Transregional Collaborative Research Center SFB/TR 8 Spatial Cognition: Reasoning, Action, Interaction

Summary The Transregional Collaborative Research Center SFB/TR 8 Spatial Cognition was established by the German Science Foundation (DFG) at the Universities of Bremen and Freiburg in January 2003. 13 Research projects pursue interdisciplinary research on intelligent spatial information processing. This article introduces the research field of spatial cognition and reports on aspects from cognitive psychology, cognitive robotics, linguistics, and artificial intelligence.

KEYWORDS A.1 [Introductory and Survey] spatial cognition, mental reasoning, cognitive robotics, linguistic descriptions, knowledge integration, spatial assistance

1 Introduction
In January 2003, the German Science Foundation (DFG) established the Transregional Collaborative Research Center SFB/TR 8 Spatial Cognition at the Universities of Bremen and Freiburg. The center currently carries out 13 research projects in the research areas Spatial Reasoning, Spatial Action, and Spatial Interaction. Approximately 50 researchers are currently involved in the center.

The center is complemented by the International Quality Network on Spatial Cognition (IQN) that was established in 2002 by the German Academic Exchange Service (DAAD) with funds of the Future Investment Program (ZIP) of the German Federal Government. Approximately 30 universities worldwide engaged in spatial cognition research currently participate in this network.

The center and the network were established on the basis of the Spatial Cognition Priority Program funded by the DFG from 1996 to 2002, in which researchers from more than a dozen research institutions were involved across Germany. This program built up strong links to international projects and programs and participated in the joint organization of workshops, conferences, a book series [1], and a journal.

1.1 What is Spatial Cognition?
Many everyday situations are so easy for us to handle that we do not realize that they involve complex mental operations in our mind. However, when computer scientists working in the area of artificial intelligence attempt to replicate these abilities with computers and robots, we become aware of the types of functions that are required to achieve this performance.