

Paving the Way for the Implementation of the NSDI in NGO-Government Partnership

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Key words: INSPIRE, NSDI, PPP, networking

SUMMARY

The networked GI community in a country can significantly contribute to the better definition, implementation and control of the national spatial data infrastructure. This is valid also for Hungary, where the preparation of the adoption of INSPIRE directive is underway in NGO-governmental partnership with the active role of the Hungarian Association for Geoinformation.

In Hungary, the national GI association HUNAGI was established by ten scientific societies, academic institutions and the HUNGIS Foundation under the auspices of the National Committee on Technological Development in 1994. The co-operation between HUNAGI and the governmental agencies in the field of spatial data infrastructure has started in 1996 as the NSDI concept was realised at the first GSDI Conference held in Bonn-Königswinter, Germany. Since that time HUNAGI attended all of the GSDI conferences and its slogan was chosen as “A Forum of PPP to support building the Spatial Data Infrastructure on National, European and Global Level”. According to the mission goal, HUNAGI became really interdisciplinary having today 106 member institutions who represent the academia, governmental sector, NGOs and private companies in a balanced way.

HUNAGI joined EUROGI in 1996. Influenced by the trend on global and European level, the GI association successfully contributed to the elaboration of the GIS strategy orchestrated by the HUNGIS Foundation and KPMG, as well as to the definition of the core data of the NSDI approved by the Interministerial Committee on Informatics and Communication in 1997.

HUNAGI and its steadily growing number of members were deeply involved in European projects orchestrated or supported by the European institutions (Phare, IST, TEMPUS etc). These projects such as OLLO, ABDS, Panel-GIS, LIME, SDILA, ESMI, ETEMII, Nature-GIS, were extremely useful to achieve cohesion and strengthen the team spirit in fields, which are inevitable for the implementation of the national SDI. These projects served as complimentary actions to the ongoing governmental projects such as National Cadastral Project, National Topomap Program, the institutional building and IT upgrade of the Land Office Network (TAKAROS, TAKARNET, META), agricultural and environmental monitoring programmes CROPMON and CORINE, the elements of the NPAA (national programme of the adoption of Acquis Communautaire) including LUCAS, MADOP, VINGIS, the land policy related TAMA and TALC as well as the international cooperation

and actions in geodesy, cartography, remote sensing and in a wide area of applications from regional planning to satellite navigation.

After the successful GSDI6 Conference organised jointly with EUROGI in Budapest, HUNAGI was invited by the European Commission to join the INSPIRE Expert Group in 2002. Experts of HUNAGI members had the opportunity to contribute to the working teams actions related to different subtopics even before Hungary became full member of the European Union in May 2004. HUNAGI took part at the World Forum on Information Society and initiated the successful establishment of the Task Force on SDI Strategy under the Subcommittee on Strategic Analysis of the Intergovernmental Committee on Information Society in 2004.

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1. THE HUNGARIAN GI ASSOCIATION

In Hungary, the national GI association HUNAGI was established by ten scientific societies, academic institutions and the HUNGIS Foundation under the auspices of the National Committee on Technological Development in 1994. The co-operation between HUNAGI and the governmental agencies in the field of spatial data infrastructure has started in 1996 as the NSDI concept was realised at the first GSDI Conference held in Bonn-Königswinter, Germany. Since that time HUNAGI attended all of the GSDI conferences and its slogan was chosen as “A Forum of PPP to support building the Spatial Data Infrastructure on National, European and Global Level”.

According to the mission goal, HUNAGI became really interdisciplinary having today 106 member institutions representing the academia, governmental sector, NGOs and private companies in a well balanced way.

HUNAGI mission goals are twofold:

- to promote, stimulate, encourage and support the development and use of GI and its associated technologies,
- to strengthen the institutional links between the multidisciplinary GI communities in Hungary and in abroad.

The objectives of the Hungarian GI Association are

- to provide representation and visibility of the GI community's interests in the European Umbrella Organisation for Geographic Information (EUROGI),
- to build up contacts with similar national GI associations,
- facilitating the implementation of the National Spatial Data Infrastructure by networking, knowledge transfer and information dissemination.

HUNAGI carries out actions related to the EUROGI membership and provides representation of its members' interest on international fora.

On domestic level HUNAGI contributes to the elaboration and facilitation of the

- National Information Society Strategy & Implementation (MITS) orchestrated by the Ministry of Informatics and Communication with special emphasis on the information society,
- implementation of the EU level and national policies,
- the Adoption of Acquis & Transition Facility Programmes,
- strengthen the Public- Private- Partnership,

- enhancing the efficiency and competitiveness in the public and private sector respectively.

1.1 HUNAGI Members Representing Academic Institutions

With the calendar year of entry

1994 College of Geoinformatics, University of West-Hungary

1996 ATC Agroinformatics and Applied Mathematics Department, University of Debrecen

1997 Dept of Physical Geography, József Attila University of Sciences,
Department of Photogrammetry and Geo-informatics, Budapest University of Technology and Economics

1999 Institute for Environmental and Landscape Management, Szent István University, Gödöllő

2000 Chair of Landscape Planning and Regional Development, Budapest University of Economics and Public Administration

Research Institute of Soil Sciences and Agrochemistry of the Hungarian Academy of Sciences

2001 Chair of Surveying and Remote Sensing, Institute of Geomatics and Engineering Faculty of Forestry, University of West-Hungary

Chair of Water- and Environment Management, Faculty of Agricultural Sciences, Debrecen University

Department of Cartographic Science and Geoinformatics, L.Eötvös University

Institute of Mathematics and Informatics, Faculty of Agricultural Sciences, University of Kaposvár

Pázmány Péter Catholic University, Faculty of Humanities

2002 Institute for Ecology and Botany of the Hungarian Academy of Sciences (MTA ÖBKI) GIS and Mapping Workgroup

2003 Department of Surveying and Geodesy Budapest University of Technology and Economics

Pollack Mihály College of Engineering, Department of Public Utilities, Geodesy and Environmental Protection, University of Pécs

Regional Research Centre Alföld of the Hungarian Academy of Sciences

2004 *Zsigmondy Vilmos és Széchenyi István School for Vocational Training, Nagykanizsa*
Chair of Automation, Veszprém University

1.2 HUNAGI Members Representing Governmental Institutions

With the calendar year of entry

1995 Hungarian Space Office

1996 Mapping Service of the Hungarian Defence Forces

1997 Capital Plant Health and Soil Protection Service

Geological Institute of Hungary (MÁFI)

GRID Budapest

Institute of Geodesy, Cartography and Remote Sensing (FÖMI) incl. 8 subscribed projects (INSPIRE, CLC, CROPMON, EUPOS, INTREL, MADOP, META, VinGIS)

Prime Minister's Office
 1998 Pnc for Regional Development and Town Planning (VÁTI)
 2001 Hungarian Meteorological Service (OMSZ)
 2002 Baranya County Land Office
 Capital Land Office
 TopoMap Non-profit Co., Ministry of Defence
 Somogy County Land Office
 State Forestry Service
 Veszprém County Land Office
 Vas County Plant and Soil Prot.Serv.
 2003 Baranya County Plant and Soil Protection Service
 Fejér County Land Office
 Fejér County Plant & Soil Prot. Service
 Hajdú-Bihar County Plant and Soil Protection Service
 Heves County Plant and Soil Prot.Serv.
 Jász-Nagykun-Szolnok County Plant and Soil Protection Service
 Komárom-Esztergom County Plant and Soil Protection Service
 Somogy County Directorate Central Statistical Office
 Somogy County Plant and Soil Protection Service
 Tolna County Land Office
 Department of Rural Development Programmes, MoARD/South-Danubian Regional Rural
 Development Office
 2004 Nógrád County Land Office
 Pest County Land Office
 Győr-Moson-Sopron County Land Office
 Csongrád County Land Office
 Borsod-Abaúj-Zemplén County Land Office
 Research and Informatics Institute for Agricultural Economics (AKII)
 Jász-Nagykun-Szolnok County Land Office
 National Directorate of Environmental, Nature Protection and Water
 Geodetic and Geophysical Research Institute of the Hung. Acad. of Sciences
 CELK Center Kht
 2005 38. Env.Prot. & Water Directorate of the Region Central Tisza

1.3 HUNAGI Members Representing Governmental Institutions

With the calendar year of entry
 1994gita Hungary Geospatial Information & Technology Association
 Hungarian Academic and Research Network Association (HUNGARNET Association)
 Hungarian Geographical Society
 Hungarian Association for Settlement and Regional Development
 Hungarian Society of Surveying, Mapping and Remote Sensing
 HUNGIS Foundation
 John v. Neumann Society for Computing Sciences
 1997 Dennis Gabor Foundation

1998 Hungarian Federation of Agroinformatics (MAGISZ)
2001 Society of Hungarian Surveying and Mapping Entrepreneurs
WWF Hungary
2003 12. FAO Land Tenure Service –SDAA Outpost in Budapest

1.4 HUNAGI Members Representing Local Governments

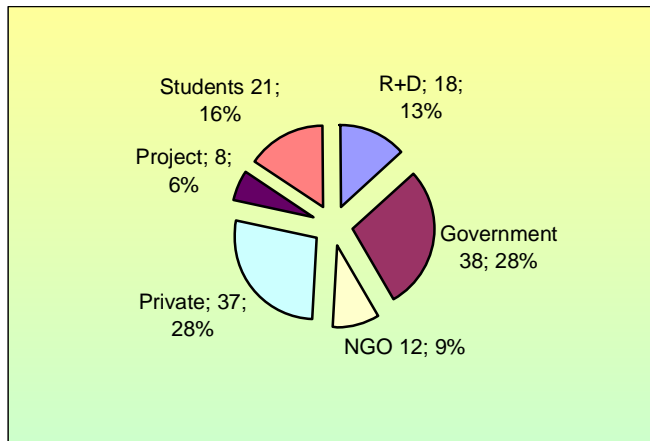
With the calendar year of entry
2005 1. Municipality of Szombathely

1.5 HUNAGI Members Representing the Private Sector

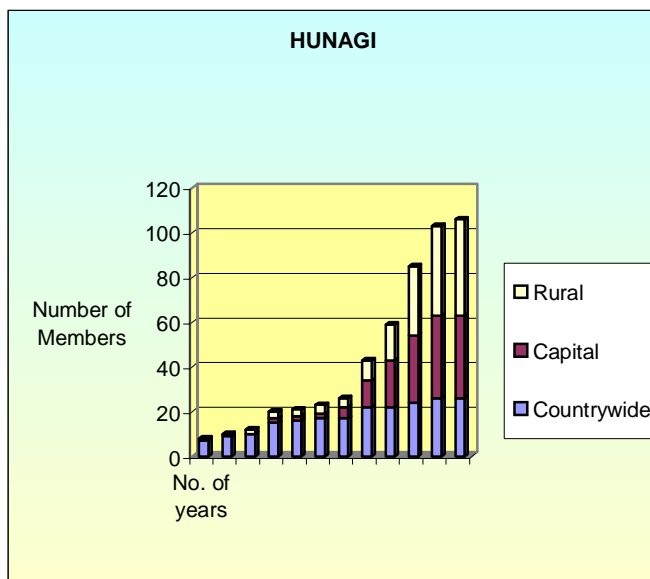
With the calendar year of entry
2000 VITUKI Consult
2001 BEKES Ltd.
Bonaventura GIS Market Analysis and Publishing Ltd.
DigiTerra GEOinformatics System House Ltd
GeoX Ltd
HISZI-MAP Map Publishing Co.
National Cadastral Programme Non-profit Co.
WEBhu Ltd.
2002 Autodesk Ltd. Hungary
Congress Ltd
Erda Ltd
ESRI Magyarország Kft
Geodézia Ltd
GraphIT Ltd.
HungaroCAD Informatikai Kft.
L&MARK GIS, Computing Techniques and Engng Ltd.
TTTC Ltd.
VARINEX Informatics
2003 InterMap Ltd.
Csanády & Partner
Compet-Terra Ltd.
DigiKom Ltd
GeoData Ltd.
GeoNet2000 Ltd
GT Rt (Geodetic and Cartographic Shareholding Co.)
Hydea Ltd.
Regional Environment Technology Center Non-profit Co.
Telespazio Hungary Ltd.
T-Systems Unisoftware Ltd
2004. Infoterra Hungary Ltd
EUROSENSE Ltd.
HungaroGEO Ltd

Rudas & Karig Ltd
 CartoHansa Ltd.
 ATLAS INNOGLOBE Ltd
 2005 Alföld GIS Informatika
 37.Geodetic and Mapping Ltd at Pécs

1.6 Growth of the Membership and Breakdown by Capital –Rural



Membership breakdown by sectors



Member institutions and organisations
 Growth during the first decade and breakdown by geographical location / area of activity

2. HUNAGI'S FORGING LINKS ON EUROPEAN LEVEL: EUROGI

HUNAGI joined EUROGI in 1996. Influenced by the trend on global and European level, the GI association successfully contributed to the elaboration of the GIS strategy orchestrated by

the HUNGIS Foundation and KPMG, as well as to the definition of the core data of the NSDI approved by the Interministerial Committee on Informatics and Communication.

By the Committee approval of 15 October 1997 the NSDI components include:

- Geo-referenced land registry and cadastre
- Topographic database
- Administrative boundary database
- National digital orthophoto coverage
- Harmonised geographical names
- Parcel-based identification and reference system
- Metadata and clearinghouse

Via EUROGI, HUNAGI has been also involved in the works related to the GI2000 initiative and INSPIRE (Infrastructure for Spatial Information in Europe). The GI2000 initiative and associated projects led to INSPIRE, which was adopted in mid-2004 by the European Commission after three years of in-depth preparation. EUROGI bundled its network of 6500 and participated in INSPIRE either directly or indirectly through expert and thematic working groups. If approved by the Council and European Parliament (anticipated in early 2007), INSPIRE will make a major legislative contribution to environmental policy and sustainable development by facilitating the use of Geographical Information in Europe.

The horizontal (interdisciplinary) and vertical (from local to global and vice versa) approach of EUROGI ensures effective knowledge transfer and exchange of experiences. All members of EUROGI including HUNAGI benefit from the synergy, especially those in countries where the set-up of a national spatial data infrastructure (SDI) is under development. EUROGI's contribution to the project "GI Network in Europe" (GINIE) should be explicitly emphasized.

It is anticipated, the approved EUROGI action plans on:

- data policy issues (including Public Sector Information),
- applications (GMES, Galileo), as well as
- analysis of the impact of European legislation related to policy implementation and control in agriculture, environment and water management in the context of use of GI will give significant impetus to building SDI on national levels also in Hungary with special emphasis on the core data sets as listed in the INSPIRE Annex I-III.

3. HUNAGI MEMBER'S ON EUROPEAN/GLOBAL LEVEL IN THE SDI CONTEXT

HUNAGI and its steadily growing number of members were deeply involved in European projects orchestrated or supported by the European institutions (through Phare, IST, TEMPUS). These projects such as OLLO (Open Learning for Land Offices), ABDS (Administrative Boundary Database Service), Panel-GIS, LIME, SDILA, ESMI, ETEMII, GSDI6, GINIE, Nature-GIS, were extremely useful to achieve cohesion among collaborators and strengthen the team spirit in fields, which are inevitable for the implementation of the national SDI. These projects served as complimentary actions to the ongoing governmental

projects such as National Cadastral Project, National Topomap Program, the institutional building and IT upgrade of the Land Office Network (TAKAROS, TAKARNET, META), agricultural and environmental monitoring programmes CROPMON and CORINE, the elements of the NPAA (national programme of the adoption of Acquis Communautaire) including LPIS, CwRS, LUCAS, MADOP, VINGIS, the land policy related TAMA and TALC as well as the international cooperation and actions in geodesy (e.g. AIG, EuroGeographics: EUREF/UELN), cartography (ICA), cadastre (UNECE WPLA, PCC) remote sensing (ISPRS, EARSeL), GI (AGILE) and in a wide area of applications from regional planning to satellite navigation (Galileo, EUPOS).

After the successful GSDI6 Conference organised jointly with EUROGI in Budapest, HUNAGI was invited by the European Commission to join the INSPIRE Expert Group in 2002. Experts of HUNAGI members had the opportunity to contribute to the working teams actions related to different subtopics even before Hungary became full member of the European Union in May 2004. Paved the way by HUNAGI, the newly nominated environment and the GI sector representatives were accredited by the DG Environment and continued the work in early 2004.

HUNAGI took part at the World Forum on Information Society delivering a presentation on the role of the National GI Associations: case of Hungary. Supported by the Ministry of Agriculture and Rural Development, HUNAGI initiated the establishment of a Task Force on SDI strategy formulation at the meeting orchestrated by the Ministry of Informatics and Communication. The Task Force has been established reporting directly to the Subcommittee of Strategic Analysis of the Intergovernmental Committee on Information Society in 2004.

These harmonised activities between the NGO and different governmental agencies and institutions were introduced with special emphasis on

- lessons learned, best practices
- knowledge transfer,
- awareness raising and
- lobbying

both on domestic and international level using channels including European institutions, and organisations such as EUROGI, PCC, WPLA, GSDI and EuroGeographics. In the knowledge dissemination and land-related value-added services the growing importance of the Central European Land Knowledge Center (CELKCenter) should be emphasized.

In the case of Hungary, three major pillars of NSDI will be highlighted in accordance with the following user-friendly aspects: data availability, data accessibility and data useability (ie. the National Mapping Programmes, the implementation of the Spatial Data Infrastructure inspired by INSPIRE and the Geoportal/ geospatial one-stop respectively).

4. COOPERATION OF THE NGIA AND NMAs IN HUNGARY

The co-operation between the interdisciplinary national GI association HUNAGI and the Governmental Agencies in the field of NSDI has a ten-year history. HUNAGI secretariat and

its communication infrastructure is supported by the Ministry of Agriculture and Rural Development since 1994. The flagship of the Hungarian GI FÖMI provides safe server for HUNAGI frequently updated primary news source at the domain: www.fomi.hu/hunagi, which special chapters devoted to the Hungarian geodata portals, map services as well as for the trendy topics: PSI, INSPIRE, GMES and Galileo. The Link chapter connects the visitor to a continuously extended, wide range of information source by a structured way. The number of website visitors increases significantly, nearly doubled in every two years. HUNAGI play a useful and important role in the daily life of the adoption of the EU legislation and related institution building activities at the National Mapping and Land Administration, supporting also the R+D, countrywide projects, applications and services provided by the Institute of Geodesy, Cartography and Remote Sensing FÖMI. According to the *Act on Surveying and Mapping Activities* the responsibility related to the service of smaller scale mapping products belongs to the Mapping Agency of the Defence Forces and its non-profit company TopoMap, both stable member of HUNAGI.

Some of the milestones of the achievements by the members includes:

- advanced legislation on surveying and mapping promoting the use of GI with authentic core data and products (1996),
- introduction of operational countrywide crop monitoring (since 1997),
- countrywide operational territorial database service (provided by VATI, which belongs to the Prime Minister's Office today),
- governmental acknowledgement of the core NSDI data (1997),
- 4th EC GI Workshop in Budapest (1998),
- ISPRS Commission VII Symposium (1998),
- series of LIS related international events (GIS/LIS Central Europe, Vienna Initiative, FAO, TAMA, TALC, World Bank, UNECE WPLA etc) 1993-1996, 1988-2004,
- the Phare supported advanced IT development of Land Administration including the National Cadastral Project and National Topomap Programme,
- EU accession related institution building (CORINE, CwRS, LPIS, VINGIS, MADOP),
- First EC Workshop on Cadastre in Budapest hosted by MoARD,
- project participations (ABDS, PanelGI, GINIE, GSDI6 Conference, CELKCenter),
- Widely acknowledged, highly successful activities in the field of GI education and training,
- participation in the INSPIRE- related working groups, strategy planning and expert meetings ,
- Officerships among others in AGILE, ICA, IAG, EARSeL, FIG, ISPRS, EUROGI and GSDI,
- Active participation in EuroGeographics, PCC and UNECE WPLA, good links with FAO and the World Bank
- Successful bilateral programmes especially with Germany and the Netherlands
- The name of Department Lands and Mapping of the Ministry of Agriculture and Rural Development was changed to "Land Administration and Geoinformation" by 15 January 2005.

5. PREPAREDNESS FOR THE IMPLEMENTATION OF THE INSPIRE

In accordance with the user-friendly aspects of data availability, data accessibility and data useability, the NSDI in Hungary has the following three major pillars:

- the National Mapping Programmes,
- the implementation of the Spatial Data Infrastructure according the INSPIRE directive (expected to be in force by January 2007), and
- the Geoportal (efficient geospatial one-stop).

The INSPIRE Preparatory Phase Working Plan for 2005-2006 was reviewed and commented by the Expert Group under the Dutch EU presidency in early December 2004 and now is the subject of in-depth discussion at the Working Party of Environment of the European Council. The Ministry of Environment and Water is the prime interface as in the majority of EU Member States, but the Department of Land Administration and Geoinformation of the Ministry of Agriculture and Rural Development, in conjunction with the institute FÖMI provides professional GI-related support on continuous basis.

According to the voice of the GI sector, the national coordination body in INSPIRE-related activities (Intergovernmental INSPIRE Coordination Board) should be formed as soon as possible by upgrading of the recent Interagency committee on map supply to be chaired by Deputy State Secretary level. In order to support the right decision, the SDI Strategy Task Force composed by representatives of more than 15 ministries and agencies have to complete its document proposing the major strategy directives and recommended actions based on a short reasoning and background. One of the mostly needed document is still missing: this is a sound impact analysis, upon which the appropriate budget can be dedicated for the implementation. Only a coordinated, multiagency framework can assure the approval of the required budget, which is inevitable to meet the expectations and adopt the deadlines as described by the INSPIRE preparatory Working Plan.

Initiated by the academic institutions, and the major data provider stakeholders, the Geodetic Commission of the Hungarian Academy of Science invited the INSPIRE and SDI strategy experts for a briefing and discussion in order to accelerate the preparation process by promotive resolutions.

6. CHALLENGES AND ANTICIPATED IMPACTS

Policy, institutional, organisational, legislative, technological, financial, capacity building aspects and special features (such as the fundamental role of the geo-referenced integrated land registry & cadastre or outsourcing and PPP) of the present Hungarian situation will be highlighted and illustrated by the oral presentation and the possible scenarios/trends for a planned/anticipated change during the INSPIRE implementation in the next 10 years and the estimated societal/economic impact (ie. in the sustainable, integrated rural development) will be mentioned.

REFERENCES

www.hunagi.hu (Here all the abbreviations, programmes, projects, partners, members and documents referred or mentioned in this paper can be easily searched and accessed. In case of some internal documents the ID and password can be received by written request at hunagi@hunagi.hu).

BIBLIOGRAPHICAL NOTES

Gábor Remetey-Fülöpp graduated in 1998 at the Budapest Technical University as surveying engineer with diploma work in photogrammetry and postgraduated in automation in geodesy he received doctor degree at the same university. After 2 years topographic field works at Cartographia Company, he joined the institute of water management planning VIZITERV where he became chief of the computer aided design unit. In 1977 he was spent some months at the Rijkswaterstaat, ITC and the Delft University of Technology. In 1980 he was invited to the Remote Sensing Centre of FÖMI where he served as head of the image processing lab. In 1986 he was invited to the Department of Lands and Mapping of the Ministry of Agriculture. His responsibilities include GI/GIS/LIS/RS-related R+D and bi- and multilateral international co-operations. After served as stagier at the DG XIII (DG InfSo) of the European Commission in 1994, he became desk officer of the EU accession related R+D executed by FÖMI between 1998-2004, including the establishment and supervision of the Central European Land Knowledge Center (CelkCenter). He was representative of the national point of contact to the European Space Agency Earthnet programme between 1982-1990, President of the ISPRS Commission VII "Resources and Environmental Monitoring" between 1996-2000, Chair of ISPRS Working Group "Human Settlements and Impact Analysis" (2000-2004). He is Secretary General of the Hungarian national GI association *HUNAGI* since 1994, member of the EUROGI Executive Committee since 1998, member of the Board of Directors of GSDI since 2004, Co-Chair of ISPRS Working Group "Spatial Data Infrastructure" (2004-2008) and member of INSPIRE Expert Group and the Permanent Committee on Cadastre in the European Union appointed by the Ministry of Agriculture and Rural Development.

CONTACTS

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