<https://gemini.google.com/u/1/app/5b5f3092ace62463>

Production-Ready Specification: public.media\_roles\_master Table

Version: 1.0 (Checklist REV 05-18-25-A Applied)

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1\. Purpose & Primary Use-Cases

Mission Statement: To define and manage a controlled vocabulary of roles or contexts for media items when they are linked to other entities (e.g., an image used as a 'gallery\_image' in an article, an 'avatar' for a profile, or a 'featured\_image' for a trail). This table provides semantic meaning to media links, enabling consistent handling and display across the platform. It forms part of Module 8 (Platform Content).

2\. Schema

| Column | Data Type | Constraints | Description |

| `role\_code` | `TEXT` | `PRIMARY KEY, NOT NULL, CHECK (role\_code = lower(role\_code) AND role\_code ~ '^[a-z0-9\_]+$' AND char\_length(role\_code) > 0 AND char\_length(role\_code) <= 50)` | 🟠 PK. Short, unique, machine-readable, lowercase code (e.g., `gallery\_image`, `profile\_avatar`). Max 50 chars. |

| `default\_display\_name` | `TEXT` | `NOT NULL, CHECK (char\_length(default\_display\_name) > 0 AND char\_length(default\_display\_name) <= 100)` | Human-readable name in the primary reference language (e.g., "Gallery Image"). Max 100 chars. (Translatable via `public.translations`) |

| `default\_description` | `TEXT` | `NULLABLE, CHECK (default\_description IS NULL OR char\_length(default\_description) <= 255)` | Detailed description of the role in the primary reference language. Max 255 chars. (Translatable via `public.translations`) |

| `icon\_identifier` | `TEXT` | `NULLABLE, CHECK (icon\_identifier IS NULL OR char\_length(icon\_identifier) <= 50)` | Optional identifier for a UI icon representing the role (e.g., a Material Design Icon name). Max 50 chars. |

| `is\_active` | `BOOLEAN` | `NOT NULL, DEFAULT true` | If true, this media role is active and can be assigned in linking tables. |

| `created\_at` | `TIMESTAMPTZ` | `NOT NULL, DEFAULT now()` | Timestamp of role definition creation. |

| `updated\_at` | `TIMESTAMPTZ` | `NOT NULL, DEFAULT now()` | Timestamp of last role definition update (auto-updated by trigger). |

| `created\_by\_profile\_id` | `UUID` | `NULLABLE, REFERENCES public.profiles(id) ON DELETE SET NULL ON UPDATE NO ACTION` | Profile ID of the user who initially created this role. |

| `updated\_by\_profile\_id` | `UUID` | `NULLABLE, REFERENCES public.profiles(id) ON DELETE SET NULL ON UPDATE NO ACTION` | Profile ID of the user who last updated this role. |

3\. PostgreSQL DDL

SQL

```

CREATE TABLE public.media\_roles\_master (

role\_code TEXT NOT NULL PRIMARY KEY,

default\_display\_name TEXT NOT NULL,

default\_description TEXT NULL,

icon\_identifier TEXT NULL,

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 ON UPDATE NO ACTION,

updated\_by\_profile\_id UUID NULL REFERENCES public.profiles(id) ON DELETE SET NULL ON UPDATE NO ACTION,

CONSTRAINT check\_media\_role\_code\_format CHECK (role\_code = lower(role\_code) AND role\_code ~ '^[a-z0-9\_]+$' AND char\_length(role\_code) > 0 AND char\_length(role\_code) <= 50),

CONSTRAINT check\_media\_role\_default\_display\_name\_length CHECK (char\_length(default\_display\_name) > 0 AND char\_length(default\_display\_name) <= 100),

CONSTRAINT check\_media\_role\_default\_description\_length CHECK (default\_description IS NULL OR char\_length(default\_description) <= 255),

CONSTRAINT check\_media\_role\_icon\_identifier\_length CHECK (icon\_identifier IS NULL OR char\_length(icon\_identifier) <= 50)

);

-- Indexes

CREATE INDEX idx\_media\_roles\_master\_is\_active ON public.media\_roles\_master (is\_active);

CREATE INDEX idx\_media\_roles\_master\_created\_by\_profile\_id ON public.media\_roles\_master (created\_by\_profile\_id) WHERE created\_by\_profile\_id IS NOT NULL;

CREATE INDEX idx\_media\_roles\_master\_updated\_by\_profile\_id ON public.media\_roles\_master (updated\_by\_profile\_id) WHERE updated\_by\_profile\_id IS NOT NULL;

-- Comments

COMMENT ON TABLE public.media\_roles\_master IS 'Defines a controlled vocabulary of roles for media items when linked to other entities (e.g., gallery\_image for an article). Module 8. Version 1.0.';

COMMENT ON COLUMN public.media\_roles\_master.role\_code IS 'PK. Machine-readable code (e.g., gallery\_image, profile\_avatar). Lowercase, snake\_case, >0 and <=50 chars.';

COMMENT ON COLUMN public.media\_roles\_master.default\_display\_name IS 'Default human-readable name in the primary reference language (e.g., "Gallery Image"). >0 and <=100 chars. (Translatable via public.translations)';

COMMENT ON COLUMN public.media\_roles\_master.default\_description IS 'Default detailed description of the role in the primary reference language. Max 255 chars. (Translatable via public.translations)';

COMMENT ON COLUMN public.media\_roles\_master.icon\_identifier IS 'Optional identifier for a UI icon representing the role (e.g., a Material Design Icon name). Max 50 chars.';

COMMENT ON COLUMN public.media\_roles\_master.is\_active IS 'If true, this media role is active and can be assigned in linking tables. Default is true.';

COMMENT ON COLUMN public.media\_roles\_master.created\_at IS 'Timestamp of role definition creation.';

COMMENT ON COLUMN public.media\_roles\_master.updated\_at IS 'Timestamp of last role definition update (auto-updated by trigger).';

COMMENT ON COLUMN public.media\_roles\_master.created\_by\_profile\_id IS 'Profile ID of the user who initially created this role. FK to profiles.id. ON DELETE SET NULL, ON UPDATE NO ACTION.';

COMMENT ON COLUMN public.media\_roles\_master.updated\_by\_profile\_id IS 'Profile ID of the user who last updated this role. FK to profiles.id. ON DELETE SET NULL, ON UPDATE NO ACTION.';

```

4\. Triggers/Functions

SQL

```

-- Trigger for general updated\_at timestamp

CREATE TRIGGER handle\_media\_roles\_master\_updated\_at

BEFORE UPDATE ON public.media\_roles\_master

FOR EACH ROW

EXECUTE FUNCTION extensions.moddatetime('updated\_at');

COMMENT ON TRIGGER handle\_media\_roles\_master\_updated\_at ON public.media\_roles\_master IS 'Automatically updates the updated\_at timestamp whenever a row is modified.';

-- Trigger function to clean up related translations on delete

CREATE OR REPLACE FUNCTION public.cleanup\_media\_roles\_master\_translations()

RETURNS TRIGGER AS $$

BEGIN

IF TG\_OP = 'DELETE' THEN

DELETE FROM public.translations

WHERE table\_identifier = 'media\_roles\_master'

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

AND row\_foreign\_key = OLD.role\_code;

END IF;

RETURN OLD;

END;

$$ LANGUAGE plpgsql SECURITY DEFINER;

COMMENT ON FUNCTION public.cleanup\_media\_roles\_master\_translations() IS 'Removes related entries from public.translations for default\_display\_name and default\_description when a media\_roles\_master entry is deleted. Runs as SECURITY DEFINER. Ensure search\_path is secure.';

-- Apply the cleanup trigger for translations

CREATE TRIGGER trigger\_cleanup\_media\_roles\_master\_translations\_after\_delete

AFTER DELETE ON public.media\_roles\_master

FOR EACH ROW

EXECUTE FUNCTION public.cleanup\_media\_roles\_master\_translations();

COMMENT ON TRIGGER trigger\_cleanup\_media\_roles\_master\_translations\_after\_delete ON public.media\_roles\_master IS 'After a media role is deleted, removes its associated translations from the public.translations table.';

```

5\. JSON Schema Mirror

JSON

```

{

"title": "media\_role\_master",

"description": "Defines a controlled vocabulary of roles for media items (e.g., gallery\_image for an article). Module 8. Version 1.0.",

"type": "object",

"properties": {

"role\_code": {

"type": "string",

"description": "PK. Machine-readable code (e.g., gallery\_image, profile\_avatar). Lowercase, snake\_case, >0 and <=50 chars.",

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

"minLength": 1,

"maxLength": 50

},

"default\_display\_name": {

"type": "string",

"description": "Default human-readable name in the primary reference language (e.g., \"Gallery Image\"). >0 and <=100 chars. (Translatable via public.translations)",

"minLength": 1,

"maxLength": 100

},

"default\_description": {

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

"description": "Default detailed description of the role in the primary reference language. Max 255 chars. (Translatable via public.translations)",

"maxLength": 255

},

"icon\_identifier": {

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

"description": "Optional identifier for a UI icon representing the role (e.g., a Material Design Icon name). Max 50 chars.",

"maxLength": 50

},

"is\_active": {

"type": "boolean",

"default": true,

"description": "If true, this media role is active and can be assigned in linking tables."

},

"created\_at": {

"type": "string",

"format": "date-time",

"description": "Timestamp of role definition creation.",

"readOnly": true

},

"updated\_at": {

"type": "string",

"format": "date-time",

"description": "Timestamp of last role definition update.",

"readOnly": true

},

"created\_by\_profile\_id": {

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

"format": "uuid",

"description": "Profile ID of the user who initially created this role. FK to public.profiles."

},

"updated\_by\_profile\_id": {

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

"format": "uuid",

"description": "Profile ID of the user who last updated this role. FK to public.profiles."

}

},

"required": [

"role\_code",

"default\_display\_name",

"is\_active"

],

"primary\_key": ["role\_code"],

"foreign\_keys": [

{"columns": ["created\_by\_profile\_id"], "references\_table": "public.profiles", "references\_columns": ["id"], "on\_delete": "SET NULL", "on\_update": "NO ACTION"},

{"columns": ["updated\_by\_profile\_id"], "references\_table": "public.profiles", "references\_columns": ["id"], "on\_delete": "SET NULL", "on\_update": "NO ACTION"}

]

}

```

6\. Relationships & Integrity

- Primary Key: `role\_code` (TEXT).

- Foreign Keys:

- `created\_by\_profile\_id` references `public.profiles(id) ON DELETE SET NULL ON UPDATE NO ACTION`.

- `updated\_by\_profile\_id` references `public.profiles(id) ON DELETE SET NULL ON UPDATE NO ACTION`.

- Referenced By: This table will be referenced by various `[entity]\_media` linking tables (e.g., `public.article\_media.media\_role\_code`). `ON DELETE RESTRICT` should be considered for these incoming FKs to prevent deletion of a role if it's in use.

- Mermaid ER Snippet:

Code snippet

```

erDiagram

profiles ||--o{ media\_roles\_master : "audit\_created\_by"

profiles ||--o{ media\_roles\_master : "audit\_updated\_by"

article\_media }o--|| media\_roles\_master : "uses\_role"

media\_roles\_master {

TEXT role\_code PK

TEXT default\_display\_name "Translatable"

TEXT default\_description "Translatable"

TEXT icon\_identifier

BOOLEAN is\_active

UUID created\_by\_profile\_id FK

UUID updated\_by\_profile\_id FK

TIMESTAMPTZ created\_at

TIMESTAMPTZ updated\_at

}

```

7\. Multilingual Strategy

- Translatable Fields: `default\_display\_name` and `default\_description` store their primary reference language text (English) directly.

- Translated versions are stored in `public.translations` linked by `table\_identifier = 'media\_roles\_master'`, `column\_identifier` (e.g., 'default\_display\_name'), and `row\_foreign\_key = media\_roles\_master.role\_code`.

- An `AFTER DELETE` trigger (`trigger\_cleanup\_media\_roles\_master\_translations\_after\_delete`) ensures orphaned translations are removed.

8\. Role-Based Workflow & RLS Notes

- Key Fields: `is\_active`.

- RLS Policies:

- Enable RLS: `ALTER TABLE public.media\_roles\_master ENABLE ROW LEVEL SECURITY;`

- Force RLS for table owners: `ALTER TABLE public.media\_roles\_master FORCE ROW LEVEL SECURITY;`

- 🟢 Policy 1: Allow public read access to active media role definitions.

SQL

```

CREATE POLICY "Public can read active media roles"

ON public.media\_roles\_master FOR SELECT

USING (is\_active = true);

```

- 🟢 Policy 2: Allow platform administrators to manage all media role definitions.

SQL

```

CREATE POLICY "Admins can manage all media roles"

ON public.media\_roles\_master FOR ALL

USING (public.has\_role('admin\_platform') OR public.has\_role('admin\_super')) -- Using example roles

WITH CHECK (public.has\_role('admin\_platform') OR public.has\_role('admin\_super'));

```

- 🟠 Caution: Deactivating roles (`is\_active = false`) is preferred over deletion if roles are in use by `[entity]\_media` tables, especially if those linking tables use `ON DELETE RESTRICT`.

9\. ENUM vs Lookup Discussion

- 🟢 This table \*is\* a lookup table (master table) and is appropriately designed as such to provide flexibility and descriptive attributes for media roles.

10\. UI/UX Enablement

- Columns powering UI: `role\_code`, `default\_display\_name` (translated), `default\_description` (translated), `icon\_identifier`.

- Indexed Fields: PK (`role\_code`), `is\_active`.

11\. Auditing & Lifecycle Management

- Audit Columns: `created\_at`, `updated\_at` (auto-managed via `extensions.moddatetime` trigger). `created\_by\_profile\_id`, `updated\_by\_profile\_id` for tracking user actions.

- Lifecycle: Role availability is managed by the `is\_active` flag.

12\. Scalability & Future-Proofing

- Scalability: The table is expected to remain small and performant.

- Future-Proofing: The structure is robust. `icon\_identifier` provides UI flexibility. New roles can be added easily.

13\. Seed Data

- 🟢 Example Seed Data (Primary reference language: English): | role\_code | default\_display\_name | default\_description | icon\_identifier | is\_active | created\_by\_profile\_id | updated\_by\_profile\_id | | :-------------------- | :------------------------ | :---------------------------------------- | :-------------- | :-------- | :-------------------- | :-------------------- | | `gallery\_image` | `Gallery Image` | `Image used in a content gallery.` | `image\_aspect\_ratio` | `true` | `[ADMIN\_UUID]` | `[ADMIN\_UUID]` | | `inline\_image` | `Inline Content Image` | `Image embedded within body text.` | `image` | `true` | `[ADMIN\_UUID]` | `[ADMIN\_UUID]` | | `featured\_image` | `Featured Image` | `Primary representative image.` | `star` | `true` | `[ADMIN\_UUID]` | `[ADMIN\_UUID]` | | `profile\_avatar` | `Profile Avatar` | `User's public avatar image.` | `person` | `true` | `[ADMIN\_UUID]` | `[ADMIN\_UUID]` | | `background\_image` | `Background Image` | `Image used for backgrounds or banners.` | `landscape` | `true` | `[ADMIN\_UUID]` | `[ADMIN\_UUID]` | \*(`[ADMIN\_UUID]` is a placeholder for an actual admin/system user profile ID).

14\. Next-Action Checklist

- 🔴 Dependency Note: The DDL includes FKs to `public.profiles`. Ensure `public.profiles` table exists before these constraints are applied. The translation cleanup trigger depends on `public.translations`.

- 🔴 Create Table: Execute DDL for `public.media\_roles\_master`.

- 🔴 Create Indexes: Execute DDL for defined indexes.

- 🔴 Implement Triggers:

- Apply `handle\_media\_roles\_master\_updated\_at` trigger.

- Create and apply `public.cleanup\_media\_roles\_master\_translations()` function and its trigger.

- 🔴 Implement RLS Policies: Define and apply RLS policies as specified.

- 🔴 Pre-populate Seed Data: Insert initial V1 media roles as suggested.

- 🟢 Define `icon\_identifier` Convention: If used, establish a clear convention for `icon\_identifier` assets.

- 🟠 Audit Field Population: Confirm and document the process for populating `created\_by\_profile\_id` and `updated\_by\_profile\_id`.

\* \* \* \* \*