

Information Management to support Concurrent Engineering in Infrastructure Planning Processes

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Graduation Data
June 18th, 2010

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Concurrent Engineering (CE) has the potential to make construction projects less fragmented, improve project quality, reduce project duration, hence reduce project costs, while creating more satisfied customers. Though, applying CE is not without risks and costs. It makes it more difficult for project manager to coordinate the flow of information between the parallelized activities. Coordinating the flow of information in the design process is further complicated when the objectives of stakeholders change during the process. Therefore the objective of this research is: "Designing an information management model to support Concurrent Engineering in infrastructure planning processes."

This research uses theory-testing and case studies to come to information management barriers. These information management barriers are the basis for the information management design. The designed model, presented in Figure 1 on the next page, consists of two parts. The first part describes the vertical integration of information management. This part combines the stage-gate approach from Cooper (2005) and the requirements information model from Hull et al. (2005). It describes how the project team should structure information into deliverables and hand it over to the next activities. Also, the model describes how to handle with dynamic design information and to make the status of requirements more transparent. The second part of the model describes the horizontal integration of processes. This part describes how shared understanding and shared commitment can overcome fragmentation. This part also describes an organization structure to support the developed model.

The effectiveness of the model is validated through a review session with the intended users of the model within the company. The participants of the review session have agreed that the model supports information management, by breaking the information management barriers, and that ARCADIS will use this model in the next 'CE project'.

The identification of the information management barriers for CE and the proposed model, are important for future planning processes. CE has the potential to fasten planning processes. Freezing input data and having strict deadlines in the planning processes, as the Elverding Committee (2008) advises, will not solve the identified barriers for fastening planning processes with methods like CE. Projects are often delayed because of the dynamic environment with changing regulations and stakeholder demands. It might be ideal to freeze input data, have strict deadlines, and less room for appeal, though, in such a dynamic environment it does not seem to solve the barriers for fastening planning processes.

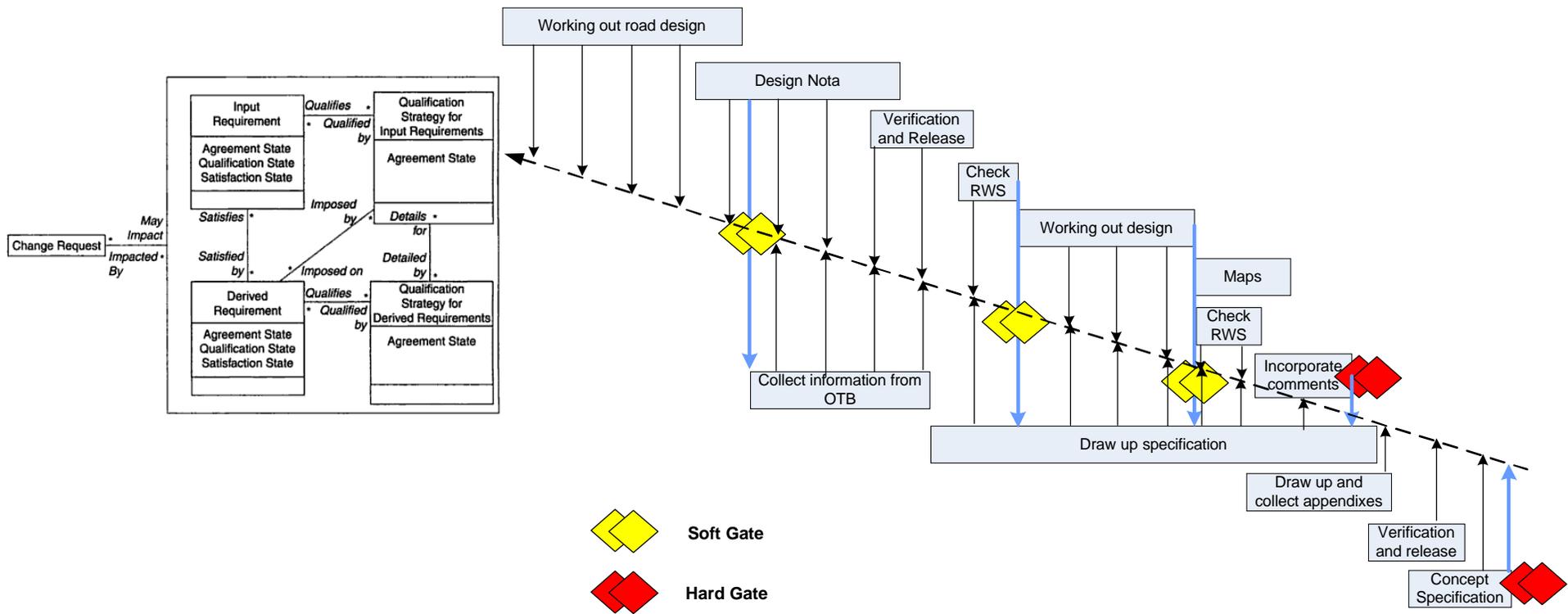


Figure 1: Designed Information Management Model applied on Road Design Activities