

---

# ParTeG – Integrating Model-Based Testing and Model Transformations

---

Stephan Weißleder  
Fraunhofer FIRST



Dehla Sokenou  
GEBIT Solutions



Industrietag SE2010




# Table of Content

Model-based testing

Improving test quality with ParTeG

- Combination of coverage criteria
- Model transformations

Tool demo



CONTENTS.

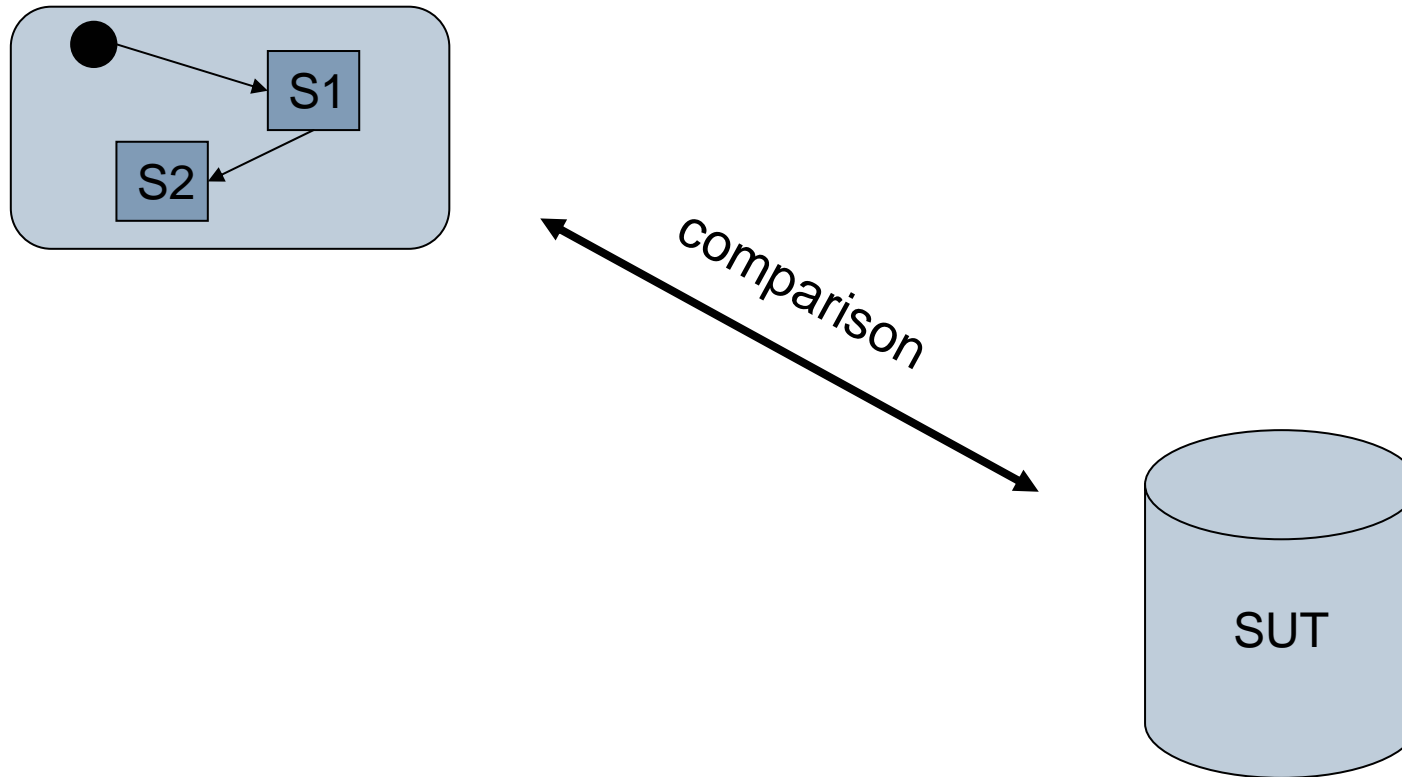
SUBJECT	ILLUSTRATED BY	PAGE
<i>Frontispiece.</i>	ARTHUR HUGHES.	
I. <i>God rest you, merry Gentlemen.</i>	T. DALZIEL . . . . .	2
II. <i>The Manger Throne</i>	W. J. WIEGAND . . . . .	4
III. <i>A Virgin unspotted</i>	T. DALZIEL . . . . .	6
IV. <i>Come, ye lofty</i>	F. A. FRASER . . . . .	8
V. <i>Come, tune your heart</i>	F. A. FRASER . . . . .	10
VI. <i>The first Nowell</i>	T. DALZIEL . . . . .	12
VII. <i>Jesus, hail!</i>	W. J. WIEGAND . . . . .	14
VIII. <i>Good Christian men, rejoice</i>	FRANCIS WALKER . . . . .	16
IX. <i>Sleep, holy Babe</i>	ARTHUR HUGHES . . . . .	18
X. <i>Good King Wenceslas</i>	F. A. FRASER . . . . .	20
XI. <i>When I view the Mother holding</i>	W. J. WIEGAND . . . . .	22
XII. <i>The seven joys of Mary</i>	P. HUNDLEY . . . . .	28
XIII. <i>On the Birthday of the Lord</i>	JOHN LEIGHTON . . . . .	30
XIV. <i>What Child is this?</i>	W. J. WIEGAND . . . . .	32
XV. <i>Glorious, beautiful, golden-bright</i>	W. J. WIEGAND . . . . .	34
XVI. <i>Waken! Christian children</i>	F. A. FRASER . . . . .	36
XVII. <i>A Child this day is born</i>	W. J. WIEGAND . . . . .	38
XVIII. <i>Carol for Christmas Eve</i>	T. DALZIEL . . . . .	40
XIX. <i>When Christ was born of Mary free</i>	ARTHUR HUGHES . . . . .	42



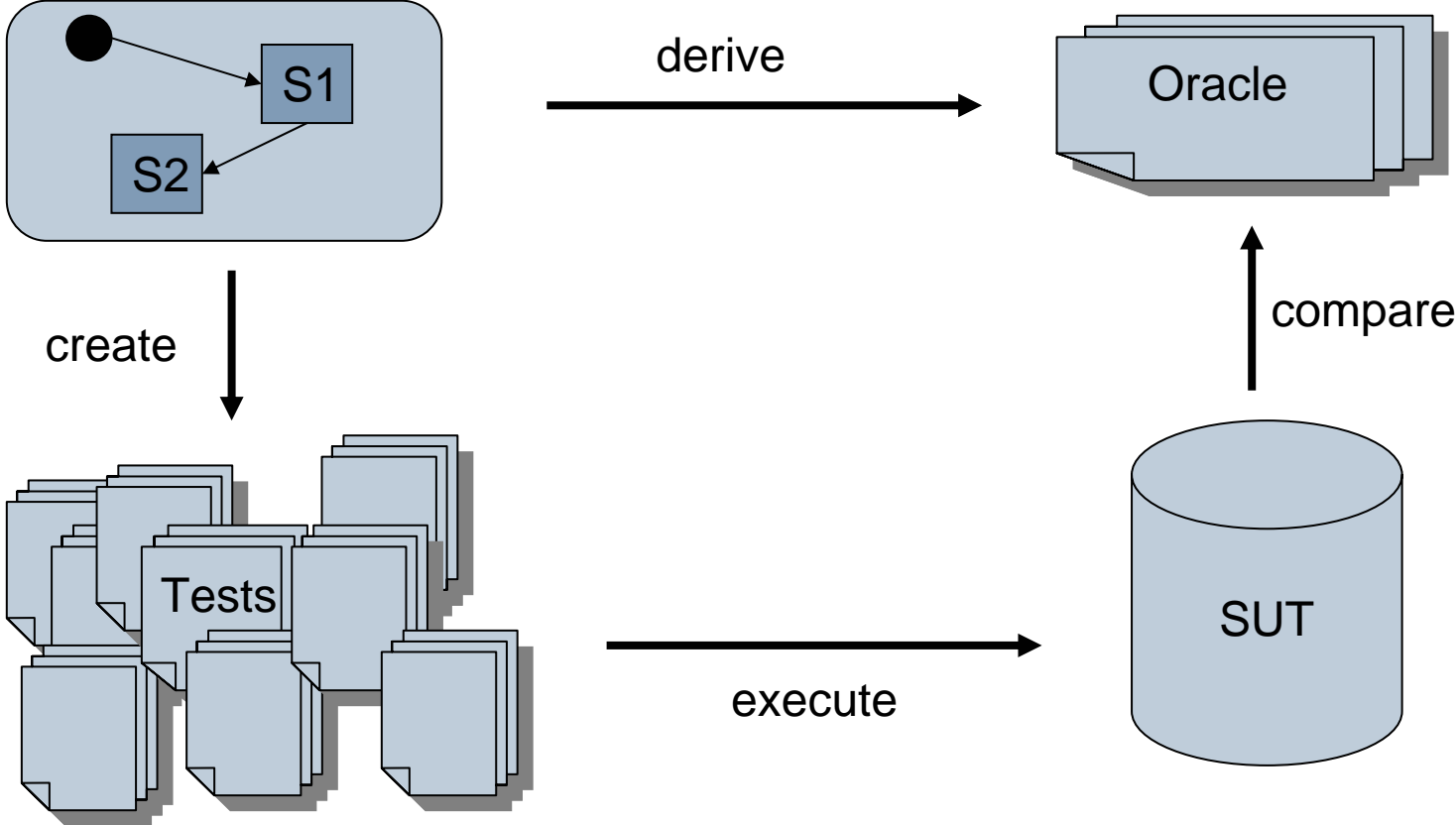
---

# Model-Based Testing

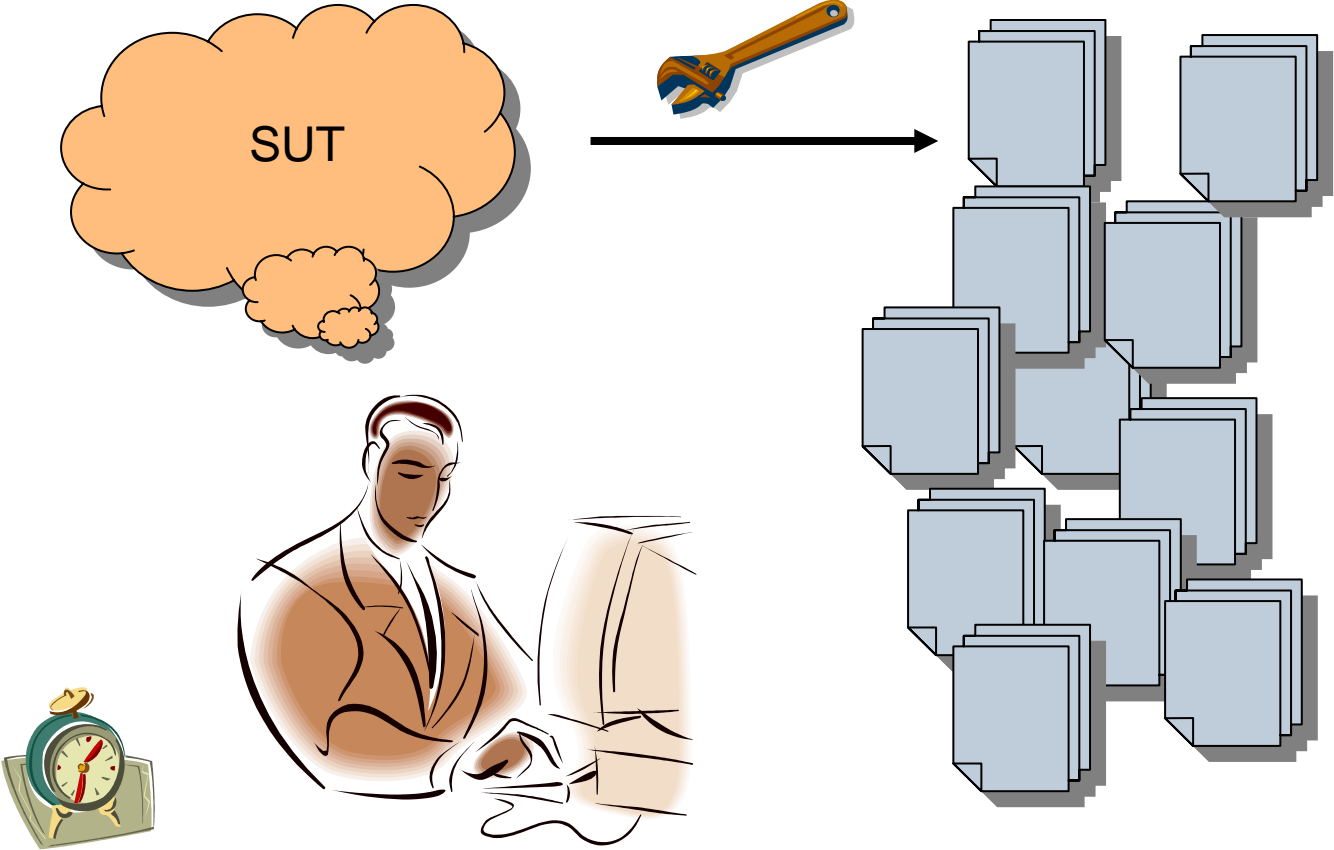
# Introduction to Model-Based Testing



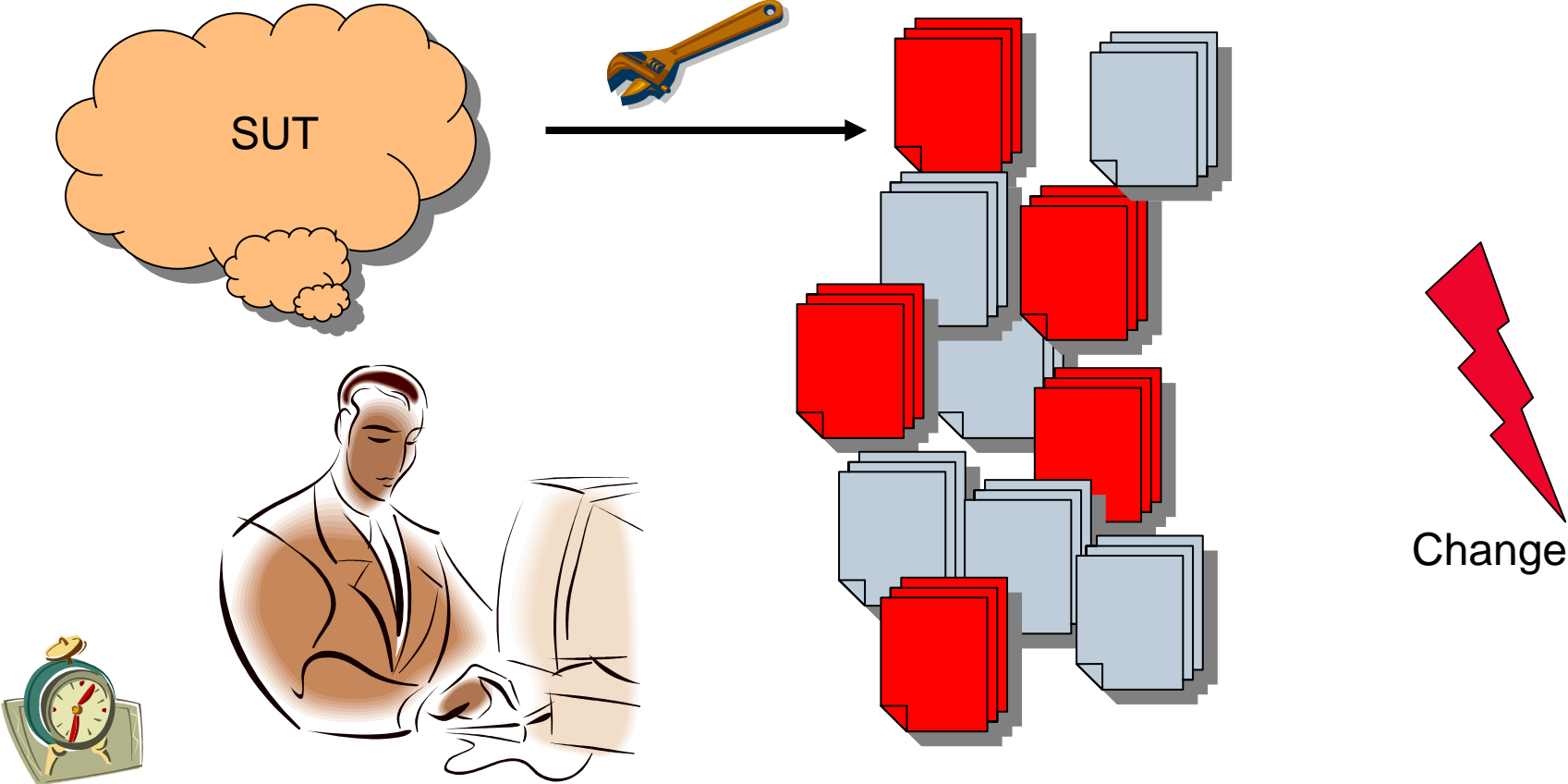
# Introduction to Model-Based Testing



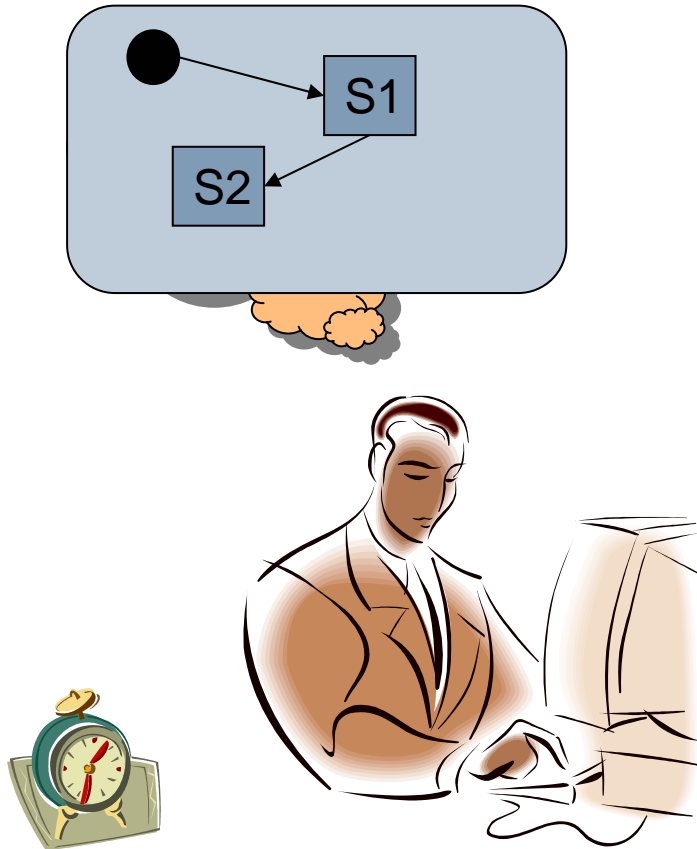
# Manual Test Creation



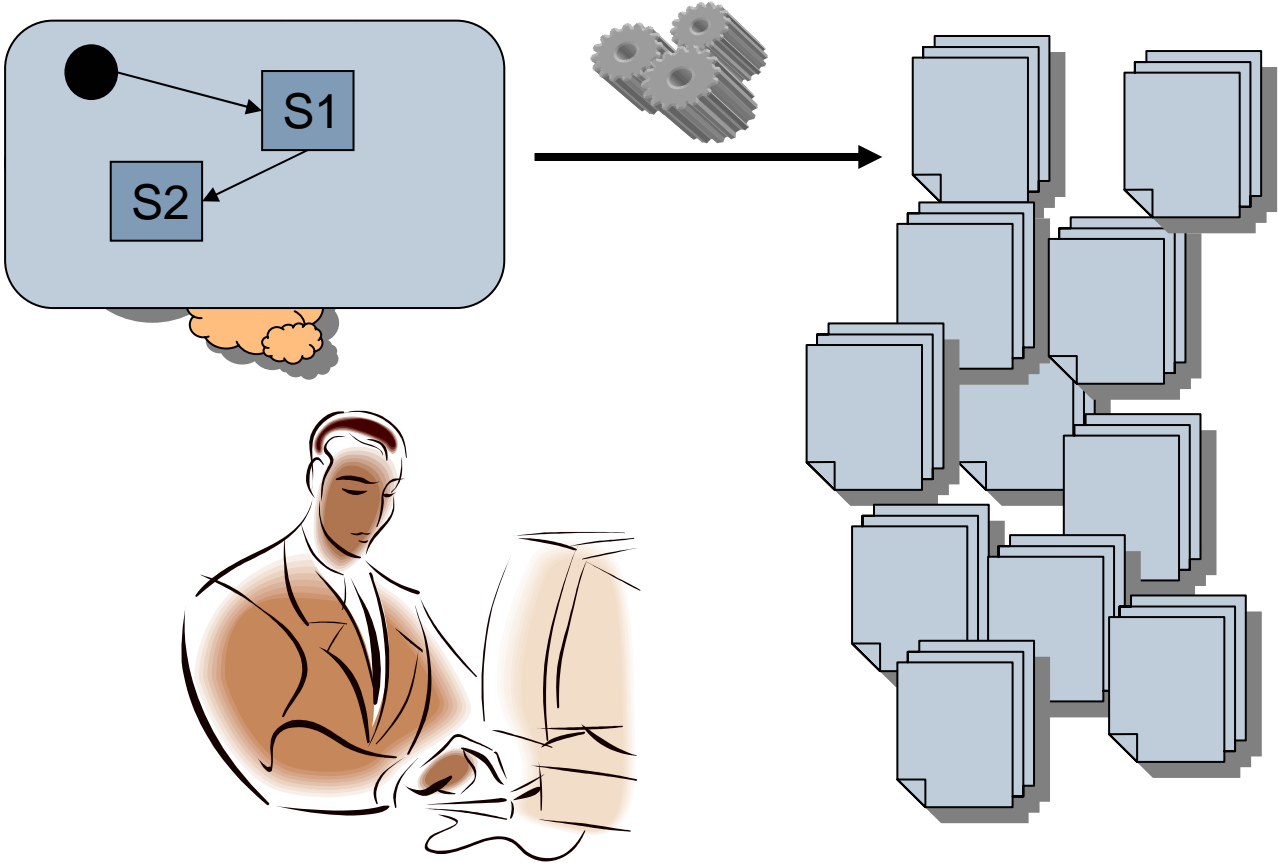
# Manual Test Creation



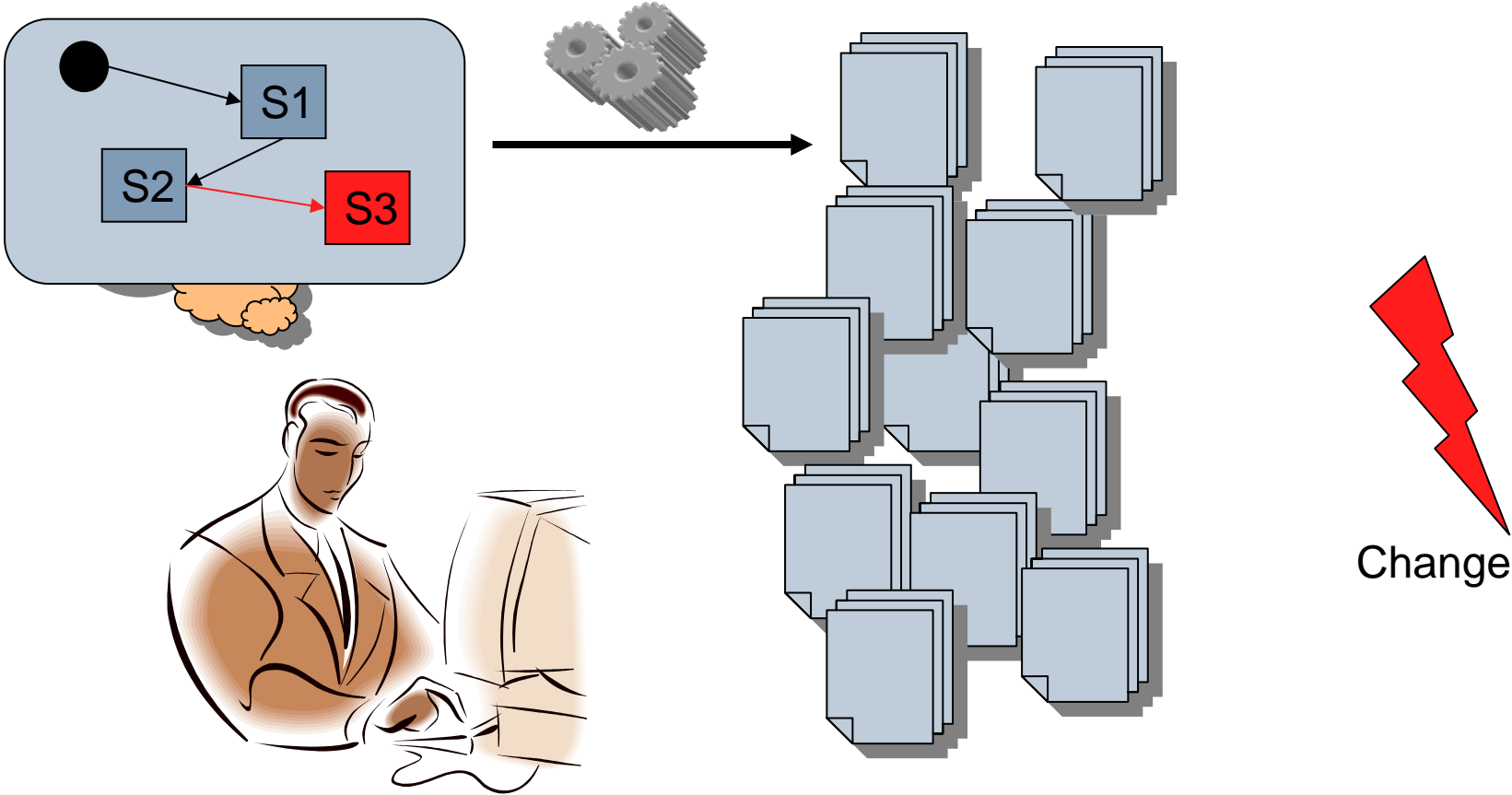
# Automatic Model-Based Test Generation



# Automatic Model-Based Test Generation



# Automatic Model-Based Test Generation

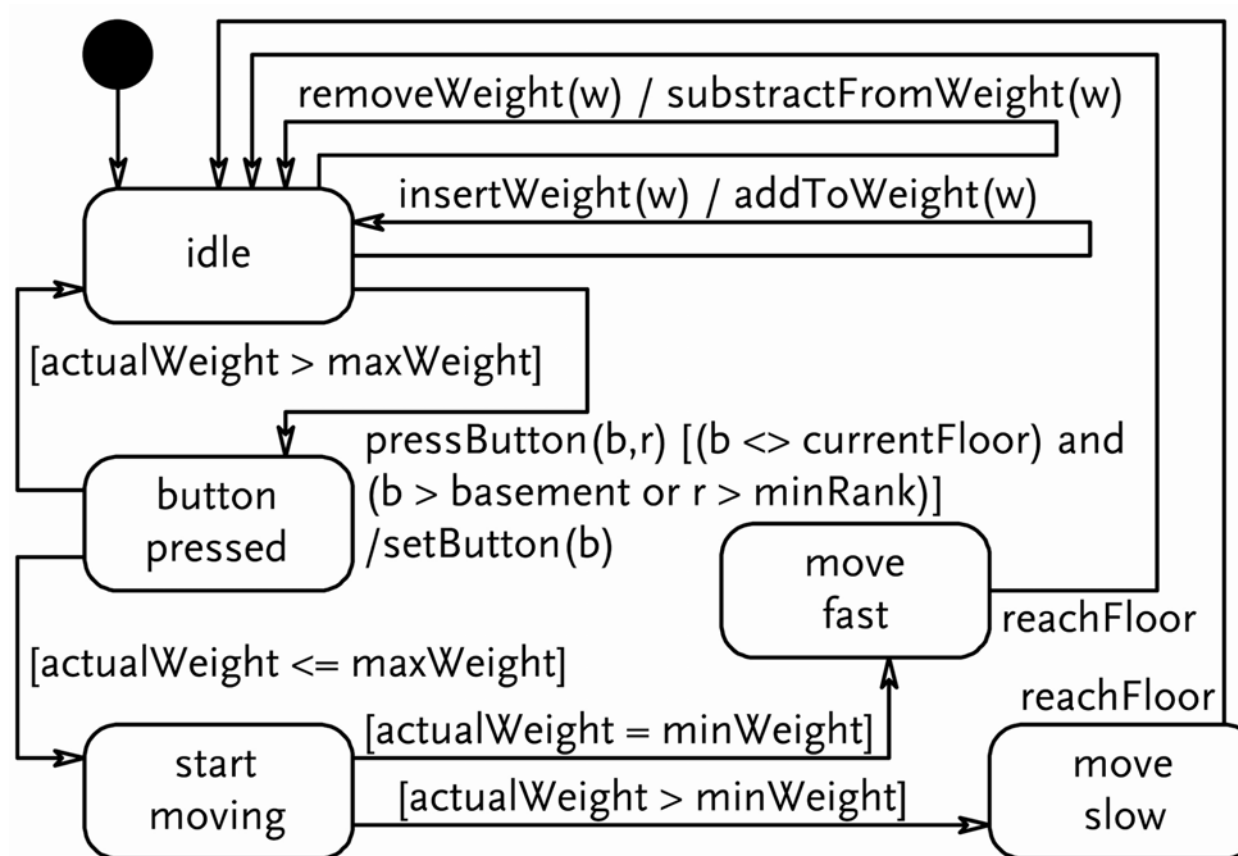




---

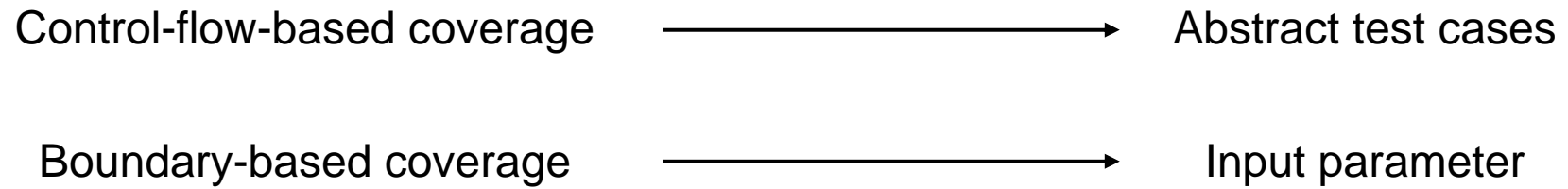
# Combination of Coverage Criteria

# Example of a Freight Elevator



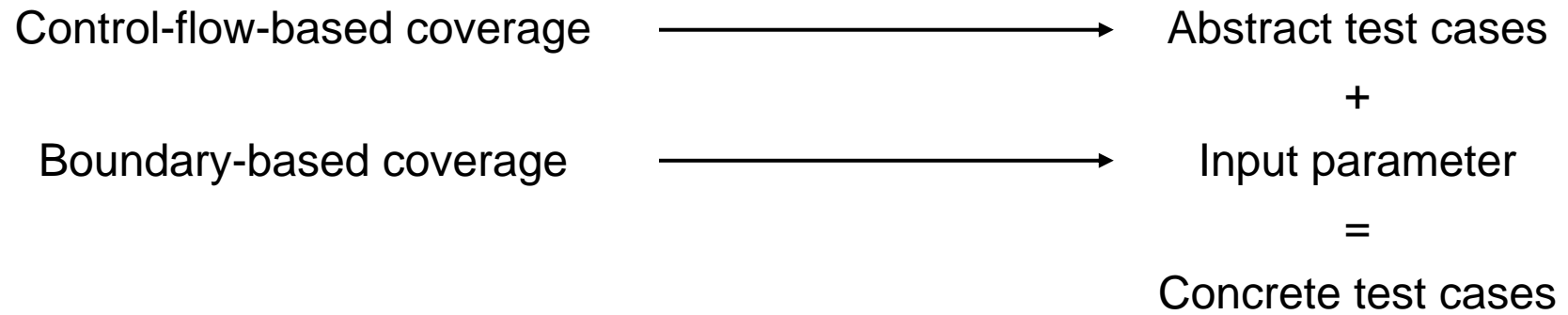
# Combination of Coverage Criteria

---



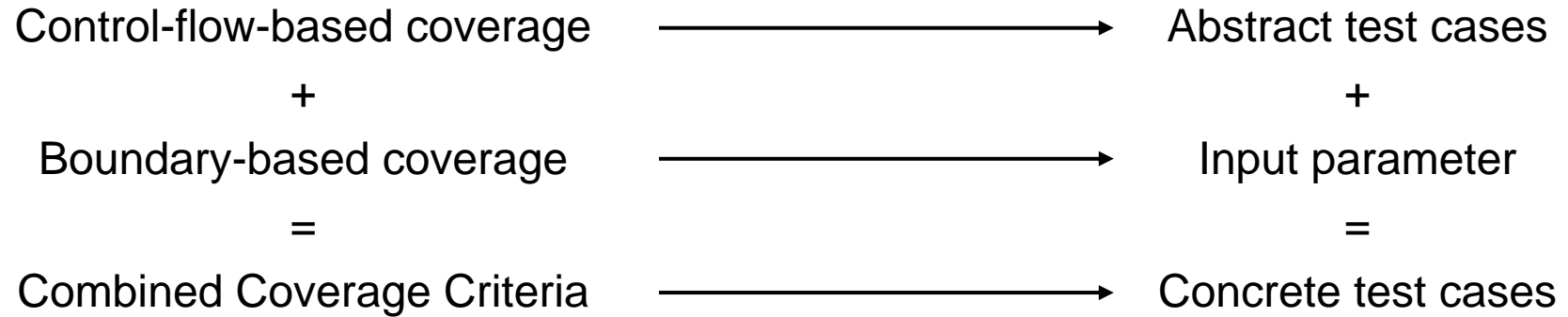
# Combination of Coverage Criteria

---



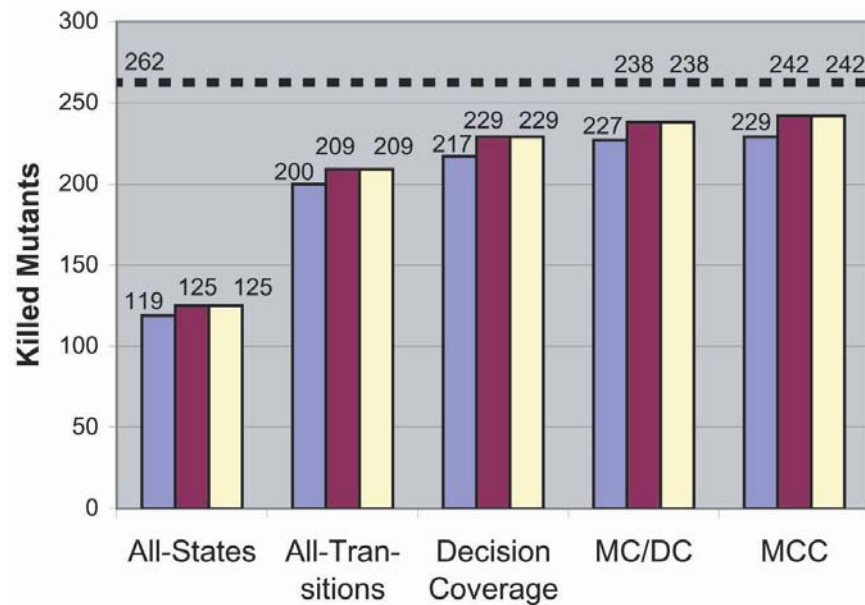
# Combination of Coverage Criteria

---

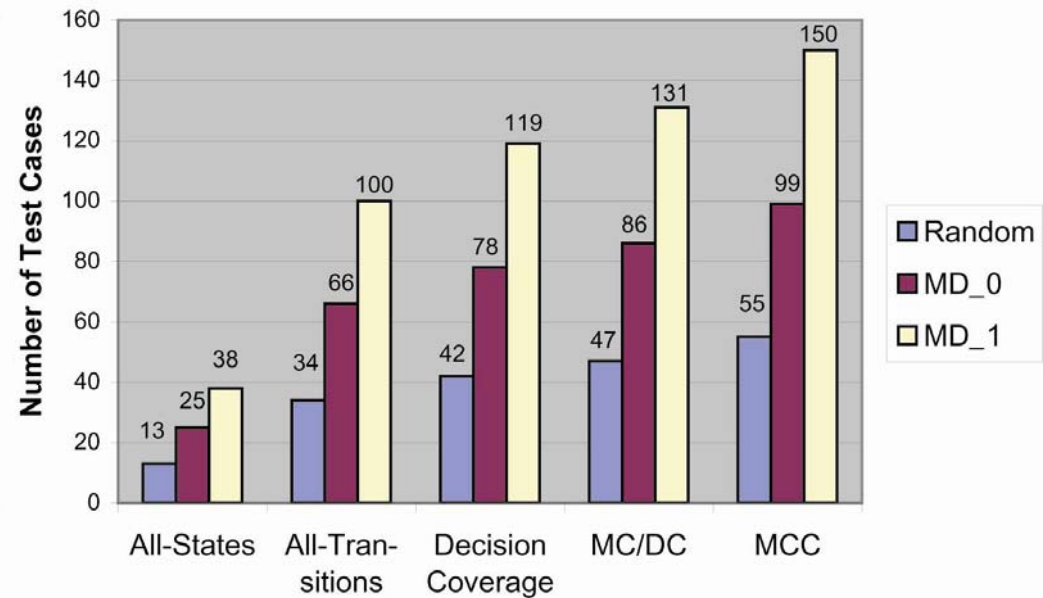


# Results of Application – Industrial Cooperation

## Java Mutation Analysis



## Test Costs





---

# Model Transformations

# Test Model Transformations

Scenario:

Coverage criteria are focussed on the structure of the test model

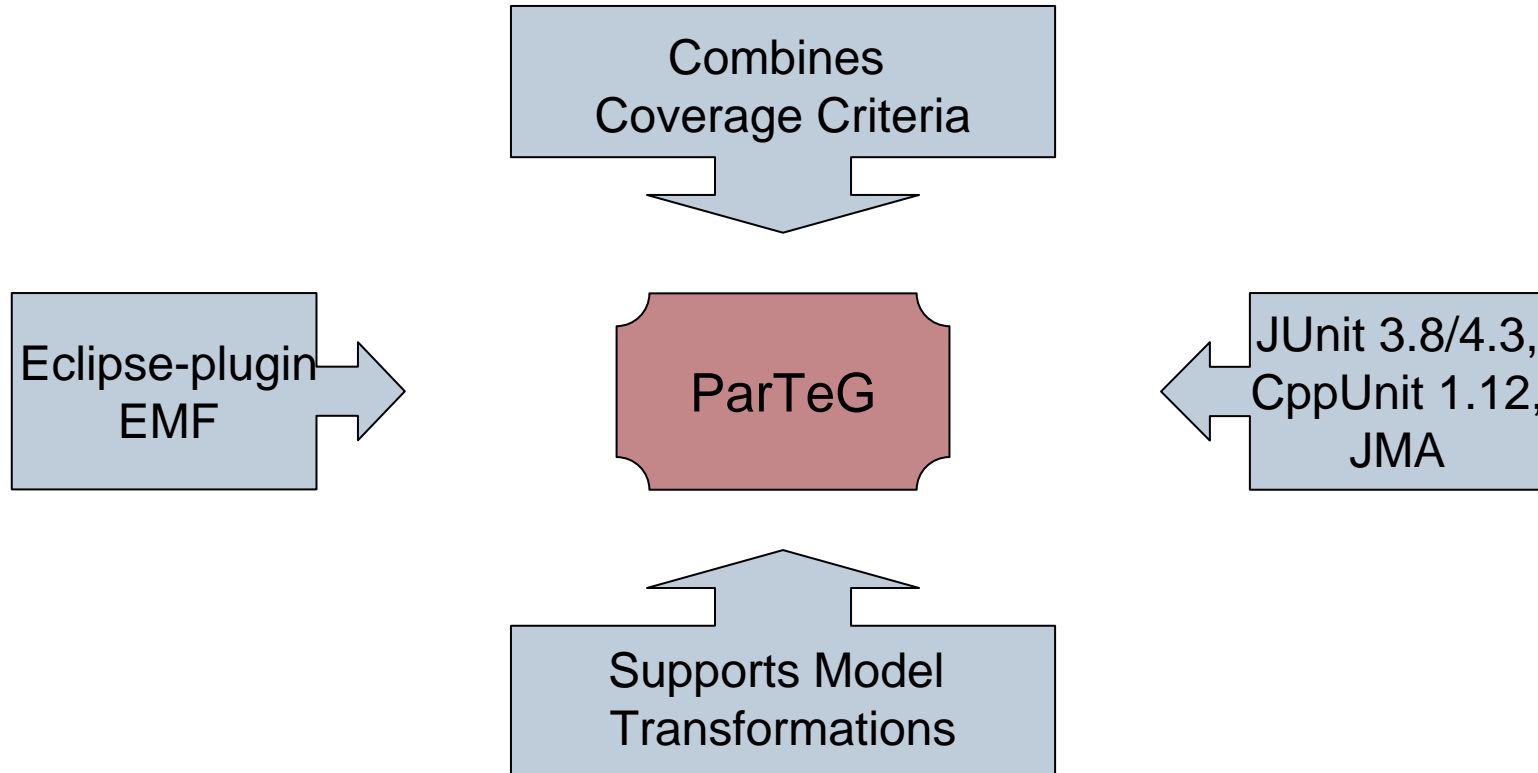
Test cases test the behavior of the SUT

Idea:

Transform the test model in a semantic-preserving manner



# Partition Test Generator





---

# Tool Demo

# Conclusion

---

Model-based testing

ParTeG – Partition Test Generator

Combination of coverage criteria

Support of model transformations

Advantages beyond the application of single coverage criteria

Contact:

stephan.weissleder@first.fraunhofer.de

+49 (0)30 6392 1876

Quality of Model-Based Testing

QuoMBaT @ ICST 2010 (April 6th)

[www.model-based-testing.de/quombat10](http://www.model-based-testing.de/quombat10)

Seite 21