CUBE® TECHNOLOGIES

Innovative Solutions for Green Exhibitions

EXHIBITION SMART GRIDS

The KEOPS solutions : an innovative concept of electrical distribution

Active energy efficiency, Smart Grids,

Smart electric meters are part of our daily lives.

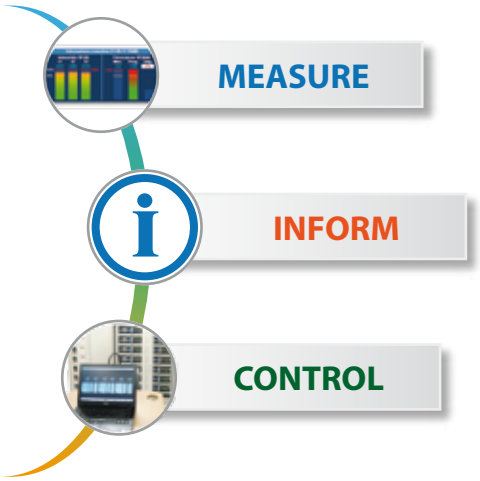
Today, **measuring**, **analyzing** and **controlling** the electrical network of a venue has become a necessity.

For 10 years, CUBE Technologies have been involved in the "smart grids" concept and have developed a **range of innovative solutions** enabling a **new approach** of electrical distribution.

5 main reasons to be a player in energy efficiency :

- Forecast increase of the electric energy costs,
- Need to regulate the power consumption peaks,
- Necessity to follow rules and standards (ISO50001 June 2011),
- Necessity to propose electrical connections of **very low wattage(<1kw)** requested by an increasing number of organisers and exhibitors,
- Necessity to fulfill the new behavior of organisers and exhibitors requesting more transparency on costs.

The keys for energy efficiency according to CUBE Technologies



Measure separately the different consumptions : organiser, exhibitors and buildings.

Inform simultaneously the venue's management team and the consumer (exhibitor) for more efficiency.

Control each stand individually and avoid wasting thanks to numerous and precise information.

The KEOPS Solutions are currently in use in big venues such as : VIPARIS Porte de Versailles, Palais des Congrès de Paris, Le Bourget, Paris Nord Villepinte but also CEB in Bordeaux and Geneva Palexpo, ...

For each venue, the KEOPS Solutions enable a remote control of electrical installations.

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KEOPS MANAGER Suite

The KEOPS Manager Suite is the central element of the KEOPS Solutions.

It is a professional software, developed in cooperation with electrician teams working in different European exhibition centers.

It is dedicated to manage the electricity supplying grids of the stands.

It simplifies and optimizes the relationship between technical teams and exhibitors.

4 Smart Grid functions

Consumption management :

Using a traditional system, the exhibitor orders an electrical connection indicating the maximum power estimated necessary. The venue provides, on his stand, an electrical box whose power capacity is calibrated by a fuse or a circuit breaker (for ex : 16A circuit breaker for a connection up to 3kw). The tolerance of these components enables the exhibitor to consume more than 1,5 time of his ordered consumption. In that case, neither the venue, nor the exhibitors are aware of the situation.

With the KEOPS Solutions, the exhibitor is informed of any exceeding consumption. The KEOPS system can cut off his electrical distribution and indicates in real time the level of over-consumption, encouraging him to reduce the power of his equipment.

The scheduled cut-off :

Using a traditional system, the stand electrical cut-off, by the end of each day, is operated by electrician teams. According to the layout of the premises and the available staff, this cut-off can be effective several hours after the exhibitor departure. Sometimes it can also be impossible if the storage room is locked.

With the KEOPS Solutions, the embedded smart device integrates a clock and an accurate calendar stating start and end times of the electrical box for each event. Therefore, the energy management is optimized and ensures costs saving for the venue.

Consumption invoicing provided in complete transparency :

Today for logistics and financial reasons, the commercial offers are mostly made of package prices (invoicing the electrical connection whatever the real consumption).

The KEOPS Solutions provide a unique interface, enabling to know at any time, during the event the exhibitors consumption and to transfer it automatically to the venues' accounting department. This function enables to propose transparent commercial offers without workforce overrun.

Information to energy consumers :

Today organisers and exhibitors are not informed of their consumption. Therefore they are not encouraged to modify their behavior.

With the KEOPS Solutions each source of consumption (heating, air-conditioning, exhibitor consumption, lighting…) can be measured and counted separately and consolidated at any time.
This information can be given to the different stakeholders in real-time to make them always more eco-friendly.