

Open-Source Implementation of Environmental Monitoring System

Nilantha Premakumara¹

Abstract

Air pollution receives one of the prime concern in Sri Lanka, primarily due to rapid economic growth, industrialization and urbanization with associated increase in energy demands. Lacks of implementation of environmental regulation are contributing to the bad air quality of most of the Sri Lanka cities. Air pollutants produced in any air shed are not completely confined, but at time trespassing all the geographical boundaries, hence do not remain only a problem of urban centers, but spread and affect remote rural areas supporting large productive agricultural land.

Whilst widely accepted as an important facet of Open Source technologies and their application, the scientific evaluation of such technologies and systems is often underexplored in research. This work presents an integrated approach of developing a prototype Environmental Monitoring System based on open source hardware and software, and the system's reliability in terms of data accuracy. The system is able to measure six environmental parameters: Air temperature, Air CO Percentage, Air NO₂ percent, Air O₃ percentage, Air PM Percentage, Air SO₂ percentage. This research has shown a promising way of establishing a dense coverage to monitor the environmental phenomena in a more cost effective manner.

Keywords: Open-source environmental monitoring information, Real time data, Sensors

Author Details

1. Faculty of Information Technology, University of Moratuwa