



Resilience of IAG Scientific Services

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Unified Analysis Workshop

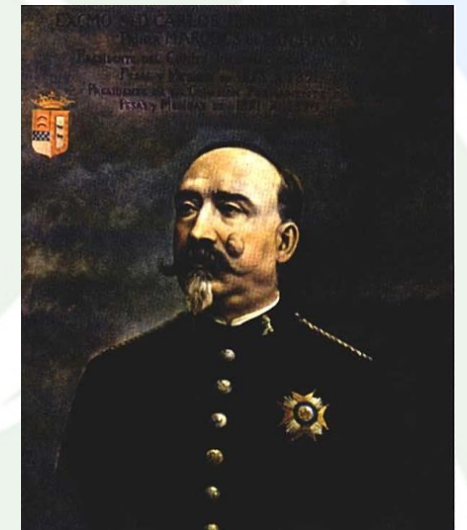
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Origins of the IAG

- **Central European Arc Measurement**
 - Established in 1862
 - By General Johann Jacob Baeyer of Prussia
 - **Objective**
 - Determine anomalies in Earth's curvature in Central Europe
 - Deflection of vertical; Relative structure of geoid
 - Interpret observed anomalies
 - Structure and composition of Earth
- **First Conference of Representatives**
 - Held in 1864 in Berlin
 - Created
 - Permanent Commission; Central Bureau; Triennial meetings of General Conferences
 - Considered forerunner of IAG and IUGG General Assemblies
- **International Geodetic Association**
 - Established at General Conference of 1886 in Berlin
 - **First President: General Carlos Ibáñez de Ibero**
 - First Director General of Instituto Geográfico Nacional (IGN) Spain
 - Incorporated into International Union of Geodesy and Geophysics
 - Established in 1919 by International Research Council



General Johann Jacob Baeyer



General Carlos Ibáñez de Ibero

Global Geodesy Supply Chain



Global Geodesy Supply Chain



Users Needs

- **Science**

- **Research Customers**

- State-of-the-art products
 - Accurate
 - Timely

- **Society**

- **Operational Customers**

- Resilient products
 - Available continuously without restrictions
 - Of proven reliability
 - Resilient infrastructures
 - For observations and products
 - Require institutional commitment for human and material resources

Panel Discussion

Resilient Scientific Data Infrastructure in Geodesy

State, Constraints, and Threats

- **Discuss ways of improving availability of geodetic data**
 - Develop strategies to preserve geodetic data in perpetuity
 - Redundant data centers distributed globally (?)
 - Identify data repositories that are at risk and / or datasets that may no longer be available (now and in the future)
 - Sustain access to geodetic data
 - To both scientific and societal users
- **Define ways to make geodetic infrastructure more resilient**
 - Identify challenges in storing, curating, and indexing geodetic data
 - Including personnel resources and legal issues
 - Evaluate suitability of using cloud environments as geodetic data repositories

Panel Discussion

Improving the Resilience of IAG's Products

- **Eliminate single sources of failure**
 - Most Services have numerous Analysis Centers that reduce data and derive products
 - Geodetic data and products are reasonably resilient at AC level
 - But most Services have only one source of combined products
 - Only one Analysis Center Coordinator or Combination Center
- **Discuss ways of making combined products more resilient**
 - Multiple Combination Centers
 - Having independent processing chains
 - Providing consistent combined products
 - Given in same format
 - Seamlessly available to users

