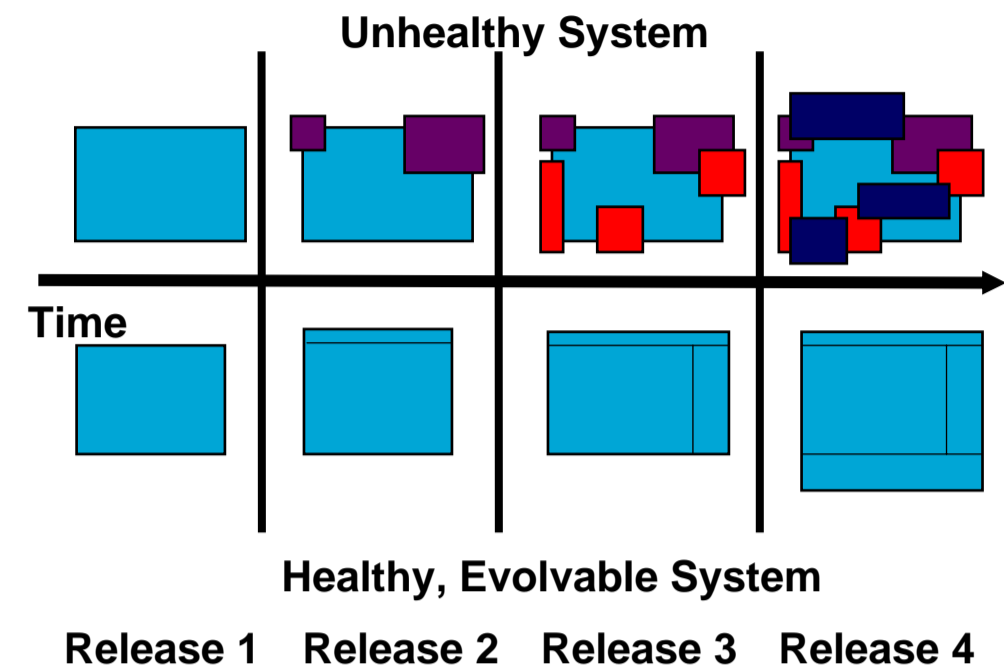


Darwin Project



Evolvability – Complex System Transparency in Design



Introduction

New products in the field of complex mechatronic product development (e.g. MRI) are always an evolution of existing products. System changes made now should not compromise the possibility to make new changes in the future.

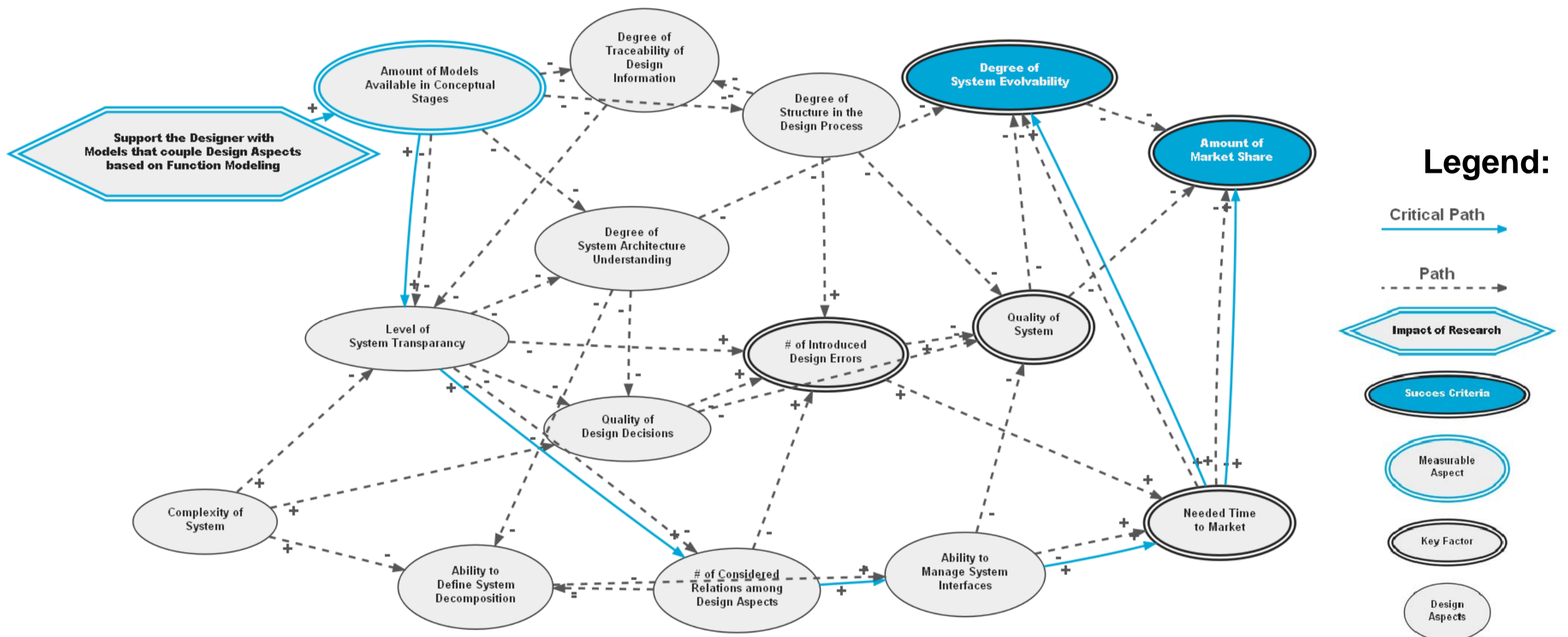
Maintaining system health from release to release is essential to ensure timely solutions and good quality products, but has proven to be a very difficult process to manage in practice.

Research Questions

How can system architects be supported in making a system decomposition that can deal with unknown future design changes?

What and how should design information be managed and presented to support architects and designers in system decomposition and interface management?

Initial Reference and Impact Model of Research



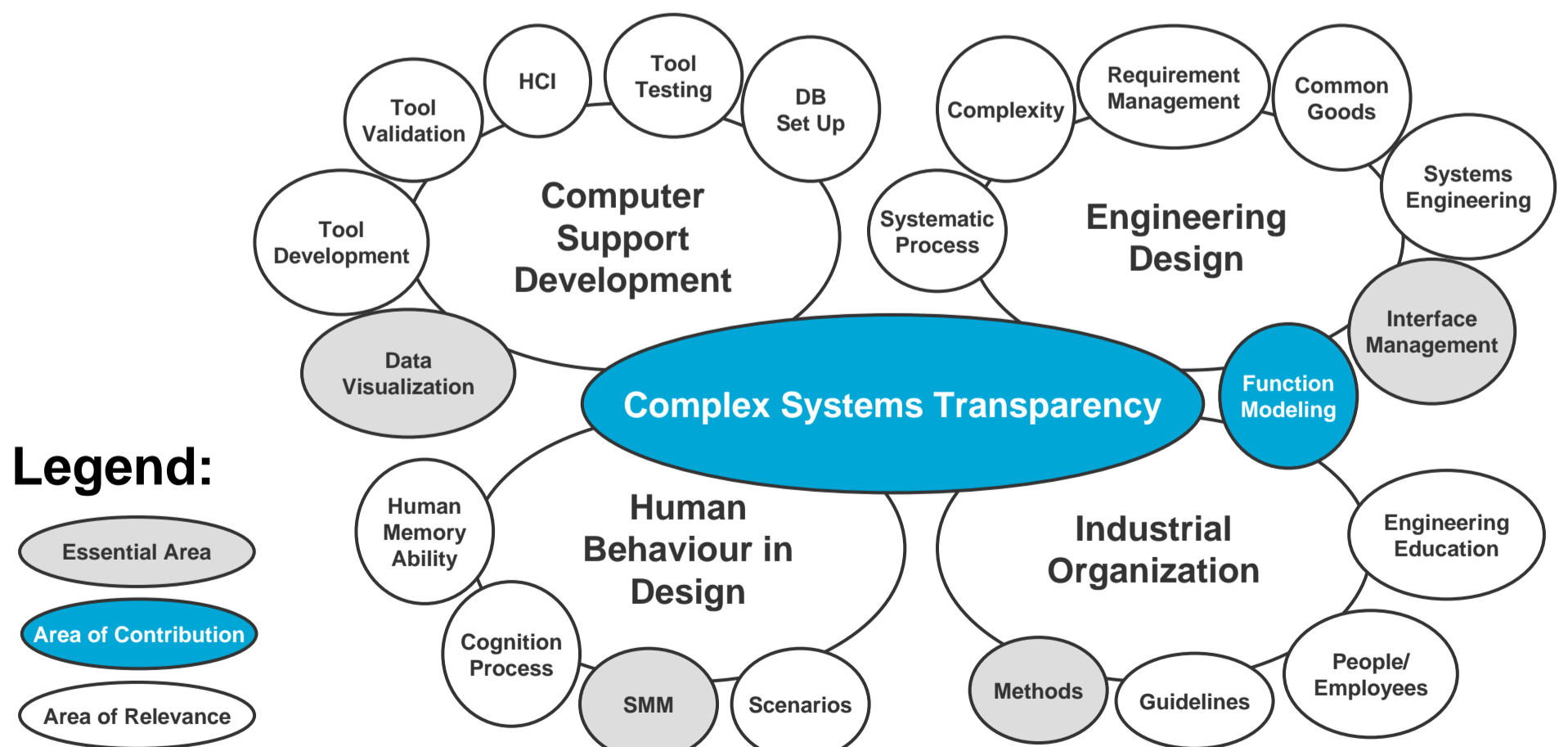
Research Approach

The academic field of Function Modeling (FM) addresses the issue of connecting high level system considerations (e.g. top level requirements) to detailed concepts (e.g. components, lines of code). In industrial practice these connections appear to be missing. This research proposes to use FM as a backbone model to improve system overview and understanding. Coupling different kinds of information (e.g. FM, Requirements, Components, Interface definitions) will be essential to give the architects a map of the system in which they can navigate.

Expected Results

A method that proposes a coherent system model through which the user can navigate as if it was a roadmap. It should deal with creating the models and using the models.

Research Area of Relevance and Contribution Diagram



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