



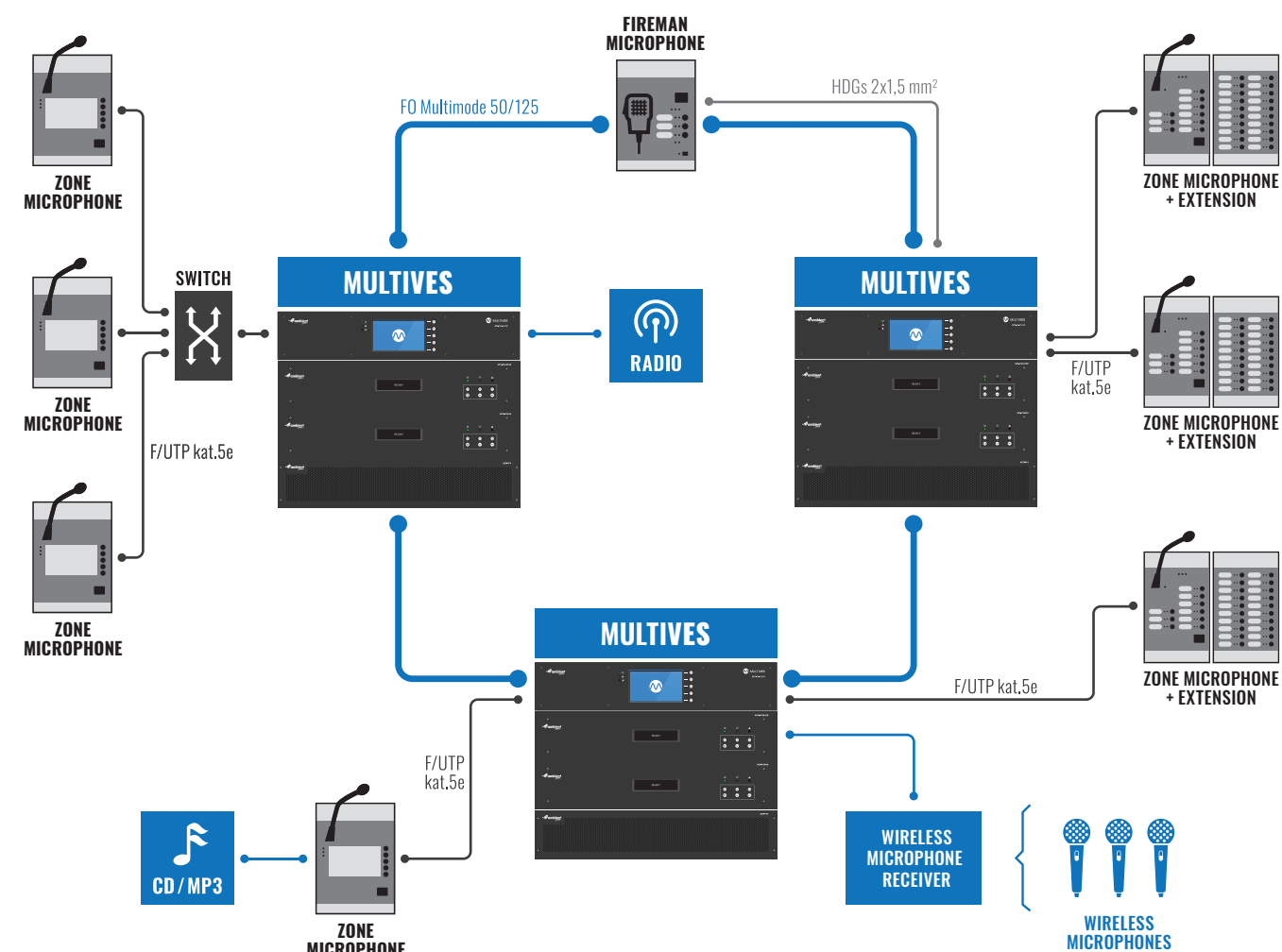
PUBLIC ADDRESS (PA) SYSTEM OF AN OFFICE AND WAREHOUSES IN LOGISTICS CENTRES

CAN IT BE DONE USING VOICE EVACUATION SYSTEM?

This article presents a few issues related to installation of **PA systems in warehouses** with office facilities on an example of a logistics centre.

Features of an object, requirements, examples of how these can be met and also additional benefits resulting from use of **MULTIVES Voice Evacuation System** of the Polish manufacturer Ambient System Sp. z o.o. in such applications were presented.

MULTIVES system flexible topology



OBJECT CHARACTERISTICS

Current logistics centres with office facilities are objects that can be composed of several warehouses of about 20,000 – 25,000 m² including the necessary storage technique, where high storage racks, transport equipment, etc. and office and social buildings of a total of 10,000 m² will be located. Number of staff in a plant can amount from 500 to even 1,000 persons. Objects of this type, in respect of fire equipment, require, inter alia, installation of systems such as: fire sprinkler systems, fire alarm systems, fire safeguards (fire valves and gates), smoke venting systems, alarm and emergency lighting, hydrant systems and fire extinguishers. In respect of alarming on any danger, fire protection system includes optical and acoustic indicators making up the fire alarm system. According to the

laws in Poland, objects of this type do not require the use of Voice Evacuation Systems, however the Investors often require that additional alarm equipment, User-specific, fitted with fire service microphones, radio communication systems, etc. The purpose of such systems is to improve the efficiency of building protection for detection of any types of danger as well as the commercial use of a facility in daily life.

Installed sound systems, including office facilities and internal areas of warehouses, must be free to expand and to meet, inter alia, the following requirements:

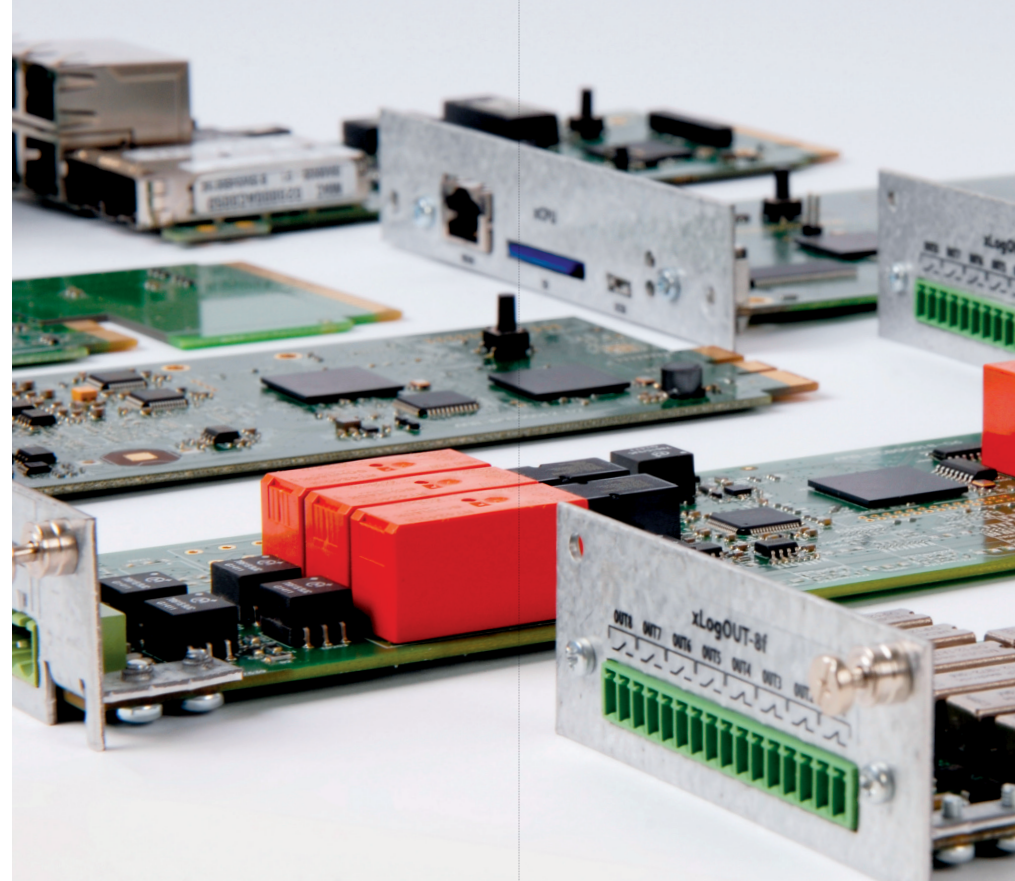
- » enable the creation of extensive sound system based on over a dozen speaker lines to which several thousand speakers are connected;
- » system control panel must be able

to transmit automatic alerts planned according to the time schedule related to buildings operation;

- » system must enable the connection of external sound sources such as radio or internal wireless communication systems, etc.

- » quantity and target distribution of the system microphones used for verbal messages should be arranged according to the requirements of the Tenant, therefore the system must provide complete freedom and flexibility in this respect.

This article presents the advantages and functional possibilities resulting from use of the voice evacuation system MULTIVES by Ambient System Sp. z o.o. for the above applications, operating as a professional public address system.



FULFILMENT OF THE REQUIREMENTS

Size of system – practical, with no limitations

Logistics centre with office facilities is an object whose expected useable area can be even up to 100,000 m². In practice, it means that the public address system must enable the connection and failure-free operation of devices supplying and controlling over 70 speaker lines to which even more than 2,000 speakers will be connected. Such boundary conditions virtually exclude the use of small or medium PA systems but are not a challenge to MULTIVES. MV System enables more than 250 control units to be connected to the system to which, in total, more than 11,000 speaker lines can be connected and, at the same time, we can matrix 45 audio signals. MULTIVES is designed to deliver the industry's largest systems a, but also, with its module structure and individual selection of devices for any design, is used for large and medium applications, providing virtually unlimited functionality while maintaining an attractive price.

Timers (task schedules)

MULTIVES is able to create task schedules – so-called timers. It is a function used to

create elements triggering an action in a specific time. Depending on the needs, a period of triggering of a system function, e.g. transmission of selected alert from system memory to one or several speaker zones can be defined as: annual, monthly, daily, hourly or minutely, operating from Monday to Friday and/or from Saturday to Sunday. The system also enables specifying the time and date of the start of the action of a defined periodic event and its termination date.

Built-in and easily accessible audio inputs / outputs

Connection of external devices to MULTIVES requires no additional audio interfaces since as a standard, the system offers built-in audio inputs or outputs located in such components, such as control units, microphones or power amplifiers. With this function, we can connect the external signals anywhere in the system, coming from audio outputs of co-operating devices. Activation of an input can be done in many ways, i.e. manually by pressing a freely-defined microphone button, by activation of freely-programmable

logical input to which we can lead the control signal from other device or automatically, according to the planned schedule. Audio signal matrixing, i.e. selection of a speaker zone or several speaker zones to which connected signals are transmitted, is also freely programmable to meet the expectations of each User.

The microphones

The basic function of zone microphones of MULTIVES system is the transition of the voice alerts to the selected zone or several speaker zones by the operators. Additionally, the freely programmable buttons of microphones can be used to manually trigger the specific pre-planned system events. Each microphone has a built-in speaker that allows you to listen to the alerts sent to the selected zone, but also provides for intercom function (available for each microphone) giving you an added advantage of using the system, i.e. the two-way communication between the employees with no need to add further devices. Number and distribution of microphones is defined by the User. All microphones and control

units have their own IP address, communicate through Ethernet network, and up to 254 such devices can operate within one system. Cabling for devices is made

as in typical LAN systems. Considering that the microphone can be located near the speakers, as a standard, the system provides a function to eliminate acoustic

feedback so that we can place microphones anywhere in the facility and meet all User's requirements in this respect.

ADVANTAGES

MULTIVES Voice Evacuation System fulfils all operational requirements of objects like logistics centres, but its use for such applications also gives additional benefits. All control units for system management have a built-in alert memory and DSP processor that ensures professional audio signal processing. Depending on acoustic conditions in the area, 3-band parametric equalizers at all system inputs and 8-band sound equalizers at every audio output, can be freely configured by changing the value of middle frequency, quality factor and amplification, thus improving the quality of alerts or transmitted music. Audio limiters at every output additionally improve system's safety. The above functions are very important for public address system in rooms of high volume, where an unfavorable long reverb can be produced.

It should be further noted that MULTIVES system, working in this

application, additionally provides a much higher reliability than in standard PA Solutions. User receives a PA system which fulfils all requirements for Voice Evacuation Systems, which makes that it is reliable in operation. All components from microphones, through central devices and speaker lines are monitored, and any damage thereof is indicated within less than 100 seconds. System is resistant to damage of basic amplifiers providing dynamically-managed back-up amplifiers. Thus, a back-up amplifier replaces a damaged one, whose operation is required at that time, and after transmitted alert with a back-up amplifier, it returns to the group of resources, so that it can back up other amplifiers as well. The use of the accumulators in the control panel ensures the systems operation in case of loss of the basic power supply and their condition is also being monitored.

MULTIVES system is a Voice Evacuation System that can be installed and used as a PA system in objects like logistics centres or any other extensive warehouses with office facilities. A detailed description, specification of components and complete reference list can be found at www.ambientsystem.eu. Voice Evacuation Systems / PA Contractors and Designers who are interested in this solution are advised to contact with the Product Support Department of Ambient System. We are be happy to answer any questions and give you any additional information.

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