

Support Bulletin

User defined Coordinate Systems

GEOSPATIAL, March 2019

The following support bulletin explains

- *Define a coordinate system in Trimble Coordinate System Manager*
- *Export coordinate system from Trimble Coordinate System Manager to jxl*
- *Use your user defined coordinate system in Penmap*

Required versions:

Penmap for Windows 10.8.4.8154

Penmap for Android 10.8.5.949

Penmap Project Manager 10.8.3.960

Trimble Coordinate SystemManager 3.6.4.0

Define a new coordinate system with Trimble Coordinate System Manager	2
Install Coordinate System Manager via Trimble Installation Manager	2
Create a new coordinate system	4
Export coordinate System	5
Penmap Project Manager	7
Upload the user defined coordinate system via Penmap Project Manager to Trimble Connect	7
Project creation with user defined coordinate system	9
Penmap for Android	10
Open a project with a user defined coordinate system	10
Penmap user coordinate system definition is missing. Please check Geodata folder	10
Download user defined coordinate system from Trimble Connect	12
Penmap for Windows	13
Sync user defined coordinate system between Windows and Trimble Connect/Android via USB	13
Known issues	16
Not all necessary files for the coordinate system are synchronised	16

<https://geospatial.trimble.com>

www.trimble.com

User defined coordinate system in Penmap

Penmap uses the Trimble Geodetic Library (TGL). If the needed coordinate system is not available a new coordinate system can be build up via Trimble Coordinate System Manager.

If the coordinate system is in general use please send a request to update the TGL.

The form can be found here:

<https://docs.google.com/forms/d/e/1FAIpQLSc2oOwmGHIs-POBw1VCtvgDRAAaFcsUih2eF29KfGHISGisBA/viewform>

Define a new coordinate system with Trimble Coordinate System Manager

Coordinate System Manager is available for Microsoft Windows and in general installed with Trimble Business Center or Trimble Access.

It's also downloadable via Trimble Installation Manager at Penmap Project Manager or Penmap for Window area.

Install Coordinate System Manager via Trimble Installation Manager

Having a Penmap for Windows licence

1. Open Installation Manager.
2. "Check" Coordinate System Manager in the Penmap Office/Field area.
3. Install

Having no Penmap for Windows licence

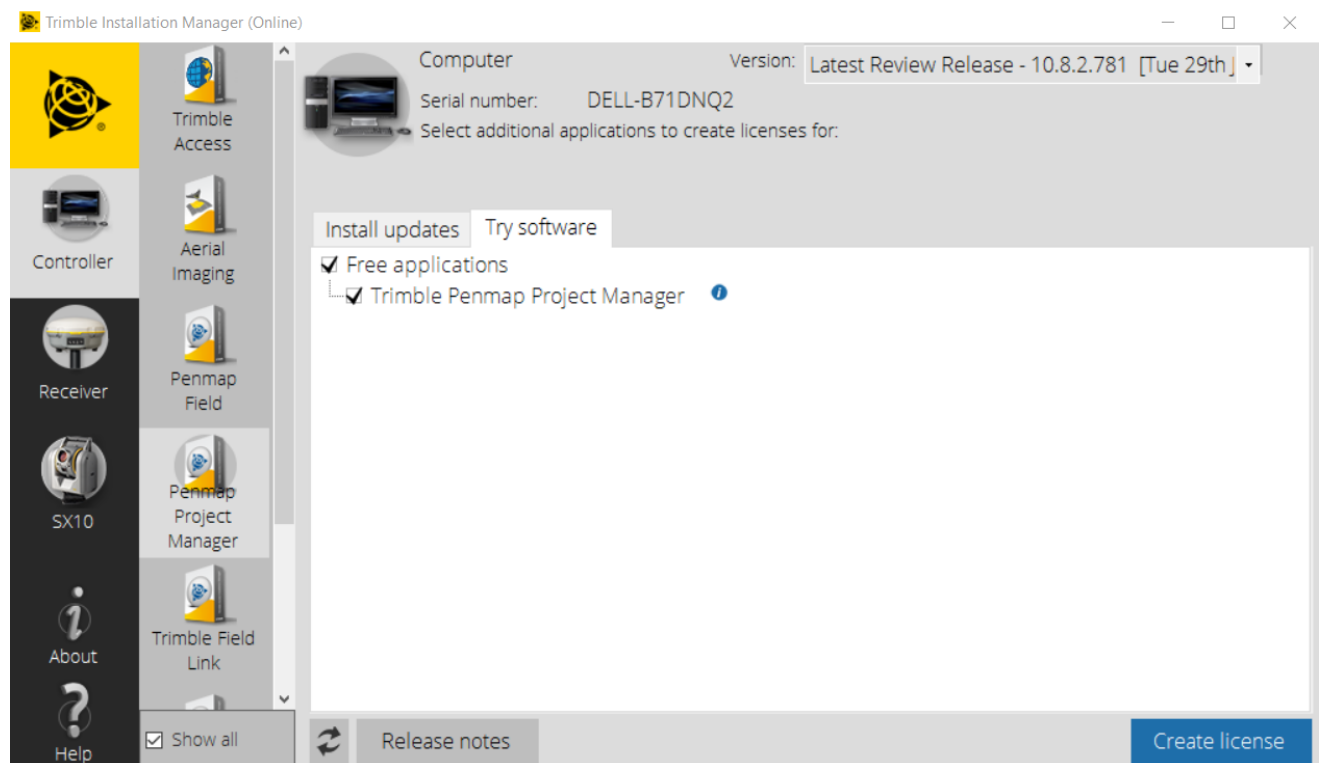
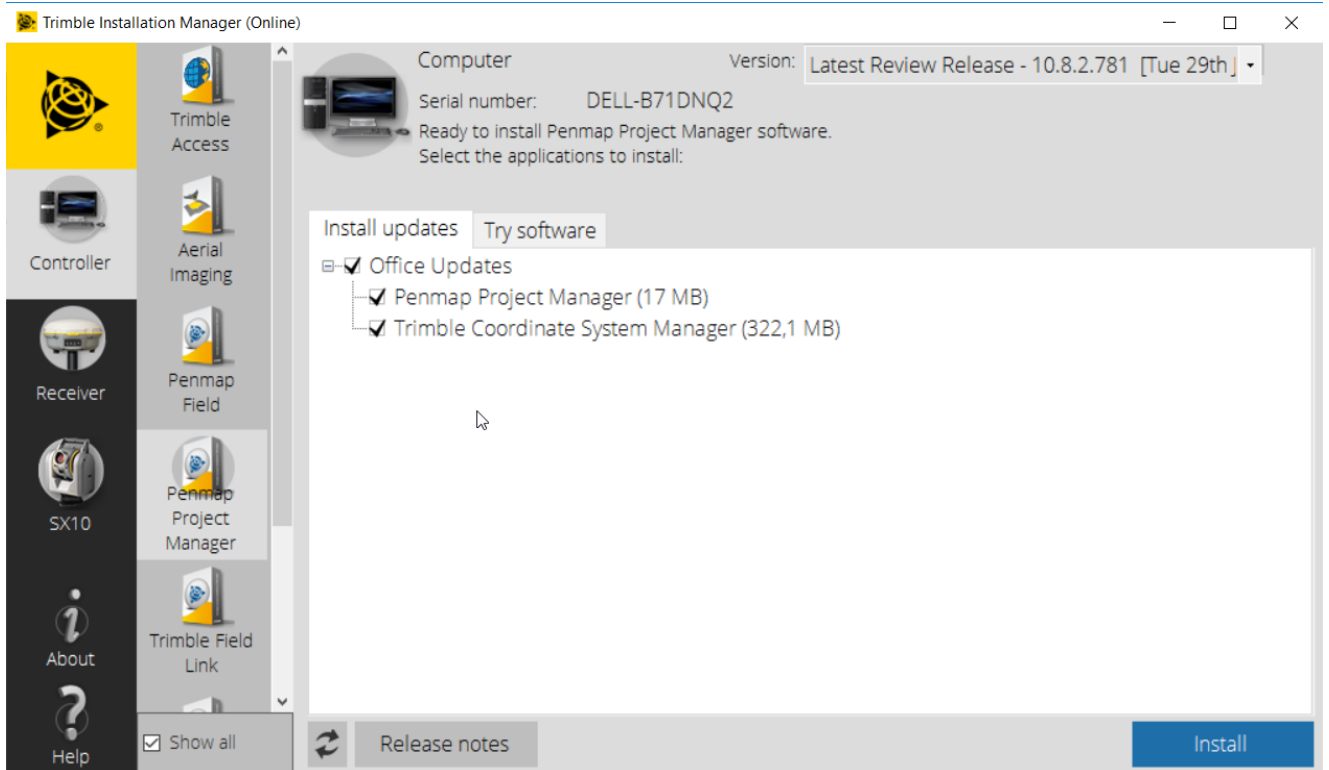
Trimble Installation Manager is available at <https://www.trimble.com/installationmanager/>

1. Download and install Trimble Installation Manager.
2. Start Installation Manager.
3. If there is no Penmap shown enable "show all".
4. Select Penmap Project Manager.
5. Switch to "Try Software" and press [Create license]
6. if this is finished you can install Penmap Project Manager and Trimble Coordinate System Manager

<https://geospatial.trimble.com>

www.trimble.com

© 2019, Trimble Inc. All rights reserved. Trimble, the Globe & Triangle logo, are trademarks of Trimble Inc., registered in the United States and in other countries. TMX-2050 is a trademark of Trimble Inc. All other trademarks are the property of their respective owners.



<https://geospatial.trimble.com>

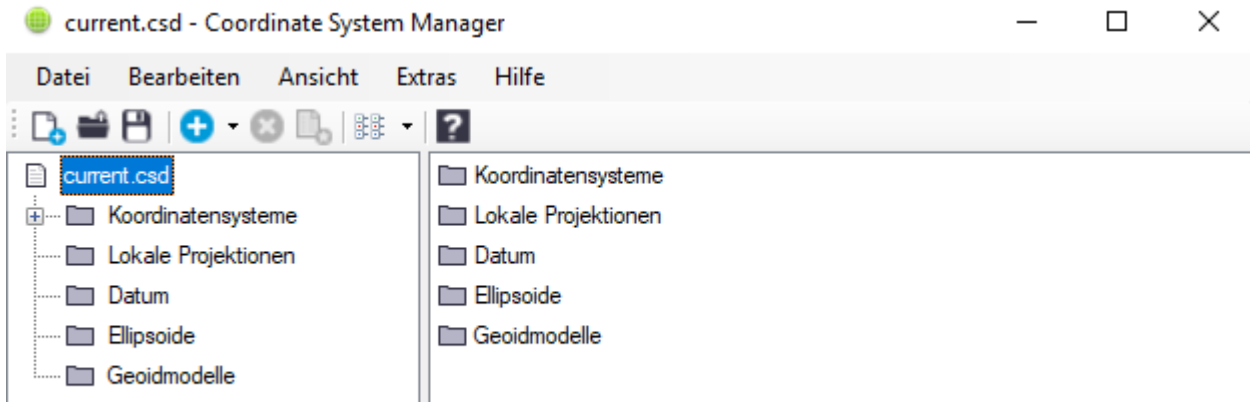
www.trimble.com

© 2019, Trimble Inc. All rights reserved. Trimble, the Globe & Triangle logo, are trademarks of Trimble Inc., registered in the United States and in other countries. TMX-2050 is a trademark of Trimble Inc. All other trademarks are the property of their respective owners.

Create a new coordinate system

A new coordinate system can be created via Trimble Coordinate System Manager

1. Start Coordinate System Manager
2. You have to define everything you need for your system
 - a. Geoid
 - b. Ellipsoid
 - c. Datum
 - d. Projection
 - e. Coordinate System



<https://geospatial.trimble.com>

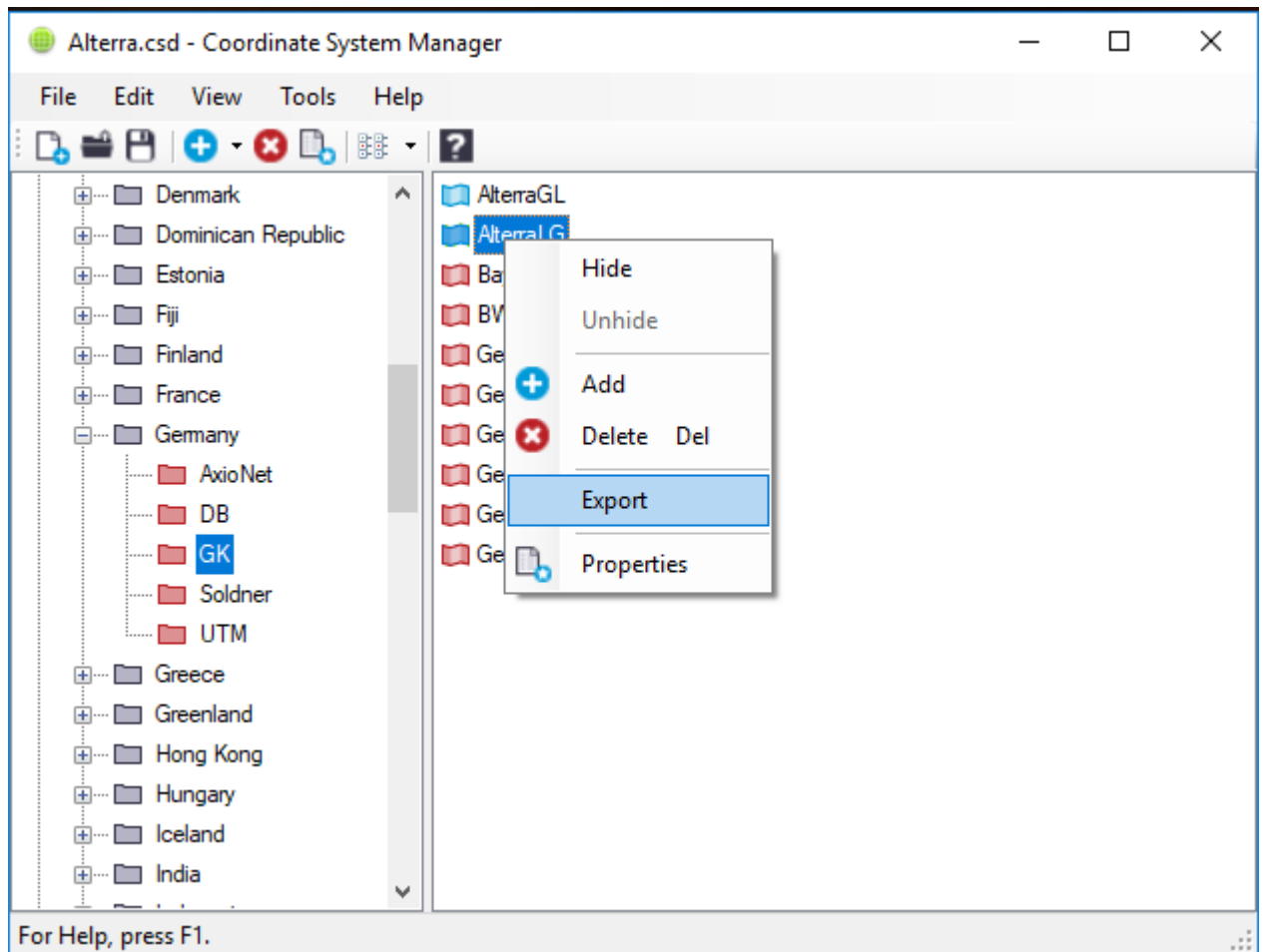
www.trimble.com

© 2019, Trimble Inc. All rights reserved. Trimble, the Globe & Triangle logo, are trademarks of Trimble Inc., registered in the United States and in other countries. TMX-2050 is a trademark of Trimble Inc. All other trademarks are the property of their respective owners.

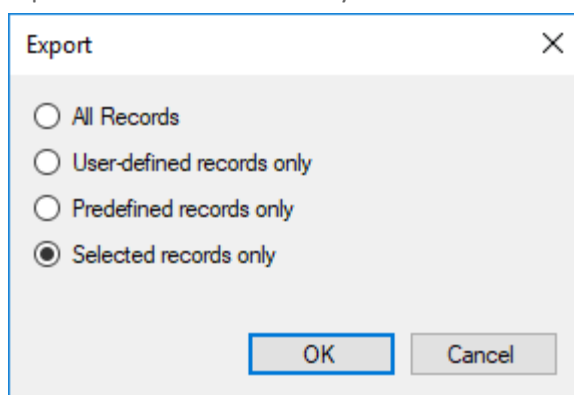
Export coordinate System

A defined coordinate system can be exported as a Trimble Field Software XML (*.JXL).

1. Select your coordinate system
2. Rightclick



3. Export "selected records only"



<https://geospatial.trimble.com>

www.trimble.com

© 2019, Trimble Inc. All rights reserved. Trimble, the Globe & Triangle logo, are trademarks of Trimble Inc., registered in the United States and in other countries. TMX-2050 is a trademark of Trimble Inc. All other trademarks are the property of their respective owners.

4. Save as "Trimble Field Software XML (*.JXL)" to your Geodata folder (C:\ProgramData\Trimble\GeoData)

Dateiname:	Germany_Allterra
Dateityp:	Trimble Field Software XML (*.JXL)
	Coordinate System Export Files (*.CSW)
	Trimble Field Software XML (*.JXL)
hier ausblende	All Files (*.*)

<https://geospatial.trimble.com>

www.trimble.com

© 2019, Trimble Inc. All rights reserved. Trimble, the Globe & Triangle logo, are trademarks of Trimble Inc., registered in the United States and in other countries. TMX-2050 is a trademark of Trimble Inc. All other trademarks are the property of their respective owners.

Penmap Project Manager

Penmap Project Manager (PPM) is a desktop application where you'll set up your Trimble Connect projects, add/remove users, create projects and templates and export the data collected in the field. The application is included with your Penmap for Android subscription.

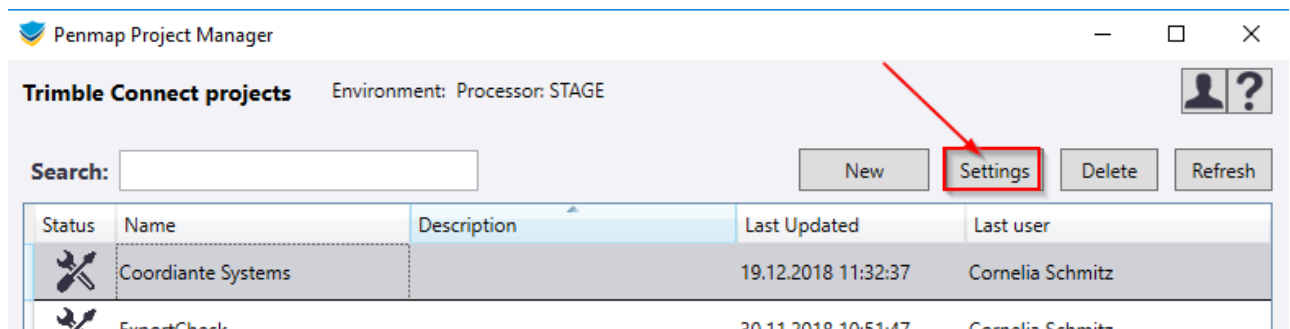
Penmap Project Manager works in conjunction with Trimble Connect, which stores all your settings and projects in the cloud.

To use the coordinate System in Penmap Project Manager the coordinate system needs to be on Trimble Connect.

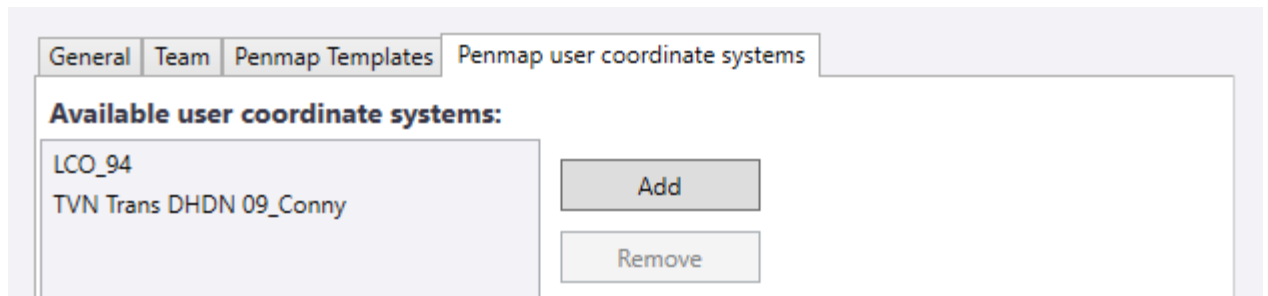
Upload the user defined coordinate system via Penmap Project Manager to Trimble Connect

The coordinate system can be uploaded to your Trimble Connect project with the following steps:

- 1) Start Penmap Project Manager
- 2) Pick the Trimble Connect project and go to [Settings]



- 3) Go to "Penmap user coordinate systems" and press [Add]



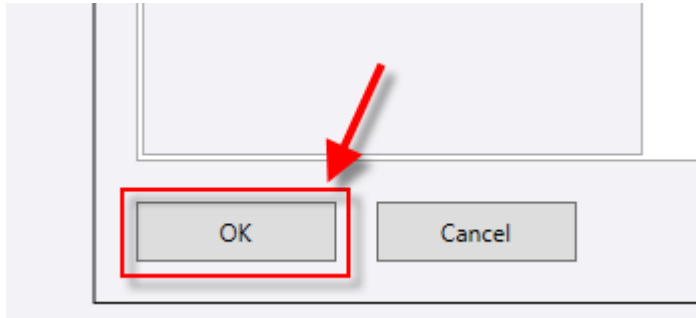
- 4) Pick the coordinate system from where you have saved it and open it

<https://geospatial.trimble.com>

www.trimble.com

© 2019, Trimble Inc. All rights reserved. Trimble, the Globe & Triangle logo, are trademarks of Trimble Inc., registered in the United States and in other countries. TMX-2050 is a trademark of Trimble Inc. All other trademarks are the property of their respective owners.








- 5) Go to the bottom of “Penmap user coordinate systems” and press [OK] to store all Trimble Connect project settings



Note: The user coordinate systems will be uploaded automatically to Trimble Connect.

The coordinate system is stored in Trimble Connect parallel to the Penmap folder

Trimble Connect™

Coordiante Systems	DATA	ACTIVITY	TODO	TEAM	SETTINGS
Explorer	+ Add  > PenmapUserCoordSystems				
▼  Coordiante Systems	<div><div>< Name</div><div>Size</div><div>Last modified by</div><div>Last Modified On</div><div>Tags</div></div>				
▶  Penmap	<div><div><input type="checkbox"/></div><div> TVN Trans DHDN 09_Conny.jxl</div><div>2.38 KB</div><div>Cornelia Schmitz</div><div>Dec 19 2018</div></div>				
 PenmapTemplates					
 PenmapUserCoordSystems	<div><div><input type="checkbox"/></div><div> Zone Slovakia JTSK03.jxl</div><div>2.41 KB</div><div>Cornelia Schmitz</div><div>Dec 19 2018</div></div>				

<https://geospatial.trimble.com>

www.trimble.com

© 2019, Trimble Inc. All rights reserved. Trimble, the Globe & Triangle logo, are trademarks of Trimble Inc., registered in the United States and in other countries. TMX-2050 is a trademark of Trimble Inc. All other trademarks are the property of their respective owners.

Project creation with user defined coordinate system

Create a new project with Penmap Project Manager. The dialog “Coordinate System” will now have “My Systems” on the top. There is the user defined coordinate system to pick.

The image shows two screenshots of the "Coordinate System" dialog box in Penmap Project Manager.

The top screenshot shows the "System:" dropdown menu open, displaying a list of coordinate systems. "My Systems" is selected and highlighted in blue. Other visible options include "Argentina/Campo Inchauspe" and "Argentina/BOSCAR07".

The bottom screenshot shows the full "Coordinate System" dialog box. The "System:" dropdown is set to "My Systems". Below it, the "Zone:" dropdown is set to "Germany|TVN Trans DHDN 09 Conny". The "Datum:" dropdown is set to "ascos Trans DHDN (Bessel)". The "Geoid:" dropdown is empty. At the bottom of the dialog, the text "CoreX: 2.3.0.6 DB:84" is displayed. The "Next" button is highlighted with a blue border, while "Previous" and "Cancel" are in grey.

Press [Next] to continue with Penmap project creation

<https://geospatial.trimble.com>

www.trimble.com

© 2019, Trimble Inc. All rights reserved. Trimble, the Globe & Triangle logo, are trademarks of Trimble Inc., registered in the United States and in other countries. TMX-2050 is a trademark of Trimble Inc. All other trademarks are the property of their respective owners.

Penmap for Android

Open a project with a user defined coordinate system

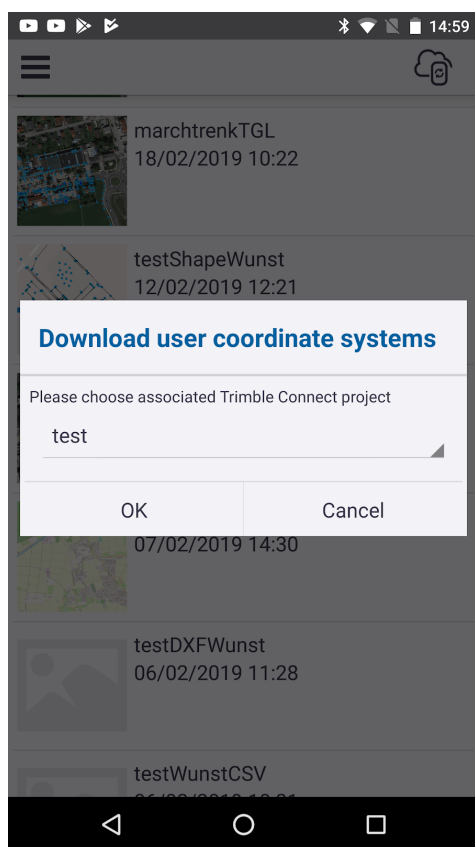
Open a project with user defined coordinate system will automatically try to Download the user defined coordinate system from Trimble Connect.

The coordinate system will be saved in the folder “Geodata” of internal device storage *e.g.* `/storage/emulated/0/Geodata`.

Penmap user coordinate system definition is missing. Please check Geodata folder

If the used coordinate system is not available on the local device (*e.g.* `/storage/emulated/0/Geodata`) and the current Penmap project is not stored on Trimble Connect, Penmap will download all available user coordinate systems from a Trimble Connect project.

You must select the Trimble Connect project if more than one Trimble Connect project exists on Trimble Connect.



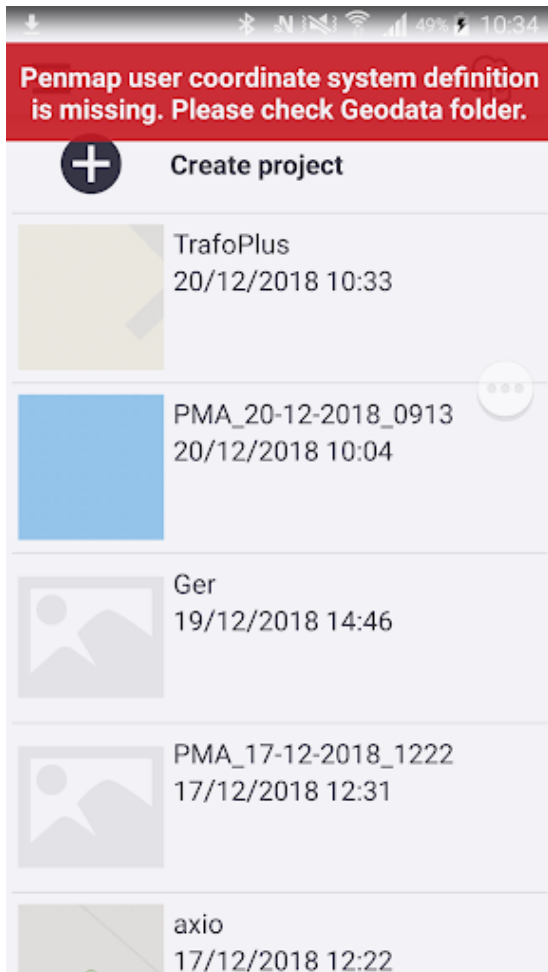
All coordinate systems will be saved in folder “Geodata” of internal device storage *e.g.* `/storage/emulated/0/Geodata`.

<https://geospatial.trimble.com>

www.trimble.com

© 2019, Trimble Inc. All rights reserved. Trimble, the Globe & Triangle logo, are trademarks of Trimble Inc., registered in the United States and in other countries. TMX-2050 is a trademark of Trimble Inc. All other trademarks are the property of their respective owners.

If the coordinate system is not available on Trimble connect or there is no internet connection the message “Penmap user coordinate system definition is missing. Please check Geodata folder”



<https://geospatial.trimble.com>

www.trimble.com

© 2019, Trimble Inc. All rights reserved. Trimble, the Globe & Triangle logo, are trademarks of Trimble Inc., registered in the United States and in other countries. TMX-2050 is a trademark of Trimble Inc. All other trademarks are the property of their respective owners.

Download user defined coordinate system from Trimble Connect

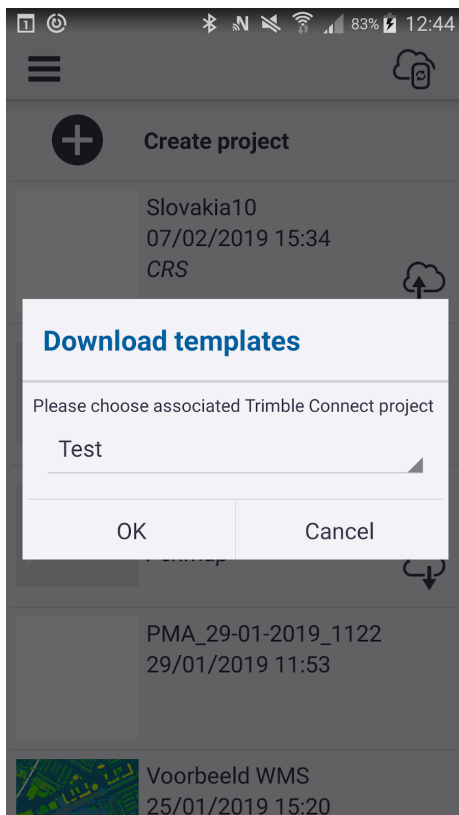
Penmap Android provides the opportunity to download coordinate systems from Trimble Connect.

A user defined coordinate system can be uploaded via Penmap Project Manager, Penmap for Windows or manually over Trimble Connect website.

Download of coordinate system is possible via “Download templates”.

1. Start the download of templates
2. Selected Trimble Connect project

After that all templates and user defined coordinate systems from the selected Trimble Connect project will be downloaded directly to “Geodata” folder of the device.



<https://geospatial.trimble.com>

www.trimble.com

© 2019, Trimble Inc. All rights reserved. Trimble, the Globe & Triangle logo, are trademarks of Trimble Inc., registered in the United States and in other countries. TMX-2050 is a trademark of Trimble Inc. All other trademarks are the property of their respective owners.

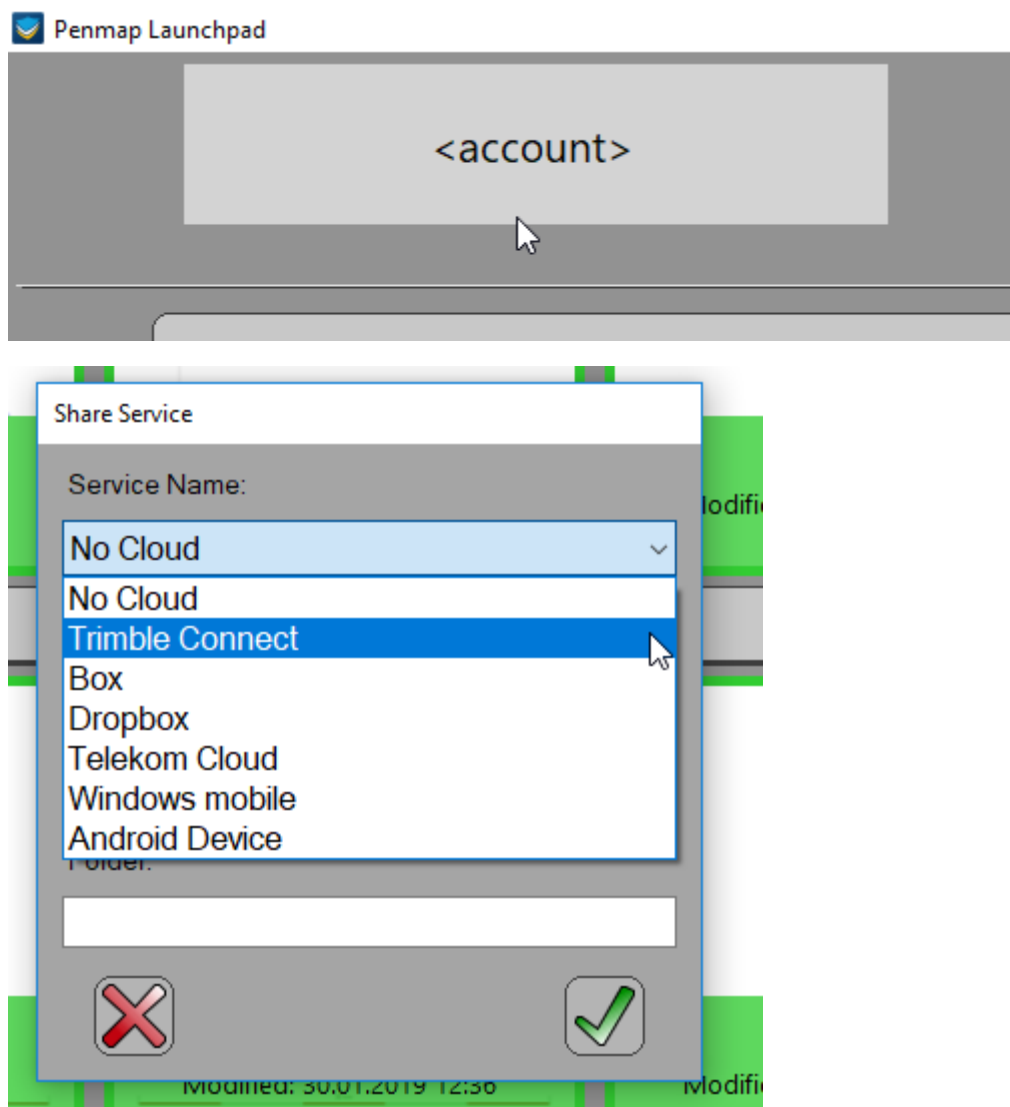
Penmap for Windows

In Penmap for Windows it's possible to synchronize user defined coordinate systems via Trimble Connect or USB to/from Android device.

Sync user defined coordinate system between Windows and Trimble Connect/Android via USB

To upload a system just copy your coordinate system to *C:\ProgramData\Trimble\GeoData* - the jxl-file and all needed files like geoid (ggf), grid files (sgf) and so on.

Set your Trimble Connect account or connect to your Android device via USB in the upper left corner.

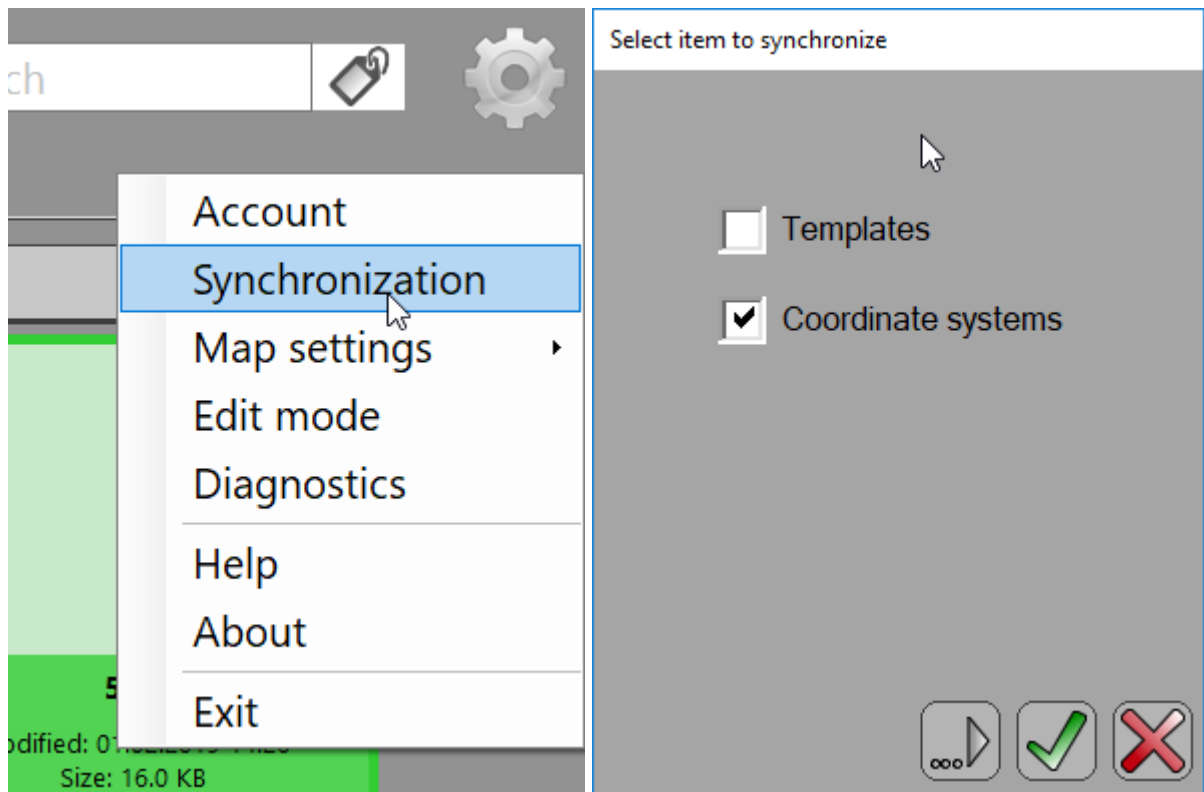


Open the Synchronisation in the upper right corner at the gear button

<https://geospatial.trimble.com>

www.trimble.com

© 2019, Trimble Inc. All rights reserved. Trimble, the Globe & Triangle logo, are trademarks of Trimble Inc., registered in the United States and in other countries. TMX-2050 is a trademark of Trimble Inc. All other trademarks are the property of their respective owners.



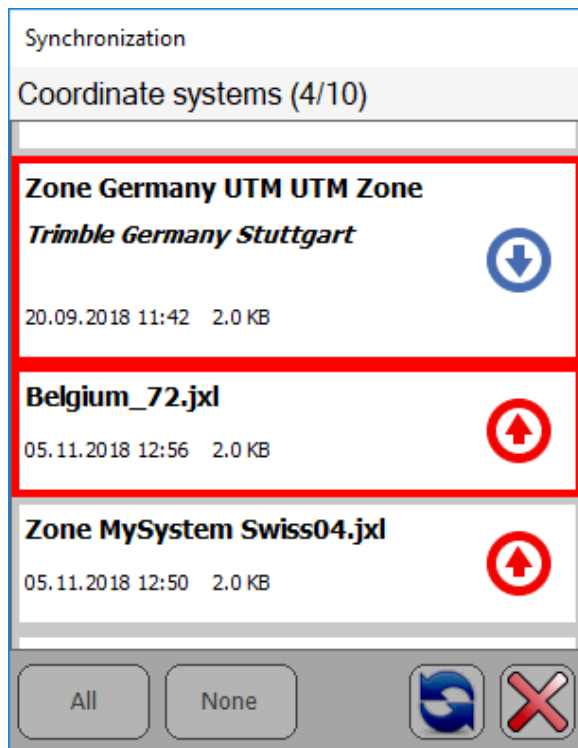
1. Select coordinate system
2. press next

<https://geospatial.trimble.com>

www.trimble.com

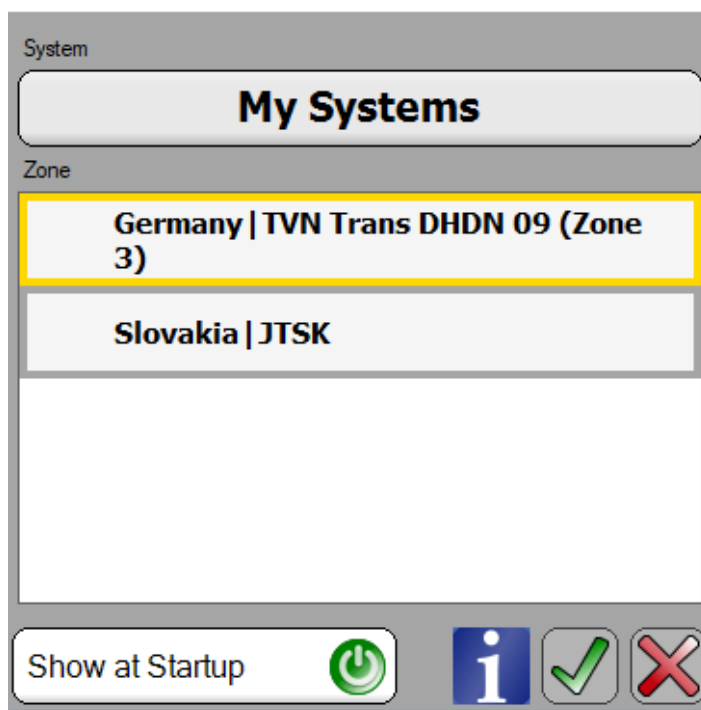
© 2019, Trimble Inc. All rights reserved. Trimble, the Globe & Triangle logo, are trademarks of Trimble Inc., registered in the United States and in other countries. TMX-2050 is a trademark of Trimble Inc. All other trademarks are the property of their respective owners.

3. Select/deselect the system via click to up-/download



4. Press the arrow button to synchronize the systems
5. To create a project, from a downloaded system just pick it from "My Systems" at the top

Coordinatesystem



<https://geospatial.trimble.com>

www.trimble.com

© 2019, Trimble Inc. All rights reserved. Trimble, the Globe & Triangle logo, are trademarks of Trimble Inc., registered in the United States and in other countries. TMX-2050 is a trademark of Trimble Inc. All other trademarks are the property of their respective owners.

Known issues

Not all necessary files for the coordinate system are synchronised

Only next files are synchronizable in the moment:

- geoid files (*.ggf)
The name of the geoid is saved in the jxl <GeoidName>, so the matching file is <GeoidName>.ggf.
- shift grid file (*.sgf)
The name of the shift grid file is saved in the jxl <ShiftGridFileName>, so the matching file is <ShiftGridFileName>.sgf.
- projection grid file (*.png)
The name of the projection grid file is saved in the jxl <ProjectionGridFile>, so the matching file is <ProjectionGridFile>.png.
- snake grid file (*.dat)
The name of the snake grid file is saved in the jxl <SnakeGridParameterFile>, so the matching file is <SnakeGridParameterFile>.dat.

Important notes:

- *Names of shift grid, projection grid and snake grid files will be stored in Jxl-files under XML block "Projection".*
- *Grid names which has next syntax e.g. like "EGM96 (Global)" or "Belgium (2005)" are Trimble known grid files and will be automatic found and can be directly get from Trimble servers.*

Using files with different names needs to copy them manually to the Geodata folder on the device. On Android this is e.g. `/storage/emulated/0/Geodata`; on Windows `C:\ProgramData\Trimble\GeoData`

<https://geospatial.trimble.com>

www.trimble.com

© 2019, Trimble Inc. All rights reserved. Trimble, the Globe & Triangle logo, are trademarks of Trimble Inc., registered in the United States and in other countries. TMX-2050 is a trademark of Trimble Inc. All other trademarks are the property of their respective owners.