

From SIGMA to MAGIS : a Step Further

<http://www.sigma-cassini.org>

<http://gdr-magis.fr>

History [Late 80's]

- Worldwide
 - Regional Research Laboratories (UK) : mainly social science oriented
 - National Center for Geographic Information Analysis (USA) : computer science and social sciences
- France
 - Computer science and geography



France : Scientific issues

- 92-95 MIS CASSINI
 - Time in GIS
 - Scale in GIS
 - Data quality
 - Spatial Reasoning
- 96-99 MIS CASSINI II
 - Time and Data Quality
 - Scale and Spatial analysis
 - Communication and Cooperation in GI
- Administrative shortcut
- 01-04 SIGMA-Cassini
 - Environment management
 - Spatial Analysis
 - Data Quality
 - Interactions
 - GIS and Mobility
 - Remote sensing and aerial photography



SIGMA II



- Classes of problem
 - Exchange-Build-Share Geographic Information
 - Mobility-Reactivity-Real Time
 - Multi-representation
- Working Groups
 - Dynamic Cartography
 - Risk Assessment
 - Land Management
 - Earth Observation
 - Location Based Services
- Director : michel.mainguenaud@insa-rouen.fr
- V-Director : christiane.weber@lorraine.u-strasbg.fr

Classes of problem

- Exchange, Build, Share
 - Ontology of the SIGMA domain (based on the SAGEO key words)
 - Software test-beds : to promote a collaborative strategy based on integrated platforms
- Mobility, Reactivity, Real Time
 - Software level and data architecture : specialized indexes
 - Data fusion from heterogeneous sensors
- Multi-representation
 - Multi-representation as a semantic network
 - Position paper

Working Groups

- Dynamic Cartography
 - Vocabulary definition
 - Geo-visualisation
 - Usability depending on users, cases, level of analysis
 - Map animations
 - Interactions between mobile objects
 - User's point of view <-> personalization
- Risk assessment
 - New approach in SIGMA : to build a community
 - Pluri-disciplinary approach (national schemes)

WG (II)

- Land Management
 - Information exchange and diffusion
 - Data and user categories
 - Real time monitoring
 - Processes vs. interactions
 - Multiple spatial representation
 - 3D, Simulation, Analytical representation
- Location-based services
 - Temporal and spatial indexes for real time data flows
 - Architecture design to collect and broadcast large numbers of objects

WG (III)

- Earth Observation
 - Data acquisition with light sensors (e.g., drone) for DEM
 - Very High Spatial Resolution : Segmentation and classification
 - Free Software libraries to integrate the different developed tools



MAGIS

- Methods and Applications for Geographical Information Science
- Still a CNRS “Research Center Group”
- 35 French research centers and laboratories
- More than 200 researchers
- Scientific program :
 - Spatio-temporal information: From sensors to decision
- Director : Thierry.Joliveau@univ-st-etienne.fr
- V-Director : christophe.claramunt@ecole-navale.fr

Organization : *Poles - Project Groups*

- Poles
 - In relation to the main GIS research fields
 - Goals :
 - A general conceptual and methodological framework
 - To foster synergy between the different group projects
- 4 poles
 - Sensors : data integration
 - Models : spatio-temporal modeling and representation
 - Analysis : spatio-temporal methods and tools
 - Decisions : GI organizational and societal contexts

Organization : Poles - Project Groups (2)

- Group Projects
 - Collective research actions
 - Varying terms (from 6 months to 4 years)
 - Autonomous
 - Connected to one or more poles
 - Methodological challenges and innovations
- Current groups
 1. Mobility, u-GIS, networks of located sensors
 2. Dynamic and interactive mapping
 3. Information systems for a sustainable city
 4. Territorial governance and GI engineering
 5. GI data and tools sharing
 6. Spatial dynamics analysis and simulation
 7. Epistemological and cognitive dimensions of GI

Upcoming manifestations

- Cartactive meeting :
 - Paris, 5/06/2009
- Magis summer school
 - Aussois, Savoie. 7-11/09/2009
- Spatial Analysis and GEomatics Conf.,
(SAGEO) <http://sageo09.univ-pau.fr/>
 - Paris, 25-26/11/2009

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