

INSTRUCTIONS TO INSTALL ADDITIONAL FILES FOR THE "NEURAL NETWORK DETECTION UNIT"

1. Install the PHOTOMOD Radar distribution package version 2.3 or higher.

2. Depending on the version of your computer's operating system, download the corresponding archive with additional files for neural network processing from the Racurs website:

- Windows 10 (https://racurs.ru/downloads/Radar/Radar_Neuro_Win10.zip)
- Windows 11 (https://racurs.ru/downloads/Radar/Radar_Neuro_Win11.zip)

3. Each archive includes the following files:

• cuda_build_OS.exe - tools for parallel computing

• **SARTectron.rar** – an archive with libraries for neural network processing adapted to the operating system version and the Cuda version

• **NeuralNets.rar** – archive with configuration files (*.conf*) and neural network weights files (*.pth*).

The files are grouped by the type of objects to be detected (*Ships, Airplanes, Oil Pumps*) and by the type of images on which the specified weights were trained.

4. Unzip all the archives to the folder with the installed PHOTOMOD Radar

5. Install the cuda_build_OS.exe distribution package



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INSTRUCTIONS TO SOLVE PROBLEMS WITH LAUNCHING THE OBJECT DETECTION MODULE USING THE NEURAL NETWORK METHOD

If, in the **«Detection Using N.N»** tool window, after entering all the necessary parameters and clicking the **"Run"** button one of the following events occurs:

a) the **progress bar** does not start for a long time;

Detection module		– 🗆 X
Select a target image: D:\Radar_data\27. Neu ral Network Detection\ _scene.rdp	Select pre-trained config file: \\Heap3\radar\PHO il_Pumps\Terrasar\ oil_pumps_terrasar_config.yaml	New project
Subset		Load project
X 0	Choose the *,pth file with pre-trained weights: \\Heap3\vadar\PHOil_Pumps\Terrasar\ oi_pumps_terrasar_weights.pth	Save project
and the second second	Select a folder to save the detection results:	Save as
	D:\Radar_data\27. Neural Networl Open	
1 a 5 a # 100		Run
a share a star		Settings
Select folder with target images:		Help
Open	Show results	Close
Preprocessing 252 µs 361		
	Prog	ress bar
		~
		~
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b) PHOTOMOD Radar process does not show activity in the Windows Task Manager

👰 Task M	lanager								_		×
File Opti	ons View										
Processes	Performance	App history	Startup	Users De	tails Services						
				5.00	V N 5000	40/	740/	00/			
				58	% ~ 58%	4%	/1%	0%			
Name			St	CF	U Memory	Disk	Network	GPU	GPU engin	e	
👻 🦻 PH	IOTOMOD Rada	ar Application		45,6	% 2 409,0 MB	0 MB/s	664,5 Mbps	0%			^
🎴 S	ARTectron.exe			0,6	% 1 365,3 MB	0 MB/s	664,5 Mbps	0%			
🧧 🎴 S	ARTectron.exe			45,0	% 789,1 MB	0 MB/s	0 Mbps	0%			
🧧 🎴 S	ARTectron.exe			0	% 102,3 MB	0 MB/s	0 Mbps	0%			
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🦻 P	HOTOMOD Rad	dar Application	n	0,1	% 38,1 MB	0 MB/s	0,1 Mbps	0%			
<u>C:</u>	Console Windov	v Host		0	% 6,1 MB	0 MB/s	0 Mbps	0%			
<u>C:N.</u> (Console Windov	v Host		0	% 6,0 MB	0 MB/s	0 Mbps	0%			

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Check the contents of the folder that you set to save detection results. A **«command.txt»** file should appear in it. Next:

1. Open the Windows Command Prompt (cmd)

04	Command Prompt	-	×
Mic (c)	rosoft Windows [Version 10.0.19045.5487] Microsoft Corporation. All rights reserved.		^
C:\	Users\permyakov>		~

2. Open the **command.txt** file, select and copy all its contents

i command.txt - Notepad		×
File Edit Format View Help		
/tempscene"saving_folder "D:/Radar_data/27. Neural Network Tool/27.2. Neural Network Detection/_results/10	_03_2025	" ^
		\sim
<		>
Ln 1, Col 423 100% Windows (CRLF) UTI	-8	

3. Paste the contents of the file command.txt to the command line

GEE Command Prompt	_		×
(c) Microsoft Corporation. All rights reserved.			^
C:\Users\permyakov>"D:/PHOTOMOD Radar 24_12/SARTectron/SARTectron.exe"test_from_diryaml_file "//Hea MOD Radar/PHOTOMOD Radar Include/Windows 10_new/NeuralNets/Oil_Pumps/Terrasar/oil_pumps_terrasar_config_te ting_folder "D:/Radar_data/27. Neural Network Tool/27.2. Neural Network Detection/temp_scene"saving_fo _data/27. Neural Network Tool/27.2. Neural Network Detection/_results/10_03_2025"_	p3/ra st.ya lder	dar/PH(ml"1 "D:/Rad	DTO tes tar

4. Press Enter.

If the detection process has started, you will see windows with the following content.

Command Prompt	_		×
Microsoft Windows [Version 10.0.19045.5487] (c) Microsoft Corporation. All rights reserved.			^
C:\Users\permyakov>"D:/PHOTOMOD Radar 24_12/SARTectron/SARTectron.exe"test_from_diryaml_file "//Hea MOD Radar/PHOTOMOD Radar Include/Windows 10_new/NeuralNets/Oil_Pumps/Terrasar/oil_pumps_terrasar_config_te ting_folder "D:/Radar_data/27. Neural Network Tool/27.2. Neural Network Detection/temp_scene_small"sav /Radar_data/27. Neural Network Tool/27.2. Neural Network Detection/_results/10_03_2025" ** fvcore version of PathManager will be deprecated soon. ** ** Please migrate to the version in iopath repo. ** https://github.com/facebookresearch/iopath	p3/ra st.ya ing_f	dar/PH0 ml"1 older '	OTO tes "D:
** fvcore version of PathManager will be deprecated soon. ** ** Please migrate to the version in iopath repo. ** https://github.com/facebookresearch/iopath			
<pre>+[32mTest images number is 9 +[32mImage #1 : founded 5 objects +[0m Object #0 : Class 'Oil_Pump', prob = 0.99115389585495 +[0m Object #1 : Class 'Oil_Pump', prob = 0.982089340209961 +[0m Object #2 : Class 'Oil_Pump', prob = 0.9274049997329712 +[0m Object #3 : Class 'Oil_Pump', prob = 0.9274049997329712 +[0m Object #4 : Class 'Oil_Pump', prob = 0.9274049997329712 +[0m Object #4 : Class 'Oil_Pump', prob = 0.928846955299377 +[0m Object #0 : Class 'Oil_Pump', prob = 0.9928846955299377 +[0m Object #1 : Class 'Oil_Pump', prob = 0.9938555026054382 +[0m Object #3 : Class 'Oil_Pump', prob = 0.9938555026054382 +[0m Object #3 : Class 'Oil_Pump', prob = 0.9927820682525635</pre>			

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Detection module	– 🗆 🗙
Select a target image: D:\Radar_data\27. Neu ral Network Detection\ scene_small.rdp Subset X Image: Y Image: Height Image: Out C kit 1510.1010 Subset Y Image: Height Image: Select pre-trained config file: \L\Heap3\radar\PHO il_Pumps\Terrasar\ oil_pumps_terrasar_config.yaml Image: Image: Y Image: V Image: V Image: V Image: V Image: V Image: Vidth 1516 Y Image: Vidth 1218 Vidth Image: Select a folder to save the detection results: D:\Radar_data\27. Neural Network Image: D:\Radar_data\27. Neural Network Image: Dittert Image: Image: Vidth Image: Image: Vidth Image: Image: Vidth <	New project Load project Save project Save as
Detection done. Show detection results?	Run Settings
Select folder with target images: Open Show results	Close
Starting the object detection process Ubject #2 : Class 'Ull_Pump', prob = 0.9904540777206421 Object #3 : Class 'Oil_Pump', prob = 0.9672383666038513 Object #4 : Class 'Oil_Pump', prob = 0.7856466174125671 - Time spend for detection: 12.70750641822815 seconds	× ~ >

If the **command.txt** file does not appear in the output folder or the detection process does not start even after command line operations, do the followings:

- 1. Take a screenshot of the Windows Command Prompt with the error
- 2. Find out the version of your computer's operating system, as well as the type of graphics card installed on it, and send them, along with a screenshot, to PHOTOMOD Radar technical support: **dzz@racurs.ru**