Call for Papers

Special Issue on Indoor Spatial Information

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While geographical space has been long the main subject of geo-information research human beings spend most of their daily life in indoor space. Over the past few years, indoor space appears as a novel domain of application and development for geo-information. However, indoor space can be considered as a complex system as shopping malls, convention centers, airports, train stations, and hospitals to mention a few examples, underline many complex processes due to the large range of human activities that happen in these environments. The demands for efficient data modelling and management solutions for indoor spaces have been therefore continuously growing, and are nowadays considered as key research and development issues for spatial information science.

Several pioneer indoor spatial information systems, navigation-based solutions and services have been recently suggested providing a series of innovative solutions for indoor space. However, the extent of the possibilities behind the development of indoor space haven’t been completely explored, as well as the data modelling concepts necessary to the development of indoor space are still to be conceptually and formally defined. In particular, the range of services is still to be explored, let us mention amongst others indoor location-based services, indoor-based marketing, indoor asset management, indoor facility management, emergency control in indoor space, indoor robotics, and indoor big data analysis. Amongst many research questions still opened an important one and still the object of many recent discussions is to which degree indoor space differs from outdoor and geographical spaces. Clearly current data integration, modelling and technological approaches so far applied to outdoor space cannot be directly applied to indoor space. Novel modelling methodologies are required, as well as innovative spatial theories, indoor data models, technologies and service-based solutions that should reflect the properties encompassed in indoor space.

The special issue encourages submissions of high-quality unpublished papers reporting original work in both theoretical, experimental and visionary research in the area of indoor spatial information. The list of topics includes, but is not limited to:
- Indoor space theory
- 2D and 3D spatial data modeling for indoor space
- Indoor positioning and tracking
- Indoor spatial awareness
- Context-based modelling for indoor space
- Topology of indoor space
- Indoor space ontology and semantic model
- Spatial data mining for indoor space
- Handling moving objects in indoor space
- Indoor spatial big data
- Applications and services of indoor spatial information
- Standardization of indoor spatial information

All papers will undergo the same rigorous GEIN review process. Please refer to the GEIN website for detailed instructions on paper submission. Please choose “Special Issue: Indoor Spatial Information” as the Article Type.