ISCVE

Voice Alarm Systems Guide
For Industry Professionals

Institute of Sound, Communications
and Visual Engineers Ltd

iscve.org.uk

A Voice Alarm Systems Guide for Industry Professionals

VAS Professionals would include Audio/Acoustic Consultants, Audio System Designers, Audio System Installers and Audio System Engineers (for Verification, Commissioning and ongoing Maintenance).
Professionals in the Voice Alarm industry need to be suitably qualified and fully familiar with all the relevant Standards and working practices when specifying, designing, installing, commissioning and maintaining these life safety systems.

Sound System Standards Relevant in the UK
- BS5839-8 – Design, installation, commissioning and maintenance of voice alarm systems.
- EN54-16 – Voice alarm control and indicating equipment.
- EN54-24 – Components of voice alarm systems – Loudspeakers.
- BS50849 – Sound systems for emergency purposes.
- BS7827 – Designing, specifying, maintaining and operating sound systems for sports grounds, large public buildings and venues.
- Guide to Safety at Sports Grounds (The Green Guide)
- BS60268-16 – Objective rating of intelligibility by speech transmission index.
- BS6259 – Design, planning, installation, testing, maintenance of sound systems.

Professionals designing these systems should be formally trained, academically with a degree in Electro-Acoustics Engineering and/or with appropriate courses from recognised industry bodies such as the ISCVE, FIA etc. Some manufacturers also offer good training courses, but this is usually based around their products.

As well as formal training, the benefits of gaining hands-on experience on the installation, commissioning and maintenance of these systems cannot be understated.

Specifications from Consultants should be written in conjunction with the client's requirements, as well as the relevant Standards, and in a manner that eliminates ambiguity about the system to be delivered. As well as the relevant Standards, the specification should be based on recognised good practice and be suitable for most normal applications.

In some applications a pragmatic approach to the design which deviates from the standards is required as is recognised by BS 5839-8 for example; BS5839-8 extract - *the recommendations might be unsuitable and would lead to VAS's that would be unnecessarily expensive, incorporating measures that are not cost effective, or that could be difficult to install. In these circumstances, variations from the recommendations might be necessary, even though, in general, the user, purchaser or enforcing authority requires strict compliance with the document.*

While it is necessary for certain limitations or performances recommended in this part of BS5839 to be expressed numerically, the values often approximate or based on custom and practice, or the judgement of experts. While they are generally applicable, rigid adherence might not be appropriate and minor variations might not have any significant effect. For example, in an office building it might be judged that sound pressure levels of 57dBA could be accepted in a number of cellular offices, if achieving the 60dBA recommended in this part of BS5839 would necessitate a large increase in the number (and cost) of loudspeakers required.

Regarding costs, not all loudspeaker outputs need to be dual circuit (A/B or secure loop)

or individual amplifiers per loudspeaker circuit. There are times when this could add unnecessary costs to the project.

Any variations from BS5839-8 and other relevant standards incorporated within the specification, should be clearly identified and approval agreed by the client or enforcing authority.

The specification should emphasise the following areas;

Responsible Premises Management Duties – ensure the end client understands the importance of appointing a nominated person(s), as they have the legal duties as the nominated member of the Premises Management. This includes documented weekly testing of the VAS by nominated staff in accordance with clause 39.1 in BS 5839-8:2023 and documented 6 and 12 monthly maintenance inspections by a competent organisation with adequate access to spares and a good knowledge of the system, in accordance with clauses 40.1 and 40.2 in BS5839-8:2023.

The ISCVE offers the 'VA for Responsible Premises Management' training course, designed to understand the legal responsibilities of this role. Details can be found in the Training section of the website.

https://iscve.org.uk/training-development/training-events/voice-alarm-skills/#vapremises

Commissioning and Maintenance – engineers need to be suitably qualified and fully conversant with the requirements of these duties in accordance with BS5839-8. Commissioning of the system should be thorough and complete. In particular, tests for compliant audibility and intelligibility should be given a high degree of attention. Ensure that all design, installation and commissioning certificates, test results, handover documentation (including the Logbook) and client training of the system are completed fully and signed for by the client's representative. There are three elements to the ongoing maintenance of a system: a) weekly tests, carried out by the premises management team, b) 6-month inspection carried out to the requirements of BS5839-8 section 40.1 by a competent person with specialist knowledge of VAS's and 12-month inspection carried out to the requirements of BS5839-8 section 40.2 by a competent person with specialist knowledge of VAS's.

The ISCVE has highly experienced Members capable of carrying out commissioning, verification and maintenance of VAS systems.
Contact info@iscve.org.uk for more information.

User Training – should be carried out at the handing over of the completed system, to ensure that enough members of the premises management team understand the system and how it operates. External training may be required for microphone users, to ensure broadcasts are clear and intelligible at all times.

With regards to operational training, the ISCVE has an excellent guide to assist in the training of microphone users. Click on the link below to download a copy of this guide.

https://iscve.org.uk/standards/a-guide-for-training-microphone-users-of-sound-systems-and-other-communication-systems/

Finally, the ISCVE has highly experienced Members capable of carrying out third-party verification of VAS systems. Contact info@iscve.org.uk for more information.

For further reference, the ISCVE have produced guides for Responsible Premises Management and Specifiers (which includes a simple VAS specification).