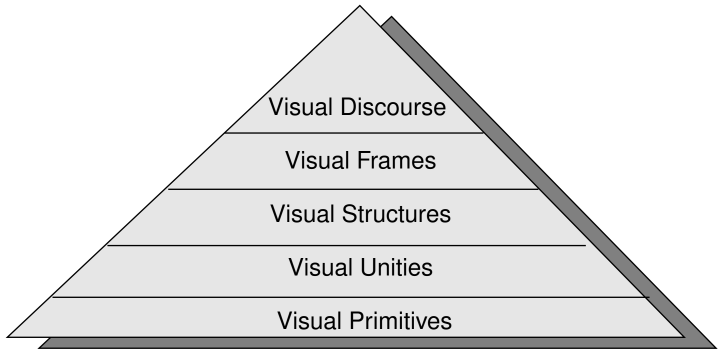

Visual Discourse
Visual Frames
Visual Structures
Visual Unities
Visual Primitives

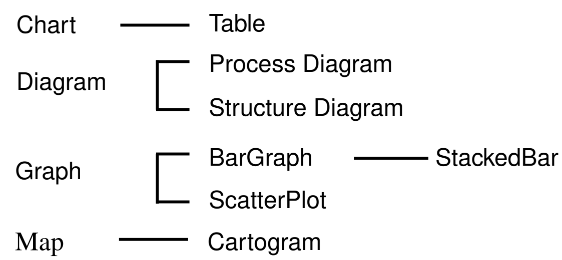
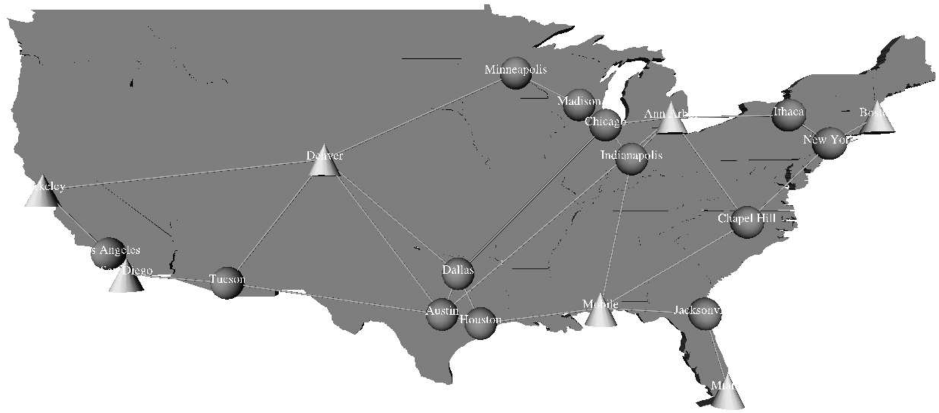


Chart
Table
Diagram
Process Diagram
Structure Diagram
Graph
BarGraph
StackedBar
ScatterPlot
Map
Cartogram


Minneapolis
Madison
Chicago
Ithaca
New York
Indianapolis
Chapel Hill
Dallas
Tucson
Austin
Houston

```
(defclass ACTION
    (is-a OPERATOR)
    (slot operands)
    (slot preconditions)
    (slot postconditions)
    (slot parameters)
    (slot preference))
```

(a)

```
(defclass ANIMATED-ACTION
    (is-a ACTION)
    (slot startTime)
    (slot stopTime)
```

(b)

```
(defclass MOVE
    (is-a ANIMATED-ACTION)
    (slot source)
    (slot destination)          )
```

(c)

```
(defclass COMPOSITE-ACTION
    (is-a ACTION)
    (slot decompositionSchemata)
    (slot decompositionPreferences)
    (slot currentDecomposition) )
```

(a)

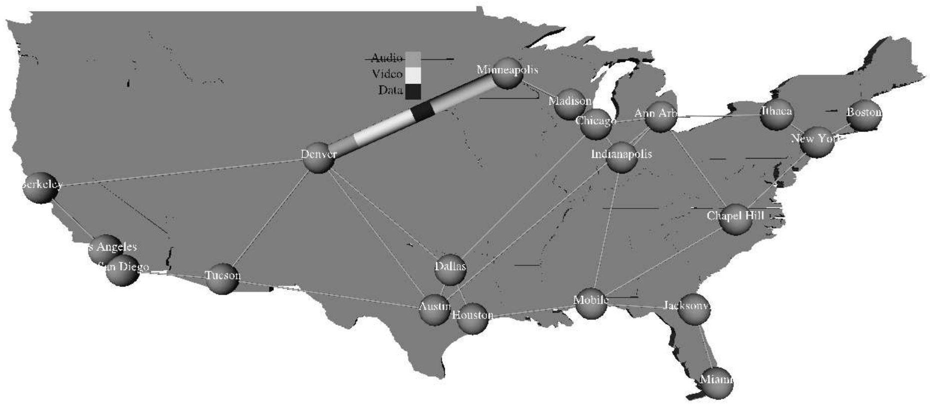
```
(defclass DECOMPOSITION-SCHEMA
    (is-a OBJECT)
    (slot subactions
    (slot partialOrders)
    (slot causalLinks))
```

(b)

```
(RevealInternal (is-a ACTION)
    (operand ?objX)
    (. . .)
    (decompositionSchemata
        DecompositionSchema1
        DecompositionSchema2)
    (decompositionPreferences
        (preference1
            (condition (and
                (HighIntersection ?objX)
                (SmallBoundingBoxSize ?objX))
            (preferred DecompositionSchema2))
        (default
            (preferred DecompositionSchema1))))
```

```
(DecompositionSchema1
    (is-a DECOMPOSITION-SCHEMA)
    (subactions
        (Subaction1 (Focus ?objX))
        (Subaction2 (DesignVisObject (internal ?objX)))
        (Subaction3 (Open ?objX)))
    (partialOrders
        (< Subaction1 Subaction3)
        (< Subaction2 Subaction3)))

(DecompositionSchema2
    (is-a DECOMPOSITION-SCHEMA)
    (subactions
        (Subaction1 (Focus ?objX))
        (Subaction2 (DesignVisObject (internal ?objX)))
        (Subaction3 (ShowInset (internal ?objX) ?objX)))
    (partialOrders
        (< Subaction1 Subaction3)
        (< Subaction2 Subaction3)))
```


Audio
Video
Data
Minneapolis
Madison
Chicago
Ithaca
Boston
Denver
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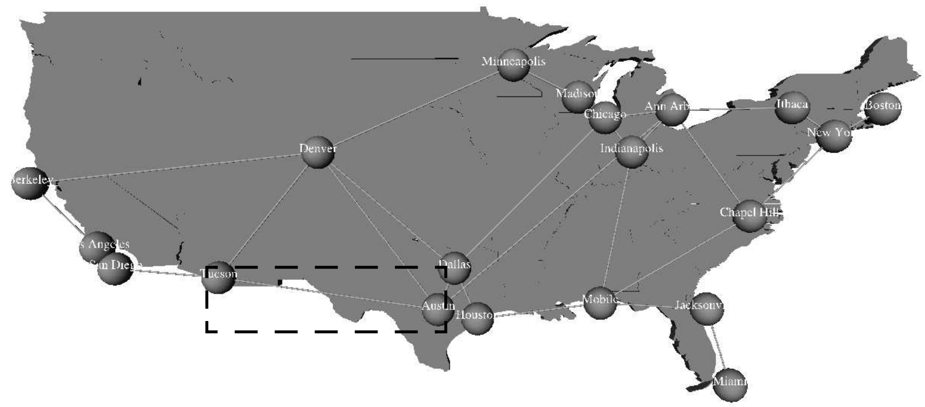
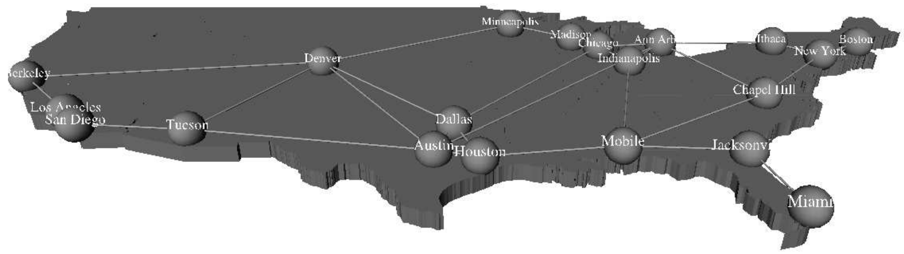
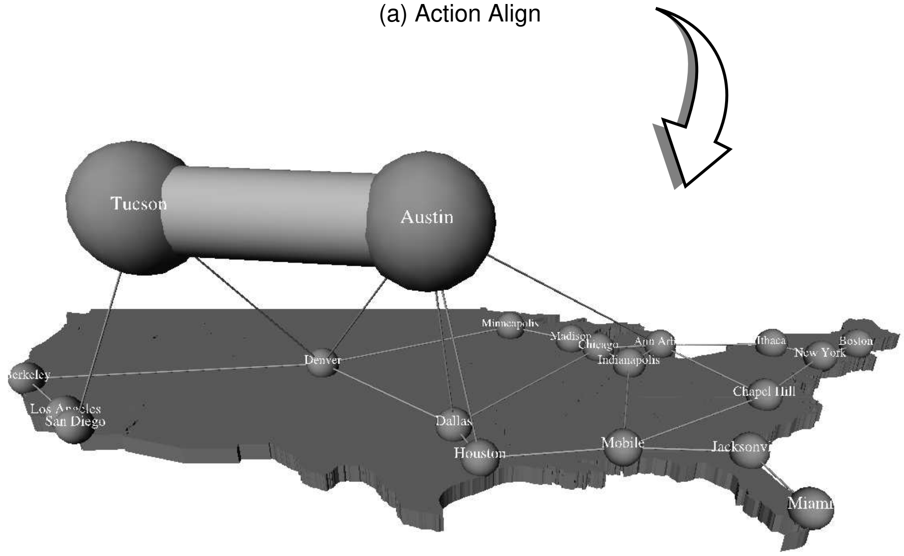
Chapel Hill
San Diego
Tucson
Dallas
Austin
Houston
Mobile

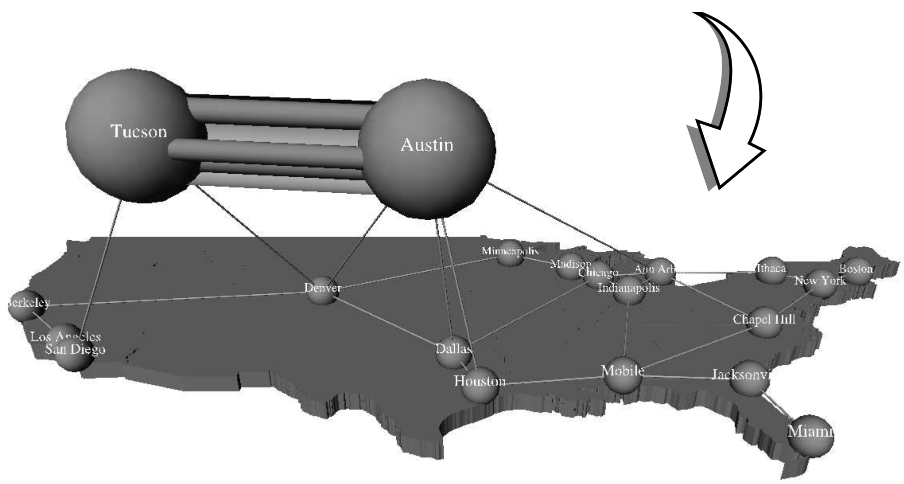

Minneapolis
Chicago
Ithaca
Boston
Indianapolis
Denver
Tucson
Dallas
Austin



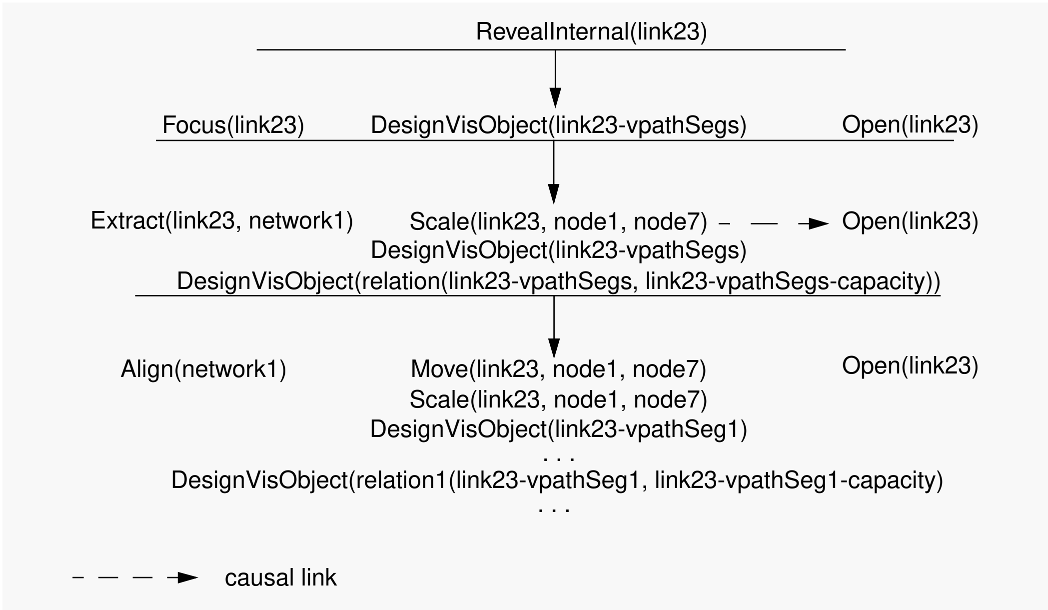
(a) Action Align



(b) Action Move + Enlarge + . . .



(c) Action Open


RevealInternal(link23)
Focus(link23)
DesignVisObject(link23-vpathSegs)
Open(link23)
Extract(link23, network1)
Scale(link23, node1, node7)
Open(link23)
DesignVisObject(link23-vpathSegs)
DesignVisObject(relation(link23-vpathSegs, link23-vpathSegs-capacity))
Align(network1)
Move(link23, node1, node7)
Open(link23)
Scale(link23, node1, node7)
DesignVisObject(link23-vpathSeg1)
. . .
DesignVisObject(relation1(link23-vpathSeg1, link23-vpathSeg1-capacity)
. . .
causal link

Formation Action	Transformation Action	Camera Action
MapProperty	Align	Dolly
MapGeometry	CutAway	Pan
MakeVisualUnity	FishEyeView	Rotate
ShowInset	Highlight	Seek
ShowMultiView	Move	Set
	Open	Zoom
	Scale	
	Transfigure	

“Efficiently Planning Coherent Visual Discourse” by Zhou & Feiner Figure Caption Titles