INTEGERBYTE LLP - ENTERPRISE RPA ACCELERATOR

Power Automate Desktop Framework: Solution Design Document (SDD)

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1. Executive Architecture Overview

The IntegerByte Power Automate Desktop (PAD) Framework is a modular, reusable RPA foundation engineered to standardize desktop flow orchestration across DEV, UAT, and PROD environments.

Core Pillars: Reliable | Efficient | Scalable | Secure

2. End-to-End Execution Flow Lifecycle

Step 01 - Service Termination (Start): Terminates stale browser/Excel/ERP processes before execution.

Step 02 - Variable Initialization:

- BASIC Edition: Reads configuration key-values from a local VM/AVM CSV file.
- PRO Edition: Receives Dataverse Environment Variables from Cloud Flows + Model-Driven App.

Step 03 - Folder Structure Provisioning: Auto-creates local Input, Backup, Output, and Logs folders.

Step 04 - Sub-Flow Orchestration (Main -> Business Sub-Flows -> Label Handler).

Step 05 - Categorized Logs & Exception Handler:

- PRO captures System, Business, and Functional Exceptions with timestamped desktop screenshots.

Step 06 - Automated Email Notification:

- PRO dispatches formatted HTML emails with flow name, action name, screenshot & log attachments.

Step 07 - Daily Backup & Monthly OneDrive Archiving:

- Moves processed input/log files to daily backup and archives monthly to OneDrive (PRO).

Step 08 - Service Termination (End): Gracefully closes target applications and releases memory.

3. 18 Power Automate Desktop Best Practices Checklist (Free Bonus)

01. Always separate initialization, business logic, and cleanup into dedicated Sub-Flows.
02. Never hardcode file paths, URLs, or credentials; use Environment Variables or CSV config.
03. Use consistent naming conventions: inp_ (Input), out_ (Output), loc_ (Local), glb_ (Global).
04. Wrap every critical UI/Web automation block inside an On Block Error container.
05. Distinguish Business Rule Exceptions (invalid data) from System Exceptions (app crash/timeout).
06. Capture a full desktop screenshot immediately inside the exception handler before cleanup.
07. Terminate orphan processes (chrome, msedge, excel, saplogon) at both Start and End of Main flow.
08. Prefer UI Element relative selectors and dynamic attributes over brittle XPath coordinates.
09. Replace fixed Wait actions with Wait for Window / Wait for Web Page Content / UI Element checks.
10. Log every sub-flow entry, exit, and row counter with ISO-8601 timestamps.
11. Move input files to a timestamped Backup folder immediately after processing to avoid duplicates.
12. Keep each Sub-Flow under 60-80 actions for fast designer loading and easy debugging.
13. Use centralized Label Handlers for retry loops and graceful exit routing.
14. Send structured HTML summary emails with execution KPIs, error action name, and log attachments.
15. Automate monthly log/backup archiving to OneDrive or SharePoint to prevent VM disk exhaustion.
16. Manage DEV, UAT, and PROD endpoints via a Model-Driven App without editing flow code.
17. Document input/output arguments and flow diagrams in your Solution Design Document (SDD).
18. Test both Happy Path and Negative/Exception scenarios before promoting to Production.

4. Licensing & Edition Summary

BASIC Edition: Rs 19,500 (Cut Price Rs 21,000) | PRO Edition: Rs 22,500 (Cut Price Rs 27,000)

Custom Enterprise CoE Edition: Reach out to tointegerbyte@gmail.com | +91-9824209737