OIIE Pull Historical Measurement Data

This Event is sending a query requesting historical measurement data and expects a reply having the historical measurement data.

Specific Data Content

The following data can be used for filtering:

- The measurement location at which measurements were taken

- The serialized asset or functional location of interest

- Device/Transducer that took the measurement

- Measurement source from which the measurement was published

Data Processing

This Event is querying historical measurement data and require that the recipient system processes the data received. The receiving system is expected to respond to the query by sending the historical measurement data including any contextual data.

Expected Response

The receiving system is expected to send the reply consisting of:

- The measurement/data value

- The timestamp at which the measurement value was acquired

- The data quality

- Any associated events or alarms

Additionally, the following contextual data may be provided in the response:

- The measurement location at which measurement were taken

- The serialized asset or functional location of interest

- Device/Transducer that took the measurement

- Measurement source from which the measurement was published

- Any agent associated with the alarm or event

Reference Implementation

The query to request historical measurement data can be sent to the target system in many ways. Similarly, the response from the recipient system can be sent back to the source system in many ways. The following is the list of current reference implementation(s) available:

- Using MIMOSA CCOM BODs

    1. GetMeasurements

    2. ShowMeasurements

- Using OIIE BOD for OPC UA content

    1. GetHistoricalDataAccess

    2. ShowHistoricalDataAccess

NOTE   Business Object Document (BOD) message structure is used to provide additional message concepts that encapsulate a MIMOSA CCOM payload. BODs indicate both behavior and structure for messages and the major components of a BOD are depicted below.
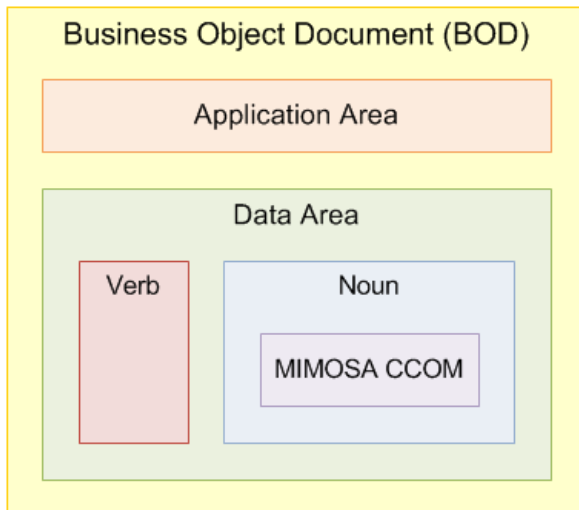
Example

An example of reference implementation of the pull historical measurement data Event using GetMeasurements CCOM BOD is provided below.

```xml
<?xml  version="1.0"?>
<GetMeasurements  languageCode="EN" releaseID="4.1.0" xmlns="http://www.mimosa.org/ccom4"
xmlns:oa="http://www.openapplications.org/oagis/9"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <oa:ApplicationArea>
    <oa:Sender>
      <oa:LogicalID>fc3899f0-9703-0137-e25d-22000a6f90e2</oa:LogicalID>
    </oa:Sender>
    <oa:CreationDateTime>2019-09-15T13:21:00Z</oa:CreationDateTime>
    <oa:BODID>a28c4811-2a62-4eaa-8ab2-5372d744ed92</oa:BODID>
  </oa:ApplicationArea>
  <DataArea>
```

```xml
    <oa:Get>
      <oa:Expression>/*</oa:Expression>
    </oa:Get>
    <MeasurementsCriteria>
      <MeasurementLocationUUID>
  e015177c-8281-576b-56a9-87c16c3d91cc</MeasurementLocationUUID>
      <Recorded>2019-05-25T13:13:32Z</Recorded>
    </MeasurementsCriteria>
  </DataArea>
</GetMeasurements>
```

An example of reference implementation of the response message using ShowMeasurements CCOM BOD is provided below.

```xml
<?xml  version="1.0"?>
<ShowMeasurements languageCode="EN" releaseID="4.1.0" xmlns="http://www.mimosa.org/ccom4"
xmlns:oa="http://www.openapplications.org/oagis/9"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <oa:ApplicationArea>
    <oa:Sender>
      <oa:LogicalID>df758f83-fb11-4fee-8086-f4ed3222fff8</oa:LogicalID>
    </oa:Sender>
    <oa:CreationDateTime>2019-09-15T15:21:00Z</oa:CreationDateTime>
    <oa:BODID>8872be3e-84ab-47b1-85dc-8729e62e35f5</oa:BODID>
  </oa:ApplicationArea>
  <DataArea>
    <oa:Show/>
  <Measurements>
    <Measurement xsi:type="SingleDataMeasurement">
      <UUID>611ee2af-12d5-5cec-578c-160c9aeb5118</UUID>
      <InfoSource>
        <UUID>19a137cf-a70d-2888-343a-bc1158bf7f9f</UUID>
      </InfoSource>
      <Recorded>2019-07-25T23:47:38Z</Recorded>
      <MeasurementLocation>
        <UUID>e015177c-8281-576b-56a9-87c16c3d91cc</UUID>
        <InfoSource>
          <UUID>19a137cf-a70d-2888-343a-bc1158bf7f9f</UUID>
        </InfoSource>
        <ShortName>Temp. Loc. 1</ShortName>
      </MeasurementLocation>
      <Data>
        <Measure>
          <Value>55.36</Value>
          <UnitOfMeasure>
            <UUID>3912c639-8c27-4b29-868b-a0f01790770f</UUID>
            <InfoSource>
              <UUID>cf3f3a8a-1e42-4f15-9288-9cf2241e163d</UUID>
            </InfoSource>
            <ShortName>Degrees Celsius</ShortName>
          </UnitOfMeasure>
        </Measure>
      </Data>
    </Measurement>
  </Measurements>
```

```
    </DataArea>
</ShowMeasurements>
```

Version Applicability/Alignment

Events describe individual message exchanges between systems detailing data and processing requirements and, hence, they are aligned to specific versions of CCOM and/or other MIMOSA standards. For example, older versions of CCOM may not include the specific data elements required by newer Events, while older Events may become obsolete or have their data requirements change over time.

This Event is applicable to the following versions of CCOM:

- CCOM 3.x (part of OSA-EAI 3.x)

- CCOM 4.x

NOTE   Use of 'x' in the version number indicates a variable version. For example, "4.x" indicates applicability to all versions of CCOM with the MAJOR version '4', regardless of MINOR and PATCH versions.

Document Versioning

Version	Date	Major Changes
1.0	2021-01-20	Created as per OIIE use case architecture and updated OpenO&M template