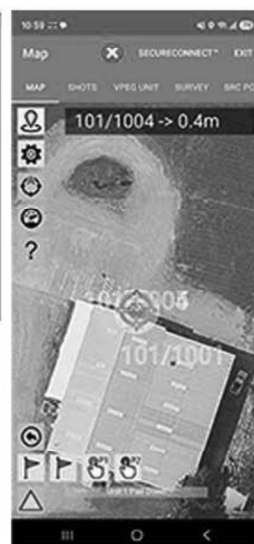




VPEG eVib

SOFTWARE GUIDE

Electromagnetic Seismic Vibrator System



WIRELESS
CONTROL



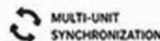
PC & ANDROID
COMPATIBLE



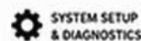
SWEEP CREATION
& MANAGEMENT



GPS
INTEGRATION



MULTI-UNIT
SYNCHRONIZATION



SYSTEM SETUP
& DIAGNOSTICS

PORTABLE. POWERFUL. PRECISE.

Document Control

Field	Information
Document Title	VPEG eVib Software Guide
Document Type	Software Guide and Field Operation Manual
Product Models	VPEG-8 and VPEG-16
Primary Software	NavLink VPEG / NavLink
Supporting Software	Seismic Source Installer, SourceLink, SourceControl F3, Source Signature
Prepared For	R.T. Clark Co., Inc.
Revision	Draft 1.0 - Formatted Layout

NOTE: Manual Scope

This guide is intended to help VPEG operators install required software, connect to the VPEG eVib controller, configure sweep and acquisition settings, run manual and on-the-fly VP surveys, and review field shot records.

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1. Introduction and Scope

The VPEG eVib software ecosystem is used to connect to, configure, control, and document field operation of the VPEG electromagnetic seismic vibrator system. The primary field application is NavLink VPEG, which allows an operator to connect to the eVib controller, manage survey points, configure sweep tables, run VP records, and review shot information during acquisition.

This guide is written for field operators, crew chiefs, and support personnel who will be using VPEG software in production, testing, demonstrations, or training. It should be used together with the VPEG eVib Operations and Safety Manual.

2. Quick Start Field Workflow

Use this section as a quick reference before beginning field acquisition. Detailed procedures are provided in later sections.

1. Power on the VPEG and allow the eVib controller to fully boot.
2. Connect the Android device or PC to the VPEG Wi-Fi network.
3. Open NavLink VPEG or NavLink.
4. Confirm unit connection and GPS status.
5. Review sweep table settings.
6. Review acquisition settings, including record length, sweep number, and stack count.
7. Select or create the first shot point.
8. Confirm the VPEG is positioned correctly and coupled to the ground.
9. Press Start and monitor the system for PSS Received and VP Completed.
10. Move to the next point, select or create the next source point, and repeat until the survey is complete.
11. Review shot records before ending the field session.

WARNING: Field confirmation

Do not move the VPEG until the software indicates VP Completed. Moving before completion may result in incomplete or incorrectly assigned records.

3. Connecting to the VPEG

Each VPEG system is configured with Wi-Fi access for connection to an Android device, tablet, or PC running the appropriate Seismic Source software.

Connection Item	Example Value
Serial Number	5001
IP Address	10.0.5.01
Wi-Fi SSID	VPEG eVib
Wi-Fi Password	12345678

Connection Procedure

1. Power on the VPEG unit and allow the eVib controller to fully boot.
2. Open Wi-Fi settings on the Android device, tablet, or PC.
3. Select the VPEG eVib Wi-Fi network.
4. Enter the Wi-Fi password when prompted.
5. Open the NavLink VPEG application.
6. Confirm that the software shows a connected VPEG unit before attempting to run a VP.

NOTE: Default values

The connection values above are examples. Confirm the final serial number, IP address, SSID, and password for each production unit before publishing or field release.

4. Seismic Source Software Overview

The VPEG eVib system is operated and controlled using software developed by Seismic Source in partnership with R.T. Clark. Software may be downloaded from the Seismic Source downloads page:

<https://seismicsource.com/html/downloads>

Software	Required / Optional	Primary Use
Seismic Source Installer Program	Required	Installs available Seismic Source applications on PC.
Seismic Source Installer Program for Android	Required for Android workflows	Installs Android software packages where applicable.
NavLink VPEG App for Android	Required for Android field operation	Connects to the VPEG and controls field VP operation.
SourceLink	Optional / Licensed	Used for project setup, reviewing field records, and generating end-of-day files.
NavLink	Required for PC Field operation	Connects to the VPEG and controls field VP operation.
SourceControl F3	Optional	Used to configure sweep tables on a PC.
Source Signature	Optional	Used to visually review accelerometer, pilot signal, and geophone information.

TIP: Training resources

A full range of Seismic Source tutorials is available on the Seismic Source YouTube channel:

<https://www.youtube.com/channel/UCWszOSFMYMt20E-d2CD4xvQ>

5. Installing Seismic Source Software

To install Seismic Source software, first install the Seismic Source Installer application on the PC or Android device. The installer provides access to the available Seismic Source software offerings.

1. Download the Seismic Source Installer from the Seismic Source downloads page.
2. Run the installer on the PC or Android device.
3. Open the Seismic Source Installer application.
4. Select Install Products.
5. Locate the desired application category.
6. Download and install the required application.

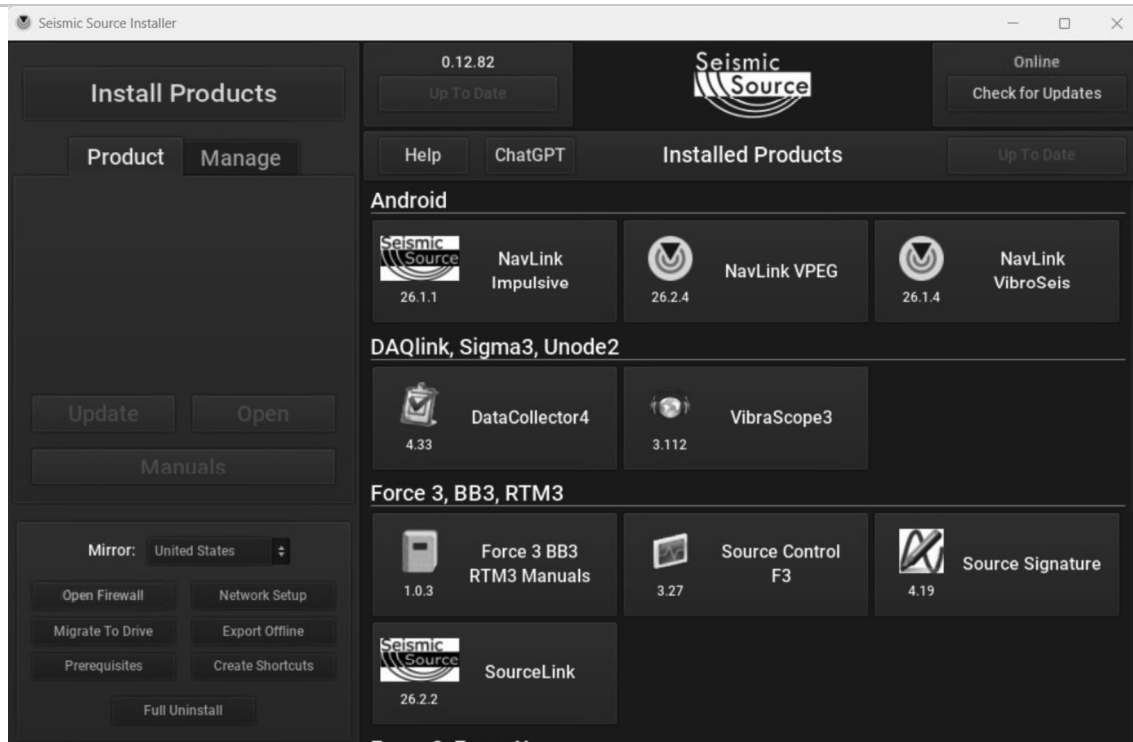


Figure 5.1: Seismic Source Installer interface.

After selecting Install Products, a dialog displays available application categories. The Android NavLink VPEG application is found in the Android menu. The PC application for NavLink is found in the GPS menu. Select the desired application and use the download button on the right side of the menu.



Figure 5.2: Install Products dialog.

6. Installing NavLink VPEG on an Android Device

Direct Download and Installation

To install directly on an Android device, download the SSCAppStore.apk file from the Seismic Source downloads page, install the app store package, and then use it to install NavLink VPEG directly on the device.

Installing to Android Using a PC

1. Download the NavLink VPEG Android application using the Seismic Source Installer.
2. In the installer, select the application and choose Open to view the installation folder.
3. Locate the NavLinkVPEGxx.x.x.apk file.
4. Copy the APK file to the Android device.
5. Open the APK file on the Android device and install it.
6. If prompted, allow installation from the app used to open the APK file.

Enable Permission to Install Apps

1. Open the Android device Settings.
2. Select Security and privacy.
3. Select More security settings.
4. Tap Install unknown apps.
5. Allow installation for the app used to open or install the APK file.

NOTE: Android security permissions

Android devices may block third-party APK installation by default. Permission wording may vary depending on device manufacturer and Android version.

7. NavLink VPEG App Operation

NavLink VPEG is the primary field application for VPEG operation. It allows the operator to connect to the VPEG controller, monitor unit status, verify GPS position, configure sweep and acquisition settings, select or create source points, run VPs, and review shot records.

App Area	Operator Purpose
Map / Survey View	Displays current unit position, selected source points, navigation targets, and survey layout.
Group Settings	Defines group ID, unit ID, lead unit, and multi-unit operating configuration.
Acquisition Settings	Sets record length, sweep number, stack count, start delay, and operating mode.
Sweep Table	Creates, edits, saves, compares, and sends sweep parameters.
Shot Records	Displays completed VP information including line, station, shot ID, and number of stacks.
Status Pages	Displays unit ID, GPS status, satellite condition, and connection information.

8. Parameterizing the VPEG

Before running field production, confirm the VPEG group settings and acquisition settings. This ensures the correct unit is connected and that each VP uses the intended operating mode, sweep number, record length, and stack count.

Group Settings

Navigate to the Group Settings tab and confirm or edit the Group ID, Units in Group, and Lead Unit fields. Default settings for a single VPEG are typically Group ID 1, Units in Group 1, and Lead Unit 1.

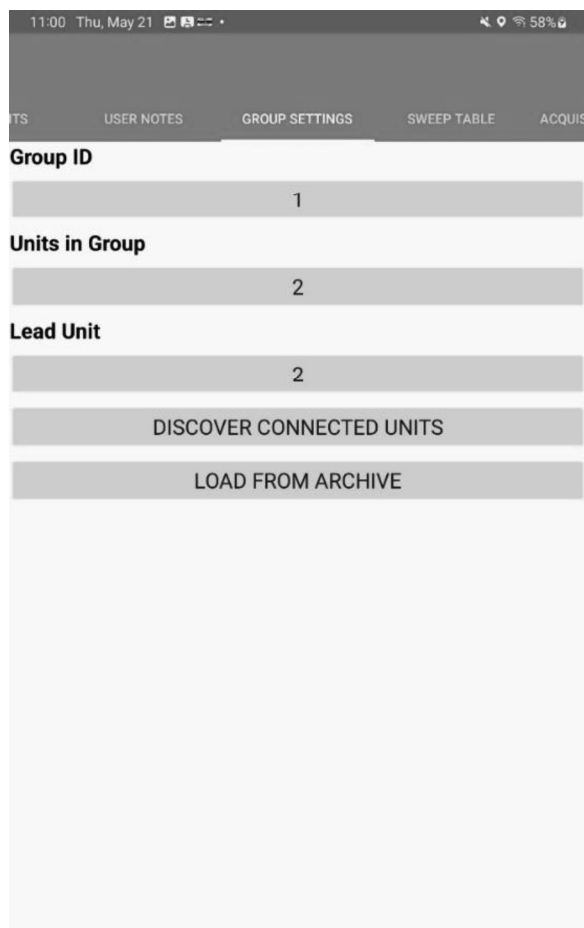
- Use Discover Connected Units to automatically populate the connected VPEG when available.
- When running multiple synchronized VPEG units, assign unique unit numbers and confirm the correct lead unit.
- Confirm group settings before production begins.

Acquisition Settings

After confirming the connected VPEG, open Acquisition Settings. Mode should be set to Electric Vibrator. Record Length is entered in milliseconds and should include the sweep time plus listen time. The Number of Sweeps or stack count controls how many sweeps are performed at each source point. Sweep Number refers to the sweep entry stored in the loaded sweep table.

NOTE: Start delay

A start delay may be used to allow for system overhead before the sweep begins. Confirm the recommended default value during final software review before publishing the manual.



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ITS USER NOTES GROUP SETTINGS SWEEP TABLE ACQUIS

Group ID

1

Units in Group

2

Lead Unit

2

DISCOVER CONNECTED UNITS

LOAD FROM ARCHIVE

Figure 8.1: Group settings screen example.

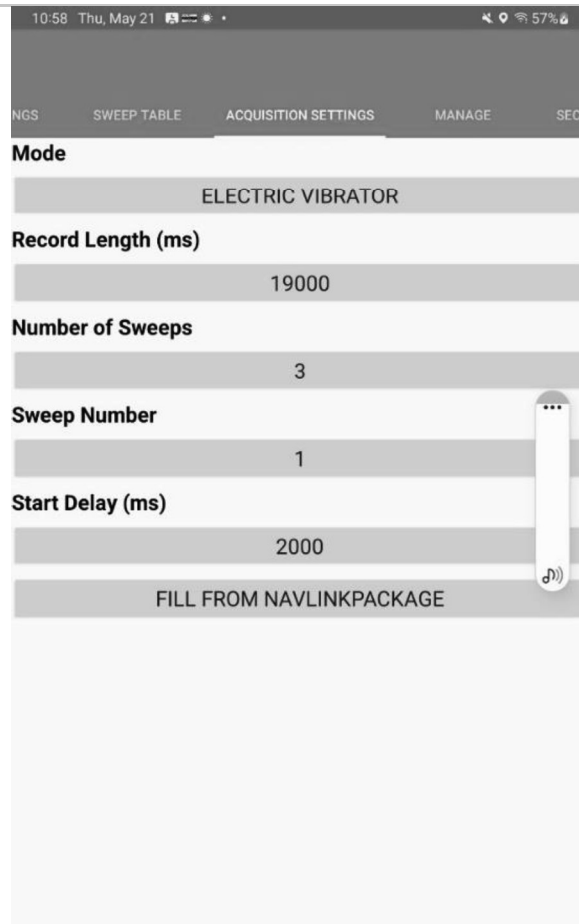


Figure 8.2: Acquisition settings screen example.

9. Building and Loading Sweep Tables

Sweep tables store the sweep definitions used during field operation. Operators may create or edit sweep parameters directly in NavLink VPEG or build sweep tables using PC software such as SourceControl F3.

Sweep Parameter	Description
Sweep Number	The stored sweep slot assigned to acquisition settings.
Start Frequency	Beginning frequency of the sweep.
End Frequency	Ending frequency of the sweep.
Sweep Length	Duration of the sweep.
Sweep Type	Linear or another available sweep type.
Tapers	Start and end smoothing values applied to the sweep.
Amplitude	Sweep drive level or output percentage, if available.

1. Open the Sweep Table tab.
2. Select the sweep number to review or edit.
3. Confirm start frequency and end frequency.
4. Confirm sweep length and sweep type.
5. Review taper values.
6. Save the sweep settings.
7. Confirm that acquisition settings are assigned to the correct sweep number.

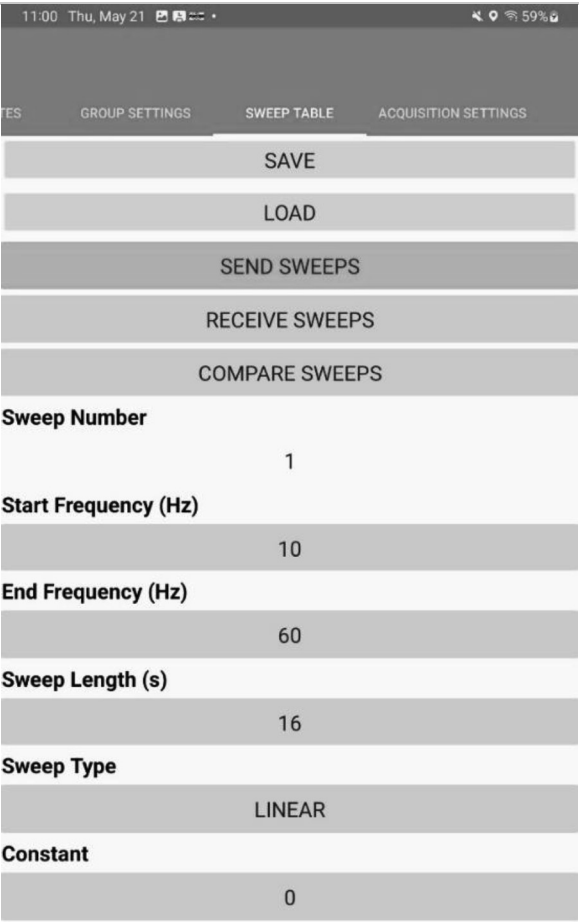


Figure 9.1: Android Sweep Table tab example.

SWEEP TABLE
10
End Frequency (Hz)
60
Sweep Length (s)
16
Sweep Type
LINEAR
Constant
0
Taper Type
COSINE
Start Taper (s)
0.3
End Taper (s)
0.1
Phase (°)
0
COPY THIS TO ALL OTHER SWEEPS

Figure 9.2: Editing a sweep in NavLink VPEG.

10. Running a Manual VP Survey with a Predefined Shot Line

This procedure is used when shot point locations have already been created or loaded in NavLink VPEG. It is useful for short lines, fixed station spacing, or predefined source points that will be selected one at a time during field operation.

Before Starting

- The VPEG unit is powered on and connected to NavLink VPEG.
- GPS is active and showing the unit location on the map.
- The desired survey line and shot point locations have been created or loaded.
- Sweep table and acquisition settings have been reviewed.
- The VPEG is properly positioned, stable, and coupled to the ground.
- The field crew is clear of the unit before starting the sweep.

Procedure

1. Open NavLink VPEG and display the survey map.
2. Locate the first shot point on the survey line.
3. Select the first shot point location.
4. Verify that the GPS position shows the VPEG on or near the selected shot point.
5. Confirm that the correct sweep and stack settings are selected.

6. Press Start to begin the VP.
7. Monitor the system status during the sweep sequence. The software should indicate PSS Received. If multiple sweeps are programmed, the system will automatically begin the next sweep in the stack.
8. Wait until the software displays VP Completed.
9. Select the next shot point location on the survey line.
10. Move the VPEG to the next source point.
11. Verify that GPS updates and confirms the unit is on or near the selected shot point.
12. Press Start to run the next VP.
13. Continue this process for each shot point on the line.

BEST PRACTICE: Tight station spacing

For close station spacing, carefully confirm that the selected point in the app matches the physical location of the VPEG. Better positioning improves field data organization.

11. Running an On-The-Fly Survey

The on-the-fly workflow allows the operator to create shot points in the field as the VPEG is moved from location to location. This workflow is useful when physical flags or markers have been placed in the field but a digital survey layout has not been imported or created ahead of time.

Before Starting

- Physical shot point markers or flags have been placed in the field.
- The VPEG unit is connected to NavLink VPEG.
- GPS is active and displaying the current unit location.
- Sweep and acquisition settings are configured.
- The correct line and starting station information have been entered.

Procedure

1. Position the VPEG at the first physical shot point marker.
2. Confirm that the GPS position shown in NavLink VPEG matches the current field location.
3. Click on the Red Flag in the bottom left, then select the second flag to create a VP. Now select the VP.
4. Press Start to run the first VP.
5. Monitor system status and confirm PSS Received during the sweep process.
6. Wait for the system to display VP Completed.
7. Move the VPEG to the next physical shot point marker.
8. In the map view, create or set the next source point at the current field location.
9. Confirm that the line number and station number have advanced correctly.
10. Select the newly created point for navigation.
11. Verify that the GPS location shows the VPEG positioned on or near the selected point.
12. Press Start to run the next VP.
13. Wait for VP Completed before moving to the next location.
14. Repeat the process for each additional field marker.

Correcting Point Selection

If the navigation display remains locked onto a previous point, clear the previous selection before selecting the correct point.

1. Tap the active pin or selected point to clear the previous navigation target.

2. Turn off any map flags or overlays if they interfere with point selection.
3. Select the correct newly created source point.
4. Confirm that the selected point is highlighted as the active navigation point.
5. Run the VP only after confirming the correct point is selected.

TIP: On-the-fly notes

Keep line and station numbering consistent throughout the survey and review shot records periodically to confirm points are being stored correctly.

12. Reviewing Shot Records and App Pages

After running a manual or on-the-fly survey, NavLink VPEG stores shot information that can be reviewed from the app tabs. Operators should review these pages during production and before closing the field session.

Shot Records Page

Use the shot records page to review completed VP records. The shot list may include line number, shot ID, station ID, number of stacks, completed VP records, and test shots or repeated shots at the same location.

1. Open the shot record or list tab in NavLink VPEG.
2. Review the completed shots.
3. Confirm that each VP has the correct line and station information.
4. Check the number of stacks recorded for each VP.
5. Identify any test shots or duplicate records.
6. Edit or note any records that require correction.

Unit and GPS Status

- Unit ID
- Group ID
- GPS satellite status
- Current line and station
- Navigation target
- Connection status

Survey Information

The survey page allows the operator to review or edit current survey settings. Typical editable fields may include line number, station number, source point information, user notes, group ID, and unit ID.

NOTE: Multi-unit operation

The default VPEG group is typically Group 1. Group settings become especially important when operating multiple synchronized VPEG units.

13. Editing Sweep Table Settings

The sweep table controls the source signal used by the VPEG. Operators can review or edit sweep settings directly from NavLink VPEG.

Example Field	Example Setting
Sweep Number	1
Start Frequency	10 Hz
End Frequency	128 Hz
Sweep Length	15 seconds
Sweep Type	Linear
Tapers	As required by survey setup

NOTE: Survey-specific settings

Final sweep settings should be selected based on survey objective, target depth, site conditions, and acquisition requirements.

14. Configuring Acquisition Settings

Acquisition settings determine how the VPEG runs each VP. This includes record length, number of sweeps, stack count, and which sweep table entry is used.

Setting	Description
Record Length	Total recording time in milliseconds (sweep + listen).
Sweep Length	Duration of the active sweep.
Listen Time	Additional time after the sweep for recording signal response.
Number of Sweeps / Stacks	Number of sweeps performed at each VP.
Sweep Number	Sweep table entry used for the VP.
Start Delay	Delay before the sweep begins, if used (recommended).

Record Length Example

If the sweep length is 15 seconds and the desired listen time is 2 seconds, the record length should be set to 17,000 milliseconds. This total includes 15 seconds of sweep time and 2 seconds of listen time.

1. Open the Acquisition Settings tab.
2. Confirm the record length.
3. Confirm the desired number of sweeps or stacks.
4. Select the sweep number to be used.
5. Confirm any start delay settings.
6. Save or apply the acquisition settings.
7. Return to the survey or map page before running the next VP.

WARNING: Acquisition setup

The selected sweep number must match the intended sweep in the sweep table. Incorrect acquisition settings may result in incomplete records or unintended sweep sequences.

15. Troubleshooting

Issue	Possible Cause	Recommended Action
Cannot connect to VPEG Wi-Fi	Controller still booting or device not in range	Wait for boot-up to finish, move closer to the unit, and reconnect to the VPEG Wi-Fi network.
Software does not show connected unit	Wrong Wi-Fi network or app not refreshed	Confirm the device is connected to VPEG eVib Wi-Fi, restart NavLink VPEG, and use Discover Connected Units.
No GPS lock or poor position accuracy	Obstructed sky view or antenna issue	Move to open sky, check GPS antenna connection, and allow additional time for satellite lock.
VP does not start	Incorrect acquisition settings or unit not ready	Verify mode, sweep number, record length, stack count, and unit connection status.
Wrong point selected	Previous point still active or map overlay interference	Clear the active pin, disable interfering overlays, and select the correct source point before starting.
Unexpected record length	Sweep time and listen time not summed correctly	Confirm record length in milliseconds equals sweep length plus listen time.

16. Appendix A - Recommended Field Checklist

Step	Field Check
1	VPEG powered on and stable
2	Android device or PC connected to VPEG Wi-Fi
3	NavLink VPEG open and connected
4	GPS status confirmed
5	Sweep table reviewed
6	Acquisition settings reviewed
7	Correct shot point selected or created
8	Crew clear of VPEG
9	Start pressed and PSS Received confirmed
10	VP Completed confirmed before moving unit
11	Shot records reviewed at end of line or session