



DEPENDENCE

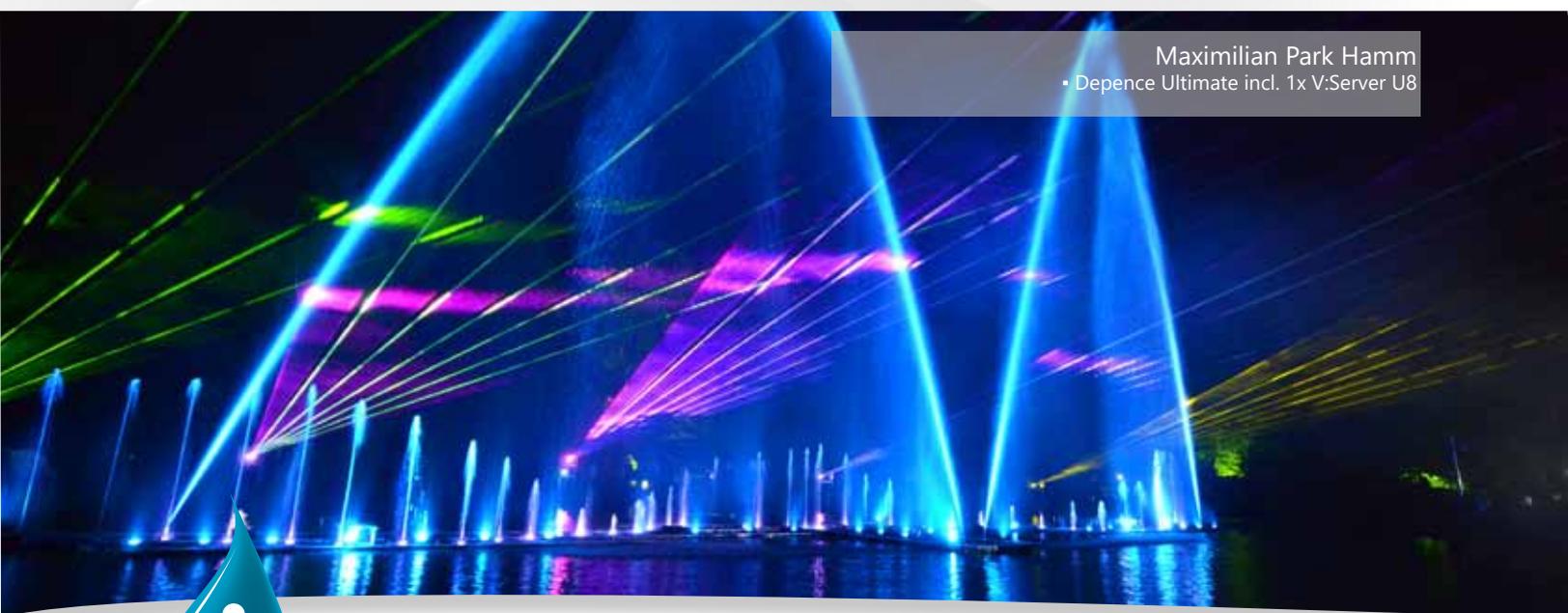
Show Control and Visualization System

Multimedia Fountain Mardan Palace - by Oase GmbH
• Depence Ultimate 2x V:Server



About Synchronorm

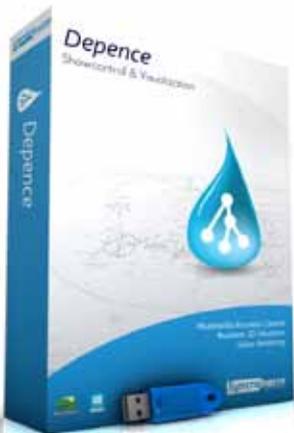
Synchronorm GmbH are producers of high end multimedia show design software which features a highly unique real-time 3D visualizer. We also manufacture our own range of installation hardware solutions to complement our system. Our worldwide team are extremely experienced within the entertainment and water show sectors and provide bespoke control and design solutions for all sectors within the industry.



Maximilian Park Hamm
• Depence Ultimate incl. 1x V:Server U8



DEPENCE is the first worldwide Multimedia Fountain Control System, which enables visualization in real-time for all show relevant media such as water, laser, light and music. Through the sophisticated and innovative interaction of hardware and software, you create complex shows much faster and more effectively without leaving your office. With the advantage of creating impressive video renderings you can offer your ideas easier and faster than everyone else.



Applications are:

- *Fountain & Showdesign Studios*
- *Theme parks*
- *Shopping centers*
- *Multimedia Show Designer*
- *Musical-/ Dancing Fountains*
- *Watergarden & Landscape projects*

Depence gives you the opportunity to design complex DMX-controlled systems easier than you've ever been able to do before. The greatest advantage of this system is the complete real-time simulation capabilities. This gives you the facility to create off site pre-programmed high quality musical fountain shows.

With a variety of interfaces, the interaction of other show elements such as lasers or kinetic, is a breeze.



The Depence Workflow

From the tender phase of design through to implementation and subsequent maintenance of the project, Depence always offers the right tools to quickly produce high quality results.



Offering and planning stages

Implement your creative ideas instantly, design complete systems then try adding different combinations of water images, lasers and many other products from our vast in built fixture library. Create your first demo shows with V:PAD and control it in real time. Demonstrate to your customers breath taking realistic animations created via V:3D in no time.



Showdesign & Realization

Create your perfect synchronized musical fountain show with V:PAD, completely from your office. Use the shows and scenes which are created in the offering stage. Implement your video output or trigger laser controls directly. Create daily plans in fully-automated procedures of the complete system. Implement several security-related sensors like water level and wind. Transfer the whole project with one click on V:Server.



Installation, Operation & Maintenance

V:Server is our installation system. Via server surface you can test several water images and device features easily. All information can be remotely monitored from anywhere in the world. At the customer's request you can load new shows complete with daily plans via the internet straight onto the server. Our remote apps allows the remote control of the whole system via external PCs or tablets.



V:PAD
YOUR VISUAL PATCHING AND SHOWDESIGN STUDIO

The Showdesign Workstation

The V:PAD Show Designer is the control software element of Depence which has functions specifically tailor made for the needs of complex Multimedia Fountain Shows that allow you to work more creatively and efficiently than ever before. Innovative structures and links of devices between each other enable an amazing interaction between hardware and software. By intuitive user interfaces and complete visual patching, you can create a simple overview of thousands of devices. V:PAD works

directly with V:3D enabling real time Visualizations. Changes of fixtures etc. are updated in the 3D view in real-time.

- Intelligent visual patching
- 2D Fountain Design View
- Fountain, Lighting, Laser, Video, Fire (fixture library)
- Professional Multimedia Timeline
- Effect Generators (ColorMix & Gradient, PanTilt, Oscillator)
- Automatic Fountain / Light control
- Automatic Fountain / Bypass control
- Handling of all pretime and delay parameters
- Custom Live-Page designer
- Remote access over DMX-Input and mobile devices
- Setting up logical sequences (BMI)
- Setting complex Time-Schedules
- Project-Export to V:Server & V:Nano over Ethernet or USB / Micro SD

Aquanario Show Berlin
• Depence Architect incl. 1x V:Server U8

Special designed for musical fountains

V: PAD has been designed specifically for the programming of sophisticated musical fountain shows and contains many innovative features such as the ALC system (Automatic Light Control), which intelligently illuminates fountains turned on automatically. In addition, pre-and post-trigger times of pumps and other characteristics can be included.

Visual Patching



By physical links (Dependencies), you can create all kinds of hardware configurations.

Programmer and FX Engine



Via programmer and FX-generator, you can create breathtaking static and dynamic scenes in a matter of seconds.

Sequencer Timeline



The innovative and intuitive Multimedia Timeline of V:PAD enables perfect timing of the show.

Live-Panel & Remote



The V:PAD Livepanel allows fast access to all shows and scenes



The Visualizer

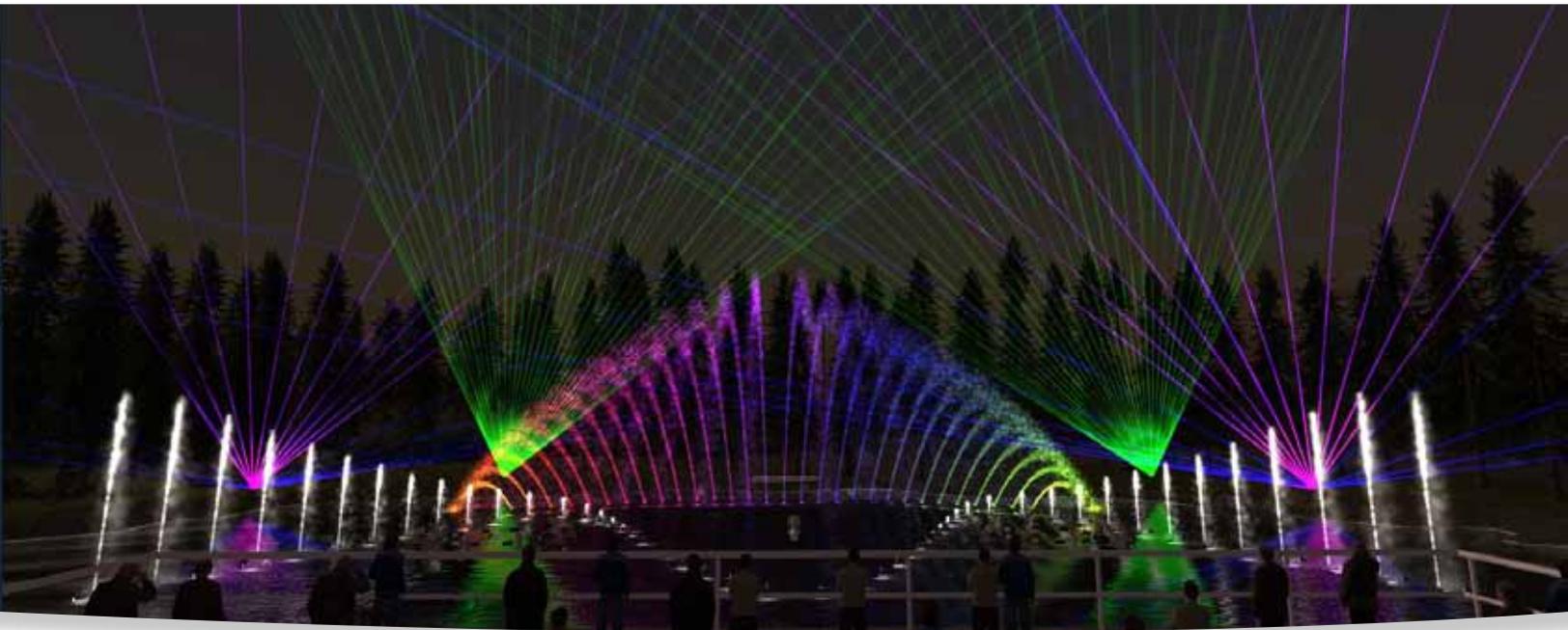
One of the main advantages of Depence is the ability to create high impact and breath taking photo realistic animations. Using the powerful Depence 3D Engine you are able to make an animation in the same way as if you were programming a real multimedia show. 3D-Models can be easily imported from programs such as Cinema4D, 3Dmax or Sketch-up. Using high end gaming technologies and GPU rendering features, you can create a very high quality video with very short render times.



- Win your Project with HQ Videos
- Render concept animations
- Photorealistic render engine
- 3D-Model Import (Cinema4D, 3DMax, Sketchup..)
- HDR, Bumpmapping, SSAO, Godrays effects
- 3D-Model Library
- Realistic fountain rendering
- Fountain flames and flame jets
- Intelligent DMX Lighting
- LaserAnimation and Pangolin Laser Support
- Waterscreen & Video Mapping features
- Video Walls and Projectors
- Video rendering including camera movements

Recommend System Requirements

- Intel i7 CPU and 6 GB RAM
- NVIDIA Geforce® GTX980 or higher
- FullHD Display
- 5GB free disk space



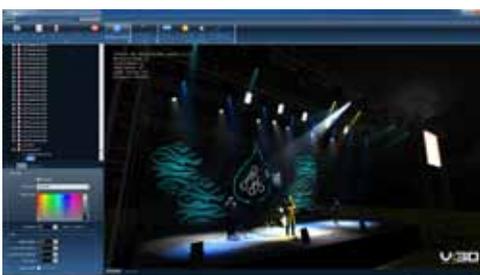
Realistic fountain simulation

By the combination and calculations of multicore CPU & GPU's it is possible to simultaneously simulate hundreds of fountains within V:3D. Several physical settings like wind, gravitation, reflection and refraction are also presented in real time. By logical links (Dependencies) of valves, pumps, nozzles and control devices, the simulated systems work exactly as they would in reality.



World Editor

The world editor enables simple importing of 3D models in familiar 3D formats (Cinema4D, 3Dmax, AutoCAD). Terrains, plants, water surfaces, clouds and many more can be easily inserted in a few steps. The Quad-View enables working simultaneously in 4 views. Several changes on objects and fixtures always work synchronously with V:PAD.

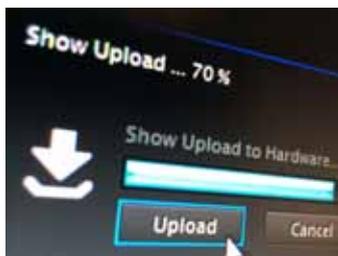


Lighting, Laser and Video

With V:3D, you have the possibility to simulate complex DMX lighting. From simple PAR lights through to 32 channel moving heads, lighting features such as Gobo's, Colour wheels, Zoom, Iris, CMY/RGB Mixing, Shutters and Prism's can all be simulated in real time. V:3D also supports real time Laser control data formats direct from Laser Animation Sollinger GmbH and Pangolin Laser.



V:Server - Standalone Show Controller



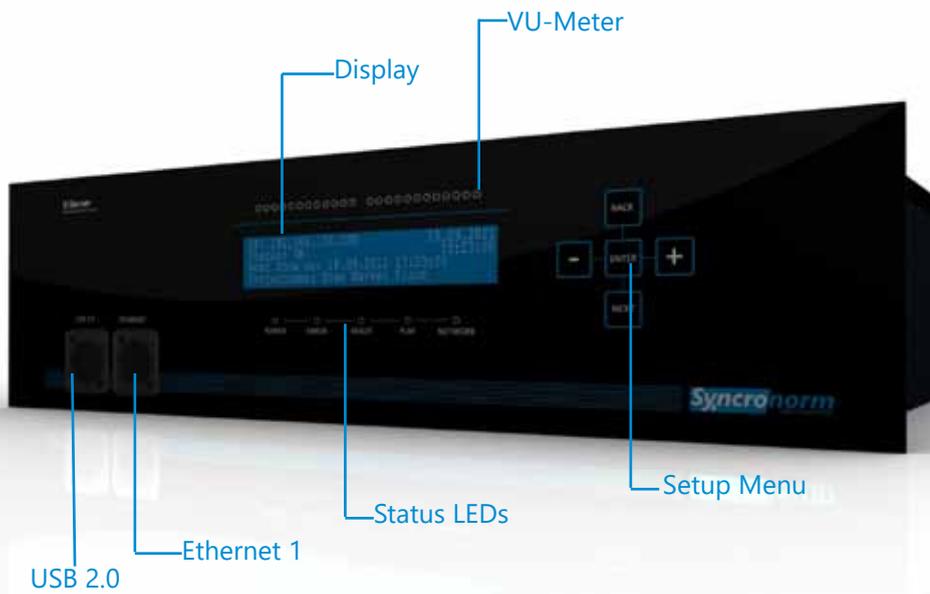
The Synchronorm V:Server is our 19" standalone DMX show player which is the perfect choice for larger fountain show installations. V:Server features a fully customizable user interface (Live-Panel), ArtNET, Full RDM Support, Timecode and the Flexible BMI system for any logic sequences. The V:Server is available as U8 (4096 DMX output channels) and U16 (8192 DMX output channels). DMX data can be distributed via 4 physical DMX connectors or ArtNET.

Functions overview

- 8 or 16 DMX Universes Output via ArtNET
- 4x physical DMX RDM Outputs & 1x Input
- Easy Show Upload via Ethernet/USB/Internet
- Full RDM Support
- MODBUS I/O for up to 16 CPU Units
- ArtNET I/O
- SMPTE Input & Output
- 2x Ethernet connectors for Show & ComNet
- Symetric Stereo Audio Output
- Full Standalone using Day-, Week-, Yearplanner
- Touchscreen friendly Live-Panel
- Sensor Connectivity (f.e. Wind, Water Level)
- Powerful DMX Routing System
- Daytime calculation for automatic lighting
- Timecode Master/Slave using NTC, SNTC, SMPTE
- Flexible BMI System for any logic sequence
- Advanced Logging System
- Remote Access via Internet
- Easy mountable 19" Rack
- 60GB SSD Harddrive
- RS232 to send custom ASCII messages
- Use V:Nano as DMX extension

Technical details:

Housing:	19inch case 4HE 400m depth, IP20
Weight:	13 kg
Power supply:	110/230V~ 300W
Connectors:	4x DMX RDM XLR 5-Pin Output and 1x DMX Input 2x RJ45 Ethernet 2x XLR 3-Pin Symetric Audio Output 2x DVI Output 1x SMPTE XLR 3-Pin 1x RS232 3x USB 3.0
Memory:	60 GB SSD





V:Nano 512 / 1024 music - Standalone Show Controller

Our "V:Nano 512" and "V:Nano 1024 music" are DIN-rail fanless ruggedized embedded systems with extra low power CPU chipset. Made for more rugged environments, these compact units support wider temperature ranges and feature: DMX 512/1990 ports, isolated Ethernet port 10/100 Mbit, Micro SD card slot, 2x 16 LCD segment display.

The units also have 8 x digital I/Os makes them the perfect solution for smaller stand alone fountain and musical fountain installations. The V:Nano range are fully compatible with all Depence architect and ultimate versions. Show Upload can be done via SD Card or local network.

Functions overview

- Standalone Multimedia Showplayer
- 512 / 1024 DMX output channels
- Audio Output (V:Nano 1024 only)
- Time Schedule with internal clock
- Show upload via MicroSD-Card or Ethernet
- 8x Digital Input and 8x Digital Output
- DIN-Rail mounting
- Live-Panel functionality via Remote Software
- Easy to use front panel setup
- ArtNET Node functionality





A: MicroSD Card Slot - supports storage for show content up to 32GB
(4 GB card is shipped with this package)

B: Ethernet 10/100 Mbit - upload from shows, remote control

C: Audio Output 3,5mm Jack Plug (V:Nano 1024 music only)

D: External Power Output 24V DC

E: Digital Output max. 1A (8 ports) - e.g. external trigger...

F: Digital Input max. 30V DC (8 ports) - e.g. wind sensor, dry protection, ...

G: DMX512/1990 ("V:Nano" 512 channel / "V:Nano 1024 music" 1024 channel)

H: Power Input 15-24V DC, 8W

Technical details:

Dimensions	(L x W x H): 160 x 90 x 58 mm
Weight:	0.33 kg
Housing:	Polycarbonate Light grey/white/blue for top-hat rail mounting
Protection class:	IP20
Power supply:	15..24V DC/ 8W
Operation temperature:	0..40°C / 0..80% humidity non-condensed
Certification:	CE
Outputs:	DMX 512/1990 ("V:Nano" 512 channel / "V:Nano 1024 music" 1024 channel) 8 x Digital Out (Clamps 24V DC/ 1A max., optically isolated) 1 x Stereo Audio (3,5 mm jack plug, galvanic isolated) - only V:Nano 1024 music
Inputs:	8 x Digital In (Clamps 24V DC., optically isolated)
Other connections:	Ethernet RJ45 10/100Mbit
Memory:	MicroSD-Card
Operation:	2 x 16 Segment LCD Display with 6 keys



SyncroSwitch - DMX RDM Power Contact Relay 6x

The SyncroSwitch units feature high-power changeover contacts (NO/NC, 230V at 8Amps resistive load max.). This makes the Syncro Switch units suitable tools for all of your switching needs: high power, low power, audio or lighting signal, motor control, valves or power of VFD's. Intelligent internal signal routing, exclusive switching options, momentary or latching output: many combinations are possible and can be set from the Synchronorm RDM browser. The DMX address is set remotely and stored electronically onto non volatile memory and can be adjusted from the Synchronorm RDM browser.

Functions overview

- DMX Relay Module (Contactor)
- 6-channel
- Compatible with Synchronorm RDM browser
- DMX512/1990, DIN 56930-2, DMX512-A, ANSI E1-20 DMX RDM
- 6 switched outputs (N.O./N.C.) 230V typ. 8A resistive load
- 4 trigger level combinations selectable
- Selectable exclusive mode
- Selectable monostable mode
- Power supply: 230V AC, approx. 3W
- Dimensions: DIN rail, width 6,5U





SyncroSplit - DMX RDM Booster / Splitter 4x

The DMX RDM splitter consists of a DMX IN data input, one DMX THRU output and four electrically high isolated DMX OUT data outputs. Since all outputs have individual electrical isolation, if a defective fixture were to be added this would not affect any other output.

The SyncroSplit is fully DMX RDM compatible and integrates itself perfectly into the synchronorm hardware product range. SyncroSplit communicates bidirectionally and supports E1-20 and E1-37 DMX RDM standards. Multiple SyncroSplit units can be used in parallel to provide more outputs. Using individual branch discovery, only devices connected to one output are discovered simultaneously. This reduces the number of logical devices per discovery run, lowering signal noise and speeding up the total discovery process.

Functions overview

- DMX RDM Splitter / Booster
- 1 DMX RDM Universe, 4+1 Outputs
- Compatible with Synchronorm RDM browser
- Cage clamp connectors (Input, DMX THRU and 4 opto-isolated outputs)
- DMX512/1990, DIN 56930-2, DMX512-A, ANSI E1-20 DMX RDM
- Wide range Power Supply: 85...230V AC, approx. 4W
- Dimensions: DIN rail, width 6,5U



Multimedia Watershow Bensheim done by Art2O GmbH
▪ Depence Ultimate 2x V:Server U8

SyncroADC - Encoder 12x

The SyncroADC multiplexer converts analog control signals (0...+10V DC) into digital DMX control signals. The SyncroADC accepts 12 analog inputs. It is ideally suited to integrate operating panels or analog inputs into the Synchronorm Depence network structure.

The unit may be configured for linear mode, to switching mode or to 1-10V input sensitivity. Additionally, a second independent DMX512 out may be activated by the input signal.

Functions overview

- DMX Multiplexer
- 12 Signal Inputs 0-10V or 1-10V (selectable)
- >10kOhm Input impedance
- DMX 512 Output
- Power supply: 230V AC, approx. 3W
- Dimensions: DIN rail, width 4U



Multimedia Watershow Ankara done by Art2O GmbH
• Depence Ultimate 2x V:Server U8

SyncroDAC - Decoder 4x

The SyncroDAC is a truly universal network decoder to drive electronic control components in a multimedia show environment. The decoder supports all major protocols: analog (1-10V) or digital (DSI, Digital Serial Interface or DALI, Digital Addressable Lighting Interface). SyncroDAC is the perfect tool to integrate analog VFD's into a Syncronorm Depence network as well as to control any 0,1...+10V, 1-10V, DSI, DALI or PWM output.

The SyncroDAC is DMX RDM compatible interface and features four DMX personalities. Thus the decoder can be operated with standard DMX or bidirectional DMX (RDM) and is full compatible with the Syncronorm RDM Browser applications.

Functions overview

- DMX Decoder
- 4-channel
- DMX512/1990, DMX512A, ANSI E1-20 DMX RDM
- Syncronorm RDM Browser compatible
- 4 outputs 0,1...+10V, 1-10V, DSI, DALI, PWM, max. 2mA
- Power Supply: 230V AC, ca. 2,5W
- Dimensions: DIN rail, width 4U





Connection Example

This is a small example of how Depence can be used in small and big multimedia fountain installations.

Smaller Installations

V:Nano 1024 Standalone



DMX
Audio
Digital I/O

Pre-Production



Show Upload via USB or Network

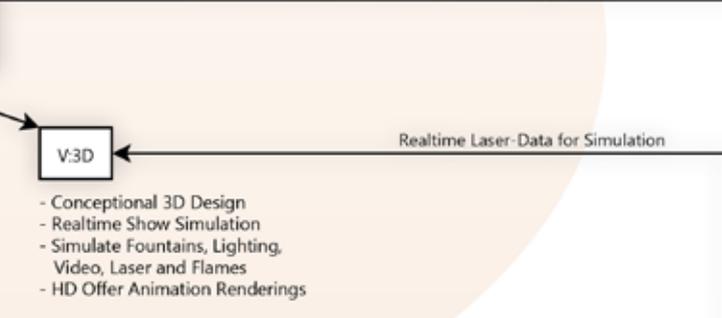
V:PAD

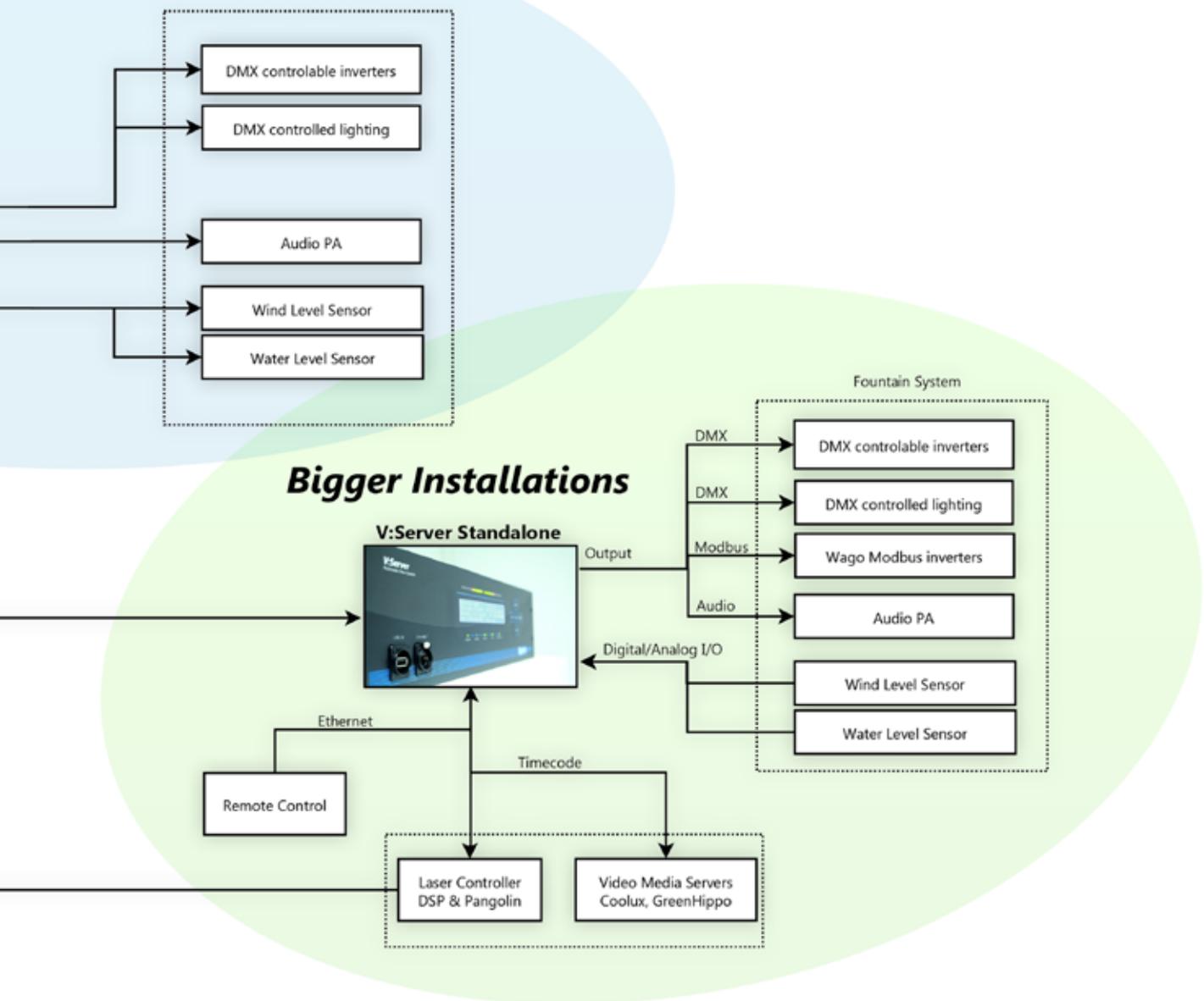
- Concept & Design
- Full DMX Patching
- Full Show Production
- Setup complex Schedules
- RDM Management
- Excel Export & Documentation
- DMX-In Streaming of old shows

V:3D

- Conceptual 3D Design
- Realtime Show Simulation
- Simulate Fountains, Lighting, Video, Laser and Flames
- HD Offer Animation Renderings

Realtime Laser-Data for Simulation







Depence Software

Depence is available in several configurations and with different functions.

	Depence Animator	Depence Architect	Depence Professional	Depence Ultimate
	Visualization-System only for presentation animations, video rendering and distribution. (No DMX-Output)	Show control and realtime simulation system for all multimedia fountains	Professional control and simulation system for all multimedia fountain	Professional control and simulation system for all multimedia fountain with special distribution price on V:Server 3.0
3D Simulation of Fountains, Lighting, Laser & Video	✓	✓	✓	✓
Video Rendering	✓	✓	✓	✓
Number of DMX-Output channels	-	2048	4096	8192
Number of DMX-Input channels	-	512	2048	2048
MODBUS Support	-	✓	✓	✓
Remote 3D Simulation over Network	-	✓	✓	✓
Timecode synchronization	-	✓	✓	4096
ArtNET I/O without ext. Hardware	-	-	✓	2048
Extended Console Feature	✓	-	-	✓
Automatic Lighting Control (ALC)	✓	✓	✓	✓
Record existing Shows	-	-	✓	✓
Full RDM Support	-	✓	✓	✓
Show Upload to V:Server and V:Nano	-	✓	✓	✓
Create User Access Groups (CPS)	-	-	-	✓
Maximum patchable Fixtures	Unlimited	1500	Unlimited	Unlimited
Reseller conditions on V:Server and V:Nano	-	-	-	✓



Depence Training

We periodically hold seminars to learn the Depence System. From the creation of projects and device patching through to show programming via the V:PAD Timeline and making complex and realistic 3D simulations with V:3D, you will learn step by step handling of Depence. By the means of case studies and demo projects we teach several working methods of the system that will be explained simply and practically.

The training is divided in 2 levels which requires a different knowledge:

Depence - Choreo

- Safe handling with the surface of Depence
- Functional explanations
- Device patching and settings
- Scene creation and effect generator
- Show creation with timeline
- Creation of daily plans
- Functions and handling of V:Server
- Duration: 2 days seminar V:PAD & V:3D

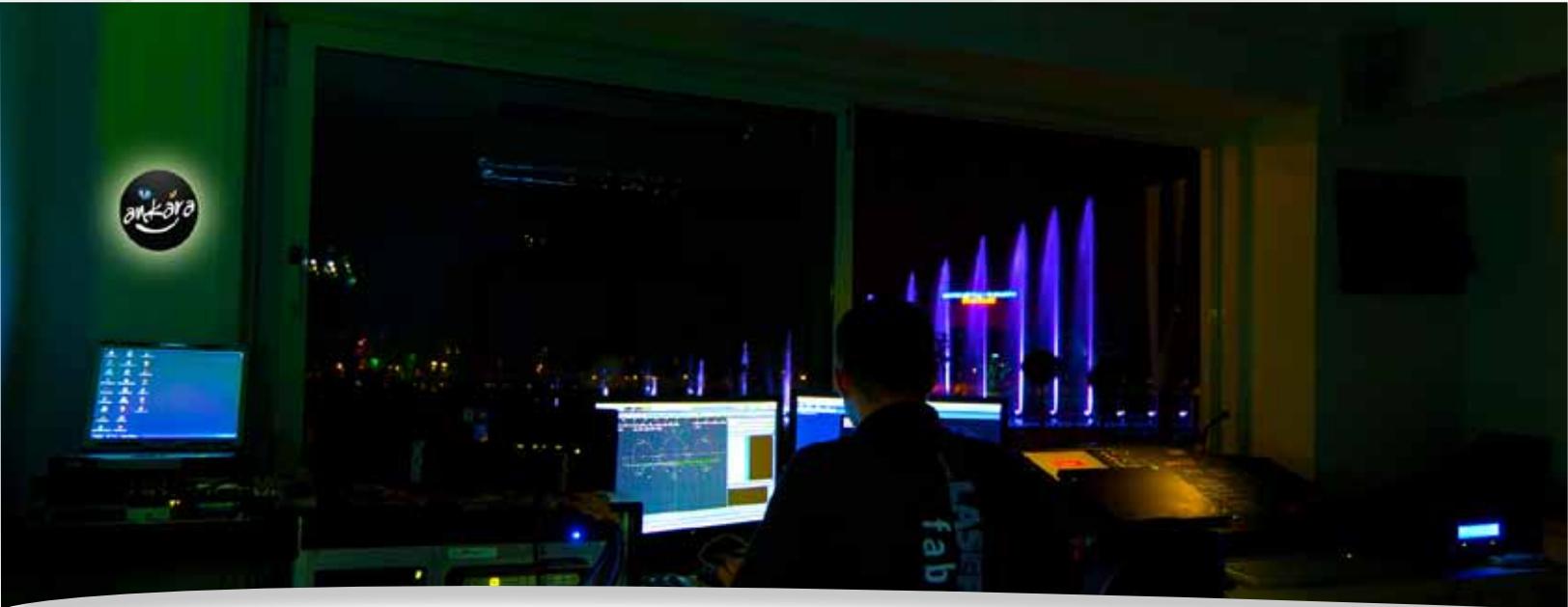
Required knowledge:
Safe handling with PC and software, DMX, basic knowledge in water technology

Depence - 3D Expert

- Safe handling with surface of V:3D
- Functional explanations
- Models and water surfaces
- Quad-View and Editor
- Tracking shots and Video rendering
- PostFX and Engine settings
- Modeling of Terrains with Cinema4D
- Duration: 1 day training V:3D, following by Choreo

Required knowledge:
Basic knowledge in 3D programs like C4D, or 3Dmax

Training courses take place in our Syncronorm show room in Arnsberg Germany. Special training sessions can also be arranged for your company anywhere in the world.



Customer Reviews

As a producer of controllable components for fountain technology we stage in corporation with Synchronorm small fountains, big and complex Multi-Media water features in the right light. We live out our passion for "living water" in larger-dimensioned projects thanks to the controllable technique. The first steps of the breathtaking choreographies of water and lighting effects can be visualized in a computer animation. There are no limitations to tailor-made ideas, innovations or individual creativity. The consumer oriented, well-arranged, intuitive and easy to use software visualizes the technology regarding all physical circumstances. Thanks to international instruction courses, fast support of the data base and the DMX-RDM assistance we can realize an easy to maintain system of fountain technology from the concept over the animation/simulation to the show and the after-sales-service.



Synchronorm's Depence is an all-in-one resourceful and versatile platform that enhances our workflow, making it more productive and efficient. With V:3D, our designers are able to realize their ideas and concepts almost instantly in real-time, enabling an immediate visualization of their works. The animation V:3D generates will greatly assist our sales in communicating our design ideas and concept to our clients, as they say "a picture paints a thousand words". The V:PAD with its many functions and capabilities allows our show programmers to express themselves creatively in choreographing a great show performance. The support we got from Synchronorm has been great. It is a pleasure to work with them.

Egon Lütke-meier | Director Commercial Business - Oase GmbH

The contribution of Synchronorm products to our workflow from design to installation of the musical fountains is undeniable. Thanks to Synchronorm Depence and its powerful companion V:3D, we can now communicate our design ideas with our colleagues and our clients visually. We have realized that with the realistic 3D animations V:3D creates for us, our clients need to ask far fewer questions and it takes only a few minutes to finalize our design presentation meeting with a client. Furthermore, creating choreographies for our musical fountains has become a child's play. We can now program our fountains in the comfort of our office or even home and the process is extremely fast as very sophisticated water and lighting effects are only a few clicks away!! And above all, whenever we need support, there is always a polite expert on the other end of the line, not making excuses but finding solutions to our problems. It is good to know we have a partner who knows what we need, sometimes better than we do.



Özgür Caner Filizli | BLT Fountains / Turkey



ART2O

We have been using Depence for the last five years now and are absolutely satisfied by this software. Having used it in numerous permanent as well as temporary installations it's safe to say that there is no other way we want to prepare our multimedia shows with fountains, lasers, video and lighting anymore. With Depence our all-in-one control is flexible and enables us to take all kinds of different show parameters into consideration, such as the speed of wind, surveillance of water levels or the monitoring of potential errors. The visualization possibilities are infinite and help us to present our customer a transparent and fully thought through project, generating a basis of trust that is essential for these kind of large works. Syncronorm's development of providing more and more hardware as well as software enabling us as the customer to obtain everything from one source is the only logical trend for such a solid product.

Jan Eiserloh | Managing Director of art2O GmbH



The integration of the syncronorm software and hardware systems into our Multimedia productions has provided us with the possibility to design, visualize, realize and optimize our creative ideas in real-time, while consulting with our clients. The syncronorm server with the Depence software solution allows for optimal fountain and other dmx controlled media programming, giving our show programmers maximum freedom to realize their creative ideas! Working with the syncronorm team is a pleasure.

Ralph Douw | CEO Emotion Media Factory



The Syncronorm Depence package has given me the facility to demonstrate designs to clients in a way I simply never could before, V:3D is amazing for visualizing water concepts and has every other element in there you could wish for as a designer such as Water, Lighting, Fire and Lasers. Alongside the visual element in Depence, VPad is a simple but extremely effective control system. The sequencer makes it so easy to create complex shows in no time. The Syncronorm team are a pleasure to do business with, they listen to your comments and react immediately to your suggestions.

Greg McLenahan | Worldwide Lighting Design

Contact



Synchronorm GmbH
Graf-Gottfried-Strasse 122
59755 Arnsberg Neheim-Hüsten
Germany

Phone: +49 (0)2932 - 89786 200

Fax: +49 (0)2932 - 89786 299

e-Mail: info@synchronorm.de

web: www.synchronorm.de