ISO 9001 for spatial data: ICGC experience

Dolors Barrot, Maria Pla
This presentation

- Certification background
  - QMS Consolidation
  - Scope widening & QMS matureness
  - Transition to ISO 9001:2015
- Conclusions
Background
The Organization

Institut Cartogràfic i Geològic de Catalunya (ICGC)

- **Catalan Geoinformation Agency and reference public service for the application of geo-scientific knowledge (Government of Catalonia)**
- **Aim**: Deliver to customers and users valued geographic and geological information and services.
- Creation: 2014
- Location: Barcelona

Institutional and commercial activities

International background

Multidisciplinary knowledge fields

- Geodesy, Geomatics, SDI, Geology, Geophysics
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Background
Target: certification

CEO

- Advantages
  - Industrial procedures
  - Reliability
  - External audits
  - Recognition

Target: to be ISO 9001 certified

Staff

- Risks
  - Bureaucracy
  - Inefficiency
  - Control
  - Distrust

2nd International Workshop on Spatial Data Quality – 6th - 7th February 2018, Valletta (Malta)
Background
Criteria

Target: to be ISO 9001 certified

Quality Management System

- Feasible scope
  - Institutional activity
  - Spatial data product
  - Topographic database 1:5000 (BT5M)

- Vision
  - Evidence good practices
  - Personnel complicity
Background

Figures

- **Resources**
  - 1 year people > Adapt and prepare the Quality Management System documentation according to ISO 9001:2000
  - External adviser > Internal auditor
  - Certifying company > External audit

- **Results**
  - Characterization of BT5M production as a set of operative processes
  - To be more proactive looking for customer’s satisfaction
  - Improvement of the corporative image
2006 - 2009
ISO 9001: 2000
2006 - 2009
QMS consolidation

- Continuous improvement
  - Preventive and corrective actions
  - Wide use of indicators
  - Customer orientation of IT Department

- Customer’s satisfaction
  - Customer’s opinion
  - DB of complaints, suggestions or questions
ISO 9001 certified

Benefits

- Internally
  - Staff commitment
  - *Certifications ISO 14001, OHSAS 18001*
- Externally
  - Competitiveness
  - *Consultancy projects*

Challenges

- Internally
  - Up-to-date documents
  - *Inconsistencies*
  - Indicators meaning
  - *Deviations*
2009 - 2018
Main changes of ISO 9001:2008

Advantages
- Control only relevant documents
- Information systems as infrastructure
- Measures of customer’s perception

Challenges
- Competence of people assurance
- Management of physical and environmental conditions

Target: scope widening
2009 - 2018
Scope widening

Topographic databases

Orthophotos
Continuous improvement

- Traceability of improvement actions
  - Link between DB of non-conformities, DB of projects and improvement actions

- ITIL orientation of IT Department
  - Services catalogue
  - Increasing communication between IT department and staff (users)

- Extended use of indicators
  - Indicators to measure quality of processes (efficacy and efficiency)
  - Checking them continuously

2009 - 2018
QMS maturity
Customer’s satisfaction

- Traceability of complaints, suggestions or questions
  - Link between DB of complaints, DB of projects and improvement actions
  - Classification by processes, severity, product, responsible area

- Customer’s opinion
  - Surveying, interviews, suggestions etc.

- Indicators
  - Average and maximum response time to the complaints
  - Satisfaction as a function of number of complaints and production projects, weighted by the cost
2009 - 2018
SQM vision changes

- Organization: Data producer >>> Service provider
- Customer: Autonomous ministry >>> Users, Enterprises, Administration
Main changes of ISO 9001:2015

Advantages

- Process’s documents, if they are needed
- Applicable to products and services
- Process model expansion
- Enhancing performance

Challenges

- Knowledge of the organization context
- Understanding stakeholders’ needs and expectations
- Risk based thinking
- Management reviews

Target: certification maintenance
2009 - 2018
Transition to ISO 9001:2015

- QMS documented information
  - Use of a content collaboration software, to assure control, maintenance and accessibility: Confluence
    - Creation of a specific space for QMS documented information
    - Linking from/to information of other Confluence spaces, internet, servers…
  - Increasing the volume of information
    - QMS monitoring meetings (private areas)
    - Objectives, improvement actions, indicators, management reviews…
Organization’s context

Relevant issues and its influence

- Determine internal and external factors that have an impact on the organization (legal, political, social, technical…) and prioritize them: SWOT analysis

- Threat - opportunity > Generalized use / consume of GI
- Strength > Capacity of adapting to IT changes, free data and open apps
- Weakness > Not all historical data and knowledge available

Stakeholders

- Identify and value interested parties and their requirements

- Valued aspects: impact on product/services, customers’ satisfaction, achievement of objectives and compliance with legal requirements
- Requirements: quality and quantity of service, technical support, communication and transparency
2009 - 2018
Transition to ISO 9001:2015

- Risk based thinking > Infrastructures / Delivery
  - Infrastructures
    - Business Continuity Plan: Business Impact Analysis / Disaster Recovery Plan
      List of main activities, impact assessment of its stopping, define recovery time and point objective, resources or actions needed to achieve RTO and RPO
  - Delivery
    - Organizational chart having its own entity, where end the production chains
      Analysis of the outputs of the productions chains and definition of derived products and services to be provided
**Benefits**

- External monitoring of areas of interest
  - BCP
- Opportunities of improvement
  - Precise identification of responsible people for process and minimum resources.
- Strengths
  - Staff’s competence and commitment.
  - Update of technology and equipment.
  - Attention service of IT dep.

**Risks**

- Observations
  - Management reviews shall include effectiveness of actions to mitigate risks.
  - Strategic objectives should be more detailed.
- Area to improve
  - Knowledge preservation.
Conclusions

- A different way of looking
  - Emphasize the positive and repair the negative.
  - Industrial approach gives importance to process interfaces pre and post-production activities.

- A helpful instrument if
  - Changes are done to improve not to get the certification.
  - Indicators are revised periodically according to the objectives.
  - Auditor’s observations or comments are considered.
Institut Cartogràfic i Geològic de Catalunya
Parc de Montjuïc,
E-08038 Barcelona
41º22’12” N, 2º09’20” E (ETRS89)
www.icgc.cat
icgc@icgc.cat
twitter.com/ICGCat
facebook.com/ICGCat
Tel. (+34) 93 567 15 00
Fax (+34) 93 567 15 67

Questions?
dolors.barrot@icgc.cat
maria.pla@icgc.cat