

Process Mining: General Introduction

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Motivation

1. **Get Ready**
2. **Travel by Train**
3. **Conference Starts**
4. **Join Reception**
5. **Have Dinner**
6. **Go Home**
7. **Travel by Train**



1. **Get Ready**
2. **Travel by Train**
3. **Conference Starts**
4. **Give a Talk**
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8. **Travel by Train**

Motivation



- Time consuming
 - Paper procedures
 - Meetings
- Error prone
 - Different people have different views about a same process
 - Information about the process may be incomplete

Motivation – more cases may be possible!

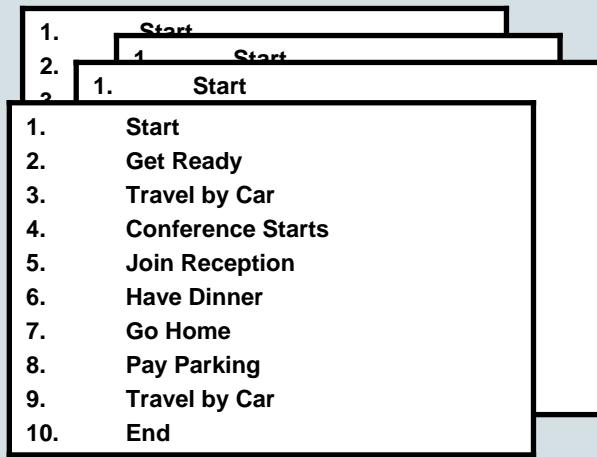
1. Get Ready
2. Travel by Train
3. Conference Starts
4. Join Reception
5. Have Dinner
6. Go Home
7. Travel by Car

1. Get Ready
2. Travel by Train
3. Conference Starts
4. Give a Talk
5. Join Reception

1. Get Ready
2. Travel by Car
3. Conference Starts
4. Join Reception
5. Have Dinner
6. Go Home
7. Pay Parking
8. Travel by Car

1. Get Ready
2. Travel by Car
3. Conference Starts
4. Give a Talk
5. Join Reception
6. Have Dinner
7. Go Home
8. Pay Parking
9. Travel by Car

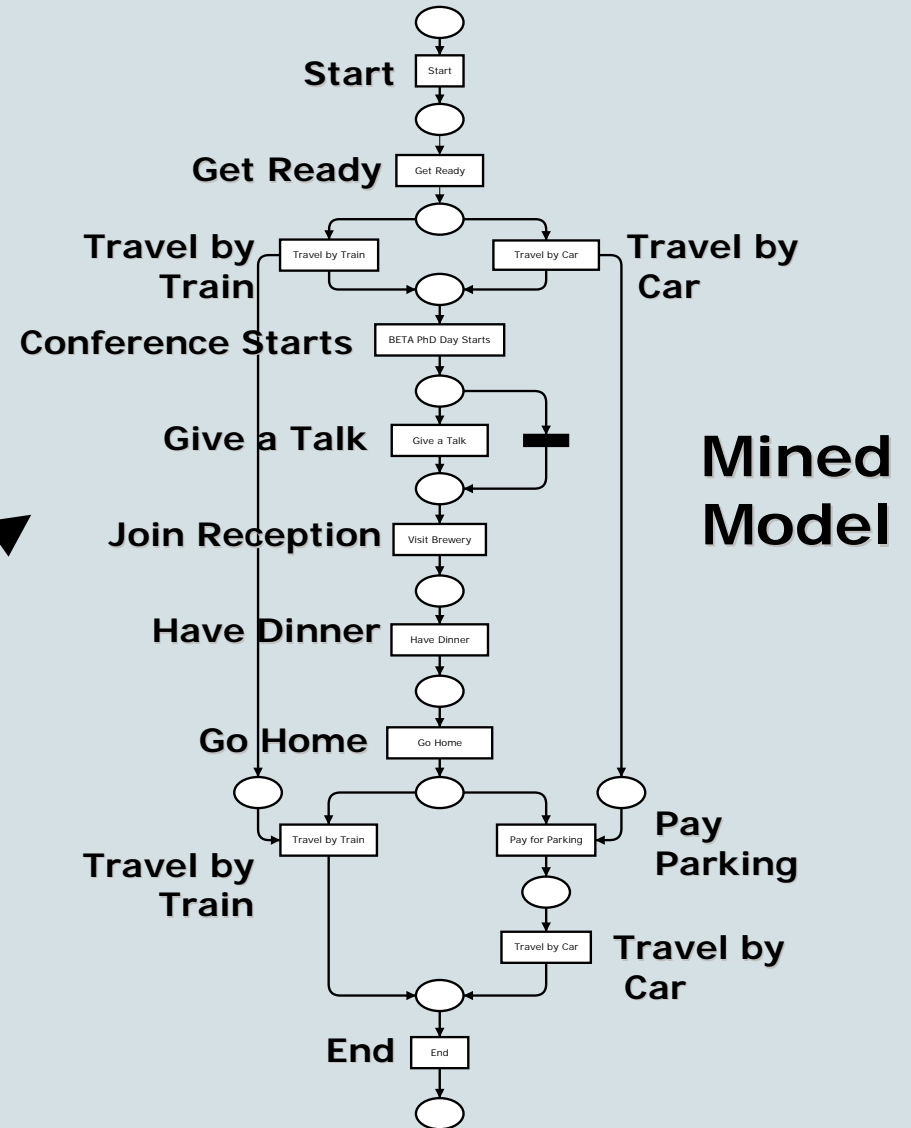
Process Mining



Event Log



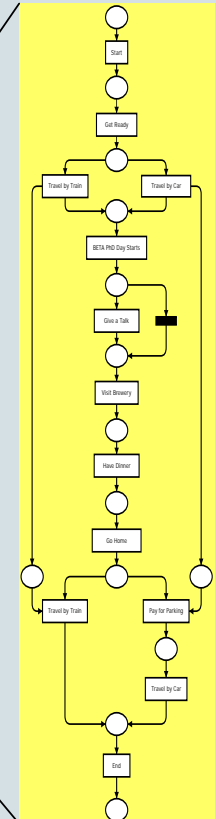
Mining Techniques



Mined Model

Process Mining

- Before deployment
 - Objective picture of how the process has been executed
- After deployment
 - Feedback mechanism



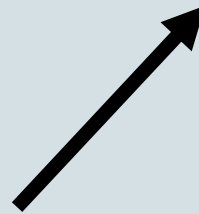
Process Mining



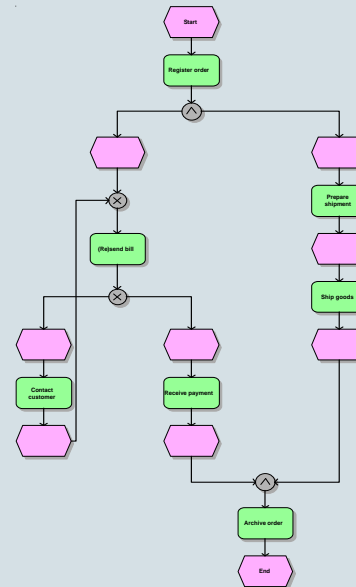
Event Log



Mining Techniques



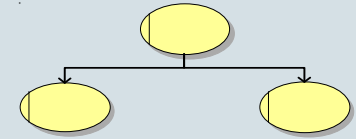
Process Model



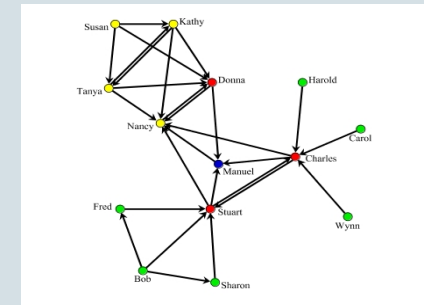
Performance Analysis



Organizational Model



Social Network



Auditing/Security



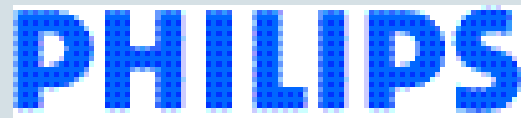
Mined Models

Tools

- *www.processmining.org*
- ProM
- ProMimport
- Free tools!

The screenshot shows the ProM website in a browser window. The main content area includes a large banner with the ProM logo and a background image of workers. Below the banner, there are several panels: a 'ProMimport' section with callouts for 'Convenient log anonymization' and 'Persistent and user-friendly configuration'; a 'Advanced window management' section; and a '4.2 Version' badge. At the bottom, there is a 'download Windows installer' button and a paragraph describing ProM as 'the leading process mining toolkit'.

Case Studies

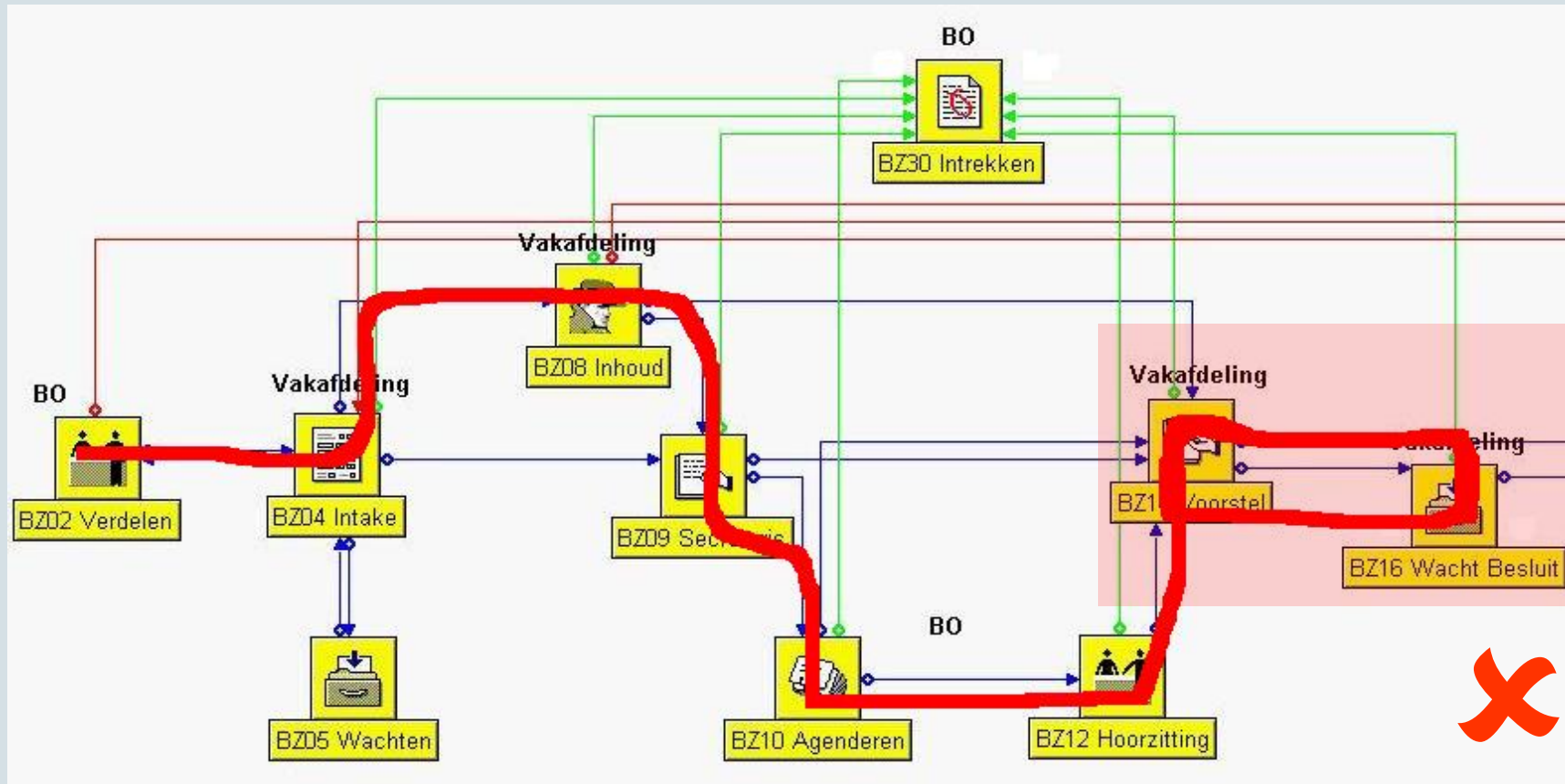


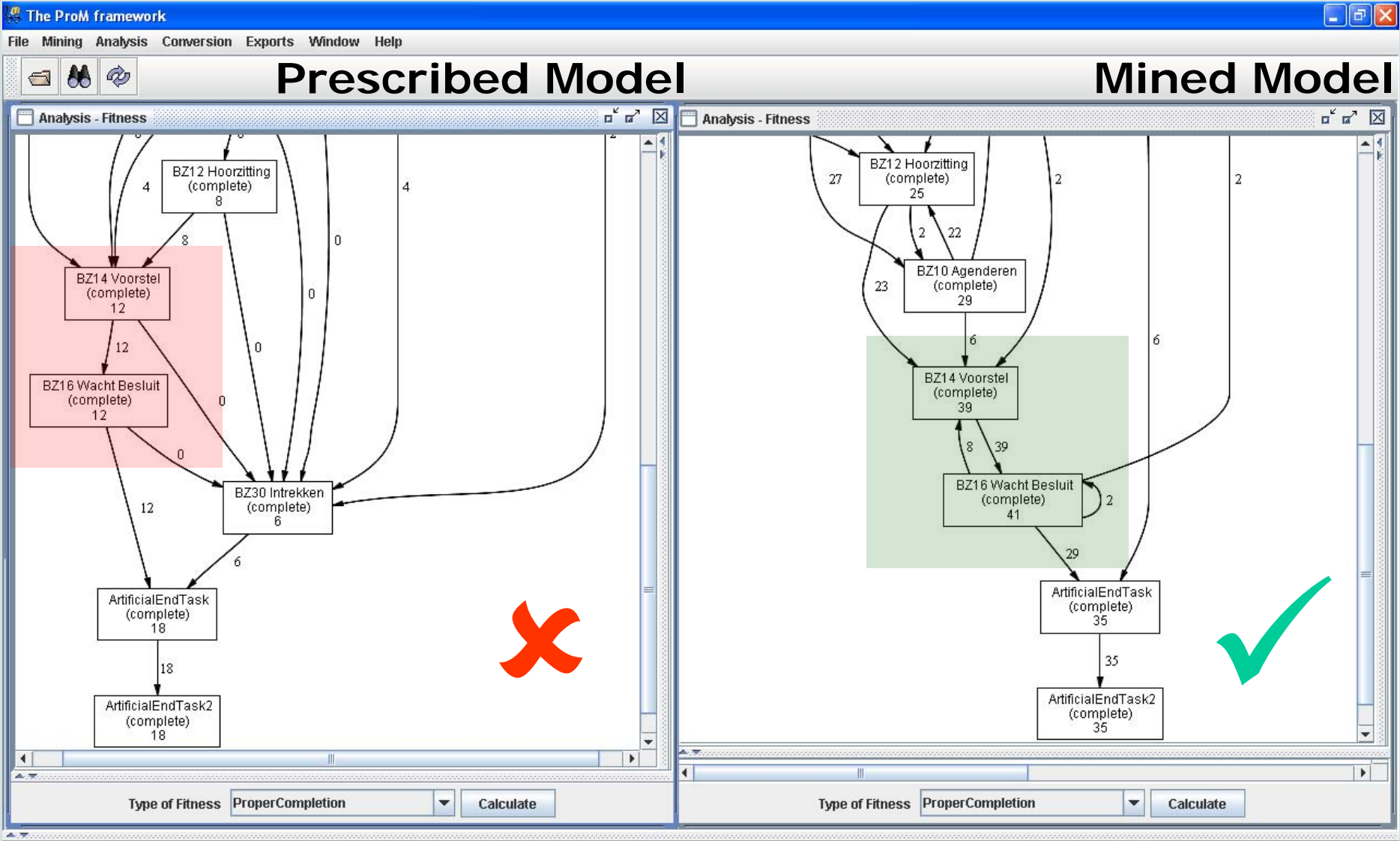
Case Study: Municipality

- Objectives
 - Discover the most frequent paths
 - Compare prescribed models with executed ones and, if necessary, mine models that describe the current situation



Case Study: Bezwaar – 1st Most frequent path (19% cases)





Case Study: ASML

- Objective
 - Reduce the test period of manufactured wafer scanners
- Questions

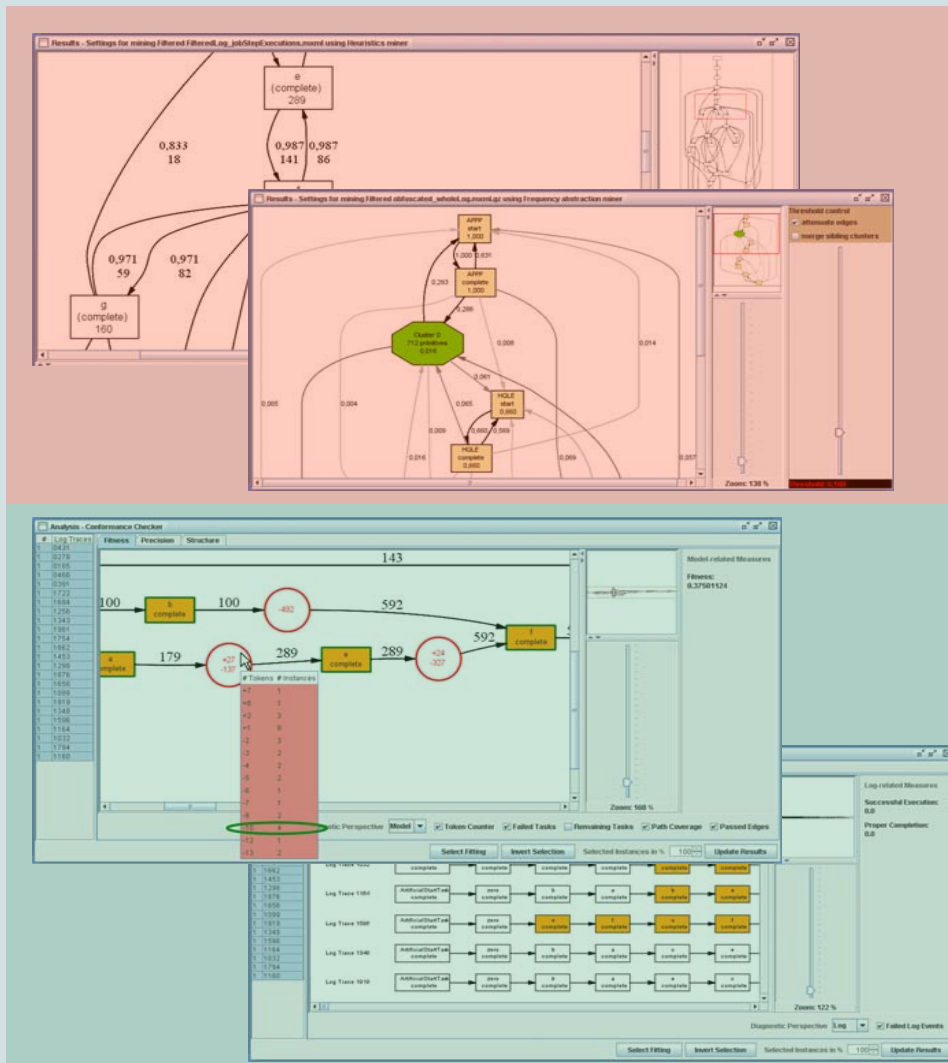


How are the tests actually executed?

How compliant are the actual test executions to the reference process?

Where is the most time spent in the test process?

ASML: Results



Report “Process Mining of Test Processes: A Case Study” >>>

