

# Timesheet & Invoice Improvements

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## Overview

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This document describes the comprehensive improvements made to the timesheet and invoice system, implementing 5 major features requested by the user.

## Implemented Features

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### 1. Send to Agency - Automatic Invoice Creation

**Location:** `server/api/routers/timesheet.ts` - `sendToAgency` mutation

**What it does:**

- When “Send to Agency” is clicked, the system automatically creates a professional invoice for the agency linked to the contract
- The invoice appears in the agency’s invoice list with all necessary payment information
- Invoice includes:
  - All timesheet entries (hours worked)
  - Expense documents with proper references
  - Margin calculations
  - Professional formatting with summary

**Key Changes:**

- Enhanced `sendToAgency` mutation to include expense documents
- Proper calculation of base amount (hours × rate) + expenses
- Margin calculation applied correctly
- Professional invoice notes with detailed breakdown
- Line items include both work entries and expense references

### 2. Visual Participant Diagram in Timesheet

**Location:** `components/timesheets/TimesheetParticipantDiagram.tsx`

**What it does:**

- Displays a visual diagram showing the workflow participants
- Shows contractor (who sends) and agency (who receives) with an arrow between them
- Does NOT show detailed timesheet entries - only the participant flow
- Clean, professional design with avatars and role badges

**Features:**

- Contractor avatar with blue theme
- Agency avatar with purple theme
- Animated arrow showing “Sends Invoice” flow
- Company/user names and emails displayed
- Helpful description text

### 3. Document Management System for Timesheets

**Location:**

- `components/timesheets/TimesheetDocumentManager.tsx` (upload component)

- `prisma/schema.prisma` (new TimesheetDocument model)
- `server/api/routers/timesheet.ts` (new mutations)

#### What it does:

- Replaces the single “fakeurl” with a proper multi-document system
- Users can upload multiple expense documents (up to 10)
- Documents are displayed as “Expense File 1”, “Expense File 2”, “Expense File 3”, etc.
- Same system as contracts for consistency

#### Features:

- Upload multiple files (PDF, images, Word docs)
- Each file gets a sequential name: “Expense File N”
- View, download, and delete documents
- File size validation (10 MB max per file)
- S3 storage integration
- Documents linked to timesheet via foreign key

#### Database Schema:

```
model TimesheetDocument {
  id          String    @id @default(cuid())
  timesheetId String
  fileName    String
  fileUrl     String
  fileSize    Int
  mimeType    String?
  description String?
  category    String    @default("expense")
  uploadedAt  DateTime  @default(now())
  timesheet   Timesheet @relation(...)
}
```

#### API Endpoints:

- `uploadExpenseDocument` - Upload a new expense document
- `deleteExpenseDocument` - Remove an expense document
- `updateTotalExpenses` - Update the total expenses amount

## 4. Corrected totalAmount Calculation

**Location:** `server/api/routers/timesheet.ts` - `sendToAgency` mutation

#### What it does:

- Fixes the calculation to properly include expenses
- Formula: `totalAmount = (hours × hourly rate) + total expenses`

#### Calculation Flow:

1. Calculate base amount from hours worked:

- Hourly: `hours × rate`
- Daily: `days × rate`
- Monthly: `(days / 20) × rate`
- Fixed: `rate`

1. Add expenses:

- `subtotal = baseAmount + totalExpenses`

## 2. Apply margin (if configured):

- Fixed margin: `marginAmount = margin`
- Percentage margin: `marginAmount = subtotal × (margin / 100)`
- If paid by client: `total = subtotal + marginAmount`
- If paid by contractor: `total = subtotal - marginAmount`

## Database Changes:

- Added `totalExpenses` field to Timesheet model
- Properly tracked in invoice creation

## 5. Professional Invoice Formatting

**Location:** `server/api/routers/timesheet.ts` - `sendToAgency` mutation

### What it does:

- Creates a professionally formatted invoice with all necessary information
- Includes detailed breakdown in the notes section
- References all expense documents

### Invoice Structure:

#### Line Items:

##### 1. Work entries (one per day):

- Description: "Work on YYYY-MM-DD: [description]"
- Quantity: hours worked
- Unit price: hourly/daily rate
- Amount: calculated

##### 1. Expense entries (one per document):

- Description: "Expense File N: [description]"
- References the uploaded document

##### 2. Expense summary:

- Description: "Total Expenses (N documents)"
- Amount: total expenses

### Invoice Notes:

Generated from approved timesheet.

#### Summary:

- Total Hours: XX.XX
- Hourly/Daily Rate: XXX USD
- Subtotal (Hours): XXX USD
- Expenses: XXX USD (N documents)
- Base Amount: XXX USD
- Margin (X.XX%): XXX USD
- Total Amount: XXX USD

#### Agency: [Agency Name]

#### Expense Documents:

1. filename1.pdf
2. filename2.pdf
3. filename3.pdf

## Database Changes

### New Model: TimesheetDocument

```
model TimesheetDocument {
  id          String @id @default(cuid())
  timesheetId String
  fileName    String
  fileUrl     String
  fileSize    Int
  mimeType    String?
  description String?
  category    String @default("expense")
  uploadedAt  DateTime @default(now())
  timesheet   Timesheet @relation(...)
}
```

### Updated Model: Timesheet

```
model Timesheet {
  // ... existing fields ...
  totalExpenses Decimal? @db.Decimal(10, 2) @default(0) // NEW
  documents      TimesheetDocument[]                  // NEW
}
```

## Migration

Run the migration to apply database changes:

```
npx prisma migrate deploy
```

Migration file: `prisma/migrations/20251209111202_add_timesheet_documents/migration.sql`

## New Files Created

#### 1. Components:

- `components/timesheets/TimesheetParticipantDiagram.tsx` - Visual workflow diagram
- `components/timesheets/TimesheetDocumentManager.tsx` - Document upload/management

#### 2. Database:

- `prisma/migrations/20251209111202_add_timesheet_documents/migration.sql` - Migration

#### 3. Documentation:

- `TIMESHEET_INVOICE_IMPROVEMENTS.md` - This file

## Modified Files

#### 1. Backend:

- `server/api/routers/timesheet.ts` - Enhanced `sendToAgency`, added document endpoints
- `prisma/schema.prisma` - Added `TimesheetDocument` model, `totalExpenses` field

## 2. Frontend:

- `app/(dashboard)/(modules)/timesheets/[id]/page.tsx` - Added diagram, improved file display

## Testing Checklist

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- ☐ Create a timesheet with multiple expense documents
- ☐ Verify documents show as “Expense File 1”, “Expense File 2”, etc.
- ☐ Submit and approve timesheet
- ☐ Click “Send to Agency”
- ☐ Verify invoice is created with:
  - ☐ All work entries
  - ☐ All expense documents referenced
  - ☐ Correct total calculation (hours + expenses)
  - ☐ Margin applied correctly
  - ☐ Professional formatting in notes
- ☐ Verify invoice appears in agency’s invoice list
- ☐ Check participant diagram displays correctly
- ☐ Test document upload/delete functionality

## UI/UX Improvements

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### 1. Participant Diagram:

- Clean visual representation
- Color-coded roles (blue for contractor, purple for agency)
- Animated arrow for flow indication
- Helpful description text

### 2. Document Display:

- Sequential naming (Expense File 1, 2, 3...)
- File size and name shown
- View and download buttons
- Clean card-based layout

### 3. Invoice Format:

- Professional structure
- Clear breakdown of charges
- Emoji icons for visual clarity
- All relevant information included

## Future Enhancements

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Potential improvements for future iterations:

### 1. Document Categories:

- Allow categorizing expenses (travel, meals, equipment, etc.)
- Filter/group by category in invoice

### 2. Expense Amounts:

- Add individual expense amounts per document
- Automatic calculation of totalExpenses from documents

**3. Invoice Templates:**

- Customizable invoice templates
- PDF generation with company branding

**4. Approval Workflow:**

- Multi-level approval for high-value invoices
- Automatic notifications to agency

**5. Document Preview:**

- In-app document preview (PDF viewer)
- Thumbnail generation for images

## Support

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For questions or issues related to these improvements, please contact the development team or refer to the main project documentation.

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**Last Updated:** December 9, 2025

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**Author:** AI Development Team