

QUALITY PLANNING IN GEOSPATIAL PROJECTS

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Presented to the

17th Annual Quality Assurance Conference

U.S. Environmental Protection Agency

Region 6

Dallas, TX

October 15-19, 2007

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Geospatial Quality Assurance (QA)

Short History

- Sharp increase in the use of geospatial science since mid-1990's.
- Most EPA QA requirements and guidance documents were created prior to the increase in geospatial science.



Geospatial Quality Assurance (QA)

Short History

- People had difficulty “translating” QA requirements and guidance into geospatial terms.
- The EPA Geospatial Quality Council (GQC) was formed in 1999 to fill the QA needs.
- The EPA hired a Geospatial Information Officer in 2004.



EPA National Geospatial Data Policy (NGDP)

- The EPA CIO released the NGDP May 2005, which describes the EPA policy of:
 - Data Planning
 - Data Collection and Acquisition
 - Data Processing and Final Documentation
 - Data Storage and Access
 - Data Maintenance and Retirement
 - Also touches...Roles & Responsibilities, Authorities, Definitions, and Waivers
 - Yes.....QA & QC are included.



Geospatial QA Authorities (drivers)

- EPA Order 5360.1 CHG 1 (1998)
 - *Policy and Program Requirements for the Mandatory Agency-wide Quality System*
 - Currently under revision
- EPA National Geospatial Data Policy
- Executive Order 12906
 - National Spatial Data Infrastructure (NSDI)
- OMB Circular A-16
 - Revised Coordination of Surveying, Mapping, and Related Spatial Data Activities
-and resultant NSDI & FGDC documents

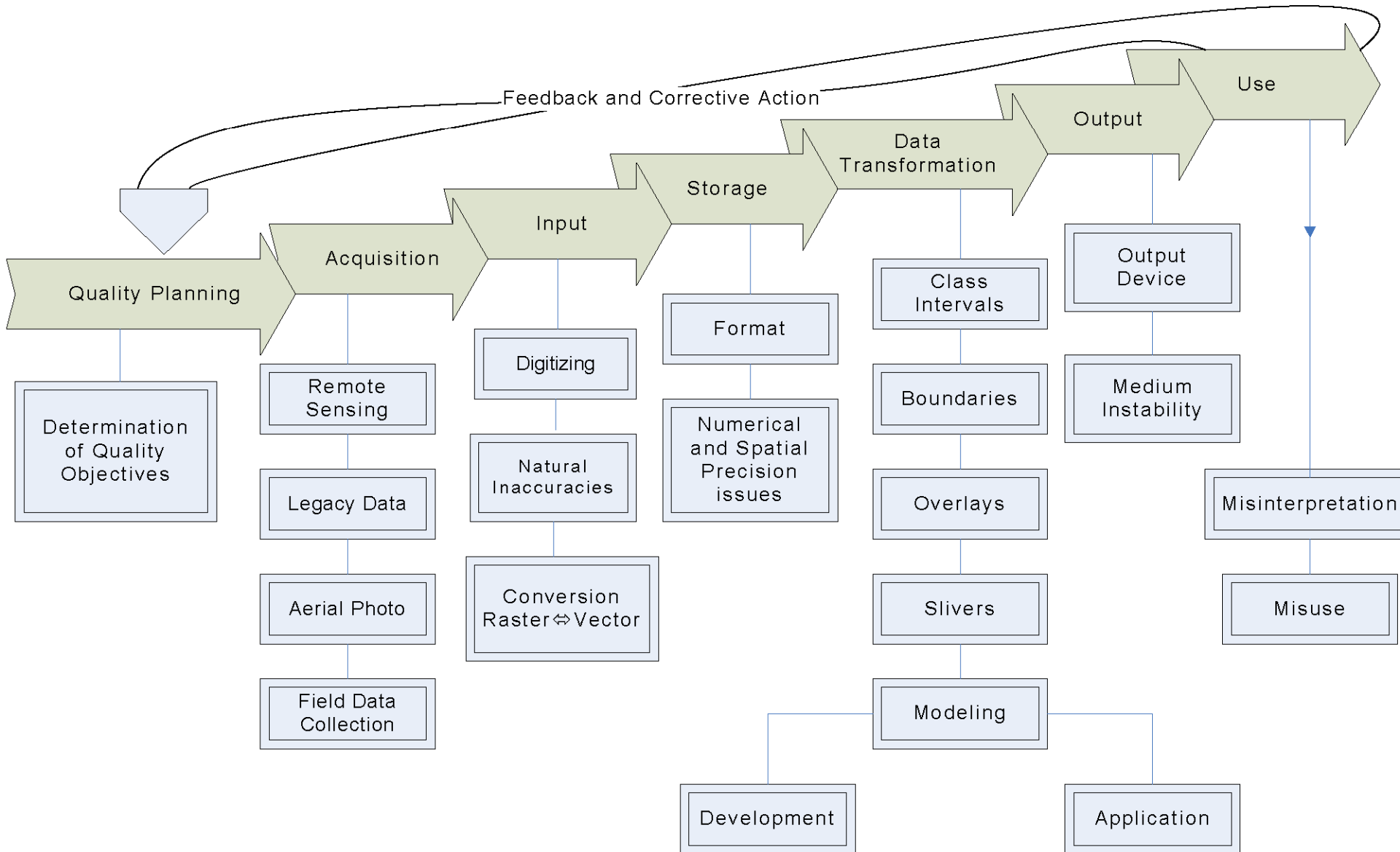


Geospatial Quality Council (GQC)

- The GQC's most important contributions to date are:
 - *Guidance for Geospatial Data Quality Assurance Project Plans*
 - EPA **QA/G-5G** EPA/240/R-03/003 [released in 2001]
 - *Global Positioning Systems – Technical Implementation Guidance (GPS-TIG)*
 - Released in 2004
 - *GIS for QA Professionals* course
 - Presented in 2000
 - GQC Website
 - Opened to public in 2003
<http://www.epa.gov/nerlesd1/gqc/default.htm>



GEOSPATIAL INFORMATION LIFECYCLE AND SOURCES OF ERROR



EPA Guidance for Geospatial Data Quality Assurance Project Plans (QA/G-5G)

- Based on:
 - EPA *Requirements* for Quality Assurance Project Plans (EPA QA/R-5)
 - EPA requires that each project have a Quality Assurance Project Plan (**QAPP**)
 - Describes required content



EPA *Guidance* for Geospatial Data QAPP (QA/G-5G)

- QAPP components are divided into four groups:
 - A. Project Management
 - B. Data Generation and Acquisition
 - C. Assessment and Oversight
 - D. Data Validation and Usability



Writing QA Project Plans

A. Project Management

- Title and Approval Sheet
- Table of Contents
- Distribution List
- Project Organization
- Problem Definition
- Project Description



Writing QA Project Plans

A. Project Management (continued)

- Quality Objectives and Criteria
- Special Training/Certification
- Documents and Records



Writing QA Project Plans

B. Data Generation and Acquisition

- Sampling Process Design
- Sampling and Image Acquisition Methods
- Sample Handling and Custody
- Analytical Methods
- Quality Control



Writing QA Project Plans

B. Data Generation and Acquisition (cont'd)

- Instrument/Equipment Testing, Inspection, and Maintenance
- Instrument/Equipment Calibration and Frequency
- Instrument/Acceptance for Supplies and Consumables
- Data Acquisition
- Data Management



Writing QA Project Plans

C. Assessment/Oversight

- Assessments and Response Actions
- Reports to Management

D. Data Validation and Usability

- Data Review, Verification and Validation



Writing QA Project Plans

D. Data Validation and Usability

- Verification and Validation Methods
- Reconciliation with User Requirements



QA Project Plan Assessment

- Located in EPA QA/G-5G
 - Appendix C – Checklist useful in QA Project Plan Review
 - Follows the same structure as writing a QAPP.
 - Contains spaces for comments



What's Next ?

Information Technology & Information Management

- Almost all of EPA endeavors rest on, or are tied to, Information Technology Systems (IT), and the effectiveness of Information Management (IM).
- Geospatial IT/IM QA Guidance is being developed.



What's Else is Next ?

- Implement the “Graded Approach” in Geospatial Projects:
 - Agree on QA Categories
 - Integrate Category information into the Geospatial SOPs



For more information...

- EPA Geospatial Quality Council website
<http://www.epa.gov/nerlesd1/gqc/default.htm>

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