

GDTF  MVR

# GENERAL DEVICE TYPE FORMAT MY VIRTUAL RIG

## GDTF & MVR WORKFLOW

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# ROBE

Robe is among the world's leading moving light manufacturers, recognised for its innovation, quality engineering and dedication to the very highest production values.



**860**

Company Employees



**75.000**

Square metre facility



**100**

Export countries



IP65



**iFORTE®**

IP65



**iFORTE® FS**

IP65



**iFORTE® LTX**

NEW

IP65



NEW

**iFORTE® LTX FS**



**FORTE®**



**FORTE® FS**



**FORTE® Fresnel**



**FORTE® PC**

30<sup>th</sup>  
ANNIVERSARY  
1994-2024  
ROBE®

QUEENIE

30<sup>th</sup>  
ANNIVERSARY  
1994-2024  
ROBE®

ROBE

ROBE





**Tarrantula™**

IP65

NEW



**iSpiiderX®**



**Spiider®**



**TetraX™**

IP65



**iTetra2™**



**Tetra2™**



**Tetra1™**

IP65



**iBeam 350™**





30

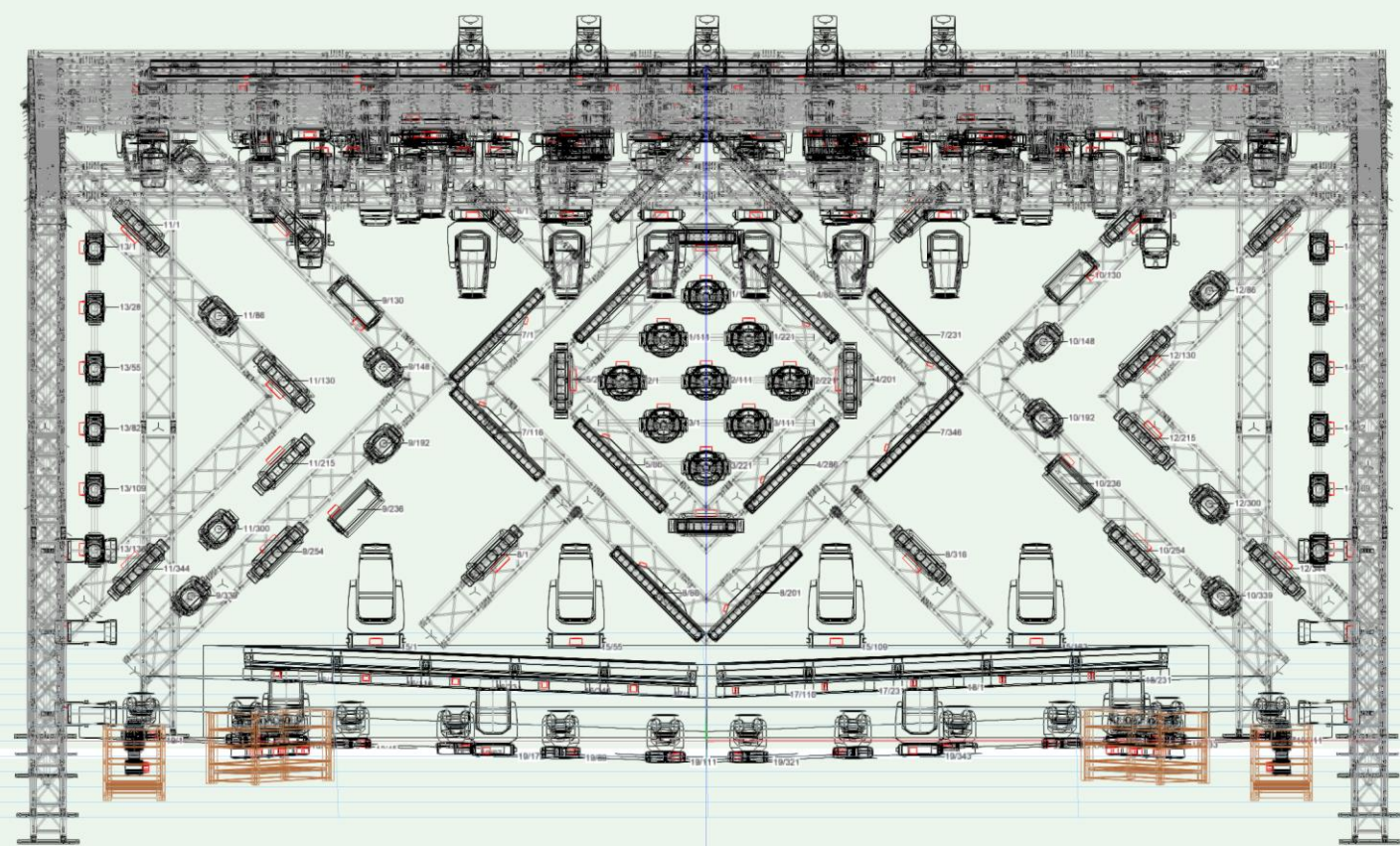
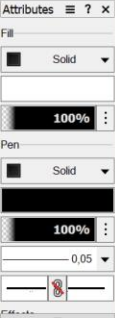
YEARS OF INNOVATIONS











Object Info - Shape

Shape Data Render

No Selection

There are no items to show in this view

Name: [ ]

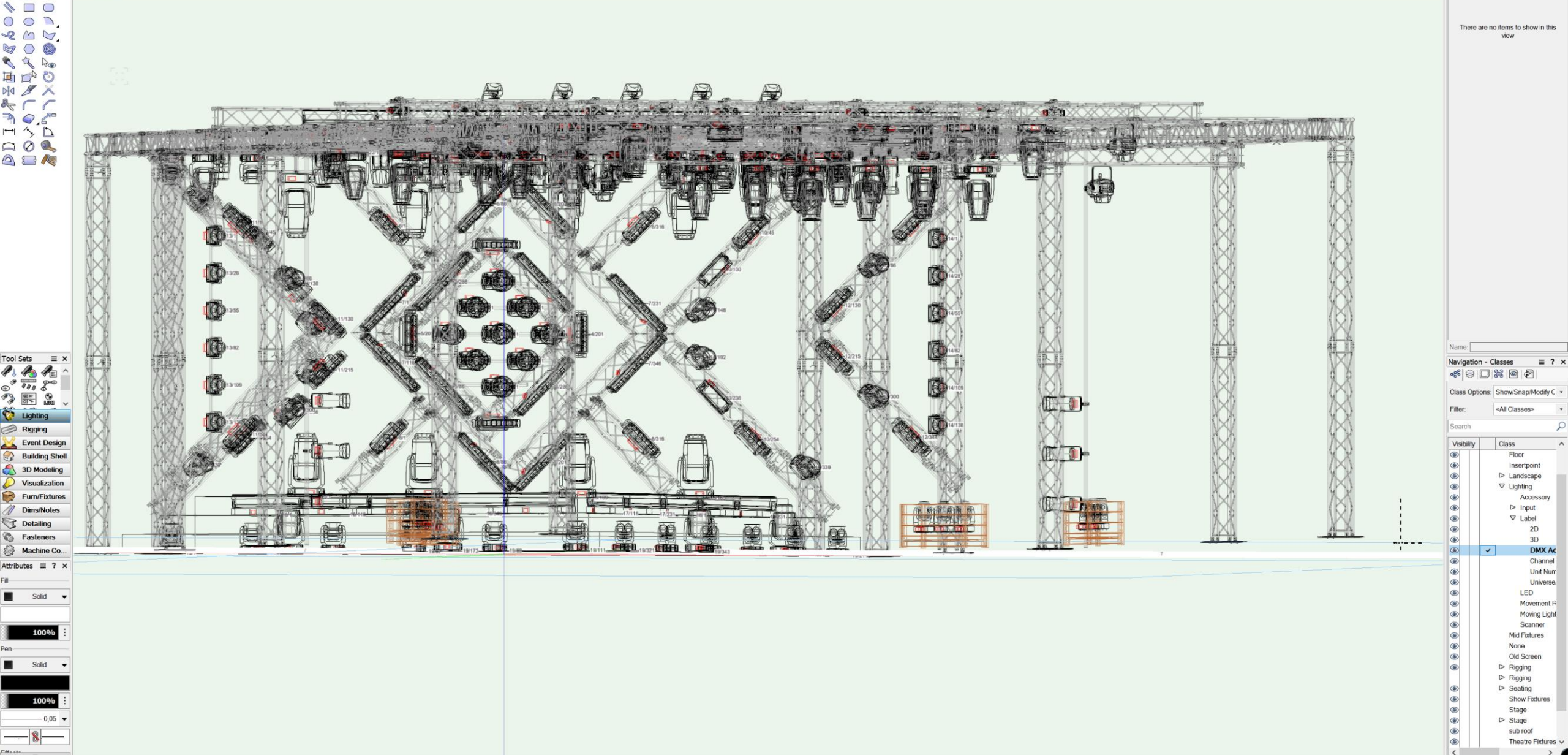
Navigation - Classes

Class Options: Show/Snap/Modify C

Filter: <All Classes>

Search [ ]

Visibility	Class
<input type="checkbox"/>	Floor
<input type="checkbox"/>	Insertpoint
<input type="checkbox"/>	Landscape
<input type="checkbox"/>	Lighting
<input type="checkbox"/>	Accessory
<input type="checkbox"/>	Input
<input type="checkbox"/>	Label
<input type="checkbox"/>	2D
<input type="checkbox"/>	3D
<input checked="" type="checkbox"/>	DMX Ad
<input type="checkbox"/>	Channel
<input type="checkbox"/>	Unit Num
<input type="checkbox"/>	Universe
<input type="checkbox"/>	LED
<input type="checkbox"/>	Movement R
<input type="checkbox"/>	Moving Light
<input type="checkbox"/>	Scanner
<input type="checkbox"/>	Mid Fixtures
<input type="checkbox"/>	None
<input type="checkbox"/>	Old Screen
<input type="checkbox"/>	Rigging
<input type="checkbox"/>	Rigging
<input type="checkbox"/>	Seating
<input type="checkbox"/>	Show Fixtures
<input type="checkbox"/>	Stage
<input type="checkbox"/>	Stage
<input type="checkbox"/>	sub roof
<input type="checkbox"/>	Theatre Fixtures







**Property**

Property	Value
Name	10
DisplayName	ETC Source4 19deg
Manufacturer	ETC
Type	Conventional
Visible	<input checked="" type="checkbox"/> True
Universe	1
Channel	510
NumChannels	1
Position	
Rotation	
XForm	
XForm Universe	0
XForm Channel	0
XForm Delta X	0.00
XForm Delta Y	0.00
XForm Delta Z	0.00
XForm Rotation Delta	360.00
XForm Rotation Rpm	120
Lighting	
Candela	288000.00
Color Temperature	3200.00
Force Emissive	False
BeamMultiplier	1.00
Gobo Wheels	
Gobo Wheel 1	
Slot 1	Open
Slot 1	Open
Gobo Wheel 2	
Slot 1	Open
Slot 1	Open
Gobo Wheel 3	
Slot 1	Open
Slot 1	Open
Color Wheels	
Color Wheel 1	
Slot 1	Open
Slot 1	Open
Color Wheel 2	
Slot 1	Open
Slot 1	Open
MVR	
InvertPan	False
InvertTilt	False
Attachments	Click to manage

**Scene Graph**

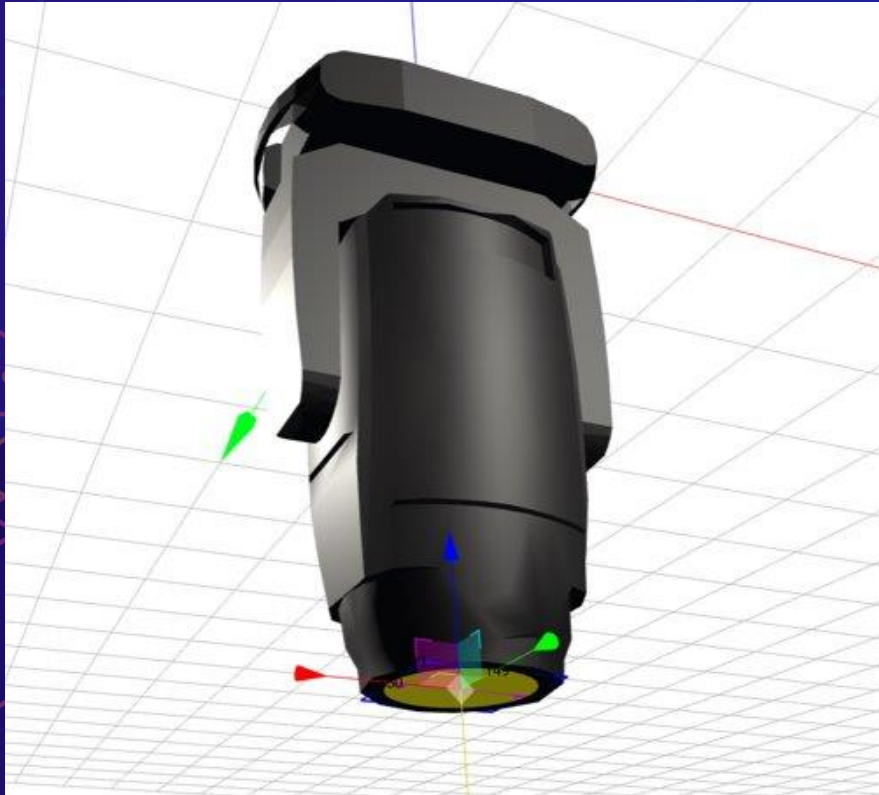
- ROOT
  - New Layer
  - VariLite VL-3500 Spot
  - Martin Mac 300 Wash 16p Comp
  - ETC Source4 19deg
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 9
    - 11
    - 12
  - Midsize Rig 1.0 v20180195.esc
    - MeshShape
    - MeshShape
    - MeshShape
    - MeshShape
    - MeshShape



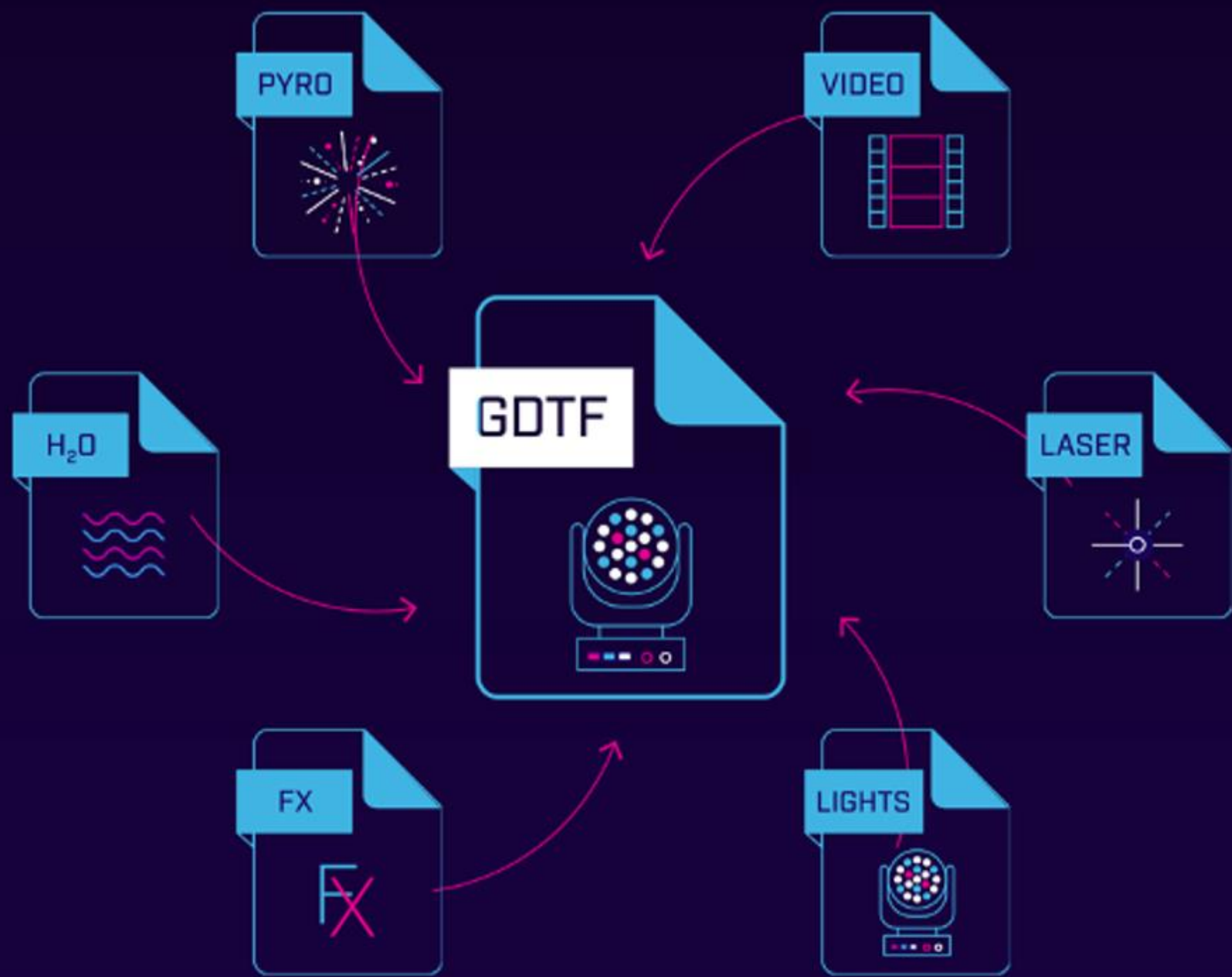
- Non-existent open and comprehensive format for device description (digital twins).
- Data exchange based on complex export/imports of non-comprehensive formats
- Non-existent consistent, functional workflow

GDTF  MVR

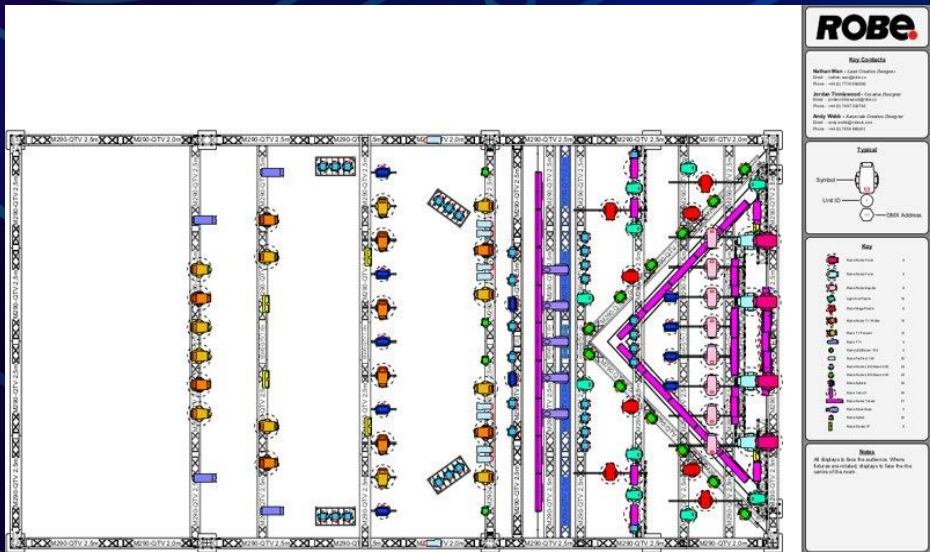
# GENERAL DEVICE TYPE FORMAT



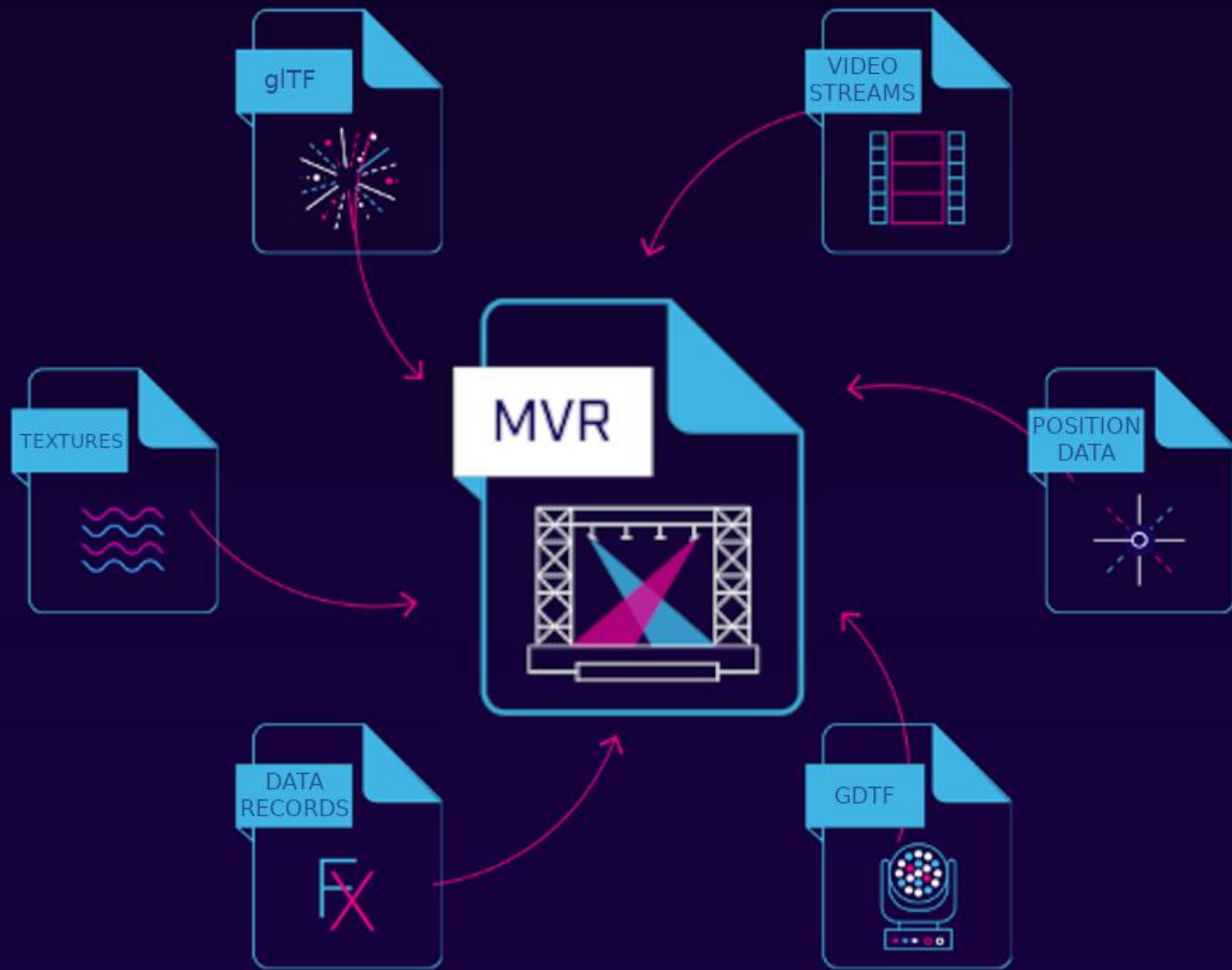
The GDTF is a file format that is used to describe devices of the entertainment industry.



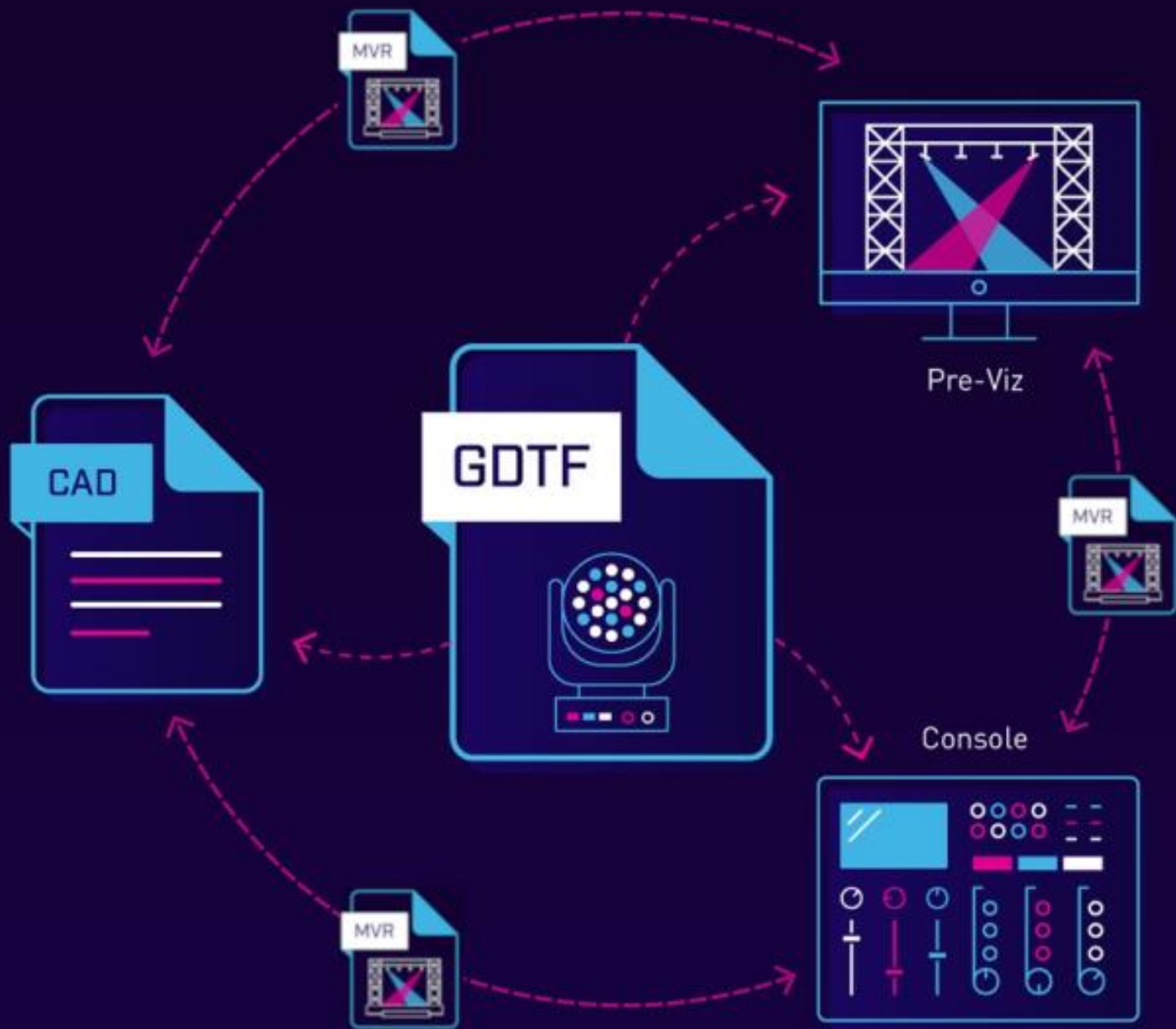
# MY VIRTUAL RIG



MVR file format uses GDTF as building blocks and describes the scene of the entertainment stage.



# COMPLETE WORKFLOW





GDTF  MVR

<https://gdtf-share.com>



# GDTF & MVR

originally conceived and jointly developed by MA Lighting,  
ROBE Lighting and Vectorworks.

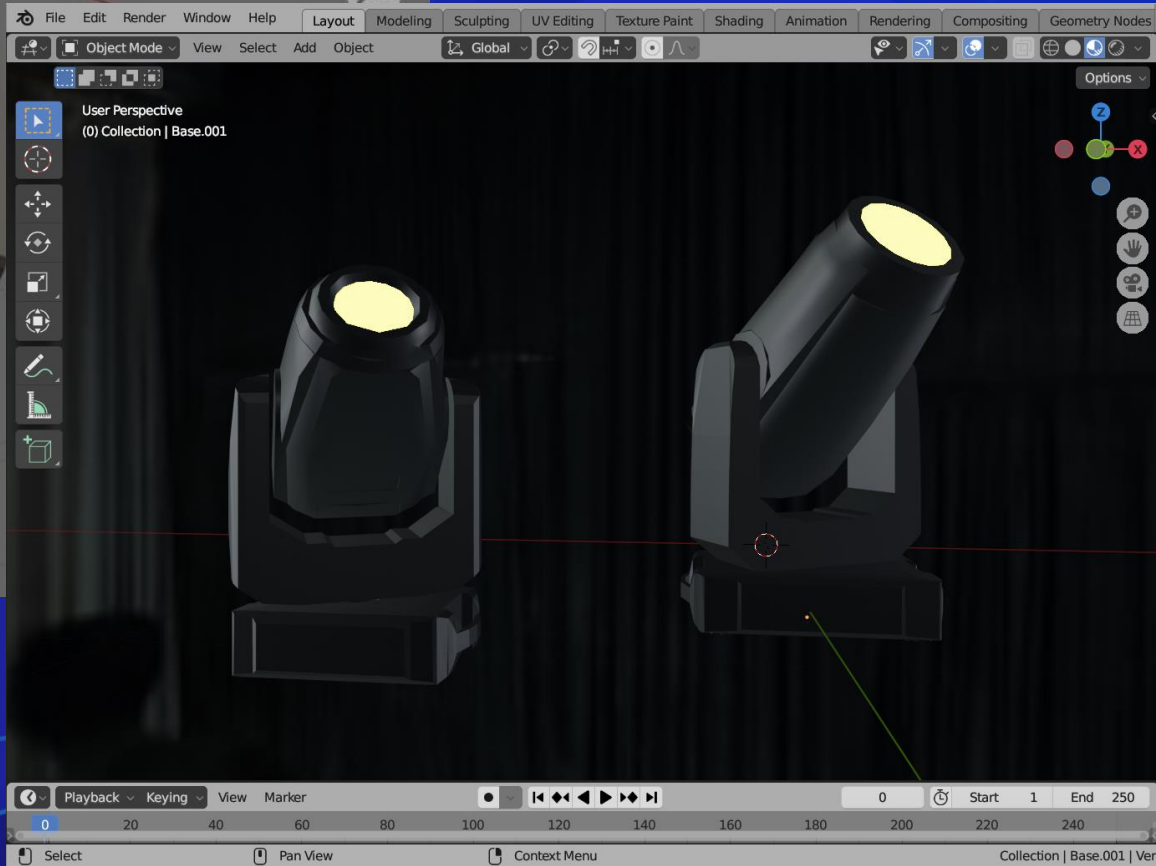
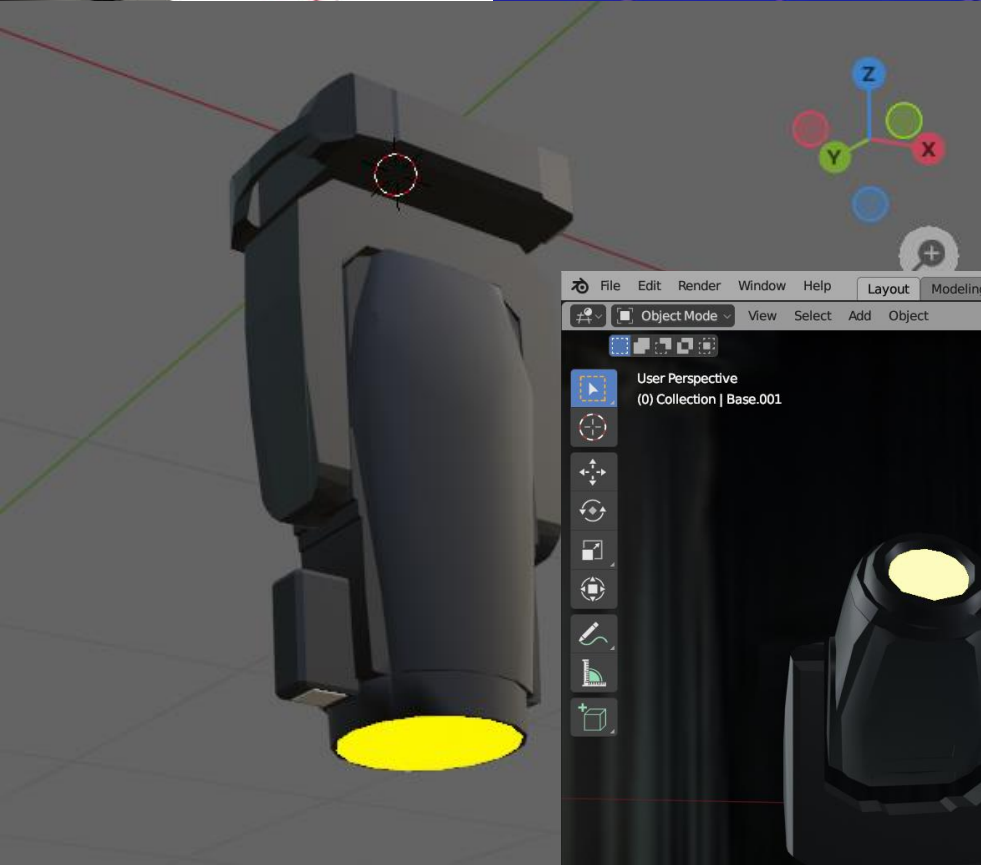
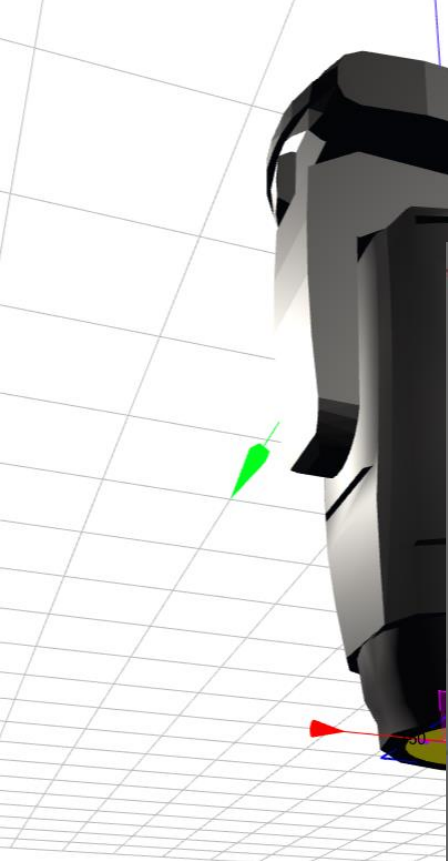
<https://gdtf-share.com>

# GDTF & MVR

Royalty free, open-source formats for describing devices of the entertainment industry

Creating a unified definition for the exchange of data for the operation of entertainment devices

Connecting the whole workflow from design and planning through control





# HISTORY

- Development started in 2017
- **GDTF** announced at a major industry exhibition in 2018
  - v1.0 released in 2019
  - v1.1 released in June 2020 as a DIN SPEC 15800
  - v1.2 February 2022 as a **DIN SPEC 15800:2021**
- **MVR**
  - v1.6 December 2023 as **DIN SPEC 15801:2023-12**

# CONTENT - GDTF

Comprehensive description to plan, visualize, control

- Lighting fixtures (static, architectural or moving heads)
- Trusses and Stage components
- Lasers
- Media servers
- Projectors and Video screens
- Electrical and Data distribution...
  
- Audio devices – work in progress

# CONTENT - MVR

- Scene description
  - Device addressing
  - Focus points
  - Electrical and Data wiring
  - 3D Scene elements
  - Sources for screens (NDI, CITP, File, CaptureDevice)
  - Textures
  - Symbol reuse
  - Layering and Classing
- MVR-xchange protocol



# INFRASTRUCTURE

- Released as DIN SPECS
- GDTF Builder (en, cz, fr, zh-cn)
- GDTF Share
- Online hosting by VPLT
- libMVRgdtf C++ library
- GDTF Share API
- Error checking in GDTF Builder and in GDTF Share

# COOPERATION

- GitHub public repositories
  - code, specs and proposals
- Established working groups
- Monthly online technical meetings for manufacturers
  - Feedback
  - Proposals
  - Education
- Helpdesk system

# MEDIA AND SOCIAL

- Landing page [gdtf-share.com](http://gdtf-share.com)
- Marketing videos
- YouTube GDTF & MVR channel
- Facebook
- Press meetings and PRs
- Dedicated booth at major exhibitions
  - Unify the Industry



# TRAINING RESOURCES

- YouTube GDTF & MVR channel
- Training videos
- Webinars
- Manuals
- Forum

# ONGOING WORK

- Support for audio devices
- Support for complex device macro animations

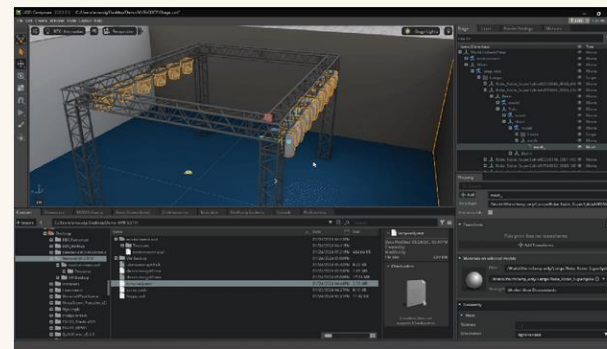
# EXISTING PROJECTS



## Avolites Titan V17 Adds GDTF Import into Avo Personality Builder

Avolites Titan software release version 17 adds new possibility to import GDTF files and convert them to Avolites Titan d4 personalities. You can see the complete [Release notes](#) here.

Posted March 21, 2024 - Categories: GDTF, Robe Lighting



## Moment Factory releases v1.0 of Omniverse-MVR-GDTF-converter with native OpenUSD FileFormat plugin

Moment Factory (a multimedia studio) has released a version 1.0 of their open-source Omniverse MVR-GDTF plugin. To ensure seamless conversion of MVR and GDTF to OpenUSD, native OpenUSD FileFormat plugin API has been used, allowing non-destructive data availability in any OpenUSD compatible software, including Unreal Engine and Blender.

Posted February 6, 2024 - Categories: MVR, GDTF, OpenUSD



GDTF  MVR

<https://gdtf-share.com>

# QUESTIONS AND DISCUSSION

# FORMATS

- ZIP archives
- XML description file
- Open Formats (glb, svg, png, ies, ldt)
- Object UUIDs

# CONTENT - GDTF

Comprehensive description to plan, visualize, control

- Lighting fixtures (static, architectural or moving heads)
  - Trusses and Stage components
  - Lasers
  - Media servers
  - Projectors and Video screens
  - Electrical and Data distribution...
- 
- Audio devices – work in progress

# CONTENT - MVR

- Scene description
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- MVR-xchange protocol

# DEVICE SPECIFIC DESCRIPTION

- 2D/3D models with textures (svg, glb)
  - Kinematic chain, dedicated geometries (wiring, beam)
- Physical properties
  - Speed, Angles, Acceleration, Dimensions, ...
- Rich metadata
  - Names, descriptions, UUIDs, RDM UUIDs...

# DEVICE SPECIFIC DESCRIPTION

- Control protocols
  - DMX, OSC, Protocol Agnostic
- Content media (gobos)
- Color spectral data
  - Spectral power distribution, subtractive filters measurements
- Photometric data
  - IES, LDT

# CONTENT SOLUTIONS - MVR

- MVR-xchange protocol
  - Network based workflow for data exchange




# Fixture data in the GDTF Fixture Builder


<https://gdtf-share.com>

## Click to create a new GDTF file


### Fixture




**Conventional**  
Load a default Conventional Fixture.



**LED PAR**  
Load a default LED PAR.




**Moving Head**  
Load a default Moving Head.



**Moving Mirror**  
Load a default Moving Mirror.

### Empty



**Empty**  
Load an empty GDTF.

### Restore Last Session

## Customize an existing file



Drag and drop an existing file or click to select a file on your hard drive

[🔗 GDTF Share](#)

Manufacturer

Robe Lighting

Name

Robin iForte LTX FS

Long Name

Robin iForte® LTX FS

Short Name

iFORTE LTX FS

Type ID

AE8FC6AB-6324-48A1-A49F-A76FF48F6C19

Linked GDTF

Linked GDTF

RDM Manufacturer ID

5253

RDM Device Model ID

0136

Can have Children

Toggle switch (ON)

Fixture Description

Are you looking for the ultimate long throw, high output, all-environment LED WashBeam with an integral camera for RoboSpot™ use capable of true, stadium-level reach and outperforming all others? You have only one choice – The Robe iFORTE® LTX FS!



Click to upload a new PNG image

Click to delete this PNG image

Geometries Models

- Base DMX
- Yoke
- Head
  - Beam
  - Camera
- Pigtail
  - Power IN
  - DMX 5Pin IN

### Properties

Name

Base

X 0 mm

Y 0 mm

Z 0 mm

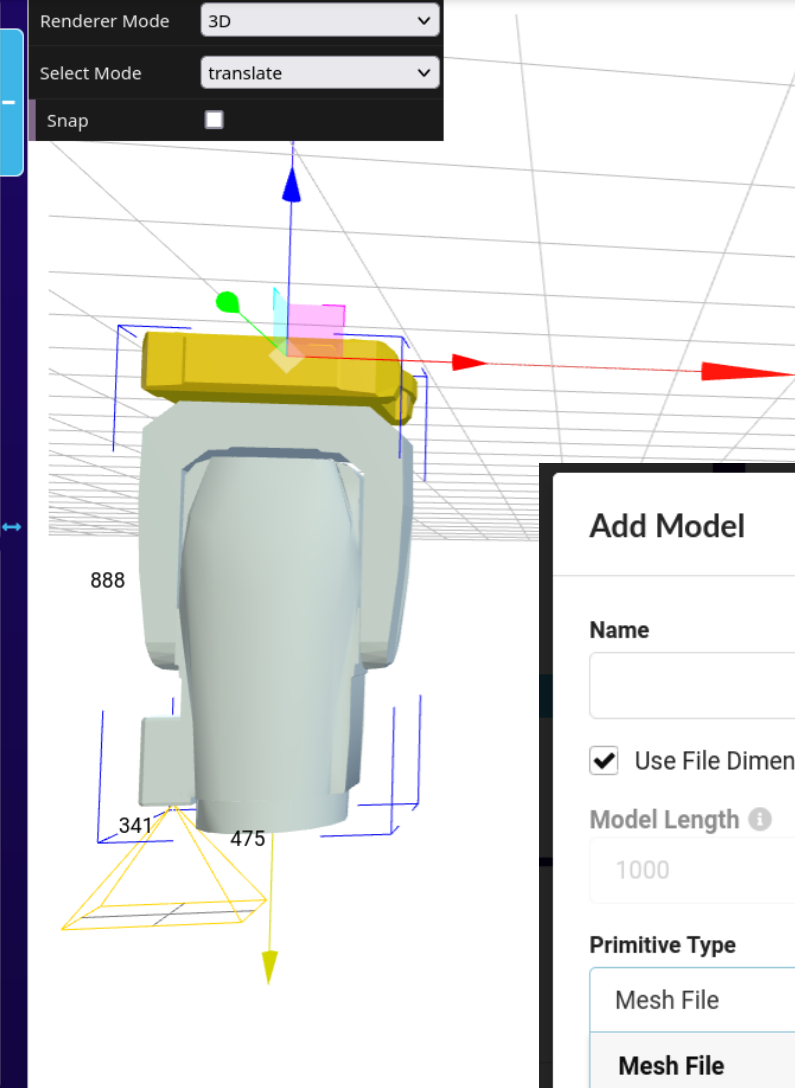
Rotation X 0 Deg

Rotation Y 0 Deg

Rotation Z 0 Deg

Geometry Type Normal Geometry

Linked Model Base



### Add Model

Name

Use File Dimensions

Model Length 1000 mm

Model Width 1000 mm

Model Height 1000 mm

Primitive Type

- Mesh File
- Mesh File**
- Cube
- Cylinder
- Sphere
- Yoke
- Head

Select File

Upload ...

Cancel OK

### + Geometry Tree

Geometry Type *i* Beam

Linked Model *i* Beam

Model Length *i* 245  mm

Model Width *i* 245  mm

Model Height *i* 1  mm

Lamp Type *i* LED

Power *i* 1000  W

Luminous Flux *i* 42078  lm

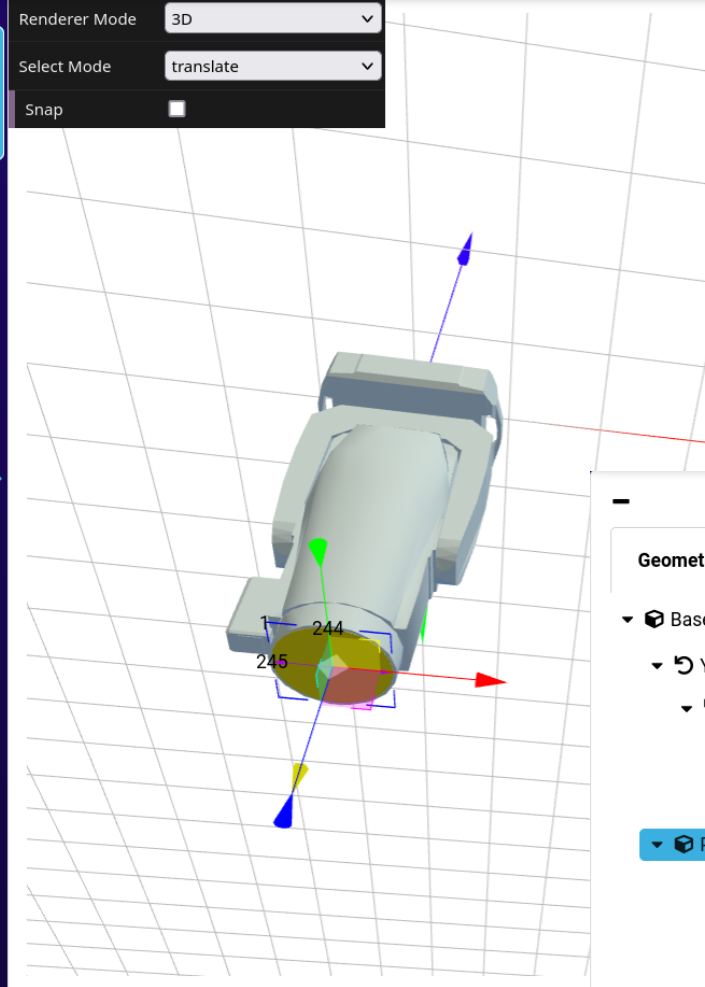
Color Temperature *i* 6700  K

Beam Type *i* Spot

Beam Angle *i* 52  Deg

Field Angle *i* 52  Deg

Beam Diameter *i* 245  mm



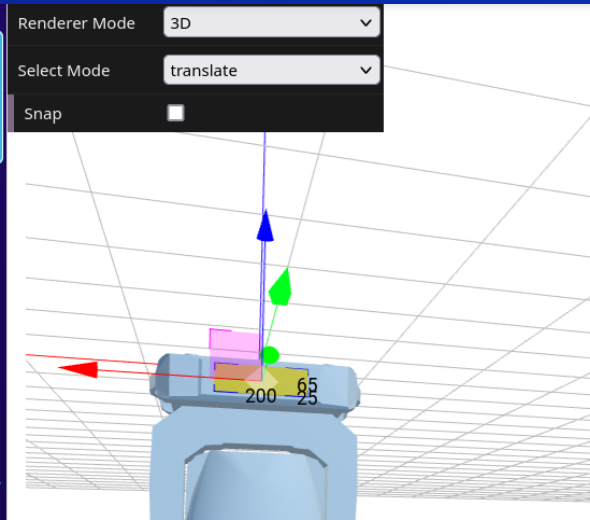
Renderer Mode 3D

Select Mode translate

Snap

**Geometries** Models

- ▼ Base DMX
- ▼ Yoke
- ▼ Head
- 💡 Beam
- 📷 Camera
- ▼ Pigtail
- 🔌 Power IN
- 🔌 DMX 5Pin IN
- 🔌 DMX 5Pin OUT
- 🔌 Ethernet IN
- 🔌 Ethernet OUT
- 🔌 Camera OUT
- + Add Child Geometry
- + Add Top Level Geometry



+ Properties

Emitters Filters DMX Profiles Color Space

White

+ Add Emitter

Name

White

Color

0.318912, 0.328150, 100

Emitters Filters DMX Profiles Color Space

Cyan

Magenta

Yellow

CTO

Deep red

Deep blue

Orange

Green

Congo blue

Multicolor

Laser green

Lavender

Filter CRI 80

Filter CRI 90

+ Add Filter

Name

Cyan

Color

0.149235, 0.174796, 18.304071

Emitters Filters DMX Profiles Color Space

+ Add Color Space

Wheels

Filter CRI 80

Filter 90 CRI

+ Add Wheel Slot

GoboWheel1

1 Open

2 G01

3 G02

4 G03

5 G04

6 G05

7 BeamReducer

+ Add Wheel Slot

Name

G01

Color

0.3127, 0.329, 100

Preview

Name

Prism 2

Color

0.3127, 0.329, 100

Preview

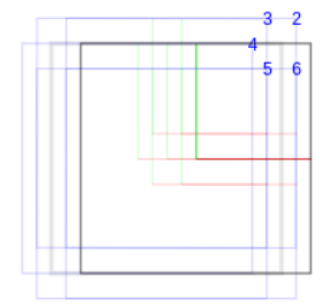
### Edit Facet 1 in Prism 2

Previous Next

#### 2D Transform Matrix

Horizontal scale	Horizontal rotation	Horizontal translation
<input type="text" value="1"/>	<input type="text" value="0"/>	<input type="text" value="0.253731"/>
Vertical rotation	Vertical scale	Vertical translation
<input type="text" value="0"/>	<input type="text" value="1"/>	<input type="text" value="0"/>
<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="1"/>

#### Preview



Color

Display as circle

Rotate Transform Reset Cancel OK

- Mode 1 - Standard 16 bit
- 1, 2 Yoke\_Pan
  - 3, 4 Head\_Tilt
  - 5 Base\_PositionMSpeed
  - 6 Base\_Control1
  - 7 Base\_LEDFrequency
  - 8 Base\_LEDFrequencyAdjust
  - 9 Base\_IntensityIndication
  - 10, 11 Head\_Color1
  - 12, 13 Head\_Color2
  - 14 Head\_ColorSub\_C
  - 15 Head\_ColorSub\_M
  - 16 Head\_ColorSub\_Y
  - 17 Head\_CTO
  - 18 Head\_Tint
  - 19 Head\_Color3
  - 20 Head\_ColorWheelSelectMSpeed
  - 21 Head\_ColorMixMSpeed
  - 22 Head\_FocusMSpeed
  - 23 Head\_AnimationSystem1
  - 24 Head\_AnimationSystem1Pos
  - 25 Head\_AnimationSystem2
  - 26 Head\_AnimationSystem2Pos
  - 27 Head\_AnimationSystem2Macro
  - 28, 29 Head\_Gobo1

### Channel Function

**Name** Pan

**Attribute** Pan

**DMX From** 0/0 8bit

**DMX To** 255/255 8bit

**Default DMX** 128/0 8bit

**Physical From** -270 Deg

**Physical To** 270 Deg

Edit Additional Properties

### Channel Function Pan

**Original Attribute** Pan (8 bit)

**Mode Master Defined By:** DMX Channel

**Emitter**

**Filter**

**Wheel**

**Color Space**

**Real Fade** 4.033 s

**Real Acceleration** 1.100023 s

**Custom Name**

**Mode Master**

**Mode From** 0 8bit

**Mode To** 0 8bit

**DMX Profile**

**DMX Profile Min** 0 Deg

**DMX Profile Max** 1 Deg

Cancel OK

Thank you

GDTF  MVR

<https://gdtf-share.com>