HTW CAVE

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CAVE systems have been used to create immersive virtual environments since the 1990s. The interaction initially took place using magnetic tracking systems and later using optical tracking systems for which users were generally equipped with active or passive markers. Natural User Interfaces avoid the use of visible control elements to the greatest possible extent in order to ensure a more natural control. Depth detection cameras that determine the distance to the picture elements enable gestures to be identified without markers. The development of more cost-effective devices (Microsoft Kinect, Asus Wavi Xtion) means that the development of NUIs is gaining in importance. The HTW CAVE has had a NUI based on a Kinect camera since 2011. The sensor data supplied directly from the Kinect is suitable for head tracking and navigation interfaces, although the data has so far been too imprecise for selection tasks. In addition, a single depth detection camera cannot sufficiently cover the interaction space of a CAVE. As a result, two Kinect cameras are now used in the CAVE described here, in order to enlarge the range of detection and to improve the sensor data by merging the two.