CE2 State Machine Analysis

View Naming System

GALAXY LEVEL (All 568 packages)

Code	Name	Description
A	Galaxy Treemap	Blueprint, packages as treemap cells
B	Galaxy Beeswarm	Blueprint, packages as circles

SOLAR LEVEL (Project packages, scope-filtered, beige theme)

Code	Name	Description
C1	SolarSwarm Trans	Bubblepacks, transitive scope
C1M	Trans Matrix	Transitive, matrix overlay
C1C	Trans Chord	Transitive, chord overlay
C2	SolarSwarm Deps	Bubblepacks, project+deps scope
C2M	Deps Matrix	Project+deps, matrix overlay
C2C	Deps Chord	Project+deps, chord overlay
C3	SolarSwarm Proj	Bubblepacks, project-only scope
C3M	Proj Matrix	Project-only, matrix overlay
C3C	Proj Chord	Project-only, chord overlay

NEIGHBORHOOD LEVEL (Single package focus, beige theme)

Code	Name	Description
D	Pkg Neighborhood	Circlepack: deps | focal | dependents

MODULE LEVEL (Single package's modules, paperwhite theme)

Code	Name	Description
E	Module Treemap	Modules sized by LOC
EM	Module Matrix	Module import adjacency matrix
EC	Module Chord	Module import chord diagram
F	Module Beeswarm	Flow overlay on treemap

PANEL (Orthogonal state)

Code	Name	Description
P	Slide-out Panel	Module declarations, Pursuit links

Click Transition Matrix

Clickable Elements Key

Element	Description
pkg	Package (treemap cell / beeswarm circle / bubblepack outer)
mod	Module (bubblepack inner / treemap cell / chord arc / matrix cell)
scp-A	Scope button → All (568 packages)
scp-T	Scope button → Transitive
scp-D	Scope button → Project+Deps
scp-P	Scope button → Project Only
vw-S	View toggle → Swarm/Treemap (primary)
vw-M	View toggle → Matrix
vw-C	View toggle → Chord
nav+	Forward / + button
nav←	Back button

Legend

Symbol	Meaning
=	Stay in current view
–	Not available
?	Undefined behavior
→X	Navigate to view X
+P	Also opens panel

Transition Table

```
          | pkg        | mod     | scp-A | scp-T | scp-D | scp-P | vw-S | vw-
M | vw-C | nav+ | nav←
----------|------------|---------|-------|-------|-------|-------|------|----
--|-------|------|------
A  Tree   | highlight | -       | -     | -     | -     | -     | -    | -
| -     | →B   | -
B  Bee    | →D +P     | -       | =     | →C1   | →C2   | →C3   | -    | -
| -     | →C1  | →A
```

```
──────────┼────────────┼────────┼────────┼────────┼────────┼────────┼────────┼──
──┼──────┼──────┼──────
C1 Trans  │ →D +P      │ +P     │ →B     │ =      │ →C2    │ →C3    │ =      │
→C1M │ →C1C │ −    │ →B
C1M       │ ?          │ ?      │ →B     │ =      │ →C2M   │ →C3M   │ →C1    │ =
│ →C1C │ −    │ →B
C1C       │ ?          │ ?      │ →B     │ =      │ →C2C   │ →C3C   │ →C1    │
→C1M │ =    │ −    │ →B
──────────┼────────────┼────────┼────────┼────────┼────────┼────────┼────────┼──
──┼──────┼──────┼──────
C2 Deps   │ →D +P      │ +P     │ →B     │ →C1    │ =      │ →C3    │ =      │
→C2M │ →C2C │ −    │ →B
C2M       │ ?          │ ?      │ →B     │ →C1M   │ =      │ →C3M   │ →C2    │ =
│ →C2C │ −    │ →B
C2C       │ ?          │ ?      │ →B     │ →C1C   │ =      │ →C3C   │ →C2    │
→C2M │ =    │ −    │ →B
──────────┼────────────┼────────┼────────┼────────┼────────┼────────┼────────┼──
──┼──────┼──────┼──────
C3 Proj   │ →D +P      │ +P     │ →B     │ →C1    │ →C2    │ =      │ =      │
→C3M │ →C3C │ −    │ →B
C3M       │ ?          │ ?      │ →B     │ →C1M   │ →C2M   │ =      │ →C3    │ =
│ →C3C │ −    │ →B
C3C       │ ?          │ ?      │ →B     │ →C1C   │ →C2C   │ =      │ →C3    │
→C3M │ =    │ −    │ →B
──────────┼────────────┼────────┼────────┼────────┼────────┼────────┼────────┼──
──┼──────┼──────┼──────
D  Neigh  │ →D' +P     │ −      │ −      │ −      │ −      │ −      │ −      │ −
│ −    │ →E   │ →C?
──────────┼────────────┼────────┼────────┼────────┼────────┼────────┼────────┼──
──┼──────┼──────┼──────
E  Tree   │ −          │ +P     │ −      │ −      │ −      │ −      │ =      │ →EM
│ →EC  │ →F   │ →D
EM        │ −          │ ?      │ −      │ −      │ −      │ −      │ →E     │ =
│ →EC  │ →F   │ →D
EC        │ −          │ ?      │ −      │ −      │ −      │ −      │ →E     │ →EM
│ =    │ →F   │ →D
──────────┼────────────┼────────┼────────┼────────┼────────┼────────┼────────┼──
──┼──────┼──────┼──────
F  MBee   │ −          │ +P?    │ −      │ −      │ −      │ −      │ −      │ −
│ −    │ −    │ →E
```

State Space Summary

```
Total Views: 17
  Galaxy:       2  (A, B)
  Solar:        9  (C1–C3 × Swarm/Matrix/Chord)
  Neighborhood: 1  (D, parameterized by package)
  Module:       4  (E, EM, EC, F — parameterized by package)
  Panel:        +2 (open/closed, orthogonal)
```

```
State Variables:
  - scene: A | B | C | D | E | F
  - scope: All | Trans | Deps | Proj  (only for B, C)
  - view:  Swarm | Matrix | Chord     (only for C, E)
  - focal: String                     (package name for D, E, F)
  - panel: { open: Bool, module: Maybe String }
```

Open Questions

1. **Back from D** - Return to which C variant? Need to remember "came from" state.
2. **Matrix/Chord clicks** - What should clicking a cell/arc do?
   - Open panel?
   - Highlight related?
   - Navigate?
   - Nothing?
3. **Panel persistence** - Does panel stay open across navigation? Close on scene change?
4. **Event bubbling** - Module click in bubblepack also fires package click. Fix with stopPropagation.
5. **Scope in D?** - Should neighborhood have scope filtering?

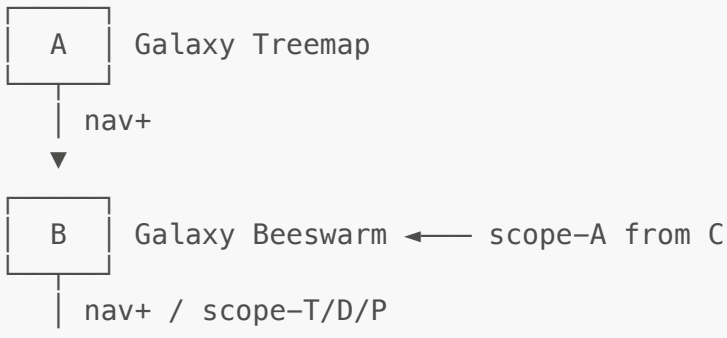
Simplification Ideas

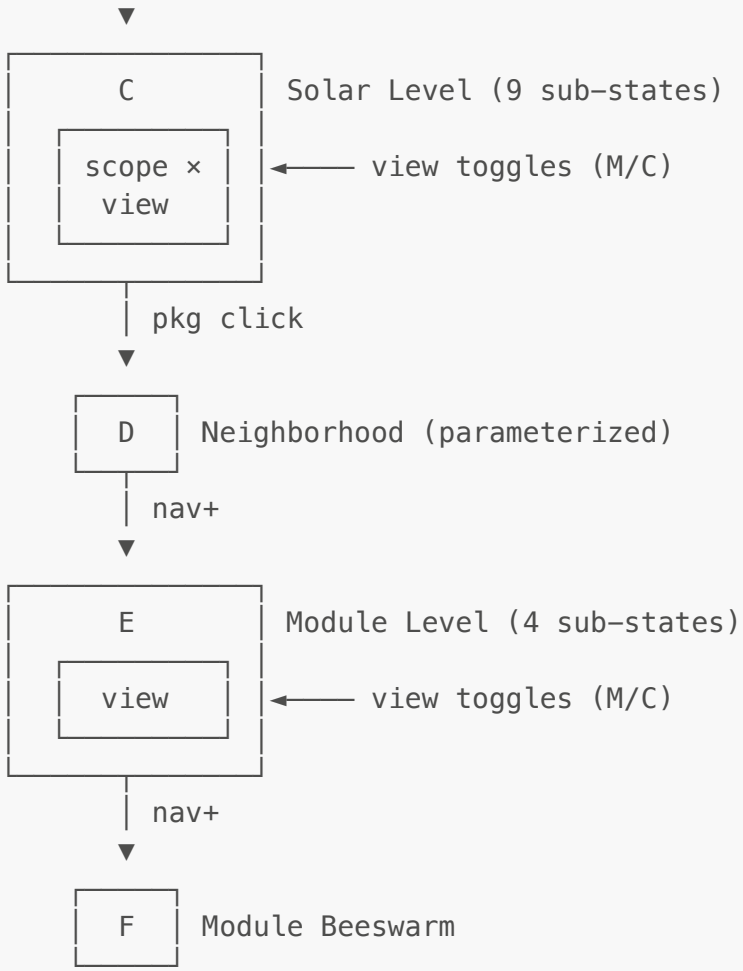
1. **Orthogonal state variables** - Instead of 9 C-states, use:

   ```
   { scene: SolarSwarm, scope: Trans|Deps|Proj, view: Swarm|Matrix|Chord
   }
   ```

2. **Consistent back** - Always go to parent, reset sub-state to defaults.
3. **Panel as pure overlay** - Never affects navigation state.

Navigation Graph (ASCII)





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