# Programming Interactive Tables with a Dataflow Language

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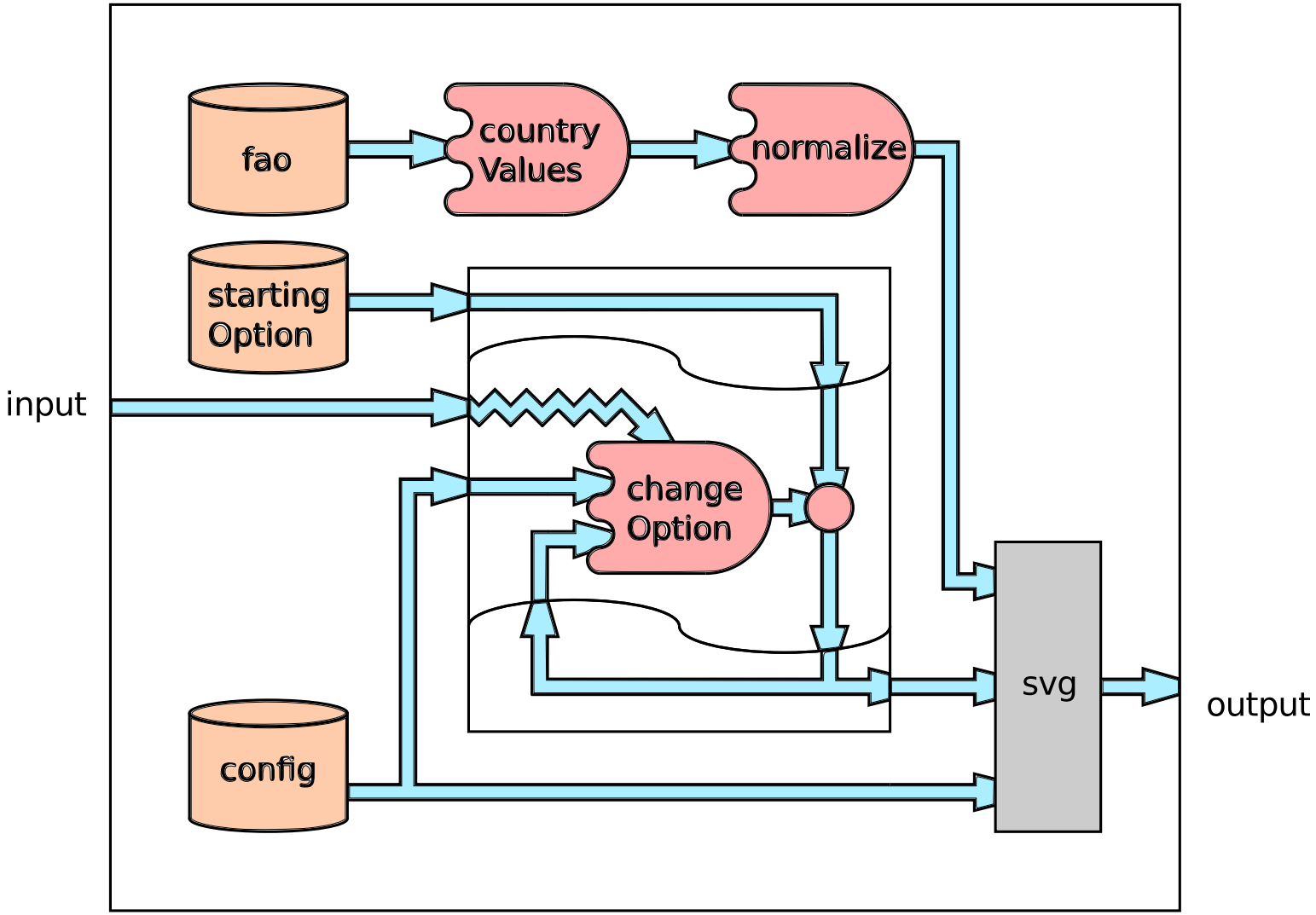
# Preview 1/2

# Preview 2/2


fao
country Values
normalize
starting Option
input
change Option
svg
output
config

# Outline

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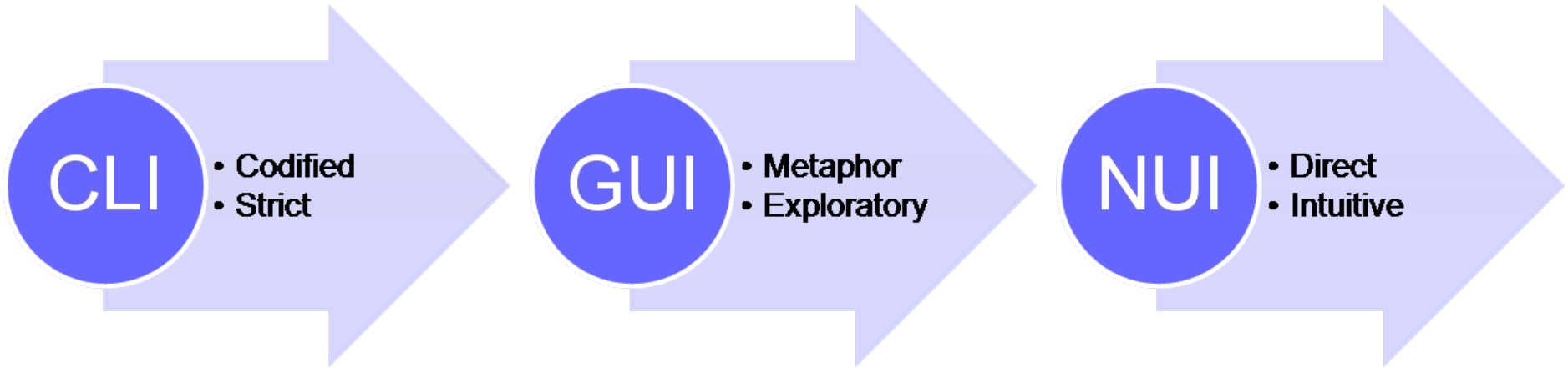
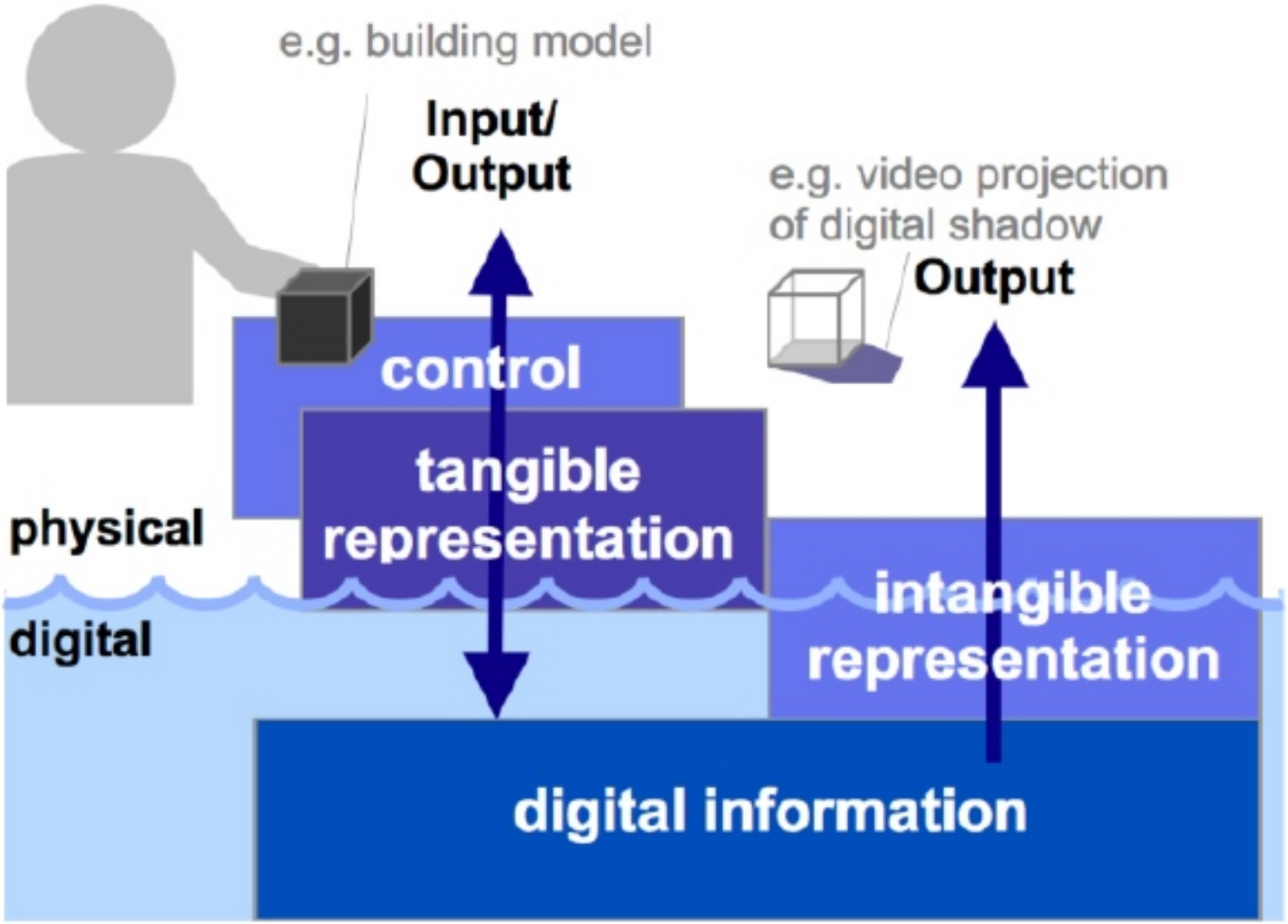
# Evolution of User Interfaces



# Tangible User Interfaces - Brush

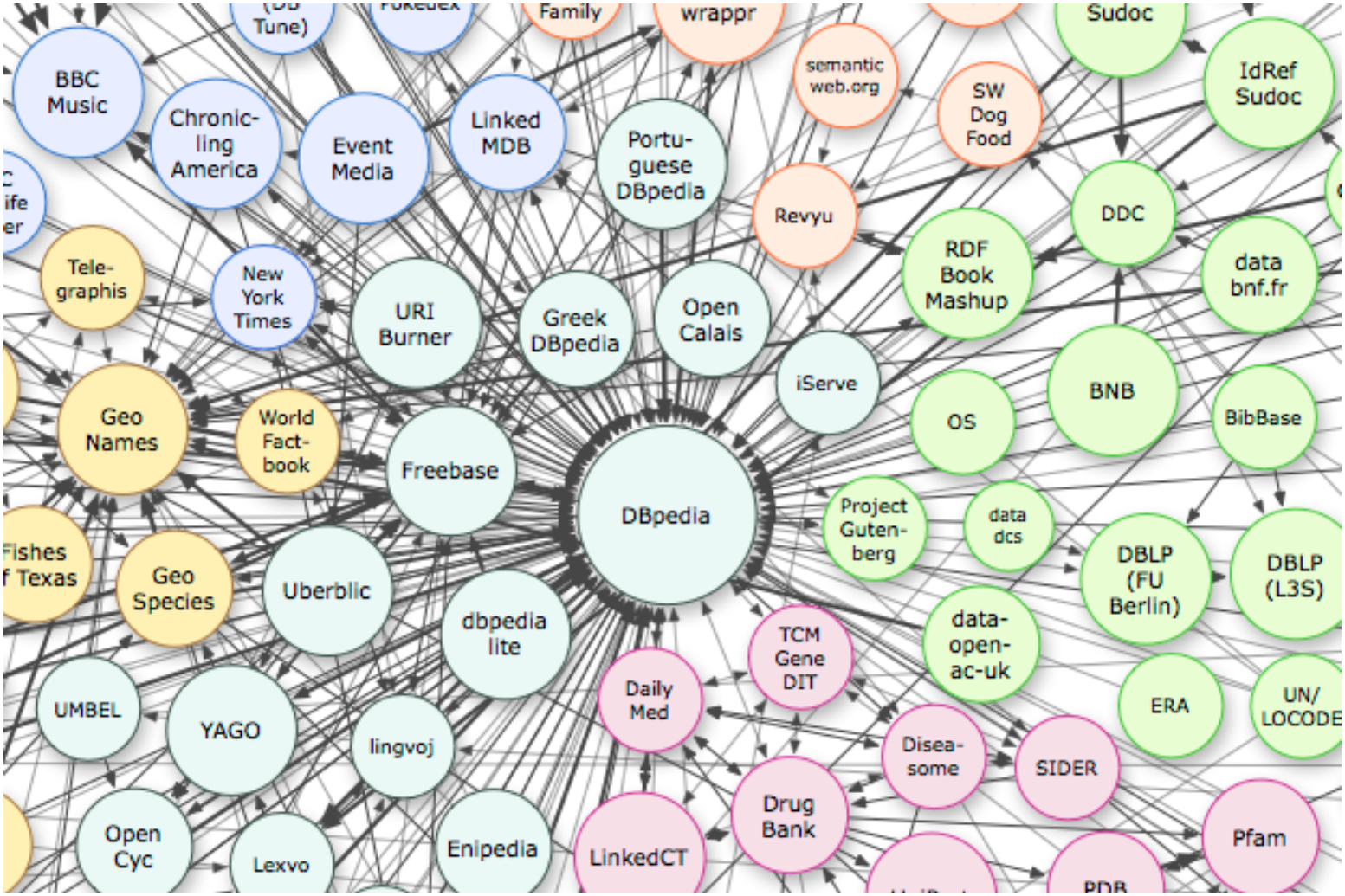
# Tangible User Interfaces - Reactable

# Tangible User Interfaces



# Outline

# Web, Semantic Web and Linked Data



# Distributed Programs

## The evolution of Software

- Software stand-alone
- Software based on the web (web applications and services)
- Software in the web (distributed and linkable as data)

## It should be...

- In an open format
- Free from unexpected interference with application contexts

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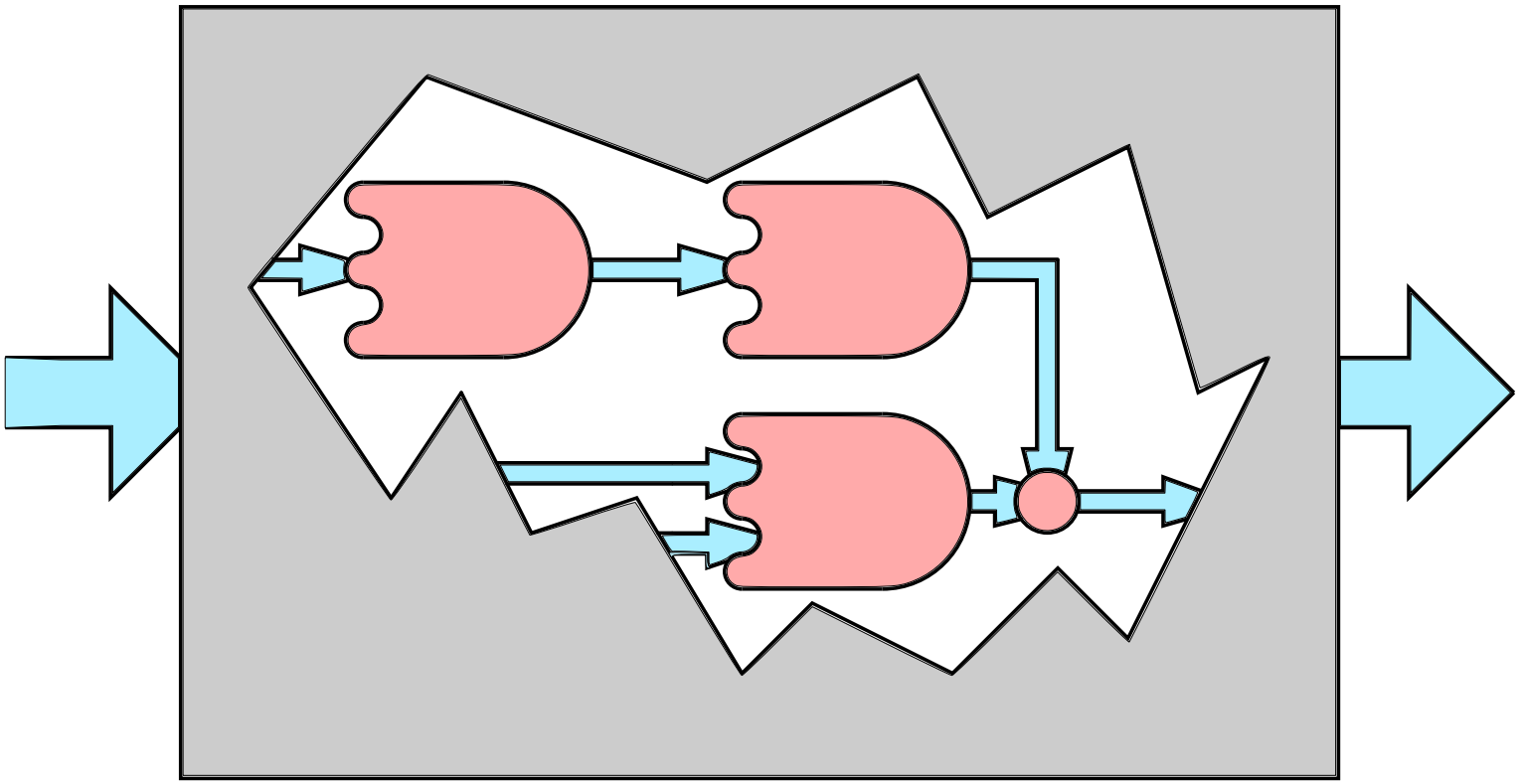
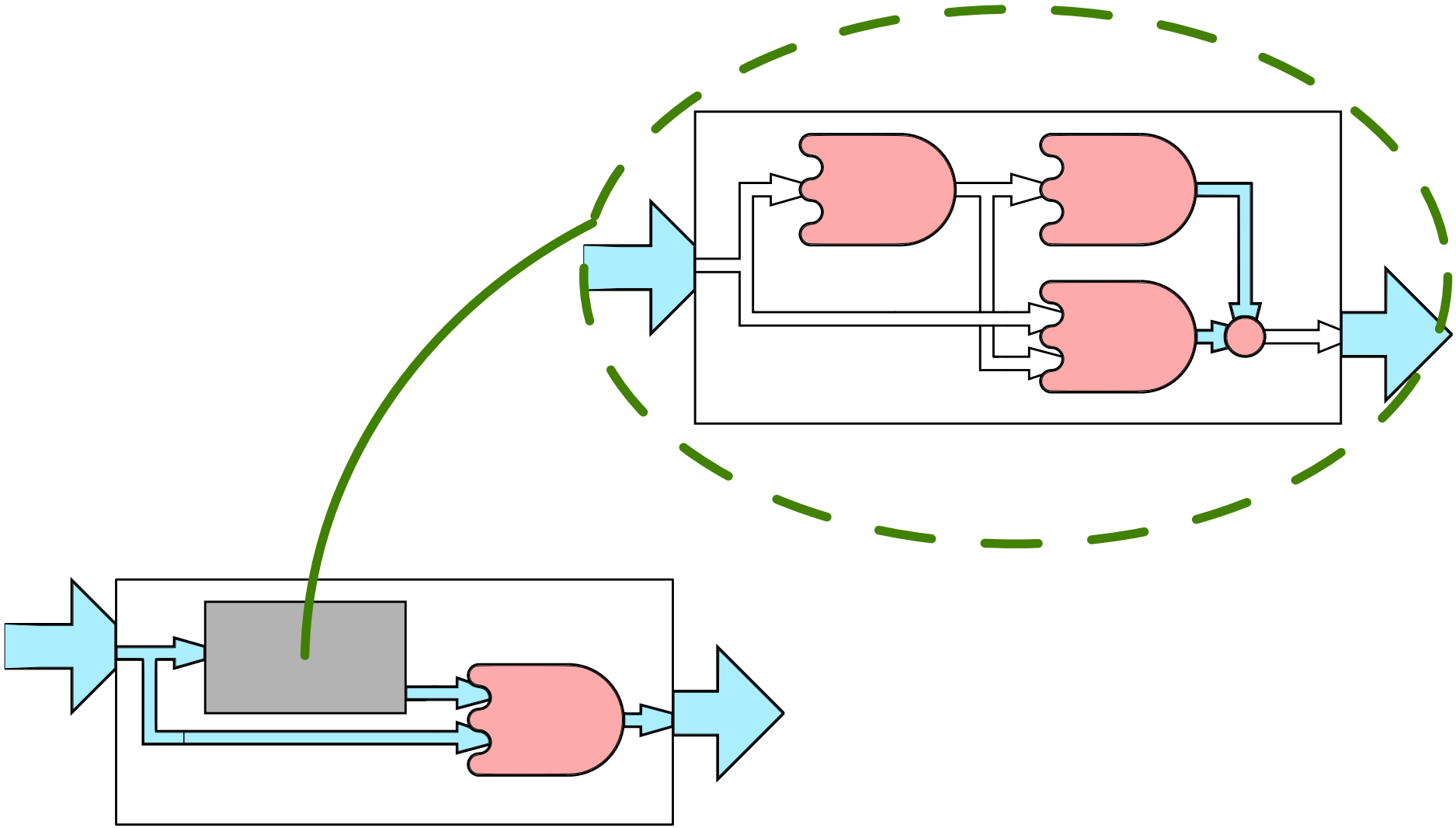
# Open Computing



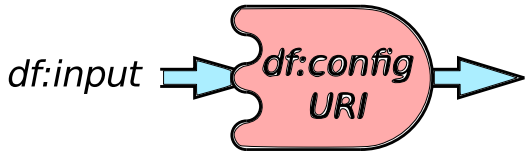
Transparent Boxes Vs Black Boxes

# Linked Programs

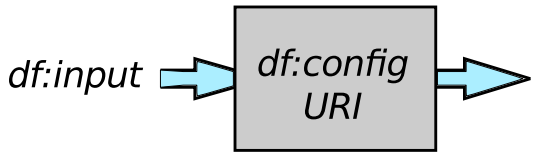


# Dataflow Paradigm

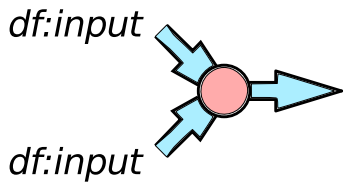
**df:ConstructGraph**



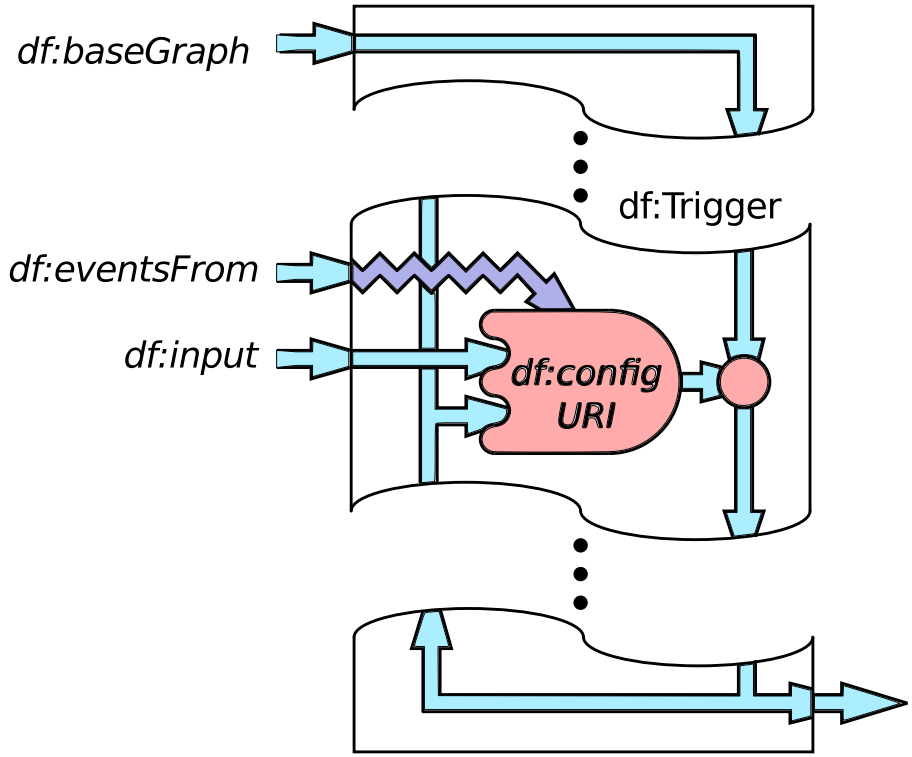

**df:DataflowGraph**




**df:UnionGraph**




**df:UpdatableGraph**




Side-Effects Free Operators

# Based on Established Standards

## Web Standards

- XML
- SVG

## Semantic Web Standards

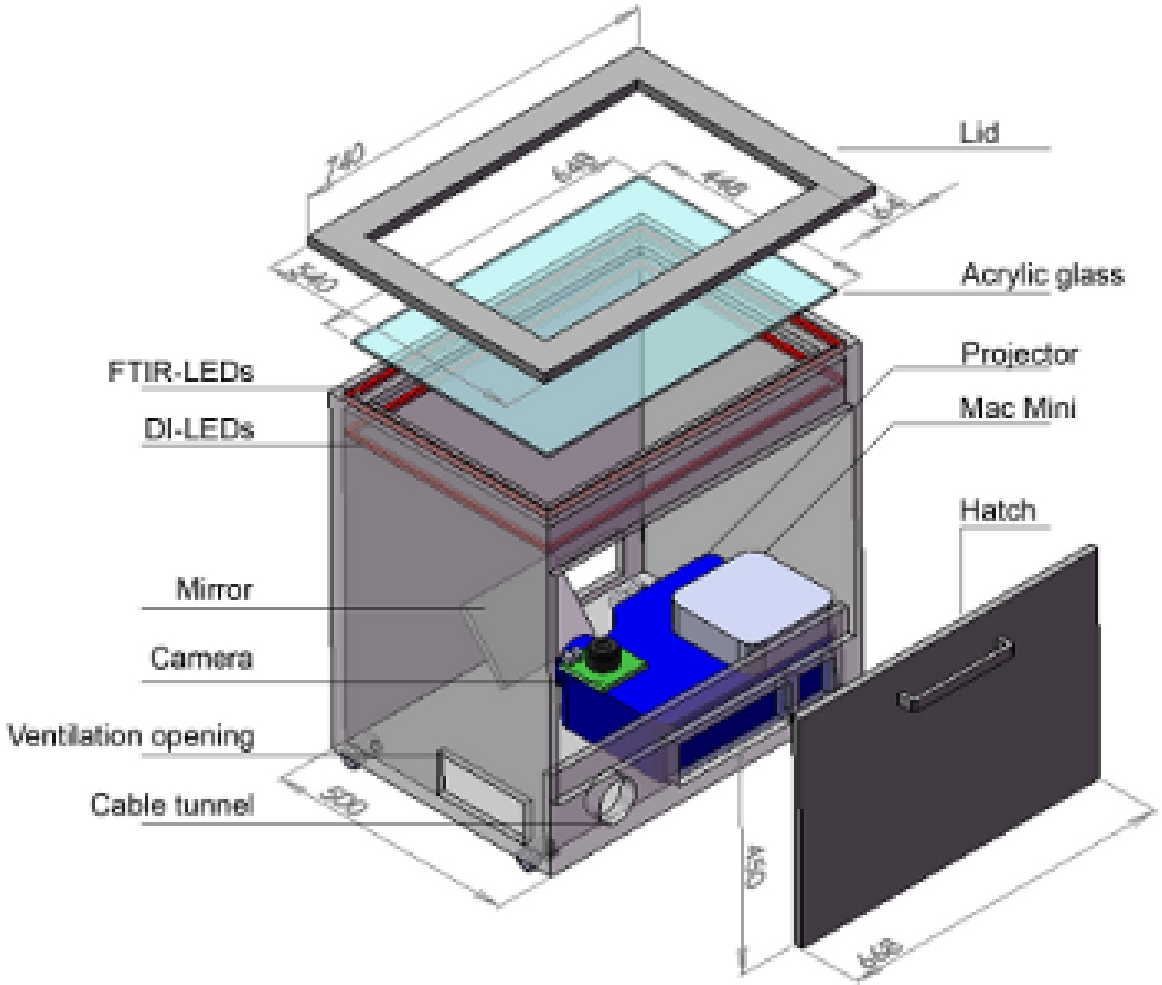
- RDF
- SPARQL 1.1

## Interactive Table Standard

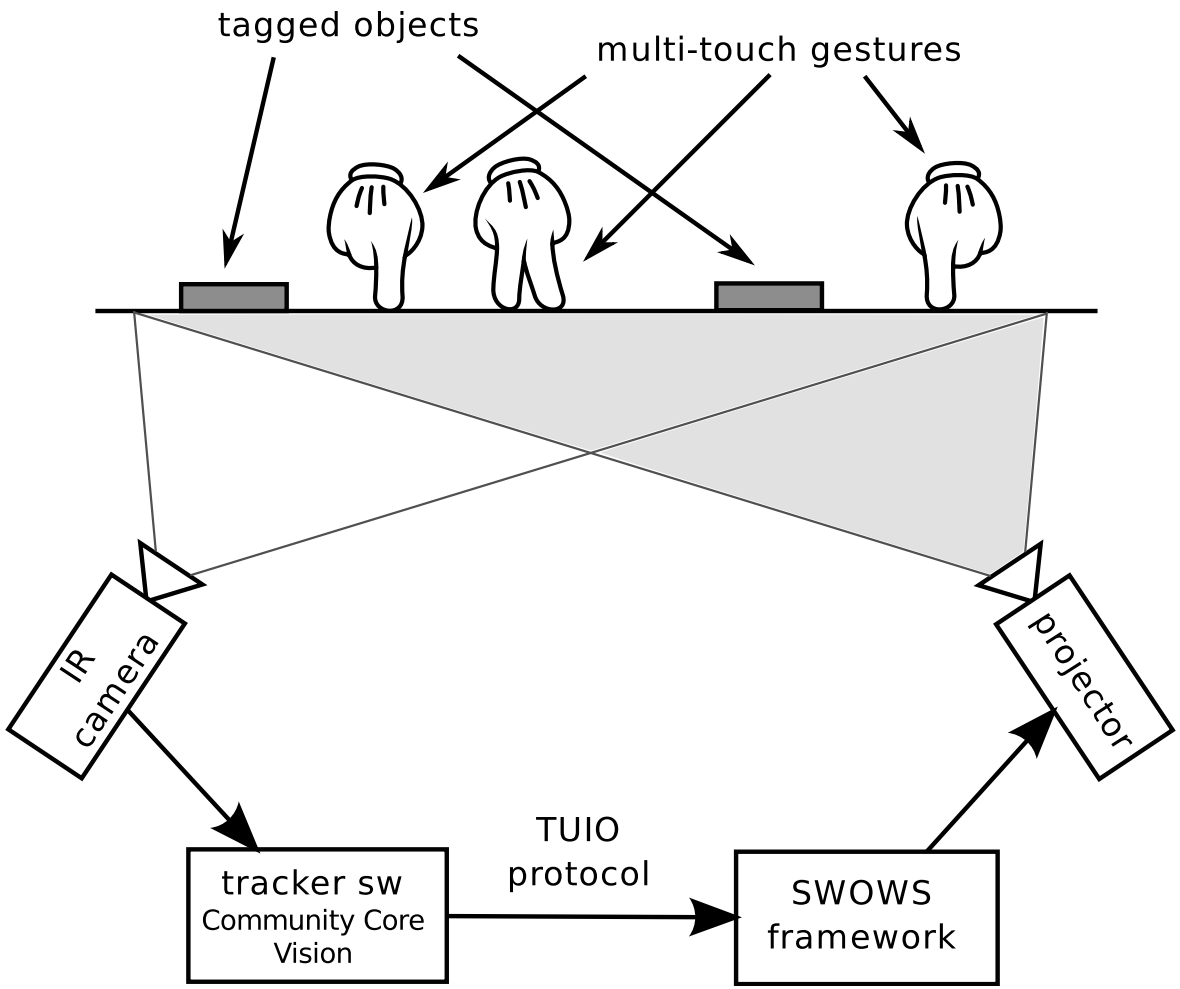
- TUIO Protocol

# Outline

# How it's built



# How it works


tagged objects
multi-touch gestures
IR camera
projector
tracker sw
Community Core Vision
TUIO protocol
SWOWS framework

# Outline

# World Info

## Data used

- FAO geopolitical ontology
- World Map with country borders from Wikipedia

## Output

- Countries colored on the map by derived geopolitical indexes

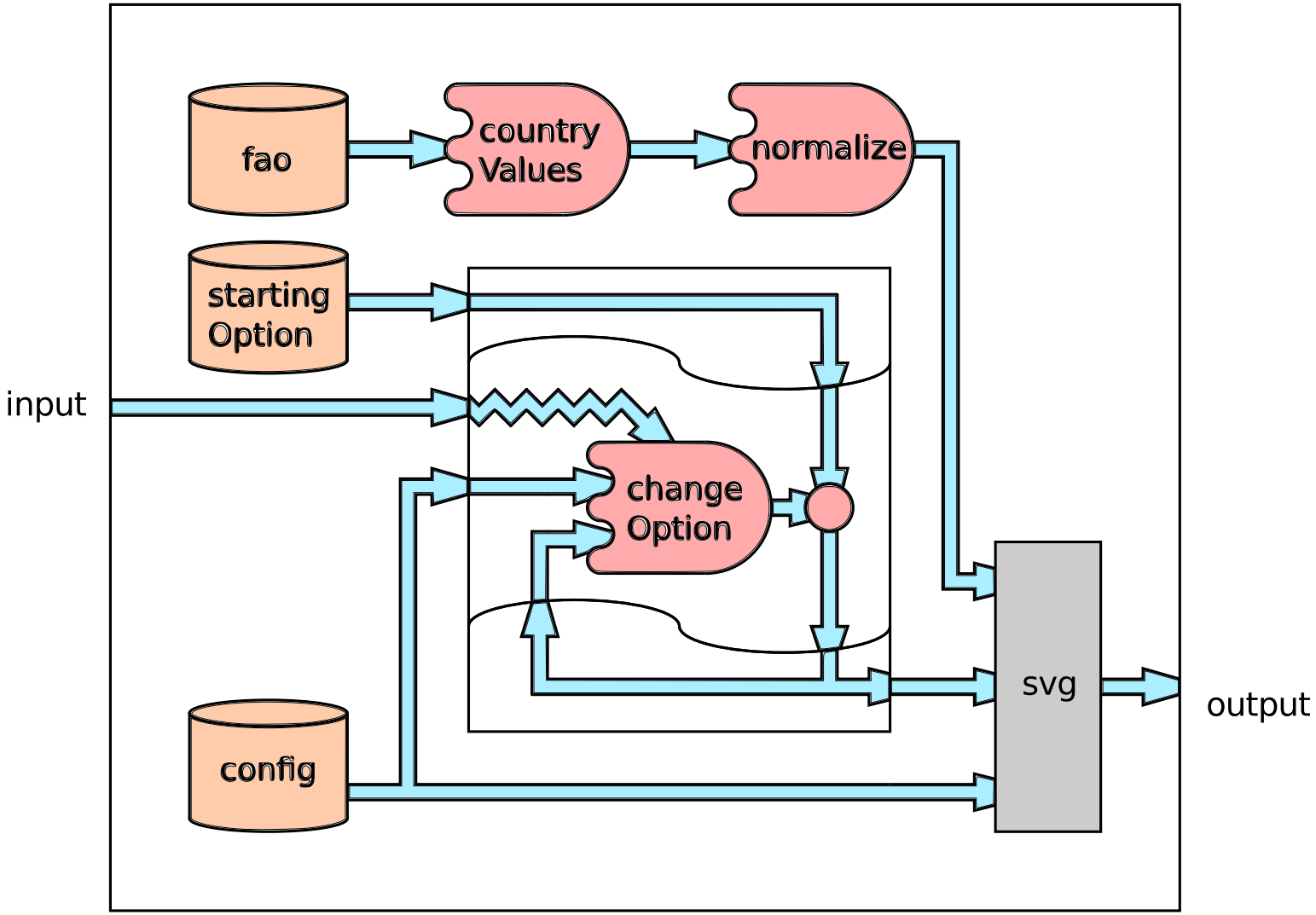
## Interaction

- Touch, to choose one of three different geopolitical indexes
- Lens Tangible, to enlarge specific areas of the map

# The table

# The tangible

# The dataflow (simplified)



# Results

- New language proposal (DfPL) for RDF generic transformation based on RDF, SPARQL 1.1 and other open standards
- New framework (SWOWS) to experiment in reusable and portable UI programming for both GUI and Tabletop TUI
- Contributions in working Tabletop TUI prototype to test applications

# Future Work

- System Optimization
- Visual Program Building
- User Interface Migration
- Parallel/Pipeline Processing

Thank you!