

RaceMode TimeAttack - Implementation Plan

Task Breakdown

Phase 1: Data Structure Updates (4 hours)

Task 1.1: Extend FProgressMetadata

File: ProgressionData.h

Add TimeAttackInitialSeconds and TimeAttackCheckpointBonus fields

Estimated: 30 min

Task 1.2: Extend RaceSessionSubsystem

File: RaceSessionSubsystem.h

Add storage properties and getter functions

Estimated: 30 min

Task 1.3: Update MapDefaultDataTable

Add TimeAttack columns and populate sample values

Estimated: 1 hour

Phase 2: Configuration Loading (3 hours)

Task 2.1: Update ProgressionCenterSubsystem::SetupRaceData

Load TimeAttack config from FProgressMetadata

Add fallback to defaults

Estimated: 1 hour

Task 2.2: Update RaceTrackManager::StartRace

Read configuration from RaceSessionSubsystem

Replace hardcoded 30.f value

Estimated: 1 hour

Task 2.3: Update HandleVehicleDetectedAtCheckpoint

Read bonus from RaceSessionSubsystem

Replace hardcoded 20.f value

Estimated: 1 hour

Phase 3: Validation System (2 hours)

Task 3.1: Implement ValidateTimeAttackConfiguration

Check timer > 0, checkpoints exist

Log clear error messages

Estimated: 1 hour

Task 3.2: Integrate Validation into StartRace

Call validation before race starts

Prevent race if validation fails

Estimated: 30 min

Phase 4: Testing (3 hours)

Task 4.1: Create Test Maps

Configure 5 test scenarios in DataTable

Estimated: 1 hour

Task 4.2: Manual Testing

Test all scenarios, verify logs and UI

Estimated: 1 hour

Task 4.3: Mobile Device Testing

Test on Android and iOS

Estimated: 30 min

Task 4.4: Update Documentation

Create implementation and testing docs

Estimated: 30 min

Total Estimated Time: 12 hours (1.5 days)