



Implementing Standards for Geographic Information in Africa: Outcomes of workshop held 10 August 2003, Durban, South Africa¹

Report compiled by Kate Lance (USGS/EDC, GSDI) and Elizabeth Gavin (EIS-Africa)

Background to the workshop

A workshop focusing on standards was initiated by EIS-AFRICA and USGS/EDC, as part of a series of activities aimed at advancing the implementation of standards for geographic information in Africa. The need to standardize geographic data and information, to support wider use and reuse of data, has been a theme at many meetings in Africa. A survey on the status of standards development and implementation in Africa was initiated by EIS-AFRICA and USGS/EDC earlier in 2003.

Plans for a workshop to the advance standards development and implementation solidified with the provision of funding by UNECA, to cover travel by delegates to an “awareness workshop”. The workshop was scheduled in association with the 21st International Cartographic Congress, to be held in Durban, South Africa, in August 2003. Further synergy was possible with another Africa-focused workshop being organized by South Africa’s Department of Land Affairs, entitled “Mapping Africa for Africa”, a workshop aimed at catalyzing action from African roleplayers, especially national mapping agencies, with respect to establishing the spatial “base layers” needed for implementing NEPAD. Through alignment of funding provided by UNECA, USGS/EDC, GSDI and the Department of Land Affairs, it was possible to increase African participation at the ICC meeting, as well as at these two African focused workshops.

The workshop

The “Implementing Standards” workshop was held on Sunday 10 August 2003, and attended by people from 8 countries in Africa, and 5 countries outside Africa. (See Annex A for the list of participants.)

The first half of the day was devoted to presentations. These presentations covered international standardization initiatives, as well as the experiences of African countries with respect to developing and implementing geographic information standards. By way of introducing the workshop, the findings to date from the survey on geographic data standards in Africa were also presented. All presentations are available through the EIS-

¹ Organised and supported by Department of Land Affairs, South Africa; EIS-Africa; GSDI; UNECA; USGS/EDC.



AFRICA web-site, <http://www.eis-africa.org/> .

Discussion groups were formed for the remainder of the day, to identify specific actions to be taken to advance standards. Participants committed themselves to various tasks, summarized in the following section. In particular, they agreed to report on the status of standards development (see first point in table).

Discussion groups' outcomes

Several principles were suggested to guide the identified actions:

- Interested parties need to consider what is happening internationally, particularly in one's sub-region and neighbouring countries;
- One should ensure greater participation in projects by both public and private sectors, as well as universities (e.g. projects may be eligible for funding, provided that there is public, private and university representation on project teams);
- Standards advocates need to identify and take some first steps – even if small - towards the implementation of standards, needed for wider and more meaningful usage of spatial datasets.

The workshop participants identified actions listed in the table below, as well as items that needed further investigation at the country level. The latter are listed in Annex B.

| Objective | Activities (responsible party in parentheses) | Timeframes |
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| <i>Direct follow-up to workshop, i.e. post-workshop reporting commitments</i> | | |
| <i>1. Compiling further information in support of national efforts to standardize geographic information</i> | Monitoring of and reporting on progress in standards development and implementation: points listed in annex B to be reported on to EIS-AFRICA and USGS/EDC | Report by end October 2003 |
| <i>Organisational and legal foundations for standards development and implementation:</i> | | |
| <i>2. Improve interactions with the national standards body and gain its support in GI standards development</i> | i. identify the national standards body, or equivalent ² ii. approach this body, requesting that they support/facilitate the country's efforts to develop GI standards iii. obtain a copy of guidelines and | All by October 2003 |

² <http://www.iso.ch/iso/en/aboutiso/isomembers/index.html>



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| | | procedures for standards development/adoptions, from the standards body | |
| <p>3. <i>Improve interaction of national standards body with ISO/TC 211</i> [by joining ISO/TC 211, you'll have access to documentation, as well as people who can provide some technical assistance].</p> | <ul style="list-style-type: none"> i. If your national standards body is not a member of ISO, request that it joins; ii. Request that your national standards body becomes (at least) an O-member of ISO/TC 211 iii. Apply for class A liaison status of CODI-GEO with ISO/TC211. ³ (CODI-GEO's Executive Working Group) iv. Liaise with the GSDI Association, taking advantage of its class A liaison status with ISO/TC 211 | | |
| <p>4. <i>Establish structures to ensure broad participation in standards development</i></p> | <ul style="list-style-type: none"> i. Develop (or strengthen existing) national coordinating committees involving all relevant stakeholders [these would liaise with national standards body] ii. Establish working groups/task teams to address particular aspects of standardization (e.g. development of quality standards for mapping, standards for hydrographic data) iii. Contribute to efforts of CODI-Geo standards working group (help draft terms of reference for CODI-Geo standards working group) | <p>December 2003</p> <p>March 2004</p> | |
| <p>5. <i>Promote recognition of standardization work, to sustain interest and effort in standardization – establish incentives to</i></p> | <ul style="list-style-type: none"> i. Incorporate standards and participation in standards working groups into people's work plans and as elements of their evaluation for promotion or recognition; as a first step, | | |

³ Both PC-IDEA and PCGIAP are ISO/TC211 class A liaisons.



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| <i>standardize</i> | <ul style="list-style-type: none"> ii. Incorporate the need for institutions' outputs to comply with standards; ii. Establish an award for standards work – to be announced at the next Africa GIS (EIS-Africa) | |
| <i>6. Support standardization through policy and legal mechanisms</i> | <ul style="list-style-type: none"> i. Develop geo-information policy on standardization, i.e. the legal framework to enforce/endorse implementation of standards⁴; ii. Incorporate standardization policy into existing geo-information policy, or elaborate on this policy iii. review existing legislation and/or draft enabling legislation that could support national standardization efforts | mid June 2004 |
| <i>Technical activities:</i> | | |
| <i>7. Draw upon existing standards to fast track standard development</i> | <ul style="list-style-type: none"> i. Evaluate existing standards, e.g. ISO, or country-level standards, particularly those of close neighbours, in terms of possible adoption or adaption, to speed up standardization ii. Read the GSDI Cookbook, and join the GSDI Technical Working Group | Will need to be ongoing; convene a meeting to review and discuss at least one standard by December 2003 |
| <i>8. Improve metadata development</i> | <ul style="list-style-type: none"> i. Enlist summer students / university students to help with metadata development [i.e. students to go to institutions, sit with people in these institutions who know their data, and capture the metadata digitally] ; ii. Establish an 'internship/attachment programme' (like e.g. Nigeria's | Try this for at least one institution by end of 2003 |

⁴ Nigeria's National Geoinformation Policy or South Africa's Spatial Information Bill provide examples of this, which could be used to fast track development of national policy.



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| | Industrial Training Fund) and advertise internship opportunities on institutional website | |
| <i>9. Increase usage of metadata and clearinghouses</i> | <ul style="list-style-type: none"> i. Tailor user interfaces for clearinghouse searches to user communities (i.e. queries same database, but entry point is geared to specific users e.g., government, youth, water. etc.) ii. Produce ‘yellow pages’ equivalent (i.e. a hard copy) of the spatial data discovery portal for those who do not have internet access | |
| <i>10. Identify standardization required</i> | List of standards needed at country level (this could be done in a participatory manner, through a workshop or series of standards working group meetings | A prioritised list by mid 2004 |
| <i>11. Developing LCCS⁵ compliant land cover datasets</i> | <ul style="list-style-type: none"> i. “Translate” existing land cover maps to LCCS ii. Liaise with FAO/Africover, enquire about technical support iii. <ul style="list-style-type: none"> a. Regional Centres to prepare documents advertising the availability of Landsat Imagery, together with free tools available for developing a land cover mapping in accordance with LCCS; b. letters to be sent to all countries in their regions; c. Announcement of pre-Africa GIS workshop on Landsat imagery iv. Additional awareness-raising about LCCS with AEIN pilot countries during Africa GIS ’03 (UNEP/DEWA) v. | October 2003 |
| <i>Supporting standards developers and implementers:</i> | | |
| <i>12. Make materials available that further</i> | <ul style="list-style-type: none"> i. Prepare ISO/TC211 guides for understanding individual ISO | by next ISO/ TC 211 meeting, i.e. |

⁵ Land Cover Classification Scheme – see <http://www.africover.org> for further information.



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| <p><i>an understanding of the framework of standards provided by the ISO 19100 standards</i></p> | <p>19100 standards (in progress – ISO/TC211 Outreach Advisory Group)</p> <p>ii. ISO/TC211 Outreach Advisory Group Outreach should enlist African colleagues to review the ‘outreach guides’/fact sheets etc, or help draft the guides to ensure that the language is understandable [Guides required in French and English]</p> | <p>October 2003</p> |
| <p><i>13. Virtual Forum for African standards developers</i></p> | <p>Establish Virtual Forum where countries could share experiences (e.g. South Africa could share its experience of the STANSA (Standards South Africa) / NSIF linkage with Kenya)</p> | <p>ECA to establish by end September 2003, ECA subsequently to moderate “sessions”/discussions</p> |
| <p><i>14. Use existing networking opportunities, where people can meet to advance standards/share experiences face to face</i></p> | <p>i. List upcoming events (e.g. Africa GIS '03) (GSDI and EIS-AFRICA);</p> <p>ii. Plan for potential standards meetings, advertise them and ensure that there is a focus on standards at all these events, even if it is through an informal meeting (GSDI and EIS-AFRICA)</p> | <p>Ongoing: Africa GIS '03 the next event (November 2003); African Association for Remote Sensing of the Environment Conference (October 2004)</p> |
| <p><i>15. Compile an inventory of institutions and expertise that can provide technical standardization support</i></p> | <p>Identify institutions and experts at country level; include in national SDI web-site, and provide to CODI-GEO Executive Working Group and EIS-AFRICA, for inclusion on these web-sites</p> | <p>Ongoing</p> |
| <p><i>16. Make available information resources relevant to standards development and implementation</i></p> | <p>i. Compile and make accessible standards materials (USGS/EDC, GSDI, EIS-AFRICA), adding to list of information resources contained in the standards questionnaire;</p> <p>ii. Regularly update list on EIS-AFRICA web-site and SDI Africa</p> | <p>Ongoing</p> |



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| | <p>implementation web-site (when ready</p> <p>iii. Complete the SDI Africa Implementation Guide, including details about standards implementation</p> | <p>On-line, by Africa GIS '03</p> |
| <p><i>17. Improve communication about standards through newsletters (e.g, SDI Africa; EIS News; ISO/TC211 outreach newsletter)</i></p> | <p>People to provide news items on standards development and implementation to producers of newsletters</p> | <p>Ongoing; participants to provide one news item by end 2003</p> |
| <p><i>18. Involve universities and training institutions in developing standards and providing tools for standards implementation</i></p> | <p>i. Talk to university professors/training institutions about undertaking research on standards: mobilize them to have students work on standards development/issues;</p> <p>ii. List university professors / training institutions interested in standards work (countries to provide list of those as part of the post-workshop reporting requirements – see Annex B)</p> <p>iii. Establish institutional mechanism for attachments of university students to relevant agencies involved in standardization</p> <p>iv. Develop university modules that address standards</p> | <p>Approach at least one institution by end 2003</p> |
| <p><i>19. Provide motivation for standardization efforts in terms of development agenda</i></p> | <p>i. Review NEPAD documentation and other documents to identify implications for geospatial data standardization;</p> <p>ii. Produce paper which draws clear connection between the need to standardize geo-information and NEPAD and other development goals (EIS-AFRICA, ECA)</p> | |



Future steps to promote standards for geographic information

This workshop was a step forward with respect to highlighting the “standards” component of SDI, which often only merits a sentence or two in a more general discussion on SDI. The workshop enabled participants to focus exclusively on standardization efforts and opportunities, such as institutional arrangements and processes needed to develop and promote standards. There is, however, a tendency still to think in terms of a basket of standards for geographic information, focusing on the ‘basket’, rather than considering standards individually. It is thus important that workshops focusing on standards for geographic information continue to be convened. Apart from the need for continued advocacy regarding standardization, there is also a need to provide potential standards developers with relevant information and insights, enabling them specify standards to develop and implement, and prioritize these within their particular country context.



Annex A: Workshop Participants

| SURNAME | NAME | ORGANISATION | COUNTRY | E-MAIL |
|--------------|----------------|--|--------------|--|
| Abebe | Mr Gulilat | Ministry of Water Resources Ethiopian Mapping Agency | Ethiopia | gulilata1994@yahoo.com |
| Banjaw | Mr Ato | Agency | Ethiopia | ema@telecom.net.et |
| Braghin | Mr M A | De Beers | South Africa | marcelo.braghin@debeersgroup.com |
| Butcher | Ms M | SANDF Department of Surveyor General | South Africa | maryna@mail.co.za |
| Chinjekure | Mr Enias | Zambia Survey Department | Zimbabwe | echinjekure@dsg.co.zw |
| Chuba | Mr Bwalya | Department | Zambia | chuba@zasurvey.org.zm |
| Cruz | Mr R | | Cuba | international@geocuba.co.cu |
| Danko | Dave | ESRI | USA | ddanko@esri.com |
| De Maeyer | Prof P | Surveyor General's Department | Belgium | philippe.demaeyer@ugent.be |
| Dlamini | Mr E S | UNECA | Swaziland | sgd@realnet.co.sz |
| Ezigbalike | Dr Dozie Mr | | | cezigbal@uneca.org |
| Fethi | Benhamouda | INCT | Algeria | benhamoudaf@wissal.dz |
| Gavin | Dr Liz | EIS-AFRICA National Spatial Information Framework | South Africa | egavin@csir.co.za |
| Govender | Mr S | | South Africa | sgovernder@csg.pwv.gov.za |
| Gyamfi-Aidoo | Mr Jacob | | South Africa | gyamfi@worldonline.co.za |
| Hakizimana | Mr Cyprien | Institut Geographique du Burundi DIN German Institute for Standards | Burundi | igebu@cbinf.com |
| Knoop | Dr H K | Regional Centre for Training in Aerospace | Germany | hans.Knoop@gmx.de |
| Kufoniyi | Dr Olajide | | Nigeria | kufoniyi@skannet.com |
| Lance | Kate | USGS/EDC and GSDI | USA | klance@usgs.gov |
| Le Roux | Ms C E | Surveys and Mapping Department of Surveyor General | South Africa | cleroux@sli.wcape.gov.za |
| Mahlango | Mr Albert | | Swaziland | sgd@realnet.co.sz |
| Makhate | Mr C K | SADC Regional Remote Sensing Unit | South Africa | cmakhate@sli.wcape.gov.za |
| Mavima | Mr Rueben | Survey of Kenya | Zimbabwe | rmavima@hotmail.com |
| Mbaria | Mr Cesare | | Kenya | cesarembaria@yahoo.com |
| Mdwara | Mr V V | CDSM | South Africa | vmdwara@sli.wcape.gov.za |



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|---------------|-----------|---|--------------|--|
| Naudé | Mr S J | SITA | South Africa | sarel.naude@sita.co.za |
| Osei | Sam | NSIF | South Africa | sosei@csg.pwv.gov.za |
| Ottichilo | Dr Wilbur | RCMRD | Kenya | ottichilo@rcmrd.org |
| Owolabi | Dr K | MLRR | Namibia | labi@mweb.com.na |
| Rashopola | Ms Remina | National Spatial Information Framework | South Africa | rrashopola@csg.pwv.gov.za |
| Siekierska | Dr E M | N R Com Surveyor General's Department | Canada | siekies@nrcom.gc.ca |
| Simelane | Mrs | Survey of Kenya | Swaziland | sgd@realnet.co.sz |
| Sogoh | Mr J | Survey of Kenya | Kenya | kism@iconnect.co.ke |
| Strydom | Paul | NSIF | South Africa | pstrydom@csg.pwv.gov.za |
| Tsele | Mrs M M | DDPLS | South Africa | modiehit@gpg.gov.za |
| Une | Mr H | Survey of Kenya/JICA | Kenya | hiroune@mb.infoweb.ne.jp |
| van Wyk | Gaby | OSS | South Africa | gvanwyk@openspatial.co.za |
| Vansteenvoort | Ms L | University of Ghent Gauteng Health Department | Belgium | liesbeth.vansteenvoort@ugent.be |
| Venter | Mr F A | Municipal Demarcation Board | South Africa | francois@gpg.gov.za |
| Venter | Mrs B | Board | South Africa | belinda@demarcation.org.za |
| Vermeulen | Mr D | SITA | South Africa | david.vermeulen@sita.co.za |
| Vorster | Ms S | EIS-AFRICA | South Africa | eisafrica@csir.co.za |
| Wonnacott | Mr R T | Surveys and Mapping | South Africa | rwonnacott@sli.wcape.gov.za |
| Zakiewicz | Mr T | Surveys and Mapping | South Africa | tsakiewicz@sli.wcape.gov.za |



Annex B: Reporting Commitments

*ITEMS TO 'RESEARCH/PURSUE' AND REPORT BACK ON TO EIS-AFRICA & USGS-EDC FOR FINAL REPORT OF ICC PRE-CONFERENCE WORKSHOP 'Implementing Standards for Geographic Information in Africa'
August 10, 2003, Durban, South Africa*

Please email to Liz and Kate, egavin@csir.co.za, klance@usgs.gov

- a) GI standards and relationship with national standards body (between now and AfricaGIS, can you agree to meet with your national standards body; discuss GI standards and ISO TC211; obtain existing guidelines for standards development/adoption)?
- b) Status of NSDI committees in your country, with specific information on standards working group (provide details of activities of the standards working group; identify linkages between standards working group and training institutions; provide details of existing sub-working standards groups in specific datasets or sectoral needs); between now and AfricaGIS, can you hold one of more meetings of the standards working group?
- c) Existing project that can be used as 'vehicle' or 'mechanism' to advance standards. [report should include details of the existing partnerships in the identified projects – specifically with respect to public, private and university partnerships]
- d) Regional centers need to report back on their recent acquisitions of satellite imagery, metadata for this imagery, and activities relating to implementation of LCCS. Also, regional centers efforts to promote SDI/awareness raising.
- e) Existing expertise? (inventory of institutions with expertise for standards work – this can be done by both country and regional center representatives)
- f) Status of land cover classification in your country? Can you promote 'translation' of existing land cover classification to GLCN/LCCS?
- g) Status of Global Map work in your country?
- h) Existence of GI specialist certification initiative?
- i) Existence of 'industrial training funds' (e.g., Nigeria) or 'required civil service assignments' that could be directed towards metadata work (or other work in support of standards/SDI)?



j) Investigate further and compile existing standards (de facto, in-house, national) documents and minutes from meetings (make these available on a website in-country and also contribute to SDI Africa: an implementation guide – e.g., South Africa Unique Identifier Standard, Zambia Data Catalog, Zimbabwe National Standards, Burundi Geonames).

k) Names of professors/university departments who could supervise students to work on standards development/tool development.

l) Circulate ICA Standards Workshop report with colleagues in your institutions and your national SDI committee.

m) Provision for standards development in existing draft policy/strategy documents (provide details on what is mentioned about standards in existing geospatial data policies/strategy documents).

Please email to Liz and Kate, egavin@csir.co.za, klance@usgs.gov