Part II
On and Above Tabletops

This part of the book is preoccupied with topics and aspects of Human Computer Interaction research. *On tabletops* refers to interactions on the surface, namely by direct touch input and gestures, while mediating tangible objects on the tabletop extend this notion of surface interaction. The area *above tabletops* addresses topics of interactions performed more distant to surfaces while still being attributed to them.

The following chapter of Weiss et al. introduces tangible general purpose control objects for surface interaction that can be dynamically changed in their optical appearances by illumination via the tabletop display. The authors provide scenarios and share details about user studies. Then Inami et al. presents research on tangible objects that are physically actuated, allowing them to move on tabletop surfaces remotely controlled. Hilliges et al. are exploring tabletop interaction styles and present an interaction model to achieve high fidelity to gestures and tangible input in the physical world. In the following chapter Aliakseyeu et al. present a review of existing tabletop interaction techniques to further the understanding of the underlying basic user interactions. They provide design recommendations for the various atomic actions. The chapter of Benko and Wigdor is preoccupied with the fundamental limitations of direct touch input. They identify seven problems of touch-based interfaces and offer a set of solutions based on current research. Finally, Grossman and Wigdor extend the notion of surface interaction into the area *above tabletops*. They present a taxonomy of 3D tabletop systems that use interactive volumetric display over horizontal surfaces.