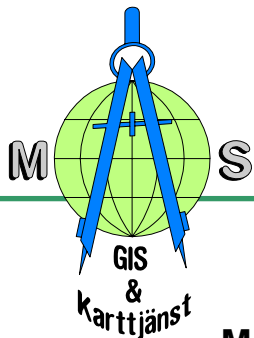


# Uncertainty in GIS with a User's Perspective



# Trends Concerning GIS Users

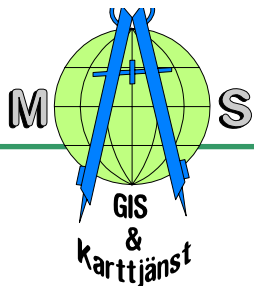
**Browser GIS based on different portals**

**GIS in all organisational levels**

**GIS for multipurpose use**

**Users not familiar with data origin and data production**

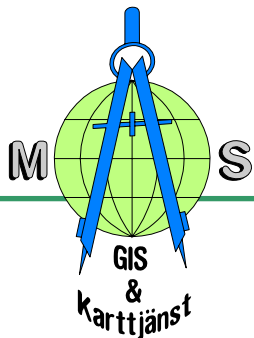
**Use of GIS more and more relying on relevant and adequate data**



# Agenda

## Uncertainty in GIS caused by

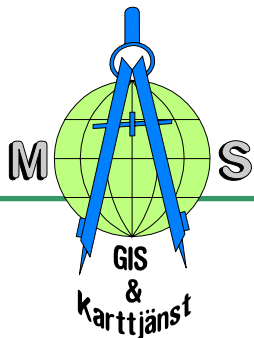
- ... shortages during the preparatory phase
- ... data uncertainties
- ... incorrect interpretation of results
- ... problems related to integrated use of many data types
- ... incorrect GIS analysis operations



# ...the Preparatory Phase

**What is supposed to be obtained with GIS?**

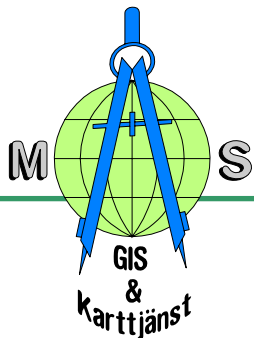
- ... relevant expectations related to the business
- ... complete and sufficiently disseminated use case descriptions
- ... correct geo data requirements
- ... the output is firmly established among the future end users



# ...the Preparatory Phase

**What is supposed to be obtained with GIS?**

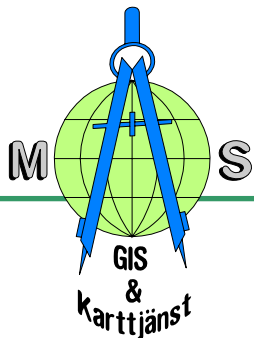
- ... relevant expectations related to the business
- ... complete and sufficiently disseminated use case descriptions
- ... correct geo data requirements
- ... the output is firmly established among the future end users



# ...the Preparatory Phase

**What is supposed to be obtained with GIS?**

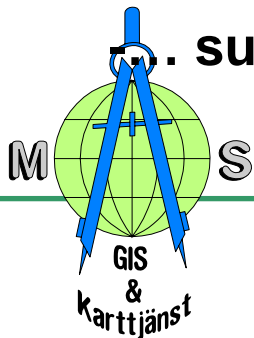
- ... relevant expectations related to the business
- ... complete and sufficiently disseminated use case descriptions
- ... **correct geo data requirements**
- ... **the output is firmly established among the future end users**



# ...Data Uncertainty

## Specifying relevant data for use in GIS

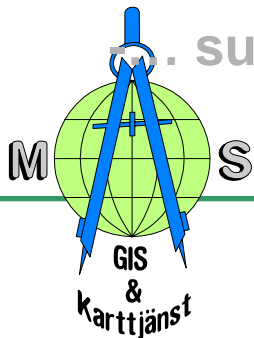
- ... relevant for the business
- ... accuracy and adequate
- ... complete and updated
- ... quality assured data production
- ... relevant data quality characteristics
- ... declared data quality
- ... supporting existing standards



# ...Data Uncertainty

## Specifying relevant data for use in GIS

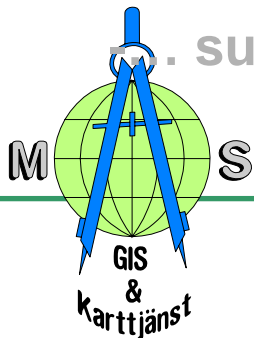
- ... relevant for the business
- ... accuracy and adequate
- ... complete and updated
- ... quality assured data production
- ... relevant data quality characteristics
- ... declared data quality
- ... supporting existing standards



# ...Data Uncertainty

## Specifying relevant data for use in GIS

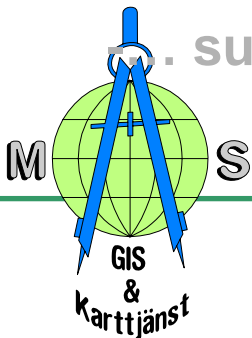
- ... relevant for the business
- ... accuracy and adequate
- ... complete and updated
- ... quality assured data production
- ... relevant data quality characteristics
- ... declared data quality
- ... supporting existing standards



# ...Data Uncertainty

## Specifying relevant data for use in GIS

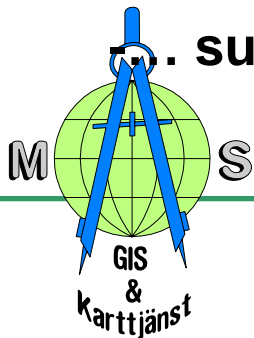
- ... relevant for the business
- ... accuracy and adequate
- ... complete and updated
- ... **quality assured data production**
- ... **relevant data quality characteristics**
- ... **declared data quality**
- ... supporting existing standards



# ...Data Uncertainty

## Specifying relevant data for use in GIS

- ... relevant for the business
- ... accuracy and adequate
- ... complete and updated
- ... quality assured data production
- ... relevant data quality characteristics
- ... declared data quality
- ... supporting existing standards**



# ...Interpretation of Results

**What does the interpretation of GIS analysis result mean**

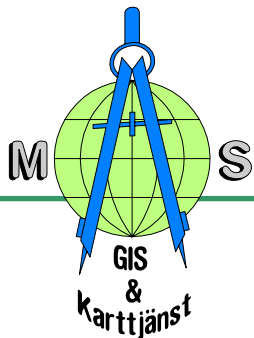
- ... as source material for decisions
- ... for desired predictions
- ... for publishing on internet for public use
- ... for map production purposes



# ...Interpretation of Results

**What does the interpretation of GIS analysis result mean**

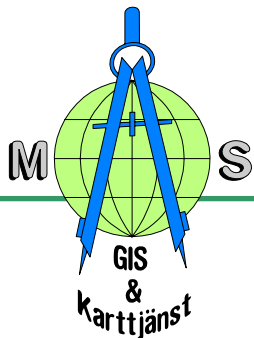
- ... as source material for decisions
- ... for desired predictions
- ... for publishing on internet for public use
- ... for map production purposes



# ...Interpretation of Results

**What does the interpretation of GIS analysis result mean**

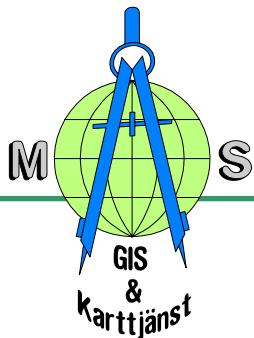
- ... as source material for decisions
- ... for desired predictions**
- ... for publishing on internet for public use
- ... for map production purposes



# ...Interpretation of Results

**What does the interpretation of GIS analysis result mean**

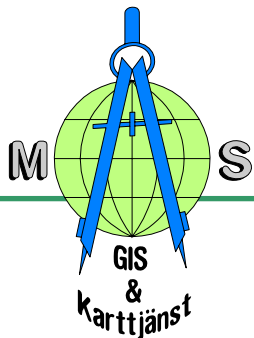
- ... as source material for decisions
- ... for desired predictions
- ... for publishing on internet for public use**
- ... for map production purposes



# ...Interpretation of Results

**What does the interpretation of GIS analysis result mean**

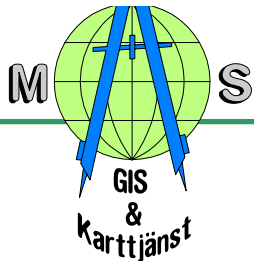
- ... as source material for decisions
- ... for desired predictions
- ... for publishing on internet for public use
- ... for map production purposes**



# ...Integrated Use of Data

**What does it mean for the use of GIS with data sets**

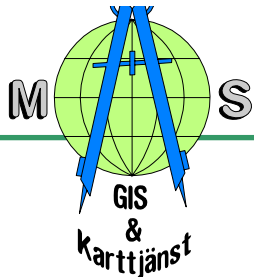
- ... basically produced for different purposes
- ... based on different data models
- ... with different data capture methods
- ... different completeness, accuracy, levels of updating etc
- ... with different scale intervals for proper use



# ...Integrated Use of Data

**What does it mean for the use of GIS with data sets**

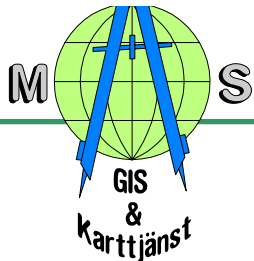
- ... basically produced for different purposes
- ... based on different data models
- ... with different data capture methods
- ... different completeness, accuracy, levels of updating etc
- ... with different scale intervals for proper use



# ...Integrated Use of Data

## What does it mean for the use of GIS with data sets

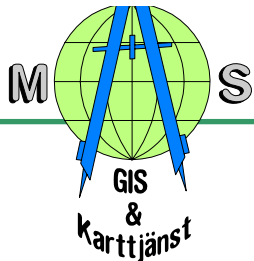
- ... basically produced for different purposes
- ... based on different data models
- ... with different data capture methods
- ... different completeness, accuracy, levels of updating etc
- ... with different scale intervals for proper use



# ...Integrated Use of Data

## What does it mean for the use of GIS with data sets

- ... basically produced for different purposes
- ... based on different data models
- ... with different data capture methods
- ... different completeness, accuracy, levels of updating etc
- ... with different scale intervals for proper use



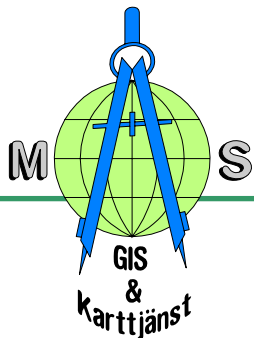
# ...Incorrect GIS Analysis Operations

**Prerequisites**

**Analysis sequences related to business**

**Use of analysis results**

**Interpretation problems**



# Analysis and prediction

*Analysis factors*

+++

---



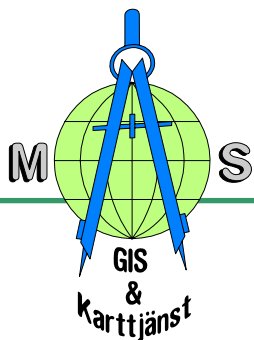
*Probability*

High

Low



Interval with uncertainties



# Some Conclusive Comments

**Many pitfalls**

**Staff training**

**Information/manuals**

**Metadata (producer/data manager/user)**

**Explicit, mandatory and followed-up  
responsibilities**

