

## Executive Summary

This document provides the technical specification for the Life Event Error Prevention Bots, a system designed to proactively reduce payment errors in the Supplemental Nutrition Assistance Program (SNAP). By monitoring linked government datasets for significant life events among current recipients, these software agents can alert caseworkers to potential changes in eligibility before they result in an incorrect payment. This specification details the system's core logic, the error prevention workflow, technical integration with existing state platforms like MD-THINK, and a scalable plan for a multi-state pilot.

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## 1.0 System Logic

The bots will operate on a defined logic that continuously monitors specific, high-impact life event triggers. The system will query linked, authoritative government datasets via secure APIs, identify triggering conditions, and assess the potential impact on a household's SNAP eligibility.

Life Event Trigger	Data Source	Triggering Condition	Potential SNAP Impact
New Employment	Dept. of Labor: Quarterly W-2 Wage Data	A new employer record appears for a member of a SNAP household who was previously unemployed.	Potential increase in household income, affecting benefit amount.
Significant Wage Change	Dept. of Labor: Quarterly W-2 Wage Data	A household member's quarterly wages increase or decrease by a predefined threshold (e.g.,	Change in household income, affecting benefit amount.

		25%).	
<b>Change in Household Composition (Birth)</b>	Dept. of Health: Vital Statistics	A new birth certificate is issued listing a SNAP household member as a parent.	Increase in household size, affecting benefit amount.
<b>Change in Household Composition (Death)</b>	Dept. of Health: Vital Statistics	A death certificate is issued for a member of a SNAP household.	Decrease in household size, affecting benefit amount.
<b>Change of Address (Out-of-State)</b>	Motor Vehicle Administration (MVA)	A member of a SNAP household registers a new address in another state.	Potential loss of state residency and SNAP ineligibility.

## 2.0 Error Prevention Workflow

The workflow is designed to be a closed-loop system that moves from automated detection to human-led resolution, ensuring accuracy and accountability.

1. **Trigger Detection:** The bot continuously monitors data streams. Upon detecting a life event that matches the predefined logic (e.g., a 30% wage increase for a SNAP recipient), the system validates the data and confirms the individual is an active case.
2. **Alert Generation:** A high-priority alert is automatically generated and placed in the assigned caseworker's queue within their primary case management dashboard. The alert will contain:
  - **Case ID and Client Name.**
  - **Alert Type:** (e.g., "Significant Wage Change Detected").
  - **Data Summary:** A concise, plain-language summary of the trigger (e.g., "W-2 data from Q3 2025 shows a wage increase from \$5,200 to \$7,100").
  - **Action Required:** A prompt for the caseworker to initiate a case review and contact the household to verify the information.
3. **Caseworker Action:** The caseworker opens the alert, reviews the information, and follows standard procedure to contact the household and make any necessary adjustments to the case.

4. **Resolution and Logging:** Once the caseworker has resolved the issue and updated the case file, they will clear the alert. The system will log the entire workflow—from trigger to resolution—creating a permanent, auditable record for quality control purposes.
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## 3.0 Integration

The bots will operate as secure, independent software agents within Maryland's existing **MD-THINK** platform, leveraging its modern, cloud-native architecture.

- **Microservice Architecture:** The bot system will be developed as a containerized microservice, allowing for independent updates and maintenance without disrupting the core MD-THINK platform.
  - **API-Driven Communication:** The bot will use MD-THINK's existing **API Catalog** to securely query the shared data repository and push alerts into the case management front-end. It will connect to external agency datasets (e.g., Department of Labor) via established, secure data exchange protocols.
  - **Security and Compliance:** All data handling will be fully compliant with federal and state security regulations, including **IRS 1075** for tax and wage data. The bot will operate within MD-THINK's FedRAMP-compliant AWS GovCloud environment, ensuring the highest level of data protection.
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## 4.0 Multi-State Scalability

The system will be designed for rapid and secure deployment across the 3-5 states participating in the Arnold Ventures project, following a phased approach.

- **Phase 1: Pilot & Refinement (Months 1-6):** The bot system will be fully deployed and tested within Maryland's MD-THINK environment. This phase will be used to refine the system logic, optimize the workflow, and create comprehensive documentation.
- **Phase 2: Create 'Bot-in-a-Box' Package (Months 7-9):** The refined bot microservice will be packaged into a "Bot-in-a-Box" deployment kit. This kit will include the containerized software, detailed API specifications, and a standardized implementation guide.
- **Phase 3: Partner State Deployment (Months 10-18):** The project's **Data Science 'Tiger Teams'** will work with the IT and program staff in each partner state. The team will use the 'Bot-in-a-Box' kit to deploy the system and lead the integration work, connecting the bots to each state's unique case management system and relevant data sources. This approach ensures a consistent core product while allowing for flexibility in state-specific

integration.