<https://gemini.google.com/u/1/app/bf28f389cd093e55?is_sa=1&android-min-version=301356232&ios-min-version=322.0&campaign_id=bkws&utm_source=google&utm_medium=cpc&utm_campaign=2024enUS_gemfeb&pt=9008&mt=8&ct=p-growth-sem-bkws>

<https://gemini.google.com/u/1/app/0e3ccfac5f6b71bb>

### Updated Production-Ready Specification: `public.event\_date\_certainty\_levels\_master`

Version: 1.1 (Based on original 1.0 with V2.1 Checklist & i18n correction Applied)

Date: May 18, 2025

#### 1\. Purpose & Primary Use-Cases

The `event\_date\_certainty\_levels\_master` table defines the different levels of confidence or certainty regarding the dates of future occurrences of recurring events, especially when official announcements are pending. Its purpose is to transparently communicate to pilgrims how reliable the projected event dates are, helping them manage expectations and plan accordingly.

#### 2\. Schema

| column | data\_type | constraints | description |

| `id` | `INTEGER` | `Primary Key, Generated always as identity` | Unique identifier for the event date certainty level. |

| `code` | `TEXT` | `Unique, Not Null, CHECK (length(code) > 0 AND length(code) <= 50 AND code ~ '^[a-z0-9\_]+$')` | Short, stable, machine-readable code (e.g., 'confirmed\_specific', 'pattern\_estimate'). Snake\_case. |

| `default\_name` | `TEXT` | `Not Null, CHECK (length(default\_name) > 0 AND length(default\_name) <= 100)` | Human-readable name in the primary reference language. (Translatable via `public.translations`) |

| `default\_description` | `TEXT` | `Nullable` | Optional description in the primary reference language providing more context. (Translatable via `public.translations`) |

| `default\_advice` | `TEXT` | `Nullable` | Optional specific advice for pilgrims in the primary reference language. (Translatable via `public.translations`) |

| `sort\_order` | `INTEGER` | `Not Null, Default 0` | Determines the display order in UI lists or filters. |

| `is\_active` | `BOOLEAN` | `Not Null, Default true` | If true, this certainty level is active and can be used. |

| `created\_at` | `TIMESTAMPTZ` | `Not Null, Default now()` | Timestamp of record creation. |

| `updated\_at` | `TIMESTAMPTZ` | `Not Null, Default now()` | Timestamp of last update (auto-updated by trigger). |

| `created\_by\_profile\_id` | `UUID` | `Nullable, Foreign Key to public.profiles(id) ON DELETE SET NULL` | Profile ID of the user who created this record. |

| `updated\_by\_profile\_id` | `UUID` | `Nullable, Foreign Key to public.profiles(id) ON DELETE SET NULL` | Profile ID of the user who last updated this record. |

#### 3\. PostgreSQL DDL

SQL

```

CREATE TABLE public.event\_date\_certainty\_levels\_master (

id INTEGER GENERATED ALWAYS AS IDENTITY PRIMARY KEY,

code TEXT UNIQUE NOT NULL CHECK (length(code) > 0 AND length(code) <= 50 AND code ~ '^[a-z0-9\_]+$'),

default\_name TEXT NOT NULL CHECK (length(default\_name) > 0 AND length(default\_name) <= 100),

default\_description TEXT NULL,

default\_advice TEXT NULL,

sort\_order INTEGER NOT NULL DEFAULT 0,

is\_active BOOLEAN NOT NULL DEFAULT true,

created\_at TIMESTAMPTZ NOT NULL DEFAULT now(),

updated\_at TIMESTAMPTZ NOT NULL DEFAULT now(),

created\_by\_profile\_id UUID NULL REFERENCES public.profiles(id) ON DELETE SET NULL,

updated\_by\_profile\_id UUID NULL REFERENCES public.profiles(id) ON DELETE SET NULL

);

COMMENT ON TABLE public.event\_date\_certainty\_levels\_master IS 'Master list of certainty levels for estimated future event dates. Replaces event\_date\_certainty\_enum. Version 1.1';

COMMENT ON COLUMN public.event\_date\_certainty\_levels\_master.id IS 'Unique identifier for the event date certainty level. Primary Key.';

COMMENT ON COLUMN public.event\_date\_certainty\_levels\_master.code IS 'Short, stable, machine-readable code (snake\_case). Max 50 chars. Must be unique.';

COMMENT ON COLUMN public.event\_date\_certainty\_levels\_master.default\_name IS 'Human-readable name in the primary reference language. (Translatable via public.translations). Max 100 chars.';

COMMENT ON COLUMN public.event\_date\_certainty\_levels\_master.default\_description IS 'Optional description in the primary reference language of the certainty level. (Translatable via public.translations).';

COMMENT ON COLUMN public.event\_date\_certainty\_levels\_master.default\_advice IS 'Optional advice for pilgrims in the primary reference language related to this certainty level. (Translatable via public.translations).';

COMMENT ON COLUMN public.event\_date\_certainty\_levels\_master.sort\_order IS 'Determines the display order, e.g., most certain to least certain.';

COMMENT ON COLUMN public.event\_date\_certainty\_levels\_master.is\_active IS 'If true, this certainty level is active and can be used.';

COMMENT ON COLUMN public.event\_date\_certainty\_levels\_master.created\_at IS 'Timestamp of record creation.';

COMMENT ON COLUMN public.event\_date\_certainty\_levels\_master.updated\_at IS 'Timestamp of last update (auto-updated by trigger).';

COMMENT ON COLUMN public.event\_date\_certainty\_levels\_master.created\_by\_profile\_id IS 'Profile ID of the user who created this record. FK to public.profiles(id).';

COMMENT ON COLUMN public.event\_date\_certainty\_levels\_master.updated\_by\_profile\_id IS 'Profile ID of the user who last updated this record. FK to public.profiles(id).';

-- Indexes

CREATE INDEX ix\_event\_date\_certainty\_levels\_master\_active\_sort ON public.event\_date\_certainty\_levels\_master (is\_active, sort\_order);

CREATE INDEX ix\_event\_date\_certainty\_levels\_master\_created\_by ON public.event\_date\_certainty\_levels\_master (created\_by\_profile\_id) WHERE created\_by\_profile\_id IS NOT NULL;

CREATE INDEX ix\_event\_date\_certainty\_levels\_master\_updated\_by ON public.event\_date\_certainty\_levels\_master (updated\_by\_profile\_id) WHERE updated\_by\_profile\_id IS NOT NULL;

```

#### 4\. Triggers/Functions

SQL

```

-- Standard updated\_at trigger

CREATE TRIGGER handle\_event\_date\_certainty\_levels\_master\_updated\_at

BEFORE UPDATE ON public.event\_date\_certainty\_levels\_master

FOR EACH ROW

EXECUTE FUNCTION extensions.moddatetime('updated\_at'); -- Or public.set\_current\_timestamp\_updated\_at()

COMMENT ON TRIGGER handle\_event\_date\_certainty\_levels\_master\_updated\_at ON public.event\_date\_certainty\_levels\_master IS 'Trigger to automatically update updated\_at timestamp on row modification.';

-- Orphaned translation cleanup trigger

CREATE OR REPLACE FUNCTION public.cleanup\_event\_date\_certainty\_levels\_master\_translations()

RETURNS TRIGGER AS $$

BEGIN

DELETE FROM public.translations

WHERE table\_identifier = 'event\_date\_certainty\_levels\_master'

AND column\_identifier IN ('default\_name', 'default\_description', 'default\_advice') -- Specify translatable columns

AND row\_foreign\_key = OLD.id::TEXT;

RETURN OLD;

END;

$$ LANGUAGE plpgsql SECURITY DEFINER;

COMMENT ON FUNCTION public.cleanup\_event\_date\_certainty\_levels\_master\_translations() IS 'Cleans up orphaned translations from public.translations when an event\_date\_certainty\_levels\_master record is deleted. Runs as SECURITY DEFINER.';

CREATE TRIGGER trigger\_cleanup\_event\_date\_certainty\_levels\_master\_translations

AFTER DELETE ON public.event\_date\_certainty\_levels\_master

FOR EACH ROW

EXECUTE FUNCTION public.cleanup\_event\_date\_certainty\_levels\_master\_translations();

COMMENT ON TRIGGER trigger\_cleanup\_event\_date\_certainty\_levels\_master\_translations ON public.event\_date\_certainty\_levels\_master IS 'After deleting a date certainty level, remove its associated translations from the public.translations table.';

```

\*(Assumption: `extensions.moddatetime` is available or `public.set\_current\_timestamp\_updated\_at()` is defined, and `public.translations` table exists).\*

#### 5\. JSON Schema Mirror

JSON

```

{

"title": "event\_date\_certainty\_level\_master",

"description": "Master list of certainty levels for estimated future event dates. Replaces event\_date\_certainty\_enum. Version 1.1.",

"type": "object",

"properties": {

"id": {

"type": "integer",

"description": "Unique identifier. Primary Key.",

"readOnly": true

},

"code": {

"type": "string",

"description": "Short, stable, machine-readable code (snake\_case). Max 50 chars. Must be unique.",

"pattern": "^[a-z0-9\_]+$",

"maxLength": 50

},

"default\_name": {

"type": "string",

"description": "Human-readable name in the primary reference language. (Translatable via public.translations). Max 100 chars.",

"maxLength": 100

},

"default\_description": {

"type": ["string", "null"],

"description": "Optional description in the primary reference language of the certainty level. (Translatable via public.translations)."

},

"default\_advice": {

"type": ["string", "null"],

"description": "Optional advice for pilgrims in the primary reference language related to this certainty level. (Translatable via public.translations)."

},

"sort\_order": {

"type": "integer",

"default": 0,

"description": "Determines the display order, e.g., most certain to least certain."

},

"is\_active": {

"type": "boolean",

"default": true,

"description": "If true, this certainty level is active and can be used."

},

"created\_at": {

"type": "string",

"format": "date-time",

"description": "Timestamp of record creation.",

"readOnly": true

},

"updated\_at": {

"type": "string",

"format": "date-time",

"description": "Timestamp of last update (auto-updated by trigger).",

"readOnly": true

},

"created\_by\_profile\_id": {

"type": ["string", "null"],

"format": "uuid",

"description": "Profile ID of the user who created this record. FK to public.profiles(id)."

},

"updated\_by\_profile\_id": {

"type": ["string", "null"],

"format": "uuid",

"description": "Profile ID of the user who last updated this record. FK to public.profiles(id)."

}

},

"required": [

"code",

"default\_name",

"sort\_order",

"is\_active"

],

"primary\_key": ["id"],

"unique\_constraints": [

{"columns": ["code"], "name": "event\_date\_certainty\_levels\_master\_code\_key"}

],

"foreign\_keys": [

{"columns": ["created\_by\_profile\_id"], "references\_table": "public.profiles", "references\_columns": ["id"], "on\_delete": "SET NULL"},

{"columns": ["updated\_by\_profile\_id"], "references\_table": "public.profiles", "references\_columns": ["id"], "on\_delete": "SET NULL"}

]

}

```

#### 6\. Relationships & Integrity

- Primary Key: `id` (INTEGER)

- Unique Constraint: `code` must be unique.

- Foreign Key References FROM other tables:

- `events\_details.future\_date\_estimation\_level\_id` will reference `event\_date\_certainty\_levels\_master.id`. Recommend `ON DELETE RESTRICT`.

- Array Foreign Key: None.

#### 7\. Multilingual Strategy

- `default\_name`: Name in the primary reference language. (Translatable via `public.translations`)

- `default\_description`: Description in the primary reference language. (Translatable via `public.translations`)

- `default\_advice`: Advice text in the primary reference language. (Translatable via `public.translations`)

- An `AFTER DELETE` trigger (`trigger\_cleanup\_event\_date\_certainty\_levels\_master\_translations`) ensures orphaned translations are removed.

#### 8\. Role-Based Workflow & RLS Notes

- Key Fields: `is\_active`.

- RLS Policies:

- 🟢 Allow public read access to active certainty levels.

SQL

```

CREATE POLICY "Allow public read access to active event date certainty levels"

ON public.event\_date\_certainty\_levels\_master FOR SELECT

USING (is\_active = true);

```

- 🟢 Allow platform admins to manage certainty levels.

SQL

```

CREATE POLICY "Allow platform admins to manage event date certainty levels"

ON public.event\_date\_certainty\_levels\_master FOR ALL

USING (

auth.role() = 'authenticated' AND

(SELECT public.has\_role\_on\_profile(auth.uid(), 'admin\_platform') OR public.has\_role\_on\_profile(auth.uid(), 'admin\_super'))

)

WITH CHECK (

auth.role() = 'authenticated' AND

(SELECT public.has\_role\_on\_profile(auth.uid(), 'admin\_platform') OR public.has\_role\_on\_profile(auth.uid(), 'admin\_super'))

);

```

- 🟠 `ON DELETE RESTRICT` from `events\_details` (when defined) is preferred.

#### 9\. ENUM vs Lookup Discussion

- 🟢 Decision: This table `event\_date\_certainty\_levels\_master` \*is\* the result of promoting the original `event\_date\_certainty\_enum`.

- Reason: Crucial for managing user expectations. A lookup table allows for clear, translatable names, detailed descriptions, specific advice, and a defined sort order.

#### 10\. UI/UX Enablement

- `default\_name` (translated): For displaying the certainty level.

- `default\_description` (translated): Can be used for tooltips.

- `default\_advice` (translated): Can be displayed prominently to guide user actions.

- `sort\_order`: To list certainty levels logically.

- `is\_active`: Filters values for admin UIs.

- UI Styling: Application could use these levels to visually style event date displays (e.g., different colors, warning icons).

#### 11\. Auditing & Lifecycle Management

- Audit Columns: `created\_at`, `updated\_at`, `created\_by\_profile\_id`, `updated\_by\_profile\_id`.

- Lifecycle: `is\_active` flag.

#### 12\. Scalability & Future-Proofing

- Manageable List: The number of certainty levels will be small and stable.

- Flexibility: Easy to refine descriptions or advice.

#### 13\. Seed Data (V1.1)

| code | default\_name | sort\_order | default\_description | default\_advice | is\_active | created\_by\_profile\_id | updated\_by\_profile\_id |

| 'confirmed\_specific\_dates' | 'Confirmed Specific Dates' | 10 | 'Exact future dates are officially announced and entered.' | 'Dates are confirmed. Plan with confidence.' | true | `[ADMIN\_UUID]` | `[ADMIN\_UUID]` |

| 'pattern\_based\_highly\_probable' | 'Pattern-Based - Highly Probable' | 20 | 'Event follows a very fixed pattern (e.g., "Every December 25th") and is almost certain to occur on calculated dates.' | 'Very likely to occur as estimated. Minor risk of change.' | true | `[ADMIN\_UUID]` | `[ADMIN\_UUID]` |

| 'pattern\_based\_estimate' | 'Pattern-Based - Estimate' | 30 | 'Event follows a general pattern (e.g., "Third week of July"). Dates are estimated based on this pattern.' | 'Good estimate, but check official sources closer to the time for confirmation.' | true | `[ADMIN\_UUID]` | `[ADMIN\_UUID]` |

| 'historical\_pattern\_unconfirmed\_for\_next' | 'Historical Pattern - Unconfirmed for Next' | 40 | 'Dates are estimated based on past occurrences, but the next event has not yet been officially announced or confirmed.' | 'Higher chance of variation. Verify with organizers before making firm plans.' | true | `[ADMIN\_UUID]` | `[ADMIN\_UUID]` |

| 'variable\_check\_locally' | 'Variable - Check Locally/Official Site' | 50 | 'Event dates are announced late, can be highly variable, or require local confirmation. Pattern is unreliable.' | 'Do not rely on estimated dates. Check official website or local sources frequently.' | true | `[ADMIN\_UUID]` | `[ADMIN\_UUID]` |

\*(Note: `[ADMIN\_UUID]` is a placeholder for an actual admin/system user profile ID used for seeding.)\*

#### 14\. Next-Action Checklist

- 🔴 Create Table: Execute DDL for `public.event\_date\_certainty\_levels\_master`.

- 🔴 Create Indexes: Execute DDL for new indexes.

- 🔴 Implement `updated\_at` Trigger.

- 🔴 Implement Orphan Translation Cleanup Trigger (after `public.translations` and function exist).

- 🔴 RLS Policies: Review and apply. Ensure helper functions are available.

- 🔴 Seed Data: Insert initial V1.1 data.

- 🟢 Population Logic: Define application layer logic for audit FKs.

- 🟢 Review ON DELETE for FK from `events\_details` (recommend `ON DELETE RESTRICT`).

- 🟢 UI/UX Design: Plan how these certainty levels, descriptions, and advice will be presented.