Key criteria

1. QUALITY is the degree to which a set of inherent characteristics fulfill **requirements**.
2. The discipline of quality management **complements** project management with a focus on customer satisfaction, prevention of defects over inspection, management responsibility and **continuous improvement**.
3. Project management assume responsibility for the development of quality policies for the project and coordination of related activities, in **compliance with** any organizational and regulatory **standards**.

From the above 3 points we derive the key elements of best practices:

* **Requirements** must be provided prior the commencement of the project; requirement in terms of i) **Technical Specifications** for each single product; ii) **Implementation Rules** for the completion of the project.
* Counterparts’ project management: external quality control is efficient if data producers adopt an effective project management that involves planning, doing, checking and acting (Plan,Do,Check,Act from *Deming* cycle). It is crucial the existence of an **internal Quality Management Plan** (QMP); if not available a preliminary task will be that of production of a QMP to be adopted by the producer.
* Standards adopted in the EQC are basically: INSPIRE xxxx, ISO xxxxx

Quality management practice has three processes: Quality Planning (QP), Quality Assurance (QA) and Quality Control (QC). Overarching these three processes is the concept of continuous improvement by planning, doing, checking and acting to improvements project quality.

**Quality Planning (QP)**

Quality Planning is the process of identifying which quality standards and regulations are relevant to the project.

The EQC QP is a document that will be based on the analysis of Technical Specifications (either tender document and bidder’s technical proposal), the Internal Quality Management Plan, best practices of relevant similar projects.

The key points of the QP:

* ***EQC Quality Management Plan (QMP)***: it is a formal document that encompasses both QA and QC procedures that address key aspects of assessing project quality standards. To be more efficient it should be drawn up in the **Inception Phase** and shall be focused on the processes used to plan, implement, document, and asses the project’s level of quality. The plan will define the EQC policies, objectives, principles, responsibilities, and accountability as it relates to expected project quality and outlines how the EQC Team will implement, perform, and measure those policies. The areas of interventions are:
  + Orthophotos:
    - Esistenza di immagini e tipo di immagini; satellite o aerofoto
    - Necessità o meno di nuovo volo: problema finestra temporale e permessi militari
    - Se nuovo volo prevedere presegnalizzazione perché le aree sono agricole e rimane poi difficile fare check points su manufatti
    - Inquadramento geodetico; problematiche legate alla rete fissa e rete GPS
    - Triangolazione aerea: differenti programmi di calcolo a blocchi e modalità di marcatura punti TA
    - Bande cromatiche per interpretazione land cover/use
  + LPIS digitalization:
    - Quale tipo di Reference Parcel viene adottato in TR: physical block ?
    - La digitalizzazione deve scendere al livello di SubParcel distinguendo le subparceltype (type of crops)? A questo si riferisce quando si parla di fotointerpetazione, bande cromatiche e missclassification matrix come previsto da ISO 19154?
    - Siccome la produzione LPIS in TR è finalizzata a IACS, nella proposta tecnica farei molto rimarcare che per stabilire una chiara e inequivocabile connessione tra DeclaredAgriParcel dello IACS e eligible AgriParcel il sistema deve avere una buona corrispondenza di SubParcelType (matrice di missclassification >95%); a cui a sua volta sono legati i Rights-Restrictions-Responsabilities. Anche questo aspetto è importante perché secondo le regole CAP il diritto del farmer di beneficiare dei sussidi non è direttamente connesso alla terra ma alla farmer’s application che si basa sulla dichiarazione annuale delle SubParcel eligible in base al SubParcel type.
* ***EQC Quality Metrics & Measures***: Quality metrics are parameters of quantitatively assessing a project’s level of quality, along with the processes to carry out such measurements. Metrics outlines the standard that a product will be measured against and should be preliminary settled either in the TS and/or in the reference standard. These measures will be carried out throughout the production’s life cycle to track and assess the level of conformity to a baseline. The quality baseline is established by the TS and/or a reference standard; should during the Inception Phase some baselines be missing, the EQC Team will adopt different sources including: i) beneficiary organisation’s quality plan; ii) best practices from similar projects completed in the same thematic area (i.e. LPIS projects in MS countries); iii) industrial standards. The areas of interventions are:
  + Orthophotos:
    - Airborne imageries:
    - Satellite imageries:
    - Fiducial points.
    - Aerotriangulation :
    - Mosaic :
    - Spectometry :
  + LPIS:
    - Metrical accuracy
    - Temporal accuracy
    - Semantic accuracy
    - Logical accuracy
    - precision
* ***EQC Acceptance Criteria:*** acceptance criteria are pre-established minimum standards that a production process must meet before deliverables are accepted. Acceptance Criteria are defined in the planning phase of the project (again, they should be stated in the tender dossier or TS, but if not, should be fixed in the Inception Phase) and then tracked throughout the project’s life to ensure the conformity to established quality standards. Acceptance criteria ca include functionality requirements, performance measures, essential conditions, regulatory compliance, etc.

**Quality Assurance (QA)**

Quality assurance is the application of planned, systematic activities to ensure that the project will employ all processes needed to meet requirements.

The EQC QA will provide the confidence that project quality is in fact being met and has been achieved. Actions and metrics to measure them, are defined in the EQC QMP; the EQC Team will adopt the dual diligence to ascertain the diligent execution of the QMP and to assure that the production process is performing according to the standards defined within the QMP. The role of **Team Leader** will function also as **Quality Audit** to determine whether project activities comply with the project’s quality processes and whether the appropriate controls have been applied. Quality Audits will be performed at defined intervals, and are geared toward determining if project quality complies with the quality metrics and measures defined in the QMP.

**Quality Control (QC)**

Quality Control is an iterative process that should be performed throughout the project’s life cycle and involves monitoring and controlling products to determine whether they comply with defined quality standards.

The control will be extended to the overall production system based on the concept that an error could be systematic and/or casual and in both cases it should be prevented in the future. To ascertain the level of error it is a common practice to define quality measurement thresholds that identify when and what corrective action may be needed to eliminate causes of unsatisfactory project performances. It should be possible to identify key nodes in the workflow adopted by the producer and for each upstream part of flow quality controls should verify and validate project processes, product functionality, regulatory compliance requirements, project deliverables and performances with the focus on the following areas:

* Prevention – Keeping errors out of the process
* Inspection – Errors must not reach the beneficiary
* Tolerance – the degree to which results are within an acceptable range

The main outcomes of quality control activities include:

* Acceptance decisions – Decisions as to whether the deliverables are accepted or rejected
* Rework – Actions to correct rejected products
* Process adjustment – Action taken to correct or prevent future quality failures.

To enhance the overall quality criteria the following practices will be adopted:

Redazione dei test di conformità (V&VP): verifica che tutti gli aspetti siano coperti da test

Conformità del linguaggio e del contenuto del V&VP agli standard.

In altre parole viene definito un Impementation Conformance Statment che deve essere chiaro, conforme ai termini standard e deve definire i limiti del dominio del problema; il ICS serve per descrivere il Implementation Under Test in termini di requisiti obbligatori, opzionali in modo che IUT sia testato contro questi requisiti.

Non può essere definito a priori un Executable Test Suite perché sono sempre dipendenti dai valori per ciascun parametro e quindi non standard.

Poiché i dati devono essere armonizzati con quelli prodotti in ambito IACS, deve essere anche validata la conformità con LPIS core model.

Modello dati

Quale tipo di Reference Parcel viene adottato in TR: physical block ?

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A livello di product specifications dovrebbero essere indicati i livelli di conformità che si intende ottenere e indicato le procedure da utilizzarsi; in particolare dovrebbe essere fornito il QC interno che il produttore deve adottare prima di sottoporre a collaudo il materiale.

Nella realizzazione dei dataset deve essere documentato il processo di QC adottato e fornito il metadato (lineage).

Definizione di limite di conformità e criteri di valutazione

Definizione della strategia di campionamento

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Info: TUTGA-99 Network (Turkish National Fundamental GPS Network)