Customizable Safety Event Forms — Prototype to Production Spec

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1. Overview & Vision

The goal of this project is to modernize the **Safety Event reporting experience** in UpKeep EHS by introducing a **fully customizable, AI-assisted Safety Event Form system.**
This feature will enable customers to design their own safety event templates, collect unique data fields, and leverage AI voice/text input to automate form completion.

The **prototype** will be built and demonstrated in **Cursor**, showcasing all key UX, field logic, and AI behavior.
The **engineering team** will then rebuild and integrate it directly into the **EHS web app**, using the Cursor prototype as both a **functional reference** and a **living specification**.

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2. System Overview

The new Customizable Safety Event Forms feature consists of two main layers:
the Cursor prototype for demonstrating UX and logic, and the EHS production implementation where it will be fully integrated into UpKeep's platform.

Layer	Purpose	Built In
Prototype Layer	Demonstrates UI, dynamic form behavior, and AI mapping	Cursor
Production Layer	Integrated into EHS web app (React, UpKeep stack)	EHS
Shared Schema Layer	JSON schema structure defining templates, logic, and field metadata	Both
AI Assist Layer	Voice transcription + field extraction	Shared Module

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3. Core Experience

The customizable form system includes the following core components:

- **Template Builder (Admin-only):** Create and edit templates using drag-and-drop fields, set required/static rules, and preview designs.
- **Dynamic Form Renderer:** Renders templates dynamically, applies validation and conditional logic.
- **AI Assist:** Voice or text description populates form fields intelligently with confidence scoring.
- **QR Integration:** Pre-fill forms based on location or event context.
- **View Structure:** Standardized layout for required and custom data fields.

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4. Template Schema

Templates are defined via **JSON schema** containing field definitions, logic rules, validation settings, and metadata.
Engineering will use this schema as the canonical definition for EHS storage and rendering.

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5. Field Catalog

The following field types will be supported in both prototype and production.
Admins can set each field as required, optional, or static.

Basic Fields

- Text (single/multi-line)
- Number
- Date & Time picker
- Dropdown
- Checkbox / Radio

- Multi-select
- File upload
- Signature (typed e-signature)

People Fields

- Injured Person
- Witnesses (repeatable)
- Supervisor / Manager
- Medical Attention Required
- Lost Time Injury
- Return-to-Work Date
- Team Members to Notify

Safety-Specific Fields

- Severity
- Hazard Category
- PPE Used
- Body Part Affected
- Injury Type
- Weather / Lighting
- Shift
- Root Cause
- Immediate Actions

- Environmental Impact

Compliance Fields

- Regulatory Agency
- Claim # / Reference #
- Insurance Details
- Lawyer Contact
- License / Permit Numbers

Media & Visual Fields

- Photo/Video Upload
- Annotated Image (body or site diagram)
- Sketch Pad
- GPS Pin
- Before/After Photos

Process & Feedback Fields

- Status
- Priority
- Review Deadline
- Assigned Reviewer
- Linked CAPA / Audit
- Supervisor Review Notes

- Employee Feedback
- Management Sign-off

AI & Smart Fields

- AI Summary
- AI Suggested CAPAs
- AI OSHA Flag
- AI Confidence Indicators

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6. AI Assist Behavior

AI Assist enables voice or text-to-form population by mapping user input to field types within the active template.
It extracts entities, fills fields, and assigns confidence levels.
Required fields must be manually confirmed before submission.

AI may **suggest Severity and Hazard classifications**, and will only allow submission once all required fields are completed (no “Unknown” values for required fields).

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7. Prebuilt Templates

Seed templates to help admins get started:

- General Safety Event
- Near Miss
- Injury Report
- Environmental Spill
- Customer Incident

Each can be cloned and customized in the Template Builder.

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8. Output Payload Spec

The Cursor prototype and EHS production system will exchange **JSON payloads** representing completed form submissions.
Each payload contains the template version, field values, attachments, and AI confidence map.

Example payload:

```
{
  "templateVersionId": "v3.0",
  "fields": {
    "title": "Employee slipped on wet floor",
    "dateTime": "2025-11-07T13:47:00Z",
    "severity": "High",
    "hazardCategory": "Slip/Trip/Fall",
    "location": "Cafeteria",
    "description": "Employee slipped due to water leak from fridge"
  },
  "aiConfidenceMap": {
    "severity": 0.88,
    "hazardCategory": 0.95
  },
  "attachments": [
    { "type": "photo", "url": "..." }
  ]
}
```

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9. View Page Reference

The EHS production app should display submitted safety events in a consistent layout:

Header (fixed): Title, Type, Date & Time, Location, Severity, OSHA Flag, Status
Body: Custom sections from template → Media Gallery → Signatures → Linked CAPAs → Audit Trail → Comments
Export: PDF export includes template name, version, timestamp, and signature block.

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10. Analytics

Initial KPIs for v1:

- Form completion time (median)
- AI Assist usage rate (%)
- Average validation errors per submission
- Field completion % per field
- Incident distribution by Location / Severity / Type
- Template usage breakdown

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11. Out of Scope for Prototype

The Cursor prototype will **not implement**:

- Team notifications
- CAPA linkage
- OSHA reporting
- Commenting system
- Permissions or role management

These will be handled in the **EHS production environment**.

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12. Roadmap

Planned for future phases (v1.1+):

- Offline mode
- Repeatable field groups
- Calculated fields
- OSHA mapping wizard
- PII tagging
- Multilingual templates

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13. Deliverables for Handoff

When the Cursor prototype is complete, the following will be delivered to engineering:

- Live Cursor prototype (form builder + renderer + AI assist demo)
- Template JSON schemas
- AI prompt templates
- UI reference and behavior documentation
- Example payloads
- Conditional logic documentation

End of Document
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