Data Processor

System Description

Abstract
This is the template for System Description (SysD document) according to the Eclipse Arrowehad documentation structure.

Contents

1 Overview

This document describes the Data Processor system, which provides

The rest of this document is organized as follows. In Section 1.1, we reference major prior art capabilitites of the system. In Section 1.2, we the intended usage of the system. In Section 1.3, we describe fundmental properties provided by the system. In Section 1.4, we describe de-limitations of capabilitites ofn the system. In Section 2, we describe the abstract service functions consumed or produced by the system. In Section 3, we describe the security capabilitites of the system.

1.1 Significant Prior Art

No significant prior art.

1.2 How This System Is Meant to Be Used

System is mainly used to create an input for the local AI model. Other use case is to produce data for the main database to store.

1.3 System functionalities and properties

1.3.1 Functional properties of the system

Data Processor receives data from all sensors, adds some data from himself, reshapes and convert data type if necessary. Once it has processed all the data from all the sensor it concatenates them into a single list and sends it to the AI model as input. Once the data processor receives a prediction it bundles everything and sends it to the main database.

1.3.2 Data stored by the system

It stores only the last ten days worth of data. It stores each days worth of data into a json file, with the name being the data in following format **DD_MM_YYYY**

1.3.3 Non functional properties

- Talks only trough gate tunneler,
- Uses RSA encryption,
- low energy consumption,
- low latency
- active only during processing the data, otherwise in sleep mode,

1.3.4 Stateful or stateless

- states preserved, functional and non-functional

1.4 Important Delimitations

System only has one data internally, days since last maintenance. Other data needs to be received from other sources. System can prepare data for the AI model to use, and once it receives a prediction from the AI model it produces data to send to the main database.

2 Services

2.1 Produced service

- inputData
- databaseData

2.2 Consumed services

- dailyTrafficData
- dailyHumidityData
- dailyWeatherData
- dailyTemperatureData

3 Security

Can be started only in Arrowhead secure mode.

3.1 Security model

- https protocol supported
- RSA data protection

4 References

5 Revision History

5.1 Amendments

Revision history and Quality assurance as per examples below

No.	Date	Version	Subject of Amendments	Author
1	2020-12-05	5.0.0		Tanyi Szvetlin
2	2021-07-14	5.0.0	Minor updates	Jerker Delsing
3	2022-01-12	5.0.0	Minor updates	Jerker Delsing

5.2 Quality Assurance

No.	Date	Version	Approved by
1	2022-01-10	5.0.0	