

Science Centre Singapore Omni Theatre

Case Study



Entertaining and educating audiences with out-of-this-world visuals

The Omni Theatre at Science Centre Singapore (SCS) is home to one of the world's brightest 8K digital planetarium systems and Southeast Asia's largest seamless dome screen. It is an immersive edutainment destination offering a variety of digital full-dome movies and live planetarium shows conducted by SCS science educators.

The original 221-seat theatre was equipped with an IMAX 70mm film projection system and a 23-metre diameter Spitz NanoSeam dome screen. In 2015, SCS embarked on a major refurbishment of the theatre with the installation of a Digistar 5 8K digital full-dome system from Evans & Sutherland (E&S). The result is a highly engaging audio-visual experience

that transports visitors on experiential journeys to remote locations of Earth and space from the comfort of their seats. A popular venue at SCS, the Omni Theatre attracts over 150,000 visitors a year.

"The Omni Theatre is Singapore's only dome screen theatre. For the past 30 years, we have been known for presenting the highest quality educational dome films to Singapore audiences," said Associate Professor Lim Tit Meng, Chief Executive, SCS. "Compelling educational content and a high quality viewing experience in terms of visual clarity, brilliant colour and crystal clear sound are the basis for our theatre's uniqueness. Hence, overall visual presentation is critical to our success."

Customer:
Science Centre Singapore



Partner:
Evans & Sutherland

Location:
Singapore

Industry/Market:

- Entertainment
- Museums and science centres

Requirements:

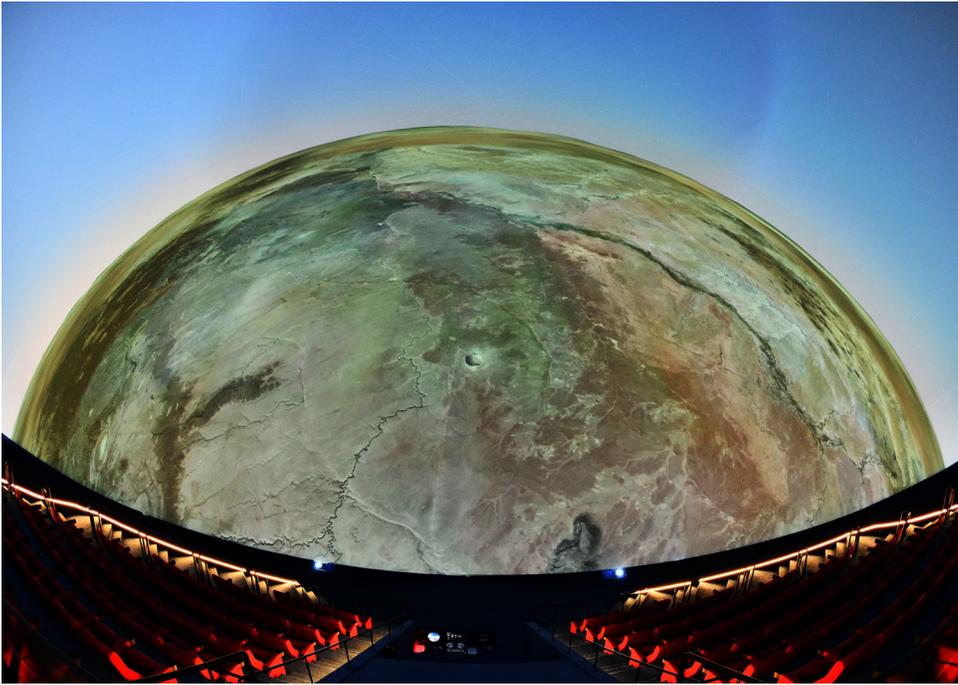
- Full-dome theatre
- High brightness
- High resolution

Summary:
The upgraded Omni Theatre at Science Centre Singapore is fitted with one of the world's brightest 8K digital full-dome systems, including the integration of an Evans & Sutherland Digistar 5 full-dome theatre system with five Christie Mirage 304K projectors.

Product:

- Christie Mirage 304K projectors (5)

Results:
The Omni Theatre's new 8K digital full-dome system featuring five Christie Mirage 304K projectors fulfils all the qualities of brightness, clarity, and 2D and 3D functionality, delivering beautiful and seamless coverage on the dome screen measuring 23 metres in diameter.



▲ Audiences are impressed by the bright, ultra-sharp and immersive visuals



▲ Evans & Sutherland's powerful Digistar 5 system enables science educators to create content-rich live shows for the Omni Theatre

At the heart of the Digistar 5 system are five Christie® Mirage 304K 3DLP® projectors powered by Digistar's intuitive user interface, easy-to-use show production capabilities, real-time science and astronomy database, and content management system. Three of the projectors are mounted in the theatre cove, while the other two are installed in the upper projection room. All five projectors are blended together with E&S's proprietary auto alignment and auto blending technology to create a seamless ultra-high resolution image that stays beautifully aligned at the click of a mouse.

Professor Lim noted that as 70mm film is becoming obsolete, SCS needs to invest in a digital projection system so that it can continue to upgrade the dome experience for its customers. "It is part of our continual product refreshment at the Science Centre. We did not set out to buy a 3D system as we felt that the 2D experience was already very immersive. But when we were introduced to the Christie Mirage 304K projector, we were very impressed by its brightness of 30,000 lumens and unique dual 2D and 3D functionality, which was a

huge bonus for us. It allowed us to offer exciting 3D movies to our visitors."

Updating a legacy theatre to present the perfect visuals

The Digistar 5 system was installed by E&S over a one-month period, during which some structural changes had to be made to fit in the five Christie Mirage projectors since the Omni Theatre is an existing IMAX dome theatre.

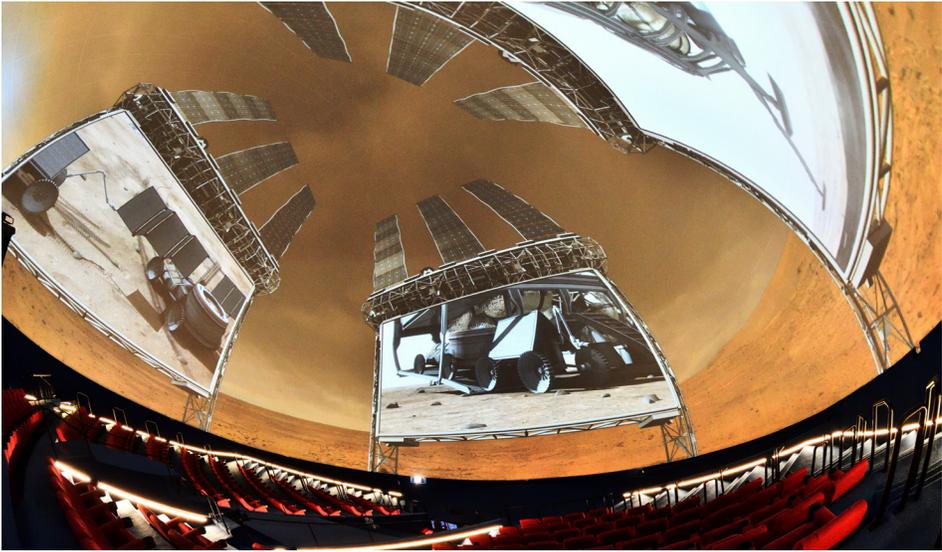
Firstly, the existing concrete cove had to be cut to fit the three projectors at the bottom part of the theatre cove. This had to be executed very carefully to avoid damaging the Spitz NanoSeam dome screen.

The second facility update was the installation of the remaining two projectors in an upper projection room which had lightly-tinted projection glass windows. To perfect the clarity and sharpness of the image, light needed to be projected unobstructed onto the dome screen. Given that the glass panels were tempered and thick, cutting the holes in situ was not feasible. Hence, new glass panels had to

be fabricated with the necessary openings for the projector lens to protrude out into the theatre, so that the best visuals can be presented to the audiences.

Professor Lim said: "We worked closely with E&S to learn to use the system effectively. We appreciate the fact that their strong partnership with Christie has allowed us to be amongst the first in the world to benefit from this innovative solution. We now have many more capabilities with the Digistar 5 system, one of the most powerful astronomy simulation systems available."

Michael Daut, Director of Product Marketing and AEOS Sales, E&S, commented, "The Omni Theatre is one of the first planetariums in the world to be fitted with the Christie Mirage 304K projectors and we are excited to be involved in this project. The robust real-time show production capabilities of Digistar allow audiences to explore the universe and visualize other sciences with spectacular realism while learning about the very latest scientific discoveries in real time. We are very pleased with the



▲ Three of the Christie Mirage 304K projectors are mounted in the theatre cove (left), while the other two are installed in the upper projection room (right)

performance of the projectors and the way they seamlessly cover the entire dome with crisp, bright imagery thanks to our auto alignment and auto blending systems. We are confident that the upgraded Omni Theatre will be a top draw for visitors from Singapore and the region."

Professor Lim is glad that SCS has maintained a good working relationship with both E&S and Christie Singapore who provide onsite local support when needed. "We are satisfied with the support that we receive from the technical team from both E&S and Christie Singapore who respond

to us quickly and to help us keep the theatre running smoothly."

Mission accomplished

Since its reopening in May 2015, the upgraded Omni Theatre has drawn positive feedback from audiences, who are impressed by the bright, ultra-sharp and immersive visuals offered by the Mirage 304K projectors.

"The projectors are excellent as they fulfilled all the qualities of brightness, clarity, and 2D and 3D functionality. The use of five blended projectors also

provided beautiful and seamless coverage on our dome screen. It is an innovative product which will take us into the future," Professor Lim noted.

The installation has yielded other benefits too. SCS now has the ability to lease from a large collection of digital movies from planetarium producers, or create its own live planetarium show using the powerful Digistar 5 planetarium software provided. This solution has enabled SCS to meet the needs of different audiences.

SCS staff has also benefited much from the new system. Technical team members get to upgrade their skillsets by using and maintaining a digital system, and they can perform their tasks with ease as preparation work to screen a new digital title takes a much shorter time than a 70mm film. The system is also a boon for the science educators who get to create content-rich live shows using the Digistar 5 software.

Able Liew, Deputy General Manager, Christie Singapore, said, "The visuals at the upgraded Omni Theatre are simply spectacular with E&S's Digistar 5 system. Its full-dome, ultra-high resolution display capabilities combined with our Mirage 304K projectors, creates a stunning visual experience. We're very pleased that the 8K digital full-dome system is delivering unrivalled digital resolution and brightness, and that audiences are having a blast with movies presented in both 2D and 3D formats."

Contact Christie

Contact us today to find out how your organization can benefit from Christie solutions.

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