OPC UA Applied in Standardized Smart Grid

About WeiHai CIMSTech Co., Ltd

WeiHai CIMSTech Co., Ltd. is a leading provider of power system automation, technology standards research, software development and system solutions. CIMSTech’s technical team is dedicated to the research and promotion of IEC 61970, IEC 61968, IEC 61850 and IEC 62541 etc. international standards. The company takes a leading position in China by offering solutions to electric power systems and enterprise modeling, standard interface, power dispatch center and enterprise-level data platform, and enterprise architecture management.

IEC 61970 CIM, CIS and OPC UA

The IEC 61970 series, set up by IEC TC 57 WG 13, is identified to deal with the application software interfaces for energy management system (EMS-API) of control center. The standard series consists of two main parts: Common Information Model (CIM) and Component Interface Specification (CIS).

The versions of the CIM continue to evolve from CIM10 in 2013 into a new draft version of CIM16 based on the extensive interoperability testing and years of continuous development and improvement. The versions of CIS, defined by OPC Foundation and the Object Management Group (OMG), are also evolving, largely due to the development of classic OPC technology. In the early stage, the semantics interface and syntax of CIS is developed with reference to the technology standards including OPC DA, DAIS, HAD and OMG DAF. However, in March 2013, IEC decided to stop using IEC 61970-402 to 407 of CIS, but directly reference IEC 62541 from OPC UA.
The Role of OPC UA in Interface Configuration of Power Public Information Management Center

The core product of WeiHai CIMSTech Co., Ltd is the software for Power Public Information Management Platform (Center). Power Public Information Management Platform is the server that can be connected to all different OPC client applications by supporting data access. OPC UA series interfaces can fully manage the publish requirements of platform for grid data, real-time data, event & alarms and historical data, and also strengthen the capability and add new features such as data modeling, firewall-friendly communications, scalability, security and access control, compared to previous versions of the CIS service interface. Therefore, OPC UA is given a high priority when configuring the data access interfaces in public information management center.

The comparison table about data publishing of power information management center, OPC UA interfaces and old CIS service interface standards, is presented below.

<table>
<thead>
<tr>
<th>Power public information</th>
<th>OPC UA interface</th>
<th>Old CIS service standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Modeling</td>
<td>UA DA</td>
<td>402 (CS), 403 (GDA)</td>
</tr>
<tr>
<td>Real-time Data</td>
<td>UA DA</td>
<td>404 (HSDA)</td>
</tr>
<tr>
<td>Event &amp; Alarms</td>
<td>UA AC</td>
<td>405 (GES)</td>
</tr>
<tr>
<td>Historical Data</td>
<td>UA HA</td>
<td>407 (TSDA)</td>
</tr>
</tbody>
</table>

Prosys OPC UA Java SDK

“Prosys as an OPC Foundation Java Stack provider” is the fundamental reason why we chose Prosys OPC UA Java SDK. After using Prosys OPC UA Java SDK, the support service from Prosys shows that the choice we made is absolutely right. We really appreciate the quick response time and professional solutions provided by their technical support team. More importantly, Prosys OPC UA Java SDK successfully implements the support for OPC UA applications with complicated data architecture, communications connectivity and security management.

"Prosys OPC UA Java SDK is easy to use with detailed documentations and examples. It helps us to speed up the development of OPC UA interface, and saves time and costs.

Xu Qingping, Technical Director, WeiHai CIMSTech Co., Ltd

Contact Prosys:
+358 9 420 9007
sales@prosysopc.com