

## Exploring the Concept of Novation

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**Abstract:** ‘Configuration processing’ is the branch of knowledge that deals with the concepts and software necessary for generation and processing of geometric configurations. ‘Formex algebra’ and its programming language ‘Formian’ provide a convenient environment for configuration processing of all kinds. Architects and structural engineers working with structural forms are among experts in many different disciplines that benefit from configuration processing concepts and tools.

The objective of the present work is to explore the capabilities of a particular configuration processing concept that is referred to as ‘novation’. The concept of novation is implemented as a ‘function’ in Formian. This function is an effective configuration processing tool. In particular, the function provides a powerful conceptual aid for creation of freeform configurations.

In this paper, the emphasis is on the practical considerations and guidance for processing of forms rather than involvement in details of the mathematical theory. The paper contains many examples providing an overall view of the capabilities of the novation function.

In using the concept of novation for processing of configurations, the following main parameters are used for the control of the operation:

(1) The overall guide for the formation of the configuration is provided by specification of movements of points on or around a given configuration. The novation function will then cause the configuration to be shaped in ‘conformity’ (harmony) with the specified movements (relocations). For example, the simple grid of Fig A1 can be formed into the shape of Fig A2 by specifying the relocations indicated by the arrows.

(2) There are a number of choices for the way in which conformity, in the context of novation, may be interpreted. This choice of the ‘interpretation of conformity’ is a key parameter in creating the required shape. For example, a change of the style of conformity for Fig A2 will change the configuration of the grid into Fig A3.