

## Quality Assurance and Digital Mapping

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### QUALITY

An essential or distinguishing characteristic  
necessary for cartographic data to be  
fit for use."

Harold Moeollering (NCDCCDS)

- \* How does data quality affect us ?
- \* What factors affect quality ?
- \* How do we achieve quality ?

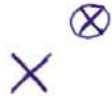


Paul Hardy  
Chief Programmer

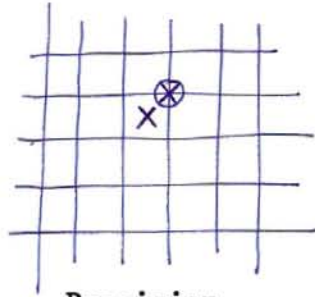
## **FACTORS IN DATA QUALITY**

- \* **Content**
- \* **Completeness**
- \* **Duplication**
- \* **Precision**
- \* **Accuracy**
- \* **Structure**
- \* **Coding**
- \* **Elegance**
- \* **Appropriateness**
- \* **Ease of Access**
- \* **Cost**
- \* **Time**

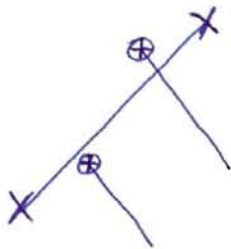
**QUALITY PROBLEMS**



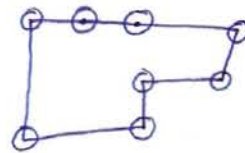
**Accuracy**



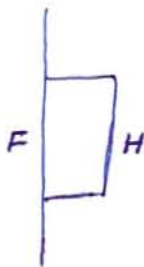
**Precision**



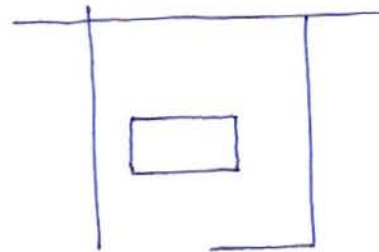
**Structure**



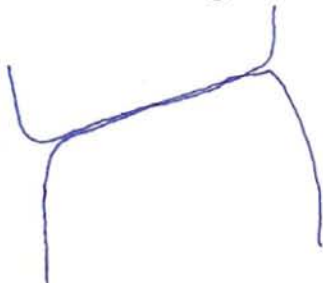
**Elegance**



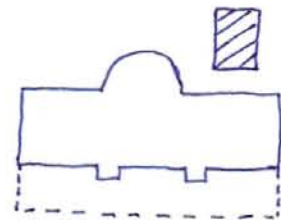
**Coding**



**Completeness**



**Duplication**



**Appropriateness**

### **STAGES AFFECTING QUALITY**

- \* **Human Analysis**
- \* **Measurement**
- \* **Drafting**
- \* **Digitising**
- \* **Registration**
- \* **Transformation**
- \* **Storage**
- \* **Manipulation**
- \* **Selection**
- \* **Representation**
- \* **Display**

### Q.A. STANDARDS

- \* ISO 9001
- \* BS 5750
- \* AQAP-1 and AQAP-13

### SOFTWARE TOOLS

- \* Standard languages - Fortran, 'C'
- \* Graphics standards - GKS, CGM, 'X'
- \* Open Systems - UNIX, POSIX, OSF
- \* 'De Facto' standards - MSDOS, DEC VMS
- \* Data standards - ISO 8211, ANSI X3.27
- \* Transfer standards - NTF, DGIWG
- \* CASE, Structured methodologies
- \* Object Oriented Programming (OOPS)
- \* Reusable software

## PROCEDURES

- \* Quality Plan
- \* Code of Practice
- \* Work Instructions
- \* Design reviews
- \* Code inspection
- \* Testing
- \* Publishing
- \* Issuing
- \* Problem reporting
- \* Modification Approval

**SUMMARY**

- \* Quality is in the eye of the beholder.
- \* Quality implies purpose.
- \* Absolute quality is a myth.
- \* Quality must be designed in, not added.
- \* Good quality can be achieved.
- \* Achieving quality is an active not passive task.
- \* Quality costs, but pays dividends.