FPS Task Parallelization Guide

This document outlines which tasks can be done in parallel and which tasks will conflict if worked on simultaneously.

Completed Tasks

- Task 01: Foundation Setup (100% Complete)
- Task 02: Protection Backend (100% Complete)

Tasks That Can Be Done Together (In Parallel)

Group 1: Multiple Module Backends

These backends are independent and don't share code/resources:

- 04-savings-backend + 08-retirement-backend + 10-estate-backend
- 04-savings-backend + 08-retirement-backend
- 04-savings-backend + 10-estate-backend
- 08-retirement-backend + 10-estate-backend

Group 2: Frontend + Different Module Backend

- 03-protection-frontend + 04-savings-backend
- 03-protection-frontend + 08-retirement-backend
- 03-protection-frontend + 10-estate-backend

Group 3: Multiple Module Frontends (Once Backends Complete)

- **03-protection-frontend** + **05-savings-frontend** (if 04-savings-backend done)
- 03-protection-frontend + 09-retirement-frontend (if 08-retirement-backend done)
- 03-protection-frontend + 11-estate-frontend (if 10-estate-backend done)

ISA Tracking Cross-Module Conflict

Cannot do together:

04-savings-backend + 06-investment-backend

Why? Both modules work with ISA allowance tracking (cross-module feature). The ISA tracker needs to query data from both Savings (Cash ISAs) and Investment (S&S ISAs) modules. Doing these simultaneously will cause integration issues.

Recommendation: Complete 04-savings-backend FIRST, then do 06-investment-backend (which will update the ISA tracker to support Investment module).

Dashboard Integration Conflicts

Cannot do together:

• 12-dashboard-integration + any module frontend (03, 05, 07, 09, 11)

Why? Dashboard integration aggregates data from ALL module frontends. The overview cards need to be imported and integrated. Working on dashboard and module frontends simultaneously will cause component import/integration issues.

Recommendation: Complete ALL module frontends (03, 05, 07, 09, 11) BEFORE starting 12-dashboard-integration.

Coordinating Agent Conflicts

Cannot do together:

• 13-coordinating-agent + any module backend (04, 06, 08, 10)

Why? Coordinating Agent calls all module agents for holistic analysis. If module backends are incomplete, the Coordinating Agent can't properly integrate them.

Recommendation: Complete ALL module backends (02 , 04, 06, 08, 10) BEFORE starting 13-coordinating-agent.



Task 14: Final Testing & Deployment

14-final-testing.md MUST be done after ALL other tasks are complete.

Why?

- Requires comprehensive end-to-end testing across all modules
- Tests cross-module integrations (ISA tracking, net worth aggregation, holistic planning)
- Includes security hardening and performance optimization for the entire application
- Validates the complete user journey from registration through all 5 modules

Recommended Implementation Strategy

Phase 1: Protection Frontend (Solo)

• **03-protection-frontend** (5-7 days)

Phase 2: Parallel Backend Development

Do these together:

- **04-savings-backend** (4-6 days)
- **08-retirement-backend** (6-8 days)
- 10-estate-backend (6-8 days)

Phase 3: Investment Backend (Solo)

• **06-investment-backend** (6-8 days) - Must be after 04-savings-backend for ISA integration

Phase 4: Parallel Frontend Development

Do these **together** (once respective backends complete):

- 05-savings-frontend (4-6 days)
- 07-investment-frontend (5-7 days)
- 09-retirement-frontend (5-7 days)
- 11-estate-frontend (5-7 days)

Phase 5: Integration (Sequential)

Do these **one at a time**:

- 1. **12-dashboard-integration** (4-6 days) After ALL frontends complete
- 2. 13-coordinating-agent (5-7 days) After ALL backends complete

Phase 6: Final Testing (Solo)

• 14-final-testing (8-10 days) - After EVERYTHING else

© Quick Reference Matrix

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04
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Task	Can Pair With	Conflicts With	Must Do Alone?	Dependencies
10-estate-backend	04, 08 backends, 03 frontend	13	No	01 🗸
11-estate-frontend	03, 05, 07, 09 frontends	12	No	10
12-dashboard- integration	None	03, 05, 07, 09, 11	No	All frontends
13-coordinating- agent	None	04, 06, 08, 10	No	All backends
14-final-testing	None	Everything	YES	ALL tasks



Key Principles

1. Backend Before Frontend

Always complete a module's backend before starting its frontend. This ensures:

- Functional APIs ready for integration
- Clear API contracts established
- Ability to test with Postman/Pest before UI development

2. ISA Cross-Module Dependency

The ISA tracking system spans Savings and Investment modules:

- Savings tracks Cash ISA contributions
- Investment tracks Stocks & Shares ISA contributions
- Combined total must not exceed £20,000 (2024/25)
- Complete Savings backend before Investment backend

3. Dashboard Integration Last

Dashboard integration imports and displays all module overview cards:

- Requires all module frontends to be complete
- Aggregates cross-module data (net worth, ISA usage, financial health score)
- · Wait until all frontends are done

4. Coordinating Agent Last

Coordinating Agent orchestrates all module agents:

- Calls ProtectionAgent, SavingsAgent, InvestmentAgent, RetirementAgent, EstateAgent
- Resolves cross-module conflicts
- Generates holistic recommendations
- · Wait until all backends are done

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5. Final Testing Must Be Last

Final testing validates the entire system:

- Cross-module integration tests
- End-to-end user journeys
- Performance optimization
- · Security hardening
- Cannot start until 100% of other tasks complete



Timeline Optimization

Single Developer Timeline

- Sequential approach: ~85-110 days (17-22 weeks)
- Optimized with smart sequencing: ~75-95 days (15-19 weeks)

Multi-Developer Timeline (3 developers)

By leveraging parallelization:

- Phase 2: 3 backends in parallel (6-8 days instead of 18-24)
- Phase 4: 4 frontends in parallel (5-7 days instead of 20-28)
- Total: ~50-65 days (10-13 weeks)

Critical Path (Cannot Be Shortened)

- 1. Foundation Setup (5 days)
- 2. Protection Backend (6-8 days)
- 3. Protection Frontend (5-7 days)
- 4. Investment Backend (6-8 days) must wait for Savings backend
- 5. Dashboard Integration (4-6 days) must wait for all frontends
- 6. Coordinating Agent (5-7 days) must wait for all backends
- 7. Final Testing (8-10 days) must wait for everything

Minimum possible timeline: ~39-51 days with perfect parallelization



Quick Start Recommendations

If You Have 1 Developer

Follow the phases sequentially as outlined above. Focus on completing entire phases before moving to the next.

If You Have 2 Developers

- **Developer 1**: Work on Protection frontend (03)
- Developer 2: Work on Savings backend (04)
- Then both move to Phase 2 parallel work

If You Have 3+ Developers

- **Developer 1**: Protection frontend (03)
- **Developer 2**: Savings backend (04)
- **Developer 3**: Retirement backend (08)
- **Developer 4** (if available): Estate backend (10)

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