## In This Issue

# Do you know the way to San Jose? *Or anywhere else for that matter*

## SkySpark® adds map-based navigation to simplify management of your portfolio
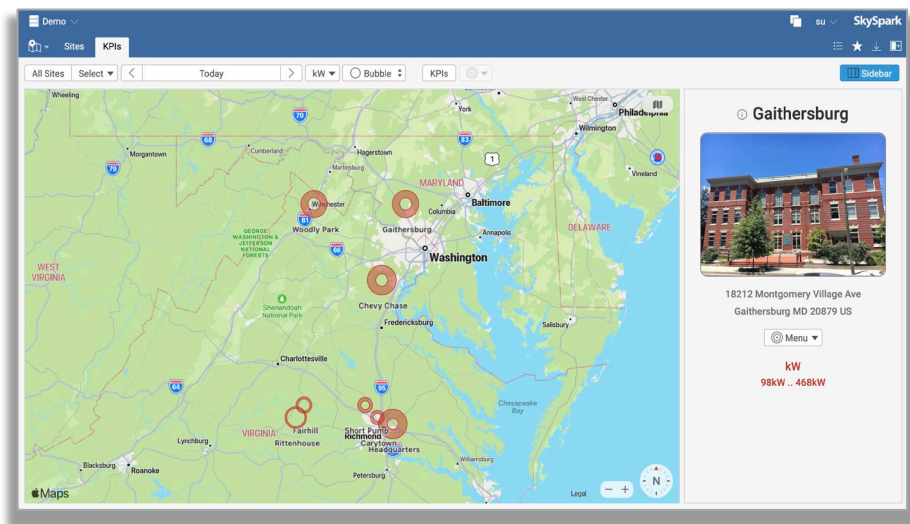


We are excited to announce the addition of map-based navigation to SkySpark!
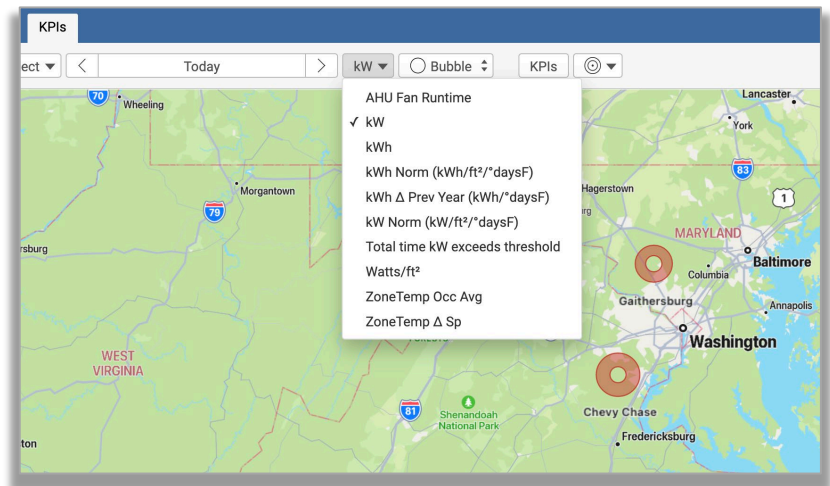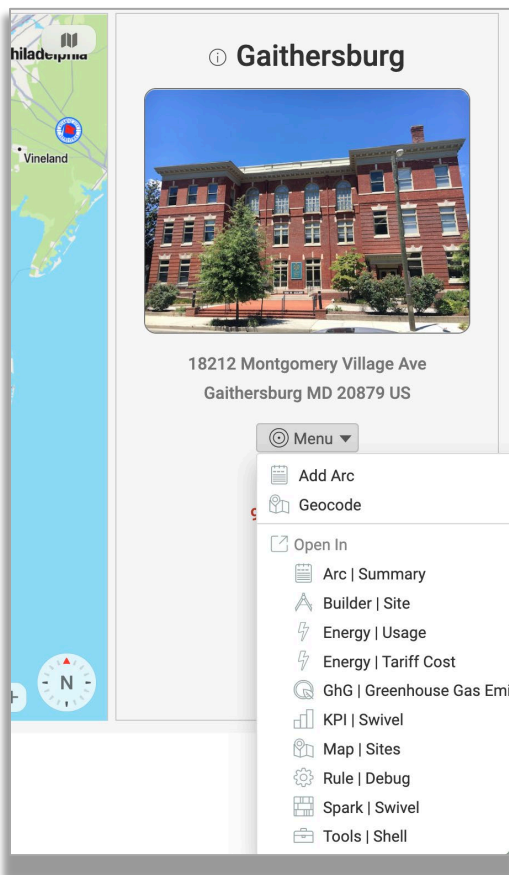
*Let's take a look!* →

# What Can You Do with Maps?

## *Well, How About Everything!*

**Display Sites and associated KPI's directly on dynamic maps with bubble charts, bar charts and gauge widgets.**

Simple drop-down menus let you quickly select the KPIs you want to view on the map. All relativized to each other.





← **Navigate to any and all site related information - with a simple click on the dropdown menu.**

Provides direct links to every SkySpark App

And - include images of your facilities

# But How Much Work is It?

### Setting up map-based navigation is SIMPLE!

Maps work directly from the address you enter when defining a site. SkySpark looks up the geocoordinates for you automatically. The result – as soon as a site is defined its located on the map and all of the associated Apps and data are connected!

That's all there is to it.

*And of course, you can always manually enter geocoordinates if needed.*



Site record showing address and geocoordinates for a site

The new Map navigation feature allows users that manage their portfolio geographically to have access to all of the features of SkySpark with a few simple clicks on a map.
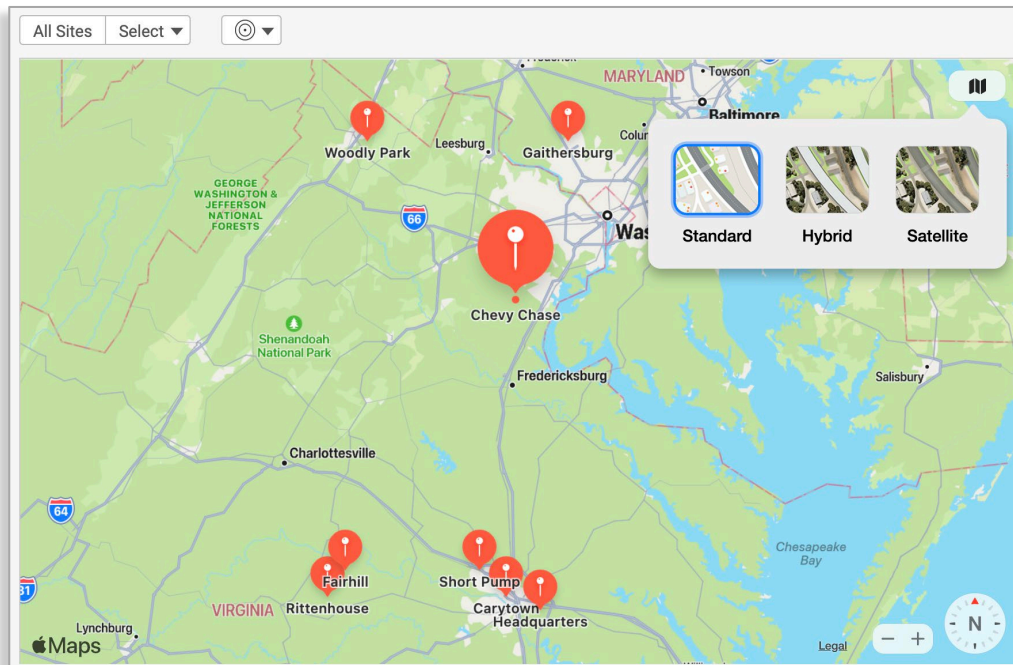


**But how much does this all cost?** The new Map feature is included as a standard part of SkySpark – *at no additional cost!*

# The Role and Functionality of an Independent Data Layer

The concept of an **Independent Data Layer (IDL)** is to elevate data to be its own entity without dependence on the applications that may use it. An IDL makes data available to any and all applications via a standard, open interface. Put another way, an IDL "frees the data" from being restricted to any single application.

The concept of an IDL is especially important as new PropTech applications rapidly emerge, all of which need access to existing data sources. The IDL vision: clients should be able to use their data with any new application that comes along without having to duplicate the work to access it. **We at SkyFoundry agree!**

In fact, a **data-first design** that provides **open access** to external applications via a standard, fully supported API has been fundamental to SkySpark from day one.

## Our View on the IDL (and Clarification of Some Terms)

The term **independent** represents an important characteristic of an IDL, but to make data useful and truly interoperable, data needs to be "normalized". By this we mean contextualizing data from diverse sources so that applications accessing the data see it as one uniform data model, no matter where the data comes from. SkySpark utilizes the Haystack standard (https://project-haystack.org/) to apply semantic tagging to data to create a uniform, standards-based data source.

Additionally, an IDL does not have to be dependent on a single, centralized "Data Lake". Much of the industry hype appears to imply that an IDL is singular in nature AND that all data from all systems must be aggregated into a single repository. This approach is not cost effective, efficient, **or necessary** to achieve IDL functionality. Further, it cannot achieve real-time operational requirements. Any attempt to pre-aggregate all facility data from diverse systems and devices runs into numerous limitations including - cost, latency, network reliability and a potential single point of failure.

# The Role and Functionality of an Independent Data Layer *Con't…*

## *SkySpark – Data Unification Platform for Operational Data*

If we accept that we will have multiple different data sources and repositories AND want the functionality of an IDL to make data freely available to external applications, there is an additional term we need to introduce – "federated". By this we mean connecting distributed data sources/repositories into a trusted, shared network, accessible by external applications as if it was a single, unified data set. Federating distributed data sources eliminates the need to attempt to aggregate all data in a single repository, while still providing the functionality of an IDL to serve data to any and all applications that need it.

By combining SkySpark's industry leading capabilities for data acquisition from real world equipment systems, the highly efficient storage of its Folio database, its high-speed industrial historian, analytics processing engine, and efficient, open API for data access, SkySpark provides the essential capabilities to achieve the vision of an IDL – delivering normalized data from sensors, equipment systems, databases, and web-services to external applications.
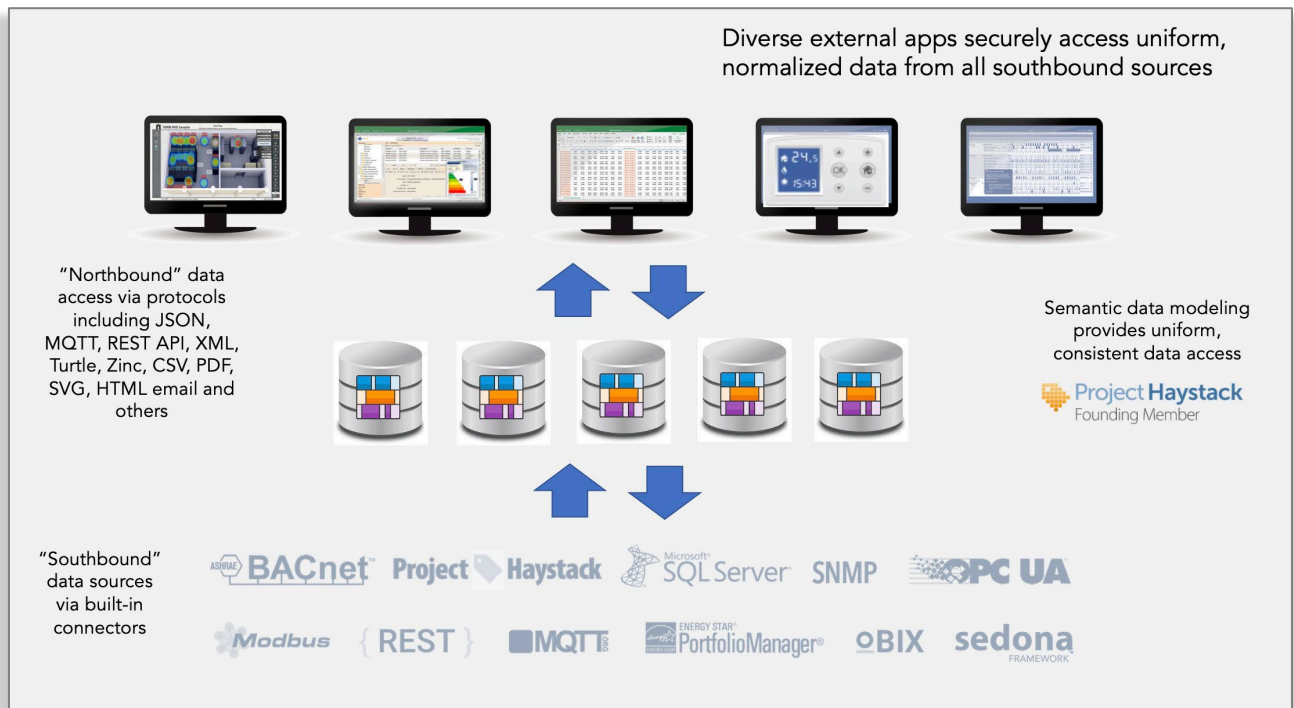
## *Two Unique Capabilities Set SkySpark Apart as an IDL Solution*

1. **SkySpark is NOT cloud dependent.** Clients that need <u>on-premise deployment</u> - with no external connections - can still have all the benefits of an IDL to serve data to applications via SkySpark's open API. SkySpark can be deployed completely inside the secure firewalls of the organization on computing platforms managed by internal IT departments.
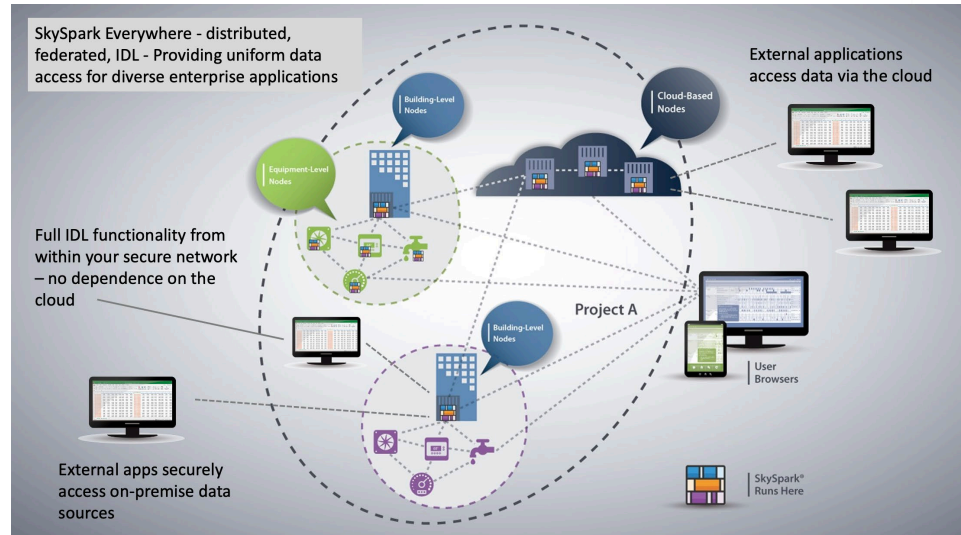


2. **Distributed Architecture** – SkySpark's distributed data and compute design enables data acquisition and computation to be performed across multiple distributed computing devices ranging from IoT edge devices to PC's, servers, and cloud platforms. This unique capability enables SkySpark to provide a distributed, yet federated, IDL.

## *The Importance of a True Distributed Data Architecture*

One of the most fundamental characteristics of the IoT is that it is a *distributed computing challenge (see sidebar)*. Similar to how computer-based automation systems started in the 1980's with centralized computers and then moved to distributed-control architectures, the IoT is distributed by its very nature and requires technology that supports that reality. *SkySpark® Everywhere™ provides that technology*.

We hear lots of talk about the "cloud" as it relates to the IoT. The cloud provides valuable capabilities, but we cannot transmit every piece of data from every device to the cloud in order to gain value from the data. An effective IoT architecture needs to embrace the highly distributed nature of the IoT providing data acquisition, computation and visualization at the edge AND the cloud.

Software functions need to reside at every level from the "edge" – e.g., directly on an equipment system, to the facility level, to the cloud where analysis can be performed at a portfolio level. Most important, ALL data and resulting computations and visualization need to be easily available to external applications to achieve the functionality of an IDL. *SkySpark provides this true, distributed edge-to-cloud capability*.

> **The IoT is a Distributed Computing Challenge**
>
> "The reality is that it is not possible, cost effective or desirable to transmit every piece of data from every IoT device to the cloud in order to gain value from that data.
>
> An IoT technology platform needs to recognize and embrace the highly distributed, non-hierarchical nature of the IoT and support that with a corresponding software architecture."
>
> Smart Systems Design | **Harbor Research**

# Data Unification: Combining, Normalizing and Contextualizing Data from Diverse Systems and Sources

SkySpark allows systems consisting of multiple nodes to be connected in unified, near-seamless systems. Data collection, storage, management, data transformation, analytics processing and visualization functions are performed by individual nodes wherever they are deployed, and all data is available to external applications as if the system were one single, seamless data source. This is important because even in modern buildings with "smart" devices, equipment systems are often siloed due to a variety of factors. Some examples:

- Different systems use different protocols and data formats creating barriers to integration
- Building automation system data is often not combined with utility rate data, which is essential to calculate actual energy costs
- In many cases, data comes from external websites via "web-services" requiring integration via API's (Application Programming Interfaces) – which may have their own unique data formats
- Software applications often utilize proprietary databases that do not provide documented "schemas" to describe the meaning of the source data, creating a barrier to utilizing data in other applications
- Even the newest IoT devices are often "islands" with their own separate networks, user interfaces, communication protocols, and "closed" data repositories which are often available only via API's that require "pay to play" to access the data

The message – no one system or data source has it all. A fundamental requirement to achieve an effective IDL is the ability to provide uniform access to data from diverse systems so that it can be easily used by the applications that owners and operators choose. SkySpark accomplishes this through its distributed architecture and the uniform contextualization of data accomplished through the application of the Project-Haystack.org data modeling standard.

## Conclusion

The rapid proliferation of PropTech software applications offers facility owners and operators new tools to improve the sustainability and operational efficiency of their portfolios. Those Apps need access to data, however. Attempting to duplicate existing data connections to diverse systems is inefficient, costly and introduces significant implementation complexity, reducing the potential benefit of the Apps.

If on the other hand those Apps can easily consume existing data via the functionality of an IDL that federates distributed data sources and provides uniform access to the data, then the true promise of the PropTech revolution can be achieved.  SkySpark provides proven IDL functionality to achieve these goals.

# SkyPosium
## 2022 | The Worldwide SkyFoundry Community Event

### October 18-19, 2022 | Washington, DC

An In-Person Event for the entire SkyFoundry User Community

We are very excited to host SkyPosium 2022 In-Person in Washington, DC! SkyPosium is designed for the entire community of SkySpark users—our reseller partners, end users, engineering consultants, and SaaS providers—everyone that uses or applies SkySpark.

This year in particular there will be several major exciting products, features and announcements to share. Attendees will benefit from enlightening presentations, insightful discussions, and productive networking. We hope you will make it a priority to join us!

SkyPosium provides 2 program tracks—one for hardcore developers and the other focused on applications, with the majority of presentations provided by the community. A general session delivered by SkyFoundry opens the event to bring everyone up to speed on the latest features and capabilities and provide a preview of our roadmap. With major portions of the program delivered by community members, it's a true community event.

Data science for the built environment is one of the hottest areas of technology and there is no question that the SkyFoundry community is leading the way. SkyPosium is a unique one-of-a-kind event that brings the community together for shared learning and networking. In addition, a **vendor showcase** provides attendees with the opportunity to meet with companies that offer complementary products and services to the SkyFoundry community.
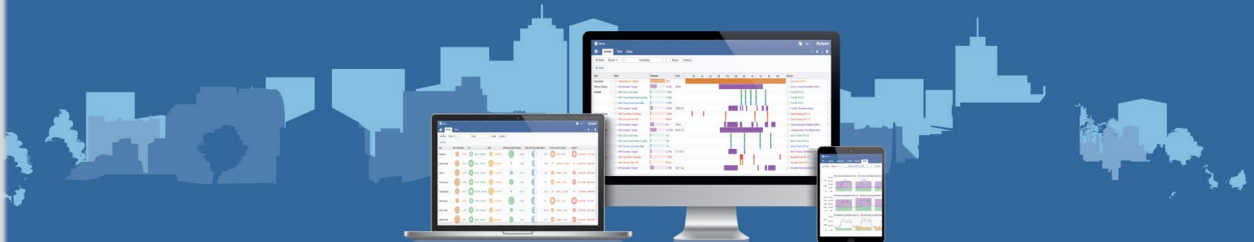
Find full details including event and hotel registration here:
https://www.skyfoundryevents.com/skyposium-usa-2022/

# Learn More About SkySpark® and How to Apply the Industry-leading Data Analytics Solution to Your Application

## Join us for a comprehensive demonstration webcast

**Find our calendar of upcoming sessions and other events here: https://skyfoundry.com/calendar**

**Or contact us at: info@skyfoundry.com**