

Author name	Eva Sjuve
Contact email	<a href="mailto:eva@moomonkey.com">eva@moomonkey.com</a>
Contact address	Sandegardsgatan 24A, 216 11 Limhamn, Sweden
Title	Metopia: Pollutants: Matter: Sonification
Type of contribution	Poster

**Abstract**

This poster describes "Metopia: Pollutants: Matter: Sonification", a wireless sensor network using sonification to experience information of constant shifts in air pollution in the urban environment.

**Microscopic matter, invisible to human perception, traverses our human bodies through the air we breathe or through our skin, such as data transmission via electromagnetic propagation, air pollution, dust, virus, bacteria, have a continuous impact on our bodies and on our behavior. Metopia is part of research in information and metadata using wireless sensor networks and sonification in the urban environment. With Metopia, the complex processes in our environment are examined using data from a versatile arrangement of sensors, including Volatile Organic Compound (VOC) sensors, to monitor variations in air pollution as invisible information. Addressed in Metopia, is the relation between humans, technology (IoT) and the environment in the age of the Anthropocene. The resulting sonification from sensor data as indeterminacy algorithms depends on the terrain of environmental complex processes.**

**This first prototype of Metopia consists of a mesh network, using ZigBee, a routing protocol on top of the 802.15.4 protocol, a low-power scalable network. Metopia is connected to the Internet where the environmental information and metadata are stored on an open source server, ThingSpeak, and processed as sonification and data visualization in an Android App.**

**Earlier research projects in this series are "ShutThatDoor!" (2001), a smart home application for saving energy, "audioTagger" (2005), urban sound composition using audioTagging with mobile phones, "Ghost Scraper" (2008), sensing urban matter for the presence of spectral information from ghosts, "Environmental Zoo" (2013), an IoT network of environmental sensors to detect toxic substances for the protection of animals in a Zoo.**

**Keywords: Environment, Sonification, Internet of Things, Metabolism, Metadata, Matter, Volatile Organic Gas Sensors (VOC), Topology**

**Mini-Biography**

Eva Sjuve is a media artist and composer. She develops technology and projects in the intersection between the wireless technology and the lived world. Her work has been included in media festivals and museums, at the Australian Center of Contemporary Art, Melbourne, Australia; Kiasma Museum of Contemporary Art, Helsinki, Finland; CAEIT Experiments in Art, Information and Technology, CalArts, USA; The Museum of Contemporary Arts, Chicago, USA; and Performa 07 in New York. Her research has been published at, Hybrid City 13, Live Interfaces 12, DIS 12 (ACM), MediaCity 10, Creativity & Cognition 09 (ACM), ISEA 08, NIME 08, LAC 08, and Auditory Cultures 07.

**Conference on the Internet of Things, York St. John University, 3<sup>rd</sup> – 5<sup>th</sup> July**