

# WORK INSTRUCTION AUTOMATION SYSTEM

Phase 0 Discovery Proposal  
for RAMP Manufacturing

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Prepared for

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## Executive Summary

Your engineers spend 2-6 weeks per product creating work instructions. That’s a tedious, document-intensive process that pulls focus from strategy and slows your time-to-market. You’re looking for **50-70% automation** to compress that timeline to **3–7 days** while maintaining engineering quality.

This proposal outlines a phased approach starting with paid discovery to validate technical feasibility, define architecture, and deliver an actionable roadmap for implementation.

**Phase 0 Investment:** \$10,000 | 3 Weeks

**Deliverables:** Feasibility report, Phase 1 proposal with validated pricing, architecture documentation, proof-of-concept demo

## The Problem & Opportunity

### Current State

Engineers manually build 50-200 page work instruction documents for each product. The process is highly iterative. Station reassignments trigger rework, images require manual capture and annotation, and CAD snapshots must be assembled by hand. This documentation burden doesn’t scale as your product portfolio grows.

### Target State

An engineer spends 30-60 minutes providing structured input to the system-whether through guided forms, AI-assisted conversation, or a hybrid approach determined during discovery. The system generates a 50-70% complete draft in an editable format. The engineer refines the remaining 30-50%, and a growing knowledge base makes every future project faster than the last.

### Business Impact

Metric	Value
Current engineer cost (10 products/yr)	\$160,000/year
Projected cost with automation	\$40,000/year
Annual savings	<b>\$120,000</b>
Payback period (Phase 0 + Phase 1)	<b>3-4 months</b>

Conservative estimate assuming 10 products/year at \$100/hour fully loaded engineer rate and 4-week average current timeline.

## Proposed Solution

The core system follows an inputs → process → outputs model designed to take what you already have and generate work instructions from it:

1. **Structured Knowledge Capture:** The engineer provides assembly details through an optimized input method-guided forms, AI-assisted conversation, decision trees, or a hybrid approach. Discovery will determine which method best fits your workflow. The goal: capture everything needed to generate instructions in 30–60 minutes instead of weeks.
2. **Document Generation:** The AI takes structured input, incorporates uploaded photos and CAD snapshots, and assembles a formatted draft of the work instructions-text steps, image placement, quality checkpoints-ready for engineer review.
3. **Editable Output:** The engineer receives a Google Slides-style document they can refine, rearrange, and finalize. The format matches your current workflow so adoption is immediate.
4. **Supporting Infrastructure:** A photo upload interface with component tagging, a knowledge base that stores reusable patterns (adhesive techniques, plastic handling, quality checks) so every project gets faster, and secure encrypted storage for all data.

## Realistic Expectations

As Joe K. stated: “My experience with AI is you don’t get 100% accuracy. If we can get it 50-70% there, we’ll manually do the rest.” We share this philosophy. Phase 1 focuses on **proven, deliverable automation** while Phase 0 identifies what’s possible in deeper phases.

Phase 1 Will Deliver	Requires Additional R&D
<ul style="list-style-type: none"><li>• Optimized knowledge capture (30-60 min vs. weeks)</li><li>• Formatted draft work instructions from structured input</li><li>• Image upload and contextual placement</li><li>• Editable output for engineer refinement</li><li>• Knowledge base that improves with each project</li></ul>	<ul style="list-style-type: none"><li>• Automated visual annotation generation</li><li>• Direct CAD integration</li><li>• Assembly logic automation</li><li>• Station optimization / skill matching</li></ul>

## Phase 0: Discovery Scope

Discovery validates feasibility before you commit to a larger investment. You get a clear-eyed assessment of what's buildable, what the architecture looks like, and exactly what Phase 1 will cost-with a working proof-of-concept to back it up.

Week	Focus	Hours
<b>Week 1</b>	Learning & documentation: engineer interviews, workflow mapping, data source analysis, Creo export research	20-25 hrs
<b>Week 2</b>	Technical feasibility: prototype knowledge capture methods, test document generation, experiment with visual annotation, validate knowledge base logic	18-22 hrs
<b>Week 3</b>	Deliverables: build proof-of-concept, write feasibility report, create Phase 1 proposal, prepare presentation	12-15 hrs

### What You Receive

1. **Technical Feasibility Report:** Component-by-component assessment of what's automatable, what requires manual input, and risk-adjusted complexity analysis.
2. **Detailed Phase 1 Proposal:** Precise scope, validated pricing, implementation timeline, milestones, and success criteria-no ambiguity.
3. **Architecture Documentation:** Database design, AI model selection, security approach, IP ownership structure, and hosting recommendations.
4. **Proof-of-Concept Demo:** A functional prototype of the knowledge capture and document generation pipeline-tangible validation, not just a report.

### Timeline

<b>Feb 10-14</b>	Kickoff meeting and initial engineer interviews
<b>Feb 17-21</b>	Technical testing, architecture, POC development
<b>Feb 24-28</b>	Report writing, Phase 1 proposal, presentation prep
<b>March 3</b>	<b>Final presentation and Phase 1 decision point</b>

## Technical Architecture

Joe K. asked for clarity on what components are needed, what's off the shelf versus custom, where it runs, and what needs licensing. Here's the overview:

Component	Approach	Details
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<b>Database</b>	Off-the-shelf	PostgreSQL (enterprise-grade, proven)
<b>AI Models</b>	Licensed APIs	Claude, ChatGPT, Gemini - enterprise contracts, no training on your data
<b>Hosting</b>	Your choice	Option A: Private cloud (AWS/GCP/Azure) Option B: On-premise server
<b>Knowledge Capture UI</b>	Custom build	Web-based interface for engineer input (method determined in Phase 0)
<b>Doc Generation</b>	Custom build	Template engine with Google Slides or PDF output
<b>Knowledge Base</b>	Custom build	Pattern library with automated learning
<b>Image Storage</b>	Off-the-shelf	Encrypted file storage with metadata

## Estimated Licensing Costs

Enterprise AI API access: ~\$200-500/month depending on usage. Database hosting (cloud): ~\$50-200/month. Secure file storage: ~\$20-100/month. Phase 0 will deliver precise figures based on architecture decisions.

## Security & IP Ownership

You're manufacturing new-to-world devices with proprietary assembly processes. Customer IP protection isn't optional-it's foundational to the architecture.

## Data Protection

All AI models accessed via enterprise contracts, guaranteeing: no training on your data, no data retention beyond processing, encrypted transmission (TLS 1.3), and SOC 2 Type II compliance. All data encrypted at rest (AES-256) and in transit, with role-based access controls and audit logging.

## IP Ownership

### **RAMP Owns:**

All data in the system, the knowledge base and training patterns, custom code developed for your specific needs, and full data export at any time. Your knowledge base is ring-fenced - no commingling with other clients.

### **Advanced Lead Solutions Retains:**

General-purpose code frameworks reusable across clients, and AI prompting methodologies and system architecture.

Phase 0 will deliver a clear IP ownership agreement for review and approval.



## Investment & Payment

PHASE 0: DISCOVERY

\$10,000

50% (\$5,000) at kickoff | 50% (\$5,000) upon delivery

*What this buys: Risk mitigation before a larger investment. Validated scope and architecture.  
Detailed Phase 1 pricing (no surprises). A working proof-of-concept. A clear decision point.*

### Phase 1: Implementation (Priced After Discovery)

Indicative range: **\$25,000 - \$45,000** depending on feasibility findings, scope prioritization, and hosting requirements. Phase 0 exists specifically to narrow this range and deliver a firm quote. Typical payment structure: 30% at kickoff, 40% at mid-project milestone, 30% upon delivery and acceptance.

**Ongoing System Management:** Phase 1 proposal will also include a monthly management fee covering AI API costs, system maintenance, bug fixes, and minor enhancements-ensuring the system stays current as AI capabilities evolve.

### Pricing Philosophy

We price by deliverables and outcomes, not hours. Fixed Phase 0 price regardless of effort. Each phase is independently valuable-Phase 0 delivers an actionable feasibility report even if you don't proceed, and Phase 1 delivers a functional system even if Phase 2 never happens. No long-term lock-in.

## Project Roadmap

Phase	Timeline	Investment	Key Outcome
Phase 0	3 weeks	\$10,000 (firm)	Feasibility report + Phase 1 proposal + POC
Phase 1	8-10 weeks	\$25-45K (validated in Phase 0)	Knowledge capture + doc generation + knowledge base
Phase 2	TBD	Based on Phase 1 data	Knowledge base expansion + deeper automation
Phase 3	Long-term	Exploratory	Visual analysis, station optimization, skill matching

Each phase ends with a decision point: proceed, adjust scope, or conclude. You're never locked into the next phase without full information.

## Risk Mitigation

Risk	Mitigation
Visual annotation may not be feasible with current AI	Phase 0 validates early. Fallback: text generation + image placement still delivers 40-50% automation.
Creo CAD integration may require expensive middleware	Phase 0 determines accessibility. Fallback: manual CAD export (still significantly faster than current state).
Phase 1 complexity exceeds estimates	Milestone-based payments. Transparent communication. Your approval required for any scope changes.
System doesn't hit 50-70% target	Phase 0 sets realistic expectations based on validated feasibility, not optimistic assumptions.

## Next Steps

1. **Review this proposal:** Discuss with your team and send any questions or clarifications.
2. **Execute Phase 0 contract:** Sign off and schedule kickoff meeting for the week of Feb 10-14.
3. **Kick off discovery:** We begin engineer interviews and workflow documentation immediately.
4. **Phase 1 decision (March 3):** Review feasibility report, validated Phase 1 proposal, and proof-of-concept. Decide how to proceed.

### Ready to Move Forward?

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