# VAISALA

# Integrating the viewLinc Continuous Monitoring System with other systems





Environmental monitoring systems do not operate in isolation and it is often valuable to combine their data with the data from other systems in order to gain new insights. Vaisala offers two methods to automate the extraction of data from the viewLinc software for use in other systems: OPC and API.
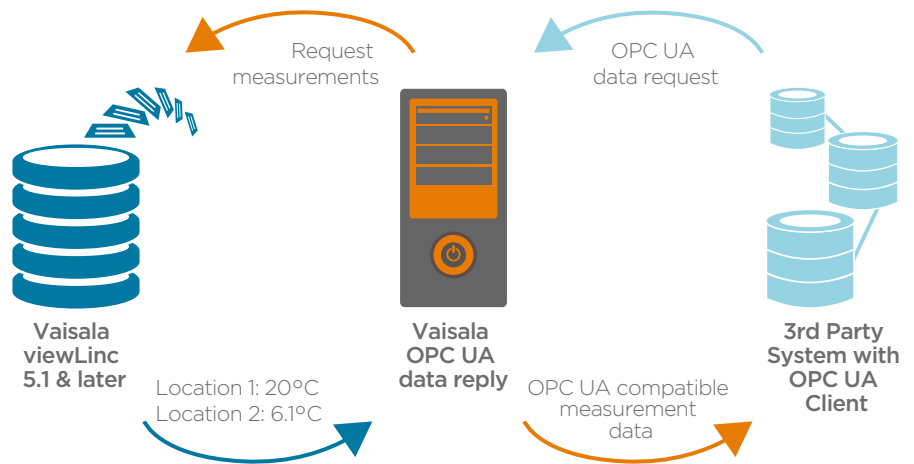
## What is OPC?

OPC stands for Open Platform Communications. Essentially, OPC is a series of communication standards that enable communications between systems that do not share a common language. There are multiple variants of OPC, including OPC DA (data access), OPC HDA (historical data access), OPC AE (alarms and events) and OPC UA (unified architecture). To send data to external, third-party systems, viewLinc versions 5.1 and later use the latest OPC standard: OPC UA.

## OPC UA & viewLinc CMS

In an age of Big Data, it is clear that combining data from multiple sources can create value that is greater than the sum of its parts. The challenge lies in combining data from systems that do not share a common language.

OPC provides a standardized and secure method to enable communication between different systems without the need for custom programming. For example, a third-party OPC UA-compatible system can request measurements from viewLinc. The Vaisala OPC UA server installed between viewLinc and the third-party system will translate the request into an API call to viewLinc. viewLinc responds by sending the measurements to the OPC UA server, which translates that data back into something the OPC UA client in the third-party system can understand.



**Request measurements**

**OPC UA data request**

**Vaisala viewLinc 5.1 & later**

Location 1: 20°C
Location 2: 6.1°C

**Vaisala OPC UA data reply**

**OPC UA compatible measurement data**

**3rd Party System with OPC UA Client**

In this way, systems that do not share a common communication protocol can use OPC UA to communicate with one another.

## Vaisala OPC UA Server software

The Vaisala OPC UA Server software allows you to share the following data with compatible clients: device details such as name, serial number and calibration date; and measurement data such as location name, unit of measure, time and current/historical measurement values.

Gap-free data is automated due to viewLinc's unique architecture. All data are stored at the point-of-measurement within each battery-powered data logger's local memory. These measurements are then transmitted to the viewLinc database for alarm processing and storage. In the event of a communication disruption, the measurements stored in the data logger are automatically transmitted to viewLinc once communication is restored. This ensures that all measurements are available via OPC UA to your client system, for example your data historian or manufacturing execution system.

## Scope of support

Vaisala supports its OPC UA server software with documentation to guide users through installation and configuration, as well as technical support for assistance in the event of a problem. However, since third-party OPC client software is outside the scope of Vaisala's expertise, we recommend customers contact the manufacturer for support on their existing OPC client software.

## Vaisala OPC UA Server requirements

The Vaisala OPC UA Server is a separate software from viewLinc and is licensed according to the size of the viewLinc system, from five connected devices to thousands.

### Requirements to use OPC UA with your viewLinc system:

- viewLinc software version 5.1 or newer

- An OPC license key installed in the viewLinc software

- A server to run the Vaisala OPC UA software

- A destination system with an OPC UA client

# What is API?

API stands for Application Programming Interface. It is a documented set of function calls that can be used to request data from the viewLinc database. Unlike the OPC UA Server, which is a complete, off-the-shelf software, the viewLinc API is a software development toolkit that is intended to be used in the development of your own software integration between viewLinc and a third-party system.

## Vaisala viewLinc API

In cases where a third-party system is not OPC UA-compatible, the viewLinc API can be used to share viewLinc's real-time and historical measurement data, alarms, and events with another system.

## Scope of support

As with all of our products, Vaisala has thoroughly tested the API during development to verify that it operates as intended. We provide documentation describing the API architecture, the available function calls, and provide sample code to demonstrate how it can be used. However, because the viewLinc API is a software development toolkit, we do not offer technical support for the API.

### Requirements to use the API with your viewLinc system:

- viewLinc software version 5.0 or newer
  a. HTTP API requires version 5.0 or newer
  b. REST API requires version 5.1.3 or newer
- An API license key must be installed in the viewLinc software
- An experienced software developer

## Directionality

It is important to note that due to a focus on data integrity and the need to efficiently validate the viewLinc software, the integration of viewLinc with other systems using either OPC or API is unidirectional. This means that data can be extracted from viewLinc for use in other systems, but data from other systems cannot be imported into viewLinc.

## Validation considerations

For customers who validate their computer systems, the selection of an integration option, such as the Vaisala OPC UA Server or a viewLinc API, is an important one.

| GAMP Category | System Type | Summary |
|---|---|---|
| 3 | Off-the-Shelf | Typically easiest to validate, with limited functions and few changes possible. |
| 4 | Configured | Tradeoff of moderately increased validation effort to gain increased functionality and ability to specialize. |
| 5 | Custom | Massive increase in validation effort for a tailor-made solution. |

The OPC UA server is an off-the-shelf software that comes with its own Installation Qualification protocol. Since the OPC UA Server has no user interface (the OPC UA client is the user interface), no Operational Qualification protocol is provided. Therefore, validating the OPC UA Server software is fairly simple.

Validation of a system integration developed using the viewLinc API can be more complex because custom software qualifies as GAMP category 5, with the additional validation burden that entails.

To learn more about GAMP categories, please see "Using the ISPE's GAMP Methodology to Validate Environmental Monitoring System Software"

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