

# Barajas Airport, Spain

## Flexible and versatile visualization



“Flexibility and versatility were the two most important features in the design.”

Óscar Calvo Martín, Centro de Gestión Aeroportuaria (CGA), Proyecto ASCESIS-ISDEFE, AENA, Madrid Barajas Airport.

Madrid Barajas Airport is Spain's busiest airport, handling more than 40 million passengers a year between Spain's attractive capital city and hundreds of domestic, European and international destinations. Barco has played a major part in the airport's amazing development.

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The capacity at Madrid International Airport was doubled in early 2006 with the addition of the new Terminal 4 and two extra runways. Madrid Barajas Airport handles the majority of Spain's transatlantic flights, and is the foremost European airport for flights to Central and South America as well as a major hub for worldwide connections. The expansion of the airport reinforces Madrid as Spain's air traffic capital and as one of the most important destinations in Europe and worldwide.

Its new facilities, together with an excellent geographical location and important international air transportation network, now enable it to secure its leading position among the principal airports of the world and as a major economic and decision making center on the continent. Further more, with this expansion, the airport will become an increasingly important hub airport, a major center for connections and activity between Europe and America, and in fact a vital gateway between America and Europe.

The Centro de Gestion Aeroportuario (CGA) is the coordination and management center for the new Madrid Barajas Airport Terminal. It is approximately 100 meters long and 40 meters wide. This center holds seven main control areas as follows.

- COSEA: Service and incident management area
- COMED: Groundside management including surface radar, taxiways, weather radar, etc.
- COSEG: Surveillance area
- CYMES: Systems and equipment management
- Coordination room: Overall management
- Training room: used for training new operators and existing operators any new technology.
- Crisis management room: access to every camera and every screen

The first five are located within the main control room while the training and crisis management areas are located in two separate rooms. As is the norm, the CGA is operational 24/7, 365 days a year.





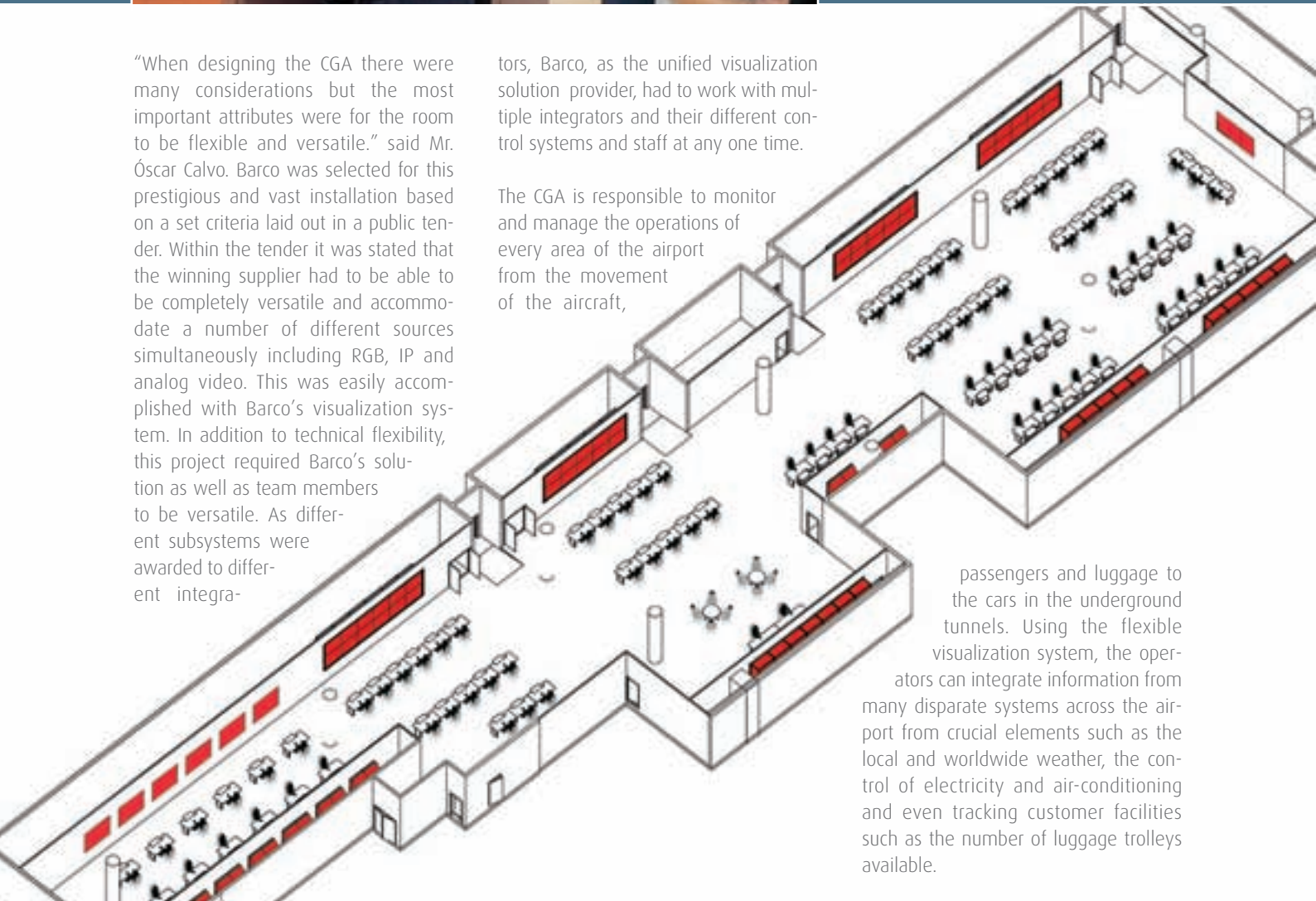
### Equipment installed:

- COSEG - 12 2x2 OverVIEW mDR50-DL
- COMED - OverVIEW 7x2 cDR67-DL
- COSEA - OverVIEW 6x2 cDR67-DL
- CYMES - 4 5x2 OverVIEW cDR67-DL and 2 2x2 OverVIEW mDR50-DL
- Coordination room - 7x2 OverVIEW cDR67-DL
- Crisis Room - 3x2 OverVIEW cDR67-DL
- Training room - 2x1 OverVIEW cDR67-DL
- 350 analog video sources
- 50 IP video sources
- 80 RGB sources

“When designing the CGA there were many considerations but the most important attributes were for the room to be flexible and versatile.” said Mr. Óscar Calvo. Barco was selected for this prestigious and vast installation based on a set criteria laid out in a public tender. Within the tender it was stated that the winning supplier had to be able to be completely versatile and accommodate a number of different sources simultaneously including RGB, IP and analog video. This was easily accomplished with Barco’s visualization system. In addition to technical flexibility, this project required Barco’s solution as well as team members to be versatile. As different subsystems were awarded to different integra-

tors, Barco, as the unified visualization solution provider, had to work with multiple integrators and their different control systems and staff at any one time.

The CGA is responsible to monitor and manage the operations of every area of the airport from the movement of the aircraft,



passengers and luggage to the cars in the underground tunnels. Using the flexible visualization system, the operators can integrate information from many disparate systems across the airport from crucial elements such as the local and worldwide weather, the control of electricity and air-conditioning and even tracking customer facilities such as the number of luggage trolleys available.





With this integrated view, the CGA can efficiently and effectively serve as the overall management center for the entire airport.

To improve collaboration, each area has a dedicated team of trained operators who are capable of not just working on their own assigned responsibilities but also on other areas. This is important to maintain maximum operator efficiency and effectiveness.

All of the monitoring is assisted by approximately 6,000 cameras spread around the airport. Up to 350 cameras are simultaneously monitored at any one time on Barco's solution, using no less than 148 rear-projection cubes. The cubes have various sizes and are grouped together in different configurations depending on the needs of the seven separate functions. Additionally, the operators have full control over the cameras and can move and zoom in or out as necessary. It is believed that this is the first airport in the world to adopt this system of active monitoring of the entire airport in one central operation area in real time.

### **Maintenance**

The maintenance of the CGA is conducted by the room coordinator. "While the display walls are considered to be part of the IT infrastructure and taken care of by the IT department," Mr. Óscar Calvo Martín, Centro de Gestión Aeroportuaria (CGA), Proyecto ASCESIS-ISDEFE comments. "The lamps are so easy to change that we don't need IT for it as this is done by the local team within the CGA."

### **Terminal 4**

In addition to the main room, there are Barco facilities in Terminal 2. The CGRh24 room is where all flights are supervised and incidents are reviewed. The visualization is made up of three separate displays arranged in a curved configuration: the three video walls in this area consist of a 5x3, 5x2, and a 4x2 configuration of Barco's OverView mDG50-DL video wall displays. There are numerous analog video input cards (16 inputs) to service these displays. There are plans to extend this facility to accommodate future expansion.

The Crisis room consists of a 5x3 configuration of Barco's OverView mDG50-DL, also supplied with a number of analog video cards.

### **The future**

The system in place now perfectly meets the current needs of Madrid Barajas Airport. However, as stated by Mr. Óscar Calvo, there is still room for evolution. "I am well aware that the Barco solution is currently not used to its full capacity and, moving forward, I am keen to develop this capacity and use more functions in line with the management of the room and maximize the benefits of the full Barco solution."

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The information and data given are typical for the equipment described. However any individual item is subject to change without any notice.  
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