

Mapping Sciences in National Academies of the USA

Currently, there are four national academies in the United States of America: *National Academy of Sciences* (NAS), *National Academy of Engineering* (NAE), *Institute of Medicine* (IOM) and *National Research Council* (NRC) (<http://www.nas.edu/>).

The oldest of them is the National Academy of Sciences established during the time of President Abraham Lincoln in 1863. Members of the Academy are reputable scientists doing scientific and engineering research dedicated to advancing science and technology and applying them for general welfare.

The National Research Council was founded in 1916. On a request by President Woodrow Wilson, it was established by NAS in order to gather experts from the broad scientific and technological community to help the nation during World War I. After the war, Wilson made an executive order in 1919 to maintain NRC in times of peace. The importance of NRC was subsequently supported by executive orders of Dwight Eisenhower in 1956 and George H. W. Bush in 1993. The current American president Barack Obama emphasized NAS in April 2009, stressing the importance of scientific advice for the nation. NRC annually publishes more than 200 reports and related publications available free of charge (<http://www.nap.edu>), making it one of the largest providers of free scientific and technical information in the world. One of the last reports published in 2010 is related to satellite and physical geodesy: *Precise Geodetic Infrastructure: National Requirements for a Shared Resource*. The conclusion of the study

recommends USA to establish a federal geodetic service to coordinate and facilitate modernization and long-term work of the national and global precise geodetic infrastructure (http://books.nap.edu/catalog.php?record_id=12954).

The National Academy of Engineering was established in 1964 and the Institute of Medicine in 1970 as independent, non-profit organizations working on the basis of the same congress document signed in 1863 by President Lincoln, establishing NAS. NAE offers counselling services to the federal government via the National Research Committee, which is the operative organ of three academies (NAS, NAE, IOM). In recent years, NAE's work was oriented towards establishing harmony between economic growth and environmental protection, ensuring national prosperity during global economic and technological dependency and educational system support (<http://www.nae.edu/Home.aspx>).

NRC was established by the Mapping Sciences Committee (MSC) in 199 in order to provide independent advice to the society and government at all levels of scientific, technical and political nature related to spatial information. MSC is one of five committees in the field of Earth sciences coordinated by the *Board on Earth Sciences and Resources* (BESR). Currently, the president of MSC is reputable cartographer Keith C. Clarke, professor at the University of California, Santa Barbara. He published a paper about the work of MSC in *ArcNews* in 2010 (Vol. 32, No 3, 1, 4-5).

MSC has been very active in recent years, and reports made in collaboration with other organizations attracted significant attention. Here are titles of five reports published between 2007 and 2009:

- ❑ *Successful Response Starts with a Map: Improving Geospatial Support for Disaster Management*, 2007 (Report compilation stimulated by Hurricane Katrina from 2005)
- ❑ *A Research Agenda for Geographic Information Science at the United States Geological Survey*, 2007
- ❑ *National Land Parcel Data: A Vision for the Future*, 2007
- ❑ *Elevation Data for Floodplain Mapping*, 2007
- ❑ *Mapping the Zone: Improving Flood Map Accuracy*, 2009

Contents of these reports and those published before 2007 are available at: <http://dels.nas.edu/besr/Mapping-Sciences/Reports-Academies-Findings>.

Note: The American dictionary *Glossary of the Mapping Sciences* includes about 11 500 terms from practical, engineering, physical and satellite geodesy, photogrammetry, cartography and several other branches of geodesy, according to Croatian terminology. Therefore, *mapping sciences* are best translated to Croatian as "geodezija", and the *Mapping Sciences Committee* as "Geodetski odbor". More about translating the term *mapping* to Croatian can be found in Geodetski list 2004, 4, 324.

Nedjeljko Frančula



Geodezija u nacionalnim akademijama SAD-a

Danas u Sjedinjenim Američkim Državama postoje četiri akademije sa statusom nacionalnih akademija: Nacionalna akademija znanosti (*National Academy of Sciences – NAS*), Nacionalna inženjerska akademija (*National Academy of Engineering – NAE*), Medicinski institut (*Institute of Medicine – IOM*) i Nacionalno istraživačko vijeće (*National Research Council – NRC*) (<http://www.nas.edu/>).

Najstarija je Nacionalna akademija znanosti osnovana 1863. za vrijeme predsjednika Abrahama Lincolna. Članovi Akademije su ugledni znanstvenici koji se bave znanstvenim i inženjerskim istraživanjima usmjerenim unapređivanju znanosti i tehnologije i njihovoj uporabi za opću dobrobit.

Nacionalno istraživačko vijeće osnovano je 1916. Na zahtjev predsjednika Woodrova Wilsona osnovao ga je NAS sa svrhom okupljanja stručnjaka iz šire znanstvene i tehnološke zajednice da bi savjetima pomogli naciji tijekom Prvog svjetskog rata. Nakon završetka rata Wilson je 1919. izvršnom naredbom produžio djelovanje NRC-a i u mirnodopskim uvjetima. Potom su svojim izvršnim naredbama, prvo Dwight Eisenhower 1956, a zatim i George H. W. Bush 1993. reafirmirali važnost NRC-a. Sadašnji američki predsjednik Barack Obama je u travnju 2009. apostrofirao NAS naglašavajući važnost znanstvenih savjeta za naciju. NRC godišnje objavljuje više od 200 izvještaja i srodnih publikacija koje su besplatno dostupne na webu (<http://www.nap.edu>) pa je time jedan od najvećih pružatelja besplatnih znanstvenih i tehničkih informacija na svijetu. Jedan od posljednjih izvještaja objavljen 2010. je iz područja satelitske i fizikalne geodezije (engl. *geodesy*): *Precize Geodetic*

Infrastructure: National Requirements for a Shared Resource. U zaključku te studije preporučuje se, među ostalim, da Sjedinjene Američke Države osnuju saveznu geodetsku službu (*federal geodetic service*) koja bi koordinirala i olakšala modernizaciju i dugoročni rad nacionalne i globalne precizne geodetske infrastrukture (http://books.nap.edu/catalog.php?record_id=12954).

Nacionalna inženjerska akademija osnovana je 1964, a Medicinski institut 1970. kao nezavisne, neprofitne organizacije koje djeluju na osnovi istog kongresnog dokumenta koji je 1863, osnivajući NAS, potpisao predsjednik Lincoln. NAE pruža savjetodavne usluge saveznoj vladi putem Nacionalnog istraživačkog vijeća koje je operativna ruka triju akademija (NAS, NAE, IOM). U posljednjih nekoliko godina rad NAE bio je usmjeren na uspostavljanje ravnoteže između ekonomskog rasta i zaštite okoliša, osiguranje nacionalnog prosperiteta u doba globalne ekonomske i tehnološke međuovisnosti i podupiranje obrazovnog sustava (<http://www.nae.edu/Home.aspx>).

NRC je 1989. osnovao Geodetski odbor (*Mapping Sciences Committee – MSC*) da bi pružao nezavisne savjete društvu i vladi na svim razinama znanstvene, tehničke i političke prirode u vezi s prostornim informacijama. MSC je jedan od pet odbora iz područja znanosti o Zemlji čiji rad unutar NRC-a koordinira *Board on Earth Sciences and Resources (BESR)*. Danas je predsjednik MSC-a ugledni kartograf Keith C. Clarke, profesor na Sveučilištu Kalifornija, Santa Barbara. O radu MSC-a on je 2010. objavio članak u publikaciji *Arc News* (Vol. 32, No 3, 1, 4-5).

Posljednjih nekoliko godina MSC je bio vrlo aktivan, a izvještaji nastali u suradnji s drugim organizacijama izazvali su zapaženu pozornost. Navodimo naslove pet izvještaja objavljenih od 2007. do 2009:

- ❑ *Successful Response Starts with a Map: Improving Geospatial Support for Disaster Management*, 2007 (Sastavljanje izvještaja potaknuto je uraganom Katrina iz 2005)
- ❑ *A Research Agenda for Geographic Information Science at the United States Geological Survey*, 2007.
- ❑ *National Land Parcel Data: A Vision for the Future*, 2007.
- ❑ *Elevation Data for Floodplain Mapping*, 2007.
- ❑ *Mapping the Zone: Improving Flood Map Accuracy*, 2009.

Sadržaji tih izvještaja, ali i onih objavljenih prije 2007, dostupni su na adresi: <http://dels.nas.edu/besr/Mapping-Sciences/Reports-Academies-Findings>.

Napomena: Američki stručni rječnik *Glossary of the Mapping Sciences* uključuje oko 11 500 termina iz praktične, inženjerske, fizikalne i satelitske geodezije, iz fotogrametrije, kartografije i još poneke, prema hrvatskoj stručnoj terminologiji, grana geodezije. Stoga je *mapping sciences* najbolje prevesti na hrvatski s geodezija, a *Mapping Sciences Committee* s Geodetski odbor. Više o prevodnju termina *mapping* na hrvatski vidi u Geodetski list 2004, 4, 324.

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