## PHASE 8: TESTING & VALIDATION

**Test Case Execution**

Test Case 1: Auto-Assignment

* Scenario: Create a new scheduled delivery with valid driver and hub data.
* Preconditions: At least one available driver with coordinates; hub data present.
* Steps:
  1. Create Delivery (Status = "Scheduled")
  2. Enter valid Latitude/Longitude
  3. Select valid Hub
  4. Save
* Expected Results:
  1. Status → “Assigned”
  2. Assigned Driver auto-filled
  3. Estimated Distance calculated
  4. ETA is set in the future

Test Case 2: ETA Calculation

* Scenario: ETA is accurate and reliable
* Validation:
  1. ETA is later than creation time
  2. ETA uses Scheduled Date as base
  3. ETA = Scheduled Date + (distance ÷ 30 km/h)
  4. ETA shows correct timezone and format
* Success:
  1. ETA within 15 min of formula
  2. Calculations always use Scheduled Date, not system date

**System Validation**

Test Case 3: Status Changes

* Scenario: Manual and workflow-driven status updates
* Steps:
  1. Create with “Scheduled”
  2. Manually update to “In-Transit”
  3. Set to “Delivered” (add notes/evidence)
  4. Test “Failed” and Attempt Count increment
* Validation:
  1. All status changes allowed, workflow operates without errors
  2. Related fields/status updated
  3. History shows transitions

Test Case 4: Data Verification

* Areas Evaluated:
  + Tabs: All expected records in Deliveries, Drivers, Hubs
  + Reports: Totals, breakdowns match actual data
  + Data Integrity:
    - No duplicate delivery numbers
    - All mandatory fields present
    - Foreign key relationships correct

Defect Tracking & Resolution Process

* Common issues: Missing coordinates, driver status errors, timezones, permissions.
* Steps:
  1. Debug logs for error root cause
  2. Update flow/rules
  3. Retest same scenario
  4. Document fix for team