

# OUTLINE

**I - INTRODUCTION**

**II - DESIGN METHODOLOGY : AN OVERVIEW**

**III - ABSTRACTION LEVELS IN ALLIANCE**

# Three Different Views

All along the methodology, we handled different views:

1 – Behavioral View (Equations)

2– Structural View (Netlists)

3– Layout View (Segments)

# Behavioral View (1)

## Logical Equations

- ◆ Description Formalism

Examples:

$$U = A \cdot (A + B)$$

$$V = C \cdot D$$

$$T = D \oplus E$$

$$X = U \cdot V$$

$$Y = V + T + X$$

$$Z = T \cdot E$$

## Behavioral View (2)

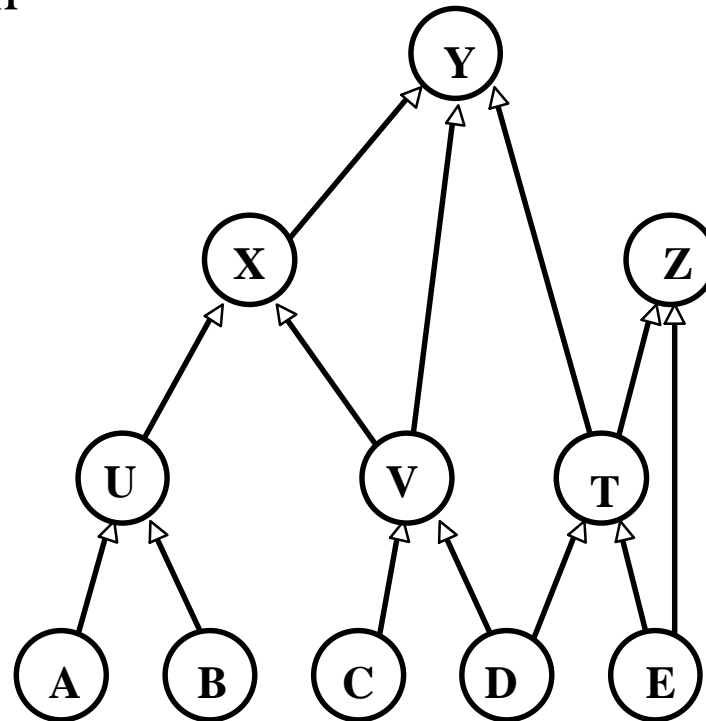
### Logical Equations

- ◆ Representation
  - A directed acyclic graph including three kinds of nodes: INPUT, INTERMEDIARY, OUTPUT
  - A logical expression is associated to each Intermediary or Output node
  - A variable name is associated to each node

# Behavioral View (3)

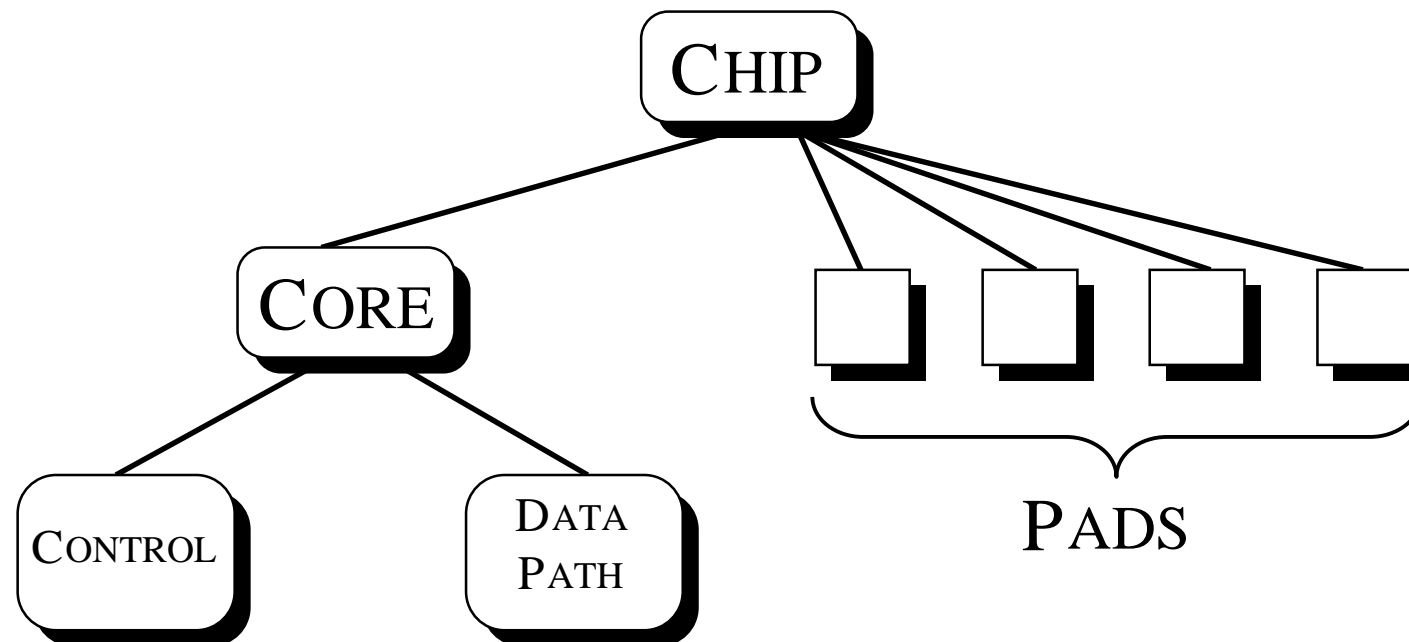
## Boolean Network

- ◆ Representation



# Structural View (1)

For each view, we are looking for its inherent basic concepts



## Structural View (2)

For each view, we are looking for its inherent basic concepts

- ◆ In the structural view:
  - Connectors: ID, Direction, etc....
  - Signals: ID, Type (External or not), etc....
  - Instances: ID, Model Name, Ports, etc....

# Layout View (1)

## Symbolic Layout

### ◆ Principles:

- ✓ Portability
- ✓ Simplicity
- ✓ Robustness

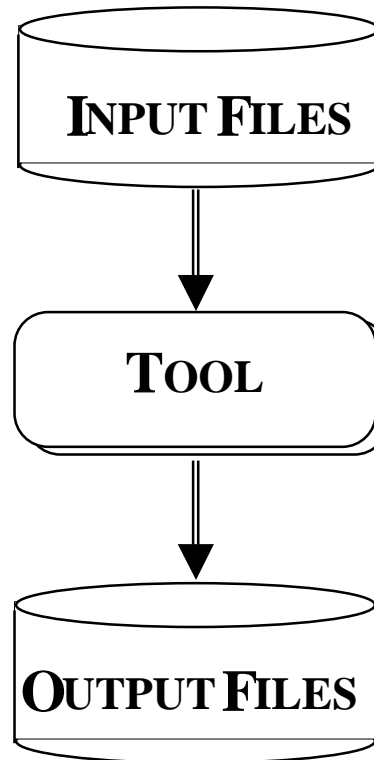


## Layout View (2)

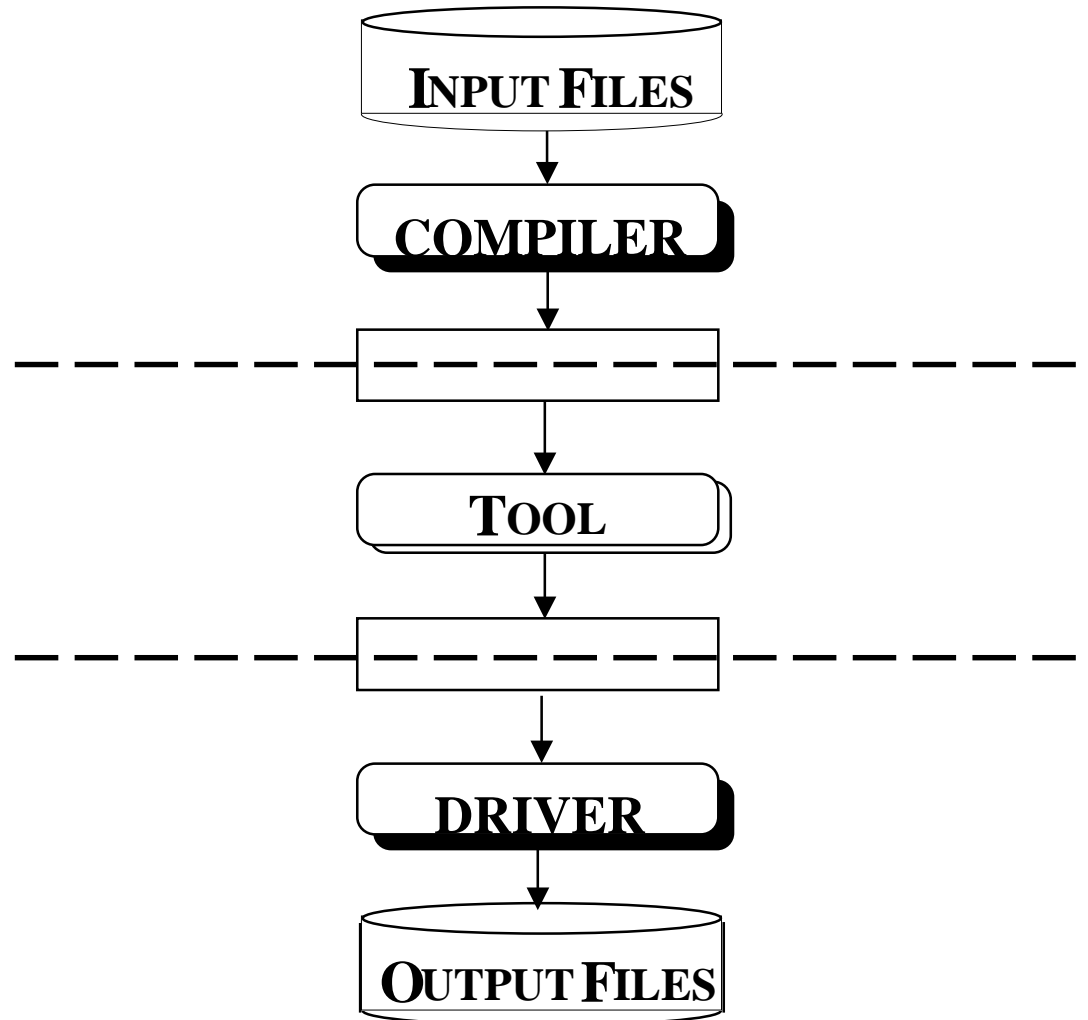
### Symbolic Layout

- ◆ Our Approach
  - Thin fixed grid, symbolic layout
  - Distances form center to center  $\Rightarrow$  Good density
  - Special symbolic layout editor
  - Automatic translation from symbolic to physical

## How to deal with these views ? (1)



## How to deal with these views ? (2)



# Independence (1)

One major idea in ALLIANCE is its **independence** towards any given language

- ◆ Identify the Concepts that:
  - ✧ Do not Depend on a Language
  - ✧ Depend on the Abstraction Level

## Independence (2)

