



Bring Standardized Data Modeling Upfront in Project Commissioning



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As reliance on the Cloud and IoT technology adoption increasingly becomes more mainstream, new opportunities exist to implement standardized tagging principles upfront during project commissioning. Such opportunities provide greater benefits for numerous stakeholders involved in greenfield and brownfield projects—beyond systems integrators and commissioning providers.

Adopting this mindset can better ensure smarter building processes and a streamlined plan for future expansion and growth. This article will address some of the challenges or risks various stakeholders face, which can occur short- and long-term as a result of disparate tagging and data modeling actions. More importantly, it will dive into the advantages gained when standardized point tagging becomes a part of the planning, specifying and design phases of the overall construction process.

Why Tag Standardized Points Upfront?

From initial actions such as planning, specifying and design, to material ordering, to system implementation and commissioning—there are various steps in a multi-phase construction project timeline that are relevant before a building is open for business. Now, consider that in that project timeline, there are multiple decision makers involved—from the building owner to the design team

(which could comprise the consulting specifying engineer, project architect and designer), to the facility manager, systems integrator, general contractor and more.

Utilizing standardized tags on building systems and devices during initial project design, system specification, programming or commissioning provides a ripple effect of benefits for the building and each stakeholder involved to enhance system interoperability and data optimization. Because data affects every aspect of a building and its occupants, applying standardized tags to data points and devices is critical to allow for predictive building maintenance and operations.

Standardized point tagging also complements current digitalization practices to create smarter buildings. This is especially relevant as not all building owners or operators manage one building and could benefit from standardized tagging implementation across multiple sites to increase future serviceability. The potential results? Decreased construction timelines, reduced risk and increased profit margin as relevant for the system specification, programming and commissioning phases of a project.

It's evident that devices, equipment and systems—such as Building Automation Systems (BAS)—become smarter to provide actionable data analytics that can be applied in Cloud applications for such processes as data visualization dashboards or reporting purposes. In fact, the steady

growth of connected IoT devices is estimated to reach 41.6 billion and generate 79.4 zettabytes (ZB) of data in 2025.¹ This means more data flowing into the Cloud that, if not defined universally, can easily get lost in the 'Cloud clutter.' Consider that one system (depending on the size of the building) can have hundreds of thousands of points. Data on those points would also serve little purpose. To make it valuable, actionable data must be tagged intelligently. End users and stakeholders that understand properly organized data can then begin to formulate it and analyze the interconnection of how it all fits together.

Consider a different scenario, such as the industrial aspects of the global oil and gas industry. When mixed data—such as that from wells, seismic data, transportation data or production data from drills—is not tagged universally, it can provide costly complexities across capital projects. In the case of a company operating several thousand gas wells, when it came time to upgrade their supervisory control and data acquisition system (based on a proprietary data-communications format), the new vendor hired had to recreate the data-communications format, thus costing the company \$180,000.² Standardizing data tagging would eliminate scenarios such as this.

Stakeholder Gains From Standardized Point Tagging

By factoring in a flexible methodology around standardized point tagging upfront, data has more meaning both on- and off-premise across various systems, multi-discipline sites and organizational processes.

Building Owners: Faced with managing stakeholder expectations, multi-site campuses and pressure to differentiate in a competitive market, upfront, streamlined tagging processes are a welcomed opportunity. Risk mitigation is top of mind when trying to control construction timelines, budget and errors.

By using standardized point tagging in the construction process, building owners can benefit from:

- Enhanced interoperability between systems
- Simplified future integration of systems as needed to support the life of the building and its occupants
- Faster project timelines resulting in on-budget costs
- Cost containment over time
- Reduced risk when factoring in standardized data points upfront

- Easier, achievable optimal performance
- Efficient systems integration that can leverage digital twin capabilities more easily as a result of universal metadata use
- Longer-term success with actionable data and analytics tools

Systems Integrators: Often there are multiple system integrators on one project site. If integrators are individually tagging or building points in a siloed process, the result could be many disparate systems that would require further integration efforts or cause difficulties when servicing the existing system. It would also make it more difficult to mine the data correctly and efficiently, resulting in cost and operational issues.

By using standardized point tagging in the system integration process, integrators can benefit from:

- Improved access to building data
- Easier processes when servicing a site long-term
- Simpler commissioning of increasingly complex and smarter systems
- Reduced time spent on the job
- Streamlined access to building data during operations
- Provided ongoing value to their clients (i.e., building owners)

Property Managers: A property management company with multiple buildings may seek consistency and standardization in building management as well. If data points have been tagged inconsistently, confusion and time lost will be the negative result.

Standardized point tagging can help property managers:

- Streamline staff workloads
- Maintain operational efficiency while maintaining low OPEX costs
- Easily duplicate and deploy standardized tags for multiple campuses
- Quickly identify equipment or devices that need to be decommissioned and replaced
- Employ more predictive maintenance procedures (i.e., less "run-until-it-breaks" methodologies)

Engineers and Contractors: The E&C industry depends on new technologies to address increasingly complex and expensive construction projects. New applications and tools are emerging, many coming at a significant cost to companies that wish to employ them.³ When engineers and contractors are brought in to work on an existing system, hours are lost and costs are incurred due to the lack of standardized tagging.

Consider a building which has a rooftop unit (RTU) that needs to be serviced. In some cases, Fault Detection and Diagnostics (FDD) processes will be used, during which algorithms will look at the various data points and alert the contractor that a specific part of the RTU (e.g., the compressor or damper) is showing signs of wear and tear. The contractor can then proactively schedule a service call for the customer instead of the customer waiting for the part to fail and then calling for emergency service.

By utilizing standardized point tagging, engineers and contractors are able to provide all the proper device and system names and information necessary at the beginning of a project for accurate design and spec purposes. Doing so can result in a cascade of benefits that affect all project phases.

Standardized Data Tagging Equals All-Around 'Win-Win'

Positive changes are taking place around standardizing data point tagging, giving increased meaning and context to data. This allows for communication among devices and point characteristics such as trending and alarms to exist in a common ecosystem.

When all components of a building and its systems utilize Project Haystack tagging standards, streamlined processes make it easier to interpret and correctly understand the data that is exchanged. Informational interoperability—using common language where all parties agree on the meaning of words—offers benefits such as workflow improvements, less setup time, reduced labor, and increased standardization.

Systems that are easily scalable, minus any proprietary layers, allow end users to access critical information when they need it. Standardized tagging provides small- to mid-market organizations with many opportunities. When the various points are integrated and tagged at the beginning of the process, tags are used to their full extent from beginning to end. ☒



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