

Propositions Accompanying the Dissertation

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Abstract

This document contains the statements belonging to the PhD thesis *CAFCR: A Multi-view Method for Embedded Systems Architecting; Balancing Genericity and Specificity*.

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1 Introduction

The Dutch dissertation system has a tradition of writing a PhD thesis and accompanying this thesis with 10 propositions. The propositions must be “defendable”. A few of the propositions must have a direct relation with the thesis itself. The other propositions provide an indication of the scientific breadth of the candidate. The thesis itself is normally very specialized, while the expectation is that a scientist has a broad area of know-how and interest.

The last statement may be more playful, or it may be a more social or political oriented proposition.

1. The importance of methods for efficient use of CPU and memory is underestimated by most software engineers. For visions such as *ambient intelligence* and *smart surroundings* these methods are indispensable.
2. A big emphasis on process and methods of system design happens at the expense of the content side of system design. Process and method are only means that cannot result in good products without application domain know-how and know-how of the applied technologies.
3. In practice UML is a counterproductive means for software and system design.
4. Generalizations are often an obstruction for finding new solutions.
5. It is for the functioning of a system architect essential to have sufficient depth in an engineering discipline and to actively maintain this discipline.
6. In the medical market a lot of user flexibility can be gained by making a paradigm shift from *product as box* to a *network of systems*. The clinical practice becomes the focus point, instead of technology, while in the longer term a shift will be made to patient-centered.
7. To make human-oriented systems, software and system designers need empathic skills, to enter into the user’s emotions, feelings, culture, and experience.
8. The measurement of the research results by counting the number of publications forces scientists to become more specialized. Integrating research is therefore less attractive, because it is more difficult to substantiate and to publish.
9. Nature is a good source of inspiration to make more robust systems. Systems that are designed by humans are, due to the pursuit of unification and standardization, more vulnerable than natural systems with a large diversity.
10. The youth welfare in the Netherlands can not cope with the large group of children from people without prospects and drug addicts. This is ticking

time-bomb threatening the Dutch society. The causes are: over-specialism, too many reorganizations, spending cuts en the pursuit of naïve ideals.

References

- [1] Gerrit Muller. The system architecture homepage. <http://www.gaudisite.nl/index.html>, 1999.

History

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- created by translating the Dutch version
- added a short introduction for the non-Dutch readers