

DevOps Performance Working Group

SPEC Research Group



February 19, 2015, Würzburg

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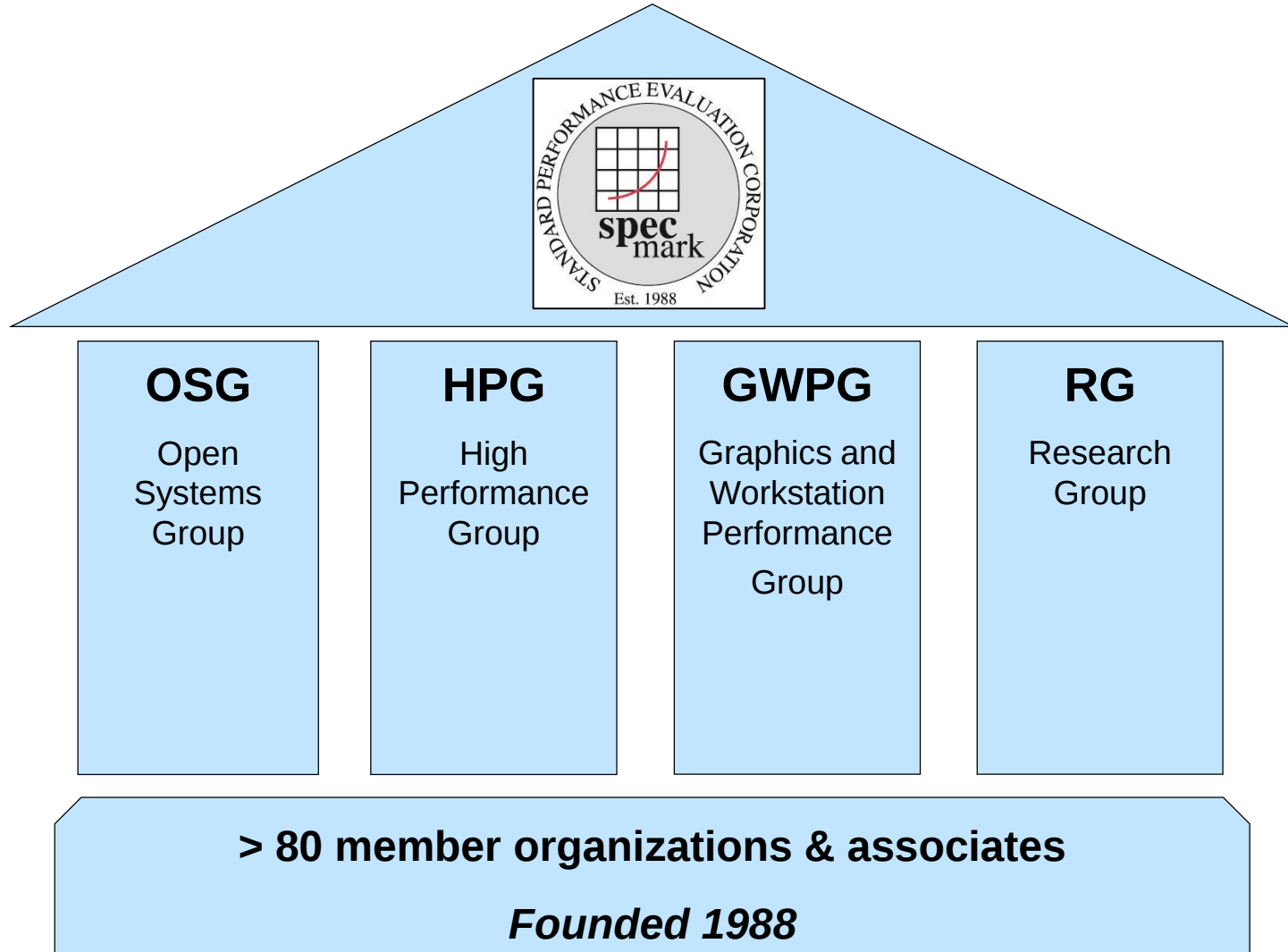
<http://research.spec.org/devopswg>

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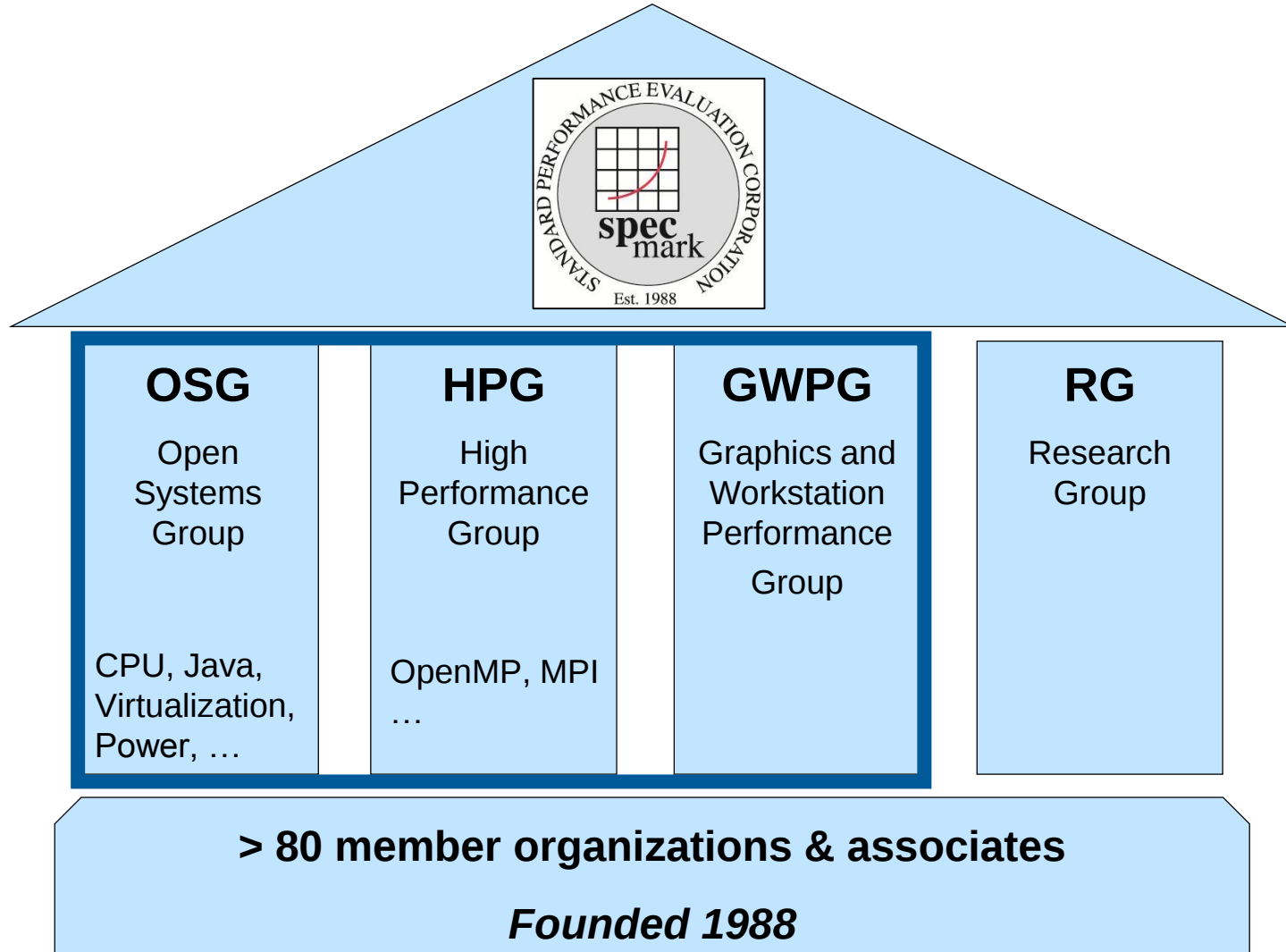
Standard Performance Evaluation Corporation

<http://www.spec.org>



Standard Performance Evaluation Corporation

Development of Industry Standard Benchmarks



Standard Performance Evaluation Corporation

Platform for Collaborative Research



Mission Statement:

- Provide a **platform for collaborative research efforts** in the area of quantitative system evaluation and analysis
- Foster interactions and **collaborations** between industry and academia
- **Scope:** computer benchmarking, performance evaluation, and experimental system analysis in general
- **Focus on** standard scenarios, metrics, benchmarks, analysis methodologies and tools

RG

Research Group

- Big Data
- Cloud
- DevOps Performance
- IDS

& associates

SPEC RG Activities

<http://research.spec.org>



- **Current Working Groups**

Big Data, Cloud, DevOps Performance, Intrusion Detection Systems (IDS)

- **Repository of peer-reviewed tools**



- **Research benchmarks**

- **Portal for benchmarking-related resources**

- **SPEC Distinguished Dissertation Award**

- **Conference and workshop organization**

- e.g., ACM/SPEC ICPE (<http://icpe-conference.org>)

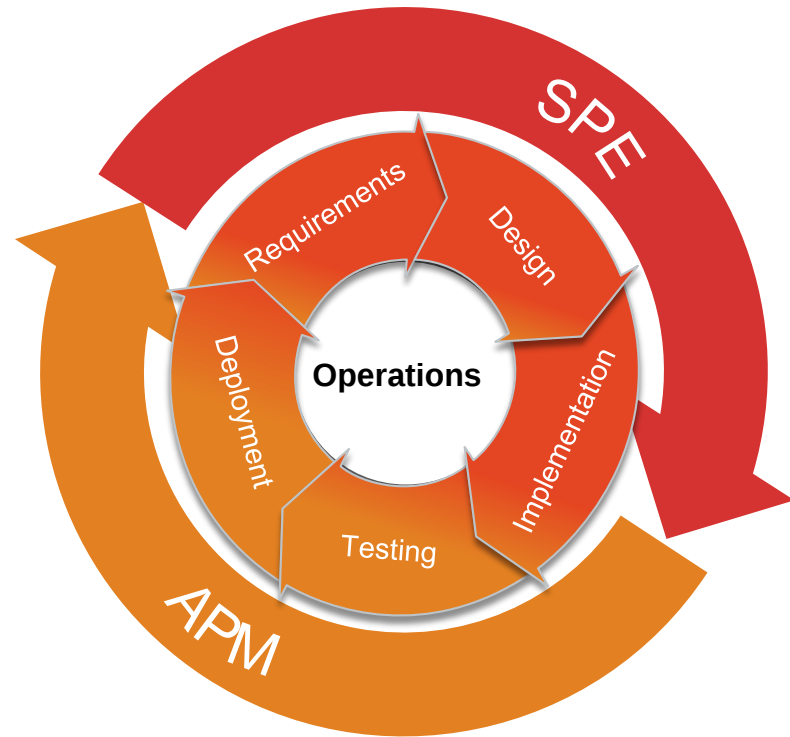
SPEC RG Member Organizations (Feb 2015)

<http://research.spec.org>



SPEC RG DevOps Performance Working Group

<http://research.spec.org/devopswg/>



Mission: The mission of the DevOps Performance WG is to foster and facilitate research in combining **measurement-based** application performance management (APM) and **model-based** software performance engineering (SPE) activities for **business-critical application systems**.

SPEC RG DevOps Performance Working Group

<http://research.spec.org/devopswg/>

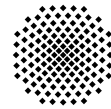


- Current member organizations

fortiss



NOVATEC



University of Stuttgart
Germany



- **Positions** (not elected)

- Chair: André van Hoorn (University of Stuttgart)
- Vice chair: Andreas Brunnert (fortiss GmbH)
- Secretary: Felix Willnecker (fortiss GmbH)
- Release manager: Nils Ehmke (Kiel University) / Starting from march:
Alexander Wert (KIT)

- **Bi-weekly calls**, currently @ Fri - 4:00-5:00 (Berlin/CET)

- **F2F meeting** tomorrow 09:30-16:00 (room UR 1)

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Topics of Interest



- **Performance and workload model extraction**
 - Dynamic/adaptive instrumentation techniques
 - Combination of static and dynamic analysis
- **Feedback between development (Dev) and operations (Ops)**
 - Interchange formats for metrics and models (interoperability)
 - Process models to better integrate SPE and APM activities
- **Runtime performance management techniques**
 - Automatic problem detection, diagnosis, and resolution
- **Load testing**
- **Benchmarks for SPE and APM methods, techniques, and tools**

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Current Activities



- **Technical report on DevOps performance (10+ authors)**
- Current State and Open Challenges
- Structure:



1. Performance Management Activities: State of the Art

- Model- and measurement-based performance evaluation techniques, model extraction, ...

2. Software Performance Engineering (SPE) During Development (Dev)

- Performance awareness, performance anti-pattern detection, performance change detection, ...

3. Application Performance Management (APM) During Operations (Ops)

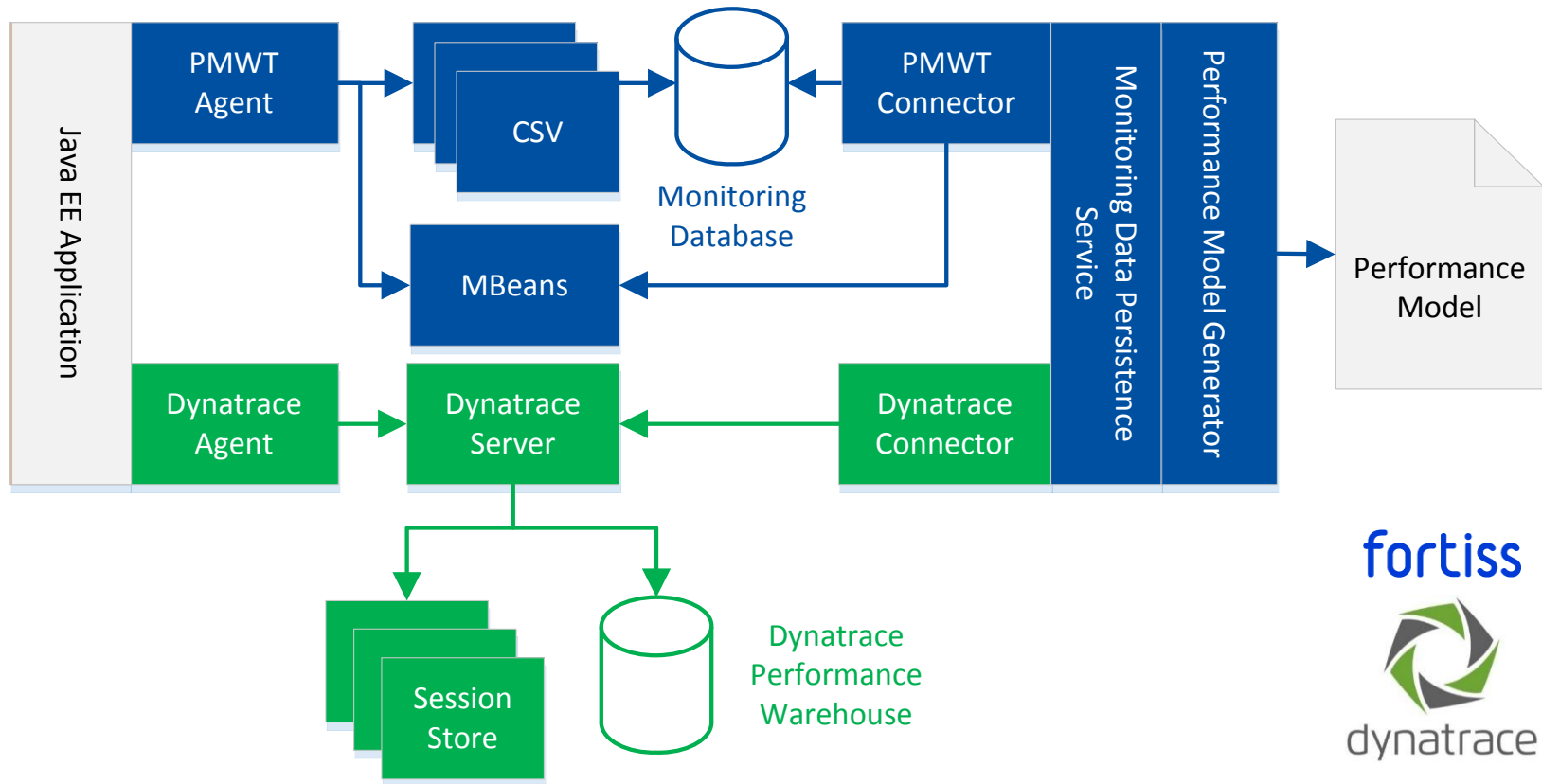
- Monitoring and reasoning, extracting load intensity and navigational profiles, ...

4. Evolution: Going Back-And-Forth between Dev and Ops

- Capacity planning and management, architectural improvements using models, ...

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Current Activities



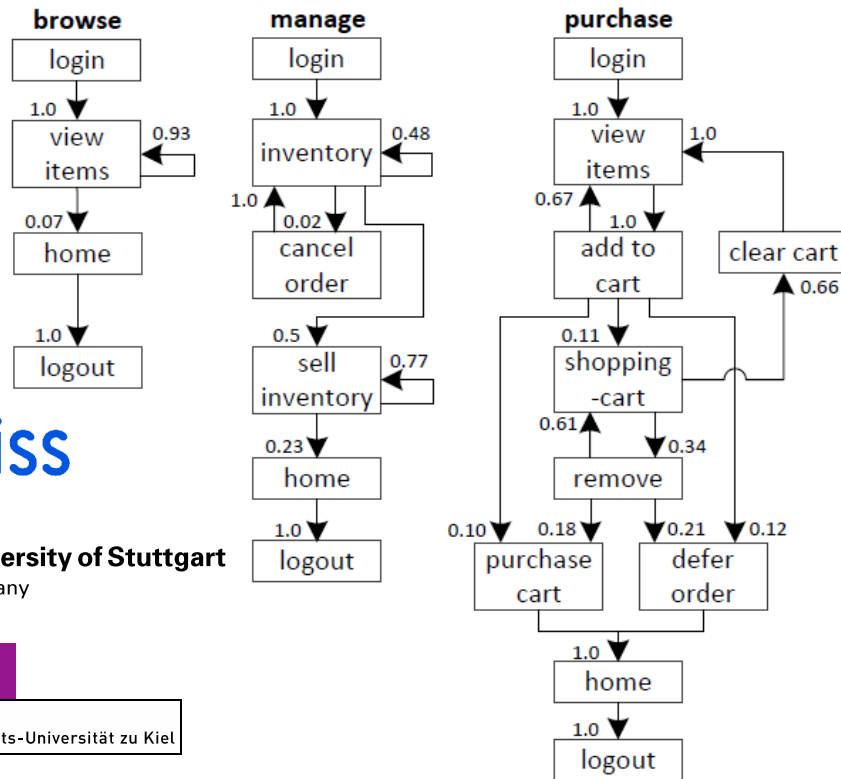
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Using industry standard APM solutions for model generation
(currently cooperating with dynaTrace) – Best Demo @ ICPE 2015



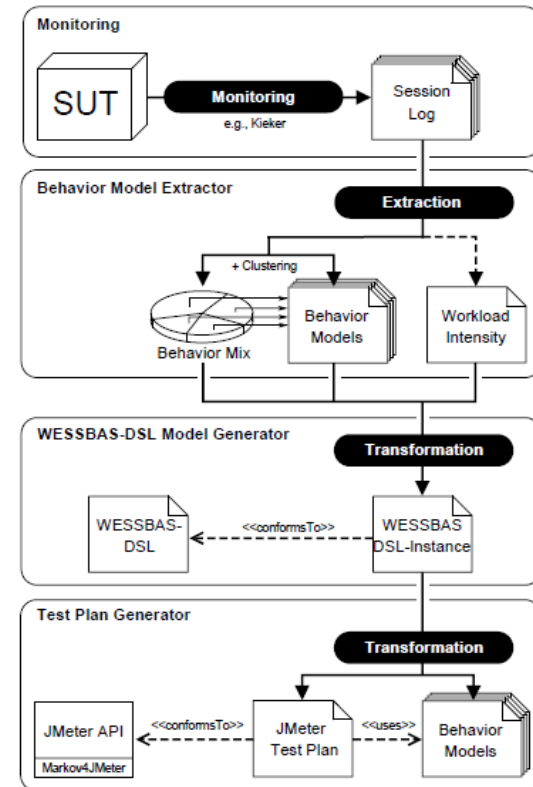
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Christian-Albrechts-Universität zu Kiel

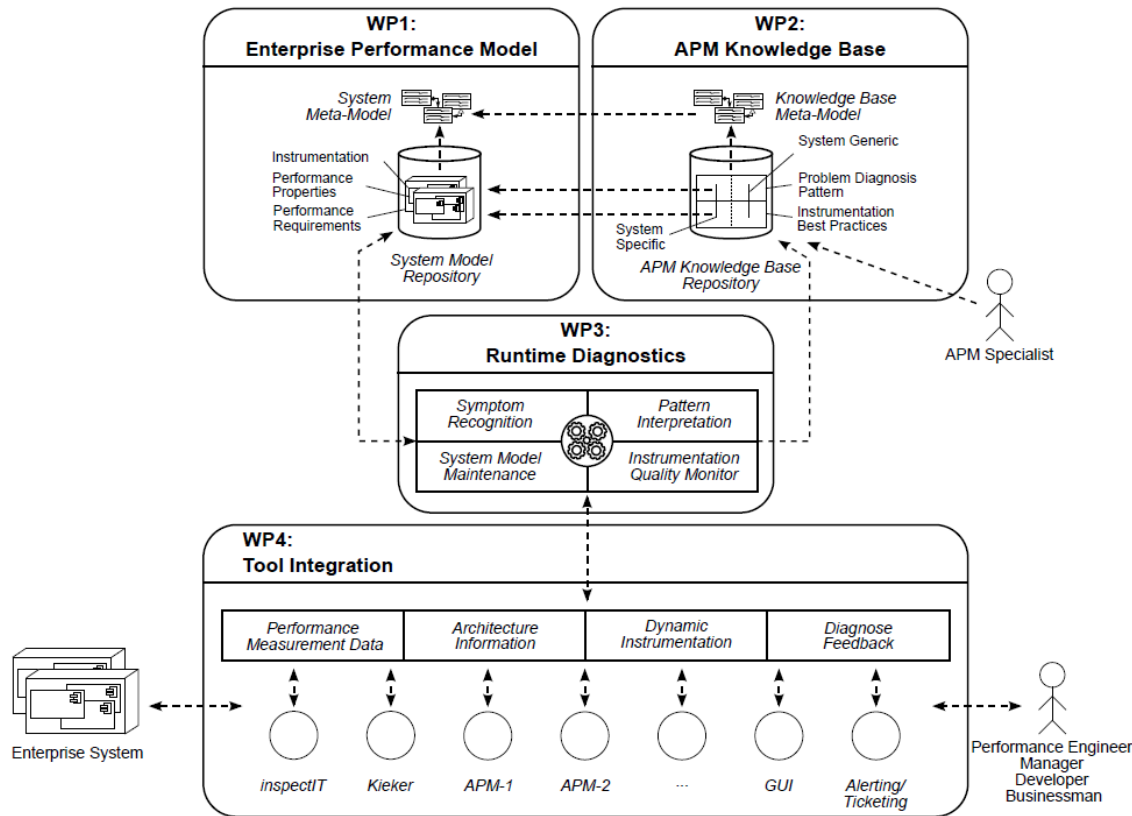


Workload Extraction and Specification for Session-Based Application Systems

→ Integrating Measurement-Based and Model-Based Evaluation

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Current Activities



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Expert-guided automatic diagnosis of performance problems in enterprise applications

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<http://research.spec.org/devopswg/>



- Interested to join?
 - Learn more: <http://research.spec.org/devopswg/>
 - **Contact:**
 - André van Hoorn (Chair): van.hoorn@informatik.uni-stuttgart.de
 - Andreas Brunnert (Vice chair): brunnert@fortiss.org
- **We are always interested in:**
 - Joint publications (e.g., scientific or white papers)
 - Joint projects (e.g., tools or benchmarks)
 - Jointly supervised student theses / internships
 - Production workloads and measurement/architectural data
 - Current challenges that cannot be addressed by existing tools



F2F Meeting Agenda (Part 1)

- **09:30-10:30**
 - Introduction round
 - Discussion TR
 1. Summary of Goals and „Story“
 2. Structure Overview
 3. Open discussion about the Structure
- **10:30-11:00 – Coffee Break**
- **11:00-12:30**
- **12:30-13:30 – Lunch**

F2F Meeting Agenda (Part 2)

- **13:30-16:00**
 - G. Casale: DevOps@Imperial – 15 min
 - G. Hager: DevOps@FAU – 15 min
 - Possible future activities
 - Discussion about future projects (track tickets)
 - Further examples
 - Dagstuhl Seminar
 - DevOps Performance Workshop @ (e.g.) ICPE
 - Marketing (web site, t-shirts/polos, member websites)
 - (How to) make WG outputs visible to outside?
 - (Refine) RG acknowledgment clause in papers: „This work has been supported by the Research Group of the Standard Performance Evaluation Corporation (SPEC).”
 - „Products“, e.g.,
 - Seminars for industry people, e.g., how to improve performance in DevOps life cycles
 - Attracting new members
 - More??????
- **16:30 – End**