

SOLAR SCADA SERIES

3 Methods to Save on SCADA Tagging Costs



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The Challenge

The licensing costs of SCADA systems can be very expensive, and a big reason for that is because many systems design their fee structure around data tags. A tag is a single data point brought into the SCADA system for monitoring or control. The more tags you have, the more you pay, and the costs can easily balloon. Here we'll show you 3 methods to optimize your data tags to reduce your overall SCADA system costs and set things up in a much more efficient and organized manner.



1. Pick and Choose

The most cost efficient (and seemingly obvious) solution is to select only the tags you need, manually. Allocate some time for a good SCADA integrator and a couple of your engineers to sit down with the available data points and decide which ones add value.

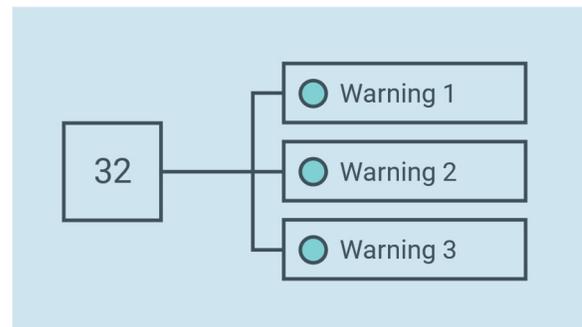
- Is monitoring this information critical for the safe and reliable operation of the equipment?
- Does it give insight into the system in such a way can could save money or time?

- Will it help the plant operate more efficiently?
- Is the data point needed for regulatory reasons?
- Is this information redundant? Is it useful at all?

The best part about a PV Solar plant is that it's made up of a handful of unique devices, repeated. For each unique device, you only need to take the time to scrutinize it once. The rest of the devices can follow along with a virtual copy and paste.

2. Park it at the Paywall

Where, exactly, along the communications pathway you get charged for a tag is completely dependent on SCADA software. It's a great idea to find out where that paywall is, and bring all your "maybe" points up to that point. This affords you the flexibility to err on the side of caution, commission the "maybes" at 90% and be sure they will work from that point without having to subscribe to their licensing fees. If you find out you did need them after all, you know they work from that point, thanks to a thorough Site Acceptance Testing at commissioning.



3. Bit-Packing Where Possible

Some devices come with a bit-packable configuration. Manufacturers configure data points so many digital statuses can be communicated at once using a single integer.

Look at this simplified example. You've got an inverter which has 16 available on/off alarms.

This data can only exist in two states (on or off) so it can be represented by a single bit (1 or 0)

Address	Description	Status
3003.0	Fault A	1(on)
3003.1	High Temp A	1(on)
3003.2	Low Temp A	0(off)
3003.3	Fault B	0(off)
3003.4	Over Current	0(off)
3003.5	Low Voltage	1(on)
3003.6	Smoke Detector	0(off)
3003.7	Backup Smoke Detector	1(on)
3003.8	Fault C	1(on)
3003.9	High Temp C	1(on)
3003.10	Low Temp C	0(off)
3003.11	Dropped Comm	0(off)
3003.12	Door Open	0(off)
3003.13	Fault D	0(off)
3003.14	High Temp D	1(on)
3003.15	Low Temp D	0(off)

Each alarm could be assigned its own tag. The server could ask 16 times,

"Hey SKD001_INVA, how's 3003.0 doing?"

And get back

"It's me, SKD001_INVA, 3003.0 = 1"

16 times.

That's a lot of chatter; a lot of tags to be charged for.

A SCADA integrator can take the time developing and configuring the I/O server to interpret bulk information. The order of the alarms in a 16-bit array on the device is known and can be deconstructed with some preparation. One, 16-bit tag. One iteration of:

"Hey SKD001_INVA, what does 3003 look like in full?"

And

"It's me, SKD001_INVA, 3003 = 0100 0011 1010 0011"

This method has the potential to cut back on a lot of tagging, but it doesn't always pan out. Not all manufacturers design their points for packing. Some devices don't have an address from which to request multiple alarms.

Future Proof

The easiest way to cut back on licensing fees is to choose a prudent configuration *now*, instead of letting expenses accumulate over the lifespan of the facility. This applies to any facility, but it's especially beneficial for PV Solar plants with their repetitive nature. Scrutinize your options, pick wisely, and park the 'maybes' outside the paywall. Explore the capabilities of your devices and collaborate with an experienced SCADA integrator to take advantage of your options in advance.