Service Description (SD) wm-data

**Abstract**

The wm-data provider gets sensor data from an active windmill and provides a wm-data service where it then stores the data in the DataManager’s historian service.

## Service Description Overview

The wm-data service provides one interface only

## Abstract Interfaces

## Wm-data

This interface provides the requested sensor data from the windmill

## Function

When a request is received it takes the next value from the CSV file which contains the sensor data for the wind turbine.

The data is then parsed into a SenML message and is sent to the DataManager’s historian service for storing in the database. Then the data is sent to the consumer as a DTO.

## Sequence Diagrams

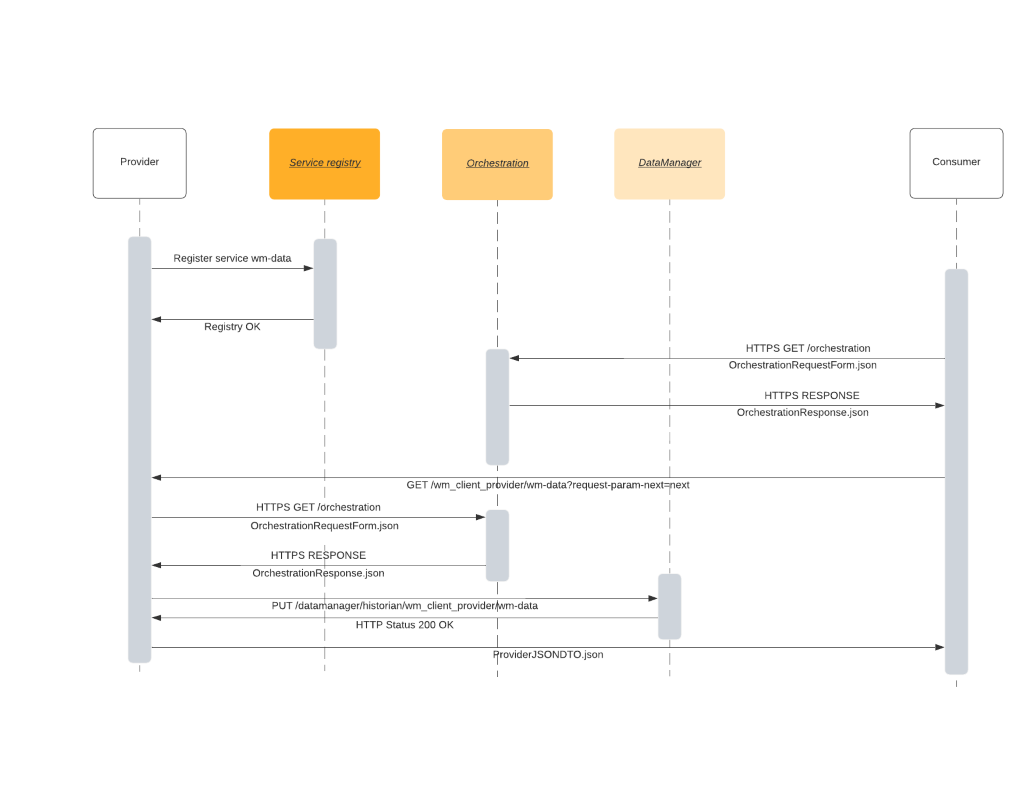


Figure 1: Sequence diagram requesting data from provider

The sequence diagram in Figure 1 shows the flow when a consumer is requesting data from the service wm-data. The provider is first registered automatically to the Service Registry. Then the consumer does a orchestration request to the Orchestration system. Upon receiving the orchestration response a request for the next data point is sent to the provider. The provider is then reading the next data point. After data is read, the provider does a orchestration request for the Historian service and when the response is received the provider does a request to the Historian service. When the storage of data is done in the Historian, the provider sends its DTO with sensor data to the consumer.

## Abstract Information Model

* Timestamp
  + In years since measurement started
  + Type: Double
* Speed
  + Revolutions per minute of the main rotor axle
  + Type: Double
* Acceleration
  + Time series in Gs measured in the main rotor bearing
  + Type: Double
  + Will be a collection of 16384 measurements for the given data point

1. Non-functional Requirements

## References

## Revision history

## Amendments

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No. | Date | Version | Subject of Amendments | Author |
| 1 | 2021-01-25 | 1.0 | First draft | Robin Jonsson |
| 2 | 2021-02-04 | 2.0 | Major updates to content | Robin Jonsson |
| 3 |  |  |  |  |
| 4 |  |  |  |  |

## Quality Assurance

|  |  |  |  |
| --- | --- | --- | --- |
| No. | Date | Version | Approved by |
| 1 |  |  |  |
| 2 |  |  |  |