark up optimized i-models

ProjectWise Mobile Access Server

Installs on a server, by your system administrator. Use it to:

- provide ProjectWise Explorer for the iPad users with a connection to ProjectWise

Which Mobile Apps Do I Need?

The Bentley mobile app suite allows for a variety of workflows to suit your needs. You may only need to view optimized i-models created on the file system, or you may need to annotate optimized i-models and store the annotation files in ProjectWise. The tasks you need to accomplish will determine which apps you need, and conversely, the apps you have will determine which tasks you can accomplish.

Consider the following workflows when selecting which apps to install.

Managed and Unmanaged Workflows

The managed workflow is for users who are already using ProjectWise, and the unmanaged workflow is for users who are not using ProjectWise. Using a managed workflow, the original i-model that you optimize is stored in ProjectWise. Using an unmanaged workflow, the original i-model is stored on the file system.

- With the unmanaged workflow, you only need i-model Optimizer on the desktop, and on the iPad you only need Bentley Navigator for the iPad.
- With the managed workflow, you need both i-model Optimizer and ProjectWise i-model Packager on the desktop, and on the iPad you need both ProjectWise Explorer for the iPad and Bentley Navigator for the iPad.

Viewing and Annotation Workflows

The viewing workflow is for users who only need to view optimized i-models on the iPad. The annotation workflow is for users who need to mark up optimized i-models and/or other documents on the iPad.

- With the viewing workflow, you only need i-model Optimizer on the desktop, and on the iPad you only need Bentley Navigator for the iPad.
- With the annotation workflow, you need both i-model Optimizer and ProjectWise i-model Packager on the desktop, and on the iPad you need both ProjectWise Explorer for the iPad and Bentley Navigator for the iPad.

Direct Connection and Manual Transfer Workflows

The direct connection workflow is for ProjectWise Explorer for the iPad users who need to connect directly to their ProjectWise datasources and perform common ProjectWise tasks from the iPad. In addition to the other mobile apps, the direct connection workflow also requires ProjectWise Mobile Access Server (installed on a server, not the desktop or iPad).

The manual transfer workflow is for:

- ProjectWise Explorer for the iPad users who cannot connect directly to their datasource(s) for whatever reason (for example, if the ProjectWise Mobile Access Server is not installed, not currently accessible, or not providing access to the datasource needed)
- Bentley Navigator for the iPad users who are not using ProjectWise at all (the unmanaged workflow)

In the manual transfer workflow, users can use email, a cloud service (such as Dropbox), or iTunes to manually transfer files as needed from the desktop to the iPad, or from the iPad to the desktop.

Note: In ProjectWise Explorer for the iPad, the direct connection and manual transfer workflows are not mutually exclusive. For example, you may receive documents on the iPad by email, and then add those documents to ProjectWise with your direct connection. Or, you may connect directly to the datasource and email documents out of ProjectWise as needed.

Using the Mobile Apps to Optimize, View, and Annotate i-models

Use the following steps to optimize your 3D i-models on the desktop, transfer the optimized i-models to the iPad, and send any mark ups you make back to ProjectWise.

Step 1: Optimize i-models for Viewing and Annotation on the iPad

In MicroStation or Bentley i-model Composer, you use the tools delivered by the i-model Optimizer app to take a 3D i-model and from it create an **optimized i-model**. Optimized i-models have the file extension .OMIM and are designed to be opened on the iPad using Bentley Navigator for the iPad. As part of the optimization process you specify **points of interest** within the i-model from which the Bentley Navigator for the iPad user will view / rotate the optimized i-model.

If you are using the **viewing workflow**, then the original i-models from which you create optimized i-models can be stored on the file system or in ProjectWise.

If you are using the **annotation workflow**, the original i-models from which you create optimized i-models must be stored in ProjectWise. This has nothing to do with the optimization process; optimized i-models are created the same whether they are to be viewed or annotated. Instead it has to do with a final step of the annotation workflow. The annotation files returning from the iPad must be stored in the same datasource as the related original i-model(s).

Step 2: (Optional) Create Packages of Optimized i-models and Other Documents Bound for the iPad

In ProjectWise Explorer, you can use the tools delivered by the ProjectWise i-model Packager app to create a package of optimized i-models and other related documents. This package is referred to as the **packaging i-model** and has the file extension .PMIM. Packaging i-models are then transferred to the iPad where they are opened using ProjectWise Explorer for the iPad.

While the original intent of the packaging i-model was to transfer optimized i-models (.OMIM files) and the necessary related files to the iPad all in one package, you can add any ProjectWise documents to it. You could create a packaging i-model that contains just PDFs and no OMIM files, for example.

Also note that the use of a packaging i-model is not a strict requirement for getting optimized i-models (or any other documents) from the desktop to the iPad. ProjectWise Explorer for the iPad users who are able to connect directly to their ProjectWise datasources also have the option of opening their optimized i-models and/or other documents directly from the datasource, without requiring those documents to be put into a package first. Still, packages are useful for transferring several related files (which may exist in different folders) from ProjectWise to the iPad in a single container.

Step 3: Transfer Documents to the iPad

The way you get files from the desktop to the iPad depends on which of the Bentley mobile apps you have installed and which workflow you are using.

For example, if you only have Bentley Navigator for the iPad installed, then you will manually transfer your optimized i-models from the desktop to the iPad. Once you have the OMIM file on the iPad, you can open it for viewing in Bentley Navigator for the iPad.

If you also have ProjectWise Explorer for the iPad installed, then you can either directly connect to your datasource and open the documents you need (packaging i-model, optimized i-model, PDF, or whatever), or you can use the manual method of transferring files from the desktop to the iPad.

You can manually transfer files from the desktop to the iPad, or from the iPad to the desktop, using email, a cloud service (such as Dropbox), or iTunes. When manually transferring files that are stored in ProjectWise, you first need to use standard ProjectWise Explorer tools to get the files out of ProjectWise, such as Document > Export > Send to Folder or Document > Send To > Mail Recipient.

Direct connection from ProjectWise Explorer for the iPad to a ProjectWise datasource requires a ProjectWise Mobile Access Server. This mobile app is installed on a server and is configured by an administrator.

Step 4: View and Annotate Optimized i-models and Other Documents on the iPad

Optimized i-models are opened on the iPad using Bentley Navigator for the iPad and can be viewed with or without ProjectWise Explorer for the iPad being installed.

If ProjectWise Explorer for the iPad is also installed, you can:

- Connect to ProjectWise datasources
- Open packages created on the desktop in ProjectWise Explorer
- Open optimized i-models into Bentley Navigator for the iPad for viewing or mark up
- Open other documents into other apps for viewing or mark up
- View PDFs, Office documents, and various image formats directly in the app
- Create packages containing annotation files
- Check out, and check in documents
- Add new documents to ProjectWise
- Delete documents from ProjectWise

Packages created in ProjectWise Explorer for the iPad are referred to as **return** packaging i-models. Just like packaging i-models created in ProjectWise Explorer, they have the file extension .PMIM. The return packaging i-model will contain **annotation files**, which can include annotation overlays of optimized i-models (created in Bentley Navigator for the iPad and stored in AMIM files) and/or other annotated files such as PDFs, Office documents, or various image formats.

Step 5: Return and Unpack Annotation Packages in ProjectWise Explorer

If you have a direct connection to the datasource you can add a return packaging i-model to ProjectWise directly from ProjectWise Explorer for the iPad. If you do not have a direct connection, or simply if you prefer, you can manually transfer the package from the iPad to the desktop where it can then manually be imported into ProjectWise.

Once the return packaging i-model is stored in ProjectWise, any ProjectWise Explorer user who has the ProjectWise i-model Packager app installed can unpack it. If the return packaging i-model contains an AMIM file (which itself contains one or more annotation overlays of optimized i-models created in Bentley Navigator for the iPad), the AMIM file is converted to an .overlay.dgn file when unpacked.

To unpack AMIM files from the return packaging i-model, the return packaging i-model must be stored in the same datasource as the related original i-model that was optimized and later annotated. Unpacking an AMIM file also requires Bentley Navigator to be installed. To unpack other file types, no additional software is required.

Appendix: Bentley Mobility File Types

File Type	Extension	Description
i-model	.I.DGN	An i-model is a read-only, V8-format DGN file published from one or more original design files that contains both graphical and property data from the original file(s). The graphical information is converted to a more efficient representation in the i-model, and the property data is converted into a common form in the i-model that does not require access to the original project workspaces or connections to external project databases.
optimized i-model	.OMIM	An optimized i-model is a single file containing one or more user-defined views of a 3D i-model that can be viewed or marked up on the iPad using Bentley Navigator for the iPad.
packaging i-model	.PMIM	A packaging i-model is a container used to transfer ProjectWise documents to and from the iPad. Once created, you cannot add documents to or remove documents from the packaging i-model. The PMIM file created in ProjectWise Explorer (desktop) will typically contain OMIM files and/or other documents you want to view or mark up on the iPad. The PMIM file created in ProjectWise Explorer for the iPad will typically contain annotation files (mark ups) that you want to store back in ProjectWise. PMIM files are optional for transferring files from the desktop to the iPad, but they are required for transferring AMIM files from the iPad to the desktop.
annotation for optimized i-model	.AMIM	An annotation for optimized i-model file is a set of annotation overlays (mark ups) created in Bentley Navigator for the iPad for a particular optimized i-model. The AMIM file is converted to an overlay.dgn file when the PMIM containing the AMIM is unpacked in ProjectWise Explorer (desktop). The overlay.dgn file can then be opened in Bentley Navigator (desktop) as usual.