



CASE STUDY

Education can be fun, when you show it on the sphere!

Client: AV Media Systems and Sféra Pardubice

Location: Automatické mlýny 1962, Pardubice, Czech Republic

Product(s) supplied:

PT-FRZ50

PT-RZ690

Challenge

The first challenge was the actual installation of the carbon sphere, which is actually a large spherical projection surface. Its size was limited by the width of the door of the room in which it is placed. The diameter of the globe is 1,7 m and it was delivered to the room divided into two halves.

Matching the projections on the sphere itself and on the surrounding ring was no less challenging. Installation and commissioning was provided by AV Media Systems, a company certified by the NOAA SOS project operator.

Solution

Four Panasonic DLP laser projectors [PT-FRZ50](#) were used for the projection on the carbon sphere, and another eight Panasonic DLP laser projectors [PT-RZ690](#) were used for the 360° projection on the ring. The projectors are powered by a separate server and special software that enables auto-calibration. Even ordinary users can reset even such a demanding installation at any time. The control is interactive and a tablet is used for it.





Projection globes as non-traditional educational aids have experienced unprecedented growth in recent years. NOAA's Science On a Sphere® (SOS) is a room sized, global display system that uses computers and video projectors to display planetary data onto a six foot diameter sphere, analogous to a giant animated globe.

The most recent installation was made at the Sféra Pardubice, the educational center in eastern Bohemia and is the only one surrounded by a ring that serves as a 360° panoramic projection. Together they form a unique immersive space that, thanks to Panasonic projectors and SOS NOAA educational programs, offers a virtually endless range of experiences combined with practical information and a fun form of education.



Sféra Pardubice – the fifth and largest SoS in the Czech Republic

Sféra Pardubice is a combination of a education, science and a hobby center. There is space for interest groups and for education. In the center of the building there is an extraordinary immersive space, which is not just an ordinary "Science on a Sphere" installation. It is a technologically very interesting project, which includes both its own spherical projection and a special panoramic display with 360° projection.

Sféra Pardubice is accessible not only to school excursions, but also to the general public. It is the fifth and largest installation of a projection globe with Panasonic projectors in the Czech Republic. The interest in the non-traditional projection is huge, individual visitor slots are occupied long in advance. The uniqueness of the solution even attracted the attention of the American embassy in Prague, and in the spring of 2024, the United States ambassador to the Czech Republic, Bijan Sabet, viewed the installation during a visit to the Pardubice region.

"Thanks to this technology, we can show visitors the world as they have never seen it," says Kateřina Pacindová, lecturer of SoS in Sféra Pardubice.

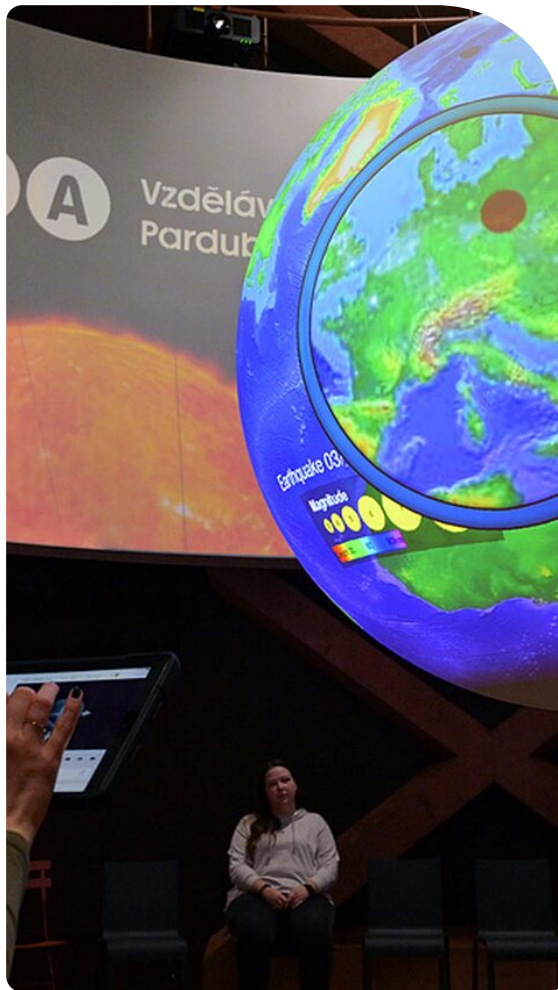
What is NOAA?

NOAA is the National Oceanic and Atmospheric Administration agency. The Pardubice educational center has at its disposal hundreds of programs developed by NOAA. Science On a Sphere® extends NOAA's educational program goals, which are designed to increase public understanding of the environment.

Programs showing various situations and traffic on Earth in real time are very popular; for example earthquakes or current air traffic, the deployment of large container ships in the world's oceans, current internet traffic or the use of the social network Facebook. But the projection globe can change to any other planet in the Solar System or, for example, to the Moon with all its familiar valleys and mountains.

"We have the freshest information at our disposal, we only work with scientific facts," states Kateřina Pacindová.





How does it work

"The surrounding ring makes it possible to supplement the information that is projected in the center, as well as additional related information, videos, floating texts and entire effects, thus actually turning the space into not only an educational one, but also an entertaining and fully interactive one. This is Formula 1 in the field of teaching tools," says Jan Buriánek from AV Media Systems, who led the installation work in Sféra Pardubice and also commissioned design programs from the American NOAA.

"We can teleport to other planets like Jupiter, Mars, Saturn and the like. We are also able to explain purely relaxed phenomena, such as the Milky Way, the movements of bodies, but even statistics that we would otherwise have a hard time explaining, such as Internet communications, hacker attacks, Facebook data," adds Jan Buriánek.

For schools, education labs, museums and science centers

The immersive SOS can be incorporated in various ways

- Geography classes: Showing real-time weather patterns and geological events.
- Environmental science: Visualizing the effects of pollution and climate change on different ecosystems.
- Astronomy: Exploring celestial bodies.
- History: Mapping historical events and their geographic context.

"Panasonic projector series RZ and FRZ are an ideal choice for long-term installations. DLP technology with a laser light source is characterized by a long service life, excellent image uniformity, color fastness and maintenance-free operation," says Zdeněk Krysl, Sales Manager, Visual System Solution, Panasonic Connect





All SoS installations in the Czech Republic

The Czech Republic has largest number of SoS installations in Europe

The very first Science on a Sphere with Panasonic projectors in the Czech Republic was installed by AV Media Systems in 2013 at the Techmania science center in Pilsen. In 2015, the Alternátor Ecotechnical Center in Třebíč followed, and in 2022, the Secondary School of Agriculture and Ecology in Žatec and the Elementary School in Krásná Lípa.

The Czech Republic thus holds a premium among European countries where Science on the Sphere is accessible primarily in museums and specialized institutions. Denmark has the second largest number of projection globes under NOAA's SOS project, with three. There are two in the UK, one each in Finland, France, Croatia, Italy and Poland. Outside of Europe, the largest number of installations is in the United States, China and India, where there are dozens of such special immersive spaces.

"The Pardubice installation is unique not only in Europe, but also in the world, because it is fully equipped. SOS NOAA does not provide more teaching and interpretation resources than are currently installed here. That is why NOAA chose this project as a reference for further installations," explained Jan Buriánek from AV Media Systems.



Project partners:

AV Media Systems – technology partner, installation and commissioning / Jan Buriánek

Sféra Pardubice – CEO / David Koppitz