



Technical Note

SeaBat Software Running in Simulate

Version 1.1

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Date: 15-04-2020
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Amendment Record Sheet

Rev.	Date	Reason for Modifications
1.1	15/04/2020	Export control disclosure added.
1.0	07/11/2016	First version of this Technical Note.

1 Introduction

This document describes the use of the 7kCenter in simulate mode. The 7kCenter application is the primary interface to the RESON SeaBat sonar. The 7kCenter runs in simulate when not connected to a sonar. With the 7kCenter running in simulate it is possible to use the Teledyne RESON Sonar User Interface (SUI) application and to test the interface with software applications using the 7k data format records as described in the Data Format Definition document (DFD).

2 Simulating synthetic data with the 7kCenter

Launch the 7kCenter from the 7k Control Center:

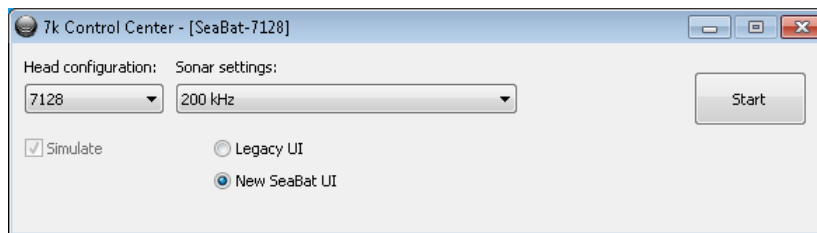
1. Start the 7k Control Center.
The 7kControlCenter is launched from a (during installation) created shortcut on the desktop.



Or alternatively, open the 7k Control Center from the installation folder.

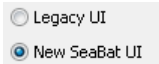
The default installation folder is C:\Program Files (x86)\RESON\7128.....

2. The 7k Control Center application opens.



From the 7k Control Center:

- a. Select the *New SeaBat UI* radio button.



- b. Press the *Start* button

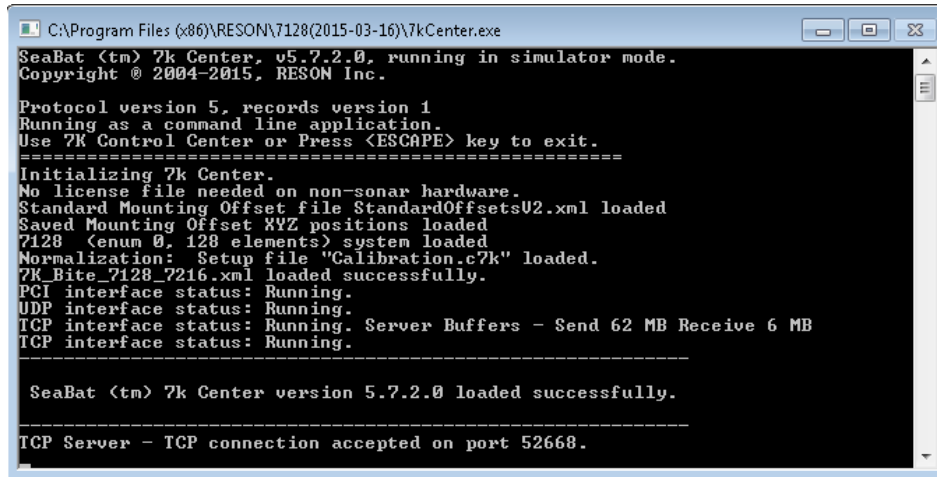


3. The 7kCenter is launched in simulate mode.
Press from the Windows taskbar the 7kCenter command icon to open the 7kCenter.exe window.



The 7kCenter runs in simulate mode. See chapter 5 for simulate commands.

With the 7kCenter running the SUI and other software connected to the 7kCenter can be tested.



```

C:\Program Files (x86)\RESON\7128(2015-03-16)\7kCenter.exe
SeaBat (tm) 7k Center, v5.7.2.0, running in simulator mode.
Copyright © 2004-2015, RESON Inc.

Protocol version 5, records version 1
Running as a command line application.
Use 7K Control Center or Press <ESCAPE> key to exit.
=====
Initializing 7k Center.
No license file needed on non-sonar hardware.
Standard Mounting Offset file StandardOffsetsU2.xml loaded
Saved Mounting Offset XYZ positions loaded
7128 (enum 0, 128 elements) system loaded
Normalization: Setup file "Calibration.c7k" loaded.
7K Bite 7128_7216.xml loaded successfully.
PCI interface status: Running.
UDP interface status: Running.
TCP interface status: Running. Server Buffers - Send 62 MB Receive 6 MB
TCP interface status: Running.
=====

SeaBat (tm) 7k Center version 5.7.2.0 loaded successfully.
=====
TCP Server - TCP connection accepted on port 52668.
  
```

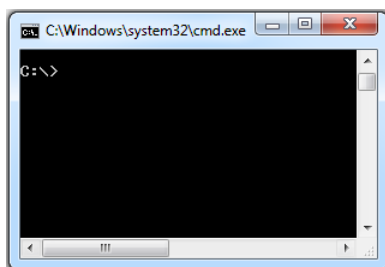
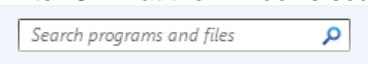
4. The 7kCenter is quit by pressing from the 7kControlCenter (see step 2) the *Stop* button.



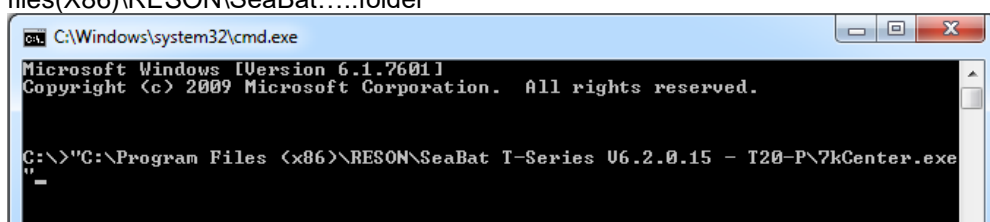
3 Simulating with logged 7k files with the 7kCenter

To test the interface with the 7kCenter or to test the Sonar User Interface (SUI) it is possible to replay logged sonar 7k data files with the 7kCenter. The 7k data file should have logged water column data (7018 data record) to be replayed in the Sonar User Interface (SUI).

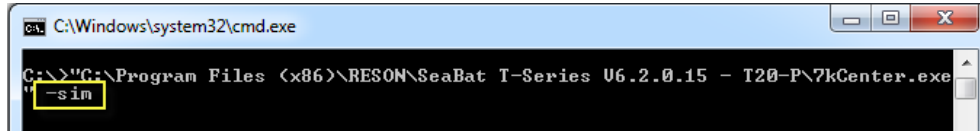
1. Open the Windows command prompt:
 - a. Open the Windows start menu.
 - b. Enter CMD at the Windows search program and files box.
 - c. Select Cmd from the list.
 - d. The Windows command prompt opens:



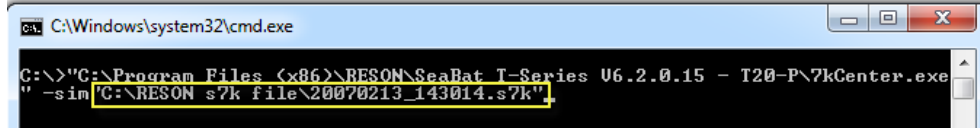
2. Drag from the installation folder of the 7KCenter the 7KCenter.exe file into the command prompt. By default the 7K software is installed in the C:\program files(X86)\RESON\SeaBat.....folder



3. Add a SPACE and enter –sim.

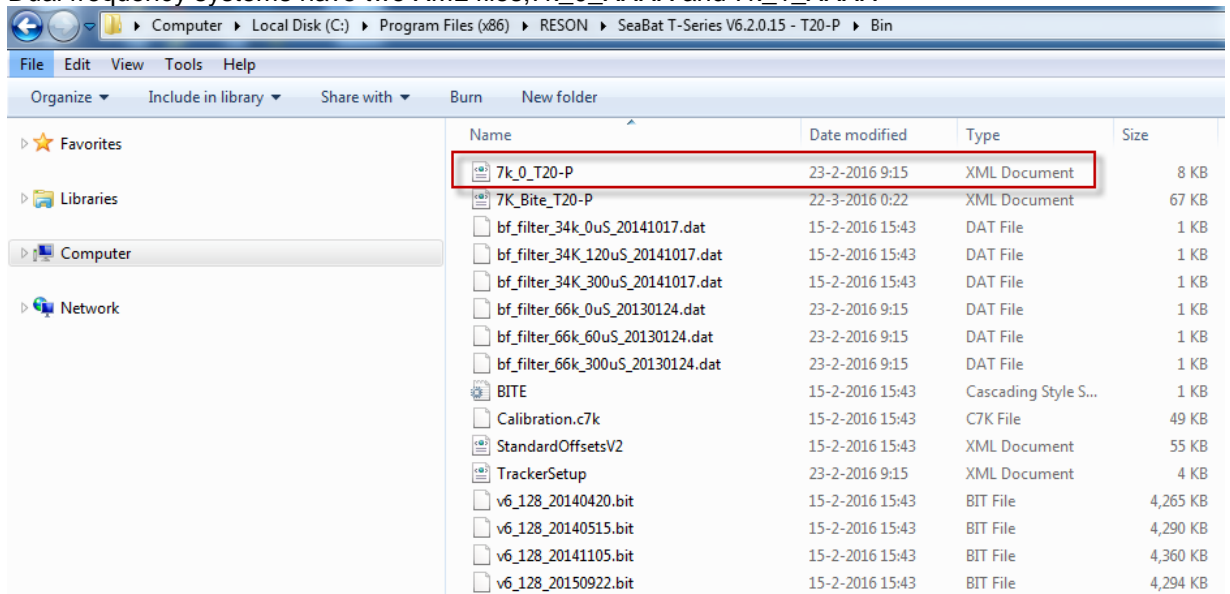


4. Drag the s7k file to replay in the command prompt. The file path is added.

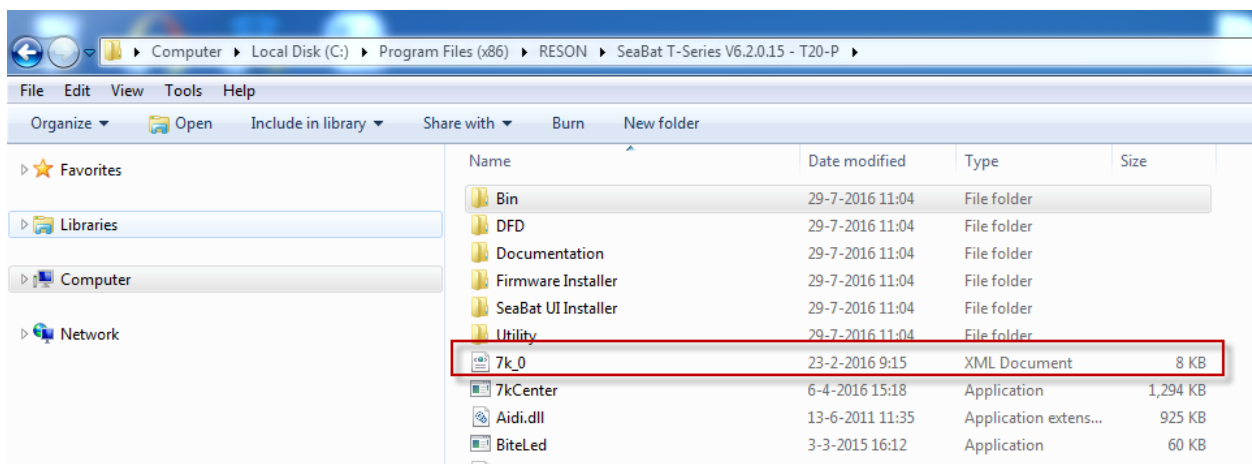


5. Open from the SeaBat installation folder the BIN sub folder.
Default the SeaBat is installed in C:\Program files(X86)\RESON\SeaBat.....

6. Locate the 7k XML file(s).
Dual frequency systems have two XML files;7k_0_XXXX and 7k_1_XXXX

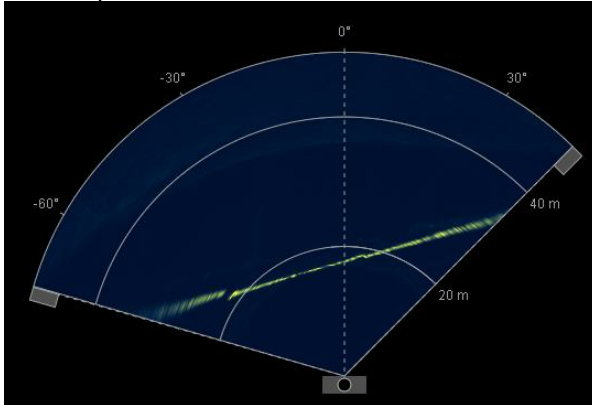


7. Copy the 7k XML file(s) to the installation root folder and rename to 7k_0. For dual frequency systems two XML files are copied. Rename the second XML file to 7k_1.



8. Press Enter in the Windows command window to start the playback.

9. The file is replayed. Start the Sonar User Interface (SUI) to visualize the data. (see chapter 4 to start the SUI and set the correct IP address).
Be aware the 7k data file must contain water column data to be replayed in the SUI.
It is not possible to use the simulation commands (see chapter 5) when replaying a 7k file.



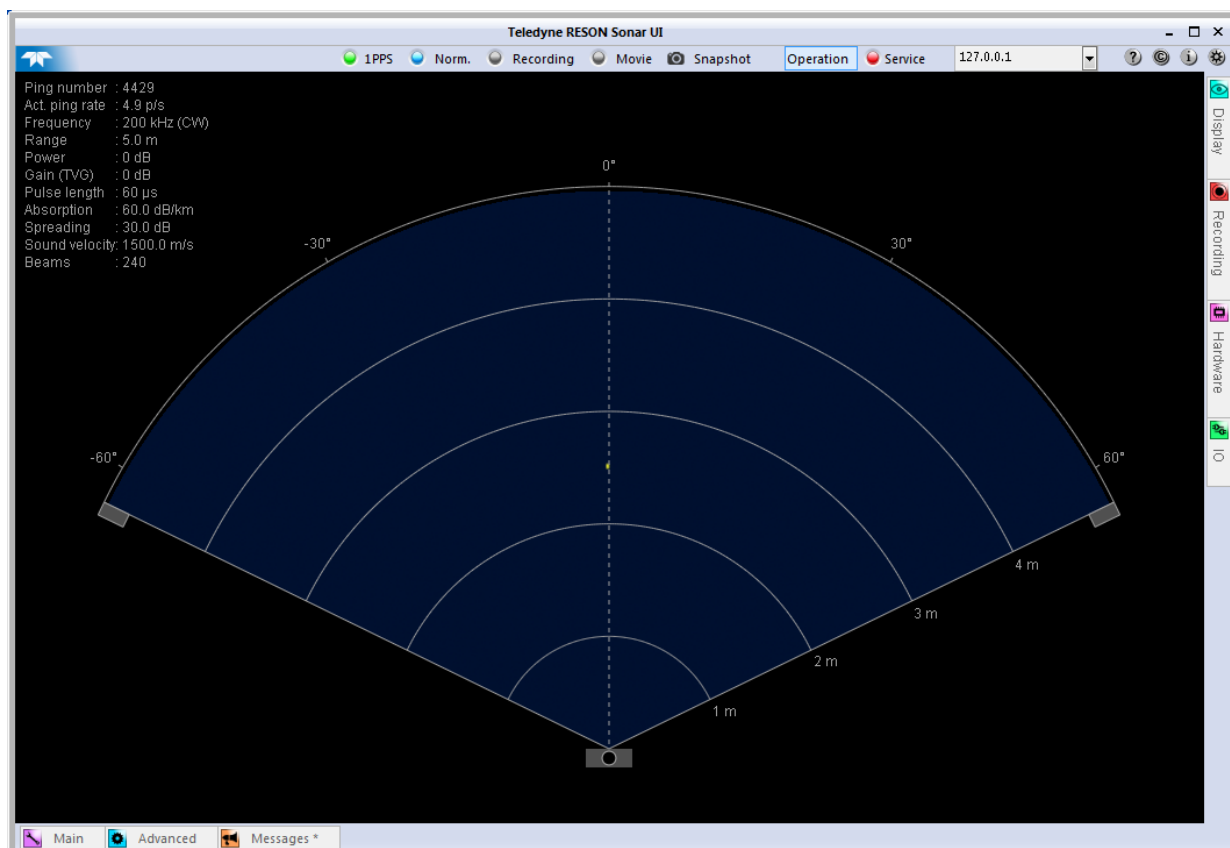
4 Using the Sonar User Interface (SUI) with one of the simulation modes of the 7kCenter

With the 7kCenter in simulate mode the SUI will show simulated data. From the SUI it is possible to change sonar parameters and output records.

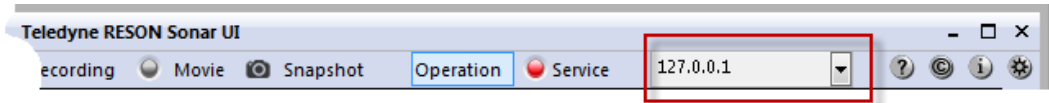
1. Launch the SUI from the (during installation) created shortcut.



2. The SUI opens.



3. Connect to the 7kCenter by selecting or set manually from the SUI toolbar the IP address of the computer on which the 7kCenter runs. Enter or select the local host IP address 127.0.0.1 if the 7kCenter runs on the same computer as the SUI.



4. The SUI is described in the Sonar UI manual.
(Available in the installation folder C:\Program files(x86)\RESON\SeaBat UIV...\manuals\...

5 7kCenter simulate commands

From the 7kCenter different simulate commands are available.

1. Open the 7kCenter command window.

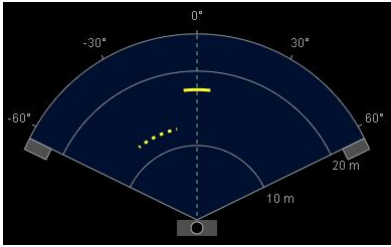
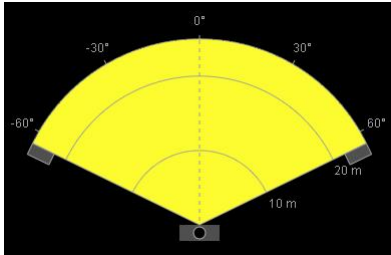
```

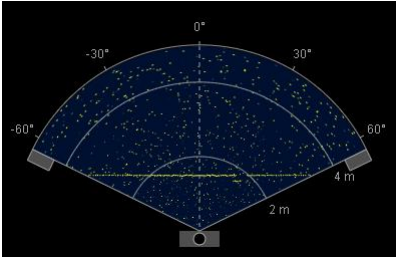
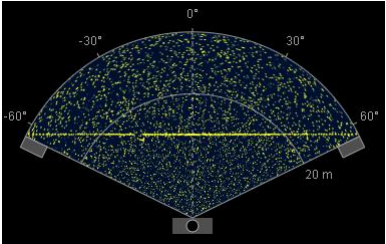
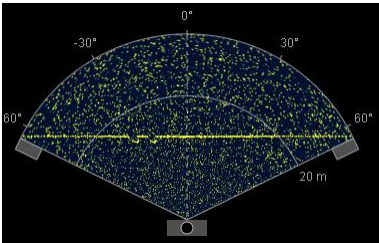
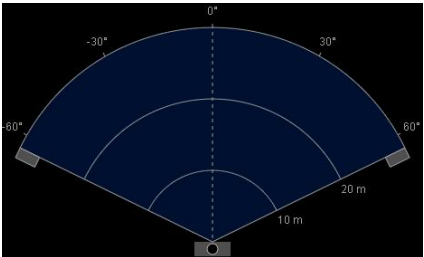
C:\Program Files (x86)\RESON\7128(2015-03-16)\7kCenter.exe
SeaBat <tm> 7k Center, v5.7.2.0, running in simulator mode.
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Protocol version 5, records version 1
Running as a command line application.
Use 7K Control Center or Press <ESCAPE> key to exit.
=====
Initializing 7k Center.
No license file needed on non-sonar hardware.
Standard Mounting Offset file StandardOffsets02.xml loaded
Saved Mounting Offset XYZ positions loaded
7128 <enum 0, 128 elements> system loaded
Normalization: Setup file "Calibration.c7k" loaded.
7K Bite_7128_7216.xml loaded successfully.
PCI interface status: Running.
UDP interface status: Running.
TCP interface status: Running. Server Buffers - Send 62 MB Receive 6 MB
TCP interface status: Running.
=====
SeaBat <tm> 7k Center version 5.7.2.0 loaded successfully.
=====
TCP Server - TCP connection accepted on port 52668.
  
```

2. Give with the keyboard a simulate command.

The next table lists simulate commands.

Simulate Command	Description
't'	Change simulate type: (Press repeatedly 't' for the desired mode)
	<div> <div>Test pattern</div>  </div> <div> <div>Blank</div>  </div>

Simulate Command	Description	
	Flat bottom  <p>Use left/right arrow keys to change transmit delay.</p> <p>Use up/down arrow key to change bottom depth.</p>	Pipe  <p>Use left/right arrow to centralize pipe on next beam.</p> <p>Use up/down arrow key to change bottom depth.</p>
	Dual pipe  <p>Use left/right arrow to centralize pipe on next beam.</p> <p>Use up/down arrow key to change bottom depth.</p>	Moving Target  <p>Use arrow keys to move location.</p>
	SPACE Single step simulated pings	
	Shift-SPACE Resume continuous pinging	
Up Arrow	Move simulated bottom up	
Down Arrow	Move simulated bottom down	
?	Show Simulation mode commands	
Ctrl-T	Open extended test menu. Press 'B' (capital!) to turn the BITE simulation on. BITE is the Built-In Test Environment and gives status of the sonar system.	

6 Records generated from 7kCenter

The SUI does not need to run to output the 7k data records except for the pipe detection and the sonar contact records. The 7kCenter in synthetic simulate do not include navigation data. Navigation data is output when a replayed 7k file includes navigation data.