

**SUMMARY OF FIG COMMISSION ACTIVITY REGARDING STANDARDS**

<i>Commission</i>	<b>1 – Professional Standards and Practice</b>
<i>Key standards issues for the Commission and status of each</i>	Commission 1 has discussed the possible creation of a database on developments in the survey profession around the world; this would benefit from the use of standards-based metadata fields
<i>2007-10 Commission plans for activity and outputs related to standards</i>	The Commission chairs the Network and in that way has a coordinating role regarding FIG activity related to standardisation
<i>Relevant current standards and standardisation activity and current links with them</i>	No specific standards. ISO 9000 and ISO 14000 are generally relevant for the management of survey activity but are not standards which FIG can influence in any meaningful way
<i>Additional comments</i>	
<i>Completed by</i>	Iain Greenway
<i>Date</i>	26 June 2009

<i>Commission</i>	<b>2 – Professional Education</b>
<i>Key standards issues for the Commission and status of each</i>	There are four main fields of interest within Commission 2 as follows <ol style="list-style-type: none"> <li>1. Core Curriculum issues</li> <li>2. Quality Assurance and Accreditation</li> <li>3. e-Learning standards</li> <li>4. Educational Metadata</li> </ol>
<i>2007-10 Commission plans for activity and outputs related to standards</i>	<ul style="list-style-type: none"> <li>• WG 2.1 supports activities in the field of curriculum, focusing on the experiences in the “Body of Knowledge” in US as well as the Bologna process in Europe;</li> <li>• WG 2.2 will disseminate good experiences on Quality Management Systems and Accreditation;</li> <li>• WG 2.3 is dealing with e-Learning techniques, where interoperability is a key topic;</li> <li>• WG 2.4 will work on the refinement of Surveying Educational Database (SEDB) as a Surveying Education Metadatabase.</li> </ul>
<i>Relevant current standards and standardisation activity and current links with them</i>	E-Learning and e-Learning metadata standards: Dublin Core Metadata Initiative (DCMI), GEM (Gateway to Educational Materials) Metadata Element Set, IEEE (Institute of Electrical and Electronics Engineers) Learning Technology Standards Committee (LTSC) Learning Object Metadata (LOM)
<i>Additional comments</i>	
<i>Completed by</i>	Bela Markus – updated by Steve Frank
<i>Date</i>	26 July 2007 – reviewed September 2008 – modified May 2009

<i>Commission</i>	<b>3 – Spatial Information Management</b>
<i>Key standards issues for the Commission and status of each</i>	Commission 3 Working Group 3.2 – SIM infrastructure specifically is tasked with the initiation and facilitation of initiatives and policies aimed at the harmonization of data, information, tools (LBS) and workflows as components of GSDI. Standards are an integral part of such activity.
<i>2007-10 Commission plans for activity and outputs related to standards</i>	There are many diverse standards which are relevant to the management of Spatial Information generally but those of specific relevance to Commission 3 workplan and associated activities are detailed here.
<i>Relevant current standards and standardisation activity and current links with them</i>	<p>ISO 14825:2004 Intelligent transport systems – Geographic Data Files (GDF) – Overall data specification</p> <p>ISO 17572-1, ISO 17572-2, ISO 17572-3 Intelligent Transport Systems (ITS) – Location referencing for Geographic Databases [Under development]</p> <p>Standards in the series 191xx being developed by ISO/TC 211 (along with the old standard ISO 6709)</p> <p>FIG is a Class A Liaison Body to ISO/TC 211 (Geographic Information/ Geomatics) and the Federation is active within the Technical Committee. TC211 has a working relationship with ISO/TC 204 which is developing the GDF and other transportation standards</p>
<i>Additional comments</i>	This listing is not exhaustive
<i>Completed by</i>	Helen Murray
<i>Date</i>	27 June 2007 – reviewed September 2008 and June 2009

<i>Commission</i>	<b>4 – Hydrography</b>
<i>Key standards issues for the Commission and status of each</i>	<p>The creation of ISO standards on data collection platforms including hydrographic sensors. This has the potential to standardise the different manufacturers' conventions on axes, signs etc.</p> <p>Hydrographic Manuals, Standards and Guidelines for performing hydrographic surveys need to stay current with emerging technologies.</p>
<i>2007-10 Commission plans for activity and outputs related to standards</i>	<p>WG 4.2 – Standards and Guidelines – brings together the focus on competence and data collection standards within the Commission. This WG will provide relevant input to ISO and competence activities, and present relevant papers at FIG meetings.</p> <p>Commission 4 to monitor ongoing work within the hydrographic community on standards of competence and occupational certification schemes for recognising individual hydrographic surveyors.</p>
<i>Relevant current standards and standardisation activity and current links with them</i>	<p>ISO 19130 (in draft form) on data collection platforms is particularly relevant at present. The current draft does not explicitly address hydrographic sensors, but it lays down general principles. Follow-up with TC211 and industry is necessary.</p> <p>The IHO, National Hydrographic Offices and other agencies develop standards and guidelines for performing hydrographic surveys. FIG/IHO/ICA International Board for Standards of Competence for Hydrographic Surveyors and Nautical Cartographers. The International Board is developing standards and guidelines for individual recognition schemes.</p>
<i>Additional comments</i>	
<i>Completed by</i>	Andrew Leyzack
<i>Date</i>	29 May 2009

<i>Commission</i>	<b>5 – Positioning and Measurement</b>
<i>Key standards issues for the Commission and status of each</i>	<p>Standards issues related to GNSS, Laser Scanners and new or emerging position techniques and infrastructure (e.g. LocataLites, pseudolites, RFID readers/tags, WiFi access points, UWB, LBS etc...) testing and calibration</p>
<i>2007-10 Commission plans for activity and outputs related to standards</i>	<p>Progress a discussion on Laser Scanner calibration and testing techniques. Look into standards issues with emerging technologies. Collation of a document concerning the importance/relevance of testing and calibration procedures related to surveying profession standards in different countries. Set up web pages related to the Commission 5 Standards, Quality Assurance and Calibration and in particular GNSS covering and linking to different national approaches. General review of the Fig publication No. 9, Recommended Procedures for Routine Checks of Electro-Optical Distance Meters (EDM) published in 1994.</p>
<i>Relevant current standards and standardisation activity and current links with them</i>	<p>ISO 191xx standards being developed by ISO/TC 211 (Geographic Information/ Geomatics), ISO 17123 managed by TC/172 SC6 (Geodetic and Surveying Instruments). The latter currently includes consideration of updating 17123-1 Theory, and considering a standard on testing terrestrial laser scanners (this being drafted by the</p>

	Commission 5 chair)
<i>Additional comments</i>	
<i>Completed by</i>	David Martin
<i>Date</i>	28 August 2007 – reviewed May 2009

<i>Commission</i>	<b>6 – Engineering Surveys</b>
<i>Key standards issues for the Commission and status of each</i>	FIG Publication 25 on Models and Terminology for the Analysis of Geodetic Monitoring Observations is of some relevance to standards issues.
<i>2007-10 Commission plans for activity and outputs related to standards</i>	The C6 working groups are: <ul style="list-style-type: none"> <li>• 6.1 – Deformation Measurement and Analysis</li> <li>• 6.2 – Engineering Surveys for Industry and Research</li> <li>• 6.3 – Engineering Survey Data Bases and Facility Management</li> <li>• 6.4 – Engineering Surveys for Construction Works and Structural Engineering</li> <li>• 6.5 – Terrestrial Laser Scanners (joint with Commission 5)</li> </ul>
<i>Relevant current standards and standardisation activity and current links with them</i>	ISO is not specifically working in these areas to any extent at present, although some ISO/ TC211 work is relevant to WG 6.3. We need to investigate what possible proposals FIG could make in this regard. There are however a number of national and regional standards covering these areas. There are also some older ISO standards covering setting out and construction.  ISO 19130 (draft) and ISO 17123-8 on GPS (see Commissions 4 and 5 above) may also have relevance to Commission 6. ISO 19130 does not at this stage cover terrestrial laser sensors but it would be appropriate to enlarge its scope to do so in the future, as the technology matures.
<i>Additional comments</i>	Commission 6 will look at the possibility of putting together standard techniques for specific engineering surveying activities.
<i>Completed by</i>	Gethin Roberts
<i>Date</i>	16 June 2009

<i>Commission</i>	<b>7 – Cadastre and Land Management</b>
<i>Key standards issues for the Commission and status of each</i>	Establishment of a Land Administration Domain Model (LADM). The aim is to prepare standardized procedures and methods for the purpose of clearly defining data models suitable for land administration and tenure issues. As this model should also be suitable for issues in developing countries, it will be developed in close cooperation with UN HABITAT and its work on "Social Tenure Domain Model" (STDM) and "Global Land Tool Network" (GLTN).
<i>2007-10 Commission plans for activity and outputs related to standards</i>	Working groups 7.1 and 7.3 participate actively in the development of the LADM.
<i>Relevant current standards and</i>	The LADM was accepted as a work item by ISO/TC 211 (Geographic Information/ Geomatics) in 2008 and work is proceeding, with FIG

<i>standardisation activity and current links with them</i>	<p>providing the Project Leader, Christiaan Lemmen (ITC), and Editor, Harry Uitermark (ITC). Also Prof Peter van Oosterom from Delft University supports in the developments. Three meetings took place in 2008 (Copenhagen, Denmark, Delft, The Netherlands and Tsukuba, Japan) to discuss the Working Draft. A Committee Draft has been distributed for agreement in Molde, Norway, May 2009 amongst the Project Team members and FIG authorities. The Annexes are still under preparation but are expected to be ready for distribution in the beginning of May 2009.</p> <p>In this work, Commission 7 is cooperating with ISO/TC211, the UN-Habitat and its "Global Land Tool Network" initiative. During a Conference, held at World Bank in Washington US, March 9 -10 2009, a special post conference Workshop attention paid to the STDM, with contributions from FIG (President Enemark), World Bank, UN Habitat, FAO, ILS, Land Equity International.</p> <ul style="list-style-type: none"> <li>• <a href="http://www.iso.org/iso/en/stdsdevelopment/tc/tclist/TechnicalCommitteeDetailPage.TechnicalCommitteeDetail?COMMID=4637">http://www.iso.org/iso/en/stdsdevelopment/tc/tclist/TechnicalCommitteeDetailPage.TechnicalCommitteeDetail?COMMID=4637</a></li> <li>• <a href="http://www.unhabitat.org/categories.asp?catid=283">http://www.unhabitat.org/categories.asp?catid=283</a></li> <li>• <a href="http://www.gltm.net/">http://www.gltm.net/</a></li> <li>• <a href="http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/EXTPROGRAMS/EXTIE/0,,contentMDK:21956533~isCURL:Y~menuPK:3715444~pagePK:64168182~piPK:64168060~theSitePK:475520~isCURL:Y,00.html">http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/EXTPROGRAMS/EXTIE/0,,contentMDK:21956533~isCURL:Y~menuPK:3715444~pagePK:64168182~piPK:64168060~theSitePK:475520~isCURL:Y,00.html</a></li> <li>• <a href="http://siteresources.worldbank.org/INTIE/Resources/STDM-Workshop_Summary_report.doc">http://siteresources.worldbank.org/INTIE/Resources/STDM-Workshop_Summary_report.doc</a></li> </ul>
<i>Additional comments</i>	---
<i>Completed by</i>	Daniel Steudler and Christiaan Lemmen
<i>Date</i>	29 April 2009

<i>Commission</i>	<b>8 – Spatial Planning and Development</b>
<i>Key standards issues for the Commission and status of each</i>	<p>Much of the work of Commission 8 is not directly related to existing international standards. However, some of the important standards that underpin the commission's Strategy for environmental sustainable development are ISO 14000, ISO 14001 ISO 14004, ISO 19011 (Environmental Management System and Guidance on the Development and Implementation of Environmental Management) and ISO 14064 and ISO 14062 (Greenhouse Gasses/Climate Change and Integrating environmental aspects into product design and development). Specific areas that are being pursued by the commission are set out below.</p>
<i>2007-10 Commission plans for activity and outputs related to standards</i>	<ul style="list-style-type: none"> <li>• WG 8.1 Strategy for Environmental Sustainable Development has a link to ISO 14000, 14001 and 14004,</li> <li>• WG 8.5 on Renewables and Recyclables has links to ISO 14000 and ISO/TC211</li> <li>• WG 8.6 on coastal settlements and climate change has links to both ISO 14000 and ISO1464 and some of the standards in the ISO 19011 and ISO/TC 207 and ISO/TC 211</li> </ul>

<p><i>Relevant current standards and standardisation activity and current links with them</i></p>	<p>Given today's socio-economic climate and the international drive for sustainable development, relevant current standard to commission 8 should impact/emphasis on the following:</p> <ul style="list-style-type: none"> <li>• Respect for environment</li> <li>• Applying sustainability appraisal to spatial planning</li> <li>• Social equity (balancing the community)</li> <li>• Effective community involvement in planning and development policy process and decision making</li> <li>• Effective integration of climate change and economic concerns into spatial planning and development issues.</li> </ul> <p>Though the standards below (ISO 14000, ISO 14064 and ISO 19011) may have some relevance to the commission's activities, practitioners should be aware that both regional spatial planning systems and local development frameworks in the 21<sup>st</sup> century are more influenced by the concept of sustainable development. Though this might be a 'paradigm shift' of historical planning systems in some countries, it allows professionals to make significant contribution towards reducing the problems of climate change and global warming. Here are links to relevant ongoing ISO and TCs.</p> <p><a href="#">TC 207 Standardization in the field of environmental management systems and tools in support of sustainable development</a></p> <p><a href="#">ISO and the response to climate change Consensus-based International Standards</a></p> <p><a href="#">ISO/TS 15686-9:2008 Buildings and constructed assets -- Service-life planning</a></p>
<p><i>Additional comments</i></p>	<p>Commission 8 has a broad and a far reaching remit, reflective of the holistic skills found within planning and development of the Built Environment. To achieve standard practice and performance among professional, the commission used the relevant ISO/TC information to develop in its members and professionals, relevant Knowledge and key skills through case studies and conference papers. At the moment Commission 8 is keen on the climate change and sustainable development agenda.</p>
<p><i>Completed by</i></p>	<p>Isaac Boateng</p>
<p><i>Date</i></p>	<p>26 June 2009</p>

<p><i>Commission</i></p>	<p><b>9 – Valuation and the Management of Real Estate</b></p>
<p><i>Key standards issues for the Commission and status of each</i></p>	<p>The re-organisation of the International Valuation Standards Council (IVSC), will allow Commission 9 to play a more substantial part in the work of the IVSC; however, the capacity of the Commission to make a valuable and sustained contribution to the IVSC has to be evaluated realistically.</p>
<p><i>2007-10 Commission plans for activity and outputs related to standards</i></p>	<p>Working Group 9.4 'Review of Valuation Methods and Standards Worldwide' has a specific project to identify the standards used in different markets around the world.</p> <p>The intention to strengthen the connection with the IVSC, inter alia, is set out in the Commission Work Plan. A decision will be taken in 2009 as to the contribution that the Commission can realistically make</p>

	to the IVSC and its standardisation processes, and will be communicated to the IVSC Secretariat.
<i>Relevant current standards and standardisation activity and current links with them</i>	The eighth edition of the International Valuation Standards (IVS) has been published by the IVSC. Brian Waldy has long-standing links with the IVSC and the current Chair of Commission 9, Prof. Viitanen, has attended an IVSC meeting.
<i>Additional comments</i>	
<i>Completed by</i>	Brian Waldy
<i>Date</i>	30 September 2008 – updated by Iain Greenway 26 June 2009

<i>Commission</i>	<b>10 – Construction Economics and Management</b>
<i>Key standards issues for the Commission and status of each</i>	None directly – the Commission is focusing more on project management and commercial acumen, which are not covered at present by international standardisation bodies
<i>2007-10 Commission plans for activity and outputs related to standards</i>	None directly. RICS in 2009 published documentation on measurement standards. ICEC is also active in best practice activity and Commission 10 will maintain contact with them
<i>Relevant current standards and standardisation activity and current links with them</i>	There is no formal standardisation work in this area, but it appears to be one in which the documenting and spread of best practice would be most useful.
<i>Additional comments</i>	
<i>Completed by</i>	Iain Greenway
<i>Date</i>	26 June 2009

### **FIG and ISO (updated 30 September 2008)**

FIG is a Class A Liaison member of:

- ISO/TC 172 SC6 – Geodetic and Survey Instruments
- ISO/TC 211 Geographic Information/ Geomatics

Liaison with TC172 SC6 is coordinated by Hans Heister, with a meeting of the SC having been hosted by Professor Heister during April 2008. Issues currently under consideration by the Committee include:

- Revision of ISO 17123-1 Theory, to move away from standard errors to the Uncertainty of Measurement (as long proposed by Jean-Marie Becker of FIG)
- Revision of ISO 17123-5 Tacheometers
- Possible new work item on terrestrial laser scanners being prepared by the Commission 5 chair
- A possible new series of standards on laboratory testing

Liaison with TC211 is coordinated by Iain Greenway and FIG is active in its work with this TC, including on the Outreach Group and in a number of work items

**FIG and Sister Organisations**

FIG and ISPRS have agreed that they should maintain contact on standardisation issues, to determine how they may be able to increase their influence by joint approaches. This topic will also be discussed by the Joint Board at an appropriate time.

Iain Greenway  
Chair, FIG Standards Network  
26 June 2009