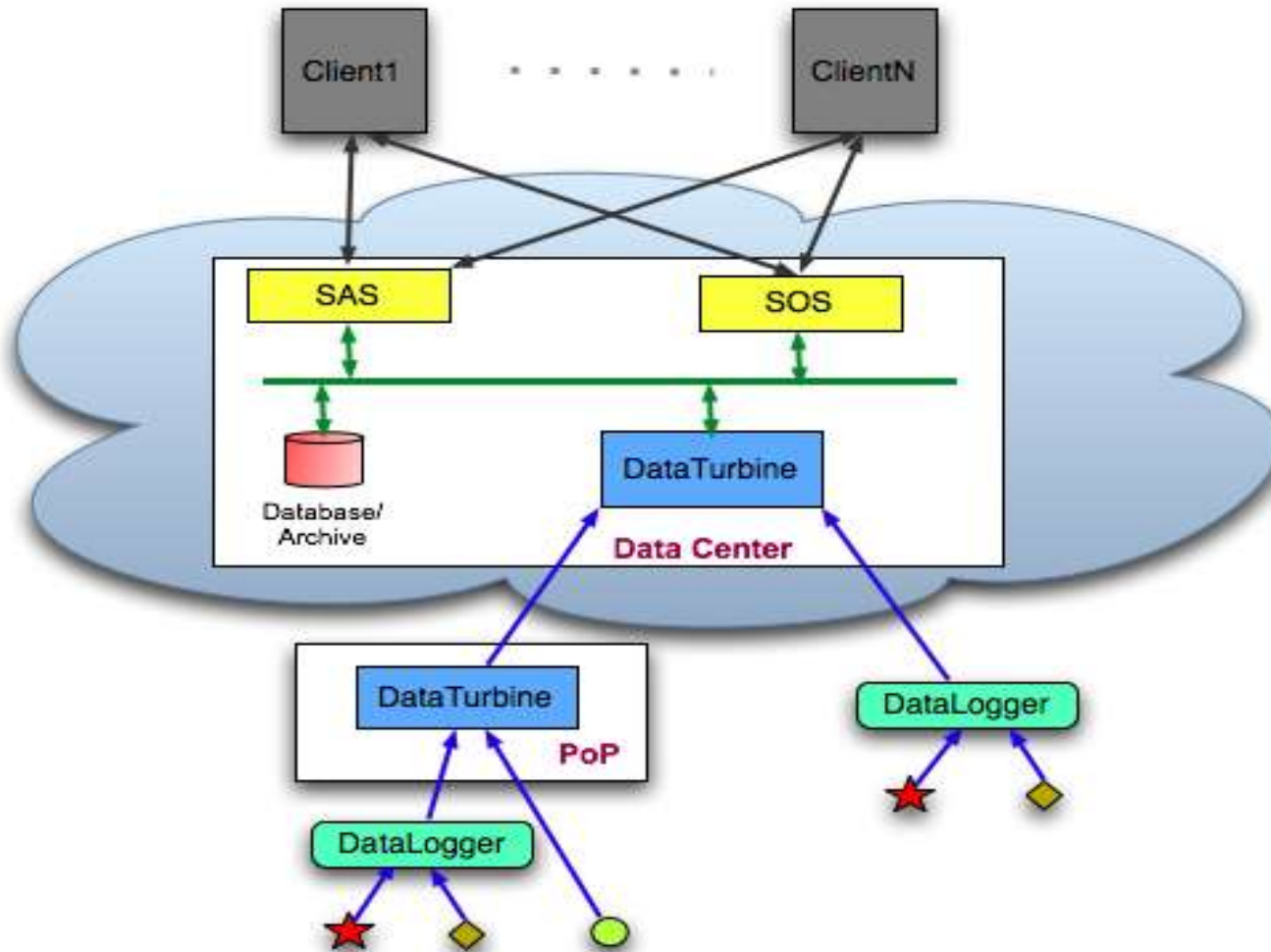


Serving CREON data in OGC-SWE complaint manner



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NAKAMURA**

Datacenter Architecture



```
- <sml:SensorML rng:version="1.0.1">
- <sml:member>
- <sml:System gml:id="creon-mcr-gump">
  <gml:description>CREON Gump Station, MCR LTER Site</gml:description>
  <gml:name>creon-mcr-gump</gml:name>
- <sml:keywords>
- <sml:KeywordList>
  <sml:keyword>Measurements of Oceanographic conditions</sml:keyword>
  <sml:keyword>Measurements of weather conditions</sml:keyword>
  <sml:keyword>in situ</sml:keyword>
  <sml:keyword>station</sml:keyword>
</sml:KeywordList>
</sml:keywords>
- <sml:identification>
- <sml:IdentifierList>
- <sml:identifier name="longName">
- <sml:Term definition="urn:ogc:def:property:OGC:longName">
- <sml:value>
  CREON Station for Measurements of Oceanographic conditions and Measurements of weather conditions at the Gump Station, MCR LTER site
</sml:value>
</sml:Term>
</sml:identifier>
- <sml:identifier name="shortName">
- <sml:Term definition="urn:ogc:def:property:OGC:shortName">
- <sml:value>creon-mcr-gump</sml:value>
</sml:Term>
</sml:identifier>
- <sml:identifier name="Model Number">
- <sml:Term definition="urn:ogc:def:identifier:OGC:modelNumber">
- <sml:value>CPST</sml:value>
</sml:Term>
</sml:identifier>
- <sml:identifier name="uniqueID">
- <sml:Term definition="urn:ogc:def:identifier:OGC:uniqueID">
- <sml:value>urn:ogc:object:feature:Sensor:CREON:MCR:GUMP</sml:value>
</sml:Term>
</sml:identifier>
</sml:IdentifierList>
</sml:identification>
- <sml:classification>
- <sml:ClassifierList>
- <sml:classifier name="IntendedApplication">
- <sml:Term definition="urn:ogc:def:property:OGC:application">
- <sml:value>Measurements of Oceanographic conditions</sml:value>
</sml:Term>
</sml:classifier>
- <sml:classifier name="sensorType">
- <sml:Term definition="urn:ogc:def:property:OGC:sensorType">
```

For more information about the 52° North Sensor Observation Service visit <http://52north.org/sos>.

Service URL:

Request Examples:

You can change the examples in the folder [project-directory]/52n-sos-service/src/main/webapp/examples/.

```
1 <?xml version="1.0" encoding="UTF-8"?>
2 <GetObservation xmlns="http://www.opengis.net/sos/1.0"
3   xmlns:ows="http://www.opengis.net/ows/1.1"
4   xmlns:gml="http://www.opengis.net/gml"
5   xmlns:ogc="http://www.opengis.net/ogc"
6   xmlns:om="http://www.opengis.net/om/1.0"
7   xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
8   xsi:schemaLocation="http://www.opengis.net/sos/1.0
9     http://schemas.opengis.net/sos/1.0.0/sosGetObservation.xsd"
10  service="SOS" version="1.0.0" srsName="urn:ogc:def:crs:EPSG:4326">
11
12
13   <offering>CREON</offering>
14   <observedProperty>urn:ogc:def:phenomenon:OGC:1.0.0:vaisala:airtemperature</observedProperty>
15   <observedProperty>urn:ogc:def:phenomenon:OGC:1.0.0:vaisala:humidity</observedProperty>
16   <responseFormat>text/xml;subtype="om/1.0.0"</responseFormat>
17
18 </GetObservation>
19
20
21
22
23
24
```

This TestClient was successfully tested in Firefox 3.5.2, Safari 4.0.3, Opera 9.64 and InternetExplorer 8.0.6001.18702 and should work properly in Firefox 1.0 or higher, Safari 1.2 or higher, Opera 8 or higher and InternetExplorer 5 or higher.

```

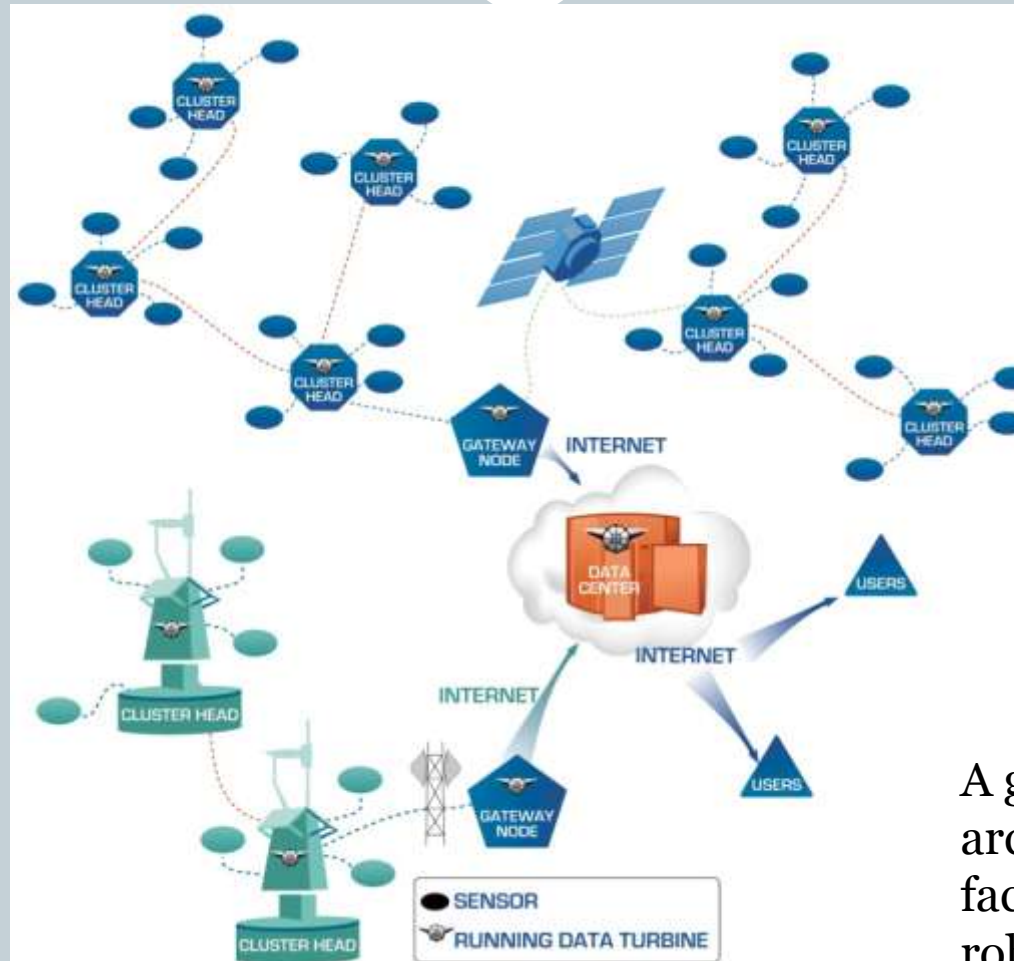
- <swe:DataArray>
- <swe:elementCount>
- <swe:Count>
  <swe:value>16</swe:value>
</swe:Count>
</swe:elementCount>
- <swe:elementType name="Components">
- <swe:SimpleDataRecord>
- <swe:field name="Time">
  <swe:Time definition="urn:ogc:data:time:iso8601"/>
</swe:field>
- <swe:field name="feature">
  <swe:Text definition="urn:ogc:data:feature"/>
</swe:field>
- <swe:field name="urn:ogc:def:phenomenon:OGC:1.0.0:vaisala:airtemperature">
- <swe:Quantity definition="urn:ogc:def:phenomenon:OGC:1.0.0:vaisala:airtemperature">
  <swe:uom code="celsius"/>
</swe:Quantity>
</swe:field>
- <swe:field name="urn:ogc:def:phenomenon:OGC:1.0.0:vaisala:humidity">
- <swe:Quantity definition="urn:ogc:def:phenomenon:OGC:1.0.0:vaisala:humidity">
  <swe:uom code="percentage"/>
</swe:Quantity>
</swe:field>
</swe:SimpleDataRecord>
</swe:elementType>
- <swe:encoding>
  <swe:TextBlock decimalSeparator="." tokenSeparator="," blockSeparator=";"/>
</swe:encoding>
- <swe:values>
  2008-09-16T23:50:00.000+09:00,creon-mcr-gump,21.12,89.3;2008-09-16T23:55:00.000+09:00,creon-mcr-gump,21.09,88.9;2008-09-17T00:00:00.000+09:00,creon-
  mcr-gump,21.07,88.9;2008-09-17T00:05:00.000+09:00,creon-mcr-gump,21.04,88.6;2008-09-17T00:10:00.000+09:00,creon-mcr-gump,21.1,89;2008-09-17T00:15:00.000+09:00,creon-
  mcr-gump,21.21,88.9;2008-09-17T00:20:00.000+09:00,creon-mcr-gump,21.24,88.8;2008-09-17T00:25:00.000+09:00,creon-mcr-gump,21.15,88.8;2008-09-17T00:30:00.000+09:00,creon-
  mcr-gump,21.3,88.8;2008-09-17T00:35:00.000+09:00,creon-mcr-gump,21.88.5;2008-09-17T00:40:00.000+09:00,creon-mcr-gump,20.73,88.7;2008-09-17T00:45:00.000+09:00,creon-
  mcr-gump,20.58,89.2;2008-09-17T00:50:00.000+09:00,creon-mcr-gump,20.66,90;2008-09-17T00:55:00.000+09:00,creon-mcr-gump,21.22,90;2008-09-17T01:00:00.000+09:00,creon-
  mcr-gump,21.1,88.9;2008-09-17T01:05:00.000+09:00,creon-mcr-gump,21.18,89.3;
</swe:values>
</swe:DataArray>
</om:result>
</om:Observation>
</om:member>
</om:ObservationCollection>

```

Generic Observing System Architecture

Focus: Move computation into the field with ***Embedded Cyberinfrastructure***

- Sensors
- Cluster Head: aggregation point for sensors. Last IP-addressable point in network
- Gateway Node: entry point to the Internet



A generic architecture facilitates scalability, robustness, reproducibility, and efficiency.

Interface and controller between instruments/sensors and communications



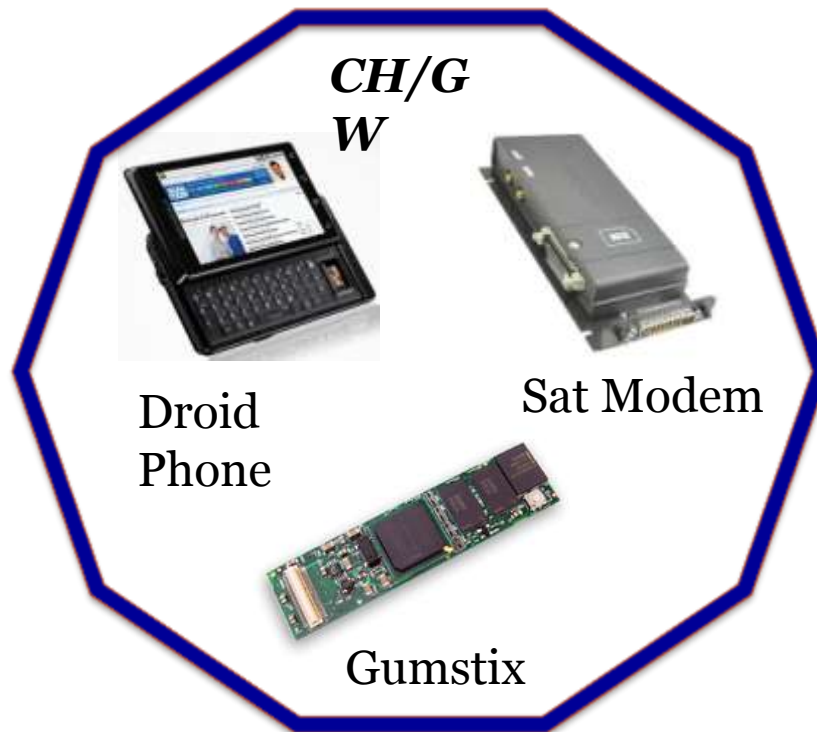
Cellular



Wi-Fi



Iridium



Droid
Phone

Sat Modem

Gumstix



Sensors/Instruments

