

**CVDex**

# **ERD**

Finanzas SD – Architecture, Flows & SOPs

Arquitectura, Flujos y Procedimientos

November 10, 2025

# 1 Entity Relationship Diagram / Diagrama de Relación de Entidades

## 1.1 EN: Data Model Overview

### 1.1.1 Core Entities

The Finanzas SD system uses the following core data entities stored in Amazon DynamoDB:

**1. Users** Stores user profiles and authentication information.

- **Primary Key:** userId (String)
- **Attributes:**
  - email - User email address
  - name - Full name
  - role - User role (SDM, PM, FIN, AUD)
  - department - Department assignment
  - cognitoSub - Cognito user identifier
  - createdAt - Timestamp
  - updatedAt - Timestamp
  - isActive - Boolean flag

**2. Projects** Project metadata and budget allocations.

- **Primary Key:** projectId (String)
- **Attributes:**
  - projectName - Project name
  - managerId - Project manager user ID
  - budgetAllocated - Total budget amount
  - budgetSpent - Spent amount
  - budgetRemaining - Remaining amount
  - status - Project status (active, completed, on-hold)
  - startDate - Project start date
  - endDate - Project end date
  - createdAt - Timestamp
  - updatedAt - Timestamp

**3. Prefacturas** Pre-factura (preliminary invoice) records.

- **Primary Key:** prefacturaId (String)
- **Sort Key:** createdAt (String)

- **Attributes:**

- projectId - Associated project
- submittedBy - User ID who submitted
- amount - Invoice amount
- description - Invoice description
- category - Expense category
- status - Status (draft, pending, approved, rejected)
- approvedBy - User ID who approved (if applicable)
- approvalDate - Approval timestamp
- rejectionReason - Reason for rejection (if applicable)
- attachments - S3 URLs for attachments
- createdAt - Timestamp
- updatedAt - Timestamp

#### 4. Budgets Budget allocation and tracking records.

- **Primary Key:** budgetId (String)

- **Attributes:**

- projectId - Associated project
- fiscalYear - Fiscal year
- quarter - Fiscal quarter (Q1, Q2, Q3, Q4)
- allocatedAmount - Allocated budget
- spentAmount - Amount spent
- remainingAmount - Remaining amount
- status - Budget status
- createdBy - User ID who created
- approvedBy - User ID who approved
- createdAt - Timestamp
- updatedAt - Timestamp

#### 5. Approvals Approval workflow state management.

- **Primary Key:** approvalId (String)

- **Attributes:**

- entityType - Type of entity (prefactura, budget)
- entityId - ID of the entity being approved
- requestedBy - User ID who requested approval
- assignedTo - User ID assigned to approve
- status - Approval status (pending, approved, rejected)

- comments - Approval comments
- decidedAt - Decision timestamp
- createdAt - Timestamp

## 6. Documents Document metadata for generated PDFs and CSVs.

- **Primary Key:** documentId (String)
- **Attributes:**

- documentType - Type (pdf, csv, excel)
- entityType - Related entity type
- entityId - Related entity ID
- fileName - Original file name
- s3Url - S3 storage URL
- sharepointUrl - SharePoint URL (if uploaded)
- generatedBy - User ID who generated
- size - File size in bytes
- createdAt - Timestamp

## 7. Audit Logs Comprehensive audit trail for compliance.

- **Primary Key:** logId (String)
- **Sort Key:** timestamp (String)
- **Attributes:**

- userId - User who performed action
- action - Action performed
- entityType - Entity affected
- entityId - Entity ID affected
- ipAddress - Client IP address
- userAgent - Client user agent
- changes - JSON of changes made
- timestamp - Action timestamp

## 8. Notifications System notifications for users.

- **Primary Key:** notificationId (String)
- **Attributes:**

- userId - Target user ID
- type - Notification type
- title - Notification title

- message - Notification message
- read - Read status (boolean)
- actionUrl - Link to related entity
- createdAt - Timestamp

## 9. Settings System configuration and user preferences.

- **Primary Key:** settingKey (String)
- **Attributes:**

- value - Setting value (JSON)
- description - Setting description
- scope - Scope (system, user)
- userId - User ID (if user-scoped)
- updatedBy - User who last updated
- updatedAt - Timestamp

### 1.1.2 Relationships

Users (1) — submits —> (N) Prefacturas

Users (1) — manages —> (N) Projects

Projects (1) — contains —> (N) Prefacturas

Projects (1) — has —> (N) Budgets

Prefacturas (1) — requires —> (1) Approvals

Budgets (1) — requires —> (1) Approvals

Prefacturas (1) — generates —> (N) Documents

Users (1) — receives —> (N) Notifications

Users (1) — performs —> (N) Audit Logs

### 1.1.3 Access Patterns

1. **Get user's prefacturas:** Query by submittedBy using GSI
2. **Get project's prefacturas:** Query by projectId using GSI
3. **Get pending approvals for user:** Query by assignedTo and status=pending using GSI
4. **Get user's notifications:** Query by userId and sort by createdAt
5. **Get audit logs for entity:** Query by entityId using GSI
6. **Get budget by project and fiscal period:** Query by projectId, fiscalYear, quarter

## 1.2 ES: Descripción General del Modelo de Datos

### 1.2.1 Entidades Principales

El sistema Finanzas SD utiliza las siguientes entidades de datos principales almacenadas en Amazon DynamoDB:

[La traducción completa sigue el mismo patrón que la sección EN con 9 tablas principales y sus relaciones]

### 1.2.2 Relaciones entre Entidades

Los usuarios envían pre-facturas para proyectos, los proyectos tienen presupuestos asignados, y todas las acciones se registran en el registro de auditoría para cumplimiento normativo.

ERD Diagram