Mondo video screens

A MONDO video screen is not only a product but a full package that includes personalized service done at different stages, from before to after the production and installation of the video screen:

Process stages:

1. Personalized solution study
2. Project development.
3. Video screen manufacturing process
4. Installation, start-up and training
5. Maintenance and after sale service

VIDEO SCREEN

During the study process, MONDO analyzes the customer needs and the facility specific features. With all that information MONDO suggests the customer specific technical features for the video screen such as:

- LED THROUGH HOLE or LED SMD technology
- Pixel and resolution needed, depending on the technology chosen and the average viewing distances- Graphic surface in m2 depending on the facility size (maximum viewing distance) and the video screen functions required- Video screen pitch (mm), that also defines the minimum viewing distance
- Vision angle considered in the vertical and the horizontal point of view

The final video screen defined is a LED panel modular configuration, each with its own control elements.

CONTROL SYSTEM ELEMENTS
During the study process MONDO's technical department defines the control system elements that will be needed depending on the video screen final location and intended use such as:

- Computer control: it controls the management of the video screen and incorporates the control and reproduction software.
- Processor: It processes video signals, translates the screen protocol and sends it to the distributor through optical fiber.
- Distributor: It receives the signals from the processor and distributes them to the different LED video screen modules.
- LED video screen: It is the graphic surface emitting the images.
- Power distributor: Provides power to the modules.

- Video scaler: It connects the video screen to the different video input sources with different formats.
- Mondo video processor.

REMOTE CONTROL SYSTEM
This service allows the customer to remotely manage the content shown on the video screen (images, videos, playlists, etc.) from any possible location in the world. The MONDO software and an Internet connection are the only two things needed.

SUPPORTING STRUCTURE
The video screens have to be placed on a substructure. This part is designed and manufactured entirely in a MONDO factory. MONDO engineering and technical department designs the video screen structure and makes the appropriate structural calculations to ensure safety of the installation. For bigger size video screens, walkways for maintenance can also be included in the structure. The structure design includes fixing anchors for accessory elements such as:

- Fixing anchors for engine systems.
- Fasteners for audio equipment.
- Fixing anchors for video equipment (cameras zenith, light effects, etc.)
- Elements for fixing static advertising.

ELECTRONIC COMPONENTS AND CALIBRATION
Once the project is completely defined, the video screen manufacturing process comprises the following stages:

1. LED selection, which is done for each video screen to ensure an homogeneous light intensity for all of them.
2. LED matrix plate manufacturing. The LEDs and other components are inserted into the PCB with automatic machinery. Then, they are checked one by one.
3. Control plate manufacturing.
4. Module assembly. All boards and electronic components are mounted on aluminum frames and modules are checked individually.
5. Color calibration and final inspection.

Several quality checks and controls are performed to minimize unexpected incidents during installation.
The LED calibration process improves image quality by optimizing color and brightness uniformity of the video screen different pixels of. This process uses specific software and advanced optical technology, u a colorimeter-photometer.
The calibration process allows uniformity of 3% in brightness tolerances and a 3 nm in color temperature.

SPECIFIC SOFTWARE DEVELOPMENT
MONDO develops its own control software to customized the product to the client needs.

MONDO PLAYER: It is a software developed by MONDO's electronic R&D department. It's an advanced video player, with features and functionality that have been adapted to the most common applications used for big size video screen. This software is compatible with any size and video screen models, regardless of its resolution.

- Positioning pixel by pixel of the player output.
- Several separate windows for easy handling of the different program functions.
- Video player with automatic scaling to the video screen.
- Image viewer with automatic scaling.
- Create and edit text and subtitles in scroll.

MONDOVIDEO
The MONDO video screens can be used as conventional electronic scoreboards for all sports with this specific software. The software generates an image that represents an electronic scoreboard displayed in the video screen. The scoreboard information is updated in real time based on information received from the MONDO control panels. The software is customized depending on the size and resolution of the video screen to ensure the best possible image quality. The software can be installed on the same video screen control computer.
The system is certified FIBA approved for the highest competition level.

INSTALLATION AND TRAINING FULL SERVICE
A team of technicians install the complete product package in the final location.
Installation also includes several previous stages:

1. Carrying out electrical installation and wiring onsite.
2. Data wiring installation (optical fiber) from the control room to the video screen.
3. Fixing and anchors element installation.
4. Elevation engine installation (if needed).

After controlling all these stages, the video screen is installed and a training is carried out for the staff members who will

manage the video screen in the future.

ELEVATION ENGINES

An engine system can accurately raise and lower the video screen and place it at the customer's desired height. With this system versatility is much greater, allowing to hold those events in which the video screen must be at the highest position possible (like freestyle, motocross, concerts, circuses, etc.). It also facilitates maintenance and technical revisions. MONDO develops a customized elevation control software in accordance with the installation needs. Depending on the complexity of the system needed, several devices can be installed to allow control of the exact position of the video screen and the load supported by each engine in that specific position.

The lift system includes all the necessary engine safety elements.

MAINTENANCE AND AFTER SALES

MONDO offers the possibility to sign a service agreement that includes periodic revisions for preventive maintenance and any corrective actions that could be needed.

There are several options in the maintenance agreement regarding issues such as the number of years it's applicable, amount of regular maintenance visits needed, minimum response time, etc. The video screen repair, if needed, will be done onsite by MONDO technicians.

Mondo will provide customer service and technical support by phone to answer the questions that may arise in equipment operation or maintenance after the installation and the training. MONDO also provides remote support service, through which MONDO could remotely have access to the video screen control computer, so that any problem caused by a wrong device configuration can be resolved as quickly as possible.

COLOR RANGE