

# **Finanzas SDMT Changes API - 500s investigation**

Finanzas SD – Architecture, Flows & SOPs

Arquitectura, Flujos y Procedimientos

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# 1 Finanzas SDMT Changes API – 500s investigation

## 1.1 Observations

- **Infrastructure wiring:** The SAM template exposes GET/POST `/projects/{projectId}/changes` on the `ChangesFn` Lambda, which is built from `src/handlers/changes.ts`, and grants it CRUD access to the `ChangesTable` (`${TablePrefix}changes` with pk/sk keys).  
`□F:services/finanzas-api/template.yaml↑L1220-L1258`  
`□F:services/finanzas-api/template.yaml↑L214-L231`
- **Handler behavior:**
  - GET validates `projectId`, calls `ensureCanRead`, then queries DynamoDB for `pk = PROJECT#${projectId}` and returns `{ data, projectId, total }` after normalizing items.  
`□F:services/finanzas-api/src/handlers/changes.ts↑L76-L188`
  - POST validates JSON, enforces `title`, `description`, and numeric `impact_amount`, builds a `CHANGE#` item keyed by `PROJECT#${projectId}`, and writes with a `ConditionExpression` to prevent duplicates. Auth (`ensureCanWrite` + `getUserEmail`) runs before DynamoDB writes. Failures fall through to the catch block, which returns 500 for any non-auth errors.  
`□F:services/finanzas-api/src/handlers/changes.ts↑L91-L200`
- **Contract test expectations:** The dev contract script first selects a project from `/projects`, then issues `GET /projects/{id}/changes` and expects 2xx. It POSTs a payload containing `title`, `description`, numeric `impact_amount`, `currency`, `justification`, and an array `affected_line_items`, then re-GETs and asserts the new id is present; any non-2xx is treated as a failure.  
`□F:tests/finanzas/changes/run-changes-tests.sh↑L37-L123`
- **Frontend payloads:**
  - `getChangeRequests` fetches `/projects/${project_id}/changes`, accepting multiple payload shapes and normalizing to the domain model, defaulting status to pending if missing.  
`□F:src/lib/api.ts↑L755-L769`
  - `createChangeRequest` POSTs `{ baseline_id, title, description, impact_amount, currency, justification, affected_line_items }` to the same route and normalizes the response; it doesn't send `project_id` in the body, relying on the path parameter.  
`□F:src/lib/api.ts↑L772-L818`
  - The SDMT Changes form splits the “Affected line items” textbox into an array and passes the same fields (`title`, `description`, `impact_amount`, `currency`, `baseline_id`, `justification`, `affected_line_items`) to `createChangeRequest`. Project id comes from `ProjectContext` selection, and missing/invalid values are blocked client-side.  
`□F:src/features/sdmt/cost/Changes/SDMTChanges.tsx↑L71-`

L152

## 1.2 Likely 500 triggers in dev

1. **DynamoDB resource mismatch:** The handler unconditionally calls `tableName("changes")` for both GET and POST. If the deployed stack is missing the `${TablePrefix}changes` table or `TABLE_CHANGES` is misconfigured, `QueryCommand/PutCommand` will throw (`ResourceNotFound/AccessDenied`), leading to the generic `serverError` path (HTTP 500). This is consistent with 500s on both load and create despite green unit/contract tests, which rely on a properly provisioned table. The template declares the table, but a drifted or partial dev deployment would surface exactly as the reported 500s. `F:services/finanzas-api/src/handlers/changes.ts`†L76-L200 `F:services/finanzas-api/template.yaml`†L214-L231
2. **Unhandled Dynamo conditional failures:** POST uses a strict `ConditionExpression` prohibiting any existing pk/sk; if the dev data layer reuses change IDs (e.g., seeded `CHANGE#` ids or retries with the same id), Dynamo returns `ConditionalCheckFailedException` which also bubbles to the 500 catch block. Contract tests generate unique ids and won't catch this, but a stuck id in dev would trigger 500 on create. `F:services/finanzas-api/src/handlers/changes.ts`†L134-L168
3. **Environment/audience drift:** Auth errors are converted to 4xx by `fromAuthError`, but any other runtime exceptions from token parsing or missing env (e.g., `COGNITO_CLIENT_ID`) would throw before reaching the handler catch. Given the handler defers to `ensureCanRead/Write`, a misconfigured dev client id could surface as 500s even though tests inject mocks. Confirming Cognito env matches the UI client id is necessary. `F:services/finanzas-api/src/handlers/changes.ts`†L181-L199 `F:services/finanzas-api/src/lib/auth.ts`†L33-L89

## 1.3 Recommended fixes (surgical)

1. **Harden Dynamo wiring & error surfaces**
  - Add explicit handling for `ResourceNotFoundException` and `ConditionalCheckFailedException` in `changes.ts` so they return actionable 4xx/409 responses instead of 500, and log the resolved table name for visibility. This will convert missing-table drift into a clear signal and prevent UI 500s on duplicate ids. `F:services/finanzas-api/src/handlers/changes.ts`†L76-L200
  - Consider guarding `tableName("changes")` with a startup validation (or emitting the resolved name in logs) to detect env drift early.
2. **Verify dev stack resources**
  - Confirm `${TablePrefix}changes` exists and matches the Lambda env (`TABLE_CHANGES`), and that `ChangesFn` has CRUD permissions. If absent, redeploy the `ChangesTable`

resource from `template.yaml` or correct the prefix for the dev stage. [F:services/finanzas-api/template.yaml†L214-L231](#) [F:services/finanzas-api/template.yaml†L1220-L1258](#)

### 3. Protect against duplicate ids

- Either ensure frontend never supplies id (current UI doesn't) or make the handler generate the id unconditionally when sk already exists, returning 409 on collision. This prevents silent retries from surfacing as 500s. [F:services/finanzas-api/src/handlers/changes.ts†L134-L168](#)

## 1.4 Test/validation plan

- Backend: `cd services/finanzas-api && npm test --runInBand`.
- Contract: `bash tests/finanzas/changes/run-changes-tests.sh` and `bash tests/finanzas`
- Frontend build sanity: `npm run build:finanzas`.
- UI: In `/finanzas/sdmt/cost/changes`, pick a known project (e.g., the first from `/projects`), load the page (expect no 500s), submit a new change with title/description/impact, and confirm it appears in the table and summary counts with status pending.