

Unified UI Specification Standard

Grounded in:

- **ISO 9241-110:2020** (interaction principles)
- **ISO 9241-210:2019** (human-centred design)
- **WCAG 2.2 AA** + Apple HIG + Material Design accessibility baselines
- **W3C DTCG Design Tokens** as the exchange format
- **IFML (OMG)** for optional flow diagrams

This standard provides structure for **screen and flow specifications**. It maps directly to the JSON schema provided. Schema metadata uses JSON Schema `examples` arrays (for instance `"examples": ["v1.0"]`) so it remains valid under Draft 2020-12 strict mode.

1. Standard Structure

Each screen design must include:

1. Artifact Card

- ID: `UUISS-<Area>-<Screen>-<nnn>`
- Version: Semantic (`vMAJOR.MINOR.PATCH`)
- Owners: `@product` , `@design` , `@dev`
- Status: Draft → Ready → Approved → Implemented
- Links: Figma, Jira, PRD, Personas, Roadmap release, REQ/TC IDs
- Platforms: iOS ≥16 / Android ≥13 / Web ≥Chrome 120

2. Purpose & Principles

- Goal: User and business value
- KPIs: Quantified, machine-verifiable (e.g. `SelectionTime p90 ≤2000ms`)
- Journey Context: Where the screen fits
- HCD Alignment: ISO 9241-110 principles

3. Composition & Hierarchy

- Regions: IDs, required/optional, components, focus order
- Design System references only (no ad-hoc widgets)

4. Design Tokens

- Defined in W3C DTCG format
- Inline or external reference

5. States & Variants

- States: default, hover, pressed, disabled, error, loading, success
- Variants: light/dark themes

6. Behavior Rules

- Conditions for enabling/disabling components

7. Interactions

- Event → Condition → UI Action → Navigation → Analytics

8. Accessibility

- Touch targets: iOS $\geq 44\text{pt}$ / Android $\geq 48\text{dp}$ / Web $\geq 24\text{px}$
- Contrast: min 4.5:1 (AA)
- Focus indicators mandatory
- Gesture and keyboard alternatives required

9. Internationalization (i18n)

- ICU keys required
- RTL support mandatory
- Tone guidelines documented

10. Analytics Plan

- Event naming `object_action`
- Minimal properties, no PII unless flagged

11. Edge Cases

- Empty, timeout, retries, offline

12. Acceptance Criteria (BDD)

- Gherkin scenarios with traceability to REQ and TC

13. Data Contracts

- API endpoints, schema refs, retry policy, cache strategy

14. Traceability

- Mapping to Personas, PRD, REQ, TC, KPIs

2. Example Screen Spec

UUISS-Mode-001 — “Mode Selection Screen” — v1.0.0

Owners: @product @design @dev • **Status:** Approved **Figma:** [Figma Link](#) • **Jira:** [APP-45](#) **Links:** PRD-001, REQ-101/102, TC-201/202 • **Personas:** Commuter, Casual User **Release:** R1-2025-Q1 **Platforms:** iOS ≥16 / Android ≥13 / Web ≥Chrome 120

Goal & Context

Enable users to quickly choose **Travel Mode** or **Explore Mode** immediately after onboarding. **KPI:** Mode Selection Time p90 ≤2000ms • Error Rate ≤1%.

Composition

- **Header:** Title text (screen_title)
- **Body:** Mode cards (travel_mode , explore_mode)
- **Footer:** Primary button (continue_button)

Focus Order: Header → Mode Cards → Continue Button **Design System Components:** Card, Button, Typography/Title

Design Tokens

```
{
  "color/primary": {"$value":"#0066FF", "$type":"color", "$description":"Primary brand"},
  "space/md": {"$value":"16px", "$type":"space"},
  "radius/lg": {"$value":"12px", "$type":"radius"}
}
```

States & Variants

- **States:** default, hover, focus, pressed, disabled, error
- **Variants:** light, dark

Behavior Rules

- **Continue Button:** Enabled only when a mode is selected

Interactions

- **mode_selected** → highlight card → analytics: `mode_selected`
- **continue_pressed** (if mode selected) → route `/home` → analytics: `continue_pressed`

Accessibility

- **Touch Targets:** iOS $\geq 44\text{pt}$ / Android $\geq 48\text{dp}$ / Web $\geq 24\text{px}$
- **Contrast:** $\geq 4.5:1$ (AA)
- **ARIA Roles:** button, navigation
- **Alternatives:** gesture, keyboard, voice commands

Internationalization

- **ICU Keys:** `screen_title`, `travel_mode_label`, `explore_mode_label`, `continue_button_label`
- **RTL Support:** true
- **Tone:** Supportive, clear
- **Formatting:** Locale-driven date/time/currency

Analytics

- **mode_selected{mode}** — owner: @product • PII: none
- **continue_pressed{mode}** — owner: @analytics • PII: none

Edge Cases

- **No selection + Continue pressed:** Button remains disabled (`silent_ignore`)
- **Network timeout on Continue:** Retry dialog, exponential backoff (`retry`)

Acceptance (BDD)

Scenario: Successful mode selection

Given User is on Mode Selection Screen

When User taps Travel Mode

Then Travel card is highlighted **and** Continue button is enabled

Data Contracts

- **POST /api/user/mode**
- Request: ModeSelectionRequest JSON schema
- Timeout: 5000ms • Retry: exponential_backoff • Cache: none

Traceability

- **Personas:** Commuter, Casual User
- **PRD:** PRD-001
- **REQ:** REQ-101 (mode selection), REQ-102 (button enable rule)
- **TC:** TC-201, TC-202
- **KPI:** KPI-001 (SelectionTime \leq 2000ms), KPI-002 (Error rate \leq 1%)

3. Markdown Template (Reusable)

Use the original template as the canonical starting point for authoring human-readable screen specifications that mirror the JSON schema: [knowledge/unified-ui-specs-human-md-template.md](#)