Overview of Agents for Device Integration with a SCADA System

The Wavelet collects and transmits data to cloud storage or to an on-premises server. By using proprietary drivers, code, and APIs, the data is seamlessly and securely integrated to populate SCADA databases.

In addition to a CSV interface, the solution supports the OPC-UA, DNP3, and proprietary communication protocols.

The Wavelet can integrate into a SCADA system in the following process:

1. The device transmits the sensor data to Ayyeka cloud storage or to an on-premises server, according to the user-defined transmission interval.

2. After the data is transmitted, there are multiple mechanisms for integrating the data into a SCADA system, depending on the SCADA software and requirements:

   - **DNP3 Agent**: The DNP3 Agent is downloaded from StreamView and installed on a Microsoft Windows machine, as a Windows service, in the customer's local network. The DNP3 Agent retrieves the data from the cloud storage or to an on-premises server, wraps the data as an "outstation", and then transmits the data using the DNP3 protocol to the SCADA (master station).

   - **OPC-UA Agent**: The OPC-UA Agent is downloaded from StreamView and installed on a Windows machine, as a Windows service, in the customer's local network. The OPC-UA Agent functions as an OPC-UA Server for connectivity to the SCADA. (If the SCADA does not support OPC-UA out of the box, it will be necessary to install an OPC-UA Client as well.) After the OPC-UA Server is installed, it is necessary to exchange SSL certificates between the OPC-UA Server and the SCADA, and configure the SCADA for connectivity with the OPC-UA Server endpoints.

   - **CSV Agent**: The CSV Agent is downloaded from the StreamView application and installed on a Windows machine, as a Windows service, in the customer's local network. This output can be leveraged by users, reporting applications, and so forth because the format is user readable and very standard. The CSV Agent is configured to select specific sites and data streams to download from the Data Hub as CSV files, according to the formatting requirements of the SCADA application. The CSV files can then be consumed by the SCADA in accordance with the data import functionality.

   - **REST API**: The Agent leverages the REST API for retrieving data from the cloud storage or an on-premises server. However, it is also possible to develop custom

applications using the REST API directly, in order to retrieve data for ingestion into a SCADA application.

Even while the data flows into the SCADA system, the data is still available on the cloud storage or on the on-premises server, and it can be viewed and analyzed there as well.