Formal Verification & Rosetta

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Introduction

Aim:

Integrate formal verification techniques to the Rosetta tool suite.

Benefits:

Simple Design validation
Verification

- Traditional Methods
- Theorem Proving
- Model Checking
Model Checking

- Advantages
- Techniques
- State Space Explosion Problem
A Rosetta Example

facet sequencer():: state_based is

x,y:: integer;

begin

T1: (x@t0 = 2) && (y@t0 =5);
T2: x' = (2*x) mod 9;
T3: y' = (2*y) mod 9;
C1: (x + y) < 14;

end facet sequencer;
State Space

C1: \((x + y) < 14;\)
My Contribution

- State space analysis
- Heterogeneous Components
- Constraints