Turbine Monitor Box

System Description

Abstract
This document describes a simple system which read sensor data and makes that data available using the Arrowhead core systems.

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Contents

1 Overview

This document describes the Wind turbine condition monitoring box (CMBox) of the eclipse arrowhead system, which read data from various sensors in a wind turbine and store the data in the local cloud datamanager.

The current implementation does not make use of any actual sensors but instead uses prerecorded data [1] provided by LTU.

The rest of this document is organized as follows. In the remainder of this section we comment on the status of this document. In Section 2, we outline major delimitations of the system, which is a work-in-progress. In Section 3, we describe how the CMBox performs its publishing of data. Finally, In Section 4, we describe what services the CMBox system consumes. *Readers of this document are assumed to be familiar with the DataManager proxy service. For more information about that service, please refer to the Proxy service description from the Arrowhead Core service Datamanager.*

1.1 Status of this Document

This document presents the current state of the CMBox. However, since Eclipse Arrowhead is in active developement some things are subject to change. The communication with the datamanager is especially prone to change since an inofficial version of the datamanager is used.

2 Important Delimitations

The primary purpose of the CMBox system is to collect data from sensors and store them in the arrowhead core system datamanager.

This storage is currently done using the datamanger service proxy which offers a short storage solution in the form of cached data. A more longterm solution would be using the historian service from the same system.

3 System Role

As previously mentioned in Section 1, the CMBox system is to fulfill the role of reading sensor data and store it in the local cloud datamanager.

3.1 Data models

The data model is used is highly dependant on which datamodel the datamanager accepts. As such we refer to the datamanager documentation for the desciptions of the datamodel.

4 Services

Since the CMBox system does not provide any services but makes its data available via the datamanager, the system only consumes services.

In the following subsections are the services which are consumed.

More details regarding the consumed and produced services are given in the following subsection.

4.1 Consumed Services

4.1.1 Orchestration

This service is used in order to find the datamanager in the local cloud in order to make its data available.

4.1.2 Proxy

This service is used to temporarily store the data in the datamanagers cache.

5 References

[1] S. Martin del Campo Barraza, F. Sandin, and D. Strömbergsson. (2021) Dataset concerning the vibration signals from wind turbines in northern Sweden. [Online]. Available: http://ltu.diva-portal.org/smash/record.jsf?pid=diva2%3A1244889&dswid=377

6 Revision History

6.1 Amendments

No.	Date	Version	Subject of Amendments	Author
1				

6.2 Quality Assurance

No.	Date	Version	Approved by
1			