

## **A new ubiquitous computing paradigm based on Geo-AR system**

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**Abstract.** A geo-AR system is given in this paper as a cognitive mobile computing system. From theory of three worlds (physical, cognitive and digital) we investigate several key issues which are related to cartographic paradigm shifting and computing metaphor, including focus back to reality, new paradigm of GIS of shifting forward to sense and perception, smart map on the mobile, HCI in map reading and map use process, new map content and new type of overlay between virtual and real.

Conclusions include the paradigm shifting from traditional to cognitive computing system is investigated. Paradigm will remain stable with fascinating technical development. Sensation and mining are two typical progress in smart computing system as well as all other cognitive processes. Paradigm review is needed for guidance and forecasting in technology development.

**Keywords.** ubiquitous computing, paradigm shifting, cognitive computing system