Creating R20 files from d4 personalities

(This is NOT an official documentation but simply based on my personal experiences - it might be not complete or even simply wrong in some aspects. Please give feeback if you find anything that you think should be improved.)

R20 files had been the personalities for the Classic consoles from the Pearl 2000 on. After production of the Classic consoles was stopped, Avolites also ceased to offer free personality service for this system in 2019. You can still download the existing personalities, but no new ones will be created.

This page is intended to be helpful when you need a new personality for a fixture which isn't in the library for classic consoles but does exist as d4 file for the Titan system.

Please understand that this page is currently **Work In Progress**.

Preliminary Considerations

It is good to understand the main differences (with regards to personalities) between the old Classic system and the new Titan system. When using the Personality Builder to export R20 files from existing d4 files you most likely need to correct some details following these points.

- 1. With R20 files, **each mode requires a separate personality file**, while in the d4 world there is only one file per fixture, holding all the modes.
- 2. **No Virtual Dimmers in Classic!** In Titan you can define a dimmer channel which doesn't exist in the fixture, to proportionally dim e.g. red/green/blue colour channels. This is not possible on Classic consoles, and thus not supported in R20 files.
- 3. **No cells/subfixtures in Classic!** Nowadays there are numerous fixtures available with many individually controllable pixels or other parts, and in Titan there is a mechanism where you can control all such parts simultaneously (as Master channels) or individualle (as subfixtures or cells). This is not possible in Classic. As such, cell modes as well as modes using cells are not supported in R20 files. There is a special feature called compatibility attributes which attempts to spread out all such attributes onto available attribute banks but this is currently not covered from this explanation.
- 4. **No Conditions in Classic!** In Titan it is rather common to have a virtual function-select attribute which controls how other attributes can be adjusted, e.g. a wheel Gobo Func where you can select Index, Scroll and Shake, and the Gobo wheel itself then shows only a subsection of all the Gobo values. This is not possible in Classic.
- 5. **No 16 bit Dimmer in Classic!** While in theory this should be possible, in reality there is an issue in the software which doesn't allow such dimmers to be dimmed down to 0. Thus you might need to reduce the resolution to 8 bit and put the extra channel elsewhere.
- 6. **Two wheels only in Classic!** While there are at least three control wheels on Titan consoles and it is easy to add and operate attributes on multiple pages, Classic consoles have only two wheels, and spreading attributes across pages is best avoided.
- 7. **Classic wheel mapping not stored in d4 files!** Subsequently to the previous point the wheel mapping (i.e. how the attributes are laid out onto the wheels) for Classic consoles is in most cases different from the mapping in Titan. However, as the d4 file format is targeted towards

Titan, it doesn't provide means to store the mapping for Classic consoles. The personality builder has the option to export and import this as separate xml file in File \Rightarrow Export \Rightarrow Pearl Mapping. But you need to keep track of such files if you are using this.

1. Check if there really doesn't exist one

Use the search on https://personalities.avolites.com/ to check if there really doesn't exist what you need - downloading is always faster than attempting to do yourself.

2. Update your personality library

You certainly do not want to work with old data. Thus, download and install the latest Titan Fixture Library from https://personalities.avolites.com/.

3. Identify the correct d4 file

We assume that a d4 personality for your fixture already exists. Luckily they usually have verbose file names - have a look in the personality folder (with the PC suite installed it is C:\Program Files (x86)\Avolites\Titan\FixtureLibrary). If you don't find what you need then search at https://personalities.avolites.com/ or https://www.avolites.de/downloads/d4find for the correct filename. If you still don't find anything then request the personality for Titan or build it yourself (this might be explained on another day).

If you have found the correct d4 file copy it to a suitable location, e.g. your desktop, and open it in the Titan Personality Builder.

If you want to try it yourself then, as an example, you can download and open the personality of the

Prolight Equinox Fusion 260ZR

. The PersoBuilder will open with the whole tree collapsed, and the Attributes (top) and Properties (bottom) tabs selected:

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M Prolight Equinox Fusion 260ZR -	Personality Builder					-		1
Equinox Fusion 260ZR	Attributes	Functions	Created Attribute	es Current Fur	nctions	History	Modes	Mac
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ia		масто	G 000	Gob				
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	Name	6 U ·		Equinox	Fusion	260ZR		
	Name Name of th	is fixture						
	Properties	DMX Value	s Channels V	Vheel Mapping	Locate	e Values	Cells	

4. Identify modes, enter references

As stated above the Classic system cannot handle some specific things which came with Titan. One of them are cells and subfixtures. Thus, cell modes as well as modes referencing those cannot be exported as R20 (we omit the 'Compatibility Attributes' workaround for the moment).

In the left-hand pane expand the Modes section by clicking on the + sign. Now it will look like this:

2018 Prolight Equinox Fusion 260ZR - Personali	ty Builder	– 🗆 X
File Edit View Tools Help		
Equinox Fusion 260ZR	Attributes Functions Created Attributes	Current Functions History Modes Mac
Manual Physical Attributes	+ Generic + Reserved ⁹ 고 Pan ⁹ 고 Tit Colour Colour 1	Dimmer Shutter Colour 2
िके Modes िके 2 DMX िके 8 DMX	Colour Macro Gobo	Gobo Rot v
⊞- <u>-</u> 17 DMX	Manufacturer	Prolight ^
@ 25 DMX ⊛ ♣ Cell	Name	Equinox Fusion 260ZR
in ▶ Macros in	Name Name of this fixture	
	Properties DMX Values Channels Whee	el Mapping Locate Values Cells

One by one expand each mode (you might enlarge the PersoBuilder's window for a better overview), and identify the modes which you want to and can export as R20 file:

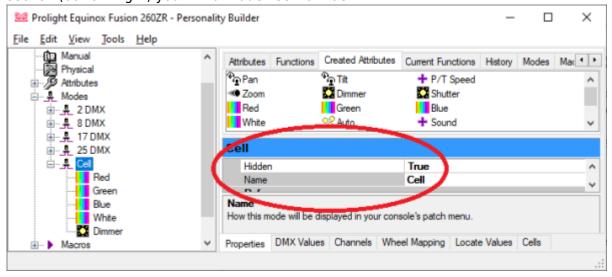
- the **2 DMX** mode features only Auto and Sound as attributes. You will hardly use this at all. Let's just skip it.
- the **8 DMX** and **17 DMX** modes look promising. We'll attempt to export those as R20.

Prolight Equinox Fusion 260ZR - Personalit	y Builder	– 🗆 ×
<u>File Edit View Tools H</u> elp		
⊡ <u>₽</u> Modes ^	Attributes Functions Created Attributes 0	Current Functions History Modes Mac
	+ Generic + Reserved Pap Pan Pap Tilt	Dimmer ^
Tilt Zoom	Colour Colour 1	Colour 2 Gobo Rot V
🔀 Dimmer	Fixture	
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⊕ <u>म</u> . 17 DMX ⊕ <u>म</u> . 25 DMX ⊕म. Cell	Name Name of this fixture	
· · ► Macros · ·	Properties DMX Values Channels Wheel	Mapping Locate Values Cells

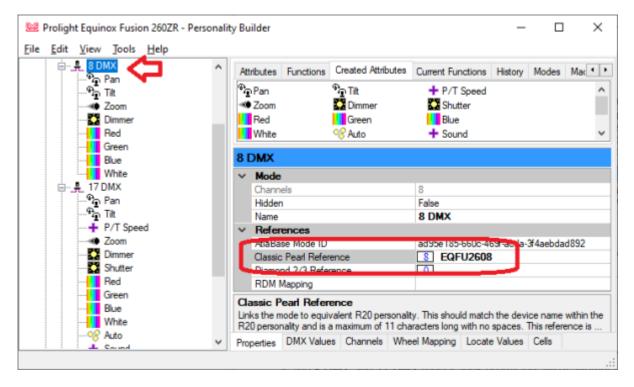
• the **25 DMX** mode contains the sections Cell Master, Cells, and Compatibility Attributes (here empty) - this is a mode which uses cells, and thus cannot be exported as R20.

Prolight Equinox Fusion 260ZR - Personal	ty Builder	– 🗆 X
	Attributes Functions Created Attributes Current Function + Generic + Reserved Dimmer Pan Pan Pan Shutter Colour I Colour 1 Colour 2 Colour Macro Gobo Gobo Rot	s History Modes Mar · ·
⊕ 17 DMX ⊕ 25 DMX ⊕ 26 Cell Master	Manufacturer Prolight Name Equinox Fusio	on 260ZR
Cells Compatibility Attributes Cell Macros	Name Name of this fixture Properties DMX Values Channels Wheel Mapping Loc	ate Values Cells
III. Macros	ropenes	.::

 finally the Cell mode is the one which is only referenced in the 25 DMX mode. proof for this is the Hidden attributes set to true: left, click on the mode Cell itself, and in the properties section (bottom right) you'll find Hidden set to True:



In order to make the selected modes exportable they each need a distinct Classic Pearl Reference. While it is possible to use up to 11 characters life is much easier if you restrict this to 8 characters. It is good practice to use the first 2 characters for an abbreviation for the manufacturer, characters 3~6 for the fixture name, and the last two for the DMX mode. Here let's use **EQ**uinox **FU**sion **26**0ZR **08** (DMX), or **EQFU2608**, and **EQFU2617** respectively. In PersoBuilder, left, click on the mode, in the properties tab (bottom-right) find Classic Pearl Reference, and enter the references we have found.



Do so for each mode which you plan to export as R20.

5. Check Wheel Mapping

Unlike Titan consoles classic only features 2 encoder wheels, and the attribute banks are structured differently. Obviously wee need to check the wheel mapping – the way how the attributes are laid out on the wheels and banks. In order to do this click on the Wheel Mapping tab on the bottom, enlarge the program window so that you have a good overview, select a mode on the left (pro tip: start with bigger modes, than smaller ones may also fit), then select the Classic Pearl tab on top-right, and tick the Filter by Mode checkbox. It will look like this:

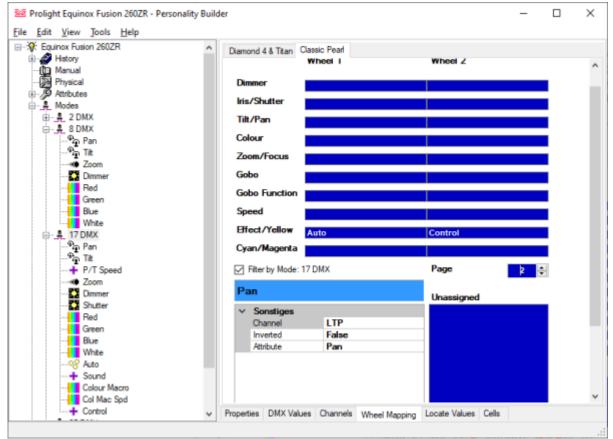
M Prolight Equinox Fusion 260ZR - Personality Buil	der	- 2		_		×
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Equinox Fusion 260ZR	Diamond 4 & Tean	Classic Pearl				
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er-≞_2 2 DMX	LAnning	Dimmer				
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		Tilt	Pan			
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🔛 Dimmer	Zoom/Focus	Zoom				
Red	Caba	20011				
Green	Gobo					
Blue	Gobo Function					
	Speed	D77.4				
		P/T Speed	Sound			
- Po Tit	Effect/Yellow		Blue			
P/T Speed	Cyan/Magenta	Red	Green			
Zoom				_		
🔛 Dimmer	Filter by Mode:	DMX	Page		1 -	
C Shutter	Pan					
Red	ran		Unassigned			
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+ Sound	Attribute	Pan	_			
Colour Macro						¥
	Properties DMX Val	ues Channes Wheel Mappin	a Locate alues	Cells		
	Copenses Drive Fun	wheel Mappin	9 0 00 000			

In the righthand area you can now drag and drop each attribute, in order to move it to another bank and wheel. Usually the suggested mapping is a good starting point. The most important thing is to move attributes from the 'Unassigned' area (bottom right) onto a valid blue rectangle (defined by Wheels and attribute group). Also using the Page select box with arrow buttons you can toggle to more pages. My result looks this:

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201 Prolight Equinox Fusion 260ZR - Personality Build	ler			_		×
File Edit View Tools Help						
Equinox Fusion 260ZR	Diamond 4 & Titan	Classic Pearl				
🗄 🥔 History						^
Manual Manual	Wheel Assignme	nt for R20 File Export				~
Physical		Wheel 1	Wheel 2			
⊕-∯ Attributes ⊡-≜ Modes	Dimmer					
± ≜ 2 DMX		Dimmer				
□	Iris/Shutter		Shutter			
Pan Pan	Tilt/Pan	Tilt	Pan			
Pa Tit			ran			
	Colour	Col Mac Spd	Colour Macro			
🔛 Dimmer	Zoom/Focus	Zoom				
Red	Gobo					
Green						
Blue	Gobo Function					
□ ♣ 17 DMX	Speed	P/T Speed	Sound			
- Pan			sound			
- P Tit	Effect/Yellow	White	Blue			
🕂 P/T Speed	Cyan/Magenta	Red	Green			
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Dimmer	Filter by Mode:	17 DMX	Page	1 🌐	1	
🚺 Shutter	Pan					
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White	Channel	LTP				
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+ Control	Properties DMX Val	ues Channels Wheel Mapping	Locate Values Cells			

- Shutter was moved from Unassigned to Iris/Shutter, Wheel 2
- Colour Macro was moved from Unassigned to Colour, Wheel 2
- White was on page 2. There I moved it to Unassigned, toggled to page 1, and moved it to Effect/Yellow, Wheel 1.



• Auto and Control are good candidates for page 2, Effect/YelloW attribute bank.

Please note that the Classic Pearl wheel mapping is not stored in the d4 file. If you made any changes which you want to store separately for future use then you need to export it using File -> Export -> Pearl Mapping. This will export the mapping onyl as xml file which you need to store and keep track of separately.

Your work on this page is done when nothing is in the Unassigned area, and nothing in the top boxes is red - on every page!

6. Export R20

After having entered the references and checked/adjusted the wheel mapping it is time to have a go on creating R20 files: click File -> Generate R20 Files.... Here are some prompts and solutions which might happen.

Question × Generate Visualiser files? Ja Nein	most likely you will answer No - generating visualiser files is explained in Creating vis files from d4 personalities
	here it complains about the missing reference for the 2 DMX
Error × The pearl reference, "", for the mode "2 DMX" is invalid. Skip mode and continue?	mode. We left this one empty intentionally. Thus click OK here to
OK Abbrechen	continue. You'd click Cancel if you'd decide to add a reference for this mode as well.

Save "8 DMX" (EQ	XE1136785					×	now it's getting closer: we are prompted for name and location of the first mode (have a look at this prompt's title bar, it reads Save "8 DMX"
	Dieser PC > Dokumente > Titan > Personalities		~	ð P	Personalities		(EQFU2608).
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1.013	1	es maraen keine saenerge	uniae gerunden.				prefer the
Bilder	*						desktop). The
icke	*						file name is a
OneDrive							little special:
Dieser PC							while for the
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E Bilder							suggested name would
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Dokumente	v						would be
Dateiname:	prolight_equinox_fusion_260zr.R20					v	impossible to
Dateityp:	Azure/Pearl/Sapphire Personality (*.R20)					~	import this
∧ Ordner ausbiende	en			S	peichern	Abbrechen	into a real Classic
							console. Hence I'd recommend to change the file name to the 8 char name which we defined as reference for this mode, in this case EQFU2608.

90 Save "8 DMX" (EQFU2608)						×	
← → < ↑ 🔲 > Dieser PC > W7_System (E:) > Benutzer > Ada	ministrator > Desktop	~	ð 🔎	Desktop du	rchsuchen		
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Avo_SB_BK # Dokumente # Bilder #							Here location
icke x*							and name are as suggested.
Dieser PC 3D-Objekte Rilder							
Dateiname: EQFU2608.R20						~	
Dateityp: Azure/Pearl/Sapphire Personality (*.R20)						~	
∧ Ordner ausbienden			S	peichern	Abbrecher	n	
							Pretty much self explanatory: there is a macro defined which uses an attribute which is not
Question The attribute, Control, is not included the macro Reset. Write macro anyway?	in this mode but is in	×					included in this mode. Maybe you want to cancel here, go back, and
	Ja Nein						check which macros and attributes are defined. In this case it is 100% correct,
							and we do not include the macro in this mode: click No.

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54 Save "17 DMX" (EQFU2617)				×	Now we are
$\leftarrow \rightarrow \checkmark \uparrow$ \blacksquare > Dieser PC > Desktop >		~	õ 🔎 Desktop d	urchsuchen	about to save
Organisieren 👻 Neuer Ordner				III • 👔	the next mode's
A Name	Änderungsdatum	Тур	Größe		personality
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Avo_SB_BK *					note that it
🚺 Dokumente 💉					did not
📰 Bilder 💉					change the
Produkte x					suggested
					filename to
					the new
Dieser PC 3D-Objekte					mode. You
E Bilder					need to
Desiton Y					manually
Dateiname CI\Users\sb\Desktop\EQFU2608.R20				×	change the
Dateityp: Azon, Pearl/Sapphire Personality (* 830)				~	filename
∧ Ordner ausblenden			Speichern	Abbrechen	again, here to EQFU2617.
					1
					This is quite
					common, in
					particular for
					attributes like Shutter, Gobo
					or Colour: in
					this case e.g.
					the shutter
					has a value
					range from
					0~15 for
					Open, but it is
					only 0 in the
					d4 file - and
Question		\times			then the
					strobe range
The channels assigned to wheels in th	nis mode only utilise				starts at 16,
part of the DMX range.					leaving the
Note: Visualiser will require complete Adjust limits to match?	range to work corre	ectly.			values 115
Adjust miles to materi.					not defined.
					This is okay for d4 (Titan)
	Ja Ne	in			as well as
					R20 (Classic)
					files but is a
					problem for
					visualiser
					files. However
					l'd
					recommend
					to adjust the
					values
					manually if
					required (see
					Creating vis
					files from d4
					personalities).

My scratchpad:

- get the latest d4 file, check at http://personalities.avolites.com - you might already check which modes are in the fixture -> cells are not supported by r20 files/classic consoles - open in personality builder - check the modes you want to use as r20 (each mode gets its own file) - for the Equinox Fusion 260ZR the Cell mode and the 25 DMX mode (which uses the cells) cannot be used as r20 - for the usable modes:

- 1. check that a distinct Classic Pearl Reference is set (11 characters, no spaces PLEQFU2602, PLEQFU2608, PLEQFU2617
- 2. when exporting the filename is created from the Classic Pearl Reference but is limited to 8 characters. Thus, 8 char references are preferable here: EQFU2602, EQFU2608, EQFU2617
- 3. check wheel mapping for the modes you need, tab 'Classic Pearl' all attributes mapped, nothing unassigned and nothing red
- 4. _____

Question

The channels assigned to wheels in this mode only utilise part of the DMX range.

Note: Visualiser will require complete range to work correctly.

Adjust limits to match?

Ja Nein

- 1. not necessarily but recommended to fix this. Here:
 - 1. Shutter (change Open to $1 \sim 15$)
- 2. Auto (change No Effect to 0~15)
- 3. Colour Macro (change Open to 1~15)
- 4. Colour Macro (change Safe to 1~127)

1. _____

Question

The attribute, Control, is not included in this mode but is in the macro Reset.

Write macro anyway?

Ja Nein

AVOSUPPORT - https://avosupport.de/wiki/

No!

- from the second mode on make sure you give the correct filename

prolight_equinox_fusion_260zr.d4 eqfu2602.r20 eqfu2608.r20 eqfu2617.r20

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Permanent link: https://avosupport.de/wiki/personality/create_r20_from_d4?rev=1653900456

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