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A Meta Model for Predictive Analysis of Modifications on HPDC Infrastructures

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SuperMUC @ LRZ

Video: **SuperMUC rendered on SuperMUC by LRZ**

http://youtu.be/OlAS6iiqWrQ

Describing an HPDC infrastructures

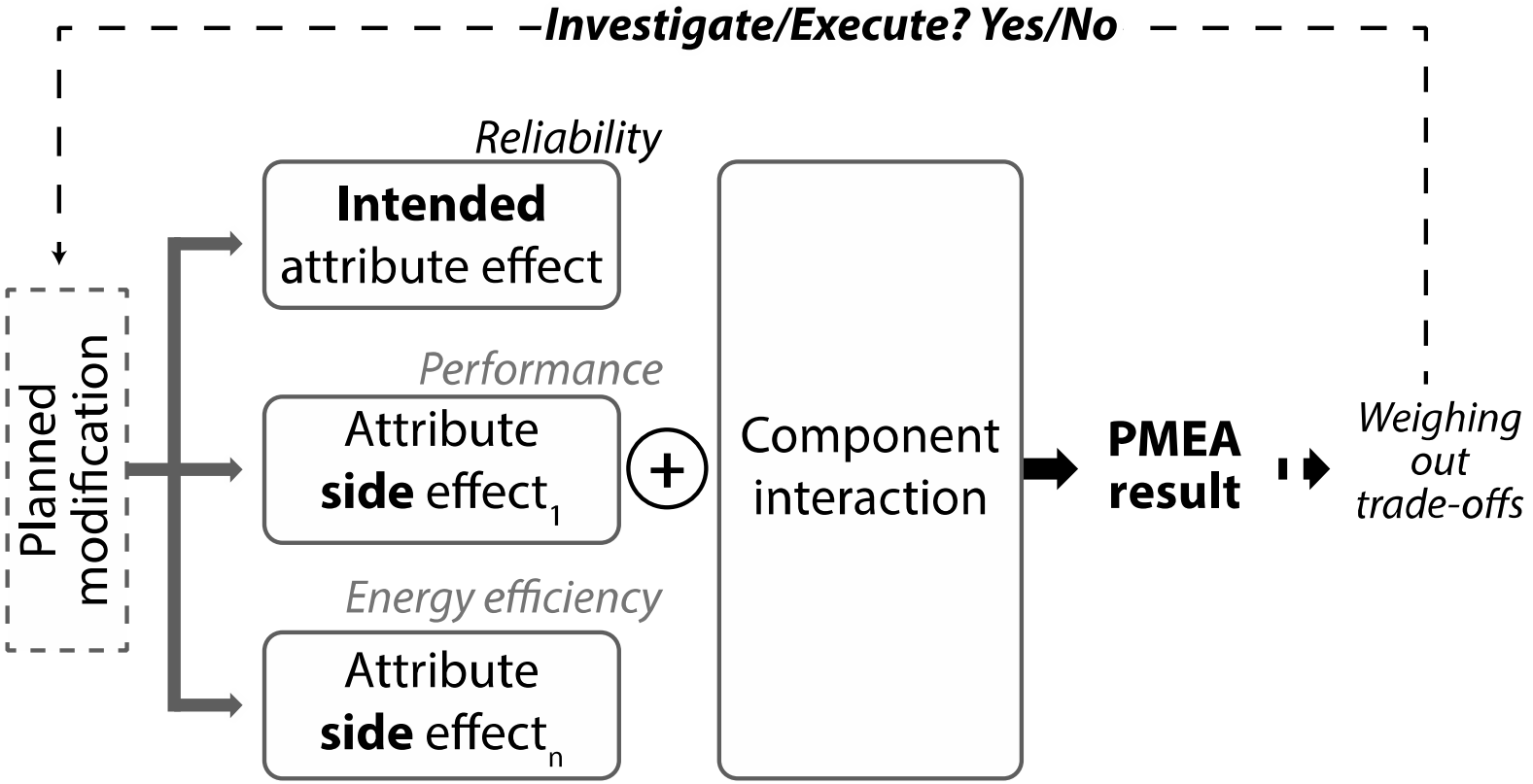
- **Capability** – Well-defined functionality the HPDC infrastructure exposes to a user or (scientific) application.
- **Property** – Specific aspect of the HPDC infrastructure, which is influenced by the applied hardware and software configuration.
- **Attribute** – Quality of the exposed capabilities and the HPDC infrastructure.

Motivation

"How to decide with respect to the entire HPC infrastructure whether a planned modification should be explored or executed at all?"

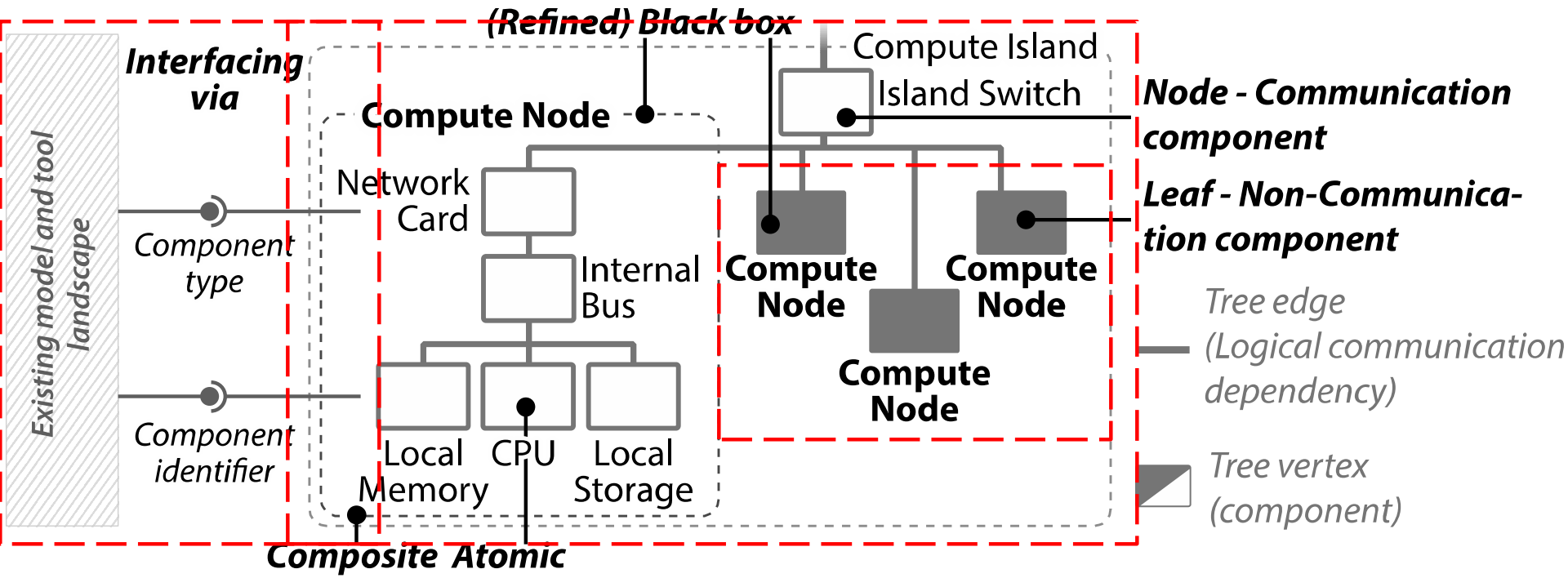
"Should we introduce redundancy in order to improve the reliability of the storage components in our HPC infrastructure?"

Predictive Modification Effect Analysis (PMEA)



Before investigating (technical) modification assembly, analyze whether the (negative) side effects will outweigh the (positive) intended effects

HPDC infrastructure model



Summary

- PMEA investigates a modification‘s intended and side effects before analyzing its accomplishment
- Presented an HPDC infrastructure model to support PMEA

Next steps

- Incorporate workload and load consideration
- Further investigate PMEA and formalize process

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