

Beagle

Design and Architecture

Annika Berger, Joshua Gleitze, Roman Langrehr,
Christoph Michelbach, Ansgar Spiegler, Michael Vogt

10th of January 2016

at the Department of Informatics
Institute for Program Structures and Data Organization (IPD)

| | |
|-----------------|-----------------------------------|
| Reviewer: | Jun.-Prof. Dr.-Ing. Anne Koziolek |
| Advisor: | M.Sc. Axel Busch |
| Second advisor: | M.Sc. Michael Langhammer |

Karlsruher Institut für Technologie
Fakultät für Informatik
Postfach 6980
76128 Karlsruhe

Contents

| | |
|---|-----------|
| List of Figures | ii |
| 1 Architectural Overview | 1 |
| 1.1 Overview of the entire system | 1 |
| 1.2 Components' interaction | 1 |
| 1.3 Communication between Beagle and external tools | 1 |
| 2 Component: Beagle Core | 3 |
| 2.1 The most important classes | 3 |
| 2.2 Reasons for chosen design | 3 |
| 2.3 Chosen design patterns | 3 |
| 2.4 Evaluable Expressions | 3 |
| 2.5 Conversion from and to Palladio | 3 |
| 3 Component: Beagle GUI | 5 |
| 3.1 The most important classes | 5 |
| 3.2 Reasons for chosen design | 5 |
| 3.3 Chosen design patterns | 5 |
| 4 Component: Measurement Tool | 7 |
| 4.1 Reasons for chosen design | 7 |
| 4.2 Adapter to Kieker | 7 |
| 5 Component: Result Analyser | 9 |
| 5.1 Reasons for chosen design | 9 |
| 6 Component: Final Judge | 11 |
| 6.1 Reasons for chosen design | 11 |
| 6.2 "Averaging" Final Judge | 11 |

List of Figures

1 Architectural Overview

1.1 Overview of the entire system

1.2 Components' interaction

1.3 Communication between Beagle and external tools

2 Component: Beagle Core

2.1 The most important classes

2.2 Reasons for chosen design

2.3 Chosen design patterns

2.4 Evaluable Expressions

2.5 Conversion from and to Palladio

3 Component: Beagle GUI

3.1 The most important classes

3.2 Reasons for chosen design

3.3 Chosen design patterns

4 Component: Measurement Tool

4.1 Reasons for chosen design

4.2 Adapter to Kieker

5 Component: Result Analyser

5.1 Reasons for chosen design

6 Component: Final Judge

6.1 Reasons for chosen design

6.2 “Averaging” Final Judge