



GEOSPATIAL THINKING

Educating
the Future
Spatial Citizens

Proceedings of the
GEOTHNK Project
Closing Conference

M. Kavouras, S. Sotiriou (Eds.)



Lifelong
Learning
Programme



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7. Geographic Information Need to Know (GI-N2K): towards a more demand driven geospatial workforce education system

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Abstract. The development of the Geographic Information Science & Technology (GI S&T) Body of Knowledge (BoK) in 2006 was a milestone achievement in the geospatial domain. It collects, describes and structures important concepts in the scientific field, and exposes them for theoreticians and practitioners alike. Today, after almost 10 years of scientific and technological developments in the geospatial field, the original BoK has become outdated. Geographic Information: Need to Know (GI-N2K) is a European project that intends to bring the original GI S&T BoK up to date. This paper explains the GI-N2K project objectives, the work already done, as well as next steps in reaching a renewed GI S&T BoK.

Keywords. Body of Knowledge, Geographic Information, Geospatial market

7.1. Introduction

The geospatial industry is a fast growing sector, generating high value/high tech jobs, innovative services and fast evolving technologies. In 2012, Donert reported over 100,000 mapping professionals in Europe, with a prognosis to employ more than 550,000 people by 2014 (Donert, 2012), and having a GIS market to reach US\$3,323.62 million by 2016 (GIS market, 2013). Despite these staggering numbers, employers still find it hard to find well-trained and skilled GI S&T employees: *“A recurrent complaint among companies and organization in the domain of GI is that the current supply of geospatial professionals is inadequate and the geospatial workers appear to be inadequately prepared to answer to the challenges and opportunities of this field”* (Vancauwenberghe and Vandenbroucke, 2015).

Hence, in order to increase Europe’s economic competitiveness in the geospatial sector, there is a clear need to align demand and supply, and it is paramount to establish more demand-driven educational programs that effectively meet the requirements of the European market.

7.2. GI-N2K Project¹⁸

7.2.1. Facts and figures

GI-N2K is a project funded under the EU Lifelong Learning Program (LLP) as an ERASMUS multilateral network, running from October 2013 until October 2016.

¹⁸ www.gi-n2k.eu

One of the most relevant contributions and pillars of the GI-N2K project is the network of partners, collaborators and contributors the project is building up. The consortium is formed by 31 partners, from 25 European countries, coming from Academia, and non-academic sectors, such as leading GIS companies or professional associations, as well as individual experts (Fig. 1, Table 1)



Fig. 1 Overview of GI-N2K partners

Partner	Country	Partner	Country
KU Leuven (coordinator)	Belgium	NUI Maynooth Ireland	Ireland
Aalborg university	Denmark	SIGTE	Spain
AGILE	Netherlands	The Slovak environmen tal agency	Slovakia
AGISEE	Bulgaria	UJI	Spain
AMFM GIS Italia	Italy	University of Bundeswehr	Germany
CEKTRA	Slovenia	University of Dresden	Germany
CISIG	Italy	University of Muenster	Germany
ESRI Romania	Romania	University of Nottingham	United Kingdom
Finnish geodetic institute	Finland	University of Salzburg	Austria
GEO-SEE	Macedonia	University of Tartu	Estonia
ISEGI	Portugal	University Pierre Mendes	France
Jagiellonian University	Poland	University West- Hungarie	Hungary
Karadeniz Technical university	Turkey	Utrecht university	Netherlan ds

LISA	Iceland	Vilnius university	Lithuania
Masaryk University	Czech Republic	Wageningen university	Netherlands
NTUA	Greece		

Table 1 *GI-N2K partners*

7.3. Objectives and expected outcomes

The general objective of GI-N2K is to update and bring the existing Geographic Information Science & Technology Body of Knowledge (GI S&T BoK) in line with new scientific and technological developments, keeping a European perspective in mind.

With the rapid advancement of technologies, the current GI S&T BoK (DiBiase et al., 2006), developed by the American University Consortium for Geographic Information Science¹⁹ and published by The American Association of Geographers²⁰, presents some limitations. These are not only related to the obsolete, incomplete or missing concepts, but also to the way the BoK can be explored, and to the predominance of American bias.

Having an updated GI S&T BoK as a final goal, the project also aims to find answers to other questions such as:

- how can education and vocational training in the domain of GI S&T match the actual job requirements in the job market?

¹⁹ UCGIS <http://ucgis.com>

²⁰ AAG <http://www.aag.org>

- how can the GI S&T BoK be used in order to fulfill employers' and job demanders' needs as well?

The new GI S&T BoK therefore also aims to be a user-friendly, evolvable knowledge base for geospatial information geared to better define curricula and career paths, attending the needs of different profiles:

- **For Academia.** Universities are not always as close as they should be to the real market. A renewed and constantly updated BoK will give academic programs a flavour of the kind of professionals the market is demanding from the university, resulting in graduates with stronger GI competences.
- **For professionals or students.** Exploring the GI S&T BoK will serve as inspiration for individual lecturers or professionals in order to update their skills or better define their curriculum. It will also give them the opportunity to create their own market-responsive curricula, as well as improve professional certification mechanisms.
- **For companies and employers.** A renewed GI S&T BoK will offer the possibility to check if the knowledge of the companies' staff fully covers project needs inside the company, or simply better outline job offers. Another interesting utility for companies is benchmarking their knowledge against their competitors.

So, the expected project outcomes will be:

- An overview of the demand and supply in the GI sector.
- A revised, evolvable GI S&T BoK with new areas, units and topics, that reflects the most up-to-date state of GI