

Developing an Effective Global Geodetic Reference Framework and Supporting Location-Based Services

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Positioning and navigation as well as spatial referencing by coordinates in general require an adequate coordinate reference system (CRS). Regarding the multitude of modern applications such as location-based services both the permanent existence and the instantaneous and ubiquitous availability of the CRS are indispensable. Typically, national agencies are in charge of the definition, establishment and maintenance of national CRS. For the sake of homogeneity it is common practice that national CRS are aligned with a global CRS based on space-geodetic observations using microwave or laser techniques. The supply of coordinate information to the user is possible through Global Navigation Satellite Systems such as the GPS. However, a global CRS can only be provided through mutual international efforts as it requires a persistent, coordinated geodetic infrastructure of globally distributed observatories, data processing work flows and product supply. For a global geospatial information management this is an ongoing, demanding task which requires an effective international coordination as well as long-term national commitments such as dedicated personal and financial resources. This presentation gives an overview of CRS and modern spatial referencing emphasizing the needs of the end user. It addresses established networks and workflows, ongoing activities as well as problems to be solved.