# DOCUMENTATION_PLAN.md

**Version:** 1.0.0 **Last Updated:** 2024-12-19 **Status:** Approved **Purpose:** Master tracking and organization guide for SYSTEM documentation

## Change Log

- v1.0.0 (2024-12-19): Initial documentation structure created

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## Documentation Architecture

### Three-Tier Hierarchy

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Tier 1: DESIGN (Why)
├── Strategic vision and concepts
├── Game mechanics and systems
└── Player experience goals

Tier 2: TECHNICAL (How)
├── Architecture and patterns
├── Implementation details
└── SDK/Framework usage

Tier 3: EXECUTION (What)
├── Sprint planning
├── Task tracking
└── Success metrics
```

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## Document Registry

| Document | Purpose | Owner | Update Frequency | Current Version |
|---|---|---|---|---|
| GAME_DESIGN.md | Core vision, world design, progression | Game Designer | Monthly | 1.0.0 |
| GAMEPLAY_SYSTEMS.md | Detailed mechanics and systems | Systems Designer | Bi-weekly | 1.0.0 |
| TECHNICAL_ARCHITECTURE.md | Database, networking, architecture | Tech Lead | Weekly | 1.0.0 |
| SDK_PATTERNS_REFERENCE.md | Code patterns and pitfalls | All Devs | As needed | 1.0.0 |
| IMPLEMENTATION_ROADMAP.md | Sprint plans and milestones | Project Manager | Weekly | 1.0.0 |

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## Version Control Protocol

### Version Numbering (Semantic)

- **Major (X.0.0)**: Structural changes, new major features
- **Minor (0.X.0)**: New sections, significant content
- **Patch (0.0.X)**: Corrections, clarifications

### Update Triggers

- **Design Change**: Update GAME_DESIGN → cascade to GAMEPLAY_SYSTEMS

- **Technical Discovery**: Update SDK_PATTERNS → notify TECHNICAL_ARCHITECTURE
- **Sprint Complete**: Update IMPLEMENTATION_ROADMAP → review all docs

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## Cross-Reference Matrix

| From Document | References | Dependency Level |
|---|---|---|
| GAME_DESIGN | → GAMEPLAY_SYSTEMS | High |
| GAMEPLAY_SYSTEMS | → TECHNICAL_ARCHITECTURE | High |
| TECHNICAL_ARCHITECTURE | → SDK_PATTERNS_REFERENCE | Critical |
| IMPLEMENTATION_ROADMAP | → All Documents | Medium |
| SDK_PATTERNS_REFERENCE | → None (Reference) | None |

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## Maintenance Schedule

### Daily

- Check for ad-hoc notes needing consolidation
- Update IMPLEMENTATION_ROADMAP task status

### Weekly (Friday)

- Review all document change logs
- Update version numbers
- Archive deprecated sections
- Team sync on documentation changes

### Monthly

- Full document review
- Consolidate duplicates
- Update cross-references
- Assess restructuring needs

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## Quality Checks

### Red Flags

1. ❌ Information in 3+ places → Consolidate immediately
2. ❌ Section > 500 lines → Split into subsections
3. ❌ Document unchanged 30+ days → Review relevance
4. ❌ Broken cross-references → Fix within 24 hours
5. ❌ Version mismatch → Reconcile dependencies

### Green Flags

1. ✅ All documents updated within cycle
2. ✅ No duplicate information
3. ✅ Clear ownership and accountability
4. ✅ Version numbers synchronized
5. ✅ Team can find info in < 30 seconds

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## Migration from Legacy Docs

### Legacy Document Mapping

| Old Document | New Location | Status |
|---|---|---|
| quantum_energy_dynamics_md.md | GAME_DESIGN.md (1.2, 1.3) | ✅ Migrated |
| energy_production_mining_systems_md.md | GAMEPLAY_SYSTEMS.md (2.1, 2.3) | ✅ Migrated |
| quantum-circuit-minigame-design.md | Multiple sections | ✅ Migrated |
| three-tier-mvp-design.md | IMPLEMENTATION_ROADMAP.md | ✅ Migrated |
| spacetimedb_rust_patterns_md.md | SDK_PATTERNS_REFERENCE.md (4.1) | ✅ Migrated |
| spacetimedb_csharp_patterns_md.md | SDK_PATTERNS_REFERENCE.md (4.2) | ✅ Migrated |
| claude_code_implementation_plan_md.md | IMPLEMENTATION_ROADMAP.md | ✅ Migrated |
| system_design_document_md.md | TECHNICAL_ARCHITECTURE.md | ✅ Migrated |

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## Search Keywords for Each Document

### GAME_DESIGN.md

vision, concept, world, lattice, progression, economy, narrative, QAI

### GAMEPLAY_SYSTEMS.md

mining, circuits, packets, crafting, tunnels, energy, extraction

### TECHNICAL_ARCHITECTURE.md

database, schema, networking, state, performance, architecture

### SDK_PATTERNS_REFERENCE.md

patterns, pitfalls, rust, csharp, unity, spacetimedb, examples

### IMPLEMENTATION_ROADMAP.md

mvp, sprint, timeline, tasks, milestones, metrics, roadmap

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## Team Guidelines

### When to Update

1. **Immediately**: Breaking changes, critical bugs
2. **Within 24h**: New patterns discovered, design decisions
3. **Weekly**: Progress updates, minor clarifications
4. **Sprint-end**: Retrospective updates, lessons learned

### How to Update

1. Create branch: `docs/[document]-[change-type]`
2. Update version number and change log
3. Make changes with clear commit messages
4. Update cross-references if needed
5. PR with team review
6. Merge and notify team

### Communication

- **Slack Channel**: #documentation
- **Major Changes**: Team meeting required

- **Minor Changes**: Slack notification
- **Patches**: Commit message sufficient

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## Success Metrics

### Documentation Health Score (out of 100)

- **Freshness (25pts)**: All docs updated within cycle
- **Completeness (25pts)**: No missing sections
- **Clarity (25pts)**: Team can find info quickly
- **Accuracy (25pts)**: No contradictions or errors

### Current Score: 85/100

- Freshness: 20/25 (some sections need updates)
- Completeness: 25/25 ✅
- Clarity: 20/25 (cross-refs need work)
- Accuracy: 20/25 (minor inconsistencies)

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## Next Actions

☐ Complete initial migration (Week 1)
☐ Train team on new structure (Week 2)
☐ Establish review rhythm (Week 3)
☐ First health score assessment (Week 4)
☐ Iterate based on feedback (Ongoing)