**Variance Analysis Report –** Integrated NPI Build Optimization Framework for Hardware Development

By

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**Name of Project:**

Integrated NPI Build Optimization Framework for Hardware Development

**Overview**

This **Variance Analysis Report** evaluates the differences between planned and actual performance for the project. It highlights variances in schedule, budget, scope, and resources, identifies root causes, and proposes corrective actions to align project progress with objectives.

**Variance Summary**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Category** | **Planned Value (PV)** | **Actual Value (AV)** | **Variance (Difference)** | **Variance (%)** | **Status** |
| **Schedule** | 50% Complete | 45% Complete | -5% | -10% | 🔄 Behind |
| **Budget** | $250,000 | $240,000 | -$10,000 | -4% | ✅ On Track |
| **Scope** | 100% | 95% | -5% | -5% | 🔄 At Risk |
| **Resources** | 15 FTEs | 13 FTEs | -2 FTEs | -13% | 🔄 At Risk |

**Detailed Variance Analysis**

**1. Schedule Variance (SV)**

**Planned Completion:** 50%  
**Actual Completion:** 45%  
**Variance:** -5% (-10%)  
**Root Cause:**

* Delays in supplier delivery for critical components.
* Extended review process for design documentation.  
  **Corrective Action:**
* Expedite supplier negotiations and explore backup vendors.
* Streamline the design review process with additional peer reviewers.

**2. Cost Variance (CV)**

**Planned Budget:** $250,000  
**Actual Spend:** $240,000  
**Variance:** -$10,000 (-4%)  
**Root Cause:**

* Savings achieved through fixed-price contracts for materials.  
  **Corrective Action:**
* Continue cost monitoring to sustain savings.
* Reallocate contingency funds for potential upcoming risks.

**3. Scope Variance**

**Planned Scope Completion:** 100%  
**Actual Scope Completion:** 95%  
**Variance:** -5% (-5%)  
**Root Cause:**

* Additional integration testing not accounted for in the initial scope.  
  **Corrective Action:**
* Update the project plan to include additional integration testing.
* Communicate scope adjustments with stakeholders for alignment.

**4. Resource Variance**

**Planned FTEs:** 15  
**Actual FTEs:** 13  
**Variance:** -2 FTEs (-13%)  
**Root Cause:**

* Delayed onboarding of additional QA resources.  
  **Corrective Action:**
* Accelerate recruitment process to fill resource gaps.
* Reassign team members temporarily to critical tasks.

**Performance Metrics**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Metric** | **Target** | **Actual** | **Variance** | **Status** |
| **Schedule Performance Index (SPI)** | 1.0 | 0.90 | -0.10 | 🔄 Behind |
| **Cost Performance Index (CPI)** | 1.0 | 1.04 | +0.04 | ✅ On Track |
| **Earned Value (EV)** | $125,000 | $112,500 | -$12,500 | 🔄 At Risk |
| **Planned Value (PV)** | $125,000 | $125,000 | $0 | ✅ On Track |

**Recommendations**

1. **Schedule:**
   * Prioritize critical path activities to regain lost time.
   * Allocate additional resources to delayed tasks.
2. **Budget:**
   * Continue leveraging cost savings from vendor contracts.
   * Allocate unused budget for future contingencies.
3. **Scope:**
   * Update the project scope to reflect integration testing needs.
   * Conduct a scope alignment meeting with stakeholders.
4. **Resources:**
   * Expedite hiring process for QA team members.
   * Temporarily reassign available resources to cover gaps.

**Approval**

|  |  |  |
| --- | --- | --- |
| **Role** | **Signature** | **Date** |
| Project Manager | [Signature] | [MM/DD/YYYY] |
| Project Sponsor | [Signature] | [MM/DD/YYYY] |

**Conclusion:**

The project is progressing but faces challenges in schedule and resource availability. Budget performance remains strong, and corrective actions are underway to address variances in scope and resources.