Render®
AI-FIRST MEETS FIELD-FIRST

Modernizing Fielding Workflows for Broadband Deployment: Now is the Time

Automating field validation to accelerate fiber builds with accuracy and confidence


Zack Raboin, Chief Technology Officer
D8Acapture®


Rob Laudati, Chief Product & Partnership Officer
Render®

The construction industry's productivity challenge is well known. For decades, output has lagged behind the broader economy even as costs and complexity have risen.

McKinsey has long warned that without a significant change, global construction could face a multi-trillion-dollar shortfall in output by 2040.

Despite historic progress, fiber deployment brings this challenge into sharp focus. Although more than half of U.S. households are now serviceable by fiber, a recent Fiber Broadband Association report shows that costs continue to rise for the remaining build-outs, with labor alone accounting for up to 80 percent of deployment costs.

For operators, builders, and the investors backing them, the implication is clear: scaling fiber cannot depend on adding more crews in a labor-constrained market or assuming more capital will always be available. Productivity gains must come from new ways of working that move every dollar of investment to return faster and more predictably.

The permitting challenge

Among the productivity challenges the fiber industry faces today, the pole permitting process stands out as a significant barrier to efficient network builds. In the U.S., utility pole permitting faces several persistent obstacles. Timelines are long and unpredictable, approvals often stretch months, and rules vary by state, creating inconsistency and confusion. Costs escalate through make-ready disputes, while workforce and regulatory bottlenecks add further delays.

Large broadband builds magnify all of these issues, threatening schedules tied to federal and state funding programs. As a result, the uncertainty around both direct and "soft" costs—like idle capital or unexpected charges—makes projects increasingly risky from both a time and financial perspective.

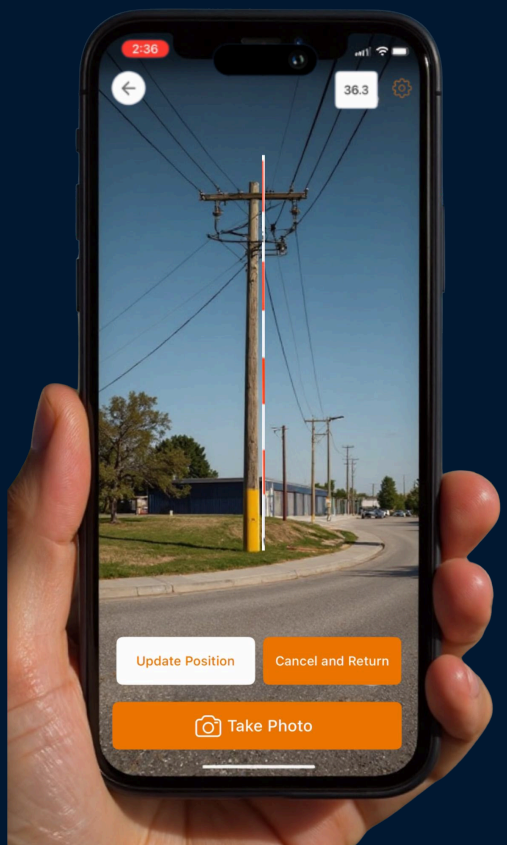
Field verification is typically a necessary step, but too often it is treated as a manual one: double-checking measurements, cross-referencing spreadsheets, or sending crews back out to validate data in person. This manual approach is neither scalable nor cost-efficient, especially as deployments expand into more complex rural areas.

Automation as a new paradigm

As we think about the potential mitigations to these challenges, the opportunities become clear. Pairing D8Averse for precise field/engineering data with Render's construction workflow engine turns a fragmented, manual fielding process into a measurable, automated pipeline—cutting weeks from schedules, reducing costly rework, and giving executives real-time control over the most schedule-critical phase of aerial builds.

Automating field verification and pole validation changes the equation. Data can be validated once and then trusted everywhere it flows. When that data is automatically synced into intelligent workflows, everyone from field technician to project manager to investor is working from a single source of truth in real time.

This is not just a technical upgrade. It is a shift in operating model: from one where errors and delays are absorbed as inevitable to one where accuracy is embedded in the process from the start. Instead of expending resources to catch mistakes after the fact, accuracy is built into the process itself.



Where the value shows up

Automation and digitalization of network deployment workflows is a common theme in the industry, but here there is a measurable return on investment possible by implementing this process. Here are a few examples of where the value lies:

- Cycle time: 30–60% faster permit turnaround by eliminating re-keying, automating docs, and driving SLA accountability.
- First-pass yield: +15–30% improvement via engineered, evidence-rich submissions that reduce rejections.
- Cost per pole: 10–25% reduction from fewer truck rolls/revisits and tighter make-ready scoping.
- Throughput: 1.5–2.5× more poles processed per month with the same headcount.
- Compliance & auditability: full chain of custody (who measured, engineered, approved), simplifying disputes and audits.

These gains don't just cut costs; they free up cash flow, strengthen capital efficiency, and build investor confidence in an environment where predictability matters as much as speed.

What this looks like in practice

Render and D8Averse are delivering on this value proposition by creating an automated workflow for fielding. Consider a rural deployment where pole data must be validated before permits are approved. In a manual process, an attachment recorded incorrectly can trigger weeks of rework, forcing crews back into the field and pushing back service availability. With automated validation, that same data is captured accurately onsite, synced instantly, and trusted by permitting authorities, avoiding costly delays and keeping projects on schedule.

In practice, this streamlined workflow incorporates several key steps including starting the project with the creation of a targeted route and candidate poles, automatic tasking of field teams to capture key attributes and photos, dynamic engineering checks and make-ready assessments so that needs are flagged automatically, and finishing with the generation of complete permit packages that are submitted in real time. Once approved, the make-ready tasks created during the workflow are tracked through completion and as-builts are synced directly into asset records.

The result is not just fewer errors, but a fundamentally more predictable process. Projects can be mobilized faster, crews can complete more work with fewer resources, and stakeholders gain real-time visibility into progress. That predictability is what enables operators and builders to scale with confidence.

Building right the first time

Fiber deployment will only scale as the industry moves beyond manual processes and fragmented tools. By treating the pre-construction pole engineering and make-ready workflows as integral components of the overall network deployment process, operators and builders that automate these fielding workflows will realize a number of high level benefits including:

- ✓ Faster field readiness: Projects flow seamlessly to field crews, accelerating mobilization.
- ✓ Reduced manual work: Automated workflows share information, cutting down on redundant data entry.
- ✓ Improved productivity: Mobile-first tools and AR-enabled features support efficient, single-tech operations.
- ✓ Better data accuracy: Real-time validation ensures standardized, high-quality field data flows directly back into Render.
- ✓ Greater project visibility: Continuous syncing provides oversight from planning through execution.

These efficiencies, particularly at the front end of deployment, dramatically increase the odds of building networks right the first time, faster, more reliably, and with the confidence that every dollar invested delivers lasting value.

Render® D8Acapture®