



Innovations in the Field of Noise and Vibrations by Spectri Ltd.

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Abstract

The article presents a comparative information for the realized innovations in the field of noise and vibrations by SPECTRI Ltd.

Keywords: noise, vibrations.

1. About us

The company SPECTRI was founded in 1998 with manager Eng. Boris Mihaylov. Specialists in the company are leading experts in the field of noise and vibration with a wide practical experience of successfully implemented projects.

In 2006, Dipl. Eng. Boris Mihaylov take leading role as founder and later on Member of the Management Body, and Co-President of BAPNCM ("Bulgarian Association for Public Noise Control and Management").

Since the founding, an exclusive agency contract has been in force (technical, engineering, service, commercial) of the company - leader in the field of noise and vibrations, Bruel & Kjaer – Denmark.

SPECTRI is partnering with world leading manufacturers of measurement equipment. **SPECTRI** carries out service activities, deliveries of spare parts and equipment for measurements, monitoring and analysis of vibrations, noise, pressure, power, offset and others., also and engineering and installation on the territory of the Republic of Bulgaria.

SPECTRI organizes different events (courses, symposium, seminars) for training and acquaintance with the latest developments in the field of noise and vibration.

2. Mission and vision

Our mission is to help our clients and partners to improve their working conditions, safety, competitiveness and efficiency. In this way, we strive to influence the environment, the quality and the joy of life.

Our vision is to be the preferred partner and provider for leading companies and institutions, which are thinking and carrying about their business and human comfort, development and prosperity and also to be the national center for competence and knowledge in the field of vibrations and noise.

3. Certificates

SPECTRI with certification ISO 9001:2015

SPECTRI successfully implemented system for managing the quality with compliance with the requirements of international standard ISO 9001:2015 including: Designing, manufacturing, engineering, maintenance, service, trading and delivery of solution, expertise, measurement equipment and software for noise and vibrations, process-parameters. Installations and settings,

training and consultations. Measurement, diagnostic analysis, control and assessment of the condition. Test of noise-vibration parameters, calibration of noise and vibrations measuring equipment. The certificate is valid until 25.11.2019.



Fig. 1: Certificate on ISO 9001:2015

SPECTRI with certification on BDS EN ISO / IEC 17020:2012 – ACS „SPECTRI – MEASUREMENTS”

Body control type C at "Spectri" Ltd. Sofia is accredited in accordance with BS EN ISO / IEC 17020:2005 by EA "BAS" with a unique certificate number № 122 ACS. This certificate is valid until 11.30.2016.

SCOPE OF ACCREDITATION:

- CONTROL OF NOISE ENVIRONMENT AND / OR DOMESTIC ENVIRONMENT: range of the control parameter - equivalent noise level, day, night, evening noise
- CONTROL OF NOISE ENVIRONMENT: range of the control parameter - equivalent noise level, peak sound pressure level, noise level, daily level of exposure to noise, average weekly level of exposure to noise
- VIBRATION CONTROL CONVEYING SYSTEM “HAND-ARM 'AND' BODY”:
range of the control parameter - the daily value of exposure
- VIBRATION CONTROL MACHINERY: range of the control parameter - Vibration acceleration, velocity
- VIBRATION CONTROL IN RESIDENTIAL AREAS: range of the control parameter - Vibration acceleration



Fig. 2: Certificate on BDS EN ISO / IEC 17020:2012

SPECTRI – LAB ACCREDITATION:

- - BDS EN 60942:2003.

Acoustic calibrator methodology for calibration:

- BDS EN 60651:1999;
- BDS EN 60804:2003;
- BDS EN 61672-1, 2, 3:2013.

Noise calibration methodology:

- - BDS EN 61252:2000.

Personal dosimeter calibration methodology

4. Our partners and latest news about them:

Brüel & Kjær Sound & Vibration A/S (www.bksv.com)

The company Bruel & Kjaer – Denmark was founded in 1942 by Per Bruel and Viggo Kjaer. From 1994 the company becomes a part from Spectris Group – United Kingdom (See <http://www.spectris.com>). Turnover for the past years is more than € 150 million a year.

The company is world leader in the field of noise and vibrations, with over 65% of world market share. The main ISO and EN standards in the field of noise and vibration have been created by and in collaboration with Bruel & Kjaer specialists.

New products from 2016-2017 by **Brüel & Kjær**:

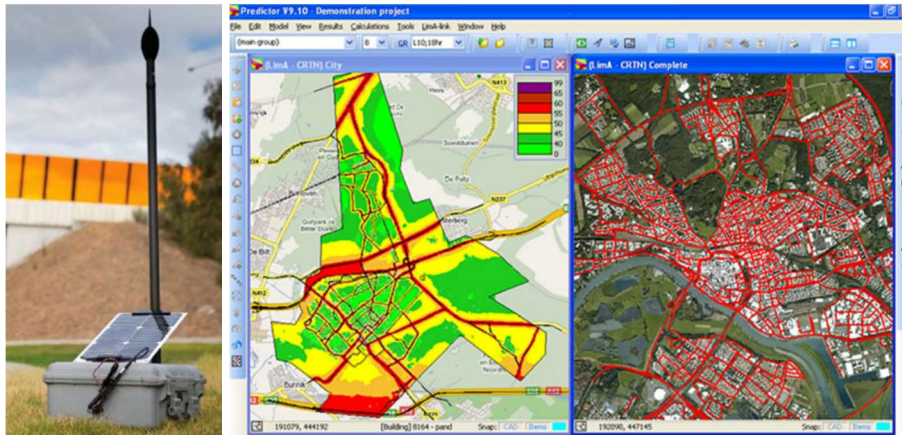


Fig.3 Noise logger type 3659 and noise mapping, prediction, modeling calculation software – Predictor – Lima Type 7810

PCH Engineering A/S (www.pch-engineering.dk)

PCH Engineering is a company, specialized in production of vibrations monitoring modules, sensors and software for continuous monitoring of vibrations and the condition of machines and equipment.

InstanTel (www.instanTel.com)

Founded in 1982, InstanTel specializes in the production of vibration and explosive modules. The company is part of Stanley Black & Decker, Inc. InstanTel's equipment for "regulated" vibrations and overpressure control over the years has earned the reputation of the most reliable similar equipment (used in over 110 countries around the world) – for various applications in the mining, construction and geotechnical research.

Eesiflo (www.eesiflo.com)

EESIFLO manufactures the most up-to-date equipment for contactless ultrasonic measurement and flow control as well as water-in-oil detection equipment, hydrocarbon water-accurate measuring equipment, BS & W analyzers.

Odeon (www.odeon.dk)

The ODEON project was initiated as a joint cooperation between the Technical University of Denmark (Acoustics Unit), Brüel & Kjær and other leading companies in the field of acoustic modeling. The ODEON development efforts over the years have made it a reliable and easy-to-use software product that is used in numerous projects in building acoustics and acoustics of premises.

Bulgarian Association for Public Control and Management (BAOKUSH) (www.nonoise-bg.com)

BAOKUSH is a non-agricultural public organization that has formed itself as an expert national center of competence in noise and vibration and whose main objective is to promote and defend the expertise in the preparation of opinions, consultations, national and international strategy papers in the field of acoustics.

5. Projects

In 2017-2018, successful updates of Strategic Noise Maps and action plans of:

- Agglomeration Sofia;

- Agglomeration Plovdiv;
- Agglomeration Burgas;
- Agglomeration Varna;
- Agglomeration Ruse;
- Agglomeration Pleven;
- API.

Realization of acoustic audits of large industrial sites as well as of large infrastructure projects:

- Monitoring and noise;
- Research;
- Noise maps.

System for noise monitoring. Sofia Airport: Annual maintenance contract, acoustic expertise, diagnostics and calibration.

Realization of other projects: Environmental noise control and monitoring – object, manufacturing, drilling

6. Own production of SPECTRI Ltd.

New products:

- Noise and vibrations monitoring terminal;
- pH, dust and meteo monitoring.

6.1 Environmental parameters monitoring terminal, type SPECTRI ESMU – 2 and Spectri data logger:

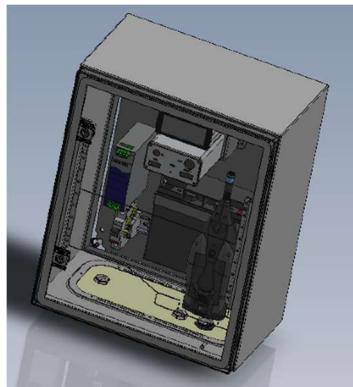


Fig. 4: Monitoring terminal – SPECTRI ESMU – 2

The solution is based on the highest class measurement equipment for noise measuring – acoustic analyzer type Brüel & Kjaer 2250/2250-L.

The terminal is used for continuous noise monitoring and also for vibrations and additional environmental parameters (its used when there is construction, urban or industrial activity).

6.2 Web – based solution, “SPECTRI WEBNOISE.eu”

- User adaptive solution for remote cloud monitoring and visualization of environmental parameters (as noise, vibrations, seismic activity, meteorological data, dust particles, acidity);

- The company SPECTRI – Bulgaria is a manufacturer of hardware computing and communicational components and of complete software base;
- The platform “Spectri Webnoise”, which is “cloud type” – modern, reliable, not – Windows based system (Linux OS in terminal data loggers and in the remote server) – designed to provide continuous monitoring and measurement, and also to prevent measurement data loss;
- The measurements are based on continuous periodic reports of real environmental parameters. In the server historical data base is updated and actualized when all the values are available for dynamic addressing.

8. Conclusions

In 2017 – 2018, the development, strategic and marketing policy of SPECTRI Ltd. is focused in the following main directions:

- Own development and manufacturing activity progress;
- Recertification and new certification expertise;
- Emphasis in delivering innovative solutions not only for the Republic of Bulgaria;
- Meeting the expectations of the expert community in the Republic of Bulgaria for the active presence of SPECTRI Ltd. on the market and continuous awareness of the novelties in the noise and vibrations.

References

1. www.SPECTRI.net