

VETERAN VECTORS LLC

AUTOMATION PROPOSAL

Payment Automation & Duplicate Prevention System

Procore + QuickBooks Online + n8n | Frontline Holdings

Prepared for
Frontline Holdings LLC

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Executive Summary

I put this proposal together after doing the full research: every Procore API endpoint verified, the SmoothX boundary mapped, and the dedup engine already designed. This isn't a ballpark. Before we build anything, I want to validate these connections against your live environment on an audit call. If something doesn't line up, I'll tell you before you sign anything.

Frontline lost \$150,000 to duplicate payments last year. Invoices come in through email, Procore, and physical mail, entered by different people with no cross-system check. The core fix isn't faster processing. It's a human stop before any invoice touches QBO. Nothing gets paid until an approver has seen it, reviewed any dedup flags in an Excel dashboard, and said yes.

I'm giving you two options. Option 1 puts that approval gate in place, fills the gaps SmoothX doesn't cover, and leaves SmoothX doing what it does well. Option 2 goes further: same approval gate, but n8n replaces SmoothX entirely. Each option is self-contained.

My recommendation is Option 1. It stops the bleeding, gives your finance team an Excel approval dashboard they already know how to use, and doesn't take on the risk of replacing a battle-tested SmoothX sync mid-season. At \$12,000, it pays for itself in the first year at better than 13x. But I'll walk you through both options so you can decide.

Understanding the Problem

Frontline manages multiple active projects across Texas, Florida, Oklahoma, Canada, and international markets. Dozens of subcontractors per project. Hundreds of invoices a month. And no single system that knows what's already been paid.

The core issue: invoices arrive through multiple channels and get entered into QuickBooks by different people at different times. There's no automated check against what's already in Procore or QBO, and nothing stops a payment from going out before a human has reviewed it against existing records. The result is duplicates, sometimes triples, on the same invoice.

Confirmed annual loss	\$150,000 in duplicate payments last year
Channels with no deduplication	Email, Procore uploads, physical mail
Missing today	Human approval gate, automated dedup, commitment matching, PM notifications, audit trail
Industry context	Construction margins run 3-8%. Duplicate payments don't just hurt. They can break a job.

The audit call is also where we validate this \$150K figure against actual Frontline invoices and confirm how costs currently flow from Procore into QBO. The real number might shift. Either way, we should know exactly what we're solving before scope is locked.

Two Options — At a Glance

Both options include the human approval gate as the foundation. Option 2 adds full SmoothX replacement on top of that. You don't have to start at Option 1 to get to Option 2.

	Option 1	Option 2
Name	Approval Gate + Gap-Filler	Full Replacement
What it does	Excel approval dashboard + n8n fills SmoothX gaps	Option 1 + n8n replaces SmoothX entirely
SmoothX	Stays	Replaced by n8n
Approval dashboard	Excel — logs, flags, approves	Excel — logs, flags, approves
Dedup engine	5-layer, n8n-native	5-layer, n8n-native
Human approval gate	Required before QBO send	Required before QBO send
Audit trail	Excel log + QBO records	Excel log + QBO records
Monthly run-rate (new costs)	~\$70-130/mo	~\$70-130/mo
Project fee	\$12,000	\$32,000
Timeline	10 weeks	18 weeks
Risk level	Low	Medium-High

My recommendation: Option 1.

Option 1 solves the problem: a human sees every invoice before it's paid, dedup flags are visible before approval, and nothing flows to QBO without sign-off. The Excel dashboard lives in OneDrive. No new software, no training curve. SmoothX keeps doing what it does well. Option 2 is for when eliminating the SmoothX dependency becomes a strategic priority, but only with a Standard or Premium retainer in place and after Option 1 is proven.

That said, the audit call may shift this. If the Procore API setup, SmoothX data boundaries, or your AP workflow look different from what I mapped, the right option may change. We pick the option after the audit, not before.

Option 1 — Approval Gate + Gap-Filler (\$12,000 / 10 Weeks)

n8n intercepts every cost coming out of Procore before it reaches QBO. Each invoice lands in an Excel approval dashboard in OneDrive first. The approver reviews it, sees any dedup flags, and marks it Approved. Only then does n8n send it to QBO. SmoothX stays in place for everything it handles today. This option closes the gap SmoothX doesn't cover: the human checkpoint.

How the Approval Gate Works

When Procore registers a cost (subcontractor invoice or direct cost), n8n pulls it via the Procore API and writes a new row to the Excel Approval Dashboard in OneDrive via Microsoft Graph API. This happens before anything else. The dashboard captures:

Project name	Pulled from Procore project record
Date and time	Timestamp of cost entry in Procore
Invoice ID / cost ID	Procore's unique cost ID, invoice number if present
Cost type	Subcontractor cost or direct cost (tagged separately)
Amount	Line-item amount and total committed
Dedup status	CLEAR or FLAGGED — matching records shown inline (not deleted)
Approval status	Blank on arrival. Approver sets to APPROVE or HOLD.

n8n runs the 5-layer dedup engine against all existing payments in QBO immediately after logging. If a potential match is found, the row is flagged FLAGGED and the matching invoice details are written into the adjacent columns. The approver sees both records side-by-side. Nothing is deleted. The approver decides.

An email goes to the designated approver: 'New invoice ready for review: [Project Name], \$[Amount], [Vendor].' They open the Excel file in OneDrive, review the row, and type APPROVE or HOLD in the Approval Status column. n8n polls the file every 5 minutes. When it sees APPROVE, it sends the cost to QBO. Nothing moves without that entry.

If an invoice has been in PENDING status for more than 4 business hours, n8n sends a follow-up email to the approver and their designated backup. This prevents invoices from queuing silently when the primary approver is out. The escalation threshold is configurable during setup.

Two edge cases are handled by design. First, if the Excel file is locked by another user when n8n tries to write (OneDrive co-authoring lock), n8n retries automatically every 2 minutes for up to 30 minutes before sending an alert. Second, if n8n detects APPROVE in the dashboard but the QBO send fails, the row is flagged ERROR, the approver gets an immediate notification, and the invoice is held. It does not get marked paid and does not silently disappear. No failure mode results in an unreviewed payment going through.

The 5-Layer Dedup Engine

Layer 1: Exact match	SHA256 fingerprint of vendor + invoice number + amount + project
Layer 2: Fuzzy match	Vendor name similarity >85%, amount within 1%, date within 30 days
Layer 3: Pattern match	Same vendor, same amount within a 45-day window
Layer 4: Procore cross-reference	Total payments vs. committed amount. Catches overpayments.
Layer 5: AI analysis	Claude API catches sophisticated duplicates the first four layers miss

What's Included — Full Scope

Phase	Weeks	Deliverables
Phase 1: Foundation	1-2	n8n setup, Procore app registration, QBO integration, vendor normalization, Microsoft Graph API connection, API verification
Phase 2: Approval Dashboard	3-5	Excel dashboard build in OneDrive — invoice logging, dedup flag columns, APPROVE/HOLD status column with dropdown data validation (prevents typos from stalling invoices), email notifications, n8n polling and QBO send trigger
Phase 3: Dedup Engine	6-7	5-layer dedup engine (exact, fuzzy, pattern, Procore cross-reference, AI analysis), audit log worksheet, threshold tuning, daily reconciliation job (compares all Procore costs against the Excel log to catch any events missed by n8n polling)
Phase 4: Customer Invoicing & Rollout	8-10	Customer invoice generation in QBO, 3-tier automated follow-up, pilot on one project, PM and Finance training, full rollout

Investment — Option 1

Phase	Fee
Phase 1: Foundation	\$3,000
Phase 2: Approval Dashboard	\$4,500
Phase 3: Dedup Engine	\$3,000
Phase 4: Customer Invoicing & Rollout	\$1,500
Total	\$12,000

Payment: 4 milestone payments of \$3,000 (kickoff, Phase 2 complete, Phase 3 complete, full rollout).

Monthly run-rate after go-live: ~\$70-130/month (n8n Cloud ~\$50-100 + Claude API ~\$20-30). Microsoft 365 and SmoothX subscriptions continue as-is. Those are existing costs, not new ones.

Option 2 — Full Replacement (\$32,000 / 18 Weeks)

Everything in Option 1, plus n8n replaces SmoothX entirely. I build the complete Procore-to-QBO financial sync: vendor bill creation, payment status sync, contact/vendor sync, cost code mapping, retention/retainage handling, and progress claim workflows, all in n8n. The Excel approval gate and dedup engine from Option 1 are included. SmoothX subscription gets cancelled. Frontline owns the entire integration stack.

What Option 2 Adds Over Option 1

Capability	Option 1	Option 2
Procore → QBO bill sync	SmoothX	n8n (you own it)
QBO → Procore payment sync	SmoothX	n8n (you own it)
Contact/vendor sync	SmoothX	n8n (you own it)
Retention/retainage	SmoothX (battle-tested)	n8n (custom-built, careful validation required)
Progress claims	SmoothX (battle-tested)	n8n (custom-built, careful validation required)
API change management	SmoothX absorbs changes	Frontline/Veteran Vectors owns updates
SmoothX subscription	Continues (~\$200-500/mo)	Cancelled. Saves ~\$2,400-6,000/year.
Maintenance burden	Low (SmoothX manages sync)	Medium-High (~2-4 hours/week ongoing)

Important Considerations for Option 2

Audit call is critical here. Option 2 replaces SmoothX entirely. Before committing to this path, the audit call needs to confirm that the Procore API exposes everything SmoothX currently handles, that your retainage and progress claim data is structured in a way n8n can replicate, and that your team understands the maintenance burden shift. If the audit surfaces gaps, we scope Option 2 accordingly or stay with Option 1.

Development risk: Retention and progress claim logic is genuinely complex. SmoothX has refined this over years. Custom-building it carries medium-high financial error risk in the first 6 months.

Maintenance burden: Without SmoothX absorbing Procore/QBO API changes, you (or I via retainer) need to monitor and respond to API updates. Estimated 2-4 hours/week ongoing.

Validation period: A minimum 4-week parallel run is required before cutting over, with SmoothX and n8n producing identical results the whole way through. Non-negotiable for financial safety.

Long-term savings: Eliminating SmoothX saves ~\$2,400-6,000/year. But the \$20,000 premium over Option 1 isn't primarily a cost decision. It's an operational independence decision. Every time SmoothX changes its pricing, API, or support model, Frontline is exposed. Option 2 eliminates that dependency entirely. If that risk matters to you, Option 2 is worth it. If it doesn't, Option 1 solves the problem at a third of the cost.

Retainer required: I won't recommend Option 2 without a Standard or Premium retainer. The API maintenance and retention logic need ongoing attention.

Investment — Option 2

Phase	Fee
Phases 1-4: Full Option 1 (Approval Gate + Gap-Filler)	\$12,000
Phase 5: SmoothX Replacement, Bill Sync (Weeks 11-14)	\$10,000
Phase 6: Payments, Retention & Progress (Weeks 15-18)	\$10,000
Total	\$32,000

Payment: 6 milestone payments of ~\$5,333 (kickoff, Phase 2, Phase 3, Phase 4, Phase 5, Phase 6).

Monthly run-rate after go-live: ~\$70-130/month. SmoothX subscription eliminated.

Cost Comparison

Cost Item	Option 1	Option 2
Project fee (one-time)	\$12,000	\$32,000
n8n Cloud (monthly)	\$50-100	\$50-100
Claude API (monthly)	\$20-30	\$20-30
SmoothX (monthly)	\$200-500	Eliminated
Microsoft 365 / OneDrive (monthly)	Existing cost	Existing cost
Monthly run-rate (new costs only)	~\$70-130	~\$70-130
Year 1 total (project + 12 months run-rate)	\$12,840-\$13,560	\$32,840-\$33,560
Year 2+ annual (run-rate only)	\$840-\$1,560	\$840-\$1,560

ROI — Why This Hits 13x in Year One

Value Driver	Current State	After Option 1	Annual Value
Duplicate payments stopped	\$150K lost last year	90%+ caught before payment	~\$135,000
AP processing time	2-5 days per invoice	Same-day approval queue	~\$15,000-20,000
PM admin time on invoices	5-10 hrs/week per PM	Under 1 hr/week	~\$10,000-15,000
Customer invoice turnaround	3-7 days	Same day, automated	~\$5,000-10,000
Total annual value (conservative)			~\$165,000-180,000

Option 1 at \$12,000 against \$165,000-180,000 in annual value is better than 13x return in year one. That's before you factor in the cost of one duplicate payment caught mid-project. At Frontline's \$15K average invoice, stopping

one duplicate per month covers the build cost in 60 days. The question isn't whether this pays off. It's how fast.

If you do nothing, Month 1	~\$12.5K exposed (at last year's monthly run rate)
If you do nothing, Month 6	~\$75K exposed
If you do nothing, Year 1	~\$150K lost — same as last year
Option 1 break-even	Less than 60 days on duplicate prevention alone
Year 1 ROI (Option 1)	~13-15x on \$12,000 investment

Monthly Retainer (All Options)

After the build is done, I offer ongoing support to keep the system running and evolving. Two weeks of post-launch support is included in the project fee at no additional cost.

Tier	Hours/Month	Monthly Fee	What's Included
Essential	Up to 5 hrs	\$625/mo	Bug fixes, threshold adjustments, API change updates, email support (24-hr response)
Standard	Up to 10 hrs	\$1,250/mo	Everything in Essential + feature enhancements, new workflow development, monthly performance call, priority support (4-hr response)
Premium	Up to 20 hrs	\$2,500/mo	Everything in Standard + proactive monitoring, quarterly audits, on-call support (1-hr response), dedicated Slack channel

Unused hours don't roll over. Hours beyond the monthly allocation are billed at \$125/hour. Either side can adjust or cancel with 30 days' written notice. For Option 2: Standard or Premium is strongly recommended. The API maintenance and retention logic need ongoing attention.

Implementation Timelines

Option 1 — 10 Weeks

Week	Phase	Focus
1-2	Phase 1	n8n setup, Procore app registration, QBO integration, vendor normalization, Microsoft Graph API connection, API verification
3-5	Phase 2	Excel dashboard build — invoice logging columns, dedup flag columns, APPROVE/HOLD status, email notifications, n8n polling trigger to QBO
6-7	Phase 3	5-layer dedup engine, Procore-QBO AI matching, Excel audit log worksheet, threshold tuning
8-10	Phase 4	Customer invoice automation, 3-tier follow-up, pilot on one project, PM and Finance training, full rollout

Option 2 — 18 Weeks

Week	Phase	Focus
1-10	Phases 1-4	Full Option 1 buildout (all phases)
11-14	Phase 5	SmoothX Replacement: bill sync, line item mapping, vendor matching, cost code sync, parallel run
15-18	Phase 6	Payment sync, retention/retainage, progress claims, contact sync, SmoothX cutover, regression testing

Both options follow the same kickoff and dependency sequence. The only thing that changes is scope and duration.

What I Need From Frontline (All Options)

The following requirements apply after the audit call confirms we're building the right thing. Nothing below is needed until we've validated the approach together.

Audit call (pre-kickoff)	Procore admin access for API review, SmoothX account walkthrough, 60-90 min with finance lead or AP manager
Microsoft Azure app registration	Admin access to register an Azure app in your Microsoft tenant with Files.ReadWrite.All permissions — needed for n8n's Microsoft Graph API connection to OneDrive (Week 1). If Frontline uses a managed Microsoft environment, your IT admin or IT vendor will need to approve this.
Designated approver(s)	Who will receive email notifications and approve invoices in the Excel dashboard — identified before kickoff
Executive sponsor	Identified before kickoff
Procore Developer App	Registered by a Frontline admin (Week 1)
Pilot project + PM	Selected by mid-project
Historical data	Duplicate invoice samples for dedup testing (by Week 3)
Finance availability	For parallel run verification
PM availability	30-minute training sessions per PM

The parallel run is non-negotiable for any option. Option 1 requires a minimum 2-week parallel run during Phase 4, with n8n and SmoothX both processing the same invoices and finance confirming identical results before the approval gate goes live. Option 2 requires a minimum 4-week parallel run before SmoothX cutover. It's what lets us catch edge cases against live data before we're fully committed.

Case Studies & Track Record

Here's what the work actually looks like.

Defense Consulting Firm

Industry	Federal defense consulting, classified network environments
The Problem	Reports that took days to generate manually using Excel and Power Automate. The process was fragile, dependent on one person, and couldn't be deployed on a classified network without a full rebuild.
What I Built	A gap analysis platform in n8n and Notion that automated the entire report pipeline, built from scratch to be deployment-ready for classified environments with no external API dependencies.
The Result	Report generation dropped from days to minutes. Now in active use and cleared for classified deployment.

National Insurance FMO (80+ Employees)

Industry	Insurance field marketing organization
The Problem	80+ person org running on disconnected tools with no visibility into where time and money were going. Leadership knew there was waste. They couldn't quantify it or prioritize what to fix first.
What I Built	A full operational assessment: mapped every process, identified redundancy, and surfaced specific automation opportunities with dollar values attached.
The Result	Identified \$100K+ in annual savings with a prioritized roadmap leadership could act on immediately.

AI Talent Marketplace Startup

Industry	Tech startup, AI talent recruitment
The Problem	The founder was burning 108-151 hours per month on manual outreach, CRM updates, and content. Everything was ad hoc. Growth was capped by hours in the day.
What I Built	Automated LinkedIn outreach, a Notion CRM with n8n handling lead capture and follow-up, and a content pipeline that turned one piece into a full distribution cycle.
The Result	108-151 manual hours per month cut to 9-13. The system runs without the founder in the loop.

Why Veteran Vectors

I've already done the homework. Before writing this proposal, I verified every Procore API endpoint against official developer documentation, confirmed the OAuth 2.0 configuration for server-to-server automation, validated the n8n connection method, mapped SmoothX's five marketplace apps down to the exact boundary between what it handles and what n8n should handle, and confirmed the Microsoft Graph API path for writing to Excel in OneDrive. The audit call is where we confirm this homework holds against your live environment. If it does, we build. If something's off, we fix the scope before you're committed.

I know construction. Invoice matching in construction isn't like e-commerce. You deal with progress billing, retainage, change orders, cost codes, and AIA-style pay applications. Same vendor, same amount, different project. Not a duplicate. Same invoice number reformatted is one. The 5-layer dedup engine is built for those edge cases specifically.

Veteran to veteran. I'm a Navy guy. Submarines, nuclear engineering, Naval Academy '14. Frontline is a veteran-owned business. I don't take that lightly. You're not getting a generic agency. You're getting someone who understands what it means to build systems that work when it matters.

I build for handoff. Everything uses open-source tools and standard APIs. The Excel dashboard your team uses is a file they already own. If you ever want to bring maintenance in-house, the operations runbook makes that transition straightforward. No vendor lock-in. No dependency on me to keep the lights on.

Your credentials are safe. All API credentials (Procore OAuth tokens, QBO OAuth tokens, and the Microsoft Graph API token) are stored encrypted in n8n's built-in credential vault. They are never written into workflow nodes in plain text. You can rotate any credential independently without touching the workflows.

Process first, tools second. I define the process before I automate it. That's why the automations hold up when edge cases hit. And they will.

Clients served	40+
Client retention	100%
Hours saved	150+ hours/month across client base
Annual value generated	\$100K+ for clients
Background	Navy veteran, submarine nuclear engineer, Naval Academy '14

Engagement Terms (Summary)

The following terms are for reference and will be formalized in the Statement of Work.

Scope changes	Written change orders with agreed pricing before work begins
Payment terms	Net 15 from invoice date, milestone-based billing as outlined per option
Intellectual property	All deliverables become Frontline's property upon final payment. I retain the right to reuse general methodologies, not Frontline-specific data or configurations.
Confidentiality	All Frontline data, credentials, and business processes are confidential. Nothing shared with third parties, used for AI training, or retained after engagement.
Warranty	90-day warranty on all delivered workflows. Defects fixed at no charge. Doesn't cover third-party API changes or Frontline configuration changes.
Third-party services	Frontline maintains its own subscriptions (Procore, QBO, Microsoft 365, n8n, SmoothX, Claude API). I'm not responsible for third-party outages or pricing changes.

Next Steps

Before anything is signed, I want to validate that this build will actually work for Frontline's environment. That means confirming the API connections, checking how costs currently flow from Procore to QBO, and making sure the Excel approval workflow matches how your finance team actually operates.

- 1. Audit Call (60-90 min):** We walk through your current Procore and QBO setup together. I confirm that the Procore API will connect as designed, SmoothX's data boundaries are where I mapped them, the dedup logic matches how your team actually enters invoices, and we confirm Microsoft 365 / OneDrive access for the Excel dashboard. No cost. No commitment. If something doesn't line up, I'll tell you before you sign anything.
- 2. Review:** Share this proposal with your finance lead and AP manager. Specifically the approval gate workflow. They should weigh in on how the Excel dashboard should route and who the designated approvers are.
- 3. Select an option:** Once we've validated the approach, pick Option 1 or 2. Or we adjust scope based on what the audit surfaces.
- 4. Sign the SOW:** I'll draft a formal Statement of Work. 50% payment to start. Building within 48 hours.

Ready to schedule the audit call?

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Veteran Vectors — *Building systems that work as hard as you do.*