Application of Standards in Antarctica

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- Background to the Scientific Committee on Antarctic Research
- Why is SCAR interested in Standards?
- History of Standards in Antarctic Mapping
- Standards currently in use
- Demonstration
- Summary
What is SCAR?

• Not the baddies in a 1960’s TV series!
• The Scientific Committee on Antarctic Research
• A committee of ICSU, the International Council for Science
• Formed in 1957, during the International Geophysical Year
• Coordinates scientific work in Antarctica
• Advises the Antarctic Treaty system
• Has been involved in Antarctic Cartography since 1958
Geographic Information and SCAR

• Antarctica is a difficult place to map
  – Hostile climate
  – Remote
  – Vast distances (58 times as big as the UK, 1.4 times as big as the USA)
  – No infrastructure

• Combining different national resources is essential

• SCAR has coordinated cartography and geographic information since 1958.
Why is SCAR interested in Standards?

- Joined up mapping requires standards
- Since 1961, SCAR has promulgated standards
- Published a standard legend for Antarctic maps in 1961
- Made recommendations for Antarctic map projections in 1961
- Made recommendations for reference ellipsoids and datums:
  - 1961 - International Ellipsoid
  - 1972 – WGS 72
  - Now – WGS 84
- Standards make maps created by different agencies “interoperable”
- Since 1996, SCAR has encouraged the use of ISO TC211 standards
- SCAR has been a Class A liaison organization since May 2002
Why Standards?

• Everyone in my field/organization uses <insert data format>
• International standards allow data sharing between different disciplines, organizations and countries.
• GIS crosses disciplinary and organizational boundaries.
• GIS allows data from different disciplines and organizations to be brought together
• Discipline or organization specific formats do not promote data re-use.
Why Standards? The Big picture

• Standards are vital for success
• THE Success story:
  – The Internet
  – Based on strong standards
  – Runs on diverse hardware and operating systems
  – Allows many suppliers to contribute.
• Failures too many to enumerate!
  – No standards, or poorly developed standards
  – OK while running in a well controlled hardware/software environment
  – Fail when exposed to the real world!
Standards used: ISO 19115 and ISO 19139 (Metadata)

- Most Antarctic data has a location
- ISO 19115 is the primary standard for Antarctic Data
- Global Change Master Directory uses a minimal implementation
  - Antarctic Master Directory is a sub-set
- Most Antarctic Datasets have a presence there
- Fuller implementations used in specific projects
Standards used: ISO 19110 (Feature Cataloguing)

- The Antarctic community is multi-lingual and multi-cultural
- The Antarctic treaty has four Official Languages – English, Russian, French and Spanish.
- The Antarctic Treaty is currently acceded to by 48 nations.
- Even people who speak English can have misunderstandings!
- ISO 19110 ensures we are all talking about the same thing.
- The SCAR Feature Catalogue is maintained by Australia
- It covers topographic features with focussing on those peculiar to Antarctica.
Other (non-ISO) Standards

- OGC web services are widely used
- Antarctic Digital Database (www.add.scar.org)
- USGS
  - LIMA
- National Snow and Ice Data Centre
- Standards VITAL in all web-based applications!
Demonstration
Summary

• SCAR is an international community
• Standards are vital to make sharing data work
• Standards are vital to create services of use for all
• Standards are a basis for solutions working in diverse environments.
Thank-you!