

# May 2018 Progress Report

By

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# Outline

- Objectives
- March Progress
- April Plans

# **Working Title**

Towards Robust Wireless Sensor  
Network-based Automatic Weather  
Stations

# **Main Objective**

To design mechanisms to improve robustness of Wireless Sensor Network-based Automatic Weather Stations

# Specific Objectives

- To investigate the status of weather stations in order to establish challenges affecting their operations and identify opportunities for improving the sustainability of Automatic Weather Stations ( AWSs)
- To propose robust optimization techniques for Wireless Sensor Network(WSN)-based AWSs design to address challenges identified
- To propose Quality of Service assessment techniques for the AWS to assess the robustness and performance of the WSN-based AWS

# May Plans

- Find and submit to an alternative journal (AWS evaluation)- **Resubmitted**
- Monitor data collected and compare with proprietary and manual data
- Revise paper as per comments from advisers - **Not done**
- Improve introduction and related work - **Not done**
- Incorporate the following sections - **Not Done**
  - Cost assessment of the data collection process
  - An optimal energy-efficient data collection scheme using data coding
  - Robust driver design model

# May Progress

- Revising paper “Towards a Robust and affordable Automatic Weather Station”, creating a document with reviewed comments and sending back to Elsevier Journal of Development Engineering.
- Presented a paper in IST-Africa entitled: “**Condition Monitoring and Reporting Framework for Wireless Sensor Network-based Automatic Weather Stations**”. (3<sup>rd</sup> Objective)
- Successfully set up three nodes running New application at the weather station – (2<sup>nd</sup> objective)
- AWS quality of Service Monitoring
  - <http://wimea.mak.ac.ug/awsmonitor/viewStationStatus>
  - Username: [admin@wimea.com](mailto:admin@wimea.com)
  - Password: adminAdmin

# Incoming node data

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28 [ADDR=158.158 RSSI=18 LQI=255 TTL=15 SEQ=172]
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2 P_MS5611=876.65 [ADDR=187.86 RSSI=9 LQI=255 TTL=15 SEQ=37]
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28 [ADDR=158.158 RSSI=10 LQI=255 TTL=14 SEQ=173]
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```



# June Plans

- Resume the May plan for the paper: “**A Robust Optimization Design for data collection in Wireless Sensor Networks**”
- Finalize assembling of AWS

**THANK YOU**