

How to Create a New RadExPro Processing Project and Load Input Data

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Introduction

All processing in RadExPro is performed within processing projects. A project is a database containing raw seismic data, intermediate and final processing results together with all processing flows and parameters, velocity tables, horizon picks and auxiliary information. Each project and all of its files are stored in one folder on your hard disk. Before you can start processing your data in RadExPro you need to load it to a processing project.

Below, on the steps 1-8 we describe how you create a new RadExPro processing project. Then, steps 9-17 describe loading input data into the project.

Creating a new project

- Run the RadExPro. In different versions of Windows you will find it in the Start menu, All programs/RadExPro.
- 2. You will see the Project Manager dialog window:

左 RadExPro 2022.3 Project	Manager		_		\times
Registered					
Project name	Date created	Date modified			
				Create new.	••
			s	elect from dis	sk
			F	Remove from	list
Save list	l list				
Project directory:					
			ОК	Cance	I.

If you run the software for the first time, the list of registered projects will be empty.

3. Click the Create New button to see standard Select Folder dialog:

Browse for Folder	\times
Select new project's folder	
> 📙 Yandex.Disk	^
🗸 😓 This PC	
> 👆 Downloads	
> 📃 Desktop	
> 🧊 3D Objects	
> 🖹 Documents	
> 🎝 Music	
> 📑 Videos	
> 💽 Pictures	
> 🐛 Windows (C:)	
🗸 🥌 Data (D:)	
> 📜 Distributives	
> 📙 Private_documents	
📜 Projects	\sim
OK Cance	el

Select a folder where your new project will be created (in this example we select a folder called 'Projects') and click the OK button.

4. In the dialog that opens type a name of the project to be created (here, we call it 'MyProject' but you can give it a better name of course):

New o	latabase		×
Title	MyProject		
Cre	ate subfolder		
		ОК	Cancel

Note the Create subfolder flag: when it is checked (default), a new project sub-folder will be created inside the folder you have selected at the previous step. That is in our case, inside the 'Projects' folder a new sub-folder 'MyProject' will be created where the new project database files will be located in. When the flag is unchecked, the new project database files will be placed directly inside the 'Projects' folder.

5. Now the newly created project will appear in the Project Manager List.

🥭 RadExPro 2022.3 Project Man	ager		—		\times
Registered					
Project name	Date created	Date modified			
MyProject	15.12.2022 19:45	15.12.2022 19:45	Cre	eate new	
			Selec	t from dis	
			Rem	iove from l	ist
Save list Load list					
Project directory:					
D:\Projects\MyProject		C	Ж	Cancel	

Double-click on the project name to open it in the RadExPro.

6. When you open a new project for the first time you will see a window like this:

RadExPro 2022.3 >>> MyProject			- 🗆 X	
Database Options Tools Windows Help				
Processing Database Navigator				
Project tree ×	Processing flow	×	× All modules ×	
»		L06	6_ ≫ ≈	
✓ ⁱ Area1			> Data I/O ^	•
✓			> Real-Time	
Flow1			> Static Corrections	
			> Geometry/Headers	
			> Interactive Tools	
			> Signal Processing	
			> Data Enhancement	
			> Deconvolution	
			> Velocity	
			> Stacking/Ensembles	
			> Migration	
			> Trace Editing	
			>VSP	
			>QC	
	5 Flow status		6 ×	
Actions ×				

This is the main RadExPro window. It contains:

- Project tree panel
- Processing flow panel
- Panel with the list of all modules
- Actions panel
- Panel with flow status

7. A RadExPro project database is a 3-level structure. We call these levels as 'areas', 'lines' and 'processing flows'. Each project can contain several Areas (although most of the people, in fact, prefer to keep one area per project). Each line can contain a number of lines, and finally each line will contain some flows.

8. On the right corner of the main window there is a panel with processing tree. It contains an area, a line and a processing flow that were created automatically (Area1, Line1, Flow1). Right-click on the Area (or Flow/Line) to rename it.



The same way, right-click an Area to create a new line or a Line to create a new processing flow.

Project tree			×	Project tree				×
»	P			» «	Ð]		
	Create line View map Set color Clear color Rename Copy Paste Delete	Ctrl+C Ctrl+V Del		Area		Create flow Add to queue Set color Clear color Rename Copy Paste	Ctrl+C Ctrl+V	
_					_	Delete	Del	l

We are going to use this flow to load input data into the project so will call it '010 Data input' (the software will sort the flows inside a line alphabetically, so we recommend to start flows names with numbers to keep them is order).

Now we are ready to load some data into the project.

Loading data

9. We will create a sub-folder called 'DATA' inside of the project folder and copy our raw data files there. Here for this example, we have got several near-surface reflection shots, each one in a separate SEG-Y file.

10. Let's have a closer look at the central and right parts of the main window:



11. On the right here is the list of available processing modules divided into groups depending on their function: Data I/O, Geometry/Headers, Interactive Tools, Signal Processing, etc. On the left is the flow itself, which by now is empty. We are going to populate the flow with the processing modules and then execute it.

12. Our data input flow shall read the data from an input file and save it as a dataset object into the project database. Since our data is in SEG-Y format, so to read it we will use SEG-Y Input module. Catch it in the module list on the right with the left mouse button, drag to the left part of the window and drop within the processing flow area. You will see the module parameter dialog:

SEG-Y Input	×
File(s)	Sample format Sample 0.0 Take format from file Number of 0 II II II R4 IM IEM Floating Point Trace length 0 Take byte order from file Use trace weighting factor Little-endian byte order Sorted by FFID:OFFSET Image: Sorted by Get all C Selection *:* 1 Remap header values RECNO,4I,,181/ SOURCE,4I,,185/ ILINE_NO,4I,,189/ XLINE_I 1
File Mask Delete Load list Save list	
From batch list Use numeric sort Save EBCDIC	headers to folder:
ОК	Cancel Load remap Save remap

Click the File... button to select files. Get into the Data folder and press Ctrl+A to select all SEGY files there at once.

🥭 Open				×
← → 🖌 🕇 📕 « Data	(D:) > Projects > MyProject > Data	ٽ ~	,○ Search Data	
Organize New folder				?
Yandex.Disk	Name	Date modified	Туре	Size
This DC	0_source.sgy	29.11.2011 12:42	SGY File	111
3 D Objects	11_source.sgy	29.11.2011 12:42	SGY File	111
	23_source.sgy	29.11.2011 12:43	SGY File	111
Desktop	-24_source.sgy	29.11.2011 12:41	SGY File	111
Documents	35_source.sgy	29.11.2011 12:43	SGY File	111
🖶 Downloads	47_source.sgy	29.11.2011 12:43	SGY File	111
👌 Music	70_source.sgy	29.11.2011 12:43	SGY File	111
E Pictures				
🚼 Videos				
💺 Windows (C:)				
🔪 Data (D:)				
~ <				>
File name:	"0_source.sgy" "11_source.sgy" "23_source.sgy"	"-24_source.sgy" ~	SEG-Y Files (*.sgy, *.segy	r, *.seg) 🗸
			Open (Cancel

Click the Open button to add all of them into the list:

SEG-Y Input	×
File(s) Data\0_source.sgy Data\1_source.sgy Data\23_source.sgy Data\35_source.sgy Data\47_source.sgy Data\70_source.sgy	Sample format Sample 1 Take format from file Number of 48 II C I2 C I4 € R4 Trace length 512 Take byte order from file Trace length 512 Take byte order from file Use trace Big-endian byte order (SEG-Y standard) ✓ Use trace C Little-endian byte order ✓ Use trace Sorted by FFID:OFFSET ✓ € Get all C Selection *:* © 3D Survey C 2D Survey Profile ID 1 Remap header values RECNO,4I,,181/ SOURCE,4I,,185/ ILINE_NO,4I,,189/ XLINE_I
File Mask Delete Load list Save list From batch list Use numeric sort Save EBCDIC holds OK	eaders to folder:

You can scroll through the list to make sure that all the files are there and the order is correct. If the order is not correct, you may use the up and down arrow buttons to the right of the list to move a selected file through the list.

The module detects automatically the parameters of the SEG-Y files. As you can see from the picture, here they were correctly detected as 4-byte real sample format, big-endian byte order, 1 ms sampling interval, trace length -512 samples. If, in your case, any of these parameters were detected wrongly, you may always correct those manually indicating correct values.

After you have finished with the SEG-Y Input parameters click the OK button to have the module added to the processing flow.

RadExPro 2022.3 >>> MyProject			-		\times
Database Options Tools Windows Help					
🔅 Processing 🛛 🖏 Database Navigator					
Project tree ×	Processing flow >> Area1 / Line1 / Flow1 ×	All modules			×
»	D - E - E -	» *			
✓	SEG-Y Input <- [multiple]	v		Data I/	o ^
✓		Trace Input			
Stelow1		Trace Output			
		SEG-Y Input			
		SEG-Y Output			
		SEG-D Input			
		RAMAC/GPR			
		SEG-B Input			
		ЛОГИС			
		SEG-2 Input			
		GSSI Input			
		SCS-3 Input			
		Super Gather			
		Load Text Trace			~
	₽ Flow status			é	7 × 9
Actions ×					
Add module SEG-Y Input from the list					
Load flow Flow1 < Line1 < Area1					

13. The data is saved to the project database using the Trace Output module. Add it to the flow the same way as you did it with the SEG-Y Input, by drag-and-drop. You will see its parameter dialog:

Carace Output	×
Single output	
Path:	Dataset Location
Mode: Overwrite	
From batch list Batch output settings	
OK Cancel	

Click the Dataset... button to see the project database browser dialog:

Select dataset			×
Object(s):			
>>	Set filter text (you can use * and ? wildcards)		
✓	Name	Location	Trace co
✓ 🗆 Line1			
Flow1			
	<		>
	OK Cancel		

Here on the left you see the project database structure (with the area, line and flow we have created). Click on the level of the database where you wish to save your data (we normally recommend that the data is saved on the line-level, however this is not obligatory). Then, type the name of the new dataset in the Object name field. We will call this dataset 'raw_data':

Select dataset			×
Object(s): raw_data			
>> Show objects from sublevels	Set filter text (you can use * and ? wildcards)		
✓ III Area1	Name	Location	Trace co
✓			
Flow1			
	<		>
	OK Cancel		

Click the OK button. Now the path to the new dataset is shown in the Trace Output dialog:

Trace Output	×
Single output	
Path: Area1\Line1\raw_data Dataset Location	
Mode: Overwrite	
From batch list Batch output settings	
OK Cancel	

Click the OK to save the module to the flow.

RadExPro 2022.3 >>> MyProject			- 🗆	\times
Database Options Tools Windows Help				
Processing Statabase Navigator				
Project tree ×	Processing flow >> Area1 / Line1 / Flow1 ×	All modules		×
» ≈ @	🖻 🔲 🕶 🖫 🕶 📒 🏭 LOG	» <		
✓ III Area1	SEG-Y Input <- [multiple]	v	Data I/0	^
✓ □ Line1	Trace Output -> raw_data	Trace Input		
Stelow1		Trace Output		
		SEG-Y Input		
		SEG-Y Output		
		SEG-D Input		
		RAMAC/GPR		
		SEG-B Input		
		ЛОГИС		
		SEG-2 Input		
		GSSI Input		
		SCS-3 Input		
		Super Gather		
		Load Text Trace		~
	5 Flow status		8	×
Actions ×				
Add module Trace Output from the list				
Add module SEG-Y Input from the list				

MB1 - Move modules; Ctrl+MB1 - Copy modules; MB1 x2 - Module parameters; MB2 - Toggle modules; Ctrl+MB2 x2 - Cut modules; Shift+MB1 - Past

14. Now, we have a flow which, when executed, will read all our shots from multiple files and save them all into one dataset called 'raw_data'. This is enough to load the data, however, we would like to see what we are loading on the screen. To have this, we will add a module called Screen Display to the end of the flow.

You may use the default parameters of the Screen:

💁 Display parameters	×		
From t= 0.0 to 0.0 t Scale 10 Number of 100 X Scale 10 Rotate Ensemble boundaries	WT/VA display mode Normalizing factor Gain 0.3 WT/VA None Entire screen Bias(%) 0 VA Individual Show every 1		
Enable backward frame scrolling Ensembles to 1 Variable spacing field Space to maximum ensemble width Ensembles' 2 Muliple panels 0 ✓ Use excursion 2.0 Axis Show headers Plot headers Header mark Picks/polygons settings	Variable density display mode Normalizing factor Gain 0.3 R/B Custom Define Individual Bias(%) 0 None Individual Show palette Data/velocity Display data Display velocity Set velocity Min.vel 500.0 Max.vel (m/s) 1500.0 		
Save Template Load Template Ok Cancel			

Click the OK to see the flow as shown below:



Important! If the amount of data you are loading is fairy big (about 5 GB and more), it could be more efficient to
use <i>framed mode</i> of flow execution to load it frame by frame (framed mode is available through the Flow mode entry of
the main menu \square .

15. Our flow is ready. To execute the flow click the Run button on the toolbar.

Processing flow >> Area1 / Line1 / Flow1	×
🖻 🛛 • 🖫 • 📒 📰 🗆	16
SEG-Y Input <- [multiple]	
Trace Output -> raw_data	
Screen Display	

You can control how the flow is going in the Flow status panel below the Flow editor:



16. When executed it will read the data from SEG-Y files, save it to the 'raw_data' dataset and finally display it on the screen. You will see the display similar to what is shown below:



17. Now, when the data is loaded into the project database, you may load it to any other flow using the Trace Input module.