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MainAiModel		**SysD**
Date		Version
2024-10-21		**4.6.2**
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Adam Epstein		**RELEASE**
Contact		Page
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MainAiModel

System Description

Abstract

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

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1   Overview

This document describes the MainAiModel, which evaluate the trained model from using testing data.

The rest of this document is organized as follows.

In Section 1.1, we the intended usage of the system. In Section 1.1, we describe fundmental properties provided by the system. In Section 1.2, we describe de-limitations of capabilitites of 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.

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1.1 How This System Is Meant to Be Used

Describe the intended usage of the system. The system is meant to take in a AI model and test data and through evaluation return a result.

Preferable a SysML/UML blaock diagram of the System should be provided. See the SysML profile and library (github.com/eclipse-arrowhead/profile-library-sysml) for support on how such block diagram should look like. Suitable tools are Eclipse Papyrus.
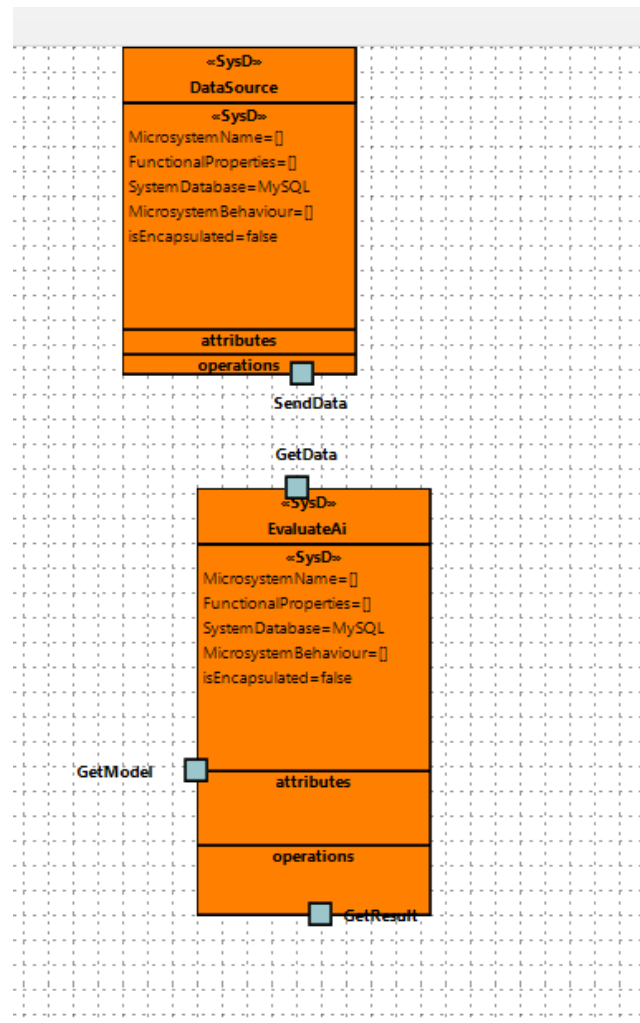

Figure 1: The system of system in its entirety, the Sos in embedded in a local cloud

Narrative describe system functionalities and properties (no implmentation details) like e.g.:

1.1.1 Functional properties of the system

The service is connected to the core microsystems to allow local-cloud functionality.

Get model and data from other systems.

The services use SendGetModel and SendGetData.

Consumed services: SendGetModel (GetModel) (SD document) and the IDD doc (SendGetModelIDD), SendGetData (GetData). Produced services: SendGetData (Results) (SD document) and the IDD doc (SendGetModelIDD)

1.1.2 Non functional properties

- security, safely, energy consumption

The information is sent using TCP/ IP which is a secure way of transmitting information. This method ensures reliable and orderly delivery, of information packets across the network(s). The method can use the IP of various systems to know where to send the packages. TCP is comparable with all OS, which is a good thing since we have 4 heterogeneous machines which we work with. In our case the information will be transmitted over a local cloud.

1.2   Important Delimitations

We need a trained model and test data that is disjunct from the training data. The system evaluates on the test data and give us a result measure.

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2 Services

This section describes consumed and produced service. In particular, each subsection names a produced or consumed service indicating the different capabilities and associated interfaces of the service. Reference to the appropriate SD document shall be made.

The consumed service is the model produced and trained by multiple machines (GetModel) and test data (GetData).

The produced data is the outputted results.

2.1 Produced service

SendData (SendResults) (SD document) and the IDD doc (SendGetModelIDD)

2.2 Consumed services

SendGetModel (GetModel) (SD document) and the IDD doc (SendGetModelIDD), GetData (SD document)

3 Security

The system is connected to the Arrowhead core microsystems which provide service registry, orchestration, and authorisation. The information is sent using TCP/ IP which is a secure way of transmitting information. This method ensures reliable and orderly delivery, of information packets across the network(s). The method can use the IP of various systems to know where to send the packages. TCP is comparable with all OS, which is a good thing since we have 4 heterogeneous machines which we work with.

4 References

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5   Revision History

5.1   Amendments

Revision history and Quality assurance as per examples below

No.	Date	Version	Subject of Amendments	Author
1	2024-10-20	4.6.2		Adam Epstein

5.2   Quality Assurance

No.	Date	Version	Approved by
1	2024-10-20	4.6.2	