PACE GUI Guide v0.2.0

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Downloading PACE GUI

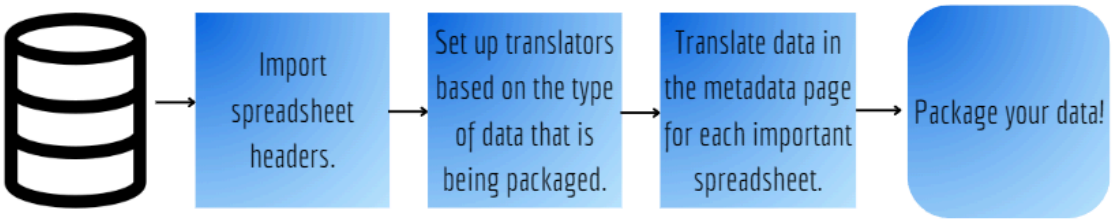
Find the latest release here. This is also the link for the PACE command line interface. Anything containing “gui” in the file name will download the PACE user interface with the other parts of the name indicating the version, the operating system, and, in the case of macOS, the type of CPU that the specific download is intended for. Below are quick links for downloading version 0.2.0 (the most recent release) on a variety of operating systems. Click a link below to download the version that suits your computer.

Windows	Mac (m1/2/3)	Mac (Intel)	Linux (deb)	Linux (rpm)

For a video guide of PACE, go to the following link.

PACE GUI Overview

PACE is the NCEI Passive Acoustic Data Archive team's tool for data providers to prepare and package multiple passive acoustic datasets. PACE reads in metadata spreadsheets as input metadata to help create the standardized data packages outputted by PassivePacker. The spreadsheets are mapped to the needed metadata fields using a Translator.

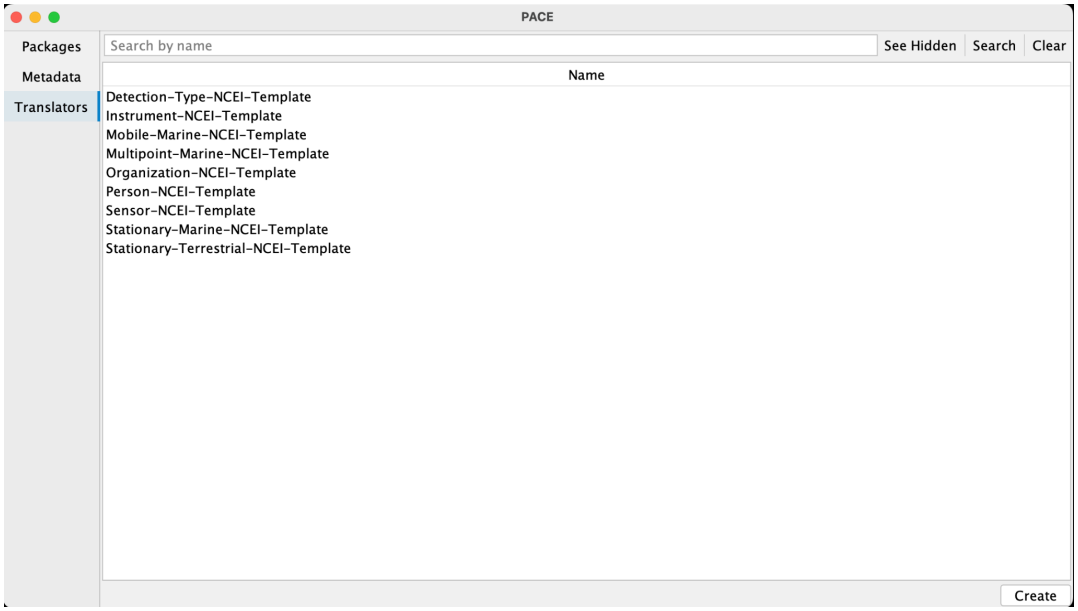


The PACE Graphical User Interface provides this functionality visually and provides users with guidance along the way as errors pop up.

GUI Layout

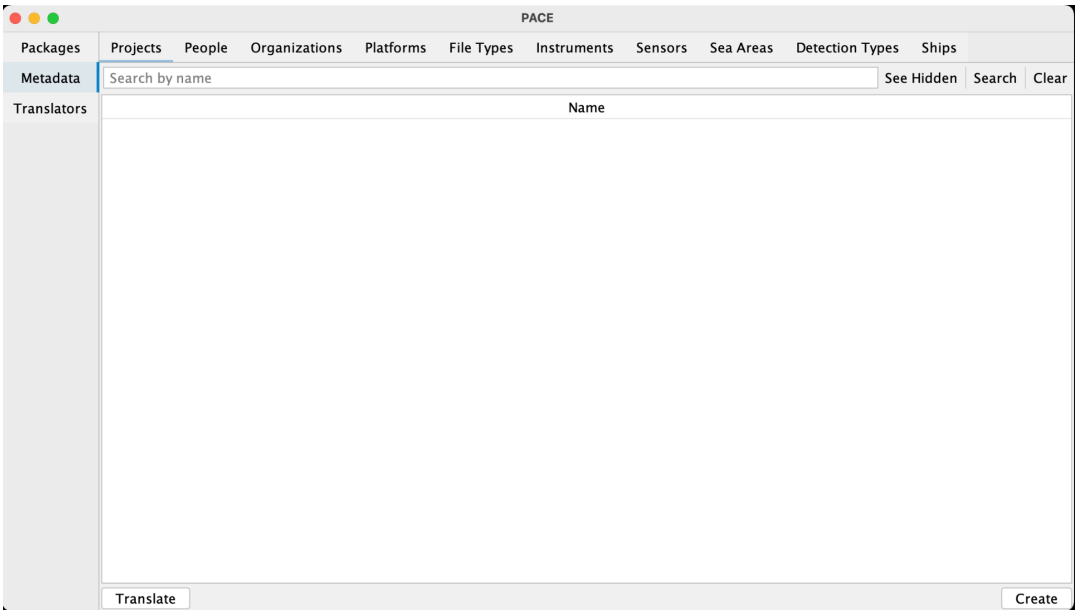
The PACE GUI has three main tabs: Translators, Metadata, and Packages. The standard workflow, as highlighted above, is to create a translator in the translators tab by importing one of your spreadsheets, then either creating a translator for your metadata fields, creating the metadata manually, or using the metadata that loads in the metadata tab, and finally using the packages tab to translate in your packages and then create output packages.

Translators Tab



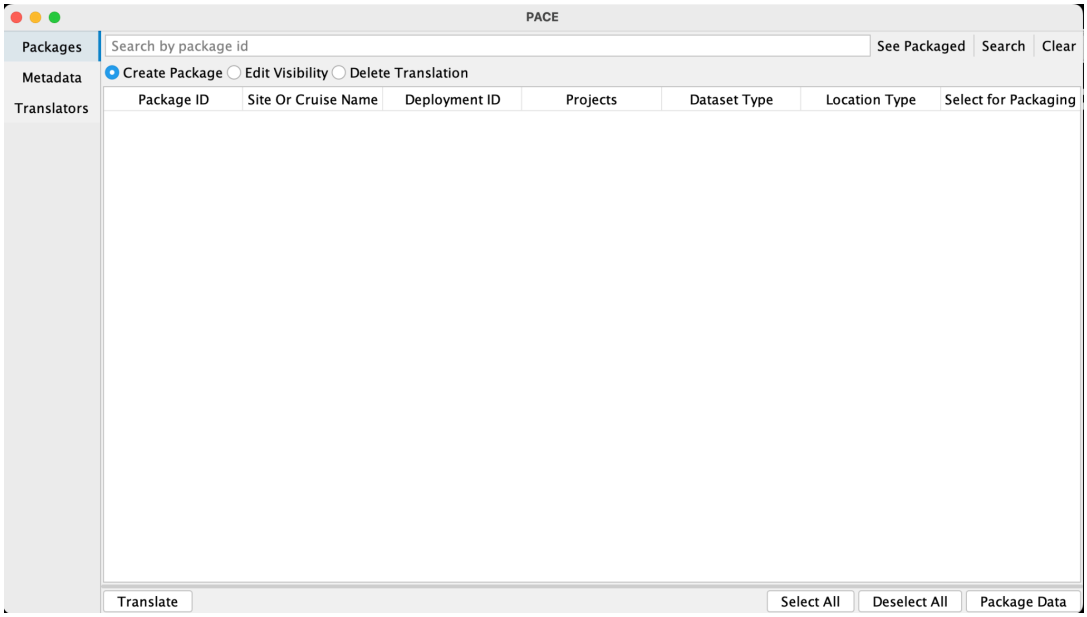
Within the translators tab, you can create new translators, edit a translator (by double-clicking on its name), and search for a specific translator name.

Metadata Tab



In the metadata tab, you can translate in new metadata, create metadata manually, and view existing metadata by clicking through the tabs at the top of the page.

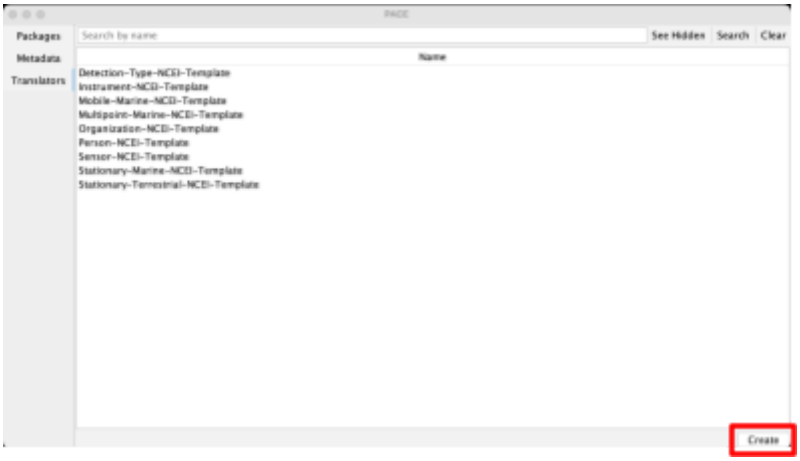
Packages Tab



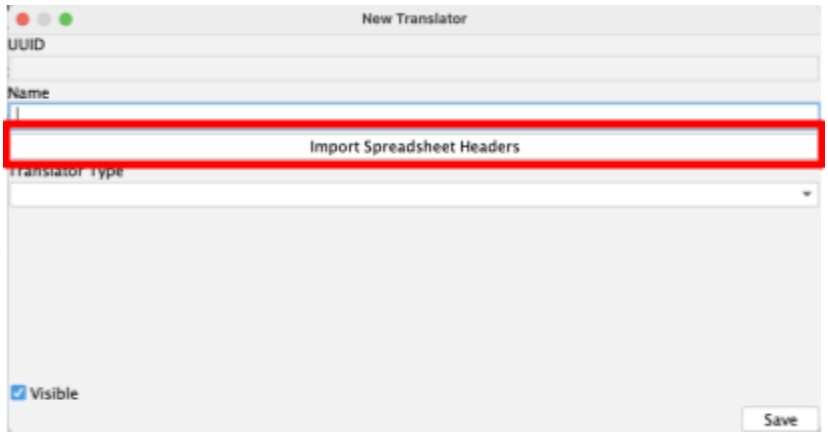
The packages tab provides a variety of functionality which you can toggle between by selecting the buttons at the top labeled Create Package, Edit Visibility, and Delete Translation. You can translate in your spreadsheets, change the visibility, delete translations, package data, and search for translations.

Translators

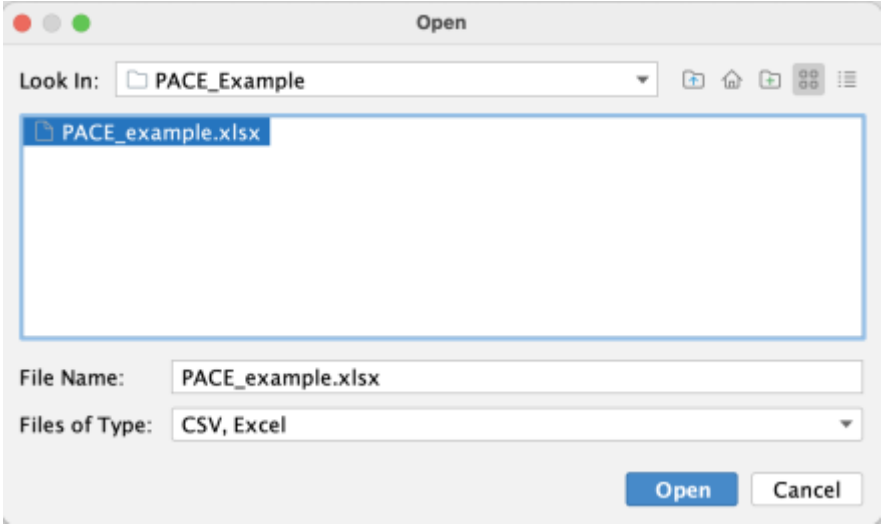
Translators allow you to map the headers of your spreadsheet to output fields in a standardized format. To start making a translator, click on the “Translators” tab and then click the create button.



After clicking create, enter a translator name, select the relevant translator type, and then click Import Spreadsheet Headers



This will display a file navigator. Navigate to the relevant file location in your computer’s directory to select the spreadsheet (.csv or .xlsx file) you would like to select.



Once you have imported the spreadsheet, the headers will now populate the dropdown menus for field mapping. At this point, I suggest expanding the translator building screen. One way to do this on a mac is to double click the words “New Translator” at the top of the window, or anywhere else on the top bar.

Creating Package Translators

Once you have selected to make a package type translator, a variety of tabs will pop up in the PACE translator builder. These will include Package Type, Package, File Paths, Contacts, Calibration, and Location. In addition to these tabs, more tabs will pop up which are specific to the package type once that field has been filled. Go through the fields in the translator builder and fill in all fields which have matches in your spreadsheet. Once you have filled out all of the data your spreadsheet is able to provide, hit save and you should see the new translator’s name appear in the translators tab.

Creating Metadata Translators

Once you have selected to make a metadata type translator, there will only be one form tab to fill out (unless you are creating a sensor translator, in which case the sensor type is in a separate tab). Provide as much information as possible for the data relevant to metadata pieces in your package. Once you have filled it out, hit save and you should see the new translator's name appear in the translators tab.

Translator Tips & Tricks

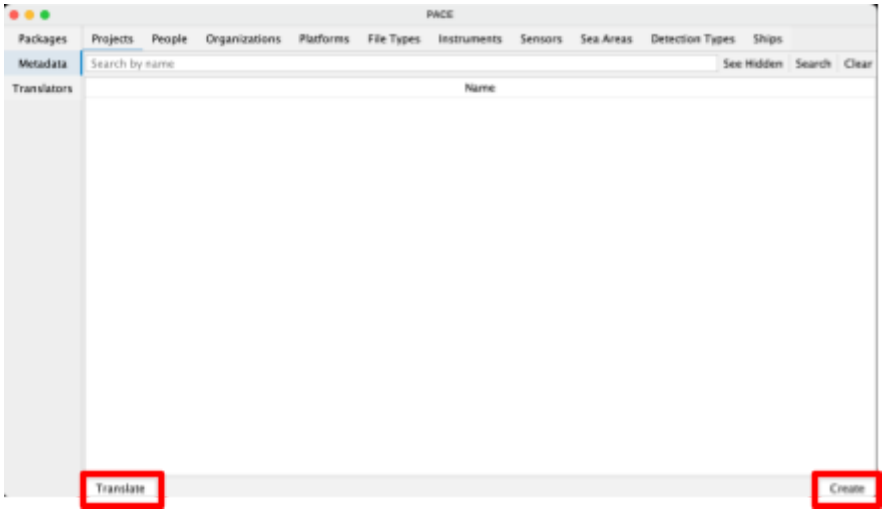
One way of speeding up the translator-building process is to use keyboard shortcuts. If you start typing out one of the header names you have imported, you will find that the field populates, without having to click in and scroll through the header options. If you get close to the correct header in alphabetical order but not quite the right header, you can use the arrow keys to navigate to it. If you mistype, take a second or two and start typing the header you're looking for again, from the start of the word/phrase. Then, when you're ready to fill in the next field, the tab button will bring you directly to it.

Additional Functions

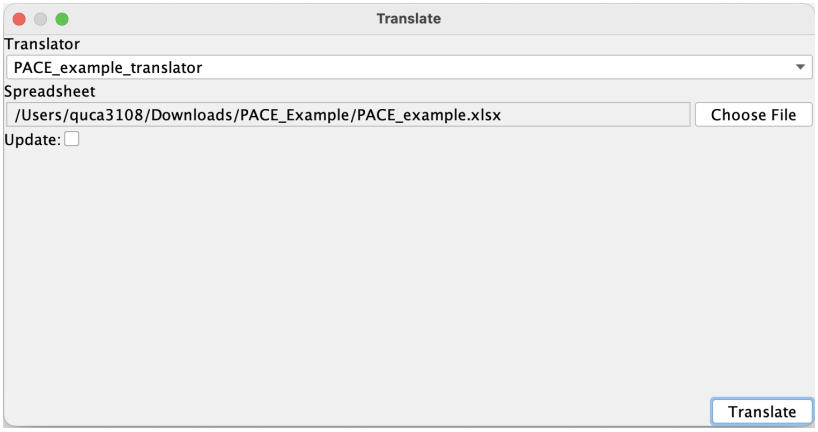
The translators page allows for some additional functionality in addition to creating translators. In order to edit a translator, all you need to do is double click on the name of the translator you would like to change. You may need to re-import the spreadsheet you were using if the header you would like to map was not mapped anywhere in the translator initially. In addition, after double-clicking the name of a translator, you will see buttons to delete and make a copy of the translator. Simply click the respective button to perform that action.

Metadata

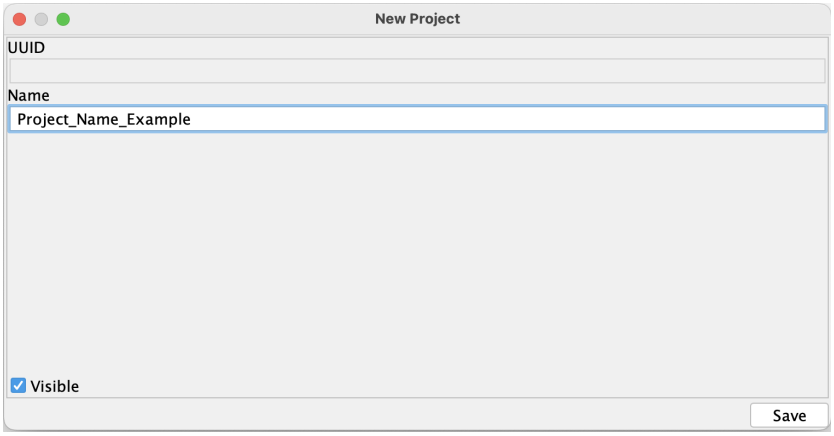
The metadata tab holds all of the relevant metadata objects for translation, maintaining naming consistency across your packages. Before adding in new metadata, check that there is not a matching metadata object already uploaded. After checking that, there are two ways to get your metadata loaded into PACE: the translate button and the create button.



After clicking Translate, choose the relevant translator and the spreadsheet to import from, then click Save to load in the metadata. In the case of the Create button, a short form will pop up for filling out the information of a single metadata object. Provide as much information as possible and then click Save.



Example Translate Screen



Example Create Screen

Metadata Exceptions

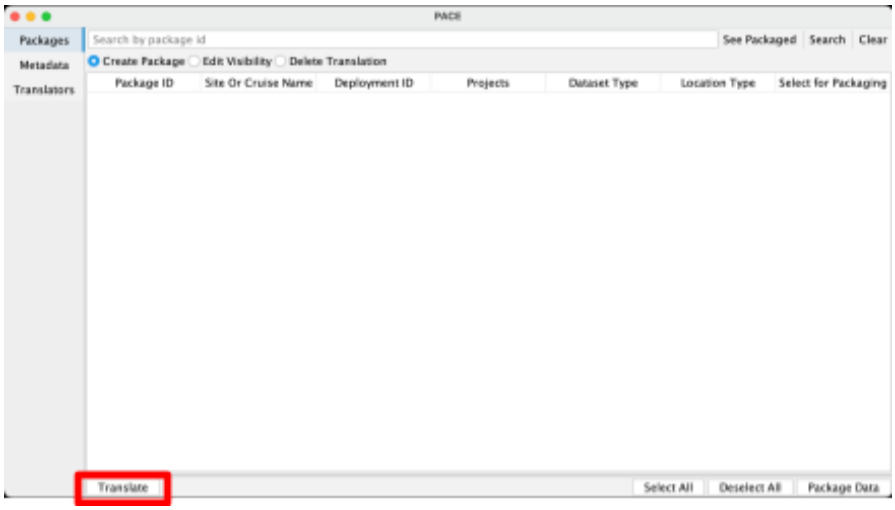
There are a few exceptions to the metadata structure described above. The first of these exceptions is default metadata. In the case of people, organizations, file types, instruments, and sea areas, there are some metadata objects that come loaded in upon install to maintain consistency across as many datasets as possible. In addition to this, sea areas prevent creation of new metadata objects to ensure the new package objects are consistent with historical metadata that has already been stored. Finally, instruments depend on file types. This means that if you attempt to make an instrument with a file type that has not yet been added to the file types repository, it will cause an error. Thus, in your workflow, you should first translate in/create file type metadata objects before adding in instrument objects.

Packaging

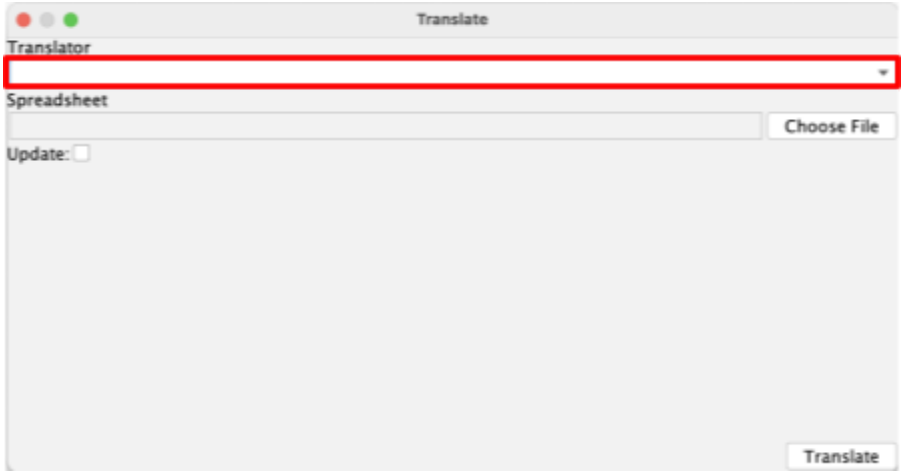
The packaging tab provides the user the ability to apply translators to your spreadsheets and package the new metadata files in with the relevant audio files.

Using Package Translators

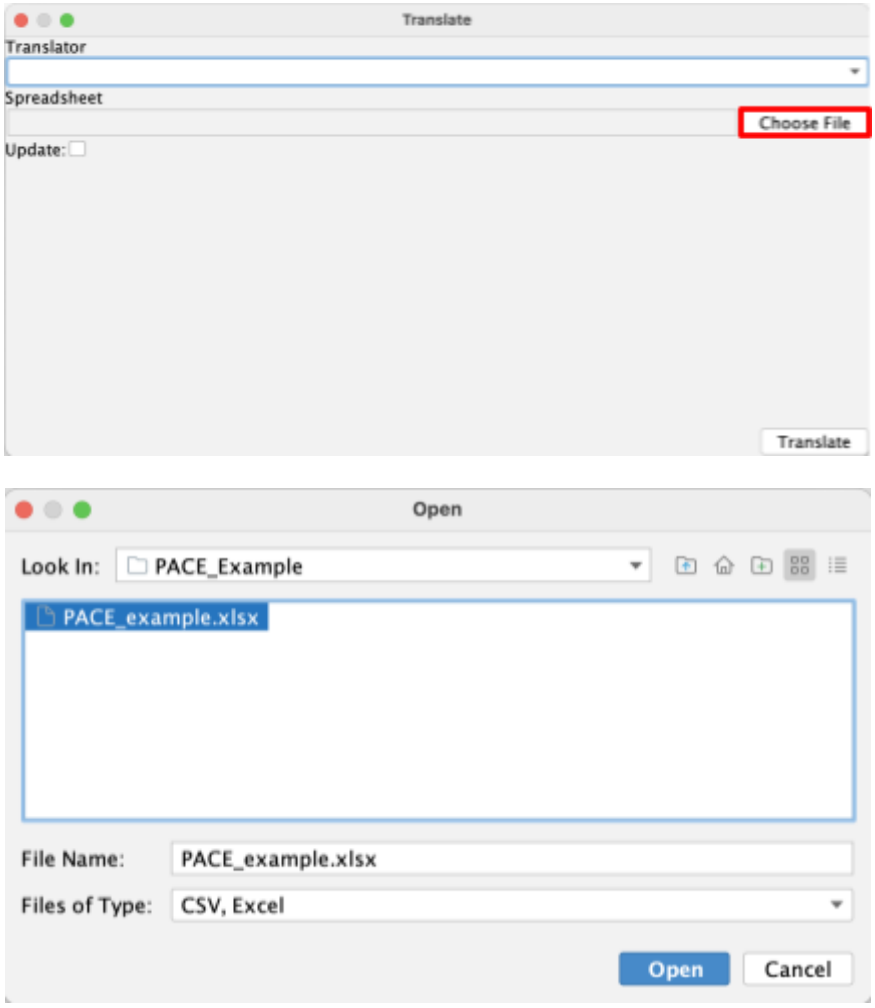
To use a package translator, click the Translate button in the bottom left of the window.



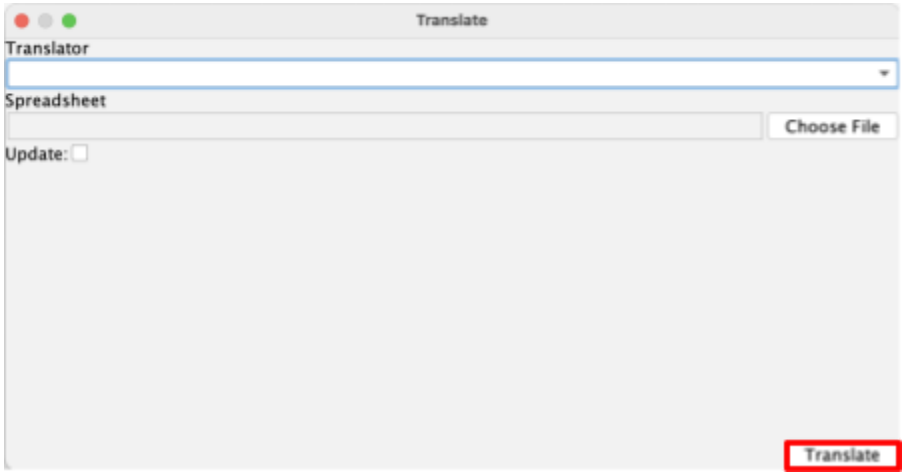
Then click the dropdown under the word Translator to select the translator you would like to use.



Then, use the Choose File button to pick the spreadsheet to translate.

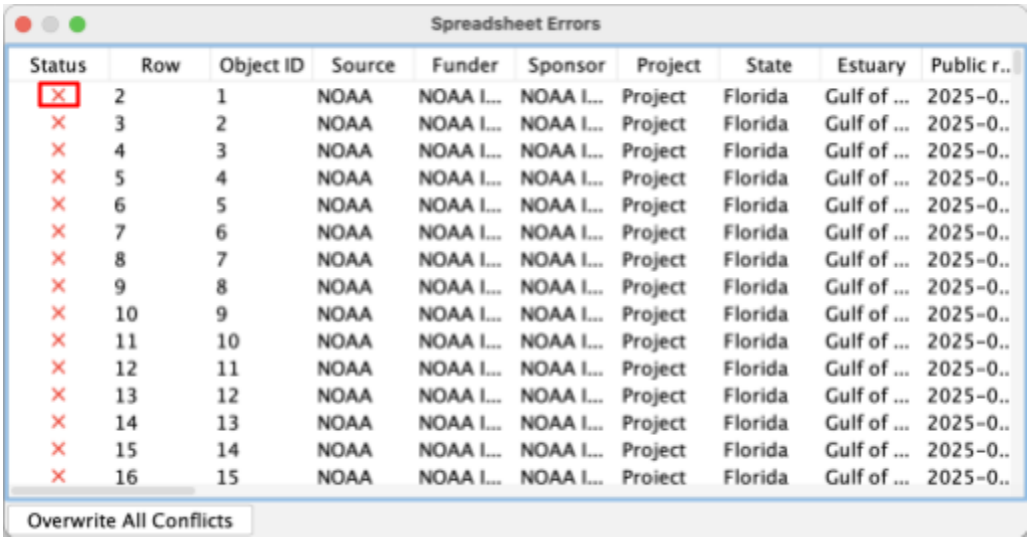


After choosing a spreadsheet file, click Translate, and you should see all successful translations populate into the Packages tab.



Reading Error Outputs

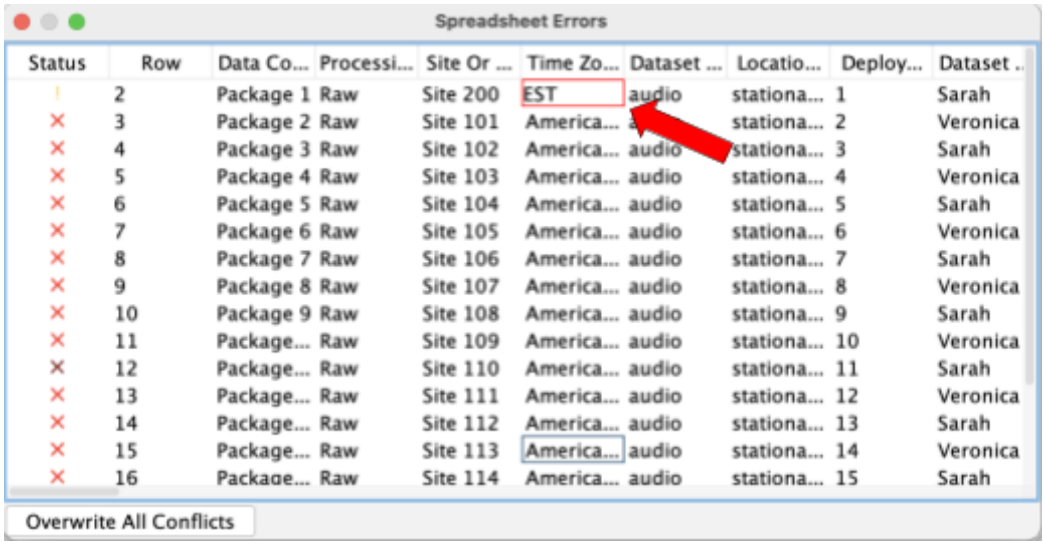
When a translation fails, typically an error spreadsheet will pop up, indicating where there are errors in the translation. If the status on the left shows a red “X” you can click the “X” in order to get useful information about what is the cause of the error.



Status	Row	Object ID	Source	Funder	Sponsor	Project	State	Estuary	Public r..
✕	2	1	NOAA	NOAA I...	NOAA I...	Project	Florida	Gulf of ...	2025-0..
✕	3	2	NOAA	NOAA I...	NOAA I...	Project	Florida	Gulf of ...	2025-0..
✕	4	3	NOAA	NOAA I...	NOAA I...	Project	Florida	Gulf of ...	2025-0..
✕	5	4	NOAA	NOAA I...	NOAA I...	Project	Florida	Gulf of ...	2025-0..
✕	6	5	NOAA	NOAA I...	NOAA I...	Project	Florida	Gulf of ...	2025-0..
✕	7	6	NOAA	NOAA I...	NOAA I...	Project	Florida	Gulf of ...	2025-0..
✕	8	7	NOAA	NOAA I...	NOAA I...	Project	Florida	Gulf of ...	2025-0..
✕	9	8	NOAA	NOAA I...	NOAA I...	Project	Florida	Gulf of ...	2025-0..
✕	10	9	NOAA	NOAA I...	NOAA I...	Project	Florida	Gulf of ...	2025-0..
✕	11	10	NOAA	NOAA I...	NOAA I...	Project	Florida	Gulf of ...	2025-0..
✕	12	11	NOAA	NOAA I...	NOAA I...	Project	Florida	Gulf of ...	2025-0..
✕	13	12	NOAA	NOAA I...	NOAA I...	Project	Florida	Gulf of ...	2025-0..
✕	14	13	NOAA	NOAA I...	NOAA I...	Project	Florida	Gulf of ...	2025-0..
✕	15	14	NOAA	NOAA I...	NOAA I...	Project	Florida	Gulf of ...	2025-0..
✕	16	15	NOAA	NOAA I...	NOAA I...	Project	Florida	Gulf of ...	2025-0..

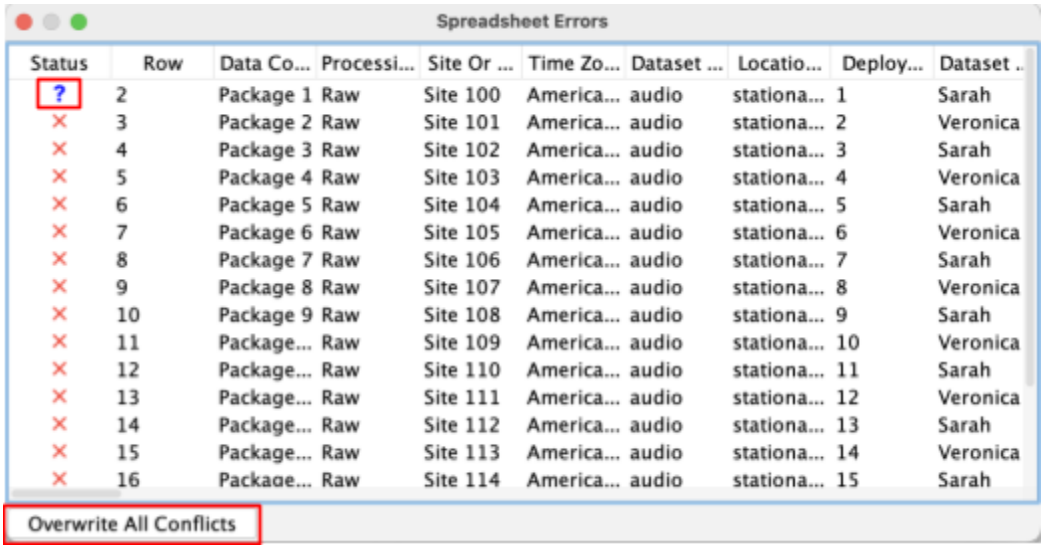
Overwrite All Conflicts

In other cases, you may see a yellow “!” in the status column. In order to get more information, scroll to the right to find where a field is outlined in a red box. Click this red box to get more information.



Status	Row	Data Co...	Processi...	Site Or ...	Time Zo...	Dataset ...	Locatio...	Deploy...	Dataset ..
!	2	Package 1	Raw	Site 200	EST	audio	stationa...	1	Sarah
✕	3	Package 2	Raw	Site 101	America...	audio	stationa...	2	Veronica
✕	4	Package 3	Raw	Site 102	America...	audio	stationa...	3	Sarah
✕	5	Package 4	Raw	Site 103	America...	audio	stationa...	4	Veronica
✕	6	Package 5	Raw	Site 104	America...	audio	stationa...	5	Sarah
✕	7	Package 6	Raw	Site 105	America...	audio	stationa...	6	Veronica
✕	8	Package 7	Raw	Site 106	America...	audio	stationa...	7	Sarah
✕	9	Package 8	Raw	Site 107	America...	audio	stationa...	8	Veronica
✕	10	Package 9	Raw	Site 108	America...	audio	stationa...	9	Sarah
✕	11	Package...	Raw	Site 109	America...	audio	stationa...	10	Veronica
✕	12	Package...	Raw	Site 110	America...	audio	stationa...	11	Sarah
✕	13	Package...	Raw	Site 111	America...	audio	stationa...	12	Veronica
✕	14	Package...	Raw	Site 112	America...	audio	stationa...	13	Sarah
✕	15	Package...	Raw	Site 113	America...	audio	stationa...	14	Veronica
✕	16	Package...	Raw	Site 114	America...	audio	stationa...	15	Sarah

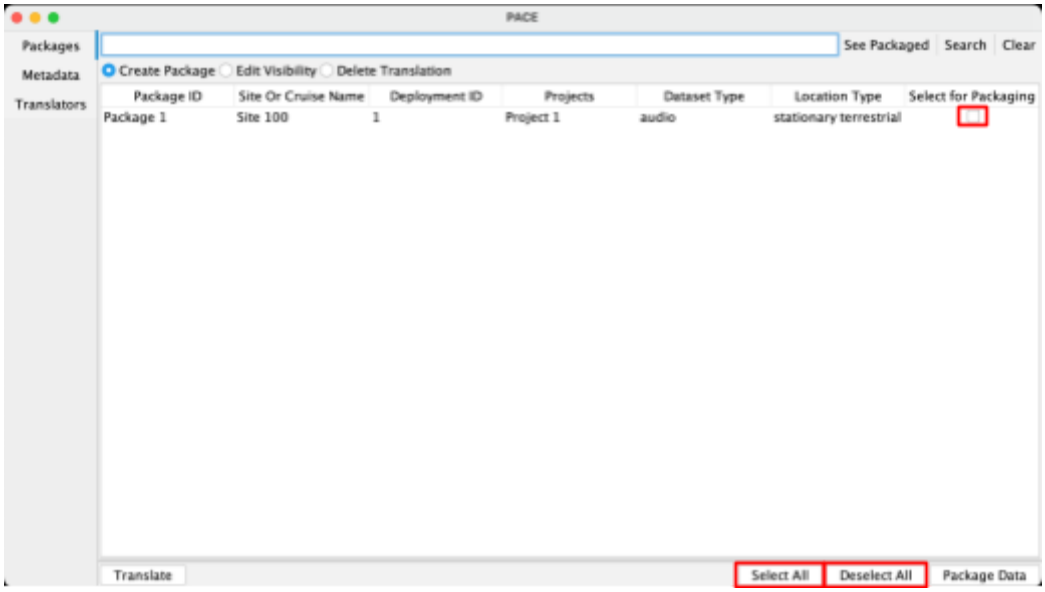
If you notice that a package you have successfully uploaded has a mistake in one of its fields, you can go back into the spreadsheet, make the necessary change, then re-translate the package into PACE. Because the package ID will already exist within PACE, a blue "?" will appear in the error spreadsheet, giving the user the opportunity to either overwrite the package or ignore it. You can either select the "Overwrite All Conflics" button in the bottom left to overwrite all conflicts, or you can click on an individual "?" to decide one-by-one.



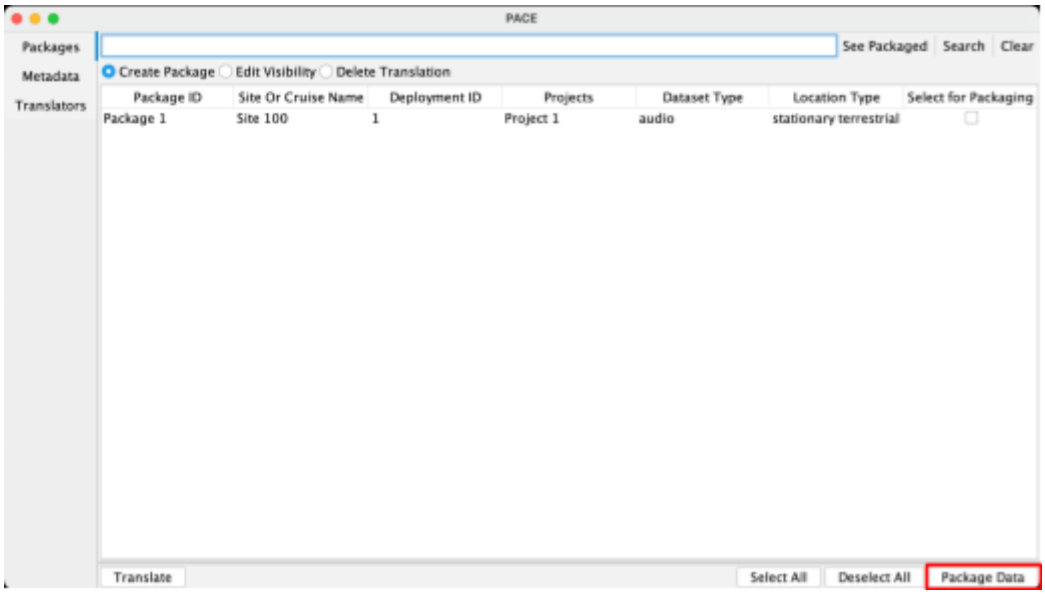
Handling Packages

Package Data

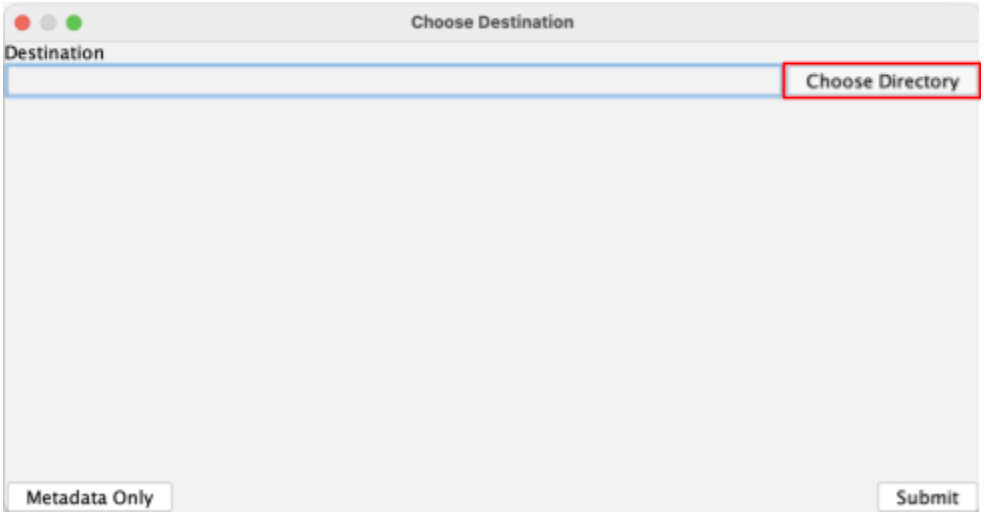
Once a package has been successfully translated, you can package the data and metadata to a location on your system. In order to do this, click the "Select for Packaging" toggle for packages you would like to output. The "Select All" and "Deselect All" buttons allow you to speed up this selection process.

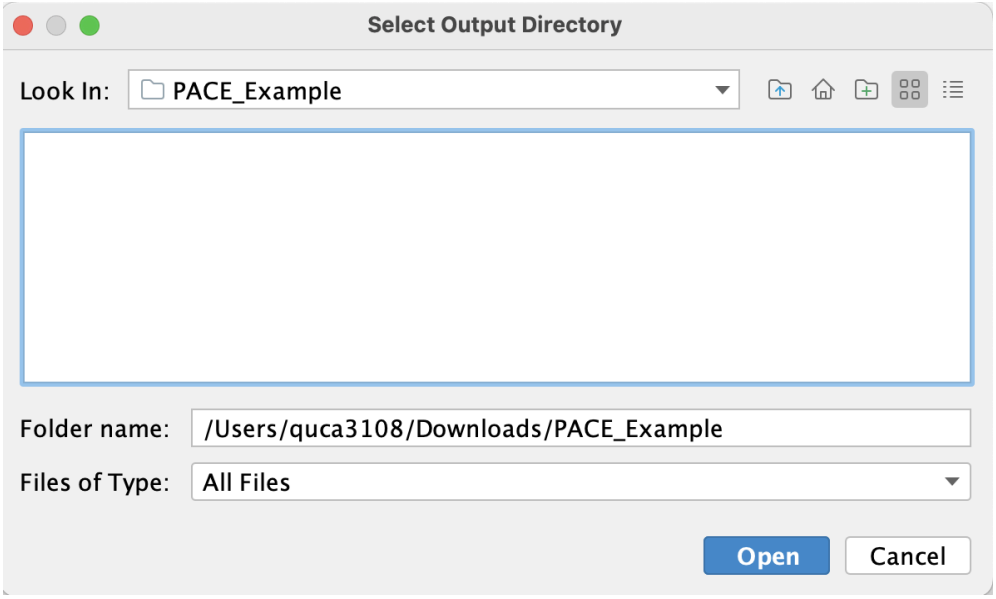


After selecting all of the packages you would like to output, click the "Package Data" button.



Select the location you would like the packages to output to, then click submit. A blue bar at the bottom of PACE will show you the progress of packaging.


Choose Destination
Destination
Choose Directory
Metadata Only
Submit

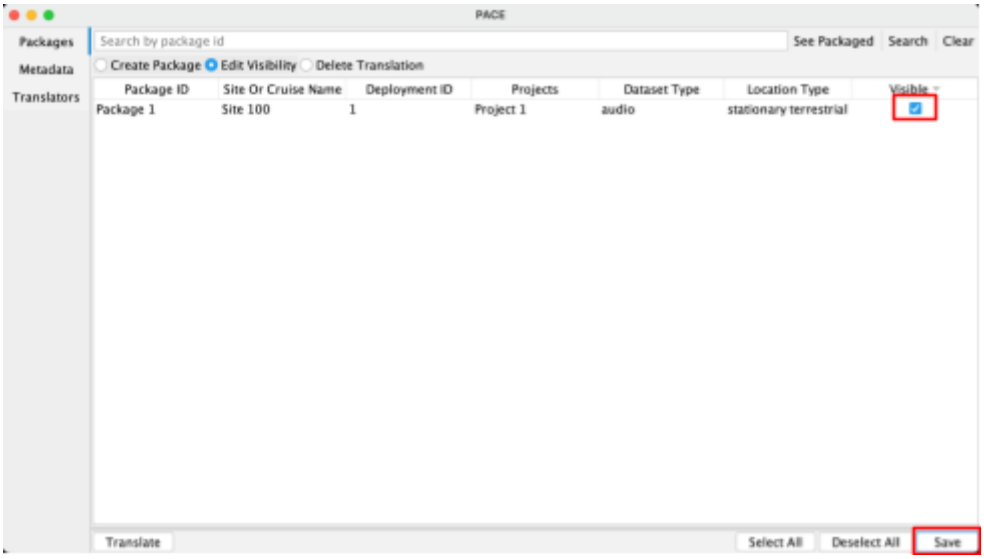

Select Output Directory
Look In:
PACE_Example
Folder name:
/Users/quca3108/Downloads/PACE_Example
Files of Type:
All Files
Open
Cancel

Choose Destination
Destination
/Users/quca3108/Downloads/PACE_Example
Choose Directory
Metadata Only
Submit

Edit Visibility

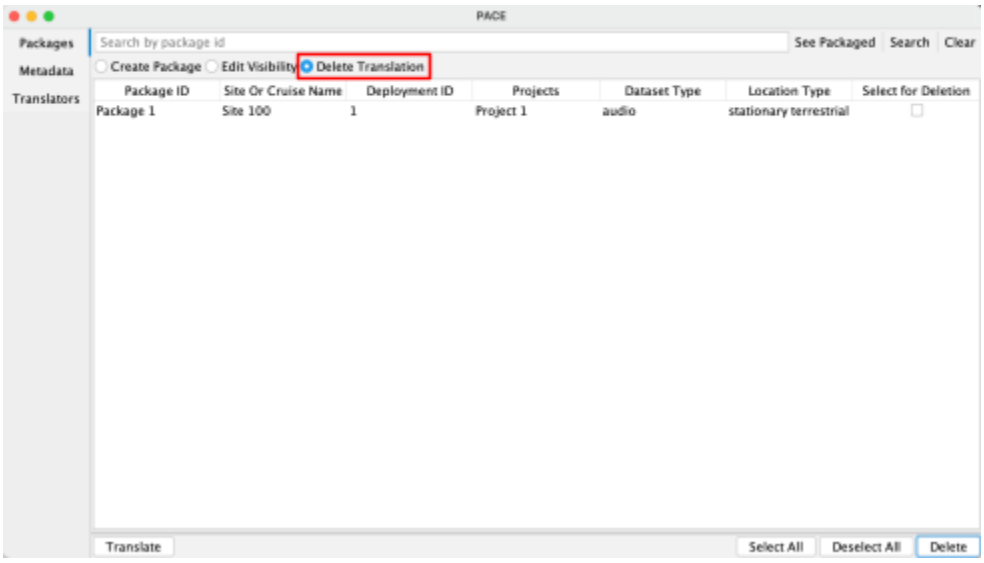
After outputting a package, the “visibility” of the package will change so that, in order to view it, you need to click “See Packaged” at the top of the window next to the search bar.

In order to make these packages return to the visible page of packages, click the edit visibility toggle at the top of the window, under the search bar, then click the “Visible” toggle on the right side of the window for the relevant packages, and hit the “Save” button. This action can be done in reverse as well to hide packages which have not yet been packaged out.

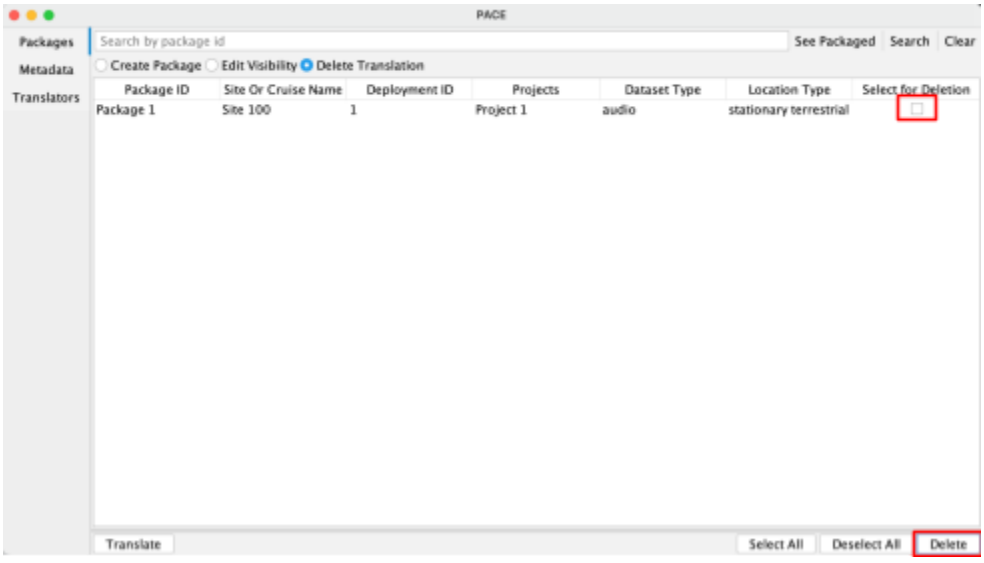


Delete Translations

If you ever feel the need to delete a translated package from PACE, first click the toggle “Delete Translation at the top of the window.



After clicking the toggle, click the “Select for Deletion” toggle on the right side of the window for the relevant package. Then, click the “Delete” button.



Other Workflows

If this workflow seems either a bit tedious or ineffective for your specific use case, we offer an option for working around the translator creation through default spreadsheets. In addition, for automating your workflow, the PACE command line interface provides the ability to run PACE functionality from your terminal.

Default Spreadsheets

If you want to use the PACE user interface but would rather fill out a spreadsheet instead of a translator for spreadsheets, we provide default spreadsheets which PACE comes with translators for. In order to access these spreadsheets, go to the following link.

Command Line Interface

If you would prefer running PACE from the command line, we provide a command line interface for you to use at the following link. Any of the assets starting with “pace-cli” will provide the command line functionality. A great interactive guide for using the command line is available here.

PACE Support Contact

If you have any questions about using PACE, please reach out to pad.info@noaa.gov and we will get back to you as soon as possible to help.