

# **SoP Explorer**

User Manual

Version: 8.0.0/1

Exported on: 24 October, 2023

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This user manual describes **SoP Explorer**, Lawo's firmware update tool for on-air systems.

The following products are updated using SoP Explorer.

- diamond
- <u>ruby</u>
- crystal
- Power Core



## 1 SoP Explorer - Getting Started

SoP Explorer is the firmware update tool for Lawo on-air systems. It can be used to check and update the firmware versions on the Core, expansion I/O cards and, where applicable, the control surface and key panels.

You will need to run SoP Explorer whenever you update to a new version of software. The latest firmware files are copied onto the PC by the software installer. When SoP Explorer connects to the Lawo system, it compares the versions. If updates are required, data is transferred firstly to the Core, and then onto the other components.

• **Important**: You should never update system while it is operational! The hardware will reset several times during the update process, causing interruption to the operation and audio.

#### **1.1 Prerequisites**

SoP Explorer must be installed onto the configuration PC using the **onair-designer.exe** installer (as described <u>here</u>). Both the configuration PC and the Lawo device must be connected to the control network.

#### 1.2 First Steps

Before you begin, check that the expansion I/O cards are installed and that any surface components, including key panels, are connected.

1. Start the software.

SoP Explorer starts automatically at the end of the ON-AIR Designer software installation procedure. It can also be started from the desktop icon or Windows START menu.

If this is the first time you have launched SoP Explorer, then the "Unit Properties" window opens automatically. Alternatively, select **Unit**  $\rightarrow$  **New...** (from the main menus).

⊋ s	oP Explorer	SoP Explorer						
Unit	Run View Help	Unit Run View Help						
	New							
	Delete							
	Properties		Unit Properties				10	
~	Refresh on Startup	7	Edituri	's properties				
	Exit			to proportioo				
_			Unit:		]			
			lp: /	192.168.101.240	- Group:	OnAir	•	
			Name:	OnAir Device	_ Sample Freq.:	48 KHz	-	
			Configuration:					
			Comment:					
						Cancel	<u>0</u> K	
		-						

2. Edit the 'Unit Properties' to define the system you wish to connect to.

Usually it is enough to enter the **IP** address of the Core and leave the other fields at their default values. In a larger network with multiple devices, it can be useful to edit the **Name** field (to help identify the device in the system tree).

Select **OK** - the unit is added to the **OnAir** device group in the system tree. SoP Explorer connects to the device and analyses the current firmware revisions.



If a white cross on a red background <sup>SO</sup> appears beside the unit name, then SoP Explorer cannot connect to the device. Check that the IP address (entered in the "Unit Properties") matches that of the remote device. Then check the IP settings of the configuration PC and the network cabling.

3. Once a connection is established, you can use the + and - signs (in the system tree) to reveal the components.

	Status	A Sic	t Hardware	Rev.	Software	Version	Timestamp	Version (SoP)	Timestamp (SoP)	Rev	SoP	
- OnAr Device (48kHz, 192,168,101.)		031	710/10	-	APPL	6.0.10231	5/14/2019 11:38:55	6.0.10231	5/14/2019 11:38:55	2 <sup>14</sup>	710_10_S01.sop	
Suitace	QEQL	031	710/10		FRBF	6.0.10231	5/14/2019 11:38:55	6.0.10231	5/14/2019 11:38:55		710_10_S01.sop	
Constant	2 EQL	031	710/10	1	USCR	6.0.10231	5/14/2019 11:38:55	6.0.10231	5/14/2019 11:38:55	215	710_10_S01.sop	
Constant	EQL	031	710/10		WWW	6.0.10231	5/14/2019 11:38:55	6.0.10231	5/14/2019 11:38:55	1.16	710_10_S01.sop	
	- Lab		11010		Phote	0.0.10251	3114201011.00000	0.0.10251	571472010 11.50.50.5		110_10_001.10p	
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For a Power Core system, you will see up to three components: **System** (for internal components), **IOs** (for expansion I/O cards) and **Surface** (for control surface modules and/or key panels). If the **Surface** branch is missing, then the surface components are not connected.

## 1.3 Editing the 'Unit Properties'

Once a unit is defined, you can re-open the 'Unit Properties' by selecting **Unit**  $\rightarrow$  **Properties...** (from the main menus) or clicking on the 🗊 button (from the toolbar).

If more than one device has been added to SoP Explorer, then you can use the **Unit** drop-down menu to select a different system.

The remaining fields can be edited as follows.

- **Ip** defines the IP address of the Lawo control system. This must be entered correctly, otherwise network communication cannot be established.
- Name identifies the system within SoP Explorer. A default name of **OnAir Device** is given to each new unit. It is a good idea to edit the name so that systems can be easily identified.
- **Group** is reserved for future implementation; the default group is always **OnAir**.
- Sample Freq this field is used to select the sample frequency for sapphire or Nova17. It has no function for other systems.
- Configuration this field is optional. It can be used to enter the file path for the system configuration. You do not have to enter a configuration, but if you do, you will able to open the ON-AIR Designer configuration by selecting Run → Configuration (from the main menus) or clicking on the button (from the toolbar).
- **Comment** this field is optional. It can be used to enter notes about the system.



#### 1.4 Checking the Current Revisions

Once the unit is defined, select a component (e.g. **System**) to interrogate its software modules.

	and the second s	- 5104	Haldwale	Rev.	Software	Version	Timestamp	Version (SoP)	Timestamp (SoP)	Rev	SoP	De
- DNAr Device (48kHz, 192, 168, 101, 240)	EQL	031	710/10	14	APPL	6.0.10231	5/14/2019 11:38:55	6.0.10231	5/14/2019 11:38:55	2 A	710_10_S01.sop	
Surface	SEGL	031	710/10		FRBF	6.0.10231	5/14/2019 11:38:55	6.0.10231	5/14/2019 11:38:55		710_10_\$01.sop	
	QEQL	031	710/10		USCR	6.0.10231	5/14/2019 11:38:55	6.0.10231	5/14/2019 11:38:55	1	710_10_S01.sop	
	EQL	031	710/10		www	6.0.10231	5/14/2019 11:38:55	6.0.10231	5/14/2019 11:38:55		710_10_S01.sop	
	VEQU	031	/10/10	82 1	MISC	6.0.10231	5/14/2019 11:38:55	6.0.10231	5/14/2013 11:38.55	007	/10_10_501.sop	
	۲.											

Several columns of information are provided: "Status", "Slot", "Hardware", etc. These are described in more detail later.

For now, use the "Status" column to check the firmware revisions. The table below describes all possible states.

Status	Meaning	Actions
💙 EQL	Software is up to date.	No action required.
UPD UPD	Software requires an update.	Update the module using one of the update methods.
NEW	Software is newer than the SoP Explorer release.	SoP Explorer cannot be used to downdate the software. Please contact the <u>Lawo Support</u> <u>Department</u> for assistance.
S FIX	Software cannot be updated by the SoP Explorer release.	Please contact the <u>Lawo Support Department</u> for assistance.
🕛 OLD	Software cannot be identified. This may occur if you have not updated the system for a while.	Please update the module and then refresh the connection.

Repeat to interrogate each component as applicable: System, IOs and Surface.

If all modules on all components are up to date, then you can close SoP Explorer. Alternatively, use the 'Software Update Wizard' to update the components.

## 2 SoP Explorer - Software Update Wizard

SoP Explorer support three software update methods: Selected, Wizard and Force. Unless otherwise advised, it is recommended to use the 'Update Wizard'.



1. Start by opening the 'Software Update Wizard', either from the main menus (**Run → Software Update → Wizard...**) or toolbar.

Configuration       Web         Elect       Selected         Web       Force         Configuration       Web         Veter Time       Solver Logs s         Cancel       F12	SoP Exp	blorer						SoP Explorer
Image: Software Update       Sected         Image: Switch Mode       Version Rest         Switch Mode       Out         Switch Mode       Out         Image: Config       Configuration         Web       Terree Config         Terree Config       Configuration         Web       Terree Config         Seve Logs as       Configuration         Cancel       F12	Unit Run	New Help						
Bendfer       Witzdram       No Stal Mode       Hadowae       Version       Timestamp       Version       Timestamp       Version       Software       Version       Vers		Software Update >	Selected					
Soften Model Porce Porce Doc [c] 710/25 · · PRPD 01.44 00/02/22/313/22.03 01.44 c Transfer Config Configuration Web Telnet Save Logs as Cancel F12 Soften Transfer Config Soften Transfer Config Configuration Web Telnet Save Logs as Cancel F12 Soften Transfer Config Soften Transfer Config Unit Soften Transfer Config		Factory Reset	Slo	Mode Hardware	Type Rev. Software	Version   Timestamp	Version (SoP) 1	
Transfer Config   Ease Configuration   Web.   Telnet   Set System Time   Save Logs as   Cancel   F12     Software   Subsce   OLD   Status   Status </td <td></td> <td>Switch Wode</td> <td>Force 002</td> <td>[C] 710/25</td> <td> FRPD</td> <td>01.39 18/07/2022 17:19:06</td> <td>01.39 1</td> <td></td>		Switch Wode	Force 002	[C] 710/25	FRPD	01.39 18/07/2022 17:19:06	01.39 1	
Erace Config     Configuration   Web   Ehnet   Set System Time   Save Logs as   Cancel   F12     Software   WISC   Suffaces   OLD   Show Wicard at Statup   Cancel   OK		Transfer Config >	240)					
Configuration   Web   Telnet   Save Logs sz   Cancel   F12     Software   WMCU   WMCU   WMCU   WMCU   WMCU   Sutaces   Sutaces </td <td>in the second second</td> <td>Erase Config</td> <td>.240)</td> <td></td> <td></td> <td></td> <td></td> <td></td>	in the second	Erase Config	.240)					
Web   Tehret   Set System Time   Save Logs as   Cancel   F12     Unit   Unit <tr< td=""><td></td><td>Configuration</td><td></td><td></td><td>CoD Evaluation Minored</td><td></td><td>V</td><td></td></tr<>		Configuration			CoD Evaluation Minored		V	
Telnet   Set System Time   Save Logs as   Cancel   F12     Unit   Software   W LUD   W MCL   <		Web		-	SOP Explorer - Wizard			
Set System Time   Save Logs as   Cancel   F12     Unit   Subfaces   OLD   Subfaces   Subfaces<		Telnet			Update Wizard			
Save Logs as       Onthin Device (48kHz, 192.168.1)       Software         Cancel       F12       F12       Surfaces       UD0       MICU		Set System Time		-				
Cancel       F12         Type       Status         ✓ System       ✓ UPD         ✓ System       ✓ UD         ✓ Dos       ✓ USCR         ✓ Dow       ✓ USCR         ✓ Show Wizard et Startup       Cancel		Save Logs as			Unit	Software		
Type       Status       Status       Status         Surfaces       OLD       Status       Status         IDs       OLD       Status       IDS         IDs       IDs       IDS       IDS         IDs       EoL       IDS       IDS         IDs       Show Wizard at Startup       Eancel       IK		Cancel F12			UnAir Device (48kHz, 192.168.1			
Image: System       Image: UPD Organization of the system         Surfaces       OLD Organization         Image: Panels       EQL Organization         Image: Show Wizard at Startup       Image:		- Concer I in			Type Status	MISC SAFE		
Show Wizard at Startup					V System V UPD	SLOD		
Panels EQL								
All None Show Wizerd at Startup Cancel OK					🗆 Panels 🛛 🗖 EQL 🚫			
Show Wizard at Startup						All None		
☐ Show Wizard at Startup								
Show Wizard at Startup						Coursel OK		
					Show Wizard at Startup			
			1					

2. Check that the correct unit is selected (in the drop-down Unit menu).

3. Then use the **Type**, **Status** and **Software** options to prepare the update as follows.

Start by selecting System (in the Type column) + UPD (in the Status column) + All (in the Software modules list).

- 4. Select **OK** a confirmation window appears.
- 5. Select **Continue** to start the update.

Software updates can take several minutes. The progress is shown in the status bar at the bottom of the SoP Explorer window. Once the update is complete, the system cold starts.

- 6. Wait for the system to reboot and then click on the refresh button on the toolbar 1.
- 7. Now check the status of the **System** modules.

All modules should be equalized **Q**EQL indicating that their software is up to date.

- 8. Repeat the process but this time select **IOs** (in the Type column) to update the expansion I/O cards fitted to the Core.
- 9. If a control surface is connected, repeat the process again but this time select **Surfaces** (in the Type column).

Once all software modules on all components are equalized, the firmware updates are complete and you can close SoP Explorer.



In the unlikely event that the 'Software Update Wizard' fails, you can try one of the <u>alternative update methods</u>.



## 3 SoP Explorer - Other Update Methods

This topic covers the other two update methods: Selected and Force. You can use the first method to update a specific component. The second method can be used if both the <u>Software Update Wizard</u> and <u>Selected Update</u> fail.

#### 3.1 'Selected' Software Update

This method updates the software on a specific component.

- 1. Using the system tree (on the left), select the component (e.g. **IOs**).
- 2. Then select the module(s) you wish to update.

🖵 SoP Explorer															
Unit Run View Help															
⊡+++ OnAir	Status	4	Slot	Mode	Hardware	Туре	Rev.	Software	Version	Timestamp	Version (SoP)	Timestamp (SoP)	Rev	SoP	Depends
🖻 🖅 OnAir Device (48kHz, 👘 🌒	EQL		002	[C]	710/25	°		FRPD	01.44	03/02/2023 19:22:55	01.44	03/02/2023 19:22:55	•	710_25_S01.sop	
	UPD		007	[C]	710/55			FRPD	01.38	18/07/2022 17:19:06	01.39	18/07/2022 17:19:06	· ·	710_55_S01.sop	
System	100000														

You can select multiple modules by using the SHIFT or CTRL buttons on your keyboard.

- To select a range: click on the first entry, press and hold SHIFT, and then click on the last entry.
- Once a range is selected, press and hold SHIFT and click to increase (or decrease) the selected range.
- Alternatively, press and hold CTRL and click to select (or deselect) individual modules.

3. Open the 'Software Update' dialog box, either from the main menus (**Run → Software Update → Selected**) or toolbar (
①).

Туре	Slot	Hardware	Target	Version	Timestamp	Filename

3. Check the actions and click on **Continue** to start the update.

Software updates can take several minutes. The progress is shown in the status bar at the bottom of the SoP Explorer window. Once the update is complete, the system cold starts.

- 4. Wait for the system to reboot and then click on the refresh button on the toolbar 🛃.
- 5. Now check the status of the updated modules.

If they are equalized  $\mathfrak{O}^{EQL}$ , then the update is successful.



#### 3.2 'Force' Software Update

This method can be used to transfer a specific set of software to a component.

Important: It is recommended to use this function with caution and only if all other update methods have failed.
A forced update does not check the hardware status of the component before performing an update. Thus, it is possible to transfer the wrong software to a module in error and, potentially, leave the system inoperative!

- 1. As before, use the system tree to select a component (e.g. **IOs**).
- 2. Then select the module you wish to update.
- 3. Open the 'Force Software Update' dialog box by selecting **Run → Software Update → Force** from the main menus.

Tune:	IOs	•
	1.00	
łardware:	941/14 941/16 941/41	^
	941/42 941/51 941/52 941/53	
	941/55 941/62 941/83 941/84	v
ilot:	0	
Goftware:	MCU	•
- ilename:	941 02 S19.sop	

- 4. From the drop-down **Type** menu, select the device type.
- 5. From the Hardware list, select the type of component.

6. In the **Slot** box, enter the slot position where the software modules should be loaded to. (This box is only active for IOs.)

- 7. From the drop-down **Software** menu, define the software module.
- 8. Check the settings and click on **OK** to start the update.

Software updates can take several minutes. The progress is shown in the status bar at the bottom of the SoP Explorer window. Once the update is complete, the system cold starts.

9. Wait for the system to reboot and then click on the refresh button on the toolbar 📝 .

10. Now check the status of the updated modules.

If they are equalized, then the update is successful.

If you need further assistance, the Lawo Support Department can be contacted by email at <a href="mailto:support@lawo.com">support@lawo.com</a>, or by telephone during normal working hours - please visit the <a href="mailto:Support">Support</a> area of the Lawo website for the most up-to-date contact details.



## 4 SoP Explorer - Software Module Interrogation

The columns on the right of the SoP Explorer window show information about the selected component's software modules.

ttt OnAir	Status		Slot Hardware	Rev.	Software	Version	Timestamp	Version (SoP)	Timestamp (SoP)	Rev	SoP	1
E- DnAir Device (48kHz, 192, 168, 101, 240)	EQL	(	31 710/10	14	APPL	6.0.10231	5/14/2019 11:38:55	6.0.10231	5/14/2019 11:38:55		710_10_S01.sop	
JO <sub>2</sub>	EQL		31 710/10	1	FRBF	6.0.10231	5/14/2019 11:38:55	6.0.10231	5/14/2019 11:38:55		710_10_S01.sop	
Sustem	EUL		01 /10/10	1	USCR	6.0.10231	5/14/2019 11:38:55	6.0.10231	5/14/2019 11:38:55	0.5	/10_10_S01.sop	
- Inclosed	EQL	1	31 710/10		MISC	6.0.10231	5/14/2019 11:38:55	6.0.10231	5/14/2019 11:38:55		710_10_S01.sop	
		103										
	<											
Explorer initialized.	-											

Most important is the **Status** column as this shows the current revision status of the firmware (compared to the version included with SoP Explorer). The remaining columns provide further information about the component or its firmware.

- Status the current revision status of the firmware. All possible states are described in the table below.
- Slot the hardware address of the component:
  - For **System**, this is always 031 (the control system).
  - For IOs, this is the expansion I/O slot number of the I/O card.
  - For **Surface**, this is the CAN bus address of the module or panel.
- Hardware the part number of the component.
- Rev the hardware revision of the component.
- Software the name of the software module.
- Version the current version running on the module.
- **Timestamp** the date and time when the current version was created (if available).
- Version (SoP) the version included in the SoP release.
- Timestamp (SoP) the date and time when the SoP version was created.
- Rev the hardware revision required to perform an update.
- **SoP** the filename included in the SoP release.

Status	Meaning	Actions
SEQL	Software is up to date.	No action required.
🕛 UPD	Software requires an update.	Update the module using one of the update methods.
○ NEW	Software is newer than the SoP Explorer release.	SoP Explorer cannot be used to downdate the software. Please contact the <u>Lawo Support</u> <u>Department</u> for assistance.
S FIX	Software cannot be updated by the SoP Explorer release.	Please contact the <u>Lawo Support Department</u> for assistance.
🕛 OLD	Software cannot be identified. This may occur if you have not updated the system for a while.	Please update the module and then refresh the connection.



## 5 SoP Explorer - Set System Time

SoP Explorer can be used to transfer the date and time from your configuration PC to the Lawo device. The transfer is done as a one-shot snapshot, so start by checking the current settings on your PC before you begin.

1. If SoP Explorer is not already open, start the application from either its desktop icon or Windows START menu.

All units that have been previously defined appear in the system tree (on the left).

If the unit you wish to configure is not listed, then select **Unit**  $\rightarrow$  **New...** (from the main menus), enter the **IP** address of the Core and select **OK** - the unit is added to the "OnAir" device group in the system tree. SoP Explorer connects to the device and analyses the current firmware revisions.

If a white cross on a red background 😣 appears beside the unit name, then SoP Explorer cannot connect to the device. Check that the IP address (entered in the "Unit Properties") matches that of the remote device. Then check the IP settings of the configuration PC and the network cabling.

2. Right-click on the unit and select **Set System Time**. Confirm by selecting **OK**.



The software now sets the system date and time to match that of the configuration PC. The success (or failure) of the reset is shown in the SoP Explorer status bar area.



## 6 SoP Explorer - Main Menus

This topic describes all possible operations from the main menus.

You can also right-click on a unit or component (in the system tree) to access the most common operations.

#### 6.1 Unit



Use the Unit menu to ...

- New add a new unit to SoP Explorer.
- Delete delete a unit from Sop Explorer. The unit must be selected (in the system tree); then choose Unit -> Delete and select Yes to confirm.
- Properties show or edit the '<u>Unit Properties</u>' of an existing system. The unit must be selected (in the system tree); then choose Unit -> Properties.
- Refresh on Startup enable/disable the refresh on startup option.
- Exit close SoP Explorer.

#### 6.2 Run



Use the **Run** menu to...

- Software Update access the three methods of updating software: the Update Wizard and Selected/Force.
- Factory Reset reset the units defined in SoP Explorer and reload the complete software set to the system.
- Switch Mode switch the mode of a Compact Engine (from crystal to sapphire compact or vice versa). This option is
  only available for Compact Engine systems.
- **Transfer Config** access the **Unit to File...** and **File to Unit...** transfer options. From here you can make a binary copy of the system configuration stored on the unit OR transfer a new binary file to the system.
- Erase Config transfer an empty system configuration to the unit.
- **Configuration** open the ON-AIR Designer configuration for the selected unit. The configuration file path is defined in the '<u>Unit Properties</u>'. This option becomes available once a configuration file is defined.
- Web open a Web UI session for the selected unit.



- Telnet open a Telnet session for the selected unit.
- Set System Time set the date and time of the selected unit to the current clock settings of the configuration PC.
- Save Logs as save the SoP Explorer logs area into a log file (for diagnostic purposes).
- Cancel cancel all operations. For example, to cancel a software update.

#### 6.3 View



Use the View menu to...

- **Toolbar** show or hide the toolbar.
- Statusbar show or hide the status area.
- Logs show or hide the logs area.
- Fixed Modules show or hide the fixed software modules (for the selected component).
- Refresh refresh the status of the selected unit. For example after performing an update.
- **Refresh All** refresh the status of all units in SoP Explorer.

#### 6.4 Help



Use the **Help** menu to...

- Support → Export Hardware Info export information about the units defined in SoP Explorer (for diagnostic purposes).
- Info view information about the SoP Explorer release.



## 7 SoP Explorer - Toolbar

This topic describes all possible operations from the Toolbar.

If the toolbar is not visible, then check the show/hide option in the  $\underline{\text{View}}$  menu.



1	create new unit	Add a <u>new unit</u> to SoP Explorer.
2	show/edit current unit's properties	Open the ' <u>Unit Properties</u> ' dialog box for the selected system.
3	cancel all operations	Cancel all operations. For example, to cancel a software update.
4	refresh all units	Refresh the status of all units. For example, after performing an update.
5	software update wizard	Start the 'Software Update Wizard'.
6	update selected software module	Open the ' <u>Software Update</u> ' dialog box for the selected software module. This option becomes available once a module is selected.
7	run configuration tool	Open the ON-AIR Designer configuration for the selected unit. The configuration file path is defined in the ' <u>Unit Properties</u> '. This option becomes available once a configuration file is defined.
8	run web browser	Open a Web UI session for the selected unit.
9	run telnet application	Open a Telnet session for the selected unit.