



New Paradigm for National Mapping Organization

Rajesh C Mathur
Vice Chairman, NIIT GIS Limited



Key Challenges.....

Currency

Common Data Model

Effective Dissemination

GIS Enabled Data

Staff Skills

Standards

Timelines

Efficient Monitoring

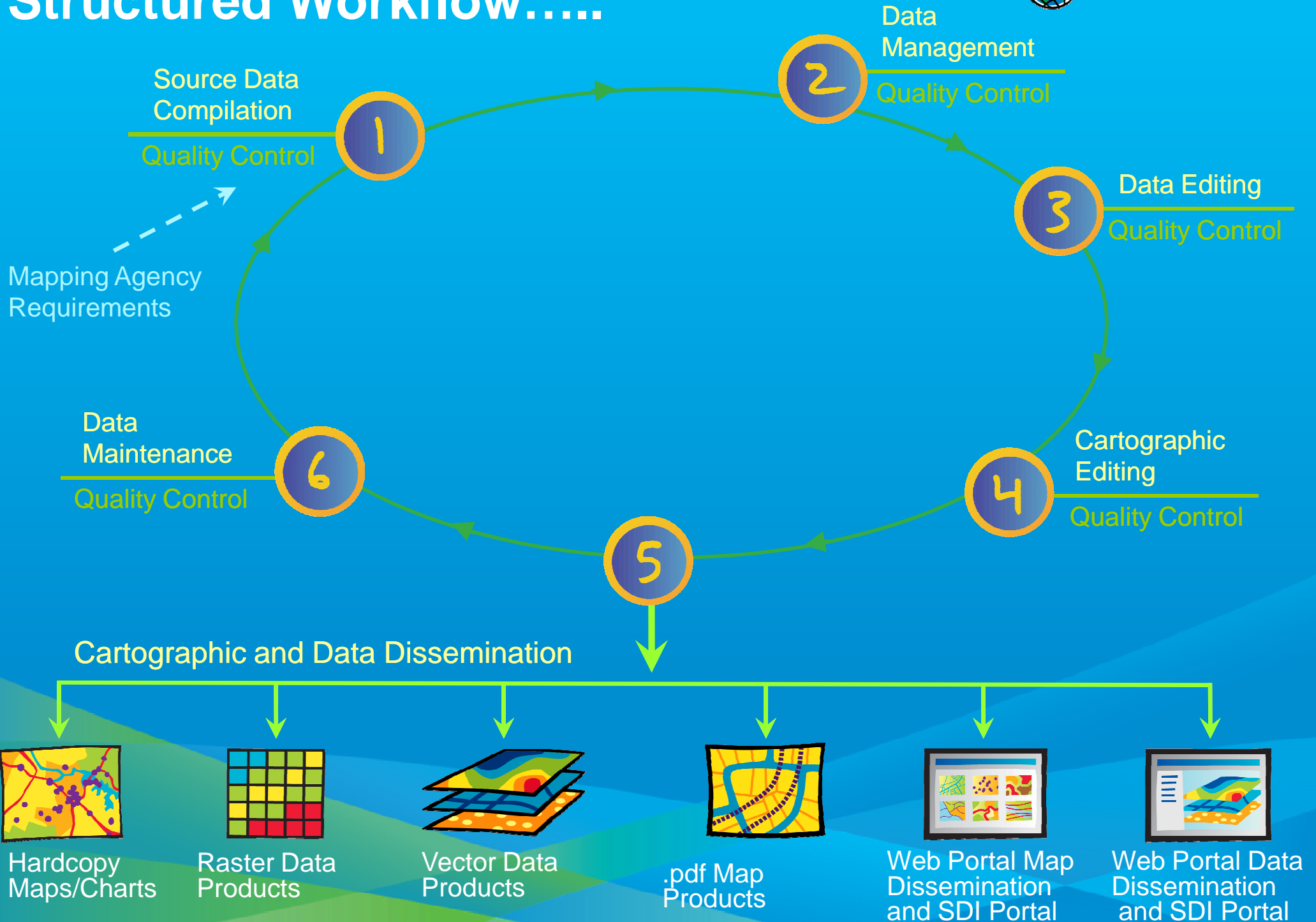


- ...Common to all National Mapping Agencies

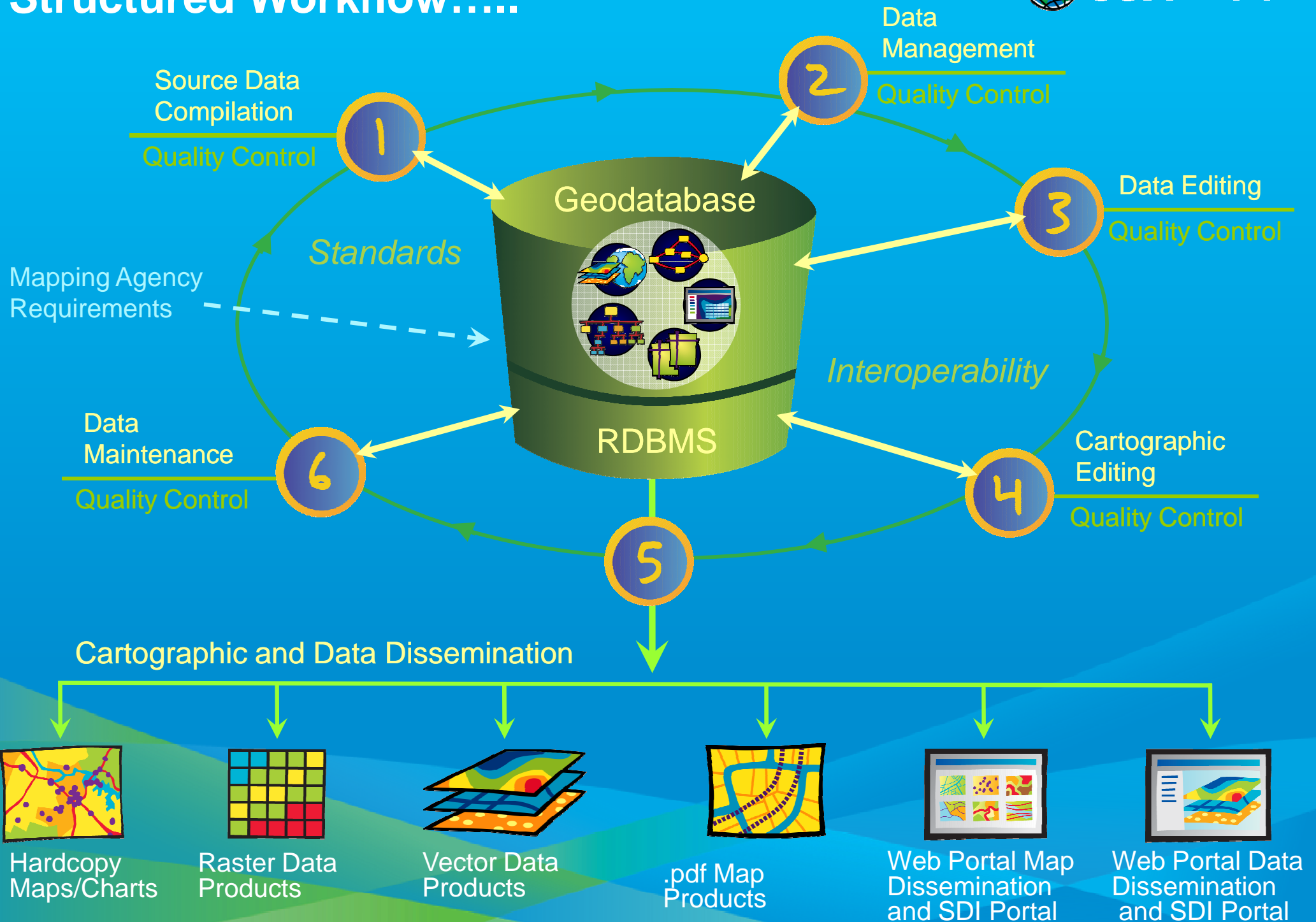
Vision.....

- Get data GIS ready
- From Mapping to Spatial Datasets
- Transition from Tiles/Sheets to Area of Interest
- Geo-enabled Services for integration with GIS Applications
- Common Data Model
- Standardization of Processes & Procedures
- Mechanism for Regular update, both Online/Offline
- **Embracing New Paradigm of**
 - **Structured Workflow**
 - **Geo-Spatial Production Mapping System**
 - **Data Dissemination**

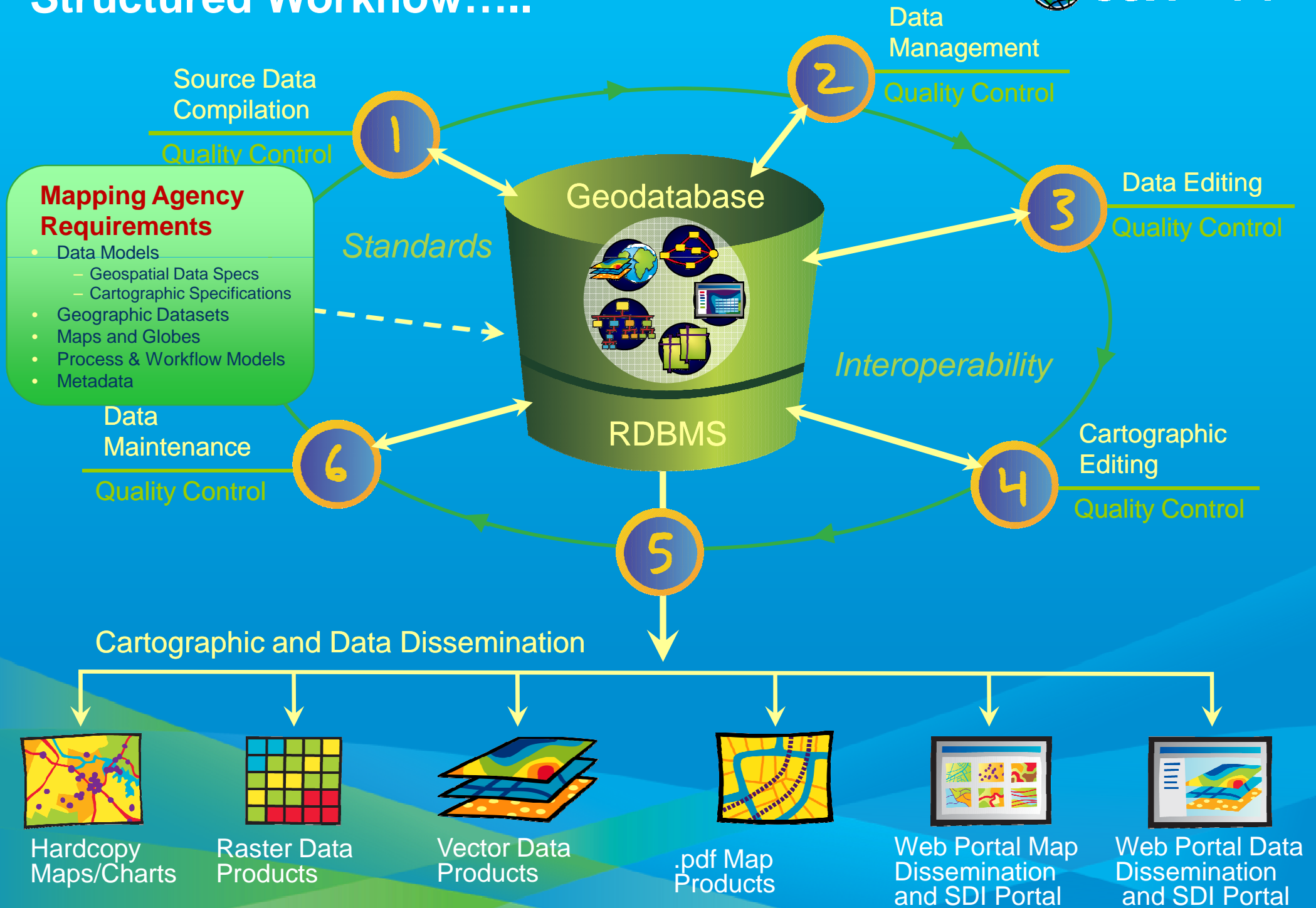
Structured Workflow.....



Structured Workflow.....



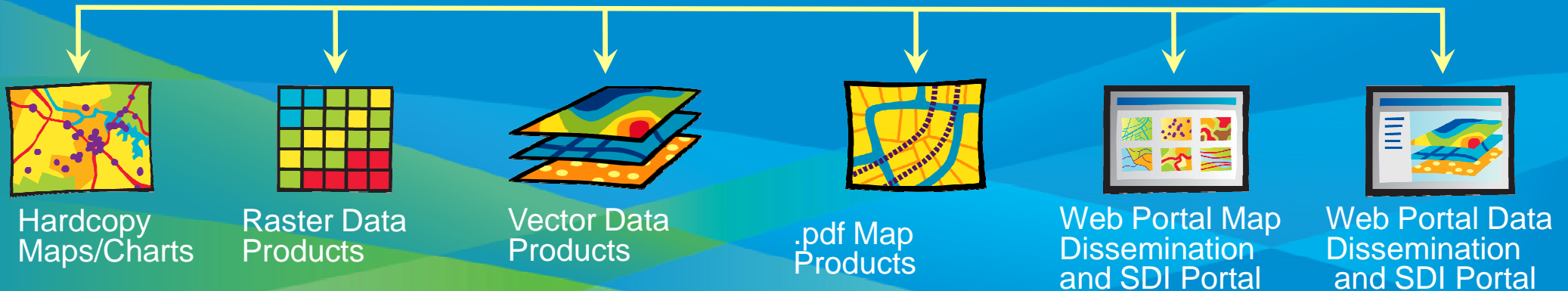
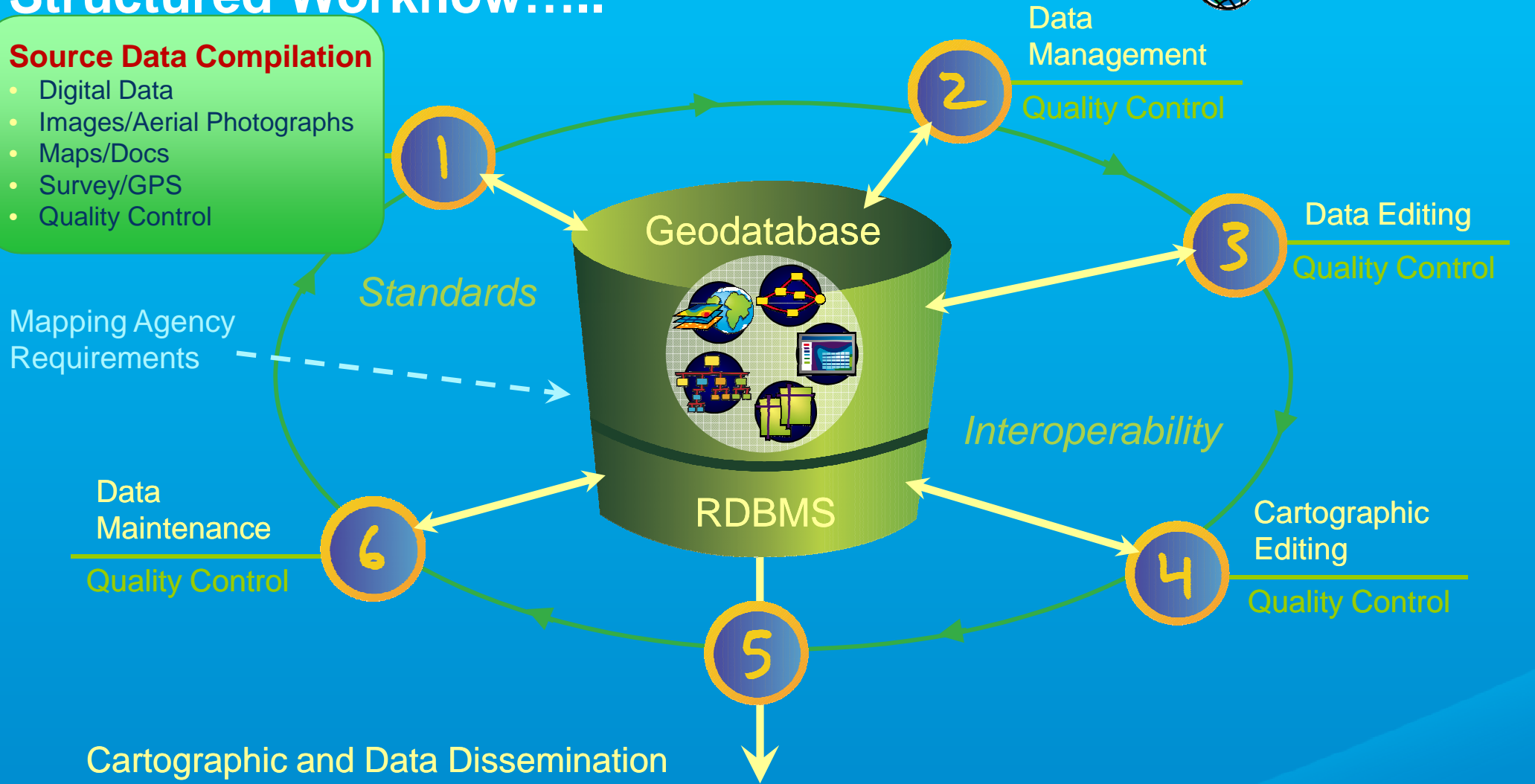
Structured Workflow.....



Structured Workflow.....

Source Data Compilation

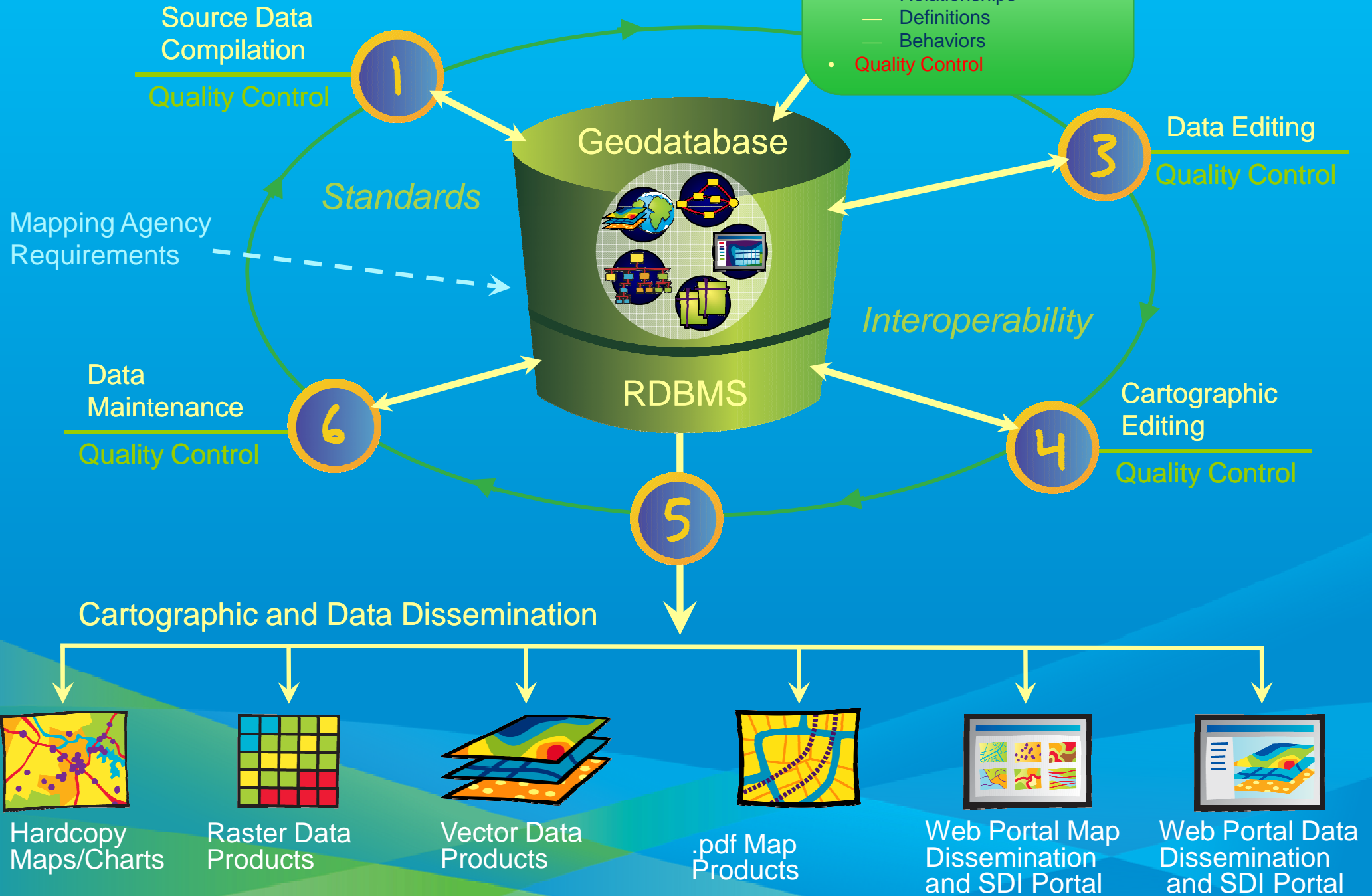
- Digital Data
- Images/Aerial Photographs
- Maps/Docs
- Survey/GPS
- Quality Control



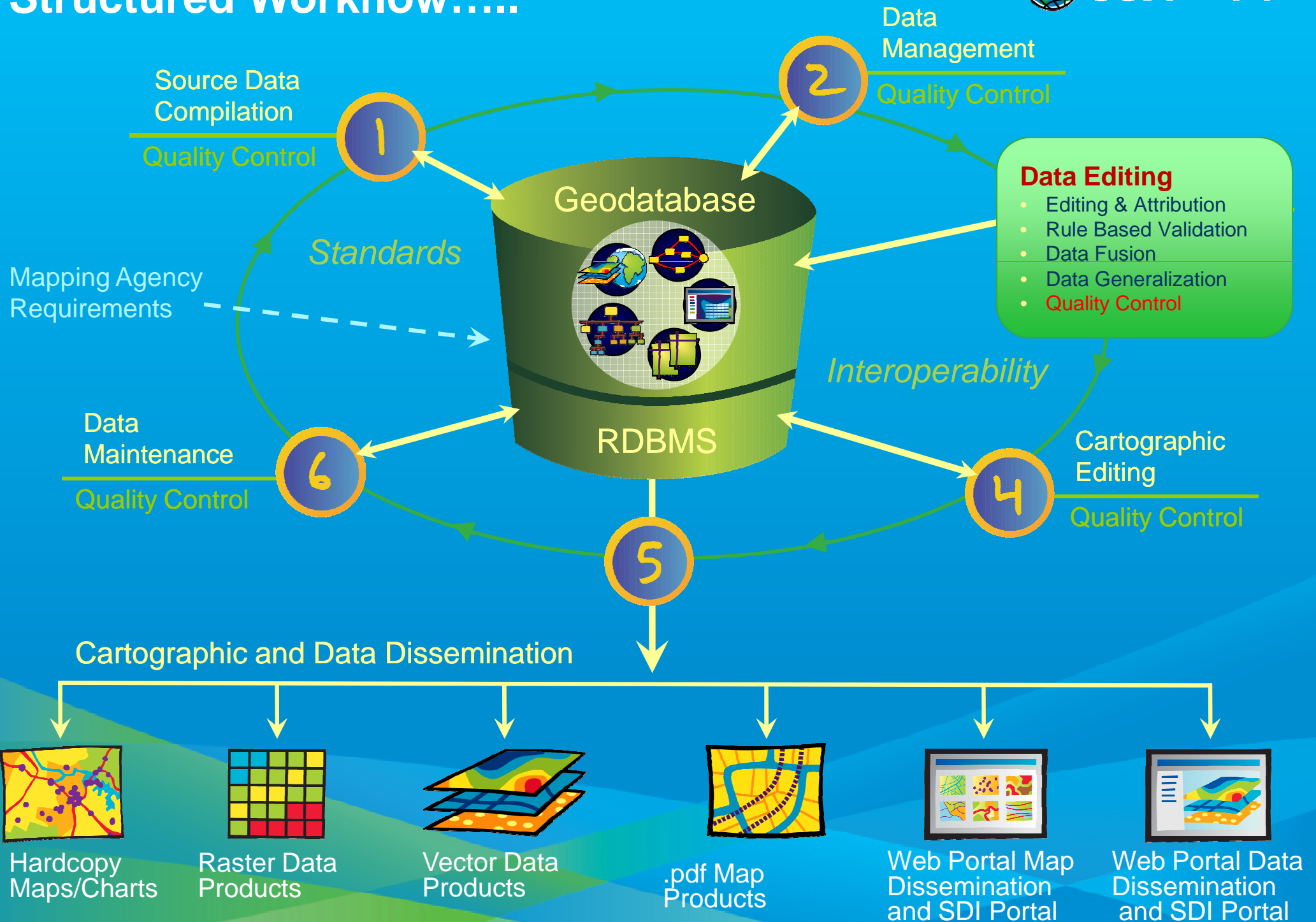
Structured Workflow.....

Data Management

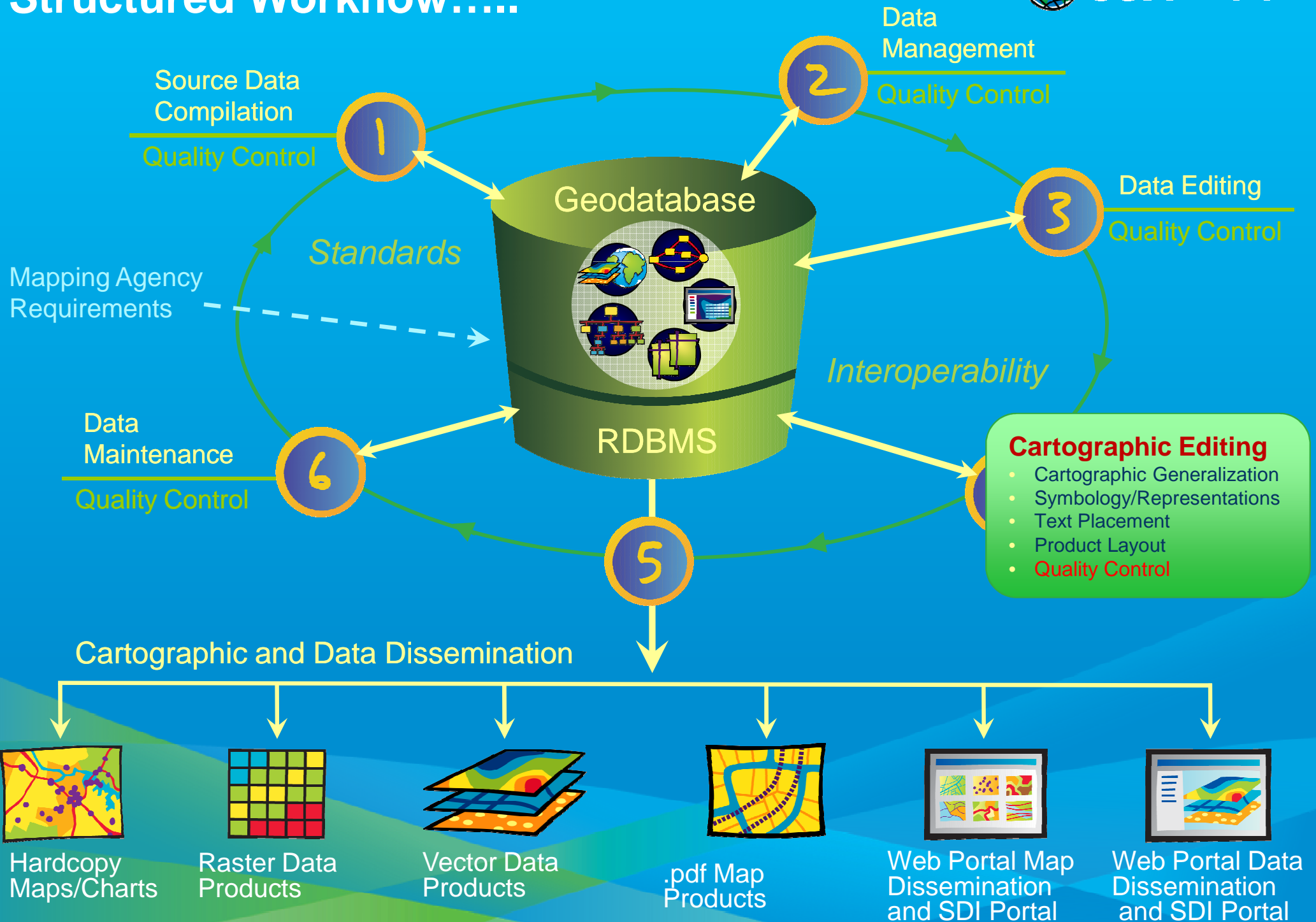
- Models/Knowledgebase
 - Schema
 - Rules
 - Relationships
 - Definitions
 - Behaviors
- **Quality Control**



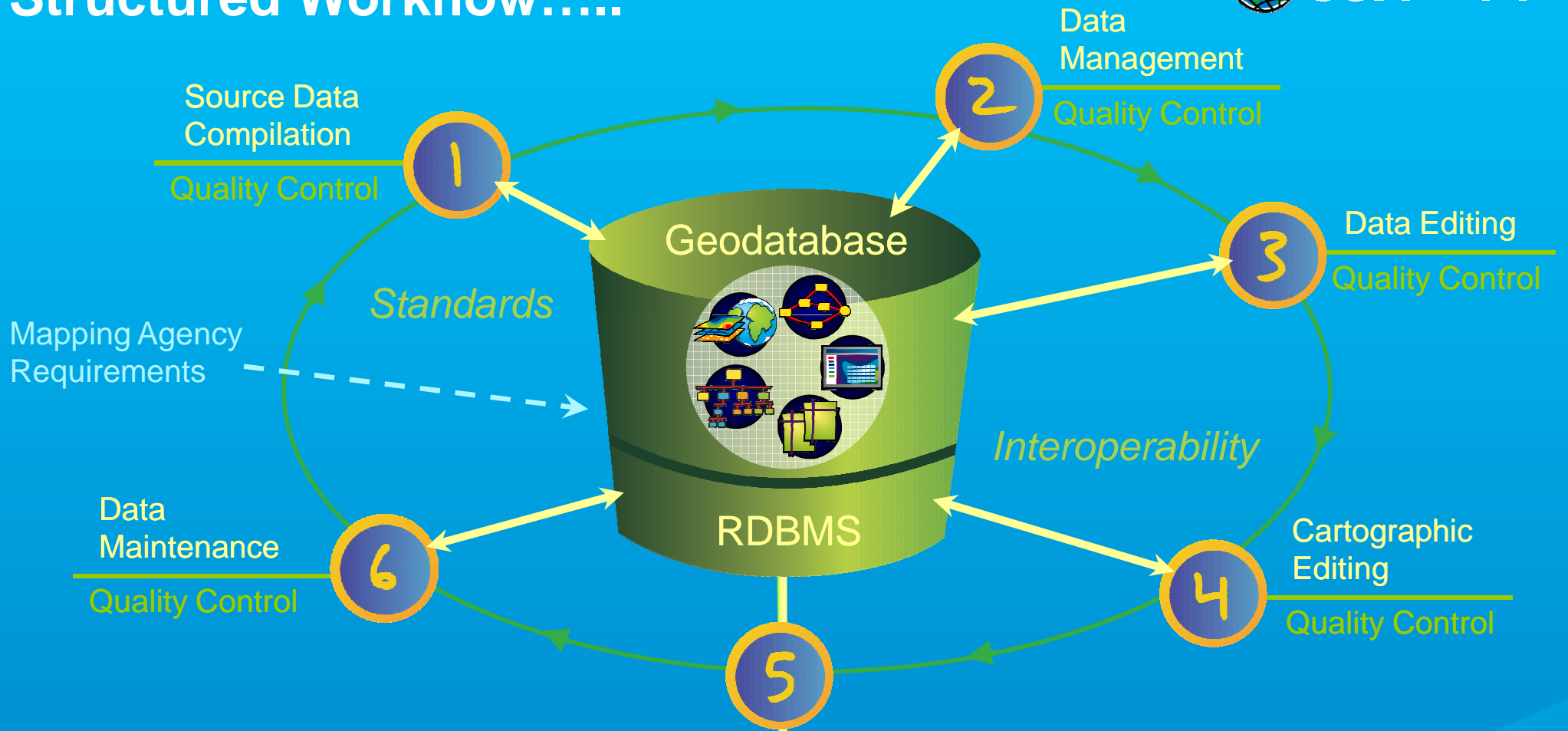
Structured Workflow.....



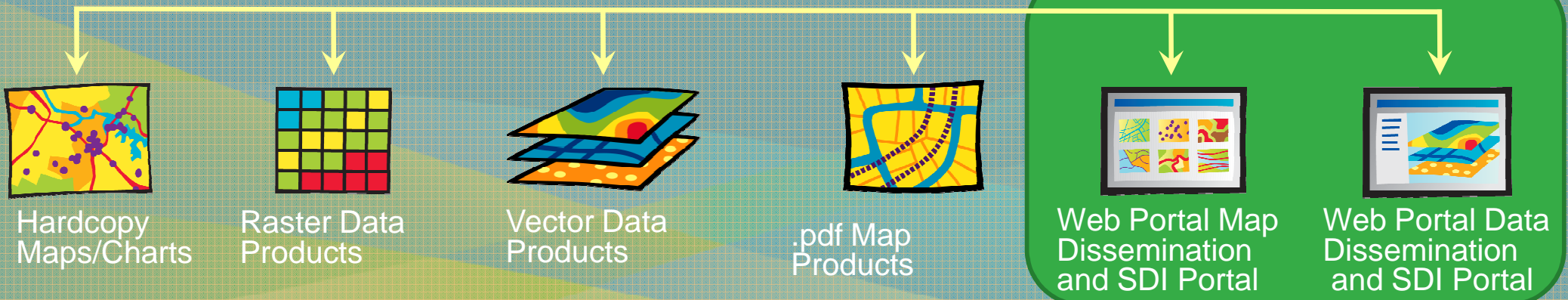
Structured Workflow.....



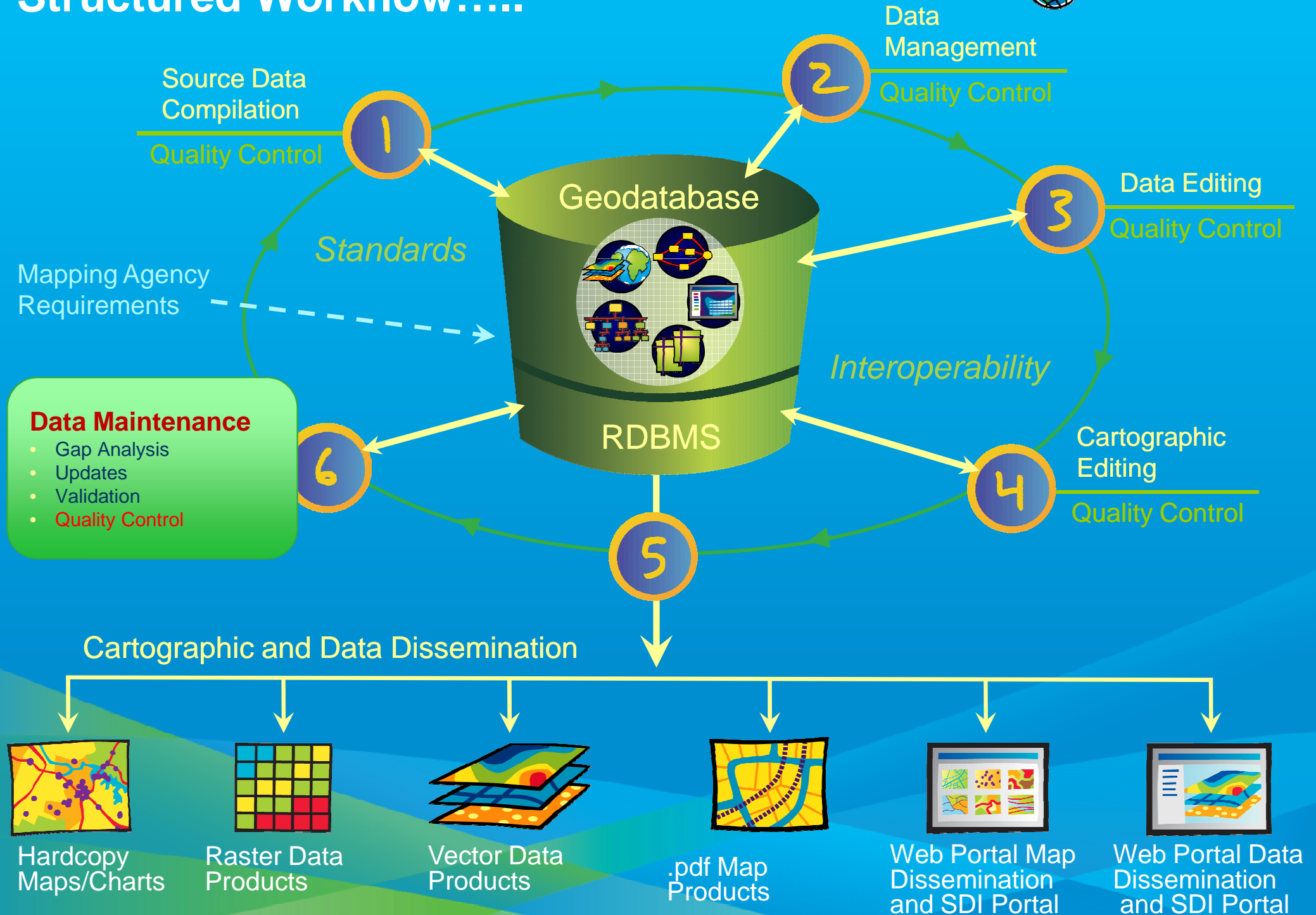
Structured Workflow.....



Cartographic and Data Dissemination

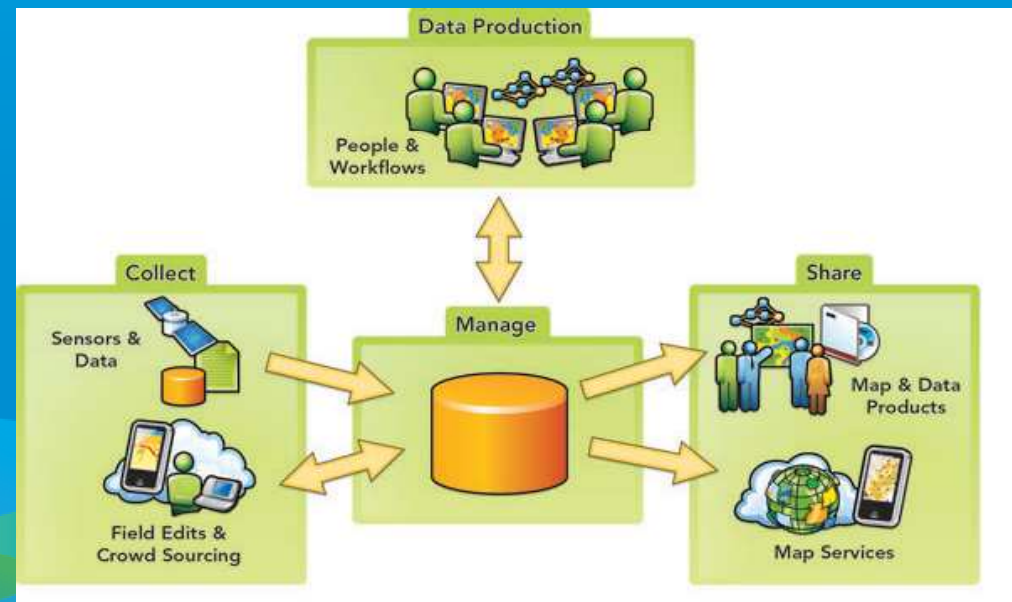


Structured Workflow.....



So basically...

- Efficient & Structured Workflow for Data Creation, Integrated update mechanism, QA / QC and Monitoring
- Standardization of Data Model
- Automation of Cartographic Processes
- Geo-Portal / Web Application for efficient dissemination of Geo-Spatial data at various levels / devices



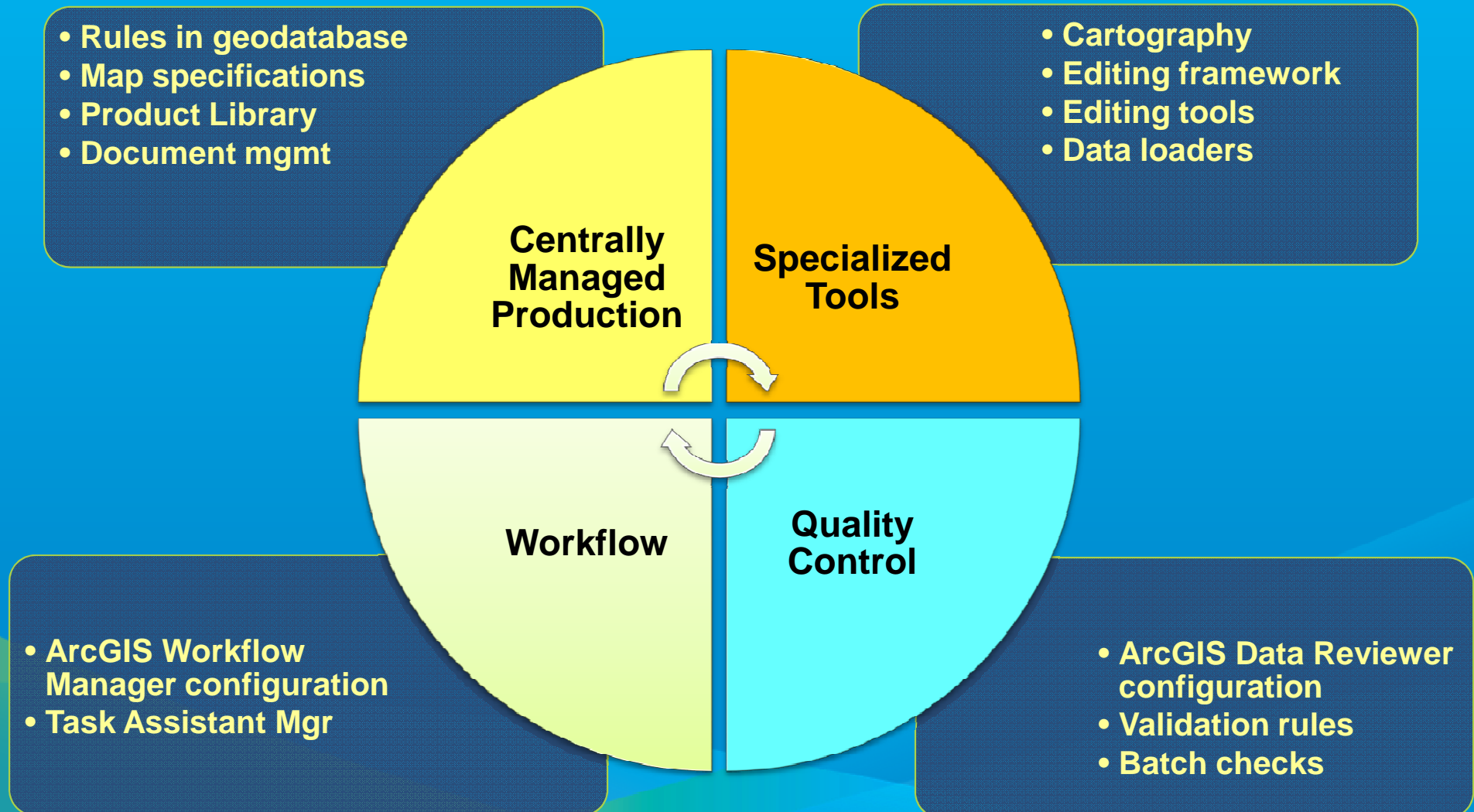
New Paradigm In Production Mapping System.....



...Centrally managed for production teams

Its Components....

Efficiently producing standards-based products



...giving NMOs an operational advantage

New Paradigm in Data Dissemination.....

Geo-Portal enabled Publishing, discovery and use of geospatial resources

- Manage, publish, and store metadata
- Search and view geospatial resources
- View live map services
- Download data



The image shows a collage of screenshots from the GEO Portal. On the left, a search results page for 'air' is visible, listing resources like 'DataFed Air Quality Portal' and 'Italian air quality relational database'. In the center, the main map interface is shown, featuring a map of a city area with various layers and a legend. On the right, a 'Create Repository' form is displayed, including fields for ID, protocol type (ESRI MS, Z39.50, OAI, WAF, CSW), and download options (ArcIMS 9.3 CSW 2.0.2 OGCCORE, CompuSUT WES CSW 2.0.1 OGCCORE, ArcGIS Online, terra catalog CSW 2.0.2 AP ISO). The form also includes a 'Download' section with fields for e-mail address, output file format, and projection.

Evolving Dissemination Pattern....



GIS Portals



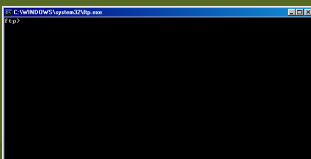
Clearinghouses



- Application focus
- IT standards
- Interoperable

- System-oriented
- Data focus
- Geo-standards
- Top down

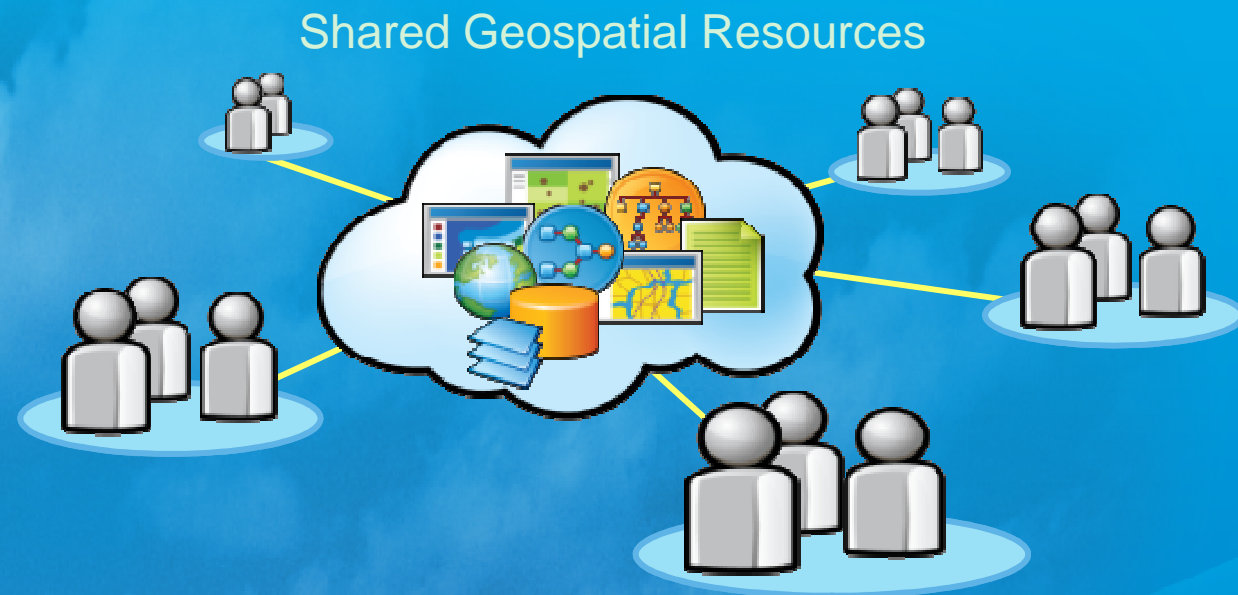
File Transfer



- Ad hoc
- Data focus
- FTP transfer
- Bottom up

That brings the concept of Geo-Services

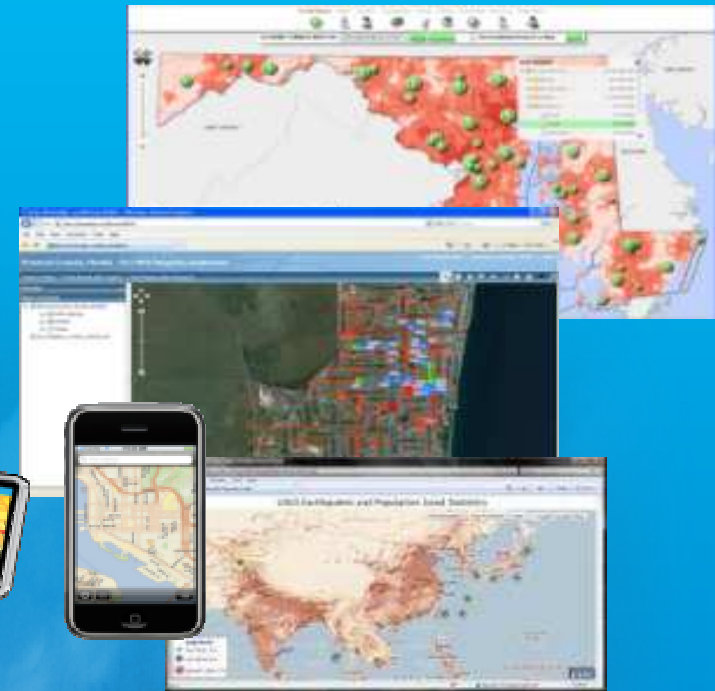
- RESTful Services
- Easily Discoverable
- Open Standards Based
- Easy-to-Use Clients
- Customizable (API's)



- **Moving from Data Sharing
To Shared Services (Maps, Models, Data . . .)**

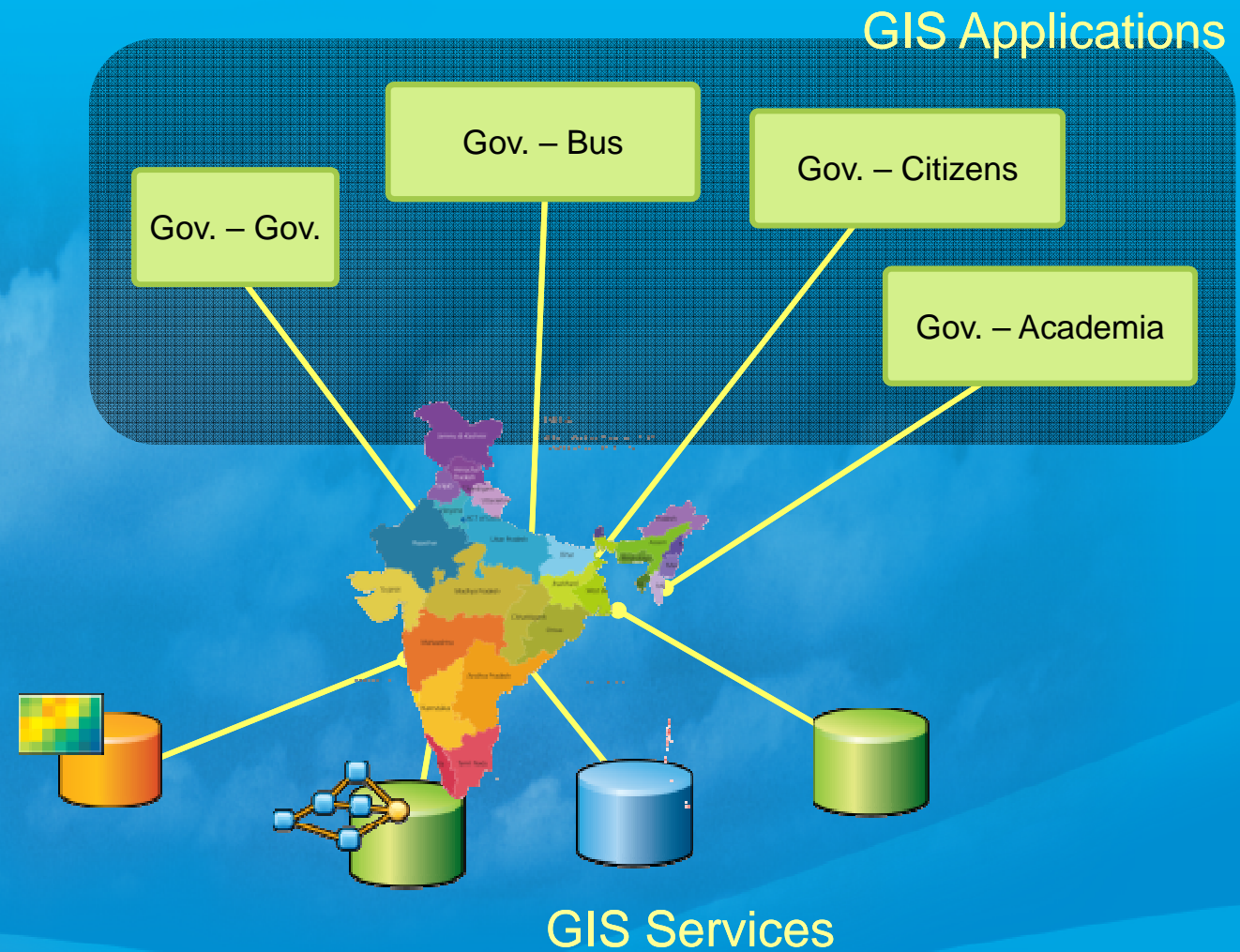
Serving Multiple Users/User groups

- Authoritative Data
- High Quality Maps
- Analytics and Models
- Rich Applications



Leveraging These Services . . .

Requiring An Integrated Geographic Platform

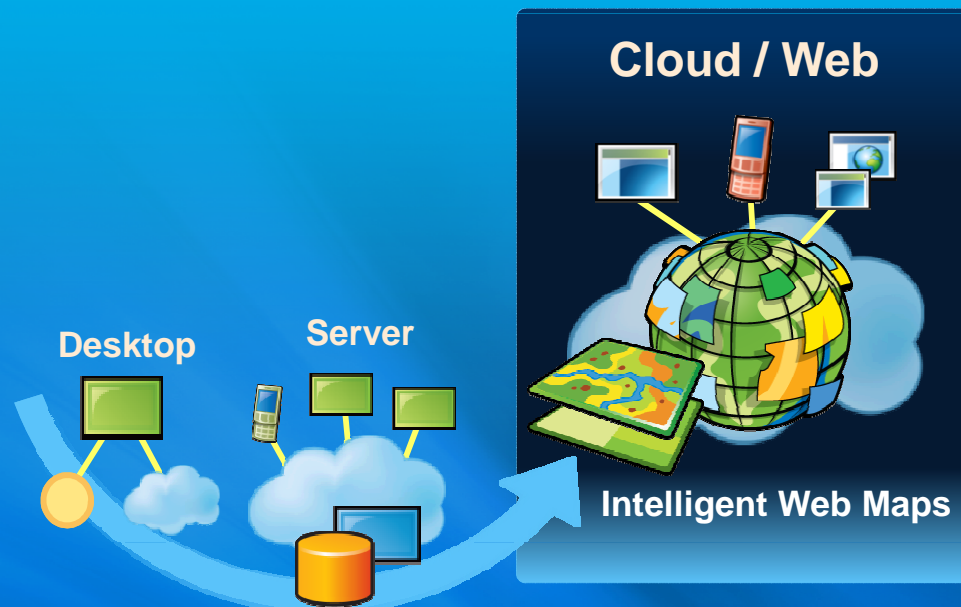


Integrating All Levels of Government . . .

That Could Support a Large Community of Users and Applications

ArcGIS Online Provides that Platform.....

An Open Platform for Maps and Geographic Information



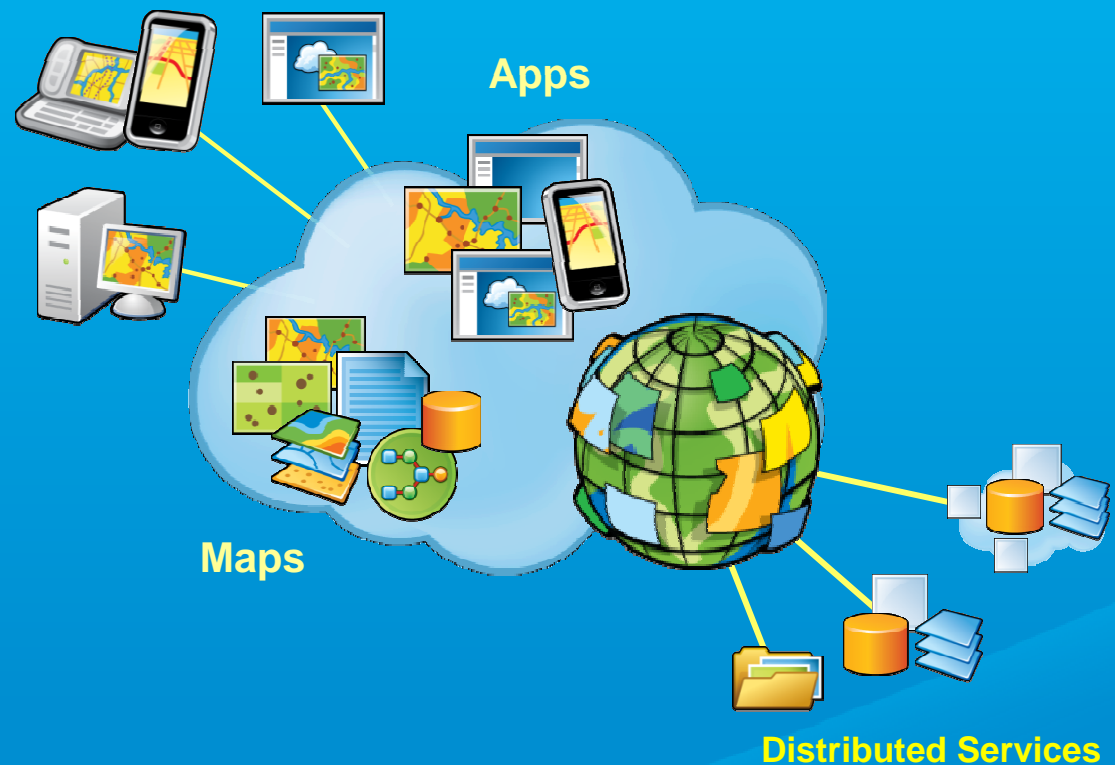
- ... Easy and Accessible by Everyone

And Presents “Geography as a Service”

A Cloud Based Portal

Providing:

- Content Management
- Intuitive Mapping
- Sharing and Collaboration
- Web and Mobile Apps
- Enterprise Integration
- Open Interoperability



For Sharing, Discovery and Use....

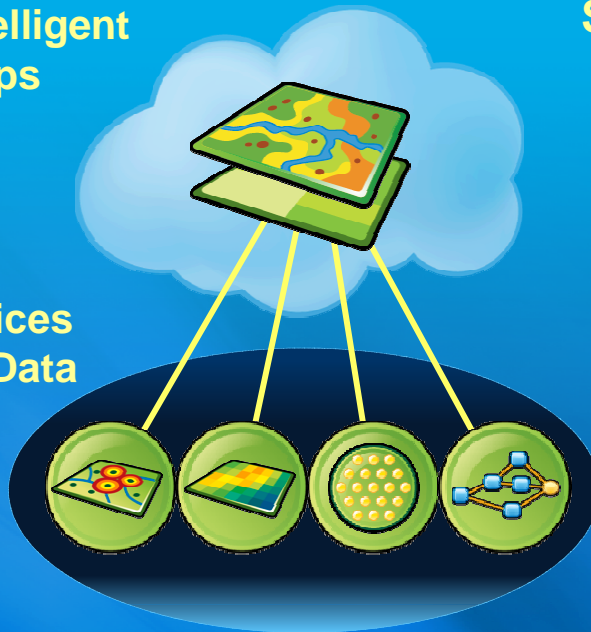
...Providing a Ready-to-Use Geospatial Platform

Leveraging The New Medium of Intelligent Web Maps

Integrating Services (Data, Maps, Models . . .)

**Intelligent
Maps**

**Services
and Data**



Supporting

- Visualization
- Editing
- Pop-ups
- Analysis
- Time

**Easily Created
and Shared**



Simplifying GIS . . .

. . . Connecting and Providing Open Access

These Web Maps Can Be Used Everywhere



... Enhancing Collaboration and Dissemination

Please Come & Explore AGOL With Us

The image shows a screenshot of the ArcGIS Online website. At the top, there is a navigation bar with links for ArcGIS, GALLERY, MAP, GROUPS, and MY CONTENT. A search bar on the right contains the text "Find maps, applications and more...". Below the navigation bar, the main header features the "ArcGIS Online" text and the Esri logo. The central banner area has a dark blue background on the left with the text "The Geospatial Platform for Your Organization" and "Host your organization's geographic information in Esri's cloud with an ArcGIS Online subscription." A green "Learn More" button is positioned below this text. To the right of the text is a 3D visualization of stacked map layers floating in a sky with clouds. Below the banner, a section titled "Esri India Online - Featured Maps" displays a carousel of four map-related images: a desktop application interface, a map of India, a tablet displaying a map, and a smartphone displaying a map. Navigation arrows are visible on the left and right sides of the carousel.