

RUE "ODU", Minsk, Belarus



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Video walls excel at visualizing and managing the enormous amount of data generated by complex systems such as national power networks. Faced with the daunting challenge of a complete upgrade of its central despatch control room, RUE ODU decided that big problems need big solutions.

PROJECT LOCATION

Minsk, Belarus

CUSTOMER

RUE "ODU"

APPLICATIONS

Power System Dispatching
Control Center

PRODUCTS USED

21 x VS-80PE78UA

INSTALLATION

Avectis, Belarus

FURTHER INFORMATION

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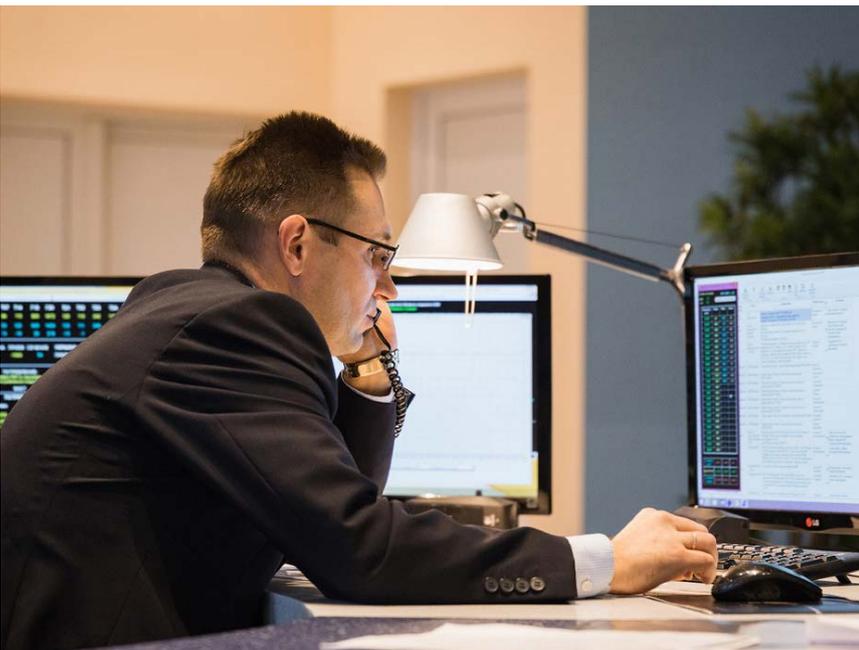


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BACKGROUND

RUE ODU (Republican Unitary Enterprise ODU) is the organisation that manages the national unified energy system of the Republic of Belarus. RUE ODU is a key element of the State Production Association of Electric Power Industries, known as “Belenergo”, and is directly controlled by the Ministry of Energy of the Republic of Belarus. As well as providing continuous centralized operations and despatch for the national grid, RUE ODU is also a vital part of a complex cross-border network of electric power systems in neighbouring countries.



PROBLEM & SOLUTION

Power dispatching control in Belarus takes place at three main levels: national, regional and municipal. RUE ODU provides operational control at a national level at its National Dispatching Centre, monitoring and managing not just the high voltage networks but the step-down substations as well. Until recently the system had been managed using a standard “mosaic-type” instrument panel. But over time, growing complexity made it increasingly difficult for dispatchers to respond quickly to changing situations. Furthermore, a key part of RUE ODU’s remit - the continual development of new management techniques and innovations such as automated monitoring and accounting – was being hampered by a lack of versatility and difficulty in drilling-down to extract vital data. And so, in 2016, the decision was made to replace the existing infrastructure with a state-of-the-art dispatch solution based on the latest video wall technology.

Central to the new system was an exceptionally large DLP video wall system designed and installed by Belarus systems integrator Avectis. The system is built from 21 Mitsubishi Electric VS-80PE78UA 80” DLP cubes in a 7 x 3 configuration. Measuring an impressive 11.2m wide by 3.5m high, the screen delivers

a total resolution of 9800 x 3150 pixels, greatly increasing the amount of data that can be displayed. At 80”, the DLP cubes are significantly larger than the 70” or 72” units more usually found in control room installations. However in this case, the extra screen area greatly improves operator visibility whilst minimizing the hardware requirement and running costs. The RUE ODU screen is believed to be currently the largest 80” DLP video wall in Europe.

Specifications

Model	VS-80PE78UA
Technology	LED video wall cube
Overall Size	40,3 m ²
No. of Modules	21
Cooling system	Air cooling system with efficient cooling pipe and aluminum plate (No liquid)
Type	DLP™ technology (0.95” DLP™ 1 chip), DarkChip3™, BrilliantColor™
Resolution	SXGA+, 1400 x 1050 pixels (per module)
Light Source	Redundant LED (RGB)
Light Source Service Life	≤ 100,000 hrs.
Brightness	630 cd/m ² bright mode 440 cd/m ² normal mode 300 cd/m ² eco mode 120 cd/m ² advanced eco mode
Contrast Ratio	1600: 1
Power Consumption	88 W in advanced eco mode 108 W in eco mode 147 W in normal mode 233 W in bright mode

DLP™ and Digital Light Processing are trademarks of Texas Instruments.





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INSTALLATION RESULTS

Mitsubishi Electric's VS-80PE78UA DLP cubes delivered an elegant and cost-effective solution to the challenge of creating a display large enough and versatile enough to fulfil RUE ODU's requirements. However installing the large format DLP cubes was not without difficulty, as some door frames had to be dismantled to allow access.

But once installed, the advantages of the VS-80PE solution became very clear. Despite the larger screen size, the system delivers a brightness of 860 cd/m² while still achieving exceptionally low power consumption. Operating in Advanced Eco mode, the power consumption of each cube is just 80W, making them currently the most energy-efficient on the market. Moreover, in this mode the LED light source is rated for a minimum of 100,000 hours, or 11.3 years, of continuous operation. Mitsubishi's air-cooled projector technology requires no routine servicing, reducing maintenance costs to practically zero. Furthermore, the highly-efficient projectors produce little heat, thereby reducing the load on the HVAC system. Rear access to the VS-80PE78UA cube means that the maintenance area behind the video wall can be maintained at a constant temperature of 18 °C, while temperatures in the control room are at a more comfortable 22-24 °C. Isolation from fan noise also improves operator comfort.

RESULTS

Thanks to the generous size of the video wall, the diagram of the entire power system and detailed information on its status is now clearly visible to the dispatchers. With all the essential data at their fingertips, the dispatchers are now able to monitor the network, adjust parameters and control power generation far more efficiently. In the event of an accident or malfunction, response times have been reduced and easier access to data ensures better decision making to recover network operability.

MITSUBISHI ELECTRIC SEVENTY SERIES CUBES

The VS-80 PE78UA models used at the RUE ODU National Dispatch Centre are part of Mitsubishi Electric's pioneering Seventy Series. The centrepiece of this projection technology is an integrated, ultra-modern DLP® chip. For its latest LED cube generation, Mitsubishi Electric has developed the innovative Smart 7 concept, a pioneering design for LED display wall cubes with a wide, intensive colour spectrum, optimum energy efficiency and an average service life of ten years. As a global market leader in LED cubes, Mitsubishi Electric currently offers the widest selection of models and is able to provide first-rate, well-engineered technology for customised solutions. The company has over 30 years' experience in LED solution development and large screen project management. We have already installed more than 78,000 DLP projector units worldwide.



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