THE SOUNDSCAPE SYSTEM

d&b Soundscape

What is Soundscape?
Throw out the rule book! d&b Soundscape unlocks the creative potential of immersive audio and system design.
Based on advanced signal processing and creative software modules, d&b Soundscape adds an additional level of intelligence to your system. It gives you more freedom when it comes to the size, number and placement of loudspeakers. It allows for various formats of audience and performance areas. There are no strict system design rules to follow.
The result? More flexibility. More scalability. More directivity. More creativity.

Discover the possibilities d&b Soundscape can bring to your application.

d&b Soundscape System Design - workflow

1. Define requirements and choose the right speaker from the d&b portfolio
2. Use d&b ArrayCalc to recreate venue data and create and simulate Soundscape System Design within your venue
3. Export all system settings to d&b's R1 Remote Control Software
4. Optional: Connect and interoperate with third party solutions, via En-Bridge or direct plug-in's
5. Run your show

This is Soundscape.

The Soundscape toolkit
Connect processing capabilities and the benefits of smart algorithms with advanced d&b loudspeaker technologies to realize endless possibilities of system design.

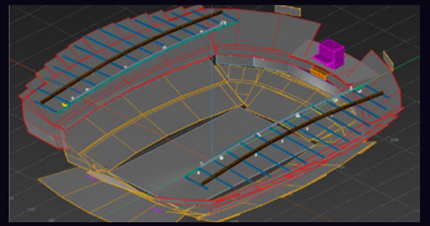
En-Scene Software
Adding object-based positioning to your system, providing level and delay-based processing for audio signals, considering position and orientation of all loudspeakers.

En-Space Software
Adding room emulation to your system, providing easy to apply, authentic room reverberation to your signal — either for single sound objects, or the whole set. Emulate walls without having them!

Soundscape Processor
Extending the sound system core with the processing power of DS100 (Dante) or DS100M (MILAN). Automatically sending the signal where & when needed, supporting object- and channel-based workflows.

THRILLING SOUNDSCAPES
ADVANCED STADIUM EXPERIENCES

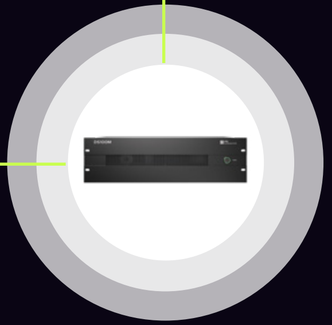
Known for one of the loudest crowds in live sports anywhere in the world, the Lumen Field stadium in Seattle needed a state-of-the-art install.
Despite meeting the need for quality sound with this extensive d&b rig, d&b Soundscape adds a huge extra to overall experience. In this case Soundscape's processing capabilities not only helped to vastly reduce complexity in streamlining signal distribution – for various zones, set-ups, focus areas – but also supported conventional channel-based signal processing. With d&b Soundscape's software module En-Scene the installation can also be used to steer people's attention throughout the whole stadium, enhance the overall clarity or push dedicated spots through precise localisation of object-based audio.



Lumen Field ArrayCalc Soundscape system plot, evaluated and simulated Soundscape system based on venue data and experience requirements

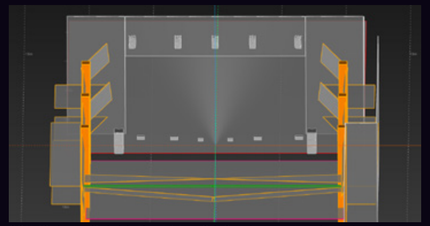
360° Soundscape System

- DS100 64x64 Signal Engine
- En-Scene Object-positioning Software
- 4x DS10 Audio network bridges
- 140x KSLi8/KSLi12 SVS
- 48x XSLi-SUB SVS
- 6x ALi60 SVS SWR
- 66x 44S WR
- 10x Vi7P HWR
- 76x 8S HWR
- 48x 5S HWR
- 10x 40D Amplifier
- 35x 5D Amplifier
- 8x 30D Amplifier



MONUMENTAL SOUNDSCAPES
VIRTUAL REPRODUCTION

Due to restrictions the planned venue, Spain's Almería Cathedral, could not be used for the city's annual orchestral show. Lacking the benefit of the original setting's visual and aural impact, the event drew instead on d&b Soundscape to provide stunning sound for a bigger AVLM production in an architectural different space – the local Municipal Auditorium. d&b Soundscape enabled the acoustical setup to emulate the cathedral's characteristic reverb. In combination with En-Scene's object-based positioning capabilities the music of the whole orchestra could be reproduced with its intended authentic sound. In combination with video projections of the cathedral's interior onto the hall's walls and ceiling, the audience, despite the different acoustic environment, could experience the convincingly real feeling of being in Almería Cathedral itself.

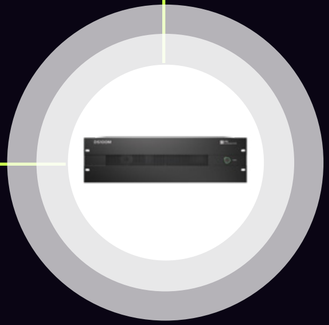


OCAL (Orchestra Ciudad de Almería) ArrayCalc Soundscape system plot, evaluated and simulated Soundscape system based on venue data and experience requirements

The originanl venue, which was acoustically emulated with the help of Soundscape's En-Space library.

180° Soundscape System

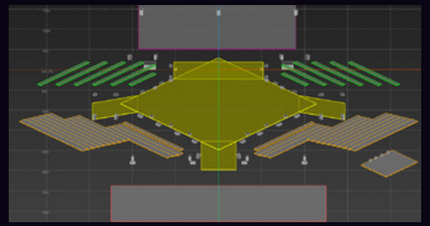
- DS100 Signal Engine
- En-Scene Object-positioning Software
- En-Space Room emulation
- DS10 Network audio bridge
- 30x T10
- 4x Y10P
- 2x E8
- 6x Y-SUB
- 5x D80 Amplifier



NATURAL SOUNDSCAPES

TRANSPARENT INTEGRITY

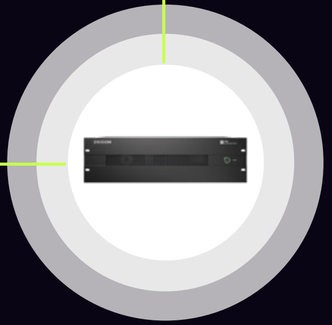
Nevill Holt Festival has a beautiful, intimate theatre situated in the picturesque rolling English countryside and, as it rarely employs sound reinforcement, its audiences are accustomed to acoustic performances. However, when the Festival first decided to move their performances out of the theatre and onto the lawn, they were faced by a conundrum:
How could they deliver the highest sound quality to discerning opera fans, without it resulting in an obviously amplified performance that would alienate their audience?
d&b Soundscape, with its En-Scene time and level calculation, was a pivotal part of delivering the natural, transparent re-production that the opera required, supporting the voices of the singers without ever overpowering or distracting.
The Festival also opted for an En-Space Virtual Acoustic Shell on-stage, to support the orchestra as they performed amid the unfamiliar acoustic of the festival stage. This virtual shell enabled modification of the acoustic to suit the orchestra's preference, whilst significantly reducing the weight loading on the stage structure, compared to a traditional, physical acoustic shell.



Nevill Holt Opera ArrayCalc Soundscape system plot, evaluated and simulated Soundscape system based on venue data and experience requirements

270° Thrust Soundscape System

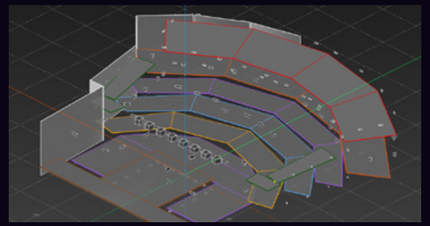
- DS100 Signal Engine
- En-Scene Object-positioning Software
- En-Space Room emulation
- 2x DS10 Audio network bridge
- 3x V10P
- 26x Y10P
- 12x T10
- 4x E6
- 12x E8
- 6x M4
- 2x SL-SUB
- 17x D80 Amplifier



CHALLENGING SOUNDSCAPES

ICONIC REINCARNATION

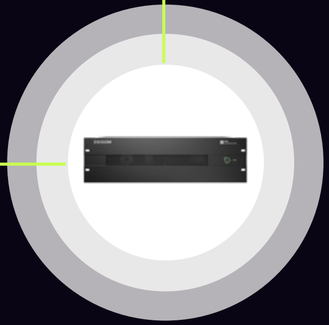
Closing after 75 years in 2022, the iconic 'Le Lido' in Paris underwent a startling transformation to be reborn, back in 2024, as 'Lido2 Paris'. Aiming to stage leading international theatre performances but facing several challenges in the new building, the venue chose d&b Soundscape to provide acoustic excellence and state-of-the-art experiences. Changing performance requirements called for maximum flexibility, while at the same time the design needed to account for low ceiling heights and the larger depth of the room. With d&b Soundscape, the optimal loudspeaker technologies were combined to match the acoustical requirements. The processing capabilities of DS100 and En-Scene met with ease the complex delay requirements, not only providing spatialized audio but also enabling automatic system alignment.



Lido2 Paris ArrayCalc Soundscape system plot, evaluated and simulated Soundscape system based on venue data and experience requirements

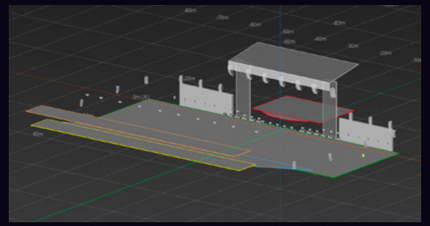
360° Soundscape System

- DS100 Signal Engine
- En-Scene Object-positioning Software
- En-Space Room emulation
- 2x DS10 Audio network bridge
- 16x Y10P
- 10x Y7P
- 48x 44S
- 18x 4S
- 32x E8
- 8x XSLi-SUB
- 9x 40D Amplifier
- 25x 5D Amplifier



FLEXIBLE SOUNDSCAPES
OBJECT-BASED FESTIVAL STRUCTURE

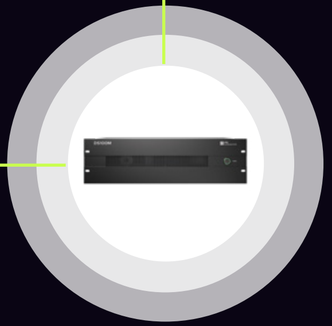
One of the most influential Jazz and Pop events in southern Germany, Jazzopen Stuttgart has over 30 years of rich history. On several stages throughout the city, it hosts big names from Jazz and Pop, supported by rising newcomers and regional bands making a stop on their tours. In recent years, the main concert stage at Stuttgart's 'Schlossplatz' has become a d&b Soundscape playground, both for artists and their engineers.
Here, 19 horizontally-distributed loudspeaker arrays create an enveloping 270° Soundscape system for the 9,000-capacity audience – standing and seated. Jazzopen clearly underlines not just the flexibility of d&b Soundscape, but that it is highly adaptable in a time-pressured touring environment. Whether iconic Rock names like Deep Purple, Sting or Joe Bonamassa, Pop divas like Grace Jones and Raye, or the mas-terminds of electronic music Kraftwerk – everyone enjoyed playing and mixing with d&b Soundscape, creating intense experiences in this outstanding location.



Jazzopen ArrayCalc Soundscape system plot, evaluated and simulated Soundscape system based on venue data and experience requirements

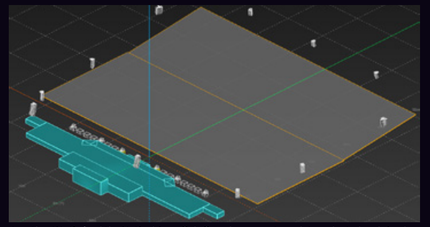
270° Soundscape System

- DS100 Signal Engine
- En-Scene Object-positioning Software
- En-Space Room emulation
- 7x DS10 Audio network bridge
- 32x KSL12
- 14x KSL8
- 32x XSL8
- 22x XSL12
- 34x SL-SUB
- 16x CCL8
- 32x CCL12
- 10x V10P
- 6x Y7P
- 21x Y10P
- 75x D90 Amplifier
- 16x D40 Amplifier



IMMERSIVE SOUNDSCAPES
BEYOND STORYTELLING

A major national parade in Vietnam's Thang Long Imperial Citadel in Hanoi celebrated the fusion of art, music and technology. The aim was to reproduce a natural and authentic feeling of historic scenes for the whole 3,000-capacity audience, in a 360° environment.
On this large stage with complex production design incorporating lighting, projectors and theatrical performance, the sound system had much to do. Not only did it have to deal with the practical demands of the setting, it also had to be able to create multidimensional spatialized soundscapes – including precise localization of performers, sound effects and scenery. With d&b Soundscape's object-based positioning software, En-Scene, the whole audience was treated to a one-of-a-kind 'history lesson' experience. With the entire area covered by a comprehensive surround system, the smart capabilities of En-Scene, in combination with the DS100 processing engine, enabled automated signal management and system alignment, resulting in precise spatialization results for every audience member.



‚Together We Defend the Nation' ArrayCalc Soundscape system plot, evaluated and simulated Soundscape system based on venue data and experience requirements

360° Soundscape System

- DS100 Signal Engine
- En-Scene Object-positioning Software
- En-Space Room emulation
- 5x DS10 Audio network bridge
- 8 x GSL8
- 16 x KSL8
- 42 x V8
- 12 x SL-SUB
- 4 x J-SUB
- 24 x D80 Amplifier

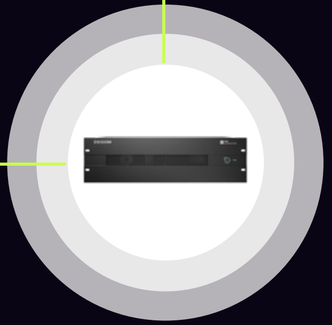
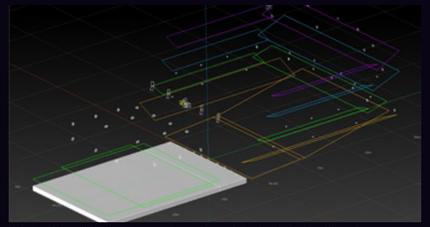


Photo courtesy of Hyogo Performing Arts Center
Photo by Takashi Iijima

ENVELOPING SOUNDSCAPES
VIRTUAL ACOUSTIC SHELLS

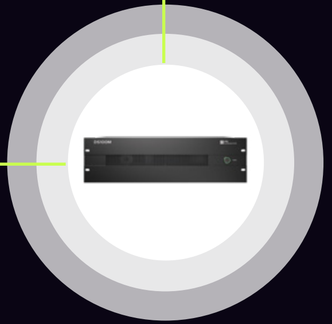
The production of Stravinsky's **Hi no Tori** (The Fire-bird) ballet performance at the Hyogo Performing Arts Center in Japan, called for the usual stage design to be adapted, as the orchestra had to move upstage to provide more space for the dancers. This meant that the physical acoustic shell needed to be replaced, while at the same time maintaining the subtlety of the stage design.
Using d&b Soundscape, a virtual acoustic shell was created around the orchestra on stage. Six suspended microphones fed the En-Space convolver, which emulated the reverberations to give the orchestra the feeling of being surrounded by physical walls and ceiling. At the same time, with all instruments close-mic'd, three positional mixes (for stage left, centre and right) were also sent to the En-Space engine. With this, the acoustic response for the Maestro and the orchestra could be precisely controlled, giving them the secure feeling of being synchronized with each other. Meanwhile, a 180° proscenium En-Scene system, plus an additional 360° surrounding En-Space system, was used to enhance audience engagement.



'Hi no tori' ArrayCalc Soundscape system plot, evaluated and simulated Soundscape system based on venue data and experience requirements

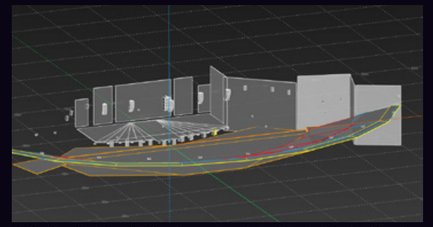
360° Virtual Acoustic Shell (VAS)

- DS100 Signal Engine
- En-Scene Object-positioning Software
- En-Space Room emulation
- DS10 Audio network bridge
- VAS Front 6 x T10 FG FF
- VAS 360 7 x T10 FG Main
- VAS Ceiling 4 x T10 FG Ceiling
- D20 Amplifier



ENGAGING SOUNDSCAPES
CONNECT TO CONGREGATION

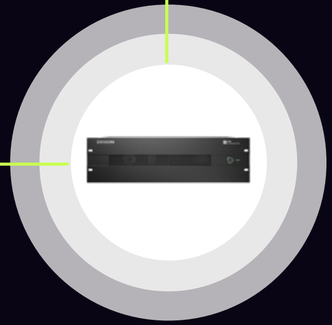
The Healing Place Church, in Baton Rouge, LA, wanted to improve the worship experience for its congregation of up to 3,000 people, to provide a more engaging experience and increase the connection with the worshippers. As the main arena includes an expansive stage, with several screens and a large, fan-shaped auditorium, it was imperative that, in making changes, sightlines were maximized. These challenges were met by a 360° Soundscape system.
With this solution, the audience area is optimally covered by a mixture of smaller horizontally distributed line arrays and point source loudspeakers deployed throughout the venue. Additionally, microphones installed on the ceiling, in combination with En-Space room emulation software, help to improve the overall acoustics of the space, adding a significant reverberant pattern to the audio signals and noticeably enhancing the sense of engagement for every member of the congregation.



Healing Place Curch ArrayCalc Soundscape system plot, evaluated and simulated Soundscape system based on venue data and experience requirements

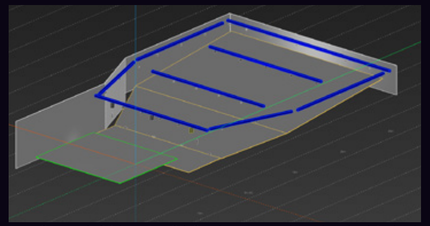
360° Soundscape System

- DS100 Signal Engine
- En-Scene Object-positioning Software
- En-Space Room emulation
- 4x DS10 Audio network bridge
- 10x V8
- 30x V12
- 6x 24S-D
- 15x 10S-D
- 8x 8S
- 13x 44S
- 10x 21S-SUB
- 4x SL-SUB
- 2x D80 Amplifier
- 22x 40D Amplifier



CUSTOMIZED SOUNDSCAPES
EMULATED SONIC FOOTPRINT

Teatro Comunale di Bologna is not only the city's most impressive opera venue, it is also one of the most important baroque houses in Italy. Built in the 18th century and associated with names such as Gluck, Rossini, Bellini, Verdi and Wagner, its historic architecture and character are central features of performances here. However, while the theatre underwent maintenance works, a temporary solution was needed to recreate this important character to the alternative location at Comunale Nouveau. Happily, with the help of d&b's En-Space Custom Rooms service, and the support of d&b's local partner, BH Audio, the venue's acoustical character could be replicated. The service team made comprehensive measurements in the original theatre and transferred the results into the En-Space library. Together with BH Audio, a Soundscape system was designed which enabled the team to authentically reproduce the acoustical behaviour of the Teatro Comunale, giving everyone – musicians and audiences – the feeling of being in the original venue.

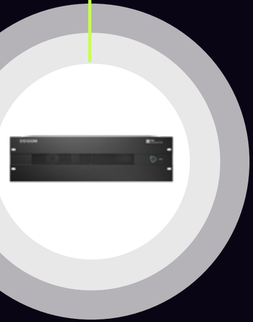


Teatro Communale di Bologna ArrayCalc Soundscape system plot, evaluated and simulated Soundscape system based on venue data and experience requirements

The origignal venue, which was acoustically emulated and transported with the help of En-Space Custom Rooms.

360° Soundscape System

- DS100 Signal Engine
- En-Scene Object-positioning Software
- En-Space Room emulation
- 2x DS10 Audio network bridge
- 3x 24S-D
- 5x 8S
- 19x E5
- 4x 4S
- 4x 44S
- 4x 8S
- 2x 16C
- 2x Ci90
- 2x MAX Monitor
- 2x E18-SUB
- 3x 10D Amplifier
- 1x 30D Amplifier
- 8x 5D Amplifier



The d&b Soundscape System

A d&b Soundscape System is not a singular approach of loudspeaker system design. It's the outcome of what speaker types you choose and connect through its applied intelligence. Living wihtin the d&b Workflow, nourished by the whole d&b portfolio, modular right from the beginning - a Soundscape system is what you make it. We call this System reality.

This is Soundscape.

Soundscape Processor

The DS100 and DS100M are the processing cores of each Soundscape live system. With various I/O options the Signal Engine comprises an extensive signal matrix with delay and level control for each crosspoint.

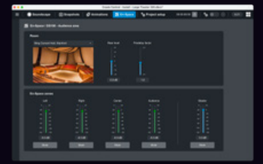
- **19" Rack device with 3RU height**
- **I/O sizes (via licenses)**
  - 64/24 (S)
  - 64/64 (L)
  - 128/64 (XL)
- **Network**
  - Dante (DS100 Signal Engine)
  - MILAN (DS100M Signal Engine)
- **Latency** < 1.4ms @48 kHz, <1.6ms @96 kHz
- **Matrix processing** level + delay matrix on each I/O crosspoint
- **Input processing** 8-band PEQ with high/low shelf, gain -120 to +10 dB, delay up to 500ms, polarity 0°/180°
- **Output processing** 16-band PEQ with high/low shelf, gain -120 to +10 dB
- **Weight** 11kg/ 24.5lbs
- **En-Scene** Software included

DS100 and DS100M Signal Engine

En-Space Software

En-Space is the room emulation software of Soundscape enabling authentic room reverberation based on real recorded impulse responses on the surfaces of renown venues. Use the loudspeaker system to emulate physical walls, or add acoustic signatures to the given space.

- **Boundary plane emulation**
- **Convolver** 144
- **Impulse response lenghth** up to 6.3 sec
- **Available rooms**
  - Blaibach Concert Hall
    200 seat capacity, 2.0 sec reverberation
  - Schubert Saal, Vienna Concert Hall
    350 seat capacity, 1.9 sec reverberation
  - Angelika Kauffmann
    600 seat capacity, 1.7 sec reverberation
  - Mozart Saal, Vienna Concert Hall
    700 seat capacity, 2.1 sec reverberation
  - KKL
    1.900 seat capacity, 2.6 sec reverberation
  - Großer Saal, Vienna Concert Hall
    1,850 seat capacity, 2.4 sec reverberation
  - Bing Concert Hall
    850 seat capacity, 2.2 sec reverberation
  - Alighieri Theatre Ravenna
    830 seat capacity, 1.3 sec reverberation
  - San Vitale Cathedral
    cathedrak with 5.6 sec reverberation
- **Custom Rooms** service to capture the individual room of your choice



En-Space View within Create.Control

En-Scene Software

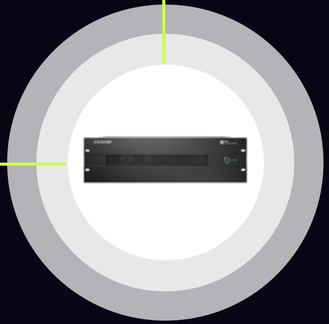
En-Scene is the object-positioning software of Soundscape enbaling automized processing of sound object positions in context of the given loudspeaker system. All being able considering loudspeaker placement and position.

- **Positioning plane** x-y
- **Delay modes** for automatic level and delay processing for each audio object
  - „off" (level based positioning)
  - „tight" (delay & level based positioning)
  - „full" (delay & level based positioning, aligned to absolute object position)
- **Spread factor** 'focused' to 'wide', to adjust level distribution of a sound object to the system, shaping the localisation quality
- **Function groups** for streamlined system organisation, each function group supports spatial information for consistent localisation throughout the system
- **Interoperate** with various 3rd party systems such as Stage Tracking, Mixing Consoles, Show Control, DAW,...

Object Positioning View within Create.Control

Create.Control

Create.Control is the stand-alone Controller Software for Soundscape. It lets you create, manipulate and control sound objects in an independent software environment.



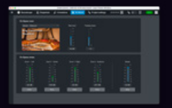
Create.Control

- Standalone software to create, manipulate, and control sound objects
- Intuitive interface designed for mixing workflows
- Use snapshots and animations to easily store and recall settings, position, crossfades, and movements throughout the performance
- Access En-Space master settings
- Import venue data from ArrayCalc and adapt effortlessly across diverse venues
- Easily transfer projects between different computers
- Work independently from System Engineering
- Create.Control communicated driectly with DS100 Signal Processor hardware to control on Object-parameters

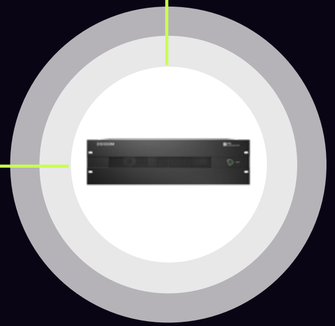
Soundscape view

Snapshots view

Animations view


En-Space view

Create.Control and the two software modules En-Scene and En-Space are connected to the DS100/DS100M through OCA protocol. Whilst Create.Control serves as a standalone Controller Software, En-Scene and/or En-Space must be installed and activated within R1 to provide the Soundscape algorithms. The DS100/DS100M automatically synchronizes parameters of Soundscape, to connect creative and technical workflows seamlessly.



Interoperability

Soundscape supports Open Sound Control (OSC). Connect your favourite hardware and software into the DS100/DS100M Signal engine or build your customized tools.

R1 connects to all audio system components and automatically controls signal data

Other OSC tools

TouchOSC
GRAPES
MiMU
STREAM DECK

Show Control

En-Snap
Gareth Owen Sound
QLab
Atlas

Tracking systems

BLACKTRAX[1]
TTA
FOLLOW-ME
zactrack
TiMAX TRACKER d4
nodestage tracking systems

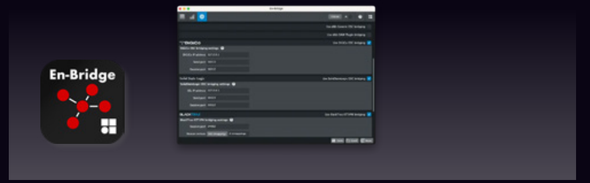
Mixing consoles

DiGiCo
AVID
Solid State Logic OXFORD · ENGLAND
LAWO

Status polling and synchronisation[2]

OSC

En-Bridge



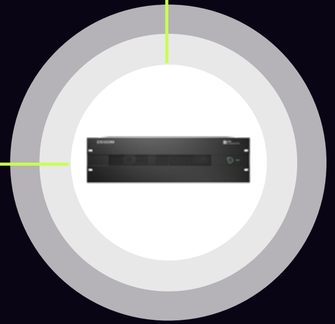
Connect your creative tools via OSC protocol to the Soundscape system to directly control parameters, such as En-Scene object position or En-Space trigger on the DS100/DS100M.

d&b's En-Bridge software streamlines connection of third party tools to Soundscape and supports bi-directional communication

OSC

OCA

This is Soundscape.



[1] For connection with Blacktrax the free-to-use Software En-Bridge needs to be installed to support RTTrPM protocol

[2] Polling and bi-directional communication mainly for mixing consoles and other osc plug-ins

d&b
Soundscape