QUALITY CONTROL IN SPATIAL DATA GIS DATABASES

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#1 QUALITY IN SPATIAL DATA GIS DATABASES EVOLVE CONSTANTLY

From paper maps through the digital conversion process to data maintained in a database, GIS data are being constantly transformed. Maintaining the integrity and accuracy of these data through a well-designed quality control (QC) plan that integrates the data conversion and maintenance phases is key in implementing a successful GIS project

#2 QC PLAN REVIEW

The fundamentals of quality Control never change. Completeness, validity, logical consistency, physical consistency, referential integrity, and positional accuracy are the cornerstones of the QC plan

#3 VISUAL QC

Creating digital data from paper map sources does not make the data more accurate. Actually this process introduces more or different types of errors into the data. The goal of high-quality data conversion is to limit the amount of random and systematic error introduced into the database. Random error will always be a part of any data, regardless of form. Random error can be reduced by tight controls and automated procedures for data entry. Systematic error, on the other hand, must be removed from the data conversion process. A systematic error usually stems from a procedural problem that, once corrected, usually clears up the systematic error problem. Random and systematic error can be corrected by checking data automatically and visually at various stages in the conversion cycle.

#4 EDGE MATCHING CHECK

Edge matching, another critical component of the map preparation process, requires that all features that cross or are near the map edge be reviewed with respect to logical and physical consistency requirements as well as noted for positional accuracy and duplication. The temporal factor must be considered. If adjacent maps differ greatly in age there are bound to be edge matching errors between these maps. Cultural features are especially prone to this problem

#5 DATA ACCEPTANCE CRITERIA

All data acceptance criteria must be clearly started in the Process Manual. Which errors are acceptable? Are certain errors weighted differently than others? What percentage of error constitutes a rejection of data? The answers to these questions are not always obvious and require knowledge of the data model and database design as well as the user needs and application requirements. Accepting data can be confusing without strict acceptance rules. Each attribute should be reviewed to determine if it is a critical attribute and then weighted accordingly.

#6 CONFLICT RESOLUTION

Conflicts resulting when the same data coming from two or more sources differ must be worked out. Map series must be reviewed together to identify duplicated features and resolve conflicting positional locations and conflicting feature attributes.

#7 AUTOMATED QC AND VALIDATION: RESOLUTION

Visual inspection of GIS data is reinforced by automated QA methods. GIS databases can be automatically checked for adherence to database design, attribute accuracy, logical consistency, and referential integrity. Automated QC must occur in conjunction with visual inspection.

#8 CATEGORIES OF QUALITY ASPECTS IN GIS DATABASE

Completeness means the data adhere to the database design. All data must conform to a known standard for topology, table structure, precision, projection, and other data model specific requirements.

Validity measures the attribute accuracy of the database. Each attribute must have a defined domain and range. The domain is the set of all legal values for the attribute.

NAFCOAST

NAf COAST

NAFCOAST PARTICIPATION IN BLUE ECONOMY INTERNATIONAL CONFERENCE

NAfCOAST will participate in the International Blue Economy event at Suez University 10th – 13th September, 2019. The event's main goal is to sustain the African Blue Economy achieving the African agenda 2063

The project will disseminate the up-to-date deliverables to a wide community of researchers, beneficiaries, stakeholders as well as decision makers.

NAfCOAST will also share the experience to the public community through a specific workshop on: EO Operational Ocean Data Products and Services for Sustainable Blue Economy.

PROJECT NEWS

Workshop on EO Operational Ocean Data Products and Services for Sustainable Blue Economy 13 September 2019.

In this half day workshop participants will be able to gain knowledge and understanding of generating the marine services and information from satellite data.

The second technical training "Introduction to QGIS will be held in Cairo on September 2019
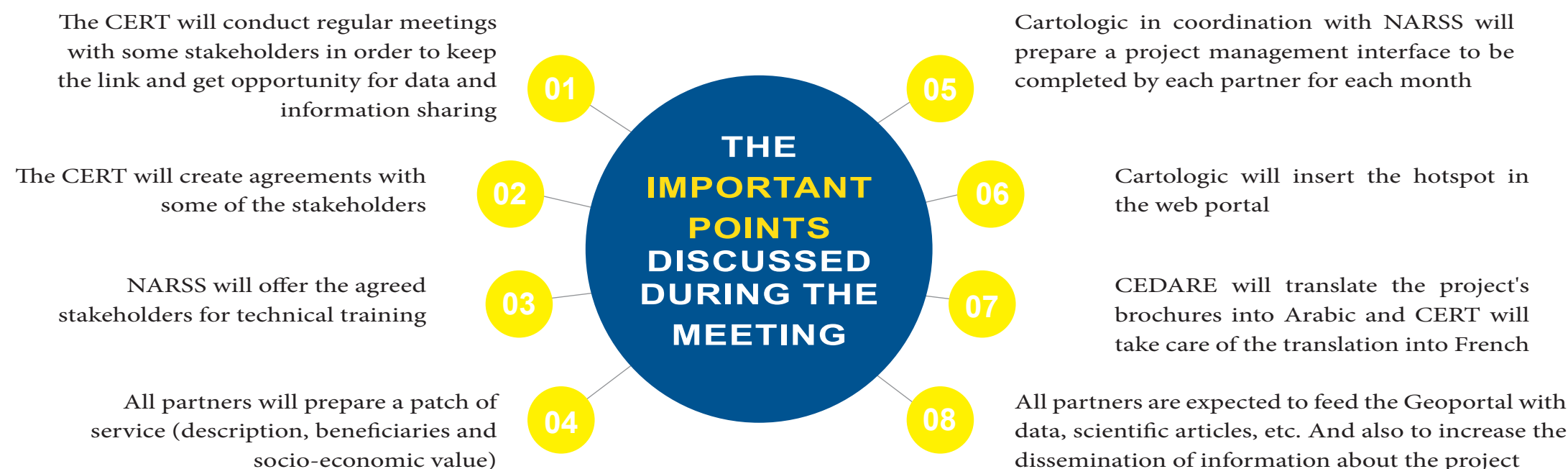
The NAfCOAST project meeting was held in Tunis, Tunisia from 24 – 26 April, 2019. This meeting is the second meeting with the project team and partners of the project. The meeting aimed to follow up of the project activities. Other challenges, policies, stakeholders engagement, project website and portal and timeline of activities were also discussed at this meeting.

As part of NAFCOAST, CERT hosted the second regional workshop for different stakeholders, from the Ministry of Agriculture, Water Resources and Fisheries, Ministry of Local Affairs and Environment and different research and international agency and offices at the Regency Hotel in Tunis on 25 April 2019. This meeting was organized to present the activities and services provided by the project and open the door to constructive collaborations.

The workshop was attended by about (28) twenty eight representatives mostly from National Center for Cartography and Remote Sensing (CNCT), Observatoire du Sahara et du Sahel (OSS), General Directorate of Forests (DGF), Directorate General for Fisheries and Aquaculture (DGPA) and National Agency for the Protection of the Environment (ANPE).

THE IMPORTANT POINTS DISCUSSED DURING THE MEETING

01 The CERT will conduct regular meetings with some stakeholders in order to keep the link and get opportunity for data and information sharing

02 The CERT will create agreements with some of the stakeholders

03 NARSS will offer the agreed stakeholders for technical training

04 All partners will prepare a patch of service (description, beneficiaries and socio-economic value)

05 Cartologic in coordination with NARSS will prepare a project management interface to be completed by each partner for each month

06 Cartologic will insert the hotspot in the web portal

07 CEDARE will translate the project's brochures into Arabic and CERT will take care of the translation into French

08 All partners are expected to feed the Geoportal with data, scientific articles, etc. And also to increase the dissemination of information about the project

THE MAIN ISSUES IDENTIFIED BY THE STAKEHOLDERS WERE AS FOLLOWS

01
- Access to the stockholders data is not always guaranteed, and it must be the subject of an authorization or an individual agreement between the CERT and the second party.

02
- The most important limitation of stakeholder data is spatial dimension

03
- Stakeholders have asked for new geo-portal services, such as some specific environmental data or the results of representations (statistics graph, Maps Edition) Stakeholders mapping

QUESTION	RESPONSE	NUMBER
Type of Institute	Governmental non-Research Organization	3
	Governmental Research Organization	2
	Non-Governmental	1
Operation Level	National	4
	International	1
	All Level	1
Operation Level	National Plan	4
	Mapping	3
	Remote Sensing	2
	Services	3
	Environmental	4