Korea's Geospatial Policy Series

Geospatial Policy I

The 5th Master Plan for National Geospatial Data Policies

This primer aims to share the knowledge and experiences of territorial planning and policy in Korea for the past 60 years. After undergoing turbulent times of colonial rule and war in the first half of 20th century, Korea has accomplished a remarkable economic and social development since the 1960s. Now Korea becomes a favorite benchmark of many developing countries, and is performing an important role to disseminate its knowledge and policy experiences to global friends. On such a track, KRIHS publishes this primer which consists of 8 topics dealing with National Geospatial Data Policies ranging in either comprehensive or specific themes. More primers will be forthcoming with a wider variety of subjects year after year.

Title	The 5th Master Plan for National Geospatial Data Policies
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※ Please note that the arguments in this primer are solely upon the authors' perspectives, and may differ from the official position of KRIHS.

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KRIHS GDPC

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Ⅳ 추진방안

The 5th Master Plan for National Geospatial Data Policies

Background

- The plan is to actively cope with the rapid development of ICT convergence technologies (for example, smart phones) and the changed policy environment such as a creative economy and a paradigm shift in government operations toward Government 3.0.
- Geospatial data are considered as both a new growth engine of a creative economy and a key element of Government 3.0 which provides customized services for the people.
  - Geospatial data are viewed as a key resource of a creative economy which combines ideas with science and technology to create new high-value added products.
  - In addition, geospatial data are required to establish a transparent and scientific policy and to promote a national policy tailored to the needs of people.
  - As a result, the 5th Master Plan for National Geospatial Data Policies have developed to promote convergence industries utilizing geospatial data and to support Government 3.0.

Legal Basis

- *National Geospatial Data Infrastructure Act* (Article 6) Every five years a Master Plan to facilitate the construction and utilization of the National Geospatial Data System shall be formulated and implemented.
- Coverage
  - General direction of policies
  - Acquisition and management of Framework Data
  - Research and development of national geospatial data systems
  - Training of specialized personnel related to geospatial data
  - Use of the national geospatial data system and distribution of the geospatial data
  - Investment and financing plans
  - Research and dissemination of standards and management of technical standards
  - Matters regarding the development of geospatial data industry

Time Frame of Plan: 2013 - 2017

제5차 국가공간정보정책 기본계획

▪▪ 추진 배경

- 스마트폰 등 ICT 융합기술의 급속한 발전, 창조경제와 정부3.0으로의 국정운영 패러다임 전환 등 변화된 정책환경에 적극 대응
- 공간정보는 창조경제의 신성장동력이자 국민 맞춤형 서비스를 제공하는 정부 3.0의 핵심요소임
  - 공간정보는 아이디어와 과학기술을 접목하여 새로운 고부가가치를 창출하는 창조경제의 핵심자원임
  - 또한 정책을 투명하고 과학적으로 수립하고 국민 맞춤형 정책을 추진하기 위해서도 공간정보가 꼭 필요함
  - 이에 따라 공간정보 융복합산업 활성화 및 정부 3.0을 지원하기 위하여 제5차 국가공간정보 정책 기본계획을 수립하게 됨

▪▪ 법적근거

- 「*국가공간정보에 관한 법률*」(제6조) 국가공간정보체계의 구축 및 활용을 촉진하기 위하여 5년마다 기본계획을 수립하고 시행함
- 내용범위
  - 정책의 기본 방향
  - 기본공간정보의 취득 및 관리
  - 국가공간정보체계에 관한 연구 · 개발
  - 공간정보 관련 전문인력의 양성
  - 국가공간정보체계의 활용 및 공간정보의 유통
  - 투자 및 재원조달 계획
  - 표준의 연구 · 보급 및 기술기준의 관리
  - 공간정보산업의 육성에 관한 사항

▪▪ 계획의 시간범위 : 2013년 ~ 2017년

I. Geospatial Data Policies: Driving Force for Creative Society

1. Paradigm Shift of Geospatial Data

▪▪ New Growth Engine for Creative Economy

● Paradigm Shift toward Creative Economy

- The global economic paradigm underscoring the importance of the land, labour and capital is shifting toward a direction in which emphasis is placed on information, ideas and knowledge (or human resources).
  - Idea- and knowledge-based industries focusing on search portals, SNS, cultural content, software and applications are leading the national economy.
- The national economy is entering an era of a creative economy in which the convergence of science and technology with ICT happens as well as the convergence of an industry with another and the fusion of industry and culture.
  * LED-convergence of agriculture and life science technologies, bio-material, manufacturing and telemedicine

● Geospatial Data as a Basis to Create High Value-added Convergence Products

- Geospatial data combine other information including crime, land value, built year of buildings and etc., and create information with a new added value.
  * The convergence of geospatial data with crime data can figure out areas vulnerable to crime; the convergence of geospatial data with data on built year of buildings can figure out areas in need of urban renewal.
- The convergence of both geospatial data and the science and technology with various fields of industries can create a new market.
  * Navigation (GPS + geospatial data) and unmanned vehicles (geospatial data + GPS + sensors + science and technology).

● Geospatial Data as a New Growth Engine for Overseas Export

- Thanks to active converging industry based on geospatial data, not only the geospatial data market but also the entire geospatial industry is rapidly growing each year.
  * The global geospatial data market is expected to have an average annual growth of 11% by 2015, reaching 150 trillion won (Daratech, 2009) while the convergence market is estimated to reach 1,500 trillion won, which is 10 times as big as that of the global geospatial data market.
- Depending on the economic growth in developing countries, emerging geospatial data markets are growing rapidly.
  * So far, South Korea has exported geospatial data-related products (which reaches a market worth of 85 billion won) directly to 12 countries including 9 countries by KOICA.

I. 창조사회를 견인하는 국가공간정보정책

1. 공간정보 패러다임 변화

▪▪ 창조경제의 신성장동력

● 창조경제로의 패러다임 변화

- 세계경제의 패러다임이 토지·노동·자본 중심에서 정보·아이디어·지식(인적자원) 중심으로 급격히 변화하고 있음
  - 검색 포털, SNS, 문화콘텐츠, 소프트웨어와 앱 등 아이디어와 지식에 기반한 산업이 경제에서 차지하는 비중이 급증
- 우리경제도 과학기술과 ICT, 산업과 산업, 산업과 문화가 융복합되어 새로운 부가가치를 창출하는 창조경제 시대로 진입

  * LED-농생명융합 바이오소재·제조, 원격의료

● 융복합 고부가가치 창출의 기반, 공간정보

- 공간정보는 공간을 매개로 범죄, 지가, 건물의 건축연도 등의 다른 정보를 융합하여 새로운 부가가치를 가진 정보를 만들어 냄

  * 범죄 정보를 공간정보와 융합하면 범죄취약지역을 파악할 수 있고, 건물의 건축연도와 공간정보를 융합하면 재개발이 필요한 지역을 알 수 있음
- 공간정보(기술)와 과학기술이 타 분야와 융복합하여 새로운 시장을 창출

  * 네비게이션(GPS+공간정보), 무인자동차(공간정보+GPS+센서+과학기술)

● 공간정보는 새로운 해외수출 동력

- 공간정보시장 뿐만 아니라 공간정보를 기반으로 한 융복합산업 활성화로 전체 공간정보 관련 시장은 매년 급성장 중임

  * 세계 공간정보시장은 연평균 11%씩 성장하여 2015년 150조원에 이를 전망(Daratech, 2009)이며, 융복합시장은 이의 10배인 1,500조원의 규모가 될 전망
- 개도국의 경제발전에 따라 신흥 공간정보시장이 급성장

  * 지금까지 해외진출 규모는 직접수주 12개국, KOICA 9개국 등 850억원 규모

Basis of Smart Society

Generalized Utilization of Geospaitial Data

- The expansion of the prevalence of smart devices has created an environment where anyone can take advantage of geospatial data anytime and anywhere.
  * South Korea's smartphone penetration rate, which is 67% (as of June 2013), is on the rise and approximately 70% of smartphone use is related to geospatial data, such as searching for places (PEW Research Center, 2011).

Enhancement of the Quality of Life through Geospatial Data Utilization

- Not only services related to searching for places but also location-based services (LBS) which offer you the information you want to obtain from the current position are expanding
- When deciding on the location of stores, the utilization of commercial analysis systems are expanding that enable the site selection process by analyzing the current population and surrounding stores.
  * Commercial Analysis System for Small Businesses provides information on 1,200 business districts across the country (Small and Medium Business Administration).
- The prevalence of online civil services related to real estate affairs, such as immediate issuance of land use regulation status documents is expanding.
  * Land information (Korea Land Information System, KLIS), Real Estate Information (Fast and Convenient Services), Land Use Regulatory Information (Land Use Regulatory Information System, LURIS) are good examples of such services.
- Services that share information on smart device users' experiences and activities through ubiquitous, location-based SNS are expanding.
  * "SeeOn" and "Foursquare" are location-based SNS in which smart device users share information about the places that they visited.

People's Well-Being and Safety through Public Participation-based Geospatial Data Utilization

- Geospatial- and SNS-based real time information on hazards and safety, shared among smart device users, can be used for disaster response and recovery activities.
  * Ushahidi, a platform combining geospatial data and SNS to share information related to disasters and social issues, was used to provide critical information for the public during extreme events (such as London Underground strike, snow storm in Washington, D.C. and Chile earthquake, all of which happened in 2010).

▪▪ 스마트사회의 기반

● 보편화된 공간정보 활용여건

- 스마트 정보기기의 보급 확대로 언제, 어디서나, 누구든지 공간정보를 활용할 수 있는 환경이 조성됨
  * 우리나라의 스마트폰 보급률은 67%('13년 6월 현재)로 증가 추세이며 스마트폰 이용의 약 70%가 길찾기 등 공간정보와 관련(PEW Research Center, 2011)

● 공간정보 활용으로 편리하고 윤택한 국민생활 가속화

- 길·위치 찾기뿐만 아니라, 현재 위치에서 원하는 정보를 제공받을 수 있는 위치기반서비스(LBS, Location Based Service)의 활용 확산
- 점포의 위치를 결정할 때 유동인구, 주변점포 등을 분석하여 입지선정을 할 수 있도록 도와주는 상권분석시스템 활용 확산
  * 전국 1,200개 상권정보를 제공하는 소상공인 상권분석시스템(중소기업청)
- 토지이용규제현황 등 부동산 관련 민원을 온라인으로 즉시 발급받을 수 있는 민원서비스의 보급 확대
  * 토지정보(한국토지정보시스템, KLIS), 부동산정보(일사편리), 토지이용규제정보(토지이용규제정보시스템, LURIS) 등이 대표적임
- 스마트기기 사용자의 경험과 활동을 언제 어디서나 위치기반의 SNS를 통해 공유하는 서비스 확대
  * 위치를 기반으로 사용자가 방문한 장소에 대한 정보를 공유하는 씨온(SeeOn), 포스퀘어(Foursquare) 등 다양함

● 국민참여기반의 공간정보 활용으로 안전하고 행복한 생활 영위

- 공간정보와 SNS를 기반으로 재해 및 안전관련 정보를 실시간으로 제공·공유하여 안전에 대비하거나 재난복구에 활용
  * Ushahidi는 공간정보와 SNS를 결합하여 재난·사회적 이슈를 공유하는 플랫폼으로, 2010년 런던 지하철 파업, 워싱턴 대폭설 도로제설 작업, 칠레지진 등에 활용됨

Driving Force of Future Convergence Technology

Acceleration of Digital Convergence

- The rapid growth in the convergence of ICT, science and technology, and contents is creating added values and new industries.
  - The United States is pushing forward a strategy for converging technologies (called NBIC, 2002) between Nano, Biotechnology (Bio), ICT (Info), and Cognitive Science (Cogno) in order to improve human performance.
  - EU is promoting development strategies for Converging Technologies for the European Knowledge Society (CTEKS, 2004) and a project to boost technology fusion and research and development, called Nano-technology, Biotechnology, Information technology and Cognitive science Project (NBIC Project, 2006-2009).

Geospatial Data as a Key Component of Advanced Digital Convergence

- Geospatial data technology can figure out and visualize relationships between things and humans and create added values by being converged with other technologies.
  - Telemedicine and robots utilizing location-aware technology and sensors; ship building and construction process management utilizing interior geospatial data
- It is possible to create business opportunities and to promote consumer-focused policies through geospatial analysis that combines big data with geospatial data technology.
  - Marketing strategies that take advantage of information on floating population and business areas; development of public transportation routes based on information on real time traffic and card/telephone usage.

Expansion of Geospatial Data-Based Future Technology Development

- It is expected that future technology developments, based on digital convergence, are speeding up to promote public health, safety, convenient and enjoyable life.
  * Future technology: intractable disease treatment, convenient intelligent living space, natural disaster response and the convergence of nano, life and IT (White Paper on Future Technology, 2013, Korea Institute of Science and Technology Information)
- Geospatial data-based convergence technology developments particularly in areas such as resource exploration and disaster prevention, automotive industry, robotics, medical care, construction and shipbuilding industries are kicking into high gear.
  * Satellites only for geospatial data, unmanned vehicles, intelligent virtual space, indoor geospatial data, location-based sensors and etc.

▪▪ 융복합 미래기술의 원동력

● 디지털 융합(digital convergence)의 가속화

- ICT, 과학기술, 콘텐츠간 융복합이 빠르게 확산되면서 고부가가치가 창출되고, 새로운 산업이 출현
  - 미국은 인간수행능력향상을 위해 나노(Nano), 바이오(Bio), 정보통신(Info), 인지과학(Cogno)간 융합기술전략(NBIC, '02)을 추진
  - 유럽연합은 지식사회 건설을 위한 융합기술 발전전략(CTEKS '04)과 기술융합 연구개발 프로젝트(NBIC Project '06-'09)를 추진

● 공간정보는 디지털 융합 고도화의 핵심요소

- 공간정보기술은 사물·사람의 위치와 관계를 인식하고, 시각화 할 수 있는 기술로 타 분야와 접목하여 고부가가치 창출 가능
  - 위치인식기술과 센서를 활용한 원격진료와 실내로봇, 실내공간정보를 통한 선박의 건조와 건축공정 관리
- 빅데이터와 공간정보기술을 융합한 공간분석 서비스를 통해 비즈니스 기회 창출 및 수요자 중심의 정책 추진 가능
  - 유동인구와 상권정보를 융합한 마케팅, 실시간 교통정보·카드정보·통화량정보 등을 활용한 대중교통노선 선정

● 공간정보기반의 미래기술 개발 확대

- 국민의 건강과 안전, 편리하고 윤택한 생활을 위해 디지털 융합을 기반으로 미래기술 개발이 활발해질 것으로 예상

  * 미래기술 : 난치성 질병 치료, 편리한 지능형 생활공간, 자연재해 대응, 나노/생명/IT 융합 등(미래기술백서 2013, 한국과학기술정보연구원)

- 특히 자원탐사·재해예방, 자동차, 로봇, 의료, 건설, 선박 등의 분야에서 공간정보기반의 융복합 기술개발이 본격화

  * 공간정보전용위성, 무인자동차, 지능형가상공간, 실내공간정보, 위치기반센서 등

Basis of Government Affairs in the Era of People's Happiness

Paradigm Shift of Government Administration Focusing on Individual Citizen

- The government consider national happiness as its best value and offers people a one-stop service, depending upon the life cycle and types of beneficiaries.
- The government should satisfy the public's right to know by actively opening up and sharing information held by the nation and also create new jobs through the private sector.
- The government should promote public participation in the policy making process through a public-private governance and make the swift removal of unnecessary and expensive red tape to strengthen public administration convergence to create synergy in policy actions.
- The government should identify policy issues and formulate a national future strategy fully supported from a scientific perspective through data analysis.

Geospatial Data as a Basis for Opening, Sharing, Communication, and Collaboration

- Geospatial data are a tool not only to help us understand and a variety of complex information through visualization but also to enable scientific analysis.
- Each administrative agency should converge existing various administrative information with geospatial data to increase the utilization of the information and administrative efficiency and to improve civil services.
  - Geospatial data can be used to spot tax evasion, to manage the state-owned property and to support start-ups, and establish the global Korean network based on geospatial data.

  * In the United States, federal, state and local governments, NGOs, academic communities have established and are operating Geospatial Platform (2010) based on geographical information to address a variety of policy issues.
- Customized policy development through the use of geospatial big data
  - Big Data refers to a wide range of information produced in real time, which can be used as a fundamental source to derive a useful value for policy actions and business purposes.
  - Governments can build a database that combines geospatial, administrative and SNS information together and develop a spatial analysis model to deal with policy issues and to formulate future strategies.

  * The United States has pushed a project called Big Data R&D Initiative, based on big data for analysis and prediction, while EU has pushed FutureICT and iKnow projects to overcome the financial crisis.

▪▪ 국민행복 시대의 국정운영 기반

● 국민 개개인에 중심을 둔 행정패러다임으로 전환

- 국민행복을 국정운영의 최고가치로 삼아 생애주기별 · 수혜자 유형별로 원스톱 대민서비스를 제공
- 국가가 보유한 정보를 적극 개방 · 공유함으로써 국민의 알권리를 충족시키고, 민간 활용을 통해 새로운 일자리 창출 도모
- 민관협치를 통해 정책과정에 국민참여를 확대하고, 정부내 칸막이 제거로 융합행정을 강화하여 정책 시너지 창출
- 데이터 분석을 통한 정책과제 발굴 및 과학적 국가미래전략 수립

● 개방 · 공유 · 소통 · 협력의 기반이 되는 공간정보

- 공간정보는 시각화를 통해 복잡하고 다양한 정보를 쉽게 이해할 수 있도록 도와주며, 과학적인 분석을 가능케 하는 도구
- 부처별로 구축된 각종 행정정보를 공간정보와 융합함으로써 정보의 활용성이 높아지고, 행정의 효율성 및 대민서비스 향상
  - 공간정보를 활용한 탈루세원 발굴, 국유재산 관리, 소상공인 창업지원, 공간정보 기반의 글로벌 한민족 네트워크 구축 등

  * 미국은 연방정부, 지역정부, NGO, 학계 등이 참여하여 공간정보를 기반으로 각종 정책문제를 해결하는 Geospatial Platform('10)을 구축 · 운영

- 공간 빅데이터를 활용한 맞춤형 정책개발 가능
  - 빅데이터는 실시간으로 생산되는 대량의 다양한 정보로, 정책과 비즈니스에 유용한 가치를 도출하는 원천
  - 공간정보와 행정정보 및 SNS정보 등을 융합한 DB를 구축하고, 공간분석모형을 개발하여 정책현안 대응 및 미래전략수립 가능

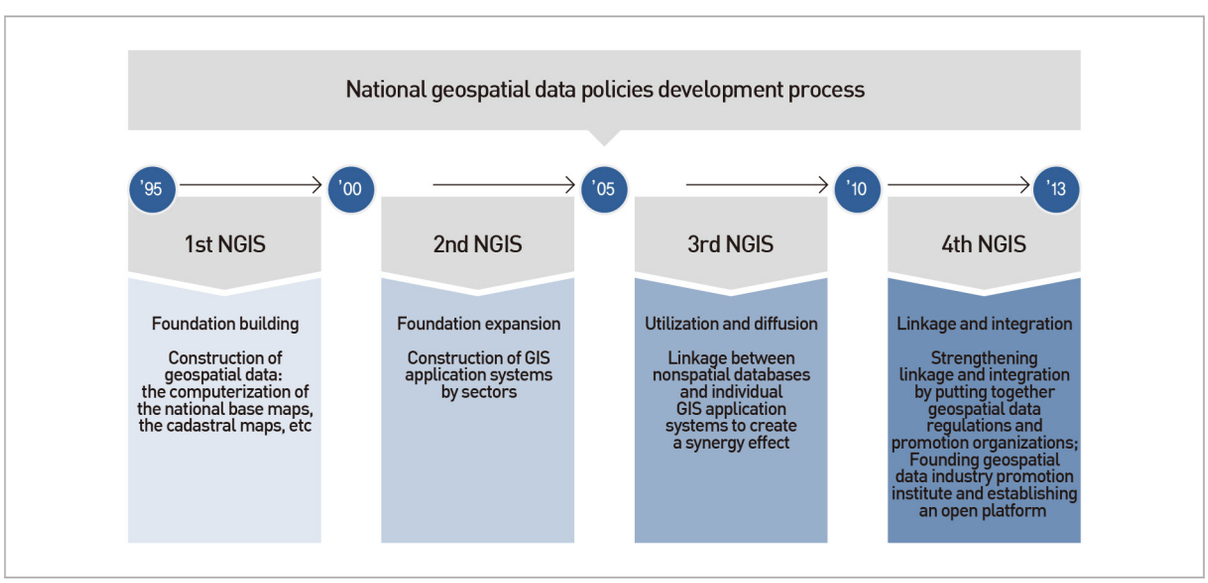
  * 미국은 빅데이터에 기반한 분석 · 예측을 위해 Big Data R&D Initiative를, 유럽은 금융위기를 극복하기 위해 FutureICT와 iKnow 프로젝트 추진

2. Current Status of National Geospatial Data Policies

▪▪ Promotional Status of National Geospatial Data Policies

● Development Process of National Geospatial Data Policy

- (Foundation Building) The 1st National GIS Construction Project ('95-'00) aimed to construct geospatial data by computerizing the national base maps and the cadastral maps; also to establish GIS-related standard-setting and to promote GIS technical development.
- (Foundation Expansion) The 2nd National GIS Construction Project ('01-'05) aimed to expand the 1st Project to develop spatial data and several stand-alone Geographic Information Systems by sectors such as land, underground facilities, environment, agriculture and forestry.
- (Utilization and Diffusion) The 3rd National GIS Construction Project ('06-'09) aimed to promote effective utilization and diffusion of GIS systems in conjunction with the databases that each of the administrative agencies had developed.
- (Linkage and Integration) The 4th Master Plan for National Geospatial Data Policies (2010-2012) aims to strengthen cross-linkages between GIS systems and to prepare for a broad base to promote convergence policy.



2. 국가공간정보정책 현주소

▪▪ 국가공간정보정책 추진현황

● 국가공간정보정책 발전과정

- (기반구축) 「제1차 국가GIS구축사업('95~'00)」을 통해 국가기본도 및 지적도 등 지리정보 구축, 표준제정, 기술개발 등 추진
- (기반확대) 「제2차 국가GIS구축사업('01~'05)」을 통해 공간정보구축 확대 및 토지·지하·환경·농림 등 부문별 GIS 시스템 구축
- (활용확산) 「제3차 국가GIS구축사업('06~'09)」을 통해 기관별로 구축된 데이터와 GIS 시스템을 연계하여 효과적 활용 도모
- (연계통합) 「제4차 국가공간정보정책 기본계획('10~'12)」을 통해 공간정보시스템간 연계통합 강화 및 융복합정책 추진기반 마련

● Implementation Status of National Geospatial Data Policy

• From 1995 to 2012, 2 trillion and 336.4 billion won was put into the budget commitment to build GIS systems, to train human resources and to promote technical development, standardization, distribution and utilization of the systems.

– The geospatial data market grew from 45 billion won in 1995 (the Ministry of Construction and Transportation, 2001) to about 4.8 trillion won at the end of 2012 (the Ministry of Transportation, 2012).

Table 1. Accomplishments of the National Geospatial Data Policies Promotion

Description	1st ('95-'00)	2nd ('01-'05)	3rd ('06-'09)	4th ('10-'12)
Geospatial data construction	• Computerization of Topographical maps and Cadastral maps • Computerization of land thematic maps such as land use maps, underground facilities maps, etc.	• Construction of framework data by sector, such as roads, rivers, buildings and political boundaries	• Construction of national base maps/marine base maps/imagery data • 3D-based national land geographic information system development • General building database development • Updating digital topographic maps	• Updating digital topographic maps • Constructing Indoor geospatial data systems
Geospatial data standardization	• Formulation of standards required to develop maps such as national base maps and underground facilities maps, etc. • Formulation of geographical information exchange and distribution-related standards	• Updating national standards to accept international standards • Standardization for framework data building and exchanging	• Establishment of national standard system (e.g., procedures, organizations, methods, regulations, etc) of Geospatial data • Promoting the expansion of international standards (ISO/TC211 WG10)	• Designation of an authority with a specialization in national standards for geospatial data • Promoting international standards for indoor geospatial data
GIS education	• Operation of GIS Education and Training Programs	• On-line GIS education system development • Standard education materials development • Education and training for public and private sector workers and teachers	• Expansion of On-line education contents • Operation of graduate programs in GIS	• Production of mobile-based education contents • Training for GIS specialists with Masters degree and Ph.D.
Geospatial clearing-house	• Promotion of pilot National GIS distribution network and application development	• Construction of national GIS distribution networks	• Advancement of national GIS distribution networks	• Operating national GIS distribution networks • Building a open platform
Geospatial data technology	• Mapping technology, DB Tool, and GIS S/W technology development	• Technology development related to 3D-based GIS, and high resolution satellite image processing	• Planning of Intelligent National Territorial Information Technology Innovation project	• Intelligent National Territorial In formation Technology Innovati on project (i.e., developing ground 3-dimensional laser scanner equipment, interior geospatial data use services platform, Multi-Looking aerial photography system, etc.)
Research for policy support	• Conducting research to promote geospatial data infrastructure (Selecting and working on a major project)	• Conducting projects to deal with current GIS-related issues at the national level and long-term, national policy support projects	• Performing national GIS tasks by 2007 and specified tasks to support changed policy environment in 2008	• Conducting research to promote geospatial data industry and to enter foreign markets • Conducting research to formulate strategies for the globalization of geospatial data open platforms
Application system construction	• Constructing a pilot underground facilities management system • Constructing a pilot land management information system	• Constructing GIS systems at the fields such as land use, underground, environment, agriculture and forestry	• Establishing a utilization system, such as UPIS(Urban Planning Information System) and KOPSS(KOrea Planning Support System)	• Expanding the integrated national geospatial data system and KOPSS • Promoting projects for centralized real estate administration information
Budget (100M won)	2,787	4,550	7,274	8,753

● 국가공간정보정책 추진현황

- '95년부터 '12년까지 공간정보 및 시스템 구축, 인력양성, 기술개발, 표준화, 유통 · 활용 등에 2조 3,364억 원의 예산 투입
  - 공간정보시장은 '95년 450억 원(건설교통부, '01)에서 '12년 말 현재 약 4조 8천억 원(국토교통부, '12)의 규모로 성장

표 1. 국가공간정보정책 추진성과

Description	1st ('95-'00)	2nd ('01-'05)	3rd ('06-'09)	4th ('10-'12)
공간정보구축	• 지형도, 지적도 전산화 • 토지이용현황도, 지하시설물 등 주제도 전산화	• 도로, 하천, 건물, 행정경계 등 부문별 기본지리정보 구축	• 국가/해양기본도, 공간영상 등 구축 • 3차원 국토공간정보 구축 • 건물통합정보 구축 • 수치지형도 갱신	• 수치지형도 갱신 • 실내 공간정보 구축
공간정보표준	• 국가기본도, 주제도, 지하시설물도 등 구축에 필요한 표준제정 • 지리정보 교환, 유통 관련 표준 제정	• 국제표준을 국내표준화 • 기본지리정보 구축 및 교환 표준 제(개)정	• 공간정보 국가표준체계(절차, 조직, 방법, 제도 등) 확립 • 국제표준활동 확대	• 공간정보 국가표준전담기관 지정 • 실내공간정보 국제표준 주도
공간정보인력	• GIS 전문인력 양성교육	• 온라인 교육시스템 구축 • 표준교육교재개발 • 공무원, 산업체, 교원 교육(거점대학)	• 온라인 교육 콘텐츠 확대 • 공간정보특성화대학원 운영	• 모바일 교육콘텐츠 개발 • 석박사 전문인력 양성
공간정보유통	• 국가지리정보유통망 시범사업 추진	• 국가지리정보유통망 구축	• 국가지리정보유통망 고도화	• 국가공간정보 유통망 운영 • 공간정보 오픈플랫폼 구축
공간정보기술	• 맵핑기술, DB Tool, GIS S/W 기술개발	• 3차원 GIS, 고정밀 위성영상처리 등 기술개발	• 지능형국토정보기술혁신사업 기획	• 지능형국토정보기술혁신사업(지상 3차원 레이저 스캐너 장비, 실내공간정보 활용서비스 플랫폼, Multi -Looking 항공사진촬영시스템 등 개발)
정책지원연구	• 공간정보기반 조성연구 추진(대표과제 1개)	• 국가GIS현안과제 및 중장기 정책지원과제 수행	• 2007년까지 국가GIS현안과제 수행, 2008년 변화된 정책 환경 지원을 위한 지정과제 수행	• 공간정보산업 진흥 및 해외진출 연구 • 공간정보오픈플랫폼 글로벌화 전략 연구
활용체계구축	• 지하시설물관리체계 시범시스템 구축 • 토지관리정보체계 시범시스템 구축	• 토지이용, 지하, 환경, 농림, 해양 등 GIS활용체계 구축	• UPIS, KOPSS 등 활용체계 구축 추진	• 국가공간정보통합체계 및 KOPSS 확산 • 부동산 행정정보 일원화사업 추진
투입예산 (억 원)	2,787	4,550	7,274	8,753

Accomplishments and Limitations of National Geospatial Data Policies

● Basis Establishment of National Geospatial Data Infrastructure

《Accomplishments》

- National base maps and thematic maps have been computerized and the databases, including 23 major components of Framework Data such as roads, buildings, rivers, administrative districts, coastline, and geodetic controls have been developed.
- The government has enacted more than 140 geospatial data standards and has been leading various events related to international standards (OGC, Open Geospatial Consortium) for indoor geospatial data.
- The national geospatial clearinghouse network and geospatial data open platform have been developed to provide 47 kinds of geospatial data (a total of 114,387 cases) online either with payment or free of chargee.
- Stronghold universities (2003-2013) have trained 14,030 students in GIS programs while specialized graduate schools (2009-2013) under support have taught 536 master's and doctoral students of GIS and also provided online GIS education for students who wish to be GIS specialist.
- Regulatory and organizational reforms have made to build the national geospatial data infrastructure systematically and to nurture a geospatial data industry (2009).
- To resolve any inconvenience that people might have experienced due to the mismatch between the physical and legal boundaries on the Cadastral map, relevant laws and regulations have been enacted to implement a new national cadastral survey.

《Limitations》

- Since Korea currently lacks global standards on established geospatial data, which can guarantee good quality (e.g., recency and consistency), the needs of a variety of users are not satisfied.
- The nation does not strictly apply geospatial data standards and lacks both a proper national standard system (through which all actions such as the planning, development, and enactment, enforcement, and application of such standards for better management) and a global standardization strategy.
  * Among the public GIS projects, 39% of them were found to be applied to such standards (the Ministry of Land, Infrastructure, and Transport, 2011).
- Low accessibility to geospatial data makes it difficult to obtain raw and up-to-date GIS data.
  * Only 23% (35,370) of 152,018 cases of file-based geospatial data were produced within five years (July, 2013).
- Currently, the nation's academic curriculums do not properly meet the needs of its IT industry; young people are reluctant to work at the software sector; the ecosystem of its fledgling GIS community experiences imbalances between the demands of the industry and GIS job seekers.

▪▪ 국가공간정보정책 추진성과 및 한계

● 국가공간정보기반 조성

《성과》

- 국가기본도와 주제도 등 종이도면을 전산화하고, 도로 · 건물 · 하천 · 행정구역 · 해안선 · 기준점 등 23개의 기본공간정보 구축
- 140여개의 공간정보표준을 제정하여 공급하고, 실내공간정보관련 국제표준(OGC, Open Geospatial Consortium)활동을 주도
- 국가공간정보유통시스템 및 공간정보 오픈플랫폼을 구축하여 47종의 공간정보 114,387건을 온라인을 통해 유·무상 개방
- 거점대학('03-'13)을 통해 14,030명을 교육하고, 특성화대학원('09-'13)을 지원하여 석박사 536명 양성 및 공간정보 온라인교육('03-) 제공
- 국가공간정보기반을 체계적으로 구축하고 공간정보산업을 육성하기 위한 국가공간정보 관련 법령 제정 및 조직 정비('09)
- 지적상 법적경계와 실제경계의 불일치로 인한 국민불편 해소를 위해 관련 법령 제정 등 지적재조사사업 추진기반 마련

《한계》

- 구축한 공간정보의 최신성·일관성 등 품질을 확보할 수 있는 체계가 미흡하여 다양한 수요자의 요구에 부응하지 못함
- 공간정보표준 적용율이 낮고, 표준의 기획 · 개발 · 제정 · 적용 등 표준활동을 관리할 국내표준체계와 국제표준화 전략 미흡

  * 공공GIS사업 중 표준을 적용한 것으로 확인된 사업은 39%(국토해양부, '11)
- 공간정보의 공개·개방이 소극적으로 이루어지고 있어 원시데이터 접근 및 취득이 어렵고, 최신성 있는 데이터 확보가 어려움

  * 파일기반 공간정보 152,018건 중 5년 이내의 정보는 35,370건(23%)에 불과('13.6)
- 학계의 교육내용과 산업현장 수요와의 괴리, 청년층의 SW분야 기피현상, 영세한 산업구조로 인력수급 불균형 초래

● Formation of Geospatial Data Industry Ecosystem

《Accomplishments》

- From 1995 to 2012, the national geospatial data project worth about 2.3 trillion won contributed to the creation of the geospatial data market worth about 4.8 trillion won.
- Following logistics, sports, energy, and content industries, Geospatial data industry was registered as the 11th specialized and independent industry in the nation.
- Geospatial Data Industry Promotion Agency was founded under the private and public partnership (2012), and SMART Geospatial Expo has been held to promote the geospatial data industry every year(2008~).
- R&D for high-tech survey, image information, DBMS, applied platforms, sensor network development was conducted to support geospatial data technology development needed in the industrial setting.

《Limitations》

- The size of most of the geospatial data businesses is so small and they are so dependent upon the public sector to make a contract that they lack the ability to create a new market.
  - 55% of the geospatial data companies recorded geospatial data-related sales of less than 1 billion won and 63% (2012) had less than 10 employees. These companies were found to be so weak in terms of technology competitiveness.

  * In the geospatial data-related software market, foreign products (e.g., ArcGIS) account for 95.3% of GIS software (2011, 448.8 billion won).

● Enhancement of Geospatial Data Utilization

《Accomplishments》

- Administrative work processes and civil services were innovated and improved through Korea Land Information Systems, Land Use Regulations and Information Systems, National Integrated Geospatial Data Systems and geospatial data open platforms(Vworld).
  - The Korea Land Information System supported 32,117 cases of administrative duties, provided 172 cases of geospatial data including seamless cadastral maps, and issued 64.2 million cases of land use planning confirmation document (2012).
  - According to the usage of geospatial data utilizing open API, National Integrated Geospatial Data Systems were used 73 million times (2012) while geospatial data open platforms were used 120,000 times (2013).

《Limitations》

- Since individual task processing systems have been developed without considering the integrated utilization of geospatial data, it is difficult to integrally utilize geospatial data. And utilization of geospatial data is not active in other domains such as health, wellfare, etc.

● 공간정보산업 생태계 형성

《성과》

- '95년부터 '12년까지 약 2.3조원 규모의 국가공간정보사업을 추진하여 약 4.8조원 규모의 공간정보시장 창출에 기여
- 공간정보산업을 물류산업, 스포츠산업, 에너지산업, 콘텐츠산업 등에 이어 국내에서 11번째로 특수 독자산업으로 등록('12.11)
- 공간정보산업 활성화를 위해 민·관 공동으로 공간정보산업진흥원을 설립('12)하고, 공간정보산업 육성을 위해 스마트국토 엑스포 개최('08~)
- 산업현장에서 필요한 공간정보기술개발 지원을 위해 첨단측량, 영상정보, DBMS, 응용플랫폼, 센서네트워크 개발 등 R&D 추진

《한계》

- 대부분의 공간정보기업이 영세하고, 공공부문 발주에 의존하여 자생력이 미약하며, 새로운 시장 창출역량이 부족
  - 매출액 중 공간정보 관련매출이 1억 미만인 업체가 55%, 종업원 10명 미만인 업체는 63%('12)에 달하며, 공간정보 SW 기술경쟁력 취약

  * 공간정보 SW시장('11년 4,488억원)에서 외국제품(ArcGIS 등)이 95.3%

● 공간정보 활용 확산

《성과》

- 한국토지정보시스템, 토지이용규제정보시스템, 국가공간정보통합체계 및 공간정보 오픈플랫폼 등을 통해 행정업무와 대민서비스를 혁신
  - 한국토지정보시스템을 통해 행정업무 지원 32,117건, 연속지적도 등 자료제공 172건, 토지이용계획 확인원 약 6,420만 건 발급('12)
  - 오픈API 등을 활용한 공간정보 활용실적은 국가공간정보통합체계 7,300만 건('12), 공간정보 오픈플랫폼은 12만 건('13)에 이름

《한계》

- 연계활용을 고려하지 않고 개별업무처리 위주로 시스템을 구축함에 따라 공간정보의 통합적 활용이 어렵고, 타 분야 활용 저조

3. Directions of National Geospatial Data Policies

● Direction 1. Advancement of User-centered National Geospatial Data Infrastructure

• A continuous improvement in the national geospatial data infrastructure is required to establish, distribute and utilize high-quality, up-to-date and accurate information that users want.

● Direction 2. Vitalization of Geospatial Data Convergence Industry

• Use creative ideas to develop new value added products and new industries by combining ICT, science and technology and contents with geospatial data.

● Direction 3. Advancement of Geospatial Data Utilization Systems and Its Expansion

• Establish geospatial data systems that are linked together to maximize the synergy effect of geospatial policies by effectively utilizing geospatial data.
• Go beyond the very limited use of geospatial data to expand the application areas, such as public health, welfare and environmental hazards.

Provider-oriented	Consumer-oriented
- Decreased the recency and accuracy of geospatial data - Have geospatial data that is closed to the public and ineffective distribution systems	- Increase the recency and accuracy of geospatial data - Have geospatial data that is highly open and improved distribution systems
Data and system integration-oriented industry	**Converging Industry based on geospatial data and technologies**
- Construction of data and business systems - Limited and closed market dependent upon the public sector to make a contract	-Create a new industry based on contents of geospatial data+ideas+science and technology
Utilization of geospatial data only in certain administrative services	**Advancement and expansion to other domains of geospatial data utilization systems**
- Utilization of geospatial data in the areas such as land, environment, agriculture and forestry - Civil service-oriented	-Expand GIS application areas, such as welfare, education, public health -Establish geospatial data systems that are linked together

3. 국가공간정보정책 추진방향

● 추진방향 1. 수요자 중심의 국가공간정보기반 고도화

- 최신성과 정확성 등 수요자가 원하는 고품질의 공간정보를 구축 · 유통 · 활용하기 위해 국가공간정보기반의 지속적인 개선 필요

● 추진방향 2. 공간정보 융복합산업 활성화

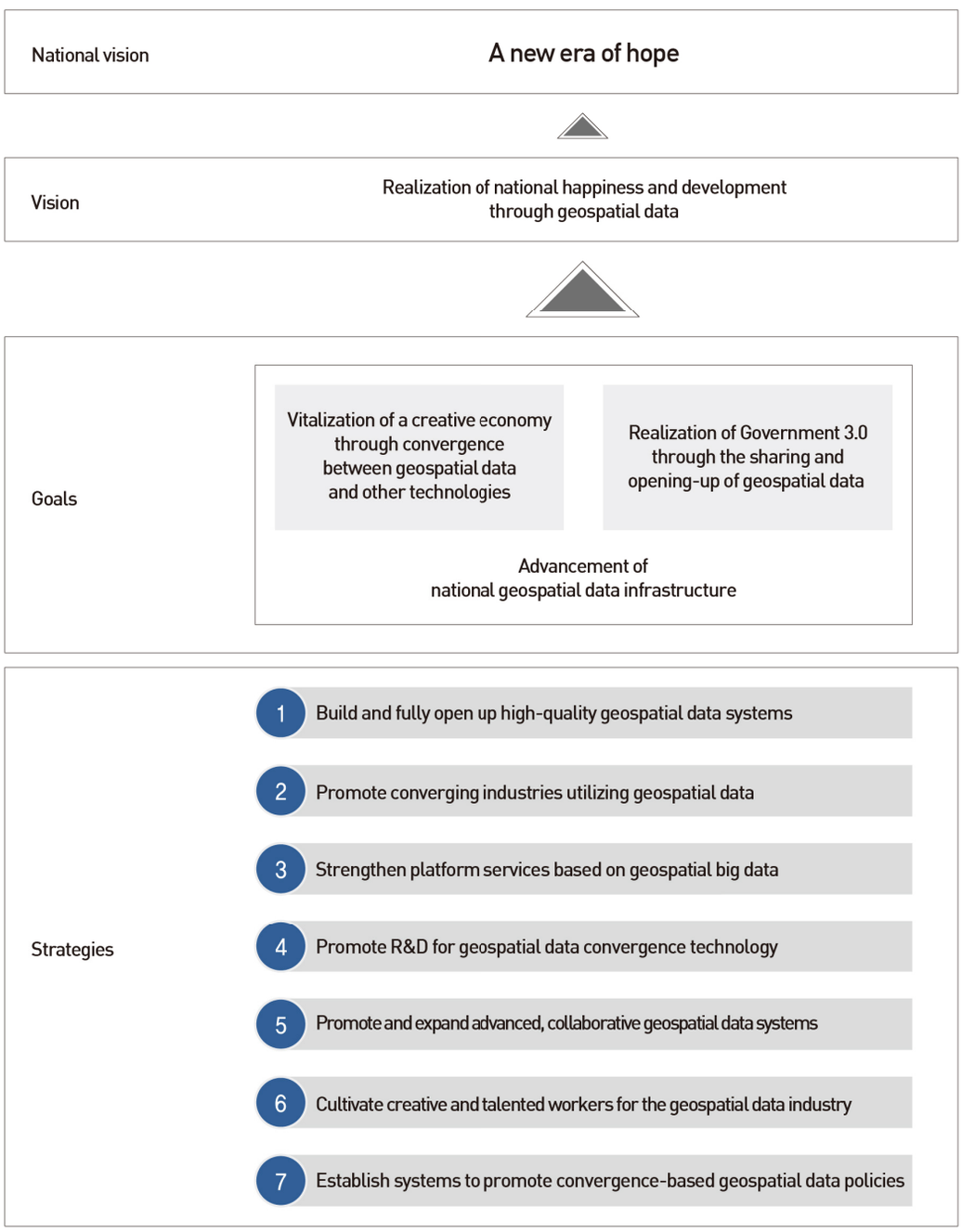
- 창의적인 아이디어를 기반으로 ICT, 과학기술 및 콘텐츠와 공간정보를 융복합하여 새로운 부가가치와 신산업을 창출

● 추진방향 3. 공간정보 활용체계 고도화 및 확산

- 공간정보를 효과적으로 활용하여 정책의 시너지효과를 극대화하기 위해 공간정보시스템간의 연계활용을 강화
- 특정 분야에 한정된 업무중심의 활용체계에서 보건, 복지, 재난, 민간 비즈니스 등 다양한 분야로 공간정보 활용영역 확대

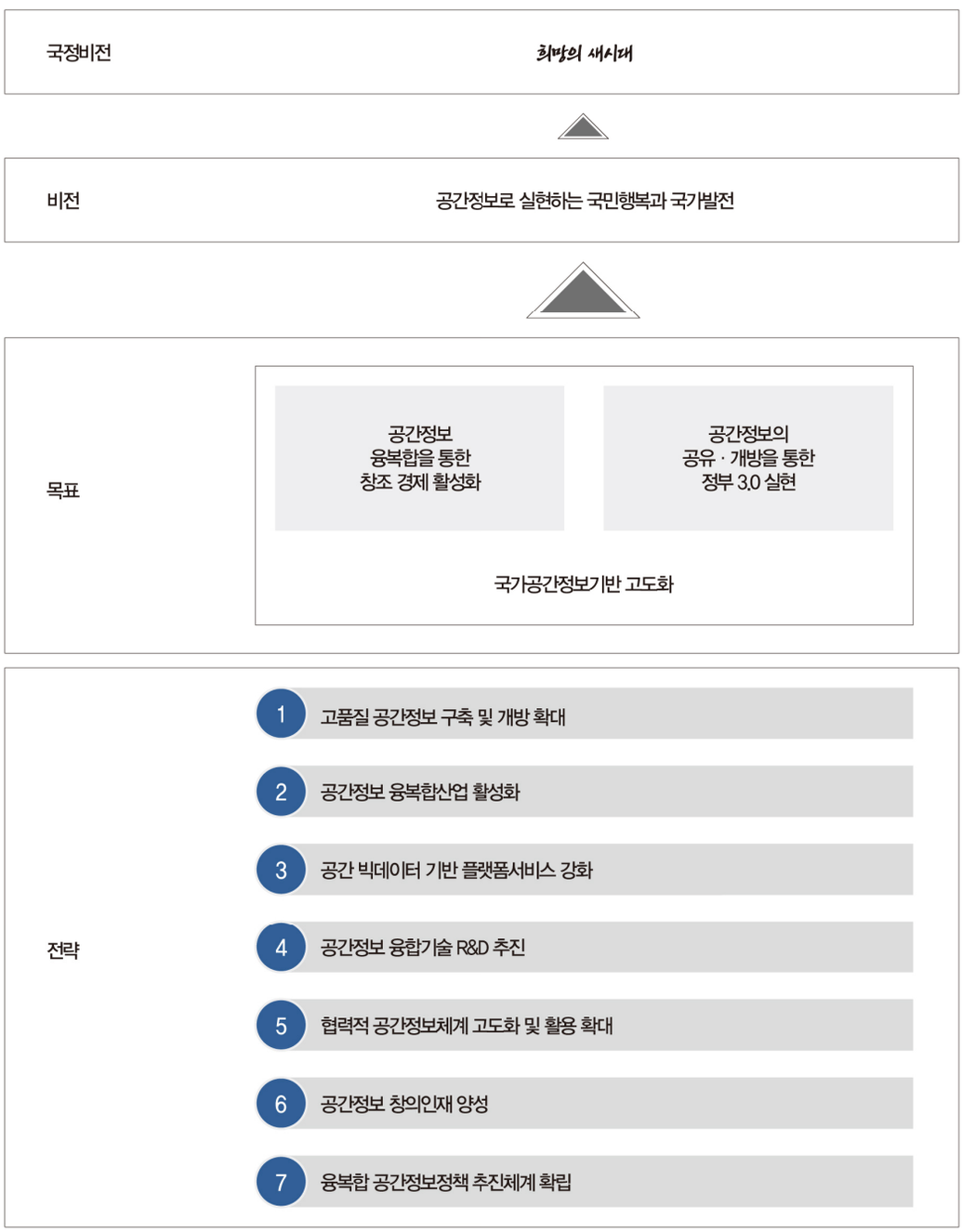
Ⅱ. Vision and Strategies

1. Vision and Goals



Ⅱ. 비전과 전략

1. 비전과 목표



Vision

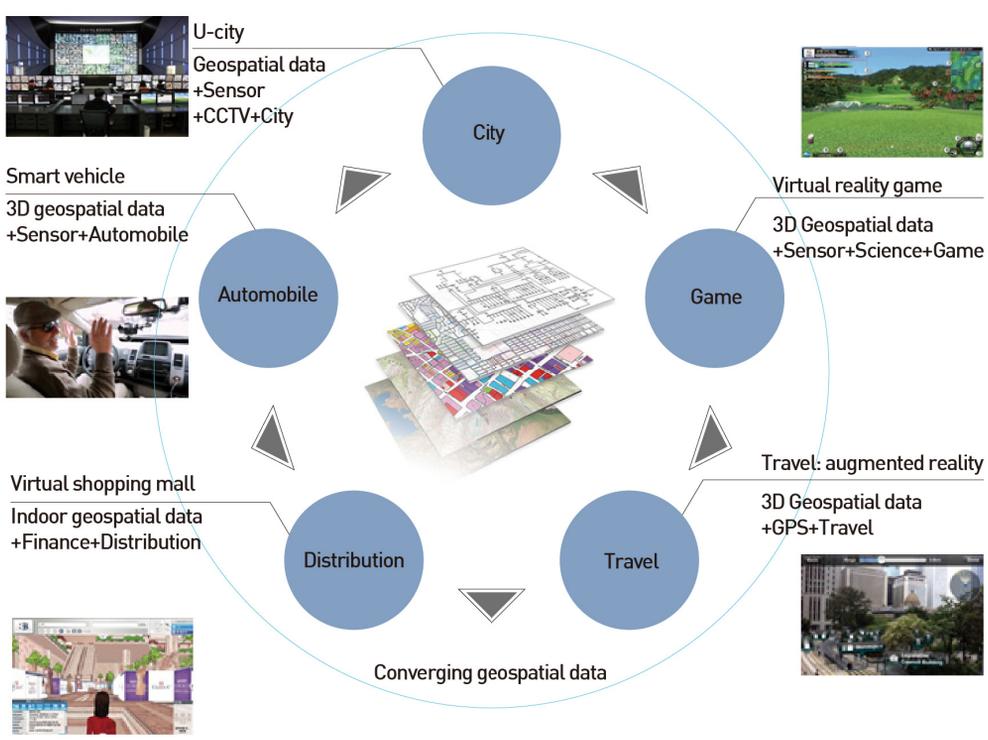
Realization of People's Happiness and National development through Geospatial Data

Goals

Three Policy Goals Established to Realize a Creative Economy and Government 3.0 and to Establish Policy Basis to Support it

● Goal 1: Vitalization of Creative Economy by Geospatial Data Convergence

• Develop a new value added industry to expand the geospatial data market and to create new jobs by combining the information utilized in different areas such as city planning, game, travel and automobiles.



▪▪ 비전

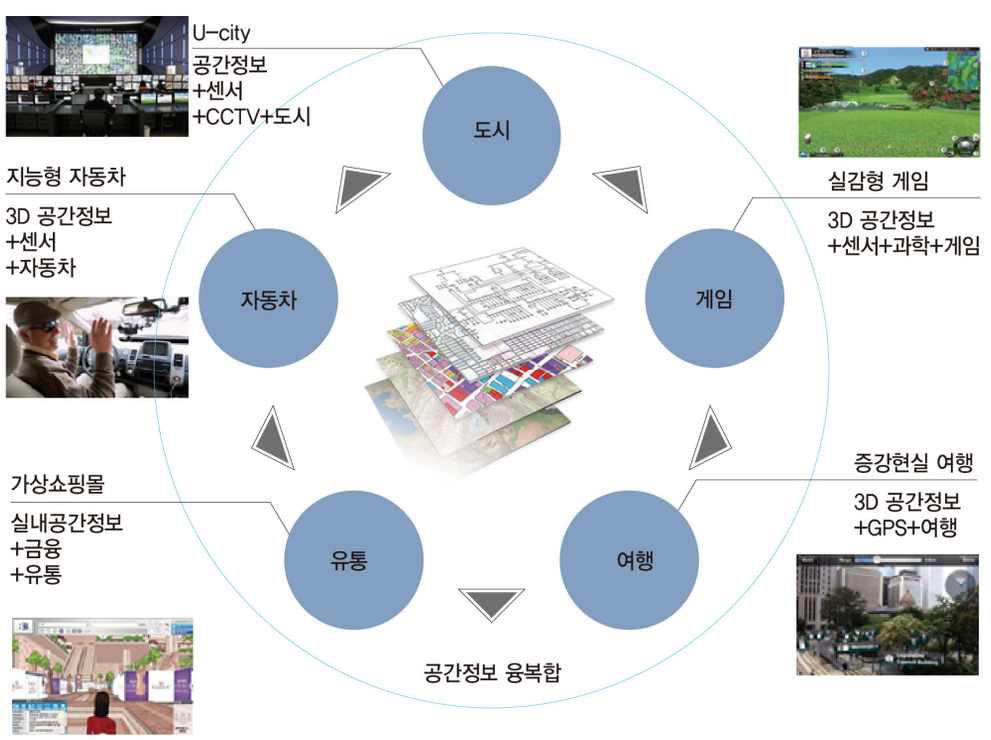
공간정보로 실현하는 국민행복과 국가발전

▪▪ 목표

새정부의 국정기조인 창조경제와 정부 3.0을 실현하고, 이를 뒷받침하기 위한 정책기반을 조성하기 위해 3대 정책목표를 설정

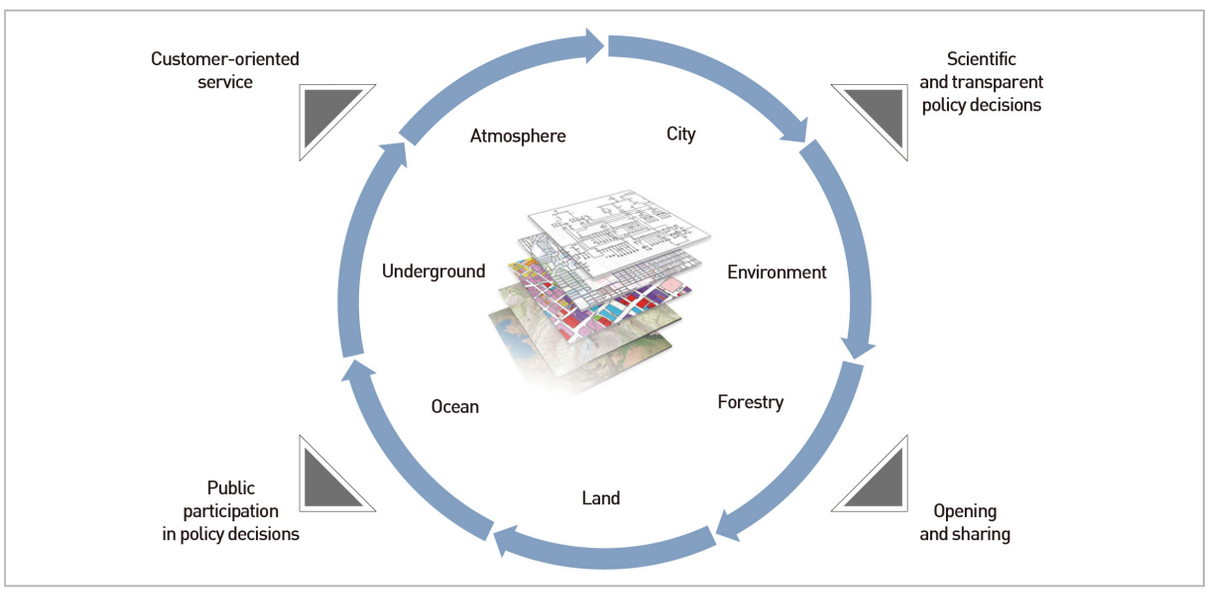
● 목표 1 : 공간정보 융복합을 통한 창조경제 활성화

- 도시 · 게임 · 여행 · 유통 · 자동차 등의 분야에 공간정보를 융복합한 고부가가치 신산업으로 공간정보 시장 확대 및 일자리 창출



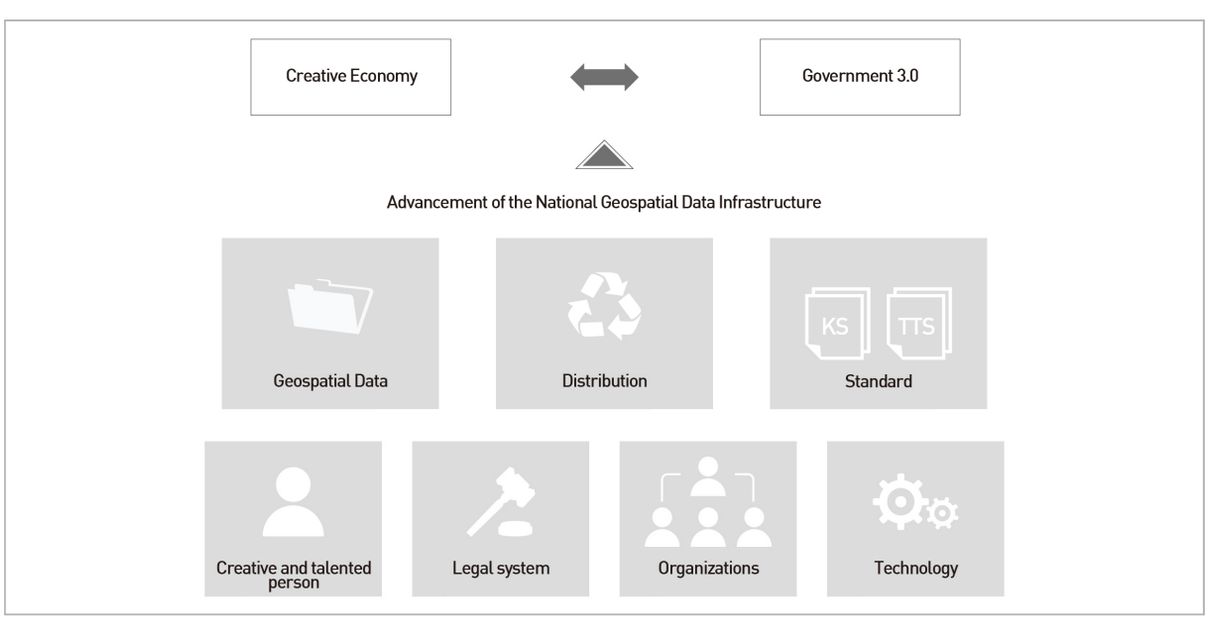
● Goal 2: Realization of Government 3.0 by Opening and Sharing of Geospatial Data

• Enhance the transparency of national policies by opening and sharing geospatial data and offer customized policies by combining public and private sector data.



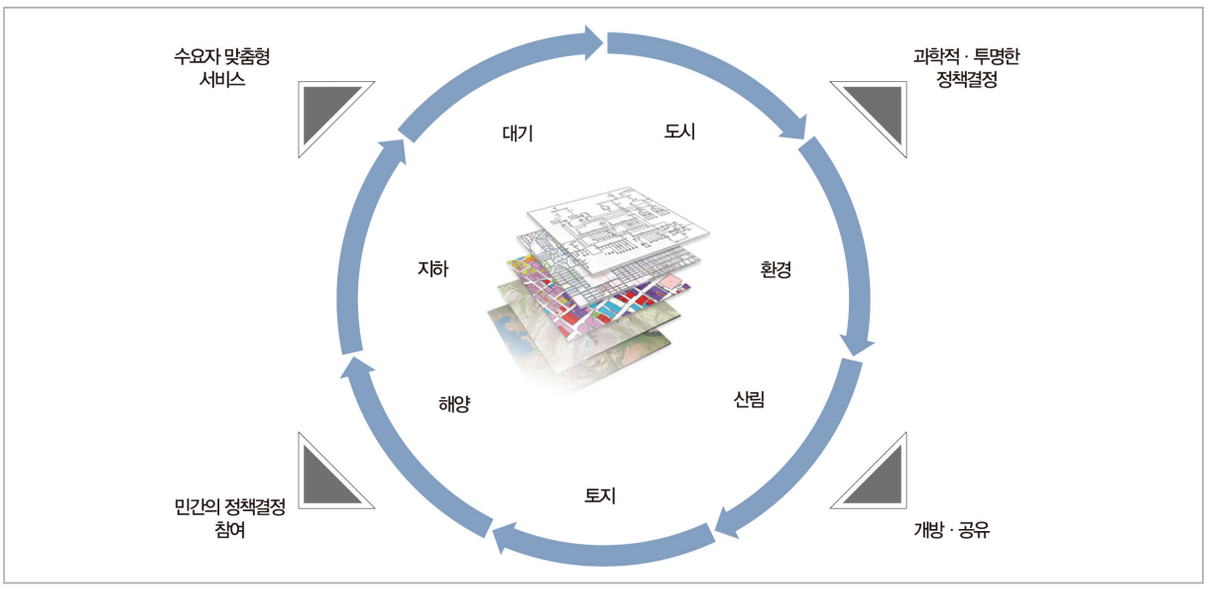
● Goal 3: Advancement of the National Geospatial Data Infrastructure

• Establish high-quality geospatial data infrastructure, improve distribution and standard systems, and train creative and talented individuals for careers in GIS.



● 목표 2 : 공간정보의 공유 · 개방을 통한 정부3.0 실현

• 정부가 생산한 공간정보를 공유·개방하여 정책의 투명성을 제고하고 공간정보와 행정정보 및 민간정보를 연계하여 맞춤형 정책을 지원



● 목표 3 : 국가공간정보기반 고도화

• 정부 3.0 및 창조경제 활성화를 지원하기 위해 고품질 공간정보를 구축하고 유통 및 표준체계를 개선하며, 공간정보 창의인재를 양성

2. Strategies

● SWOT Analysis to Derive Strategies

- Analyze strengths and weaknesses in promoting systems and competence of geospatial data, which are based on the reviews of the current national geospatial data policies.
- Examine the paradigm shift in geospatial data and analyze opportunities and threats that can influence the national geospatial data policies.

Category	Strengths	Weaknesses	Opportunities	Threats
Data	• Nation-wide digital map creation (topographic, cadastral, and thematic maps)	• Lack of recency, standardization, and consistency of geospatial data	• Increasing demands for a variety of high-quality geospatial data	-
Standard	• Leading international standards for indoor and 3D geospatial data	• Limited application of standards and inadequate management system	• Increasing geospatial data international standards organization activities • Standardized geospatial data demands increased due to active convergence	• International standards activities led by global conglomerates
Distribution	• Opening up data and formulating laws and regulations for convergence • Providing the people with national geospatial data services, based on a platform	• Limited opening and distribution of geospatial data • Segmented distribution system • Inactive open platforms	• Promoting a policy to open up and share inter-governmental geospatial data • Increasing platform-based free map service requests	• Inactive share of public agencies • Strengthening laws on individual privacy protection
Human Resource	• Continuing to cultivate manpower with expertise in geospatial data	• Mismatch between demands and supply	• Increased demand for creative talents with expertise in geospatial data	-
Organization	• Creating a new position, director general for national geospatial data infrastructure policy	• Lack of geospatial data policy governance system	• Increasing administrative demands creating policy synergy through the removal of barriers between agencies	-
Technology	• Continuing to promote R&D	• Lack of promotion strategies ranging from geospatial data R&D planning to commercialization • High reliance on import of geospatial data software	• Enabling an open source geospatial data technology ecosystem	• Geospatial information source technology preemption by overseas firms
Industry	• 18 years of experience in national GIS projects • Government's funding increase in official development assistance (ODA) for developing countries	• Provider-directed production, distribution, and use of geospatial data • Public sector-oriented geospatial data ecosystem • Weakness of the traditional geospatial data market • Weakness and low technical skills of the domestic geospatial data firms • Lack of capabilities of geospatial data firms's overseas expansion and inadequate national policy support	• Expanding international cooperation opportunities for geospatial data • Rising national awareness due to Korean wave expansion • Growing international geospatial data market • Growing geospatial data convergence industry	• Emergence of global geospatial data providers • Youth talents avoiding work in software industry
Application	• Promoting geospatial data-based admin. work • Inter-governmental sharing of geospatial data and establishment of an integrated basis for the data	• Lack of decision making support systems to solve spatial problems • Lack of utilization of geospatial data in various fields such as welfare, education, health, etc.	• Increasing opportunities to take advantage of geospatial data due to the spread of smart devices • Increasing government policies with demands for geospatial data • Surging demands for big data	-

2. 전략

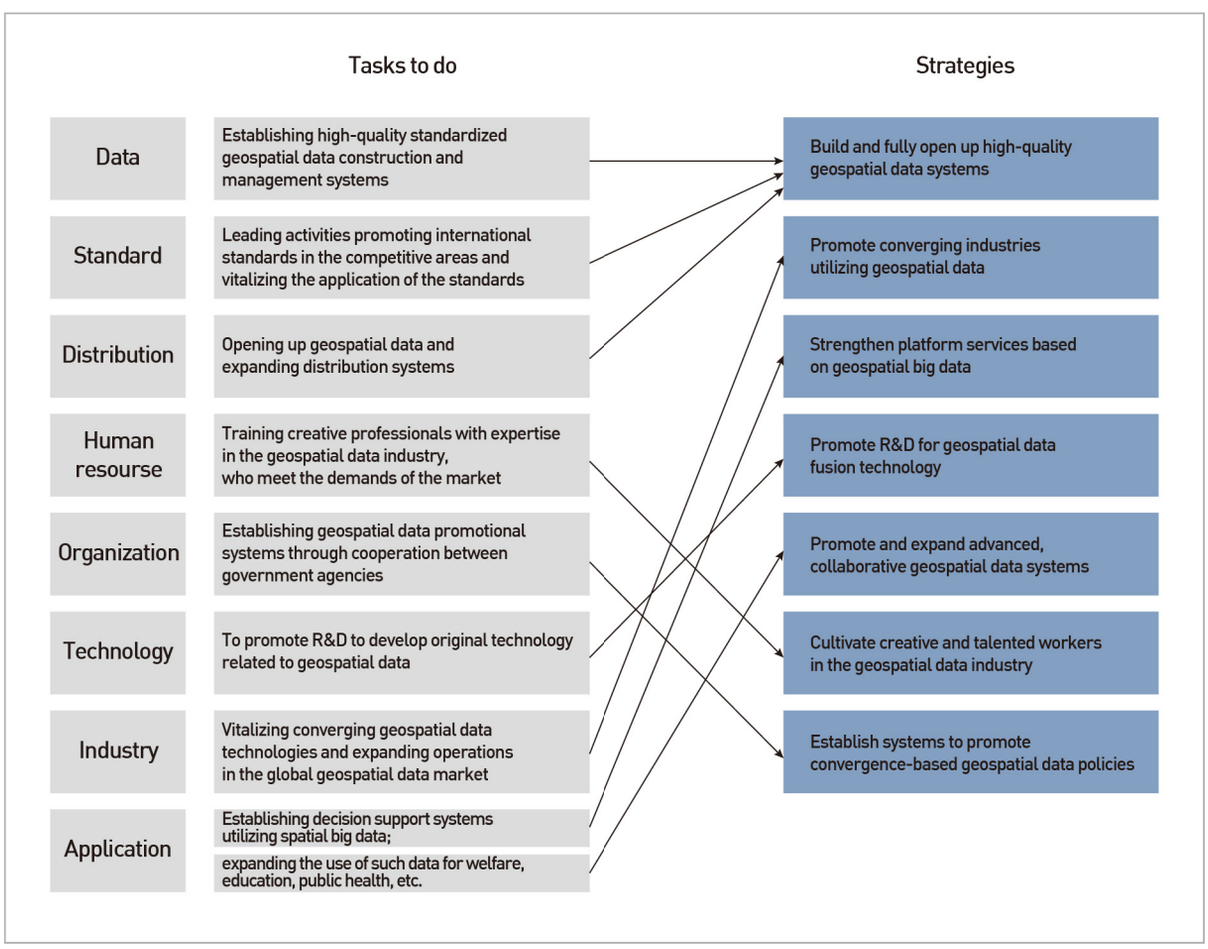
● 전략 도출을 위한 SWOT 분석

- 국가공간정보정책의 현주소에 대한 진단결과를 토대로 공간정보정책의 추진체계 및 추진역량의 강점과 약점 분석
- 공간정보 패러다임 변화로부터 국가공간정보정책에 영향을 미치는 기회요인과 위협요인을 분석

구분	강점	약점	기회	위협
자료	• 전 국토의 수치지도(지형도, 지적도, 주제도) 구축	• 공간정보의 최신성, 표준화, 정합성 부족	• 다양한 고품질 공간정보수요 급증	-
표준	• 3D와 실내공간정보 국제표준 선도	• 표준적용 및 관리체계 미흡	• 공간정보 국제표준기구 활동 활성화 • 융복합 활성화로 표준화된 공간정보 수요 확대	• 글로벌 대기업의 국제표준활동 주도
유통	• 데이터 공개/개방 및 융복합 제도 마련 • 플랫폼 기반의 대국민 국가공간정보서비스 시작	• 공간정보 개방 및 유통저조 • 유통시스템 분절 • 오픈플랫폼 활성화 미흡	• 정부 차원의 정보개방·공유정책 추진 • 플랫폼 기반의 무상 지도서비스 요청 증가	• 공공기관의 소극적인 공간정보 공개 • 개인정보 보호관련 법령의 강화
인력	• 지속적인 공간정보인력 양성	• 수요에 부응하는 인력의 공급체계 미흡	• 공간정보 창의인재 수요증대	-
조직	• 국토정보정책관 신설	• 공간정보정책 거버넌스체계 부족	• 부처간 칸막이 제거를 통해 정책시너지를 창출하는 행정수요 증대	-
기술	• 지속적인 R & D 추진	• 공간정보 R&D 기획에서 실용화까지 추진전략 부족 • 외산 공간정보 SW 종속성	• 오픈소스 공간정보기술 생태계 활성화	• 해외기업의 공간정보 원천기술 선점
산업	• 18년간의 국가 GIS사업 추진경험 • 정부의 개도국 공적개발원조(ODA) 자금 증가	• 공급자 중심의 공간정보 생산-유통-활용체계 • 공공부문 중심의 공간정보생태계 • 전통적 공간정보시장의 정체 • 국내 공간정보기업의 영세성 및 낮은 기술력 • 공간정보기업 해외진출역량 및 국가정책지원 미흡	• 공간정보 국제협력기회 확대 • 한류시장 확대에 따른 국가인지도 상승 • 해외 공간정보시장 성장 • 공간정보 융복합산업의 성장	• 글로벌 공간정보기업의 등장 • 청년인재의 SW분야 취업기피
활용	• 행정업무의 공간정보화 추진 • 공간정보 범 정부 공유 및 통합기반 마련	• 공간적 문제를 해결하는 의사결정 지원체계 부족 • 복지, 교육, 보건 등 다양한 분야에 공간정보 활용 부족	• 스마트정보기기의 확산으로 공간정보 활용여건 조성 • 정부정책의 공간정보 활용수요 증가 • 빅데이터 활용수요 급증	-

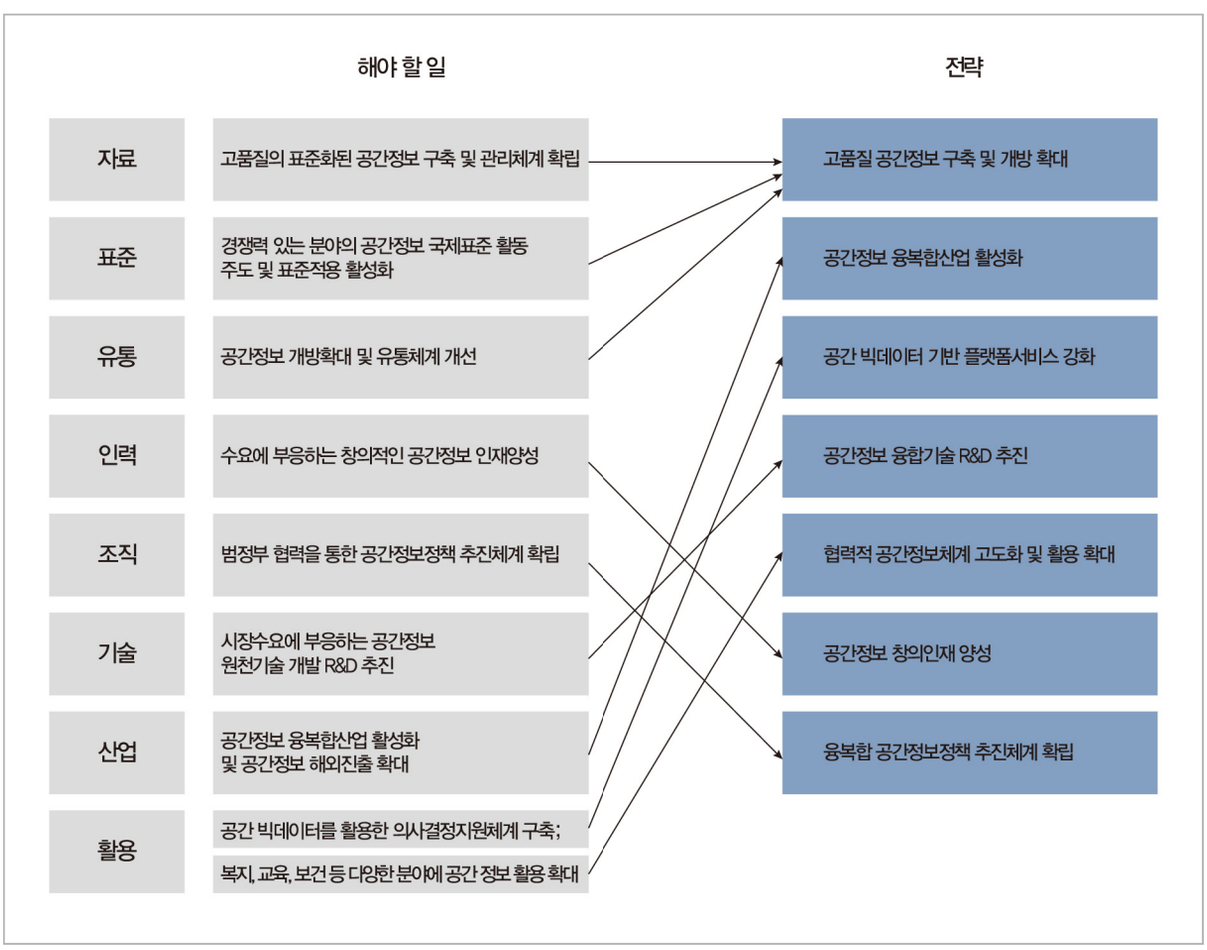
● Deriving Strategies

- Various tasks to do in each of the areas such as data, standards, distribution, human resource, organization, technology, industry, and application were derived from the SWOT analysis.
- The following seven strategies were deduced to decide what to do next:
  - Data, Standards, and Distribution: Construct high-quality geospatial data and fully open up the data.
  - Human resources: Train creative and talented individuals with an expertise in GIS.
  - Organization: Establish promotion systems to formulate policies for converging geospatial data technologies.
  - Technology: Promote R&D for converging technologies related to geospatial data.
  - Industry: Vitalize converging geospatial data industries.
  - Application: Improve platform services based on geospatial big data; Advance geospatial data systems cooperatively and expand GIS applications.



● 전략의 도출

- SWOT분석으로부터 자료, 표준, 유통, 인력, 조직, 기술, 산업, 활용 부문별로 해야 할 일을 도출
- 다음으로 해야 할 일을 추진하기 위해 아래와 같이 7대 전략을 도출
  - 자료·표준·유통 부문 :「고품질 공간정보 구축 및 개방 확대」
  - 인력 부문 :「공간정보 창의인재 양성」
  - 조직 부문 :「융복합 공간정보정책 추진체계 확립」
  - 기술 부문 :「공간정보 융합기술 R&D 추진」
  - 산업 부문 :「공간정보 융복합산업 활성화」
  - 활용 부문 :「공간 빅데이터 기반 플랫폼서비스 강화」,「협력적 공간정보체계 고도화 및 활용 확대」



● Strategy 1. Construction of High-quality Geospaital Data and Opening Expansion

• Secure the quality and recency of geospatial data and meet the needs of the public and private sectors by developing and distributing on-site practice-based, standardized geospatial data.

● Strategy 2. Vitalization of Geospatial Data Convergence Industry

• Create an environment in which governments, businesses, and individuals can create new value-added products by combining geospatial data with other non-spatial data and technologies.

● Strategy 3. Strengthening Geospatial Big Data-based Platform Services

• Build geospatial big data and develop analysis models to be used in various administrative areas (such as housing, welfare, transportation, and safety) as well as the private sector.

* Platforms create new services and provide procedures and methods which help the public participate in the decision-making process (Tim O'Reilly, 2009).

● Strategy 4. Execution of R&D for Geospatial Data Convergence Technology

• Develop geospatial data technology to meet the demands of industries and businesses, to promote public safety and convenience, and to create new growth engines.

● Strategy 5. Collaborative Advancement of Geospatial Data Systems and Utilization Enhancement

• Convert geospatial data systems into cloud-based systems which can be extended to be used in different areas by connecting and integrating the systems independently constructed and managed.

● Strategy 6. Creative Human Resources Development for Geospatial Data Industry

• Train creative, imaginative and skilled workers who can create a new value added by applying converging geospatial data to different fields.

● Strategy 7. Establishment of Execution System for Geospatial Data Convergence Policy

• Establish an inter-agency cooperation, strengthen policy coordination functions, and improve performance systems for policies related to converging technologies in order to effectively promote the geospatial data policies.

● 전략 1. 고품질 공간정보 구축 및 개방 확대

- 업무기반의 표준화된 공간정보를 생산·유통하여 공간정보의 품질과 최신성을 확보하고, 공공과 민간의 다양한 수요에 부응

● 전략 2. 공간정보 융복합산업 활성화

- 공공·기업·개인이 창의적으로 공간정보를 다른 정보·기술·분야와 융복합하여 새로운 부가가치를 창출할 수 있는 여건 조성

● 전략 3. 공간 빅데이터 기반 플랫폼서비스 강화

- 공간 빅데이터를 구축하고, 분석모형을 개발하여 주택 · 복지 · 교통 · 안전 등 다양한 행정분야와 민간에 활용될 수 있도록 지원

  * 플랫폼은 새로운 서비스를 창출하고, 국민이 정책결정 과정 및 행정에 참여할 수 있도록 절차와 방법을 제공(Tim O'Reilly, 2009)

● 전략 4. 공간정보 융합기술 R&D 추진

- 산업현장의 수요에 부응하고, 국민의 안전과 편리를 도모하며, 신성장동력을 창출할 수 있는 공간정보기술 개발 추진

● 전략 5. 협력적 공간정보체계 고도화 및 활용 확대

- 개별적으로 구축 · 운영되고 있는 공간정보시스템을 연계 · 통합하여 공동으로 활용할 수 있는 클라우드 체계로 전환하고, 활용분야 확대

● 전략 6. 공간정보 창의인재 양성

- 창의성과 상상력을 발휘하여 공간정보의 융복합 활용을 통해 새로운 부가가치를 창출할 수 있는 인재를 양성

● 전략 7. 융복합 공간정보정책 추진체계 확립

- 공간정보정책을 효과적으로 추진하기 위하여 기관 간 협력체계 구축, 정책 조정기능 강화, 융복합정책 수행체계 정비 등 추진

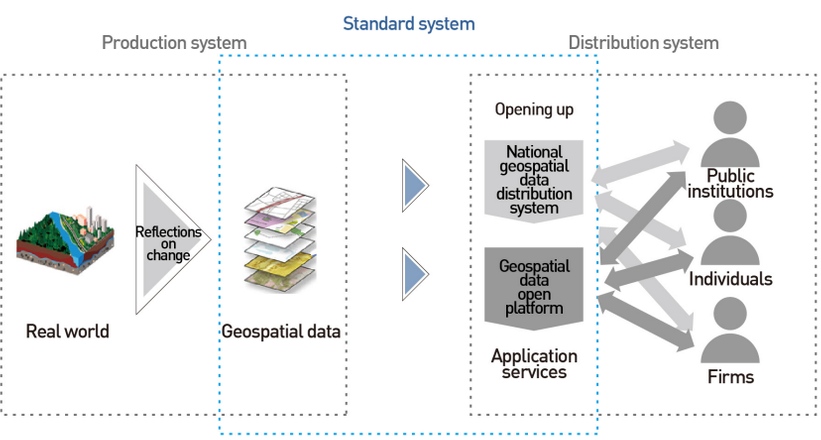
Ⅲ. Strategic Initiatives

1. Construction of High-Quality Geospatial Data and Opening Expansion

Overview

● Direction

- (Production of high-quality geospatial data) Establish a system that precisely represent the real world
- (Sharing geospatial data) Actively open geospatial data to the public so that it can be available to every user who wants to access to it
- (Advancing geospatial data standards) Establish a geospatial data standard system suited to international standards; lead international standards in promising areas including indoor geospatial data



● Policy Initiatives

[1-1] Quality Assurance of Geospatial Data and the Establishment of Management Systems
[1-2] Execution of Cadastral Resurvey
[1-3] Establishment of Clearinghouse for the Opening Expansion and Utilization Enhancement of Geospatial Data
[1-4] Establishment of International-level Geospatial Data Standardization System for Convergence Acceleration

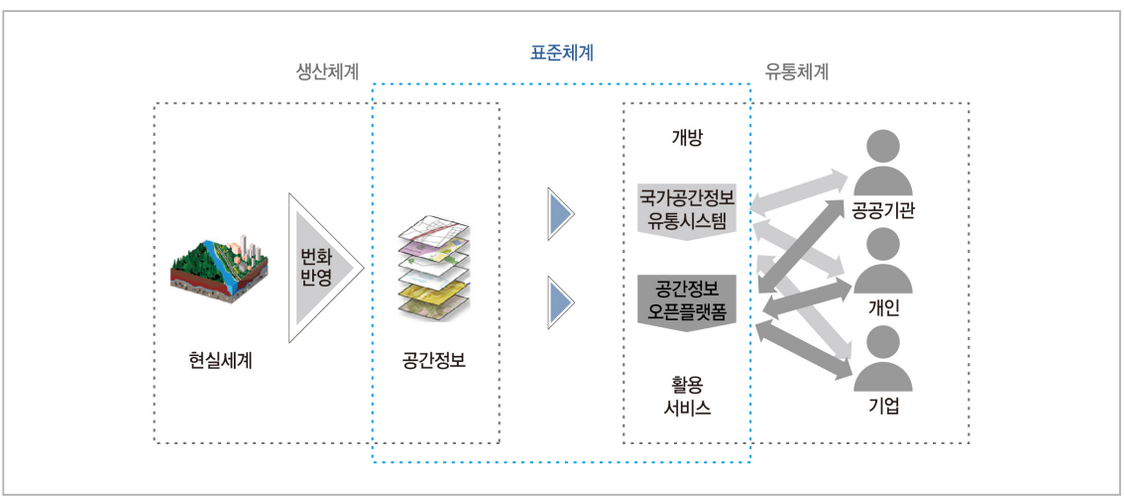
Ⅲ. 전략별 추진과제

1. 고품질 공간정보 구축 및 개방 확대

개 요

● 추진방향

- (고품질 공간정보 생산) 현실세계 변화를 정확하게 반영하여 구축
- (공간정보 개방확대) 누구나 쉽고 편리하게 공간정보를 취득·활용할 수 있도록 공간정보를 적극적으로 개방
- (공간정보 표준 선진화) 국제표준에 부합하는 공간정보 표준체계를 확립하고, 실내공간정보 등 유망분야의 국제표준 선도



● 추진과제

[1-1] 공간정보 품질확보 및 관리체계 확립

[1-2] 지적재조사

[1-3] 공간정보 개방확대 및 활용 활성화를 위한 유통체계 확립

[1-4] 융복합 촉진을 위한 국제수준 공간정보표준체계 확립

Quality Assurance of Geospatial Data and the Establishment of Management Systems

Background

- Management systems that can produce and control consistent, precise high-quality geospatial data are required to support policy making and to meet the need of industries.

Detailed Policy Initiatives

1) Construction and Management of Framework Data

- Standardize information generated from administration support systems such as Road Management System and Architectural Administration System (Se-um-teo) to develop and update Framework Data* related to roads, buildings and etc.
  * Roads (road centerline), railways (railroad centerline), buildings, administrative boundaries (legal, administrative districts, street address), cadastral map, rivers (river centerline), lakes, coastlines, watersheds, statistical districts, etc.
- Update Framework Data produced for a specific purpose such as geodetic points, aerial photographs and orthophotos on a regular basis and build a quality management system.

2) Establishment Expansion of Three-Dimensional and Indoor Geospatial Data

- Construct 3D high-precision geospatial data system from urbanized areas; establish indoor geospatial data on multi-use facilities such as subways and airports.

3) Advancement of National Base Maps

- Frequently update geospatial data on certain areas where terrain changes rise due to natural disasters or national projects and data on main geographic features such as roads, rivers and buildings since this type of information is usually in high demand.

Execution of Cadastral Resurvey

Background

- To resolve any inconvenience that people might have experienced due to the cadastral mismatch (about 14.8% of national land area) between the legal and physical boundaries on the Cadastral map, relevant laws and regulations have enacted to implement a new national cadastral survey.

▪▪ 공간정보 품질확보 및 관리체계 확립

● 추진배경

- 정책수립 및 산업현장의 공간정보 수요에 부응할 수 있도록 최신성 · 일관성 · 정확성을 갖춘 고품질 공간정보 생산 및 관리체계 필요

● 세부추진과제

1) 기본공간정보 구축 및 관리

- 도로관리시스템, 세움터 등의 행정업무 지원시스템에서 생산되는 정보를 표준화하여 도로, 건축물 등의 기본공간정보를 구축 · 갱신

  * 도로(도로중심선), 철도(철도중심선), 건물, 행정경계(법정동, 행정동, 도로명주소), 지적, 하천(하천중심선), 호수, 해안선, 유역, 통계구 등

- 기준점, 항공사진 및 정사영상 등 특정 목적으로 생산되는 기본공간정보는 갱신주기 단축 및 품질관리체계 구축

2) 3차원 공간정보 및 실내공간정보 확대 구축

- 활용성이 높은 지역부터 단계적으로 고정밀 3차원 공간정보 구축을 확대하고, 지하철 · 공항 등 다중이용시설에 대한 실내공간정보 구축

3) 국가기본도 고도화

- 도로, 하천, 건물 등 활용도가 높은 주요 지형지물과 국책사업 및 자연재해 등으로 인한 지형 변화지역의 갱신주기 단축

▪▪ 지적재조사 추진

● 추진배경

- 지적상 법적경계와 실제경계의 불일치(全 토지의 14.8%가 불일치)로 인한 국민 불편사항을 해소하기 위해 지적재조사사업을 추진

● Detailed Policy Initiatives

1) Resolving Cadastral Discrepancy

- Relieve the discomfort such building restrictions and solve problems with irregular land tracts to increase land utilization and to protect land ownership.
- Cut project cost by linking improvement projects in small and medium-sized cities and SOC projects, and support regional development by changing land category and boundaries for development projects.
  * A SOC project may produce an effect corresponding to the reinvestigation of 160,000 parcels.

2) Conversion to the World Geodetic System

- Change the data of land boundaries registered in the cadastral records based on the Tokyo Datum into the digital cadastral data based on World Geodetic System (27.01 million parcels excluding 4.98 million parcels which belong to cadastral confirmation survey areas).

3) Construction of Administrative System for Cadastral Resurvey

- Establish interactive and integrated open systems and project management systems to effectively manage a new cadastral registration system and let the public view the whole process of cadastral projects.

▪▪ Establishment of Clearinghouse for the Opening Expansion and Utilization Enhancement of Geospatial Data

● Background

- Increase public access to the geospatial data held by governments so that the private sector can take advantage of the information to create high added value and jobs.
- Build cooperative governance between agencies dealing with the production, collection and distribution, and create an efficient distribution environment to expand the opening of the geospatial data.

● Detailed Policy Initiatives

1) User-centered Opening Expansion of National Geospatial Data

- National geospatial data will be fully available in principle but accessible stage by stage except for cases on which statutes place explicit limits on disclosure to the public of information (for example, national security and personal information protection).
  - Under the national geospatial data integration system, the data will be accessible through the national geospatial data distribution system (raw data) and open platforms (application services).
- In association with Government 3.0 primary initiatives, foster the national geospatial data distribution system to be an open outlet specializing in geospatial data by linking the system with public data portals.

● 세부추진과제

1) 지적불부합지 해소

- 건축제한 등 국민생활 불편을 해소하고, 부정형지를 개선하여 토지활용도를 제고하는 등 토지소유권을 보호
- 중소도시 정비사업, SOC 사업 등과 연계하여 사업비를 절감하고, 개발사업에 필요한 지목·경계 등을 변경하여 지역발전을 지원
  * SOC 사업 적용시 연 16만 필지에 대한 지적재조사 시행효과 기대

2) 세계측지계 변환

- 동경측지계 기준으로 지적공부에 등록된 경계를 세계측지계 기준의 디지털 지적으로 구축(확정측량 지역 498만필지를 제외한 2,701만필지)

3) 지적재조사 행정시스템 구축

- 새로운 지적공부 등록 관리와 사업추진 전 과정을 실시간 열람할 수 있는 소통 · 통합형 공개시스템 및 사업관리시스템 구축

▪▪ 공간정보 개방확대 및 활용 활성화를 위한 유통체계 확립

● 추진배경

- 민간부문에서 공간정보를 활용하여 고부가가치와 일자리를 창출할 수 있도록 국가가 보유한 공간정보의 개방을 확대
- 공간정보의 개방을 확대하기 위해 공간정보 생산·수집·유통기관간의 협력적 거버넌스 구축 및 효율적인 유통환경 조성

● 세부추진과제

1) 수요자 중심의 국가공간정보 개방 확대

- 국가안보, 개인정보보호 등 관련법령에서 명시적으로 정보공개를 제한한 경우를 제외하고, 전면 개방한다는 원칙하에 단계적 개방
  - 국가공간정보통합체계의 공간정보는 국가공간정보유통시스템(원시자료)과 공간정보 오픈플랫폼(활용서비스)을 통해 개방
- '정부 3.0 추진 기본계획'에 따라 국가공간정보유통시스템을 공공데이터포털과 연계하여 공간정보 전문 개방창구로 육성

2) Public Opening and Function Improvement of National Geospatial Data Clearinghouse

- Create a marketplace where a wide range of subjects can freely share and trade geospatial data resources that they produce by opening up the national geospatial data clearinghouse to the private sector.
  * Geospatial data resources refer to all relevant resources, such as data, analysis models, application systems and S/W.
  - Geospatial data produced by individuals can be shared and traded through the national clearinghouse, if the individuals want to provide the data.
- Improve the national geospatial data clearinghouse to promote the distribution of data generated by the private and to vitalize the automatic registration, and distribution of geospatial data and dissemination of free open source software produced by local governments.

3) Monitoring the Demand and Utilization Status of Geospatial Data

- Monitor the demand and uses of national geospatial data, as there is a paradigm shift from provider-driven services to customer-centered ones which require the disclosure of information.
  - Investigate the status and outcome of practical use of geospatial data available at the national clearinghouse system and geospatial data open platforms as well as the demand of such data in order to consider the characteristics in policy-making processes.

4) Establishment of New Clearinghouse Governance System for Opening National Geospatial Data

- Support policy decision making process to actively open up geospatial data and promote role-sharing between stakeholders by establishing a system for the production, collection and acquisition of geospatial data, and collaborative governance between providing organizations.
  - Take advantage of the ‘public data strategy committee’ and the professional committee within the ‘national geospatial data council’ to open up geospatial data.
- Establish a quality management system for the private and public geospatial data to improve the reliability and accuracy of geospatial data.
  - Open up geospatial data produced by the public sector after completing the quality investigation conducted by National Geographic Information Institute and have an exclusive organization manage the quality of geospatial data produced by the private sector.

5) Improvement of Legal System to Enhance the Distribution of Geospatial Data

- Improve the legal system related to the opening-up and distribution of geospatial data in order to efficiently handle issues such as price basis, quality requirements, secondary processing, raw data provision and the construction of a new distribution governance system.

2) 국가공간정보유통시스템 민간개방 및 기능개선

- 국가공간정보유통시스템을 민간에 개방하여 다양한 주체가 생산한 공간정보자원을 자유롭게 공유·중개할 수 있는 환경(marketplace) 조성

  * 공간정보자원 : 데이터, 분석모델, 활용시스템, S/W 등 공간정보 관련 모든 자원을 의미

  - 민간이 생산한 공간정보도 원하는 경우 국가공간정보유통시스템을 통해 유통될 수 있도록 유통시스템을 개방

- 민간공개데이터 유통, 지자체 공간정보의 자동등록 · 유통, 무료 공개 S/W 보급 등을 위한 국가공간정보유통시스템 기능개선

3) 공간정보 수요 및 활용실태 모니터링

- '공급자 위주'에서 '수요자 중심'으로 정보공개 패러다임 전환에 따른 국가공간정보 수요 및 활용실태 모니터링

  - 국가공간정보유통시스템, 공간정보 오픈플랫폼 등을 통한 공간정보 활용실적 및 활용실태, 수요 등을 지속적으로 파악하여 정책 반영

4) 국가공간정보 개방을 위한 새로운 유통거버넌스 체계 구축

- 공간정보 생산·수집·제공기관 간의 협력적 거버넌스 구축을 통해 적극적 공간정보 개방을 위한 정책의 사결정 지원 및 역할분담

  - 공간정보 개방을 위해 '국가공간정보위원회' 산하 전문위원회와 '공공데이터 전략위원회'를 활용

- 공간정보의 신뢰성 및 정밀도 향상을 위해 국가공간정보와 민간공간정보의 품질관리체계 마련

  - 국가공간정보는 국토지리정보원의 품질심사를 통해 개방하고, 민간공간정보는 전담조직을 통해 품질을 관리

5) 공간정보 유통 활성화를 위한 법제도 개선

- 가격기준, 품질요건, 2차 가공, 원시자료 제공, 새로운 유통거버넌스 체계 구축 등 공간정보의 개방 · 유통 관련 법제도 개선

▪▪ Establishment of International-level Geospatial Data Standardization System for Convergence Acceleration

● Background

• Provide standards at the international level, necessary for the production and distribution of geospatial data, and lead activities promoting international standards in the competitive areas such as 3D and indoor geospatial data.

● Detailed Policy Initiatives

1) Effectiveness Enhancement of Geospatial Data Standards by Strengthening the Functions of Geospatial Data Standardization Support Organizations

• Operate a geospatial data standard support institute which is responsible for geospatial data standard business operations and support, and authorizing services.
• Develop standards required to produce and manage Framework Data and strengthen roles in managing and overseeing compliance with geospatial data standards.
• Plan the advancement of standards for metadata to facilitate geospatial data opening and distribution.

2) Leading the International Standardization Activities in the areas of High Competency such as Indoor Geospatial Data

• Lead standards of 3D and indoor geospatial data and support international standardization in connection with geospatial R&D project, and activities for developing international standards for geospatial data.

3) Strengthening Consulting and Education to Promote the Application of the Standards

• Provide customer-oriented consulting services and enhance programs to train professionals specializing in standardization in connection with the International Organization for Standardization.

▪▪ 융복합 촉진을 위한 국제수준 공간정보표준체계 확립

● 추진배경

- 공간정보의 생산·유통에 필요한 국제수준의 표준을 공급하고, 3D 및 실내공간정보 등 경쟁력 있는 분야의 국제표준활동을 주도

● 세부추진과제

1) 공간정보 표준지원기관 기능강화로 공간정보표준의 실효성 제고

- 공간정보표준업무 수행 및 지원과 인증서비스 기능 수행을 위한 공간정보 표준지원기관 운영
- 기본공간정보 생산 · 관리에 필요한 표준개발 및 공간정보표준 준수여부 관리 · 감독기능 강화
- 공간정보의 개방·유통 활성화를 위한 메타데이터 표준 고도화

2) 실내공간정보 등 경쟁력 높은 분야의 국제표준활동 주도

- 3차원 및 실내공간정보표준을 선도하고, 공간정보 R&D와 연계한 국제표준화 및 국제표준제정활동 지원

3) 표준적용 활성화를 위한 컨설팅 및 교육 강화

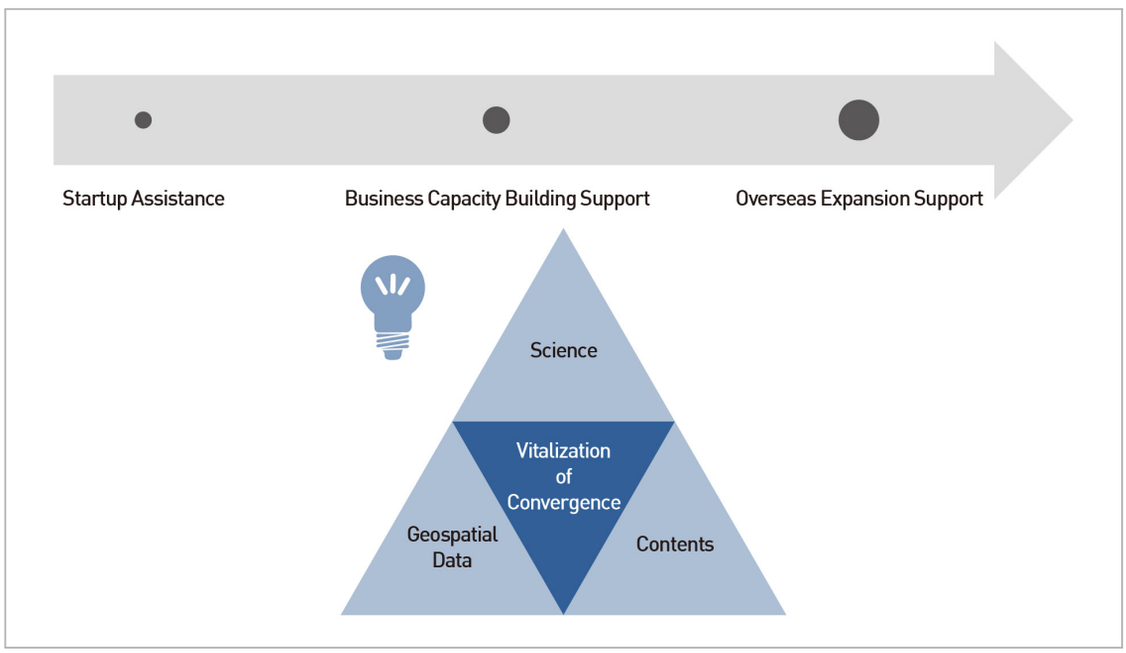
- 사용자 맞춤형 표준 컨설팅을 제공하고 국제공간정보표준기구와 연계한 표준전문가 양성 및 표준 교육 프로그램 강화

2. Promotion for Geospatial Data Convergence Industry

Overview

● Directions

- (Industry capacity building) Geospatial data-based start-up business assistance and business empowerment
- (Vitalization of convergence) Strengthening support systems to promote converging geospatial data
- (Overseas expansion support) Enhancing the competitiveness of geospatial data companies establishing operations in foreign markets



● Policy Initiatives

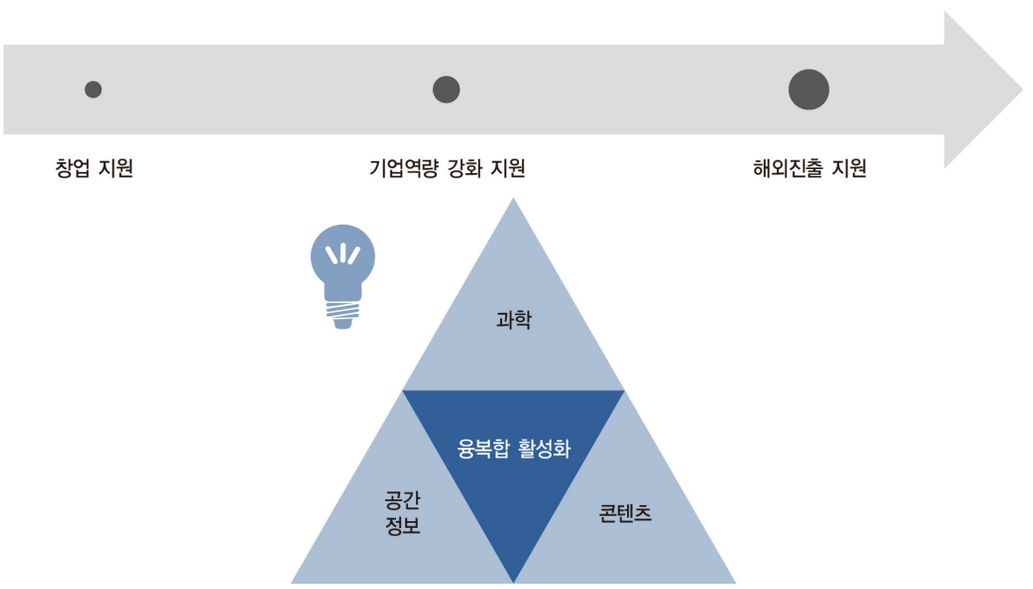
[2-1] Support for Geospatial Data-based Start-up Business and Enterprise Capacity Building
[2-2] Establishment of Support System for Geospatial Data Convergence Industry
[2-3] Support for Overseas Market Expansion of Geospatial Data Enterprises

2. 공간정보 융복합산업 활성화

개 요

● 추진방향

- (산업의 역량강화) 공간정보기반의 창업지원과 기업의 역량 강화
- (융복합 활성화) 공간정보 융복합 촉진을 위한 지원체계 강화
- (해외진출 지원) 공간정보기업의 해외진출 경쟁력 강화 지원



● 추진과제

[2-1] 공간정보기반 창업 및 기업역량 강화 지원

[2-2] 공간정보 융복합산업 지원체계 구축

[2-3] 공간정보기업 해외진출 지원

▪▪ Support for Geospatial Data-based Start-up Business and Enterprise Capacity Building

● Background

- It is expected that the geospatial data industry can create a high added value through convergence with other industries, and generate high employment-induced effects so that more jobs can be created.
  * Geospatial data industry (12.4) > Construction (12.0) > Services (11.0) > General industrial average (8.1) > Manufacturing (6.3)
- It is necessary to support geospatial data companies so that they can have self-sustaining abilities and also young people with creative ideas so that they can establish a business by taking advantage of geospatial data.

● Detailed Policy Initiatives

1) Support for Youth's Start-up Business

- Establish start-up assistance centers for young people to identify ideas to start a new business venture, support youth entrepreneurship and foster one-person enterprises in cooperation with business incubation centers within SMBA(Small and Medium Business Administration).
  - (Start-up Business Assistance Center) Create a pool of entrepreneurship specialists and supporting entrepreneurship education and consulting
  - (Business Incubation Center) Support funding for office space and furnishings, marketing, public relations, and entrepreneurship.
- Hold a contest for ideas and industry fairs and strengthen open platform services to develop converging contents of geospatial data and vitalize geospatial data industries.

2) Support for the Capacity Building of Geospatial Data Enterprises

- Provide start-up companies with consulting services and financing so that they can commercialize new technologies developed through geospatial R&D.

▪▪ Establishment of Support System for Geospatial Data Convergence Industry

● Background

- Since the geospatial data industry has a relatively very large industrial ripple effect such as creating a new industry through convergence with other industries, it is necessary to support geospatial data enterprises so that they can ensure sustainable growth.

▪▪ 공간정보기반 창업 및 기업역량 강화 지원

● 추진배경

- 공간정보산업은 타 산업과 융복합을 통해 고부가가치를 창출할 수 있고, 고용유발효과가 크므로 많은 일자리 창출이 기대

  * 공간정보산업(12.4) > 건설업(12.0) > 서비스업(11.0) > 全산업평균(8.1) > 제조업(6.3)

- 창의적인 아이디어를 가진 젊은이들이 공간정보를 활용하여 쉽게 창업하고, 공간정보기업의 자생력을 강화하기 위한 지원 필요

● 세부추진과제

1) 청년창업 지원

- 창업 아이디어 발굴 및 사업화 지원을 위한 '창업지원센터'를 설치하고 창업보육센터(중기청)와 협력하여 1인 창조기업을 육성
  - (창업지원센터) 창업전문가풀 구축 및 창업교육 · 컨설팅 등 지원
  - (창업보육센터) 사무실, 마케팅, 홍보, 창업자금 등 지원
- 공간정보 융합콘텐츠 발굴 및 산업활성화를 위해 아이디어 경진대회 및 산업박람회를 개최하고 오픈플랫폼 서비스를 강화

2) 공간정보기업의 역량강화 지원

- 공간정보 R&D를 통해 개발한 신기술의 실용화 · 상용화를 위한 컨설팅, 금융 등의 지원과 공간정보 융복합 우수기업 선정제도 도입

▪▪ 공간정보 융복합산업 지원체계 구축

● 추진배경

- 공간정보는 타 분야와 융복합을 통해 신산업 창출 등 산업파급효과가 매우 크므로 지속가능한 성장을 위해 지원기반 강화 필요

● Detailed Policy Initiatives

1) Designation of Geospatial Data Industry Promotion Facility to Vitalize Geospatial Data Convergence

• Designating geospatial data industry promotion facilities to maximize converging synergies by clustering geospatial data related businesses and organizations.

2) Hosting Smart Geospatial Expo to Lead Geospatial Data Conversion Industry

• Make the Expo a world event in which international geospatial data specialists, policy makers, and businessmen from around the world are participating in order to build a global network for overseas expansion.

- To promote and expand a high-level forum in which persons of cabinet rank are participating, and grow the international conference attracting international geospatial data specialists to be a global academic hub for geospatial data.

3) Establishment of Dedicated Support System to Promote Geospatial Data Conversion

• Intensively support convergence between geospatial data and other technologies by promoting to the public a new geospatial data technology and convergence cases, which is led by Geospatial Data Industry Promotion Institute.

▪▪ Support for Overseas Market Expansion of Geospatial Data Enterprises

● Background

• The scale of most of our geospatial data businesses is small, their knowledge capitalization rate of geospatial project experience is low, and their levels of international competitiveness and overseas awareness are low.

• While the domestic market focused on public sector projects is stagnant, the global geospatial data market has high potential of growth; Expanding the size of the nation's ODA (Official Development Assistance) has increased the possibility of entering into the global market.

* The global geospatial data market has an average annual growth rate of 11%, reaching 150 trillion won in 2015 (Daratech, 2009).

● 세부추진과제

1) 공간정보 융복합 활성화를 위한 공간정보산업진흥시설 지정

• 공간정보 관련 기업·단체 등이 집적하여 융복합 시너지효과를 극대화할 수 있도록 '공간정보산업진흥시설'을 지정

2) 공간정보 융복합 산업을 선도하는 스마트국토 엑스포 개최

• 해외진출을 위한 글로벌 네트워크를 구축하기 위해 각국의 공간정보 전문가, 정책 담당자, 기업인이 참여하는 세계적 행사로 개최

- 장관급 인사가 참여하는 고위급 포럼의 확대·발전 및 공간정보 전문가가 참여하는 국제컨퍼런스를 세계적인 아카데미 허브로 육성

3) 공간정보 융복합을 촉진할 수 있는 전담지원체계 마련

• 공간정보산업진흥원을 통해 공간정보 신기술 및 융복합 사례 홍보, 신산업 발굴 등 융복합을 집중 지원

▪▪ 공간정보기업 해외진출 지원

● 추진배경

• 국내공간정보기업은 대부분 영세하며 공간정보 구축경험의 지식자산화가 미흡하고 국제경쟁력 및 해외 인지도가 낮음

• 공공사업 위주의 국내시장은 정체인 반면 세계 공간정보시장은 높은 성장이 예상되며, 국내 ODA규모의 확대로 해외진출가능성 증대

* 세계 공간정보시장은 연평균 11%씩 성장, 2015년 150조원 전망(Daratech, '09)

● Detailed Policy Initiatives

1) Supporting Capacity Building of Overseas Market Expansion of Geospatial Data Industry

- Provide specialized consulting (such as business planning and feasibility study) for small-scale domestic geospatial data enterprises so that they are capable of implementing overseas projects.
- Select strategies for overseas expansion and support enterprises in conjunction with R&D.
- Select small and medium-sized enterprises competitive for the world market as global hidden champions in the geospatial data industry, supporting R&D activities, international marketing, finance, and legal advices.
- Expand utilization of domestic geospatial SW, and introduce SW and data authorizing system to facilitate geospatial SW industry and global competitiveness.

2) Basis Establishment for Overseas Market Expansion

- Develop education programs to train key personnel tailored to meet specific needs of converging industries, who can speak second languages and have an expertise in technology and policy consulting, or technical development.
- Collaborate with agencies related to overseas expansion such as KOICA and KOTRA to share information and find business models, and promote overseas expansion of both geospatial data and other technology businesses by cooperating with relevant agencies.
  * Examples of government agencies' overseas expansion support programs are as follows: Overseas expansion support for youth / K-Move (the Ministry of Employment and Labor, and Small and Medium Business Administration), international technology trade distribution channels (the Ministry of Science, ICT and Future Planning), overseas expansion support for small and mid-sized firms (the Ministry of Trade, Industry and Energy), and ODA overseas expansions support (office of the Prime Minister).
- Establish a geospatial data SW certification system to enhance the level of international awareness of the nation's geospatial data technologies and brand image.
  * (Test Bed Building) Certifying the capabilities of geospatial data SW operations and technologies.
  - (Application of Certified SW) Applying certified geospatial data SW to a real-world environment and making up for shortcomings.
  - (Nation-wide application) Supporting the national spread of authenticated SW across local governments.

3) Strengthening the Roles of Overseas Market Expansion Support Center for Geospaital Data Industry

- Construct ongoing international networks to collect information; develop and manage knowledge platforms for overseas expansion; and support the capacity building of enterprises and provide consulting services for overseas expansion.
  * A knowledge platform refers to a system to share knowledge, experience, and technology obtained through business promotion and overseas expansion.
- Support promotional activities such as world road shows so that overseas expansion activities can win a business contract

● 세부추진과제

1) 공간정보기업 해외진출 역량강화 지원

- 영세한 국내 공간정보기업이 해외사업 수행역량(사업기획 및 타당성검토 등)을 강화하도록 전문컨설팅 제공
- 해외진출을 위한 전략기술을 선정하고 R&D와 연계하여 지원
- 해외진출 경쟁력이 있는 공간정보 중소기업을 '글로벌 공간정보 강소기업'으로 선정하여 R&D, 해외 마케팅, 금융, 법률자문 등을 지원
- 공간정보 SW산업 활성화 및 글로벌 경쟁력 강화를 위해 국내 활용을 확대하고 공간정보 SW 및 데이터 인증제도 도입

2) 해외시장 진출을 위한 기반 구축

- 산업맞춤형 융복합 핵심인력 양성과정을 통해 외국어 사용이 가능한 기술·정책 컨설팅 인력 및 기술개발자 등을 양성
- KOICA, KOTRA 등 해외진출 관련기관과 정보공유 및 사업발굴 등 협력을 강화하고, 타부처 해외진출 사업과 연계한 동반진출 추진

  * 청년 해외진출지원/K-Move(고용부, 중기청), 해외기술거래 유통망(미래부), 중소·중견기업 해외진출 지원(산업부), ODA해외진출지원(총리실) 등과 연계
- 국내기업이 보유한 공간정보기술의 해외인지도 및 브랜드 이미지 제고를 위해 공간정보 SW 인증체계 마련
  - (테스트베드 구축) 공간정보 SW의 운용성과 기술력을 인증
  - (인증 SW 적용) 인증된 공간정보SW를 실제 환경에 적용 · 보완
  - (전국 확산) 인증된 SW 전국 지자체 확산 지원

3) 공간정보산업 해외진출지원센터 역할 강화

- 지속적인 해외네트워크 구축 및 정보수집과 해외진출 지식플랫폼의 구축 및 운영, 기업역량강화 및 해외진출 컨설팅 등을 지원

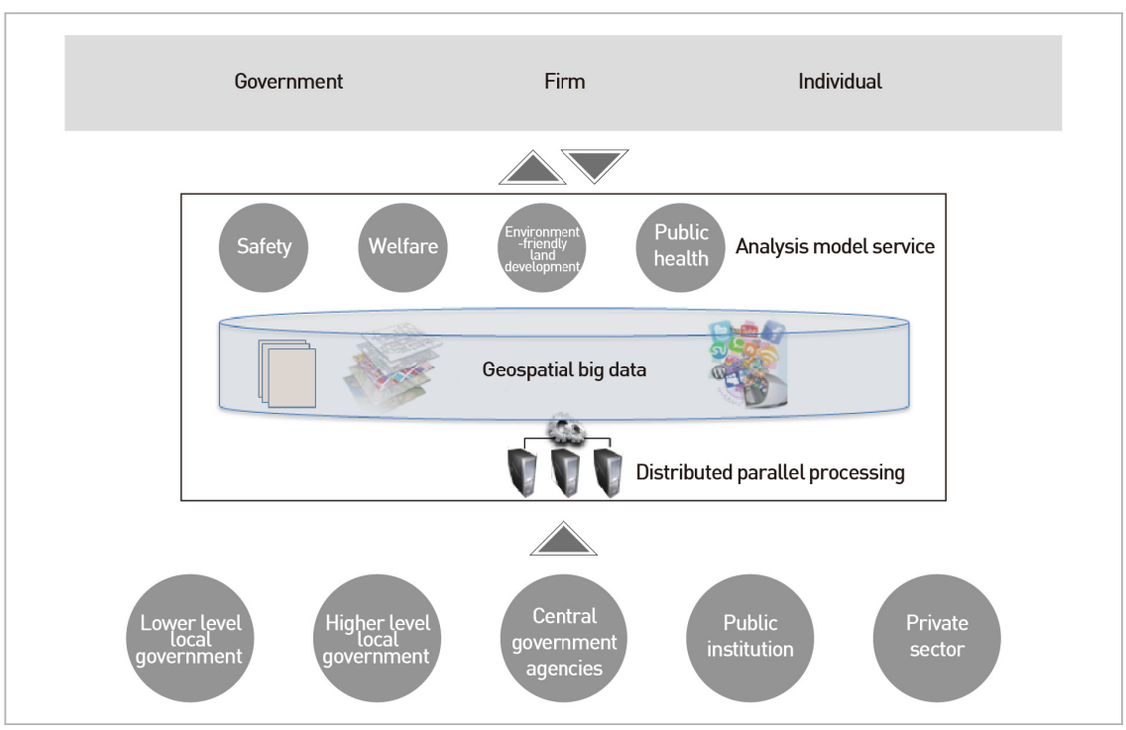
  * 지식플랫폼은 사업추진 및 해외진출로 얻은 지식·경험·기술 등을 공유하는 시스템
- 기업수주와 연계되도록 해외로드쇼 등 홍보활동 지원 강화

3. Strengthening Geospatial Big Data-based Platform Services

Overview

● Directions

- (Constructing geospatial big data) Establish a database which integrates public sector information and private sector information (such as SNS and blogs) based on geospatial data
- (Constructing distributed processing environment) Distribute geospatial big data into multiple computers so that they can efficiently handle the data
- (Developing information analysis frameworks) Create an environment to analyze geospatial big data according to a variety of needs
- (Analysis model development and support) Develop models and support the use of the models which can provide information required for national policy decisions or industrial activities



● Policy Initiatives

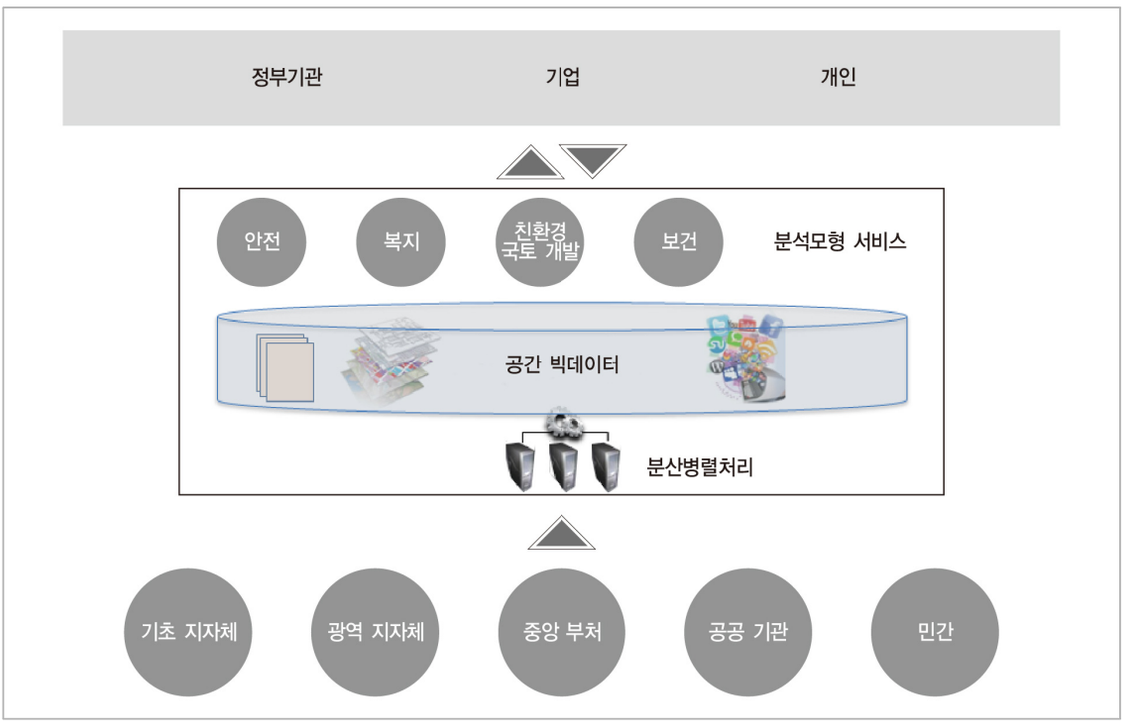
[3-1] Establishment of Geospatial Big Data System
[3-2] Establishment of Geospatial Big Data-based National Policy Support Platform

3. 공간 빅데이터 기반 플랫폼서비스 강화

개 요

● 추진방향

- (공간 빅데이터 구축) 공간정보를 기반으로 행정정보와 민간의 SNS, 블로그 등의 정보를 융합한 DB 구축
- (분산처리환경 구축) 대용량의 공간 빅데이터를 여러 대의 컴퓨터에서 분산하여 처리할 수 있는 환경 구축
- (정보분석 프레임워크 개발) 공간 빅데이터를 다양한 필요에 따라 분석할 수 있는 환경 구축
- (분석모형 개발 · 지원) 국가정책결정 또는 산업활동에 필요한 정보를 분석하여 제공할 수 있는 모형개발 및 활용지원



● 추진과제

[3-1] 공간 빅데이터체계 구축

[3-2] 공간 빅데이터 기반 국가정책지원플랫폼 구축

▪▪ Establishment of Geospatial Big Data System

● Background

- It is necessary to utilize big data technologies in order to actively respond to current national affairs and establish scientific future strategies by accurately diagnosing and predicting various phenomena.
  * Promote customized policy-making processes by analyzing a wide range of real-time big data to identify consumers' comments and behavior patterns in a timely and precise manner.
- For this purpose, promote and build a system to construct and to utilize geospatial big data which converge geospatial data and public and private sector data (such as SNS).

● Detailed Policy Initiatives

1) Establishment of Information Strategic Plan to develop Geospatial Big Data System

- Formulate strategies and push forward a pilot project to build a geospatial big database, the infrastructure for the database system and analysis platforms, and to provide application services.

2) Building a Base for Geospatial Big Data System

- Build geospatial big databases utilizing cloud-based geospatial data.
- Establish cloud storage to save and maintain geospatial big data.
- Build the application infrastructure of geospatial data produced by the private sector by taking advantage of a common infrastructure of the database system.

3) Technology Development for Convergence of Geospatial Data with Big Data and Analysis

- Develop techniques for distributed storage and parallel processing of geospatial big data, analysis and processing.

▪▪ Establishment of Geospatial Big Data-based National Policy Support Platform

● Background

- It is necessary to conduct decision making processes by taking advantage of public participation and geospatial big data to promote the transparency and scientification of the processes.
- To this end, develop a platform to identify national policy agenda, and to analyze the current status, and to provide alternatives and expected effects reported from pre-simulation, and the evaluation of policy enforcement.

▪▪ 공간 빅데이터체계 구축

● 추진배경

- 현상을 정확히 진단하고 예측하여 국정현안에 선제적으로 대응하고 과학적인 미래전략 수립을 위해 빅데이터기술* 활용 필요

  * 실시간으로 생산되는 대량의 다양한 빅데이터를 분석하여 국민, 소비자 등의 의견과 행동패턴을 신속 정확하게 파악함으로써 맞춤형 정책 가능

- 이를 위해 공간정보와 행정정보, SNS 등의 민간정보를 융복합한 공간 빅데이터를 구축하고 활용하기 위한 체계구축 추진

● 세부추진과제

1) 공간 빅데이터체계 구축을 위한 정보화전략계획 수립

- 공간 빅데이터 구축, 공간 빅데이터체계 기반구축, 분석플랫폼 구축, 활용서비스 제공 등에 대한 전략마련 및 시범사업 추진

2) 공간 빅데이터체계를 위한 기반 구축

- 클라우드 기반 공간정보를 활용한 공간 빅데이터 구축
- 공간 빅데이터를 저장·관리할 수 있는 클라우드 스토리지 구축
- 빅데이터 공통기반을 활용하여 민간데이터 활용 기반 구축

3) 공간정보와 빅데이터의 융합 및 분석기술 개발

- 공간 빅데이터 분산저장 및 병렬처리, 분석·가공 기술개발 등

▪▪ 공간 빅데이터 기반 국가정책지원플랫폼 구축

● 추진배경

- 국가정책결정과정의 투명화·과학화를 위해 국민참여 확대 및 공간 빅데이터를 활용한 정책결정 필요
- 이를 위해 국가정책의 발굴, 현황분석, 대안마련, 기대효과 사전시뮬레이션, 정책추진성과의 평가 등을 지원하는 플랫폼 개발

● Detailed Policy Initiatives

1) Development of Spatial Analysis Models to Execute National Policies

• Develop spatial analysis models based on the results of the survey on the needs of agencies which perform national policy tasks.

2) Establishment of Communication Room for Public Participation in Policy-Making Process

• Build a communication system that can help select the analysis criteria required for policy proposals, information-sharing, and policy decisions and support as well as facilitate discussion on analysis and simulation results.

3) Development of Analysis Models Management System

• Build the infrastructure of the management system which can help develop, register for, and certify analytical models, protect the intellectual property rights, and develop various application systems based on analysis model API.

4) Establishment of an Agency Dedicated to National Policy Support Platform

• The agency is intended to develop spatial analysis models, operate a communication room, and manage the models.

● 세부추진과제

1) 국정과제 수행에 필요한 공간분석모형 개발

• 국정과제 수행기관에 대한 수요조사 결과를 토대로 공간분석모형 개발

2) 정책과정에 국민이 참여하는 소통방 마련

• 정책제안, 정보공유, 정책결정에 필요한 분석기준의 선정, 분석 · 시뮬레이션 결과 논의 등을 지원할 수 있는 의사소통체계 구축

3) 분석모형 관리체계 구축

• 분석모형을 개발 · 등록 · 검증하고, 지적재산권을 보호받으며, 분석모형 API로 다양한 응용시스템을 개발할 수 있는 기반 구축

4) 국가정책지원플랫폼 운영전담조직 설치

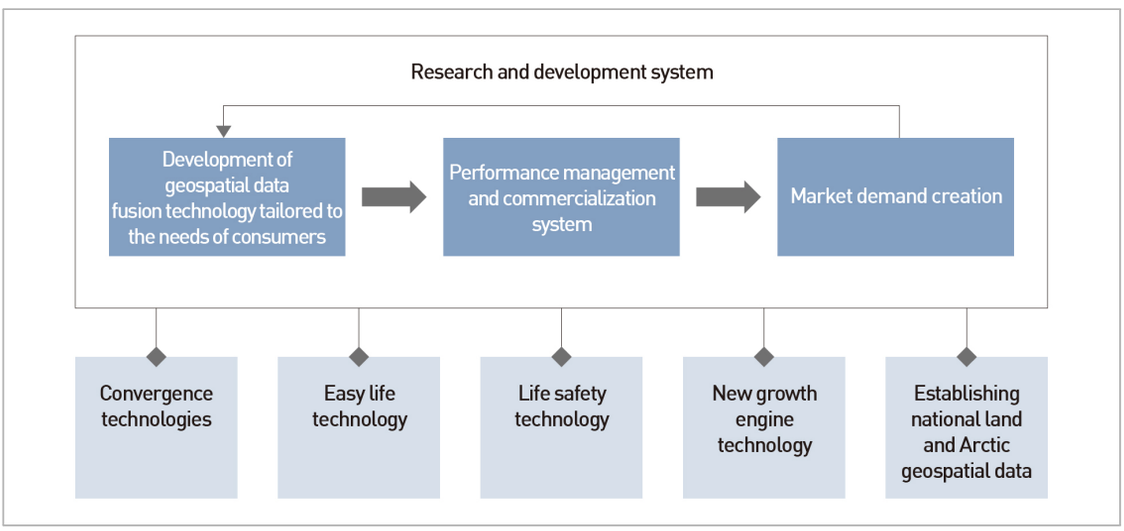
• 공간분석모형 개발, 소통방 운영, 분석모형 관리 등을 전담

4. Execution of R&D for Geospatial Data Convergence Technology

Overview

● Directions

- (Developing technology tailored to meet specific needs of industries) Develop geospatial data technologies meeting market demands
- (Enhancing performance management) Developing a performance management system to commercialize results produced through research and development
- (Conducting rigorous technical verification) Create a test bed to verify the results of technology development



● Policy Initiatives

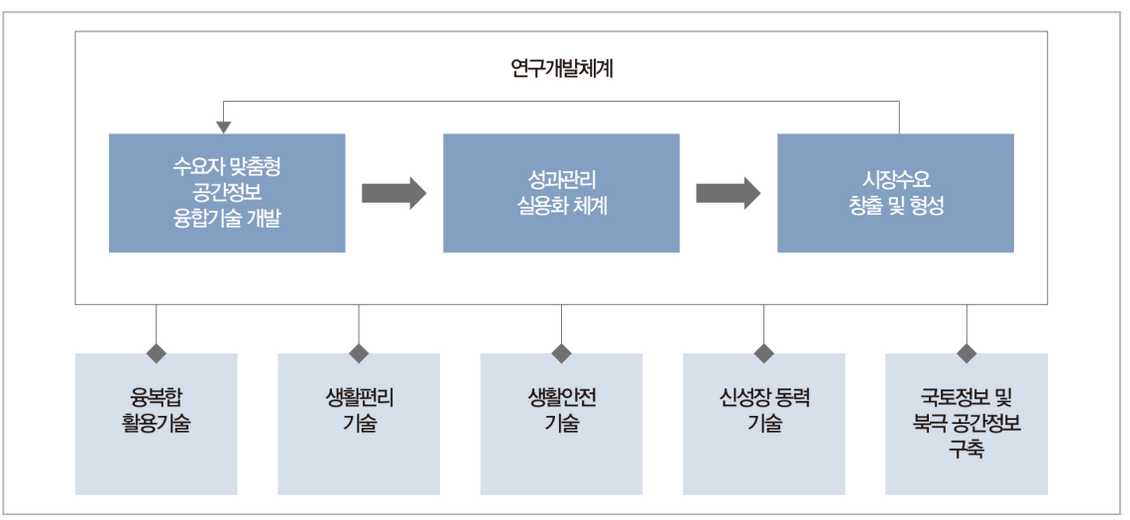
[4-1] Improvement of Management System to Secure the Practicality of Geospatial Data Technology R&D
[4-2] Technology Development for Geospatial Data Processing and its Converged Utilization to Support Industries
[4-3] Development of Geospatial Data Technology and Products for Convenient Life
[4-4] Development of Geospatial Data Technology for Life Safety
[4-5] Development of Geospatial Data Technology as New Growth Engine
[4-6] National and Arctic Geospatial Data Construction Preparing for the Expansion of Exchange between South and North Korea

4. 공간정보 융합기술 R&D 추진

개 요

● 추진방향

- (산업맞춤형 기술개발) 시장 수요를 고려한 공간정보기술 개발
- (성과관리 강화) 연구개발성과 실용화를 위한 성과관리체계 확립
- (기술검증 강화) 기술개발결과 검증을 위한 테스트베드 조성



● 추진과제

[4-1] 공간정보기술 R&D 실용성 확보를 위한 관리체계 개선

[4-2] 산업지원 공간정보 가공 및 융복합 활용기술 개발

[4-3] 생활편리 공간정보기술 및 제품 개발

[4-4] 생활안전 공간정보기술 개발

[4-5] 신성장동력 공간정보기술 개발

[4-6] 남북 교류확대에 대비한 국토정보 및 북극 공간정보 구축

▪▪ Improvement of Management System to Secure the Practicality of Geospatial Data Technology R&D

● Background

- Geospatial data technology which is a basis of convergence with other cutting-edge technologies (such as IT and mobile) is emerging as a fundamental technology that is instrumental to promote the convenience of the public and national competitiveness.
- Since national R&D projects have been conducted only by researchers working in the academic community and have focused only on securing and maintaining technology, it is very difficult to commercialize the results of technology development produced by the researchers and to develop technology tailored to the needs of consumers.

● Detailed Policy Initiatives

1) Establishment of Execution System for User-centered R&D

- Establish a promotional system that puts emphasis on the geospatial data market and consumers from the research planning stage so that research findings can be put to practical use.
  - Operate a dedicated team to develop core technologies through research and identify the market demand.

2) Systematization of Achievement Management for Utilization Enhancement of Research Results

- Improve R&D management system to keep monitoring demand change in the geospatial data market and to promote easy access to R&D.
- Promote and build a test bed to verify R&D's research results of converging geospatial data technologies and to realize a service prototype.

3) Support for Utilization of R&D Achievements

- Support the commercialization of the results of technology development through R&D.

▪▪ Technology Development for Geospatial Data Processing and its Converged Utilization to Support Industries

● Background

- It is necessary to develop geospatial data technology suited to meet the demand of industries, for example by discovering how to exploit converging geospatial technologies for promoting the geospatial data industry.

▪▪ 공간정보기술 R&D 실용성 확보를 위한 관리체계 개선

● 추진배경

- IT, 모바일 등 첨단기술과 융·복합하는 기반인 공간정보기술은 국민편의 증진과 국가경쟁력의 기반기술로 급부상
- 국가 R&D사업은 기술 확보에 중점을 두고 학계 위주로 추진되어 기술개발 성과의 산업화 및 수요자 맞춤형 기술개발에 한계 발생

● 세부추진과제

1) 수요자 중심 연구개발 추진을 위한 추진체계 구성

- 연구결과가 사장되지 않고 실용화 될 수 있도록 연구 기획단계에서부터 수요자 또는 시장을 염두에 둔 추진체계 구성
  - 핵심기술의 연구개발과 시장수요 파악을 위한 전담팀 운영

2) 연구결과의 활용·확산을 위한 성과관리 체계화

- 공간정보시장 수요변화의 지속적 모니터링과 수요자 측면에서 쉽게 접근 가능하도록 R&D 관리시스템을 개선
- 융복합 공간정보기술 R&D 연구결과의 검증 및 서비스 프로토타입 구현을 위한 테스트베드 구축 추진

3) R&D 성과의 실용화 지원

- R&D를 통한 기술개발 결과를 실용화할 수 있도록 지원

▪▪ 산업지원 공간정보 가공 및 융복합 활용기술 개발

● 추진배경

- 공간정보산업 활성화를 위해 공간정보 융복합 활용기술을 개발하는 등 산업현장에서 필요로 하는 맞춤형 공간정보 기술개발 필요

● Detailed Policy Initiatives

1) Technology Development for Geospatial Data-based Big Data Analysis and Utilization

- Develop key technologies that can analyze, visualize and store geospatial data in the manner of distributed parallel processing by extracting the geospatial big data.
- Develop big data services such as platform technology to distribute, connect and utilize geospatial big data and expansion of social safety network.

2) Technology Development for Open Source-based Geospatial Data Processing and Utilization

- Develop technology that can design and create open source-based geospatial data SW as well as process and exploit geospatial data.

3) Technology Development for Industry Specific Geospatial Data Provision

- Develop technologies and tools that can process and utilize open platform-based geospatial data customized for a specific industry.

▪▪ Development of Geospatial Data Technology and Products for Convenient Life

● Background

- Since indoor geospatial data are emerging as a blue oceans of the global geospatial market, a preemptive response including relevant technology development and commercialization will end up with preoccupying the world market.
- It is desirable to promote the convenience of the public and their welfare by applying 3D-based geospatial data and sensor technology.

● Detailed Policy Initiatives

1) Development of Indoor Locational Information Services for Convenient LIfe

- Develop 2D and 3D indoor maps for major public facilities across the country.
- Develop platforms for a variety of indoor location-based application services (within a one meter precision level) and country-wide location services.

2) Development of Geospatial Data-applied Products for Comfortable Life

- Develop 3D virtual experience technology and products to support people's leisure activities.
- Develop a system to provide customized guide services(such as accommodation, tourism, etc.) based on sensor information.
- Develop technology for welfare services and products based on geospatial data in order to help the socially disadvantaged live a comfortable life, such as direction guide for the blind.

● 세부추진과제

1) 공간정보에 기초한 빅데이터 분석 및 활용기술 개발

- 공간 빅데이터를 추출하여 분산 병렬처리방식으로 분석 및 가시화, 저장관리 할 수 있는 핵심 기술의 개발
- 공간 빅데이터를 제공, 연계 및 활용할 수 있는 플랫폼 기술 및 사회안전망 확충 등 빅데이터 서비스 개발

2) 오픈소스 기반 공간정보 가공 및 활용기술 개발

- 공간정보 SW 경쟁력 강화를 위해 오픈소스 기반의 공간정보 SW 설계 · 개발과 공간정보 가공 · 활용 기술 개발

3) 산업별 특성에 맞는 맞춤형 공간정보 제공기술 개발

- 공간정보 오픈플랫폼을 기반으로 산업별 특성에 맞게 공간정보를 손쉽게 가공하여 사용할 수 있는 기술 및 도구를 개발

▪▫ 생활편리 공간정보기술 및 제품 개발

● 추진배경

- 실내공간정보는 세계공간정보시장의 블루오션으로 부상하고 있어 기술개발과 상품화 등 선제적 대응으로 세계시장 선점 가능
- 3D 공간정보와 센서기술을 활용하여 국민생활의 편의 및 복지향상

● 세부추진과제

1) 편리한 생활을 위한 실내용 위치정보제공 서비스 개발

- 전국 주요 공공시설 등에 대한 2D 및 3D 실내지도 구축
- 시민 안전과 편의를 도모하는 다양한 실내위치기반(정밀도 1m이내) 응용서비스 및 국가차원의 위치 서비스 플랫폼 개발

2) 안락한 생활을 위한 공간정보 활용 제품 개발

- 국민들의 여가활동 지원을 위하여 3D 기반 가상체험기술 및 제품 개발
- 센서정보기반의 맞춤형 가이드 서비스(숙박, 관광 등) 시스템 개발
- 사회적 약자의 안락한 생활 지원을 위하여 시각장애인 길안내 등 공간정보 기반의 복지서비스 기술 및 제품 개발

Development of Geospatial Data Technology for Life Safety

Background

- Develop a system that provides services for real-time monitoring about hazardous areas, based on geospatial data and enables early response to accidents and emergencies so that citizens can live a safe life.
- To meet the demands for public safety, there is an increasing need to provide smart city services in connection with geospatial data and state-of-the-art ubiquitous technologies.

Detailed Policy Initiatives

1) Development of Next-Generation All-Terrain Ultra-light Unmanned Aircraft

- Promote a project to build unmanned aircraft to establish a system for real-time monitoring in disaster or epidemic outbreak areas impossible to access.

2) Establishment of City Management System Safe against Crime, Disasters and Catastrophes

- Develop technology that can provide smart city monitoring and public services based on geospatial big data.
- Establish Korean style smart city operations frameworks, communication and location-based sensors.

3) Technology Development for Systematic Development and Safety Management of Underground Spaces

- Create a sensor, technology and a system to strengthen the three-dimensional use of underground spaces and to establish a disaster response system to prevent underground accidents.

Development of Geospatial Data Technology as New Growth Engine

Background

- It is necessary to develop technology that can help secure advanced high-quality geospatial data and provide services for geospatial data convergence in order to create a new growth engine.

▪▪ 생활안전 공간정보기술 개발

● 추진배경

- 공간정보에 기반한 위험지역의 실시간 모니터링과 국민이 안전한 일상생활 영위를 위하여 안전사고 조기 대응 및 서비스 개발
- 안전에 대한 국민의 욕구 증대로 첨단 유비쿼터스 기술과 공간정보를 접목한 스마트도시 서비스 실현의 필요성 증대

● 세부추진과제

1) 차세대 전천후 초경량 무인항공기 개발

- 재해재난 및 전염병 발생 지역 등과 같은 접근불능지역의 실시간 모니터링 체계 구축을 위한 무인항공기 개발 추진

2) 범죄, 재해·재난으로부터 안전한 도시관리체계 구축

- 공간 빅데이터 기반의 스마트도시 모니터링 및 서비스 개발
- 한국형 스마트도시 운영프레임워크, 통신 및 위치기반센서 구축

3) 지하공간의 체계적 개발 및 안전관리를 위한 기술개발

- 지하공간의 입체적 활용 강화 및 지하공간 안전사고의 과학적 대응체계 실현을 위한 센서, 기술 및 시스템 개발

▪▪ 신성장동력 공간정보기술 개발

● 추진배경

- 공간정보를 통한 신성장동력 창출을 위해 최첨단의 고품질 공간정보를 획득하고 융복합하여 서비스하는 기술개발 필요

● Detailed Policy Initiatives

1) Development of Satellite Technology Dedicated to Geospatial Data

- Develop satellite technology dedicated to geospatial data to establish a system that can secure advanced geospatial data to properly respond to emergencies and disasters, issues related to climate change and environment and demands of industries.

2) Technology Development for Geospatial Imagery Data Services

- Develop core technology needed for service platforms to conduct spatio-temporal analysis of real-time imagery data through linking, and mashups.

3) Technology Development for Promoting the Commercialization of 3D Geospatial Data

- Develop technologies for automated imagery processing for lightening convergence data (Imagery + 3D Topography + 3D Facilities).

4) Technology Development for Spatio-Temporal Data Construction

- Develop technology to build geospatial data over time and to figure out trends and progress at a particular point in the past.

▪▪ National and Arctic Geospatial Data Construction Preparing for the Expansion of Exchange between South and North Korea

● Background

- Establish a system to utilize land information in case of the expansion of exchange between South and North Korea.
- Build geospatial data needed for Arctic region research, resource development and port construction.

● Detailed Policy Initiatives

1) Establishment of National Geospatial Data System to Enhance Territorial Competitiveness

- Build a database and information systems to identify the status of inaccessible areas.
- Develop a platform that enables common use of land information and formulate a guideline for renewal and distribution of the information.

2) Establishment of Arctic Geospatial Data System Preparing for the Future

- Build Arctic Satellite Elevation Imaging (SAR) Database and develop a glacial fluctuation model and monitoring system.
- Develop large image processing technology to store the Arctic region image maps and basic geospatial data, and conduct a high-resolution geodetic survey in Arctic regions.

● 세부추진과제

1) 공간정보 전용위성기술 개발

• 재해·재난, 기후변화 및 환경문제, 산업수요 등에 대응하기 위한 선진 공간정보 확보체계 구축을 위해 공간정보 전용위성기술 개발

2) 공간영상정보 서비스 기술 개발

• 실시간으로 취득되는 공간영상정보의 시공간분석, 연계, 매쉬업 등을 위한 서비스 플랫폼 핵심원천기술 개발

3) 3차원 공간정보 상용화 촉진기술 개발

• 모바일 기반 3차원데이터 서비스를 위한 이미지 맵핑 자동화처리기술, 융합데이터(영상+3차원지형+3D 시설물) 경량화 기술 개발

4) 시공간정보 구축기술 개발

• 시간흐름에 따라 공간정보를 구축하고, 과거 특정 시점의 현황과 진행패턴을 파악할 수 있는 기술 개발

▪▪ 남북 교류확대에 대비한 국토정보 및 북극 공간정보 구축

● 추진배경

• 남북 교류확대에 대비한 국토정보 및 활용체계 구축
• 북극지역 연구, 자원개발 및 항만건설 등에 필요한 공간정보 구축

● 세부추진과제

1) 국토경쟁력 제고를 위한 국토정보체계 구축

• 접근불능지역 실태DB 구축 및 정보시스템 개발
• 국토정보 공동활용 플랫폼 개발 및 갱신·유통 가이드라인 마련

2) 미래시대에 대비한 북극 공간정보체계 구축

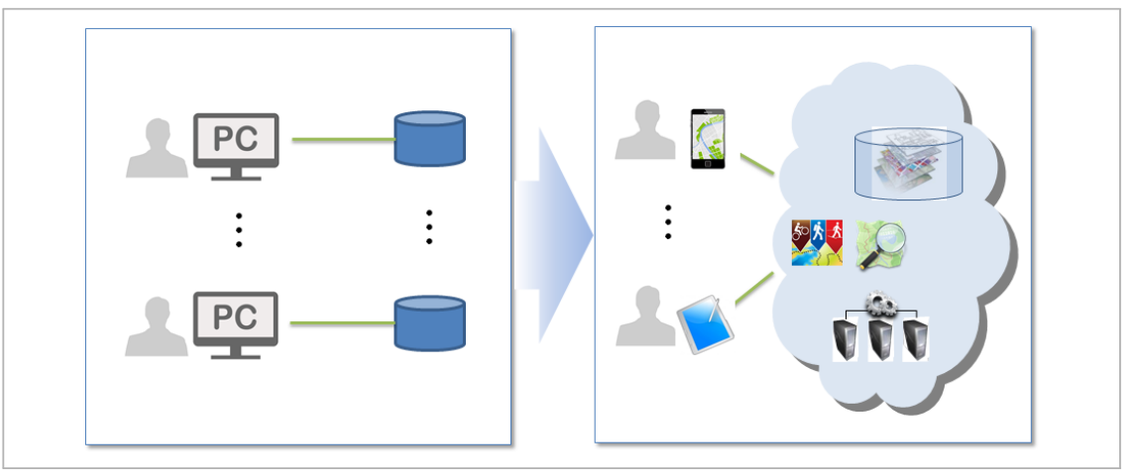
• 북극위성고도영상(SAR) DB와 빙하변동 모델 및 모니터링 시스템 구축
• 북극지역의 영상지도 및 기초 공간정보 확보를 위한 대용량 영상처리 기술개발 및 정밀 측지측량 실시

5. Collaborative Advancement of Geospatial Data System and Utilization Enhancement

Overview

● Directions

- (Securing geospatial data integrity) Enhance the reliability of geospatial data by each agency to construct and update geospatial data according to Framework Data
- (Building a sharing system for computational resources) Build a cloud-based system which enables all relevant agencies to share the use of computational resources such as geospatial data, hardware and software
- (Switching individual geospatial data systems) Transform individually operated geospatial data systems into cloud-based systems
- (Increasing collaborative use of geospatial data) Fulfill national policy tasks through collaboration among relevant agencies and the use of geospatial data



● Detailed Policy Initiatives

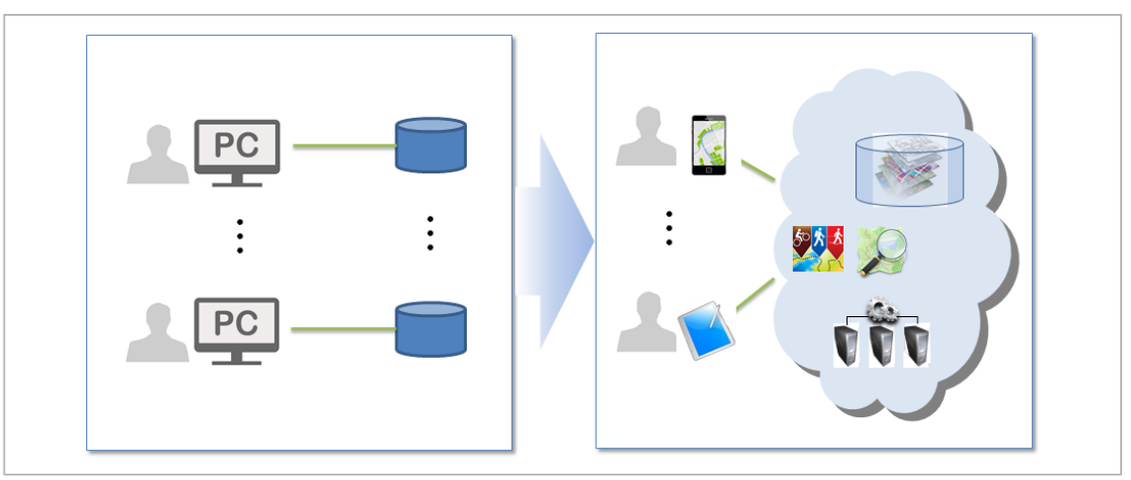
[5-1] Plan Establishment for the Construction of Cloud-based Geospatial Data System and Institutional Basis
[5-2] Geospatial Data Update for Securing Consistency
[5-3] Establishment of Cloud System Utilization Services
[5-4] Advancement of Agency-specific Geospatial Data Systems
[5-5] Collaborative Projects for the Creation of Policy Synergy

5. 협력적 공간정보체계 고도화 및 활용 확대

개 요

● 추진방향

- (공간정보 정합성 확보) 기관별로 기본공간정보에 맞추어 공간정보를 구축 및 갱신함으로써 공간정보의 신뢰성 제고
- (전산자원 공동활용 체계구축) 각 기관이 공간정보, HW, SW 등의 전산자원을 공동 활용할 수 있는 클라우드체계 구축
- (개별 공간정보체계 전환) 개별적으로 운용되고 있는 공간정보체계를 클라우드체계를 이용할 수 있도록 전환
- (협력적 공간정보 활용 확대) 공간정보를 활용해서 성공적으로 추진할 수 있는 국정과제는 관계부처가 협력하여 추진



● 추진과제

[5-1] 클라우드 기반 공간정보체계 구축계획 수립 및 제도기반 마련

[5-2] 정합성 확보를 위한 공간정보 갱신

[5-3] 클라우드체계 활용서비스 구축

[5-4] 기관별 공간정보체계 고도화

[5-5] 정책시너지 창출을 위한 협업과제

▪▪ Plan Establishment for the Construction of Cloud-based Geospatial Data System and Institutional Basis

● Background

• As geospatial data systems are constructed individually, it is difficult to secure integrity of geospatial data and it causes excessive cost to building and maintaining such systems.

* A city in South Korea spent 250 million won annually to maintain six geospatial data service systems (2013).

• As a result, governments are promoting to build a cloud-based system to take advantage of the common use of computing resources.

* Currently, governments at all levels are formulating a plan called "G-Cloud" that will help gradually transform working environment into cloud-based settings; this plan has started to be implemented from 2013.

● Detailed Policy Initiatives

1) Plan Establishment for the Construction of Cloud-based Geospatial Data System

• Develop a plan to switch to the cloud-based geospatial data system which can take advantage of the common use of computational resources by analyzing and evaluating individual geospatial data systems from the perspectives of all agencies.

– The plan includes building geospatial data database, and ensuring the stability and security of the system.

2) Construction of Agency-specific Cloud Management Systems

• Build cloud-based systems managed and operated by each agency.

3) Institutional Rearrangement and Education Support for Cloud System Construction and Management

• Build framework data based on geospatial data and formulate a legal basis for reliable cloud operating systems.

• Provide training of cloud systems and support their construction and operations.

▪▪ 클라우드 기반 공간정보체계 구축계획 수립 및 제도기반 마련

● 추진배경

- 개별적으로 공간정보체계를 구축함에 따라 공간정보의 정합성을 확보하기 어렵고 구축 및 유지보수 비용이 과다하게 소요

  * ○○시는 6개 공간정보 업무시스템 유지에 연 2.5억원 지출('13)

- 이에 따라 전산자원을 공동 활용하기 위한 클라우드체계 구축 추진

  * 현재 범정부 차원에서 클라우드기반으로 업무환경을 전환하는 'G-클라우드' 계획을 수립하고 '13년부터 단계적으로 추진할 예정

● 세부추진과제

1) 클라우드 기반 공간정보체계 구축계획 수립

- 개별 공간정보체계를 기관 전체의 관점에서 분석하여 전산자원을 공동 활용할 수 있는 클라우드체계로 전환하는 계획수립

  - 공간정보 DB 및 시스템의 안전성 확보, 보안대책 등 포함

2) 기관별 클라우드 관리체계 구축

- 기관별로 클라우드를 운영할 수 있는 관리체계 구축

3) 클라우드체계 구축·운영을 위한 제도정비 및 교육지원

- 기본공간정보 기반의 공간정보 구축 및 클라우드체계의 안정적 운영체계 구축을 위한 법적근거 마련
- 클라우드체계에 대한 교육 및 구축·운영 지원

Geospatial Data Update for Securing Consistency

Background

- Current geospatial data, built based on different base map of scales and types lack consistency between them, which make it difficult to create and to take advantage of convergence of different technologies.
- Therefore, in order to secure the integrity of geospatial data, it is necessary to update the geospatial data using Framework Data as standards for geospatial data construction.

Detailed Policy Initiatives

1) Framework Data-based Geospatial Data Construction

- Standards development for existing geospatial data renewal based on Framework Data and standards-applied renewal of existing Geospaital Data.

2) Conversion of Renewed Geospatial Data to Cloud Data

- Store the renewed geospatial data produced based on Framework Data into 'Cloud Storage' to use them anywhere at any time.
- Link together and update cloud-based data such as geospatial big data managed by government agencies.

Establishment of Cloud System Utilization Services

Background

- Since SWs for geospatial data analysis are bought by each individual agency, unnecessary costs for purchase and maintenance remain very high.
- It is necessary to provide cloud-based services for relevant agencies to share geospatial SW.

Detailed Policy Initiatives

1) Cloud-Based Geospatial Data Service Development Standards

- Develop standards of cloud-based geospatial data services that conform to cloud services standards (i.e., GeoAPI, RestfulAPI) developed by an international geospatial data standards organization (called Open Geospatial Consortium).
- Register cases that followed standards of cloud-based geospatial data services at international geospatial data standards organization.

▪▪ 정합성 확보를 위한 공간정보 갱신

● 추진배경

- 축척과 형태가 다른 기본도를 활용하여 공간정보를 구축함에 따라 공간정보간 정합성 결여 및 융합 활용 곤란
- 따라서 공간정보의 정합성 확보를 위해 공간정보 구축의 기준이 되는 기본공간정보를 활용하여 공간정보 갱신 필요

● 세부추진과제

1) 기본공간정보 기반의 공간정보 구축

- 기본공간정보를 기반으로 기존 공간정보를 갱신하기 위한 표준개발 및 표준을 적용한 기존 공간정보 갱신

2) 갱신된 공간정보의 클라우드 데이터 전환

- 기본공간정보를 기반으로 갱신한 공간정보를 언제 어디서나 사용할 수 있도록 '클라우드 스토리지'에 저장
- 공간 빅데이터 등 정부내 다른 클라우드 데이터와 연계 및 갱신

▪▪ 클라우드체계 활용서비스 구축

● 추진배경

- 공간정보 활용에 필요한 공간정보 SW를 개별적으로 구입함에 따라 구매 및 유지관리에 불필요한 비용지출 발생
- 공간정보 SW를 공동 활용할 수 있도록 클라우드 기반으로 서비스

● 세부추진과제

1) 클라우드 기반 공간정보서비스 개발표준

- 국제 공간정보표준기구(Open Geospatial Consortium)의 클라우드서비스 표준(GeoAPI, RestfulAPI)에 따라 클라우드 공간정보서비스 표준 개발
- 클라우드 공간정보서비스 표준적용사례의 국제공간정보표준기구 등록

2) Development of Common Business Functions into Cloud Services

- Develop technology to convert common services (such as geospatial data visualization, input/output, spatial analysis function, and so on) provided by individual geospatial data systems into cloud-based services.

3) Application of Cloud Services to Geospatial Data Systems

- Test geospatial data systems (such as the Korea Land Information System) built across the country before expanding the use of such systems.

4) Construction of Cloud Services Distribution Network

- Build cloud stores for the private sector to take advantage of public cloud-based services.

▪▪ Advancement of Agency-specific Geospatial Data Systems

● Background

- Enhance the quality of geospatial data (such as the recency and accuracy) and improve the functions of geospatial data systems in order to provide scientific and customized administrative services.

● Detailed Policy Initiatives

1) Advancement of Environmental Geospatial Data (The Ministry of Environment)

- 「Maintain and Manage Environmental Conservation Value Assessment Map」 which supports national territorial and environmental planning to ensure the balance between development and preservation by comprehensively evaluating national land and environment.
- 「Build detailed land cover maps using image data」 to help establish environmental policies by classifying the environmental characteristics of land cover in a precise manner.
- 「Build a comprehensive natural environment GIS-Database」 to create ecological maps based on comprehensive survey results on the ecosystem such as a nation-wide survey on the natural environment.
- 「Operate and manage environmental impact assessment information support system」 that will help systematically manage information on environmental assessment and effectively conduct assessment activities.

2) 공통 업무기능을 클라우드서비스로 개발

- 개별 공간정보체계에서 공통적으로 제공하는 서비스(공간정보 가시화, 입출력, 공간분석기능 등)들을 클라우드서비스로 개발

3) 클라우드서비스를 공간정보체계에 적용

- 전국에 구축된 공간정보체계(예: 한국토지정보시스템)에 시범적용 후 확산

4) 클라우드서비스 유통망 구축

- 공공 클라우드서비스의 민간 활용을 위한 클라우드 스토어 구축

▪▪ 기관별 공간정보체계 고도화

● 추진배경

- 과학적 · 맞춤형 행정서비스 구현을 위해 공간정보의 최신성, 정확성 등 품질을 고도화하고 기능을 개선

● 세부추진과제

1) 환경공간정보 고도화(환경부)

- 국토 및 환경을 종합 평가하여 개발과 보전이 조화된 국토환경계획 수립을 지원하는「국토환경성평가지도 유지·관리사업」
- 지표면의 환경적 특성을 정밀하게 분류하여 정확한 환경정책 수립을 지원하는「영상자료를 이용한 세분류 토지피복지도 구축」사업
- 전국자연환경조사 등 생태계조사 결과를 종합하여 생태·자연도를 구축하는「자연환경종합 GIS-DB 구축」사업
- 환경평가 관련 정보의 체계적인 관리 및 효율적인 평가업무 수행 지원을 위한「환경영향평가정보지원 시스템 운영·관리사업」

2) Advancement of Forest Geospatial Data (Korea Forest Service)

- 「Build national forest geospatial data system」 to promote geospatial data-based forest business and to help effectively share and utilize information on forest resources.
- 「Build forest site and soil maps」 to update those maps in 1/5000 scale to enhance integrated national geospatial data system, to share the maps and to increase cooperation among agencies.
- 「Build and update forest type maps to ensure the recentness of those maps」 in 1/5000 scale, which are being used in forest administration, land use and forest statistics.
- 「Maintain and manage forest land maps」 to update those maps and help forestry management business, which aims to protect and utilize forest resources.

3) Advancement of Geospatial Data for Cultural Heritage (Cultural Heritage Administration)

- 「Build cultural heritage GIS system」 to preserve cultural properties and to share information on them as well as to build a human-centered system to effectively take advantage of cultural assets.

4) Advancement of Geospatial Data for Trade, Industry and Energy (Ministry of Trade, Industry and Energy)

- 「Build mine geospatial data」 to establish a database for 150 metal and nonmetal mine maps and to improve the use of mine GIS Utilization Systems.
- 「Build Korea Mineral Resources Geospatial Information Systems (KMRGIS)」 to create mine geologic maps and a drilling log database and to distribute information on mineral resources.

5) Advancement of Geospatial Data for Marine Affairs (Ministry of Maritime Affairs and Fisheries)

- 「Investigate coastal waters」 to create a database for information on coastlines, water depth, and marine affairs.
- 「Survey West and South Sea seabed and collect and process data on both of the seabeds」 which can support EEZ (Exclusive Economic Zone) negotiations between Korea, China, and Japan, maritime transport and environmental analysis, resource development, and military operations.
- 「Build global real-time ocean observation system」 to provide real-time oceanographic information which will be integrated, utilized and shared.
- 「Build coastal management information system」 to help integrate and manage information on coastal regions, which ensures the efficient management of the space and resources of the regions.
- 「Build harbour and underground facility information system」 to ensure the accuracy and reliability of the information by combining and managing data in three dimension on harbour and underground facilities, ground and undersea depth records.
- 「Build Total Oceanographic Information System (TOIS)」 to promote stronger linkages of relevant systems for systematic marine territorial management and the future of the fishery industry.
- 「Create and develop electronic navigation charts」, which aims to build a database for high-precision electronic nautical charts.

2) 산림공간정보 고도화(산림청)

- 공간정보 기반의 산림업무를 추진하고, 효율적인 산림공간정보의 공유·활용체계 마련을 위한「국가 산림공간정보체계 구축사업」
- 국가공간정보통합체계 및 부처 간 연계·공유를 위해 산림입지토양도를 1/5,000 축척으로 고도화하는「산림입지토양도 구축사업」
- 산림행정과 토지이용 및 산림통계 등에 활용되는 1/5,000 축척 임상도의 주기적인 현행화를 위한「임상도 현행화 구축사업」
- 산지의 합리적 보전과 이용을 위해 산지구분도를 갱신하고 산지관리 업무를 지원하는「산지구분도 유지관리사업」

3) 문화재공간정보 고도화(문화재청)

- 문화유산의 가치보존과 정보의 공유, 국민중심의 문화재 공간정보 이용체계 구축을 위한「문화재공간정보 활용체계(GIS) 구축사업」

4) 산업통상공간정보 고도화(산업통상자원부)

- 150개 금속·비금속 광산 도면 DB 구축 및 광산GIS 활용체계 개선을 위한「광산공간정보구축사업」
- 광산지질도 및 시추주상도의 DB 구축 및 광물자원정보의 유통을 위한「국가광물자원공간정보망(KMRGIS)사업」

5) 해양공간정보 고도화(해양수산부)

- 해안선, 수심 등 해양정보를 DB로 구축하는「연안해역조사사업」
- 한·중·일 해양경계(EEZ) 협상, 해상 교통 및 환경 분석, 자원개발, 군 작전 지원을 위한「서·남해역 해저지형조사 및 자료처리사업」
- 전지구관측정보의 공유, 통합 및 활용 등을 위해 실시간 해양정보를 구축·제공하는「전지구실시간해양관측시스템사업」
- 연안지역 자원·공간의 효율적 관리를 위해 연안관련 정보를 통합관리하고 타 시스템과 연계하는「연안관리정보시스템 구축사업」
- 항만 지하시설물, 지반정보, 해저수심정보를 3차원으로 통합관리하여 업무정확성과 신뢰성을 확보하는「항만지하시설물 정보구축」
- 체계적 해양영토 관리와 해양수산업의 미래산업화를 위해 관련시스템의 연계 강화를 추진하는「종합해양정보시스템(TOIS) 사업」
- 고정밀 전자해도 DB를 구축하는「전자해도제작 및 개발사업」

6) Advancement of Geospatial Data for Agriculture and Forestry (Ministry of Agriculture, Food and Rural Affairs, Rural Development Administration)

- 「Promote farmland informatization」 that helps improve the efficiency of administrative works related to farmland management by building farmland-related geospatial data in a precise manner and provide farmland information for farmers.
- 「Build smart farm maps」 which contribute to increasing the accuracy of agricultural statistics and data on administrative business related to farmland and to customized farmland management by establishing a farmland information system.
- 「Enhance the soil environment information system」 that provides information necessary for decision making in agriculture.

7) Advancement of Geospatial Data for Land, Infrastructure and Transportation (Ministry of Land, Infrastructure and Transport)

- 「Enhance Korea Land Information System」 that aims to provide geospatial data on land and real estate administrative work (such as cadastral maps), which is designed to be shared by the public and private sector.
- 「Maintain and upgrade the integrated national geospatial data system」 that links and integrates a variety of geospatial data produced and managed by the central and local government agencies.
- 「Enhance Korea Planning Support Systems」 to formulate various spatial plans of the central and local governments and to promote land policies by taking advantage of spatial analysis methods.
- 「Informationize grean belt areas」 to improve the accuracy and efficiency of management affairs in the areas by taking advantage of geospatial data and to enhance the quality of civil services.
- 「Continue to implement the national transportation demand survey and database」 to be shared by the public and private sector by investigating and analyzing traffic data necessary for transportation policy and planning, and establishing a standardized database.
- 「Expand Urban Planning Information System (UPIS)」 to support scientific urban planning based on geospatial data and to inform the public of urban planning decision processes.
- 「Enhance the Integrated GIS-based building information system」 to resolve the mismatch between data.
- 「Enhance groundwater information management system」 to promote the reasonable development and conservation of groundwater and its use for the benefit of the public, and to provide the public with information on ground water.
- 「Continue to build the construction borehole information database」 for underground space management by establishing, distributing and utilizing the database in a systematic manner.
- 「Enhance the integrated information system」 to promote safety accident prevention and disaster response by effectively managing the main seven types of underground facilities.
- 「Operate the national spatial information center」 to promote land policy development and strengthen the business support system of administrative agencies by sharing and opening geospatial and real estate information.

6) 농림공간정보 고도화(농림축산식품부, 농촌진흥청)

- 정확한 농지관련 공간정보를 구축하여 농지관리 행정업무 효율성을 향상시키고 농업인에게 농지정보를 제공하는 「농지정보화사업」
- 현장과 일치하는 농경지 정보를 구축하여 농업통계 및 행정자료의 정확성을 높이고 맞춤형 농정실현에 기여하는 「스마트 팜 맵 사업」
- 농업 의사결정에 필요한 정보를 제공하는 「토양환경정보시스템 고도화 사업」

7) 국토교통공간정보 고도화(국토교통부)

- 지적도 등 토지 및 부동산 행정업무 관련 공간정보를 구축하고 공공기관과 국민이 공동 활용하기 위한 「한국토지정보시스템 구축」사업
- 국가, 지자체, 공공기관에서 생산·관리하고 있는 각종 공간정보를 연계·통합하는 「국가공간정보통합체계 유지보수사업」
- 공간분석기법을 활용하여 국가 및 지자체의 각종 공간계획 수립 및 국토정책 추진을 지원하는 「국토공간계획지원체계(KOPSS) 구축사업」
- 공간정보를 기반으로 개발제한구역 관리업무의 정확성과 효율성을 제고하고 민원서비스의 질을 향상시키는 「개발제한구역정보화사업」
- 교통정책 및 계획 수립에 필요한 교통자료를 조사·분석하고 표준화된 DB로 구축, 공동 활용하는 「국가교통수요조사및DB구축사업」
- 공간정보에 기반한 과학적인 도시계획 수립을 지원하고, 도시계획 결정과정을 국민에게 공개하는 「도시계획정보체계(UPIS) 확산사업」
- 표준화된 건물통합정보를 구축하여 정보간 불일치를 해소하고, 건물정보의 공동활용을 도모하는 「GIS 기반 건물통합정보 구축」사업
- 지하수의 합리적인 개발 및 보전과 범정부·지자체 공동 활용, 대국민 지하수정보 서비스를 위한 「지하수정보관리체계 구축사업」
- 건설공사 시추정보 DB를 체계적으로 구축·유통·활용하여 지하 공간 관리에 활용하기 위한 「건설시추공정보DB 구축사업」
- 안전사고 예방과 재난 대응, 시설물 관리를 위해 지하시설물 정보를 구축하고 공동 활용하는 「7대 지하시설물 통합정보 구축사업」
- 공간·부동산 정보의 공유·개방을 통해 국토정책수립 및 행정기관의 업무지원체계를 강화하는 「국가공간정보센터 운영」

- 「Promote the integrated real estate information system」 to enhance the credibility of the government administration through comprehensive real estate certificates, prevent the infringement of property rights, and to promote the convenience of the public in real estate-related affairs.
- 「Generate geospatial object registration numbers」 to provide a unique number for each geospatial object so that individually structured geospatial data can be effectively identified, shared, and utilized.
- 「Develop the next generation geospatial data representation technology」 to take advantage of high-quality geospatial data utilization technologies.

8) Advancement Statistical Geospatial Data (National Statistical office)

- 「Enhance geospatial statistics DB」 that provides location-based services by sharing and combining Census-based information produced by the public and private sector.

9) Advancement of Geospatial Data for Fire-fighting and Disaster Prevention (National Emergency Management Agency)

- 「Enhance Disaster prevention GIS (DGIS)」 to respond to natural hazards and emergencies in a timely and scientific manner and to share hazard information.

10) Advancement of Geospatial Data for Security and Public Administration (Ministry of Security and Public Administration)

- 「Maintain and upgrade administration geospatial data system」 that provides information on 25 types of administrative work of local government agencies (such as public health, sanitation, rural affairs, etc.) and on permit evaluation processes.
- 「Advance the public safety and disaster management system」 that addresses comprehensive national security information by combining and sharing public safety information produced by relevant agencies.

11) Advancement of Geospatial Data for Local and Metropolitan Governments (Local and Metropolitan Governments)

- Enhance Geospatial data systems of Seoul, Busan, Daegu, Incheon, Gwangju, Daejeon, Ulsan Metropolitan City, Gyeonggi-do, Gangwon-do, Chungcheongbuk-do, Chungcheongnam-do, Jeollanam-do, Jeollabuk-do, Gyeongsangbuk-do, Sejong Special Autonomous City, Gyeongsangnam-do, and Jeju Special Self-governing Province

- 부동산 종합증명서를 통해 행정의 신뢰성을 제고하고 국민의 재산권 침해 예방 및 편의를 도모하는 「부동산 행정정보 일원화사업」
- 개별적으로 구축된 공간정보를 공유·활용하기 위해 공간객체에 공간객체등록번호를 부여하는 「공간객체등록번호 부여사업」
- 고품질 공간정보 활용기술을 개발하는 「차세대 공간정보 표현기술사업」

8) 통계공간정보 고도화(통계청)

- 센서스 정보를 바탕으로 공공과 민간의 정보를 공유·융합하여 위치기반의 서비스를 제공하는 「공간통계 DB 구축사업」

9) 소방방재공간정보 고도화(소방방재청)

- 자연재해와 재난에 적시적·과학적으로 대응하고 재난정보를 공동 활용하기 위한 「소방방재지리정보시스템(DGIS) 구축사업」

10) 안전행정공간정보 고도화(안전행정부)

- 보건, 위생, 농촌 등 25개 지자체 행정업무를 지원하고 인허가 진단 등 행정정보를 제공하는 「행정공간정보시스템 유지보수사업」
- 안전정보를 공유·연계하여 국민 중심의 종합적인 국가안전정보체계를 구축하는 「국민생활재난안전관리시스템 구축사업」

11) 지방자치단체 공간정보 고도화(광역 및 기초지자체)

- 서울특별시, 부산광역시, 대구광역시, 인천광역시, 광주광역시, 대전광역시, 울산광역시, 경기도, 강원도, 충청북도, 충청남도, 세종특별자치시, 전라북도, 전라남도, 경상북도, 경상남도, 제주특별자치도 공간정보사업

▪▪ Collaborative Projects for the Creation of Policy Synergy

● Background

- Since national policy issues and tasks of the Administration don't involve a single agency but various ones, it is necessary to create a synergy in policy making processes through collaboration among agencies.
  * Taxation data from the National Tax Service and data of land appraisal values from the Ministry of Land, Infrastructure and Transport together can help identify tax evasion cases.
  - More than 60% out of 140 national policy tasks require agencies' collaboration and the use of geospatial data to enable successful promotion of the tasks and increase positive effects (See Appendix 3).

● Detailed Policy Initiatives

1) Collaborative Projects between the Ministry of Security and Public Administration and the Ministry of Land, Infrastructure and Transport(MOLIT)

- Improve work related to inhabitants' moving-in reports in connection with resident registration information system managed by city, county and district governments and integrated real estate management system managed by the Ministry of Land, Infrastructure and Transport.
- Efficiently improve local tax services, build new address update system, and promote local governments' licensing services (13 services including hygiene, local industry, rural development, animal husbandry, and public health).
  * [5-4-7] Promote the project in conjunction with the integrated real estate information development project, which is one of the detailed policy initiatives of MOLIT.

2) Collaborative Projects between National Tax Service and the Ministry of Land, Infrastructure and Transport

- Streamline tax administration work by linking the Ministry of Land, Infrastructure and Transport's integrated real estate information system and National Tax Service's the next generation national tax system, and the Ministry of Security and Public Administration's local tax system.
  * [5-4-7] Promote the project in conjunction with the integrated real estate information development project, which is one of the detailed policy initiatives of MOLIT.

▪▪ 정책시너지 창출을 위한 협업과제

● 추진배경

• 정책 현안이나 국정과제는 대부분 한 부처가 아닌 여러 부처와 관련되어 있으므로 부처간 협업을 통해 정책의 시너지 창출 필요

* 국세청의 과세자료를 국토부의 지가정보와 융합하여 탈루세원을 발굴할 수 있음

- 140개 국정과제 중 약 60% 이상이 공간정보를 활용한 협업을 통해 정책의 성공적 추진과 효과성 제고 가능(부록 3 참조)

● 세부추진과제

1) 안행부-국토부 협업과제

• 시·군·구의 주민등록정보시스템과 국토부의 부동산종합공부시스템을 연계하여 주민 '전입신고 업무처리' 개선

• 지방세 업무 효율화, 새주소 갱신체계 구축, 자치단체 인허가(위생, 지역산업, 농촌, 축산, 보건 등 13개 업무)

* [5-4-7] 국토교통공간정보 고도화 과제의 세부과제인 부동산 행정정보 일원화사업으로 추진

2) 국세청-국토부 협업과제

• 국토부 부동산통합정보, 국세청 차세대국세시스템, 안행부 지방세시스템을 연계하여 국세행정을 효율화

* [5-4-7] 국토교통공간정보 고도화 과제의 세부과제인 부동산 행정정보 일원화사업으로 추진

3) Collaborative Projects between the Ministry of Strategy and Finance, and the Ministry of Land, Infrastructure and Transport

- Link the integrated state-owned property management system and integrated real estate information system to find state-owned property such as unused administrative property (The the Ministry of Strategy and Finance, Korea Asset Management Corporation).
  * [5-4-7] Promote the project in conjunction with the integrated real estate information development project, which is one of the detailed policy initiatives of MOLIT.

4) Collaborative Projects between the Ministry of Agriculture, Food and Rural Affairs and the Ministry of Land, Infrastructure and Transport

- Utilize the integrated real estate information system to build a database for geospatial data-based agriculture statistics
  * [5-4-6] Promote to create smart palm maps, which is one of the detailed policy initiative within the project to enhance agriculture and forest geospatial data.

5) Collaborative projects between the Ministry of Food and Drug Safety and the Ministry of Land, Infrastructure and Transport

- Provide food safety information in connection with food safety management information systems and geospatial data.
  * [5-4-7] Promote the project in conjunction with the integrated real estate information development project, which is one of the detailed policy initiatives of MOLIT.

6) Collaborative Projects between Small and Medium Business Administration and the Ministry of Land, Infrastructure and Transport

- Build a small business support platform in conjunction with the Small and Medium Business Administration's Trade Area Information System called 'Small Business Persons and Stores DB' (The Small Enterprise Development Agency within Small and Medium Business Administration).
  * [5-4-7] Promote the project as a part of national spatial data center project, which is one of the detailed policy initiatives for enhancing geospatial data on national land and transportation.

7) Collaborative Projects between the Ministry of Foreign Affairs and the Ministry of Land, Infrastructure and Transport

  * Build a world-wide national land infrastructure which links global Korean networks by leveraging Korean Business Directory Information of Overseas Koreans (Korean Society).
  * [5-4-7] Promote the project as a part of national spatial data center project, which is one of the detailed policy initiatives for enhancing geospatial data on national land and transportation.

3) 기획재정부-국토부 협업과제

- 유휴 행정재산 발굴 등 국유재산 관리를 위해 기재부 국유재산통합관리시스템과 부동산통합정보를 연계(기획재정부, 한국자산관리공사)

  * [5-4-7] 국토교통공간정보 고도화 과제의 세부과제인 부동산 행정정보 일원화사업으로 추진

4) 농림축산식품부-국토부 협업과제

- 공간정보기반 농업통계 구축시 부동산 통합정보 활용

  * [5-4-6] 농림공간정보 고도화 세부과제인 스마트 팜 맵 사업으로 추진

5) 식품의약품안전처-국토부 협업과제

- 식품안전관리정보체계와 공간정보를 연계하여 식품안전정보 제공

  * [5-4-7] 국토교통공간정보 고도화 세부과제인 부동산 행정정보 일원화사업으로 추진

6) 중소기업청-국토부 협업과제

- 중소기업청의 상권정보시스템 “소상공인 상가업소 DB”와 연계하여 소상공인 지원 플랫폼을 구축(중소기업청 소상공인진흥원)

  * [5-4-7] 국토교통공간정보 고도화 세부과제인 국가공간정보센터 구축사업으로 추진

7) 외교부-국토부 협업과제

- 국외동포(한인회) 한인업소정보를 활용하여 재외동포 “한민족” 네트워크로 연결하는 글로벌 국토인프라 구축

  * [5-4-7] 국토교통공간정보 고도화 세부과제인 국가공간정보센터 구축사업으로 추진

8) Collaborative Projects between the Ministry of Security and Public Administration, the Ministry of Science, ICT and Future Planning, and the Ministry of Land, Infrastructure and Transport

- Establish and share geospatial big database which can create flooding hazard monitoring system and conduct pilot research to build a fusion model for infants and children welfare policies.
  * [3-1-1] Promote as an Information Strategic Planning(ISP) for building geospatial big data systems.

9) Collaborative Projects between the Ministry of Employment and Labor and the Ministry of Land, Infrastructure and Transport

- Run an employment-linked academy and an incumbent job competency academy in conjunction with the Ministry of Employment and Labor.
  * Promote as the detailed task of [6-2-1] and [6-2-2] : Training professionals with expertise in geospatial data]

10) Collaborative Projects between National Emergency Management Agency and the Ministry of Land, Infrastructure and Transport

- Link national earthquake disaster management information system with geotechnical information system to share construction and drilling information and geotechnical survey results to prevent or mitigate earthquake hazards.
  * [5-4-7] Promote the project with construction borehole information DB creation project, which is one of the detailed tasks within a project to enhance geospatial data on national land and transportation.

11) Collaborative Projects between the Ministry of Education and the Ministry of Land, Infrastructure and Transport

- Establish a smart learning platform in cooperation with the Ministry of Education to provide a creative learning environment based on geospatial data.
  * [6-3-1] Promote as a project to build a geospatial data smart learning platform.

12) Collaborative Projects between the Ministry of Security and Public Administration, Presidential Committee on Young Generation, and the Ministry of Land, Infrastructure and Transport

- Hold an entrepreneurship competition utilizing public data, a joint entrepreneurship education and an entrepreneurship camp, in cooperation with the four institutions in order to support youth entrepreneurship. [2-1-1] Promote a project as the support project for youth's start-up business.

8) 안전행정부-미래창조과학부-국토부 협업과제

- 침수재해 모니터링 시스템 구축 및 영유아 복지정책을 위한 공간 융합모델 시범연구 등 공간 빅데이터 구축 및 활용서비스 구축

  * [3-1-1] 공간 빅데이터체계 구축을 위한 정보화전략계획 수립과제로 추진

9) 고용노동부-국토부 협업과제

- 고용노동부와 연계하여 고용연계 아카데미와 재직자 직무역량 아카데미를 운영

  * 공간정보 창의인재 양성의 [6-2-1] 및 [6-2-2] 세부과제로 추진

10) 소방방재청-국토부 협업과제

- 건설시추정보와 지진방재용 지반조사성과 공동활용을 위한 국토지반정보시스템과 국가지진방재통합정보시스템간 실시간 연계체계 구축

  * [5-4-7] 국토교통공간정보 고도화 과제 세부과제인 건설시추공정보DB 구축으로 추진

11) 교육부-국토부 협업과제

- 공간정보기반의 창의적 학습이 이뤄질 수 있도록 교육부와 협업하여 공간정보 스마트러닝 플랫폼을 구축

  * [6-3-1] 공간정보 스마트러닝 플랫폼 과제로 추진

12) 안전행정부-청년위원회-종소기업청-국토부 협업과제

- 청년창업을 지원하기 위해 4개 기관이 협력하여 공공데이터를 활용한 창업경진대회를 공동개최하고 창업교육 및 창업캠프 운영

  * [2-1-1] 청년창업 지원과제로 추진

13) Collaborative Projects between Korea Meteorological Administration, National Emergency Management Agency, and the Ministry of Land, Infrastructure and Transport

- Build a national emergency management system to address hydrological and meteorological hazards in conjunction with the hydrological and meteorological forecast information system and the disaster damage analysis system.

14) Collaborative Projects between the Ministry of National Defense, the Ministry of Science, ICT and Future Planning, and the Ministry of Land, Infrastructure and Transport

- Establish DB that manages aerial photographs taken before and after Korea liberated from Japanese colonial rule using the open platform(V-world).

15) Collaborative Projects between the Ministry of National Defense, the Ministry of Unification, the Ministry of Science, ICT and Future Planning, and the Ministry of Land, Infrastructure and Transport

- Establish a system to analyze and share information on North Korea among organizations.

16) Strengthening Linkages between National Geospatial Data Policies, U-City and ITS Policies

- Vitalize convergence such as opening up and sharing information and promoting networks between relevant agencies.

13) 기상청-소방방재청-국토부 협업과제

- 수문기상예측정보시스템 및 방재피해분석시스템과 연계하여 국가 수문기상 재난안전 공동 활용 시스템 구축

14) 국방부-미래창조과학부-국토부 협업과제

- 공간정보 오픈플랫폼을 활용하여 해방 전후 항공사진 DB구축

15) 국방부-통일부-미래창조과학부-국토부 협업과제

- 북한정보 분석 및 공동 활용을 위한 북한정보 공동활용 시스템 구축

16) U-City 및 ITS 정책과 국가공간정보정책의 연계 강화

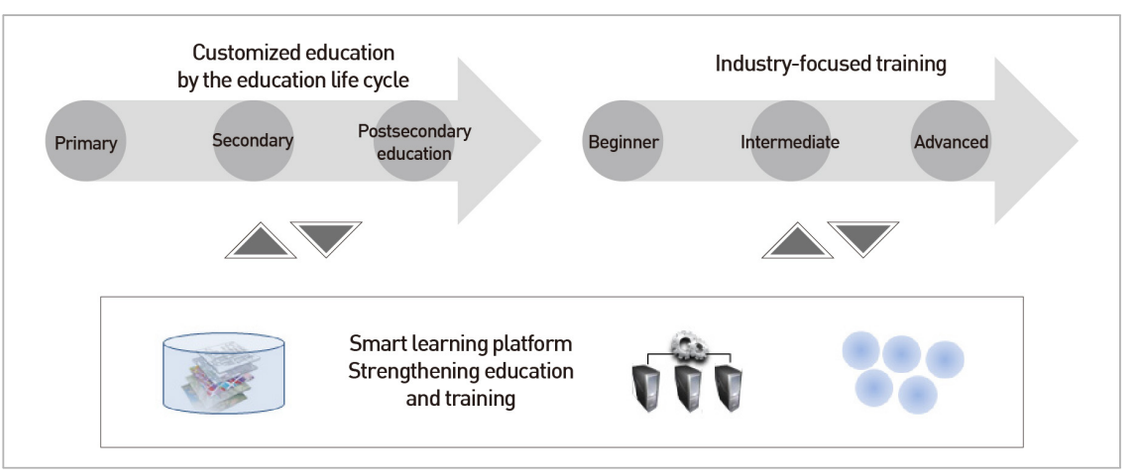
- 정보의 개방 · 공유, 사업간 연계 등 융복합 활성화

6. Creative Human Resources Development for Geospatial Data Industry

Overview

● Directions

- (Customized education) Provide personalized and differentiated public and private education and training by the K-12 education life cycle and by the job level to promote human capacity building
- (Industry-focused education) Develop converging education contents to promote the information technology and creativity and to strengthen technical training required in the industrial fields
- (Strengthening education and training platform) Establish a smart learning platform in which industry, universities, research institutes and governments can participate together and develop an intensive training program to intensively train professional personnel



● Detailed Policy Initiatives

[6-1] Introduction of Education Program for Cultivating Creative Human Resources in the Area of Geospatial Data Convergence

[6-2] Human Resources Development in the Area of Industry-customized Geospatial Data

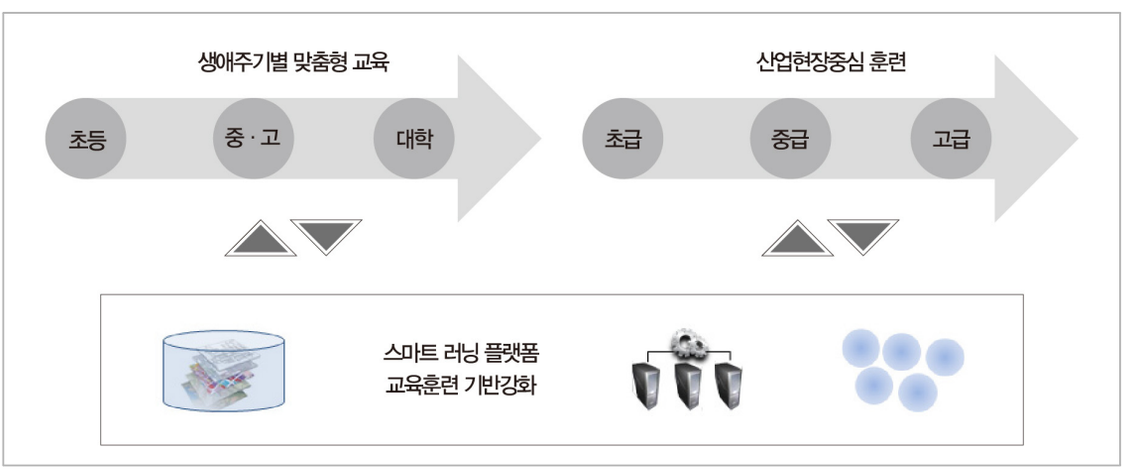
[6-3] Establishment of Participatory Geospatial Data Education Platform

6. 공간정보 창의인재 양성

개 요

● 추진방향

- (맞춤형 교육) 초·중·고등 교육생애주기별, 공공과 민간의 직무수준별 차등화 교육 및 훈련으로 인적역량 강화
- (산업현장중심 교육) 공간정보기술과 창의성을 키울 수 있는 융합교육콘텐츠 개발 및 산업현장에서 필요로 하는 기술교육 강화
- (교육훈련 기반강화) 산·학·연·관이 함께 참여할 수 있는 스마트러닝 플랫폼 구축 및 전문인력 집중훈련체계 마련



● 추진과제

[6-1] 창의인재 양성을 위한 공간정보 융합교육 도입

[6-2] 산업맞춤형 공간정보 인력양성

[6-3] 참여형 공간정보 교육플랫폼 구축

Introduction of Education Program for Cultivating Creative Human Resources in the Area of Geospatial Data Convergence

Background

- Developed countries have introduced courses of geospatial data emerging as a new growth engine of their economies into the regular curriculum of elementary, middle and high schools.
  * The United States is teaching geospatial data in elementary and secondary education under the auspices of the Federal and State Government and businesses.
- Cultivate creative talents with a specialization in geospatial data, who can demonstrate competence in various fields by providing education of the convergence of geospatial data in each education life cycle.

Detailed Policy Initiatives

1) Support for Participatory and Open Education of Geospatial Data Convergence

- Develop geospatial data-based education contents, pilot convergence education materials and guidelines to integrate geospatial data into the regular curriculum of primary and secondary schools.
- Promote participatory geospatial data convergence education (such as camps which aim to use and to experience geospatial data technology, and geospatial data Olympiad).

2) Cultivation of Professional Teachers to Vitalize the Education of Geospatial Data Convergence

- Conduct short-term, intensive convergence education training for elementary and secondary teachers.
- Develop a curriculum to provide students of specialized vocational high schools with convergence education and establish an academy to cultivate professional instructors with expertises in the field of geospatial data.

Human Resources Development in the Area of Industry-customized Geospatial Data

Background

- Since there is not enough workforce with expertise in converging technologies including geospatial data, the supply-demand imbalance of human resources in this field is being intensified.
- It is necessary to increase youth employment by strengthening linkages of public and vocational education and to support employment and welfare by improving job skills of employees.

▪▪ 창의인재 양성을 위한 공간정보 융합교육 도입

● 추진배경

- 선진국의 경우 창조경제의 신성장동력으로 부상하고 있는 공간정보를 오래전에 초·중·고 정규교육 과정에 도입
  * 미국은 연방정부 및 주정부와 관련 기업의 후원으로 초·중등학교 교육에 공간정보를 활용
- 교육생애주기별로 공간정보를 접목한 융합교육을 실시하여 사회 각 분야에서 역량을 발휘할 수 있는 공간정보 창의인재를 양성

● 세부추진과제

1) 참여·개방형 공간정보 융합교육 지원

- 초·중·고등 교육기관의 교육과정에 융합할 수 있는 공간정보기반 교육콘텐츠 발굴, 융합교육교재 시범 개발 및 가이드라인 마련
- 공간정보기술 활용 및 체험 캠프, 공간정보 올림피아드 개최 등 참여형 공간정보 융합교육 활성화

2) 공간정보 융합교육 활성화를 위한 전문교원 양성

- 초·중등교사를 대상으로 단기간 융합교육 집중연수 실시
- 공간정보 특성화고 기술인재 융합교육을 위한 커리큘럼 개발 및 전문교원(강사) 양성을 위한 아카데미 운영

▪▪ 산업맞춤형 공간정보 인력양성

● 추진배경

- 공간정보 융복합시대에 산업현장에 바로 투입할 수 있는 기술역량을 보유한 인적자원의 수급 불균형이 심화
- 공교육과 직업교육의 연계를 강화하여 청년취업을 확대하고, 재직자의 직무능력을 강화하는 등 고용복지 지원 필요

● Detailed Policy Initiatives

1) Cultivating Professionals in Geospatial Data Industry Through Employment Connections

- Foster specialized vocational high schools* and colleges supported by government ministries to cultivate professional workforce needed in the area of the geospatial data industry.
  * Develop customized education programs and support job search activities of interns and graduates through the collaboration between education agencies (including the Ministry of Education), firms and schools.
- Operate the academy to provide an intensive training program for software engineers needed in the converging geospatial data industry.

2) Cultivating Professionals in the Field of Geospatial Data Convergence

- Cultivate creative and talented people by developing specialized graduate programs geared towards industries and promote startup enterprises in connection with entrepreneurship support centers.
- Improve job skills of employees working in the private and public sector, provide them with training for converging mind and operate the capacity building program for employees for overseas employment.
  * Operate geospatial data-focused training courses through a national human resources development consortium under the leadership of the Ministry of Employment and Labor.

▪▫ Establishment of Participatory Geospatial Data Education Platform

● Background

- Develop and improve educational infrastructure in which industry, universities, research institutes, and government participate together to train creative and talented people through expanded geospatial data eduction opportunities.

● Detailed Policy Initiatives

1) Establishment of Geospatial Data Smart Learning Platform

- Build a geospatial data smart learning platform in which industry, universities, research institutes, and government participate together in order to take advantage of and share educational contents and learning activities.
  - Implement an education mentor system and promote an educational community through the platform.

2) Institutional Improvement such as the Establishment of Authentication System for Geospatial Data Professionals

- Develop a system which will evaluate and certify the level of job performance, based on National Competency Standards.
  * National Competency Standards, the national job skill standards, is a system through which the government evaluates the level of people's knowledge and skills required to perform their duties in a certain segment of industry.
- Improve promotion systems and institutions to train professionals with expertise in geospatial data.
  - Expand the educational role of certain agencies to cultivate professional workforce needed in this geospatial data industry.

● 세부추진과제

1) 고용연계를 통한 현장형 전문기술인력 양성

- 공간정보산업 현장중심의 전문기술인력 양성을 위한 정부부처연계형 특성화고* · 전문대 육성
  * 교육부와 협력하여 부처-기업-학교 간 맞춤형 교육 개발·운영, 취업연계 등 지원
- 공간정보 융복합산업에서 요구되는 SW기술자 양성을 위한 공간정보 실무·기술 집중훈련 아카데미 운영

2) 공간정보 융복합 전문인력 양성

- 산학연계형 특성화대학원을 육성하여 융복합 창의인재를 양성하고 창업지원센터와 연계하여 창업이 활성화될 수 있도록 지원
- 기업종사자, 공무원 등의 직무역량을 강화하고 융복합 마인드 교육 및 해외취업을 위한 재직자 역량강화 교육훈련프로그램* 운영
  * 고용노동부의 국가인적자원개발 컨소시움사업으로 공간정보기술 집중 훈련과정 운영

▪▫ 참여형 공간정보 교육플랫폼 구축

● 추진배경

- 공간정보 교육의 저변확대를 통한 창의인재 양성을 위해 산·학·연·관이 공동으로 참여하는 교육기반 확충 및 정비

● 세부추진과제

1) 공간정보 스마트러닝 플랫폼 구축

- 산·학·연·관이 함께 참여하여 교육콘텐츠와 학습활동을 공유·활용할 수 있는 공간정보 스마트러닝 플랫폼 구축
  - 플랫폼을 통해 교육멘토제 실시 및 교육커뮤니티 활성화

2) 공간정보 전문인력 인증체계 구축 등 제도 개선

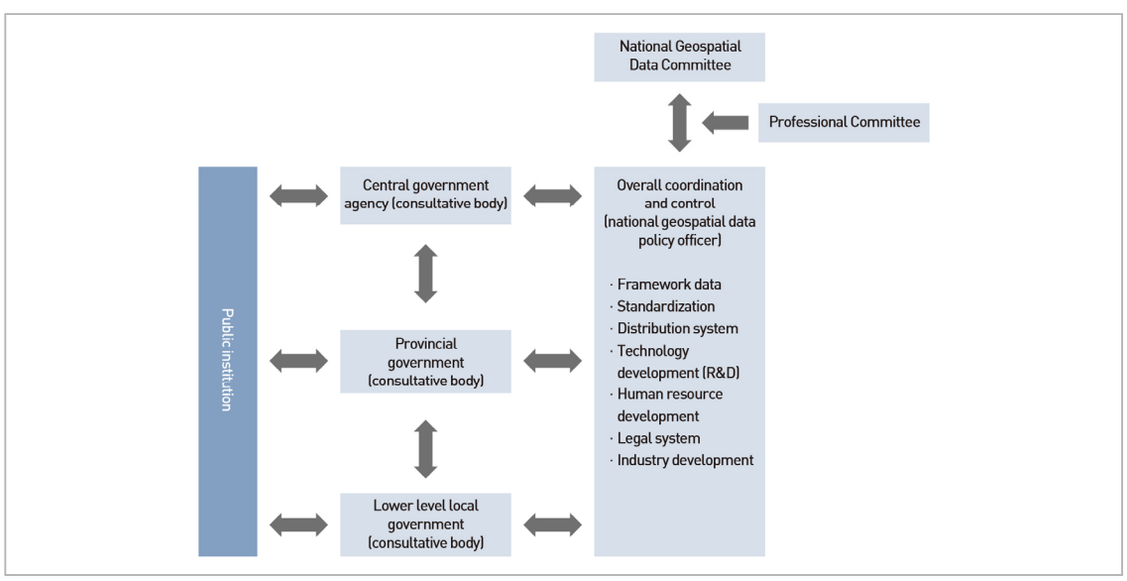
- 국가직무능력표준을 기반으로 직무수행능력의 수준을 평가하여 인증할 수 있는 제도를 마련
  * 국가직무능력표준(National Competency Standards)은 산업현장의 직무 수행에 요구되는 지식·기술·소양을 국가가 산업부문별·수준별로 체계화한 것
- 공간정보 전문인력 양성을 위한 추진체계 정비 및 제도개선
  - 일부 기관의 공간정보 전문인력 양성센터 역할 확대방안 모색

7. Establishment of Execution System for Geospatial Data Convergence Policies

Overview

● Directions

- (Building a collaborative system to promote geospatial data) Establish a geospatial data policy promotion network for the vertical coordination and the horizontal cooperation among various management agencies
- (Establishing a progressive cycle of policy process) Establish a positive cycle including agenda setting, decision, enforcement, assessment and feedback.
- (Improving the existing legal system for convergence) Establish relationships between relevant laws and lay the basis to promote the convergence of geospatial data technologies



● Detailed Policy Initiatives

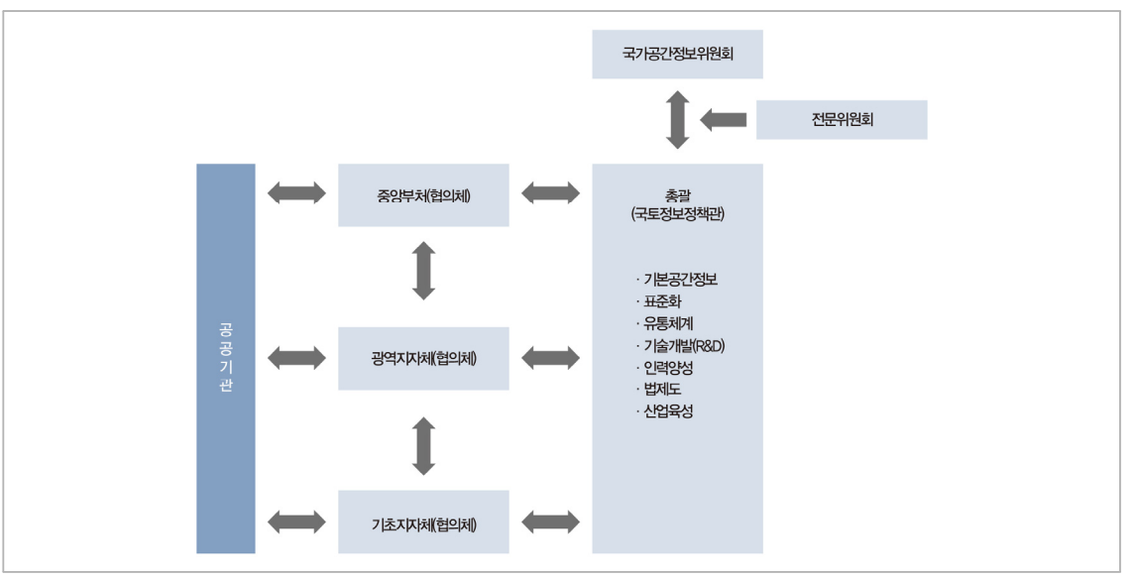
[7-1] Establishment of Inter-governmental Cooperation System
[7-2] Strengthening Geospatial Data Policy Feedback
[7-3] Foundation Formation to Promote Geospatial Data Convergence
[7-4] Strengthening Geospatial Data Policy Research

7. 융복합 공간정보정책 추진체계 확립

개 요

● 추진방향

- (협력적 추진체계 구축) 다양한 관리기관간 수직적 조정 및 수평적 협력이 이루어지는 공간정보정책 추진네트워크 구축
- (발전적 정책순환과정 확립) 의제설정-결정-집행-평가 및 환류 등 정책과정의 선순환체계 확립
- (융복합을 위한 법체계 개선) 법률 간의 위상관계 정립 및 융복합산업 활성화를 위한 근거 마련



● 추진과제

[7-1] 범정부 협력체계 구축

[7-2] 공간정보정책 피드백 강화

[7-3] 공간정보 융복합 활성화를 위한 기반조성

[7-4] 공간정보 정책연구 강화

Establishment of Inter-governmental Cooperation System

Background

- Since cooperation among relevant agencies to promote projects is not established, it is difficult to secure the integrity of geospatial data and to create synergy through the use of geospatial data.

Detailed Policy Initiatives

1) Introduction of Geospatial Data Officer in charge of Geospatial Data Policies

- Hire professionals to promote national geospatial data policies and projects in cooperation with the other institutions.
  * In 1998, the United States started to appoint Geospatial Data officer working in federal, state and local governments.

2) Construction and Management of Communication Room for Management Agencies

- Create a communication room for geospatial data-related agencies to identify, to select, to implement and to evaluate policies on geospatial data as well as to share and accumulate such policy information.

3) Construction of Geospatial Data Utilization Support System for Successful Execution of National Policies

- Establish a dedicated agency which all of the relevant government agencies can support in order to successfully complete national policy works and create synergy of policies by taking advantage of geospatial data.
  * (e.g.) Creating and operating a dedicated team in the National Spatial Data Center.

Strengthening Geospatial Data Policy Feedback

Background

- Insufficient linkage between the establishment, enforcement and evaluation of geospatial data policies, and the current assessment system is so inadequate that it is hard to make an actual evaluation of policy performance.

▪▪ 범정부 협력체계 구축

● 추진배경

- 공간정보사업을 추진하는 기관간 협력체계가 미흡하여 공간정보의 정합성 확보가 어렵고 공간정보를 활용한 시너지 창출 미약

● 세부추진과제

1) 관리기관의 공간정보정책을 전담하는 공간정보담당관제 도입

- 각 기관의 공간정보정책 및 사업을 주관하고 타 기관과 협력하여 국가공간정보정책을 추진하는 전문인력 배치

  * 미국은 '08년 연방·주·지자체에 공간정보담당관(Geospatial Data officer) 도입

2) 관리기관들이 참여하는 소통방 구축 및 운영

- 공간정보 관련 기관들이 정책발굴, 의사결정, 집행, 평가 등의 정책정보를 공유·축적·활용할 수 있는 소통방 개설

3) 국정과제의 성공적 추진을 위한 공간정보활용지원체계 구축

- 국정과제의 성공적 추진과 정책의 시너지 창출을 위해 공간정보를 효과적으로 활용할 수 있도록 범정부적으로 지원하는 전담조직 설치

  * (예시) 국가공간정보센터 내에 전담팀 구성·운영

▪▪ 공간정보정책 피드백 강화

● 추진배경

- 공간정보정책 수립·집행·평가간 연계가 미흡하고 정책성과를 실질적으로 평가할 수 있는 체계가 미흡

● Detailed Policy Initiatives

1) Strengthening Connections in the Execution of National Geospatial Data Policies

- Create a system to monitor the current status and trend of national geospatial data policy tasks and ensure implementation mechanisms for the tasks.
  * Report monitoring results to the National Geospatial Data Council and discuss after-action reports and preparedness measures.

2) Strengthening the Evaluation on the Effects of National Geospatial Data Policies

- Develop a policy assessment system to systematically evaluate the performance and effects of geospatial data policies in order to promote fruitful policies and create policy synergies.

3) Improvement of Sharing and Management Systems of Geospatial Data Projects

- Improve the system for project management agencies to effectively search and distinguish overlapped or redundant projects and to easily share geospatial data-related projects.

▪▫ Foundation Formation to promote Geospatial Data Convergence

● Background

- It is necessary to improve the existing legal system to clarify the relationships between relevant laws* for the purpose of promoting the convergence of geospatial data technologies, and also to conduct the convergence of the cadastre of land and the survey of land.
  * National Geospatial Data Infrastructure Act, the Act on the Land and Hydrographic Survey and the Cadastre of Land, the Act on Geospatial Data Industry Promotion and etc.

● Detailed Polilcy Initiatives

1) Legal System Rearrangement

- Rename National Geospatial Data Infrastructure Act to the Framework Act on the National Geospatial Data to clarify its nature as the basic law.
  - Change the basis of the Institute from the Act on the Land and Hydrographic Survey and the Cadastre of Land into National Geospatial Data Infrastructure Act to represent status change of Korea Cadastral Survey Corporation (such as expansion of the agency's role).
- Since the Act on the Land and Hydrographic Survey and the Cadastre of Land specifies the basic criteria and procedures of land and hydrographic surveying to build geospatial data, it is necessary to rename the Act to the Act on Geospatial Data Production and Management.

● 세부추진과제

1) 국가공간정보정책 추진의 연계성 강화

• 국가공간정보정책 추진현황의 모니터링 및 이행력 확보장치 마련

  * 모니터링 결과를 국가공간정보위원회에 보고하고 조치방안 논의

2) 국가공간정보정책 추진성과에 대한 평가 강화

• 내실 있는 정책추진과 정책시너지효과 창출을 위해 공간정보정책의 성과 및 파급효과 등을 체계적으로 평가할 수 있는 정책평가 체계 개발

3) 공간정보사업에 대한 공유 및 관리체계 개선

• 중복사업을 효과적으로 검색 · 판별하고 사업수행자가 공간정보사업 관련 정보를 쉽게 공유할 수 있도록 개선

▪▪ 공간정보 융복합 활성화를 위한 기반조성

● 추진배경

• 공간정보 융복합 활성화를 위해 관련 법률*간 역할관계를 명확히 하고 지적과 측량의 실질적 융합을 위한 제도개선 추진필요

  *「국가공간정보에 관한 법률」,「측량·수로조사 및 지적에 관한 법률」(이하 측수지법),「공간정보산업 진흥법」 등

● 세부추진과제

1) 법체계 정비

• 「국가공간정보에 관한 법률」의 기본법적 성격을 명확히 하여「국가공간정보에 관한 기본법」으로 명칭 변경

  – 지적공사의 공적역할 확대 등 위상변화를 반영하여 공사설립의 근거를 측수지법에서「국가공간정보에 관한 법률」로 이관

• 측수지법은 공간정보 구축을 위한 측량 · 수로조사의 기준 및 절차와 지적공부의 작성·관리 등에 관한 기본적인 사항을 정한 것이므로「공간정보의 구축 및 관리 등에 관한 법률」로 명칭을 변경

2) Convergence of Land Survey and Cadastre

- Change the association of the cadastre of land and the survey of land into the Association of Geospatial Data Industry to facilitate the convergence of geospatial data.
- Introduce a certification system to certify comprehensive geospatial data firms in order to effectively manage land survey-related firms and reduce each firm's burden of buying and maintaining the geospatial data-related equipments on their own.
- Integrate current national technical qualification systems for the survey of land and the cadastre of land, and merge public officials in technical post into a single system.

3) Geospatial Data Industry Promotion

- Make Geospatial Data Industry Promotion Institute allowed and established by law and adjust the criteria of funding contributions so that the Institute can be stabilized.
- Rename Korea Cadastral Survey Corporation to Territorial Information Corporation to expand the public role of the agency.

▪▫ Strengthening Geospatial Data Policy Research

● Background

- It is necessary to conduct research on the promotion of the convergence to create new industries and jobs by means of geospatial data which can be a growth engine of a creative economy.
  - It is necessary to build statistics through a basic, systematic investigation of the current status and trend of the geospatial data industry to effectively promote industry policies.
    - ☞ It is necessary to create annual statistics since the geospatial data industry registered for the first time in the world as a new specialized industry of the nation to promote the industry.

● Detailed Polilcy Initiatives

1) Provision of Policy Research Roadmap

- Create a medium- and long-term roadmap which can help identify and conduct strategic research projects needed to build geospatial data systems and promote industrial development policies.
  - Effectively respond to the policy issues, conduct basic and fundamental research required to develop the field of geospatial data (such as new technology trends, industry statistics survey*, and model development).

* Include this research in Geospatial Data Industry Promotion Act which is under ongoing revision.

2) Improvement of Policy Research Execution System

- Create a professional evaluation team to evaluate the appropriateness of research projects and the contribution of research results, and constantly monitor the progress of research projects.

2) 측량과 지적의 융합

- 공간정보 융복합을 촉진하기 위해 지적 및 측량 관련 협회를 「공간정보산업진흥법」에 의한 공간정보산업협회로 전환
- 측량관련 유사업종을 통합하고 장비의 중복확보 부담해소 등을 위해 종합공간정보업 또는 종합공간정보기업 인증제도 도입
- 측량과 지적으로 이원화된 국가기술자격제도와 공무원직류를 통합

3) 공간정보산업 육성

- 공간정보산업진흥원의 안정화를 위해 출연기준 조정 및 법정기관화
- 대한지적공사의 공적역할을 확대하고 명칭을 「국토정보공사」로 전환

▪▫ 공간정보 정책연구 강화

● 추진배경

- 공간정보는 창조경제의 핵심동력으로 공간정보를 통한 신산업 및 일자리 창출을 적극 지원하기 위해 융복합 촉진방안 연구필요
  - 실효성 있는 산업정책 수행을 위해 공간정보산업 현황에 대한 체계적인 기초조사를 통한 통계 구축 필요
    - ☞ 공간정보산업을 육성하기 위해 국내 11번째이자 세계 최초로 공간정보산업 특수분류가 국가통계로 등록되어 매년 통계조사 필요

● 세부추진과제

1) 정책연구 로드맵 마련

- 공간정보체계 구축 및 산업육성정책에 필요한 전략연구과제를 발굴하여 체계적으로 추진하기 위한 중장기 로드맵 마련
  - 정책현안에 효과적으로 대응하고, 신기술 동향, 산업통계 조사*, 모델개발 등 공간정보분야의 발전에 기초가 되는 연구 수행

  * 개정 추진 중인 「공간정보산업진흥법(안)」에 반영

2) 정책연구 수행체계 개선

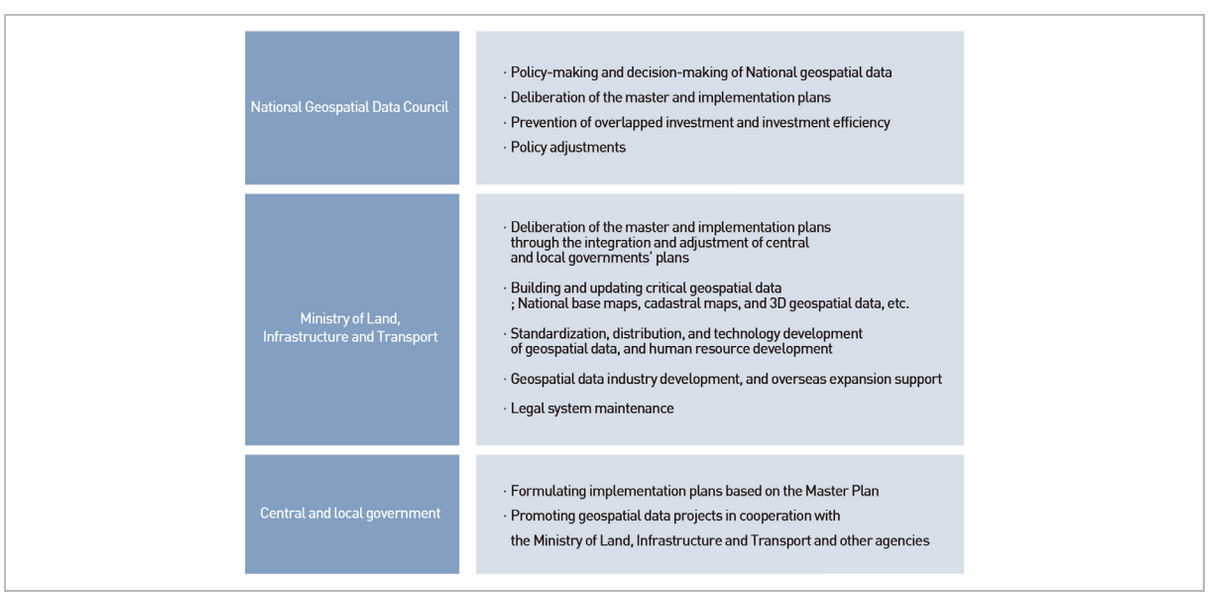
- 과제의 적정성과 연구결과의 정책기여도를 평가하고 연구과제 진행상황을 상시 모니터링하기 위한 전문평가단 운영

Ⅳ. Action Plan

1. Execution System

▪▪ Status

- (National Geospatial Data Council) Deliberation and decision-making of national geospatial data policies
- (Ministry of Land, Infrastructure and Transport) Formulating master and implementation plans for national geospatial data policies, and supervising and coordinating geospatial data projects
- (Central and local government agencies) Developing agency-specific master and implementation plans



< Future Development Directions of Execution System >

- Reorganize the subcommittee within the National Geospatial Data Council into a professional committee to make a substantive review for all the agendas, which will contribute to effectively operating the Council
- Form and operate a consultative group consisting of geospatial data officers to share information on geospatial data policies and projects, conduct technology exchanges and strengthen cooperation among relevant agencies

Ⅳ. 추진방안

1. 추진체계

▪▪ 현황

- (국가공간정보위원회) 국가공간정보정책의 심의의결
- (국토교통부) 국가공간정보정책 기본계획 및 시행계획 수립, 공간정보사업에 대한 총괄 · 조정
- (중앙부처 · 지자체) 기관별 기본계획 및 시행계획 수립

< 향후 추진체계 발전방향 >

- 국가공간정보위원회의 운영을 내실화하기 위해 분과위원회를 안건에 대한 실질적인 검토가 가능하도록 전문위원회로 개편
- 공간정보정책 및 사업에 대한 정보공유, 기술교류, 협력강화 등을 위해 공간정보담당관으로 구성된 협의체 구성 · 운영

2. Organizations in Charge of Each Project

1) Construction of High-quality Geospaital Data and Opening Expansion

Policy Initiatives	Detailed Policy Initiatives	Time Schedule					Organization
		1	2	3	4	5	
1-1 Quality Assurance of Geospatial Data and the Establishment of Management Systems	1-1-1. Construction and Management of Framework Data						Ministry of Land, Infrastructure and Transport, Ministry of Security and Public Administration, Ministry of Oceans and Fisheries, National Statistical office, Local governments
	1-1-2. Establishment Expansion of Three-Dimensional and Indoor Geospatial Data						
	1-1-3. Advancement of National Base Ma ps						
1-2 Execution of Cadastral Resurvey	1-2-1. Resolving Cadastral Discrepancy						Ministry of Land, Infrastructure and Transport, Local governments
	1-2-2. Conversion to World Geodetic System						
	1-2-3. Construction of Administrative System for Cadastral Resurvey						
1-3 Establishment of Clearinghouse for the Opening Expansion and Utilization Enhancement of Geospatial Data	1-3-1. User-centered Opening Expansion of National Geospatial Data						Central ministries, Local governments
	1-3-2. Public Opening and Function Improvement of National Geospatial Data Clearinghouse						
	1-3-3. Monitoring the Demand and Utilization Status of Geospatial Data						
	1-3-4. Establishment of New Clearinghouse Governance System for Opening National Geospatial Data						
	1-3-5. Improvement of Legal System to Enhance the Distribution of Geospatial Data						
1-4 Establishment of International-level Geospatial Data Standardization System for Convergence Acceleration	1-4-1. Effectiveness enhancement of Geospatial Data Standards by Strengthening the Functions of Geospatial Data Standardization Support Organizations						Ministry of Land, Infrastructure and Transport, Ministry of Commerce, Industry and Energy, Ministry of Oceans and Fisheries
	1-4-2. Leading the International Standardization Activities in the Areas of High Competency such as Indoor Geospatial Data						
	1-4-3. Strengthening Consulting and Education to Promote the Application of the Standards						

2. 과제별 담당기관

1) 고품질 공간정보 구축 및 개방 확대

과제	세부과제	추진일정					담당기관
		1	2	3	4	5	
1-1 공간정보 품질확보 및 관리체계 확립	1-1-1. 기본공간정보 구축 및 관리	■	■	■	■	■	국토부, 안행부, 해수부, 통계청, 지자체
	1-1-2. 3차원 공간정보 및 실내공간정보 확대구축	■	■	■	■	■	
	1-1-3. 국가기본도 고도화	■	■	■	■	■	
1-2 지적재조사 추진	1-2-1. 지적불부합지 해소	■	■	■	■	■	국토부, 지자체
	1-2-2. 세계측지계 변환	■	■	■	■	■	
	1-2-3. 지적재조사 행정시스템 구축	■	■	■	■	■	
1-3 공간정보 개방확대 및 활용 활성화를 위한 유통체계 확립	1-3-1. 수요자 중심의 국가공간정보 개방 확대		■	■	■	■	중앙부처, 지자체
	1-3-2. 국가공간정보유통시스템 민간개방 및 기능개선	■	■	■	■	■	
	1-3-3. 공간정보 수요 및 활용실태 모니터링		■	■	■	■	
	1-3-4. 국가공간정보 공개·개방을 위한 새로운 유통거버넌스 체계 구축	■	■	■	■	■	
	1-3-5. 공간정보 유통 활성화를 위한 법제도 개선		■	■	■	■	
1-4 융복합 촉진을 위한 국제수준 공간정보표준체계 확립	1-4-1. 공간정보 표준지원기관 기능강화로 공간정보표준의 실효성 제고	■	■	■	■	■	국토부, 산자부, 해수부
	1-4-2. 실내공간정보 등 경쟁력 높은 분야의 국제표준활동 주도		■	■	■	■	
	1-4-3. 표준적용 활성화를 위한 컨설팅 및 교육 강화		■	■	■	■	

2) Promotion for Geospatial Data Convergence Industry

Policy Initiatives	Detailed Policy Initiatives	Time Schedule					Organization
		1	2	3	4	5	
2-1 Support for Geospatial Data-based Start-up Business and Enterprise Capacity Building	2-1-1. Support for Youth's Start-up Business	■	■	■	■	■	Ministry of Land, Infrastructure and Transport, Ministry of Science, ICT and Future Planning, and Small and Medium Business Administration
	2-1-2. Support for the Capacity Building of Geospatial Data Enterprises		■	■	■	■	
2-2 Establishment of Support System for Geospatial Data Convergence Industry	2-2-1. Designation of Geospatial Data Industry Promotion Facility to Vitalize Geospatial Data Convergence		■	■	■	■	Ministry of Land, Infrastructure and Transport
	2-2-2. Hosting Smart Geospatial Expo to Lead Geospatial Data Conversion Industry	■	■	■	■	■	
	2-2-3. Establishment of Dedicated Support System to Promote Geospatial Data Conversion		■	■	■	■	
2-3 Support for Overseas Market Expansion of Geospatial Data Enterprises	2-3-1. Supporting Capacity Building of Overseas Market Expansion of Geospatial Data Industry		■	■	■	■	Prime Minister's Secretariat, Ministry of Land, Infrastructure and Transport, Ministry of Employment and Labor, Ministry of Science, ICT and Future Planning, Ministry of Trade, Industry and Energy, Small and Medium Business Administration
	2-3-2. Basis Establishment for Overseas Market Expansion	■	■	■	■	■	
	2-3-3. Strengthening the Roles of Overseas Market Expansion Support Center for Geospaital Data Industry		■	■	■	■	

2) 공간정보 융복합산업 활성화

과제	세부과제	추진일정					담당기관
		1	2	3	4	5	
2-1 공간정보기반 창업 및 기업역량 강화 지원	2-1-1. 청년창업 지원						국토부, 미래부, 중기청
	2-1-2. 공간정보기업의 역량강화 지원						
2-2 공간정보 융복합산업 지원체계 구축	2-2-1. 공간정보 융복합 활성화를 위한 공간정보산업진흥시설 지정						국토부
	2-2-2. 공간정보 융복합 산업을 선도하는 스마트국토 엑스포 개최						
	2-2-3. 공간정보 융복합을 촉진할 수 있는 전담지원체계 마련						
2-3 공간정보기업 해외진출 지원	2-3-1. 공간정보기업 해외진출 역량강화 지원						총리실, 국토부, 고용부, 미래부, 산업부, 중기청
	2-3-2. 해외시장 진출을 위한 기반 구축						
	2-3-3. 공간정보산업 해외진출지원센터 역할 강화						

3) Strengthening Geospatial Big Data-based Platform Services

Policy Initiatives	Detailed Policy Initiatives	Time Schedule					Organization
		1	2	3	4	5	
3-1 Establishment of Geospatial Big Data System	3-1-1. Establishment of Information Strategic Plan to Develop Geospatial Big Data System						Ministry of Land, Infrastructure and Transport, Ministry of Security and Public Administration
	3-1-2. Building a Base for Geospatial Big Data System						
	3-1-3. Technology Development for Convergence of Geospatial Data with Big Data and Analysis						
3-2 Establishment of Geospatial Big Data-based National Policy Support Platform	3-2-1. Development of Spatial Analysis Models to Execute National Policies						Central ministries, Local governments
	3-2-2. Establishment of Communication Room for Public Participation in Policy-Making Process						
	3-2-3. Development of Analysis Models Management System						
	3-2-4. Establishment of an Agency Dedicated to National Policy Support Platform						

3) 공간 빅데이터 기반 플랫폼서비스 강화

과제	세부과제	추진일정					담당기관
		1	2	3	4	5	
3-1 공간 빅데이터체계 구축	3-1-1. 공간 빅데이터체계 구축을 위한 정보화전략계획 수립						국토부, 안행부
	3-1-2. 공간 빅데이터체계를 위한 기반 구축						
	3-1-3. 공간정보와 빅데이터의 융합 및 분석기술 개발						
3-2 공간 빅데이터 기반 국가정책지원플랫폼 구축	3-2-1. 국정과제 수행에 필요한 공간분석모형 개발						중앙부처, 지자체
	3-2-2. 정책과정에 국민이 참여하는 소통방 마련						
	3-2-3. 분석모형 관리체계 구축						
	3-2-4. 국가정책지원플랫폼 운영전담조직 설치						

4) Execution of R&D for Geospatial Data Convergence Technology

Policy Initiatives	Detailed Policy Initiatives	Time Schedule					Organization
		1	2	3	4	5	
4-1 Improvement of Management System to Secure the Practicality of Geospatial Data Technology R&D	4-1-1. Establishment of Execution System for User-centered R&D						Ministry of Land, Infrastructure and Transport
	4-1-2. Systematization of Achievement Management for Utilization Enhancement of Research Results						
	4-1-3. Support for Utilization of R&D Achievements						
4-2 Technology Development for Geospatial Data Processing and its Converged Utilization to Support Industries	4-2-1. Technology Development for Geospatial Data-based Big Data Analysis and Utilization						Ministry of Land, Infrastructure and Transport
	4-2-2. Technology Development for Open Source-based Geospatial Data Processing and Utilization						
	4-2-3. Technology Development for Industry Specific Geospatial Data Provision						
4-3 Development of Geospatial Data Technology and Products for Convenient Life	4-3-1. Development of Indoor Locational Information Services for Convenient Life						Ministry of Land, Infrastructure and Transport
	4-3-2. Development of Geospatial Data-applied Products for Comfortable Life						
4-4 Development of Geospatial Data Technology for Life Safety	4-4-1. Development of Next-generation All-terrain Ultra-light Unmanned Aircraft						Ministry of Land, Infrastructure and Transport
	4-4-2. Establishment of City Management System Safe against Crime, Disasters and Catastrophes						
	4-4-3. Technology Development for Systematic Development and Safety Management of Underground Spaces						
4-5 Development of Geospatial Data Technology as New Growth Engine	4-5-1. Development of Satellite Technology Dedicated to Geospatial Data						Ministry of Land, Infrastructure and Transport, Ministry of Science, ICT and Future Planning
	4-5-2. Technology Development for Geospatial Imagery Data Services						
	4-5-3. Technology Development for Promoting the Commercialization of 3D Geospatial Data						
	4-5-4. Technology Development for Spatio-Temporal Data Construction						
4-6 National and Arctic Geospatial Data Construction Preparing for the Expansion of Exchange between South and North Korea	4-6-1. Establishment of National Geospatial Data System to Enhance Territorial Competitiveness						Central ministries
	4-6-2. Establishment of Arctic Geospatial Data System Preparing for the Future						

4) 공간정보 융합기술 R&D 추진

과제	세부과제	추진일정 1 2 3 4 5	담당기관
4-1 공간정보기술 R&D 실용성 확보를 위한 관리체계 개선	4-1-1. 수요자 중심 연구개발 추진을 위한 추진체계 구성		국토부
	4-1-2. 연구결과의 활용·확산을 위한 성과관리 체계화		
	4-1-3. R&D 성과의 실용화 지원		
4-2 산업지원 공간정보 가공 및 융복합 활용기술 개발	4-2-1. 공간정보에 기초한 빅데이터 분석 및 활용기술 개발		국토부
	4-2-2. 오픈소스 기반 공간정보 가공 및 활용기술 개발		
	4-2-3. 산업별 특성에 맞는 맞춤형 공간정보 제공기술 개발		
4-3 생활편리 공간정보기술 및 제품 개발	4-3-1. 편리한 생활을 위한 실내용 위치정보제공 서비스 개발		국토부
	4-3-2. 안락한 생활을 위한 공간정보 활용 제품 개발		
4-4 생활안전 공간정보기술 개발	4-4-1. 차세대 전천후 초경량 무인항공기 개발		국토부
	4-4-2.. 범죄, 재해·재난으로부터 안전한 도시공간정보 구축		
	4-4-3. 지하공간의 체계적 개발 및 안전관리를 위한 기술개발		
4-5 신성장동력 공간정보기술 개발	4-5-1. 공간정보 전용위성기술 개발		국토부, 미래부
	4-5-2. 공간영상정보 서비스 기술 개발		
	4-5-3. 3차원 공간정보 상용화 촉진기술 개발		
	4-5-4. 시공간정보 구축기술 개발		
4-6 남북 교류확대에 대비한 국토정보 및 북극 공간정보 구축	4-6-1. 국토경쟁력 제고를 위한 국토정보체계 구축		중앙부처
	4-6-2. 미래시대에 대비한 북극 공간정보체계 구축		

5) Collaborative Advancement of Geospatial Data System and Utilization Enhancement

Policy Initiatives	Detailed Policy Initiatives	Time Schedule					Organization
		1	2	3	4	5	
5-1 Plan Establishment for the Construction of Cloud-based Geospatial Data System and Institutional Basis	5-1-1. Plan Establishment for the Construction of Cloud-based Geospatial Data System						Central ministries, Local governments
	5-1-2. Construction of Agency-specific Cloud Management Systems						
	5-1-3. Institutional Rearrangement and Education Support for Cloud System Construction and Management						
5-2 Geospatial Data Update for Securing Consistency	5-2-1. Framework Data-based Geospatial Data Construction						Central ministries, Local governments
	5-2-2. Conversion of Renewed Geospatial Data to Cloud Data						
5-3 Establishment of Cloud System Utilization Services	5-3-1. Cloud-Based Geospatial Data Service Development Standards						Central ministries, Local governments
	5-3-2. Development of Common Business Functions into Cloud Services						
	5-3-3. Application of Cloud Services to Geospatial Data Systems						
	5-3-4. Construction of Cloud Services Distribution Network						
5-4 Advancement of Agency-specific Geospatial Data Systems	5-4-1. Advancement of Environmental Geospatial Data (The Ministry of Environment)						Central ministries, Local governments
	5-4-2. Advancement of Forest Geospatial Data (Korea Forest Service)						
	5-4-3. Advancement of Geospatial Data for Cultural Heritage (Cultural Heritage Administration)						
	5-4-4. Advancement of Geospatial Data for Trade, Industry and Energy (Ministry of Trade, Industry and Energy)						
	5-4-5. Advancement of Geospatial Data for Marine Affairs (Ministry of Maritime Affairs and Fisheries)						
	5-4-6. Advancement of Geospatial Data for Agriculture and Forestry (Ministry of Agriculture, Food and Rural Affairs, Rural Development Administration)						
	5-4-7. Advancement of Geospatial Data for Land, Infrastructure and Transportation (Ministry of Land, Infrastructure and Transport)						
	5-4-8. Advancement of Statistical Geospatial Data (National Statistical office)						
	5-4-9. Advancement of Geospatial Data for Fire-fighting and Disaster Prevention (National Emergency Management Agency)						
	5-4-10. Advancement of Geospatial Data for Security and Public Administration (Ministry of Security and Public Administration)						
	5-4-11. Advancement of Geospatial Data for Local and Metropolitan Governments (Local and Metropolitan Governments)						

5) 협력적 공간정보체계 고도화 및 활용 확대

과제	세부과제	추진일정 1 2 3 4 5	담당기관
5-1 클라우드 기반 공간정보체계 구축계획 수립 및 제도기반 마련	5-1-1. 클라우드 기반 공간정보체계 구축계획 수립		중앙부처, 지자체
	5-1-2. 기관별 클라우드 관리체계 구축		
	5-1-3. 클라우드체계 구축·운영을 위한 제도정비 및 교육지원		
5-2 정합성 확보를 위한 공간정보 갱신	5-2-1. 기본공간정보 기반의 공간정보 구축		중앙부처, 지자체
	5-2-2. 갱신된 공간정보의 클라우드 데이터 전환		
5-3 클라우드체계 활용서비스 구축	5-3-1. 클라우드 기반 공간정보서비스 개발표준		중앙부처, 지자체
	5-3-2. 공통 업무기능을 클라우드서비스로 개발		
	5-3-3. 클라우드서비스를 공간정보체계에 적용		
	5-3-4. 클라우드서비스 유통망 구축		
5-4 기관별 공간정보체계 고도화	5-4-1. 환경공간정보 고도화		중앙부처, 지자체
	5-4-2. 산림공간정보 고도화		
	5-4-3. 문화재공간정보 고도화		
	5-4-4. 산업통상공간정보 고도화		
	5-4-5. 해양공간정보 고도화		
	5-4-6. 농림공간정보 고도화		
	5-4-7. 국토교통공간정보 고도화		
	5-4-8. 통계공간정보 고도화		
	5-4-9. 소방방재공간정보 고도화		
	5-4-10. 안전행정공간정보 고도화		
	5-4-11. 지방자치단체 공간정보 고도화		

Policy Initiatives	Detailed Policy Initiatives	Time Schedule					Organization
		1	2	3	4	5	
5-5 Collaborative Projects for the Creation of Policy Synergy	5-5-1. Collaborative Projects between the Ministry of Security and Public Administration and the Ministry of Land, Infrastructure and Transport						Ministry of Food and Drug Safety, Presidential Committee on Young Generation, Ministry of Strategy and Finance, Ministry of Science, ICT and Future Planning, Ministry of Education, Ministry of Foreign Affairs, Ministry of Unification, Ministry of National Defense, Ministry of Security and Public Administration, Ministry of Agriculture and Forestry, Ministry of Employment and Labor, National Tax Service, National Emergency Management Agency, Small and Medium Business Administration, Korea Meteorological Administration
	5-5-2. Collaborative Projects between National Tax Service and the Ministry of Land, Infrastructure and Transport						
	5-5-3. Collaborative Projects between the Ministry of Strategy and Finance and the Ministry of Land, Infrastructure and Transport						
	5-5-4. Collaborative Projects between the Ministry of Agriculture, Food and Rural Affairs and the Ministry of Land, Infrastructure and Transport						
	5-5-5. Collaborative projects between the Ministry of Food and Drug Safety and the Ministry of Land, Infrastructure and Transport						
	5-5-6. Collaborative Projects between Small and Medium Business Administration and the Ministry of Land, Infrastructure and Transport						
	5-5-7. Collaborative Projects between the Ministry of Foreign Affairs and the Ministry of Land, Infrastructure and Transport						
	5-5-8. Collaborative Projects between the Ministry of Security and Public Administration, the Ministry of Science, ICT and Future Planning, and the Ministry of Land, Infrastructure and Transport						
	5-5-9. Collaborative Projects between the Ministry of Employment and Labor and the Ministry of Land, Infrastructure and Transport						
	5-5-10. Collaborative Projects between National Emergency Management Agency and the Ministry of Land, Infrastructure and Transport						
	5-5-11. Collaborative Projects between the Ministry of Education and the Ministry of Land, Infrastructure and Transport						
	5-5-12. Collaborative Projects between the Ministry of Security and Public Administration, Presidential Committee on Young Generation, and the Ministry of Land, Infrastructure and Transport						
	5-5-13. Collaborative Projects between Korea Meteorological Administration, National Emergency Management Agency, and the Ministry of Land, Infrastructure and Transport and Transport						
	5-5-14. Collaborative Projects between the Ministry of National Defense, the Ministry of Science, ICT and Future Planning, and the Ministry of Land, Infrastructure and Transport						
	5-5-15. Collaborative Projects between the Ministry of National Defense, the Ministry of Unification, the Ministry of Science, ICT and Future Planning, and the Ministry of Land, Infrastructure and Transport						
	5-5-16. Strengthening Linkages between National Geospatial Data Policies, U-City and ITS Policies						

과제	세부과제	추진일정					담당기관
		1	2	3	4	5	
5-5 정책시너지 창출을 위한 협업과제	5-5-1. 안행부-국토부 협업과제						식약처, 청년위, 기재부, 미래부, 교육부, 외교부, 통일부, 국방부, 안행부, 농림부, 고용부, 국세청, 방재청, 중기청, 기상청
	5-5-2. 국세청-국토부 협업과제						
	5-5-3. 기획재정부-국토부 협업과제						
	5-5-4. 농림축산식품부-국토부 협업과제						
	5-5-5. 식품의약품안전처-국토부 협업과제						
	5-5-6. 중소기업청-국토부 협업과제						
	5-5-7. 외교부-국토부 협업과제						
	5-5-8. 안전행정부-미래창조과학부-국토부 협업과제						
	5-5-9. 고용노동부-국토부 협업과제						
	5-5-10. 소방방재청-국토부 협업과제						
	5-5-11. 교육부-국토부 협업과제						
	5-5-12. 안전행정부-청년위원회-종소기업청-국토부 협업과제						
	5-5-13. 기상청-소방방재청-국토부 협업과제						
	5-5-14. 국방부-미래창조과학부-국토부 협업과제						
	5-5-15. 국방부-통일부-미래창조과학부 협업과제						
	5-5-16. U-City 및 ITS 정책과 국가공간정보정책의 연계 강화						

6) Creative Human Resources Development for Geospatial Data Industry

Policy Initiatives	Detailed Policy Initiatives	Time Schedule					Organization
		1	2	3	4	5	
6-1 Introduction of Education Program for Cultivating Creative Human Resources in the Area of Geospatial Data Convergence	6-1-1. Support for Participatory and Open Education of Geospatial Data Convergence		■	■	■	■	Ministry of Land, Infrastructure and Transport, Ministry of Education, Ministry of Employment and Labor
	6-1-2. Cultivation of Professional Teachers to Vitalize the Education of Geospatial Data Convergence		■	■	■	■	
6-2 Human Resources Development in the Area of Industry-customized Geospatial Data	6-2-1. Cultivating Professionals in Geospatial Data Industry Through Employment Connections		■	■	■	■	Ministry of Land, Infrastructure and Transport, Ministry of Education, Ministry of Employment and Labor
	6-2-2. Cultivating Professionals in the Field of Geospatial Data Convergence	■	■	■	■	■	
6-3 Establishment of Participatory Geospatial Data Education Platform	6-3-1. Establishment of Geospatial Data Smart Learning Platform	■	■	■	■	■	Ministry of Land, Infrastructure and Transport, Ministry of Education, Ministry of Employment and Labor
	6-3-2. Institutional Improvement such as the Establishment of Authentication System for Geospatial Data Professionals	■	■	■	■	■	

6) 공간정보 창의인재 양성

과제	세부과제	추진일정					담당기관
		1	2	3	4	5	
6-1 창의인재 양성을 위한 공간정보 융합교육 도입	6-1-1. 참여·개방형 공간정보 융합교육 지원		■	■	■	■	국토부, 교육부, 고용부
	6-1-2. 공간정보 융합교육 활성화를 위한 전문교원 양성		■	■	■	■	
6-2 산업맞춤형 공간정보 인력양성	6-2-1. 고용연계를 통한 현장형 전문기술인력 양성		■	■	■	■	국토부, 고용부, 교육부
	6-2-2. 공간정보 융복합 전문인력 양성	■	■	■	■	■	
6-3 참여형 공간정보 교육플랫폼 구축	6-3-1. 공간정보 스마트러닝 플랫폼 구축	■	■	■	■	■	국토부, 고용부, 교육부
	6-3-2. 공간정보 전문인력 인증체계 구축 등 제도 개선	■	■	■	■	■	

7) Establishment of Execution System for Geospatial Data Convergence Policies

Policy Initiatives	Detailed Policy Initiatives	Time Schedule					Organization
		1	2	3	4	5	
7-1 Establishment of Inter-Governmental Cooperation System	7-1-1. Introduction of Geospatial Data Officer in charge of Geospatial Data Policies		■	■	■	■	Central ministries, Local governments
	7-1-2. Construction and Management of Communication Room for Management Agencies		■	■	■	■	
	7-1-3. Construction of Geospatial Data Utilization Support System for Successful Execution of National Policies		■	■	■	■	
7-2 Strengthening Geospatial Data Policy Feedback	7-2-1. Strengthening Connections in the Execution of National Geospatial Data Policies		■	■	■	■	Central ministries, Local governments
	7-2-2. Strengthening the Evaluation on the Effects of National Geospatial Data Policies	■	■	■	■	■	
	7-2-3. Improvement of Sharing and Management Systems of Geospatial Data Projects	■	■	■	■	■	
7-3 Foundation Formation to promote Geospatial Data Convergence	7-3-1. Legal System Rearrangement		■				Ministry of Land, Infrastructure and Transport
	7-3-2. Convergence of Land Survey and Cadastre		■	■	■	■	
	7-3-3. Geospatial Data Industry Promotion	■	■	■	■	■	
7-4 Strengthening Geospatial Data Policy Research	7-4-1. Provision of Policy Research Roadmap	■	■	■	■	■	Ministry of Land, Infrastructure and Transport
	7-4-2. Improvement of Policy Research Execution System	■	■	■	■	■	

7) 융복합 공간정보정책 추진체계 확립

과제	세부과제	추진일정					담당기관
		1	2	3	4	5	
7-1 범정부 협력체계 구축	7-1-1. 관리기관의 공간정보정책을 전담하는 공간정보담당관제 도입		■	■	■	■	중앙부처, 지자체
	7-1-2. 관리기관들이 참여하는 소통방 구축 및 운영		■	■	■	■	
	7-1-3. 국정과제의 성공적 추진을 위한 공간정보활용지원체계 구축		■	■	■	■	
7-2 공간정보정책 피드백 강화	7-2-1. 국가공간정보정책 추진의 연계성 강화		■	■	■	■	중앙부처, 지자체
	7-2-2. 국가공간정보정책 추진성과에 대한 평가 강화	■	■	■	■	■	
	7-2-3. 공간정보사업에 대한 공유 및 관리체계 개선	■	■	■	■	■	
7-3 공간정보 융복합 활성화를 위한 기반조성	7-3-1. 법체계 정비		■				국토부
	7-3-2. 측량과 지적의 융합		■	■	■	■	
	7-3-3. 공간정보산업 육성	■	■	■	■	■	
7-4 공간정보 정책연구 강화	7-4-1. 정책연구 로드맵 마련	■	■	■	■	■	국토부
	7-4-2. 정책연구 수행체계 개선	■	■	■	■	■	

Appendices

Appendix 1. Demands of Geospatial Data Customers

- This section aims to analyze the problems and causes of the field of geospatial data, raised by customers in public and private sectors who produce, distribute and utilize geospatial data, and also to specify the demands of the customers.

- Geospatial Information Forum (Apr. 2012): This forum, formerly the space and information research committee which had been running from 2010, was launched in April, 2012. It holds a regular seminar every month to gather various opinions of experts in the field of geospatial data and to propose directions of national geospatial data policies.
- Geospatial Data Policy Council (5 rounds of meetings from Mar. to June, 2012): The council meetings were intended to identify issues of the geospatial data market through interviews with people working in the geospatial data industry, who create an added value by taking advantage of geospatial data, thus addressing such issues through opinions of experts working in public and private sectors, including government agencies, firms, academic communities, and research institutes.
- Professional Advisory Council (Dec. 10, 2011): Three rounds of meetings were held to accept opinions of professionals and public and private entities about the current status and issues of national geospatial data policies, and future directions.
- Acceptance of opinions via SNS (Oct. 2012): A Facebook page was launched to accept opinions and comments from people about directions of national geospatial data policies.
  (http://www.facebook.com/geospatialplan2015)
- Geospatial Data Forum (July 24, 2013): As a part of a systematic improvement plan to develop the geospatial data industry, this forum gathered the opinions of stakeholders about the vision, goals, strategies and tasks of the 5th Master Plan for National Geospatial Data Policies.

- As a result of the acceptance of the opinions, the users have demanded compliance of data standards, access to geospatial data, enhancement of the distribution system, activation of the industry and improvement of relative laws and regulations.

부 록

부록 1. 공간정보 수요자 요구사항

- 공간정보를 생산-유통-활용하는 공공 및 민간부문 수요자들이 생각하는 공간정보분야의 문제점과 원인을 분석하여 요구사항을 정리

- 공간정보포럼('12.4~) 2010년부터 추진해온 공간과 정보 연구회를 개편하여 2012년 4월 출범하였으며, 매달 1회 정기 세미나를 개최하여 공간정보분야의 다양한 전문가 의견을 모으고, 국가공간정보정책의 방향을 제시
- 공간정보 정책협의회('12.3~6, 5차례 개최) 공간정보를 활용하여 부가가치를 창출하는 업계 종사자들을 인터뷰하여 공간정보시장의 문제점을 파악하고, 이를 개선하기 위해 관·산·학·연의 전문가 의견을 수렴
- 전문가 자문회의('12.10~11) 국가공간정보정책의 현황과 문제점, 향후 추진방향에 대해 3회에 걸쳐 전문가, 공공기관 및 민간의 의견을 수렴
- SNS 의견수렴('12.10~) 국가공간정보정책의 추진방향에 대한 민간의 자유로운 의견수렴을 위해 페이스북 사이트를 개설하여 의견을 수렴
  (http://www.facebook.com/geospatialplan2015)
- 공간정보포럼 공개토론회('13.7.24) 공간정보산업 도약을 위한 제도개선 방안의 일환으로 제5차 국가공간정보정책 기본계획의 비전·목표·전략·과제 등에 대한 의견을 수렴

- 의견수렴 결과, 수요자들은 실시간 갱신, 데이터의 표준 준수, 공간정보의 개방 및 유통체계 개선, 산업 활성화, 법제도 개선을 요구

Demands of Geospatial Data Users

Classification	Demand
High-quality geospatial data construction	• Need to establish a real-time business-based geospatial data update system • Need to improve the quality of geospatial data: improve consistency, enhance standardization, and develop data model • Need to conduct new R&D for geospatial data
Education and human resource development	• Skilled workforce needed to produce, distribute, and use public institutions' geospatial data • Professionals needed to materialize geospatial data-based ideas • Need to enhance civil servants' capabilities to use geospatial data (training required) • Guidelines needed to take advantage of geospatial data • Educational content development needed to utilize geospatial data
Geospatial data use expansion	• Municipalities' consulting support to take advantage of geospatial data
Geospatial data industry cultivation	• Need new market creation strategies suited to the private sectors • Need to enhance the competitiveness of domestically produced geospatial data software • Need funds to support geospatial data firms • Need market activation policies, but not policies centered around geospatial data system establishment • Need a platform to link public and private geospatial data • Need to carve out new markets through convergence
Legislation and governance	• Need to Improve legal frameworks for the development of geospatial data convergence industry • Need to improve surveying performance and evaluation systems • Need to establish governance systems for the common use of geospatial data • Need to strengthen the role of the National Geospatial Data Council • Need to embody relationships between the Master Plan and the implementation plans
Public relations and overseas expansion	• Need to promote geospatial data • Need support strategies for overseas expansion • Need to support International cooperation and overseas event participation
Geospatial data opening-up and Clearinghouse improvements	• Need to actively share and provide geospatial data at zero cost • Need to actively open up attribute data (about buildings, etc.) as well as national geospatial data • Need to improve the distribution system of geospatial data: currently, it is difficult and inconvenient to identify where and which geospatial data are available)
Solving social problems	• Need to address social problems, based on geospatial data (The data can be used for decision making support, climate change and disaster response, and a safe society)

▌공간정보 수요자들의 요구사항

분야	요구사항
고품질 공간정보 구축	• 업무기반의 공간정보 실시간 갱신체계 마련 필요 • 공간정보의 품질개선(정합성 개선, 표준화 향상, 데이터모델 개발) • 새로운 공간정보 R&D 필요
교육 및 인력양성	• 공공기관의 공간정보 생산-유통-활용 전문인력 필요 • 공간정보기반의 아이디어 구현을 위한 전문가 필요 • 공무원의 공간정보 활용능력 제고(교육 필요) • 공공부문 공간정보 활용 가이드라인 필요 • 공간정보를 활용한 교육 콘텐츠 개발 필요
.공간정보 활용 확산	• 공간정보 활용 확대를 위한 지자체 컨설팅 지원
공간정보산업 육성	• 민간에 맞는 새로운 시장창출 전략 필요 • 국산 공간정보SW의 경쟁력 강화 필요 • 공간정보기업 지원을 위한 자금마련 필요 • 공간정보시스템 구축 중심의 정책이 아닌 시장활성화 정책 필요 • 공공의 공간정보와 민간의 공간정보를 중계하는 플랫폼 필요 • 융복합을 통한 새로운 시장개척 필요
법제도 및 거버넌스	• 공간정보 융복합 산업육성을 위한 법제도 개선 • 측량성과심사제도 개선 필요 • 공간정보 공동활용을 위한 거버넌스체계 구축 • 국가공간정보위원회 역할 강화 • 기본계획과 시행계획의 관계 구체화
홍보 및 해외진출	• 공간정보 홍보 필요 • 해외진출을 위한 지원전략 필요 • 국제협력 및 해외행사 참여 지원
공간정보 개방 및 유통체계 개선	• 공간정보의 적극 개방 및 무상제공 필요 • 국가공간정보뿐 아니라 관련 속성정보(건축물 등)의 적극 개방 • 공간정보 유통체계의 개선 필요 (어디에 어떤 공간정보가 있는지 잘 모름, 활용하기 불편한 구조)
사회문제 해결	• 공간정보기반의 사회문제 해결 필요 (의사결정지원, 기후변화 및 재난대응, 안전사회 구축)

Implications (Demands)

- Construction of real-time geospatial data update system
- Support for expansion of geospatial data use and human resources Development
- Measures to support for geospatial data industry
- Improvement of geospatial data-related legal system
- Opening of geospatial data and improvement of clearinghouse

Appendix 2. Analysis of Policy Tasks Relative to Geospatial Data

- In 2013, the new government presented four administrative priorities—economic revival, happiness for the people, cultural enrichment and laying a Basis for peaceful unification—with 140 national policy tasks to achieve Government 3.0.
- The following table shows the analysis of 57 policy tasks that can be performed in a more efficient and effective way when geospatial data is used for their implementation.

시사점(요구사항)

- 실시간 공간정보 갱신체계 구축
- 공간정보 활용 확산 지원과 교육·인력양성
- 공간정보산업 육성을 위한 지원방안 필요
- 공간정보 법제도 개선
- 공간정보 개방 및 유통체계 개선

부록 2. 공간정보관련 국정과제 분석

- 2013년 새정부는 경제부흥, 국민행복, 문화융성, 평화통일 기반구축 등 국정기조와 정부 3.0을 달성하기 위해 140대 국정과제를 제시
- 다음 표는 공간정보를 활용할 경우 보다 효율적, 효과적으로 과제를 수행하거나 시너지효과를 창출할 수 있는 과제(총 57개)를 분석한 것임

Analysis of Policy Tasks Relative to Geospatial Data

Policy Task	Content Relative to Geospatial Data	Geospatial Data Application Plan
To lay the groundwork for a Creative Economy through science and technology	• To create new industries through the convergence of science and technology, ideas and creativity (the convergence of cultural content, software, humanities, and art), to solve social issues such as social welfare and safety, and to establish a science-based (i.e., big data and high-performance computing) Korean wave.	Opening of geospatial data Geospatial data convergence industry Geospatial analysis/decision making Geospatial data R&D
To cultivate healthcare and industries that serve an aging population into future growth engines	• To develop u-Health, standards for public health and medical information, and advanced medical technology	Opening of geospatial data Geospatial data convergence industry Geospatial analysis/decision making Geospatial data R&D
To upgrade transportation systems and maritime shipping services as well as provide support for Korean businesses to advance into overseas construction and nuclear power plant markets	• To formulate a plan to link and integrate nationwide public transportation networks, to strengthen the management of transportation demand, to improve urban transit systems, and to advance the system for marine transportation, shipping and logistics	Geospatial analysis/decision making
To foster the maritime and fisheries industry into a viable future industry and systematically manage the country's maritime territory	• To reclaim an economic territory and strengthen marine observation and investigation activities in Antarctic and Arctic regions,	Geospatial data DB establishment
To promote the agricultural, forestry and livestock industries as new growth engines	• To realize high-tech industrialization for agri-food and make the nation a forest-rich country.	Opening of geospatial data Geospatial analysis/decision making
To realize the vision of becoming a space powerhouse by developing indigenous space technologies	• To establish a 24/7 satellite imagery observation system for weather, oceans, environment, and disasters and emergencies, to cultivate companies specializing in sales of satellite images, and to strengthen competitiveness of the market dealing with satellite images	Opening of geospatial data Geospatial data DB establishment Geospatial analysis/decision making Geospatial data convergence industry
To promote youth employment, encourage the establishment of startups and provide assistance for seeking jobs overseas	• To nurture youth talents through customized training, to provide assistance for seeking jobs overseas, and to cultivate creative young entrepreneurs	Development of manpower with expertises in geospatial data Geospatial data convergence industry
To bolster capabilities in scientific and technological innovation	• To foster talents with expertise in converging technologies, to nurture gifted and talented children in a systematic way, to develop converging public technologies, and to expand the scale of investment in R&D	Development of manpower with expertises in geospatial data Geospatial data convergence industry Geospatial data R&D

▌공간정보관련 국정과제 분석

국정과제	공간정보 관련내용	공간정보 활용방안
과학기술을 통한 창조경제 기반 조성(8)	• 과학기술과 아이디어·상상력을 융합한 신산업 창출(문화컨텐츠·SW·인문·예술과 융합/사회복지·안전 등 사회이슈해결, 빅데이터·초고성능컴퓨팅, 과학한류 조성	공간정보 개방 공간정보 융복합 산업 공간분석/의사결정 공간정보 R&D
보건·고령친화산업을 미래성장산업으로 육성(9)	• u-Health, 보건의료정보 표준화, 첨단의료기술개발	공간정보 개방 공간분석/의사결정 공간정보 융복합 산업 공간정보 R&D
교통체계·해운 선진화 및 건설·원전산업 해외진출 지원(10)	• 전국 대중교통망 연계·통합계획 수립, 교통수요관리 강화 및 도시교통체계 개선, 해운·물류 선진화	공간분석/의사결정
해양수산업의 미래산업화 및 체계적 해양영토 관리(11)	• 남극 및 북극지역의 경제영토 개척, 해양관측 및 조사활동 강화	공간정보 DB구축
농림축산업의 미래성장산업화(12)	• 농식품 첨단산업화, 산림부국 실현	공간정보 개방 공간분석/의사결정
우주기술 자립으로 우주강국 실현(13)	• 기상·해양·환경·재해재난·자원 등 위성영상 상시관측체제 구축, 위성영상 판매 전문기업 육성, 위성영상 수신활용 서비스시장 경쟁력 강화	공간정보 개방 공간정보 DB구축 공간분석/의사결정 공간정보 융복합 산업
청년 취업·창업 활성화 및 해외진출 지원(15)	• 맞춤형 교육훈련을 통해 인재로 양성한 후 해외진출 지원, 청조형 청년창업가 발굴·양성	공간정보 전문인력 양성 공간정보 융복합 산업
국가 과학기술 혁신역량 강화(16)	• 융합형 과학기술인재 양성, 과학영재 체계적 육성, 융합·공공기술 개발, R&D 투자규모 확대	공간정보 전문인력 양성 공간정보 융복합 산업 공간정보 R&D

Policy Task	Content Relative to Geospatial Data	Geospatial Data Application Plan
To boost capabilities for generating new industries through linkages among industry, academia, research institutions and local governments	• To cultivate a convergence community linking local universities, industries and research institutes through the medium of science and technology	Development of manpower with expertises in geospatial data Geospatial data convergence industry
To create the world's best Internet ecosystem	• To create new services by taking advantage of Cloud and big data, to enact an Act of Cloud Development, and to create the best Internet ecosystem through technology and human resource development	Opening of geospatial data Geospatial data R&D Development of manpower with expertises in geospatial data
To build Korea into an ITC superpower	• To build an information communication ecosystem that encompasses Content (C), Platform (P), Network (N) and Devices (D), to cultivate the software industry by developing manpower specializing in the field of open source SW and revitalizing the field, to nurture creative talents with expertise in ICT, and to create a Korean style digital content industry	Opening of geospatial data Geospatial data convergence industry Geospatial data R&D
To restore the vitality of small merchants and self-employed business owners as well as traditional markets	• To manage the Commercial Information System which provides information on the same type of competitive businesses, current leasing fees, floating population in 1,200 main business districts across the country, and to cultivate specialized markets in connection with history, culture and tourism	Opening of geospatial data Geospatial data DB establishment Geospatial analysis/decision making Geospatial data convergence industry
To stabilize the real estate market	• To adjust the quantity of housing supply	Opening of geospatial data Geospatial analysis/decision making
To secure stable food supply sources	• To ensuring good agricultural land (levy adjustment for farmland preservation fees), to respond to the anxiety of grain supply and demand, and to build a national grain procurement system	Geospatial data DB establishment Geospatial analysis/decision making
To effectively manage public sector debts and government properties	• To build an integrated government properties management system that links related systems and DB, and that takes advantage of state-of-the-art IT technologies such as GIS	Geospatial data DB establishment Geospatial analysis/decision making
To reform the welfare delivery system with the focus on the different needs of recipients	• To build a nationwide local governments social welfare information system that can provide such information to the people and public agencies as well as local governments.	Opening of geospatial data Geospatial data DB establishment Geospatial analysis/decision making
To establish a healthcare service system aimed at improving the quality of life	• To build an innovative health platform model designed toward a people-centered, effective health care service system, which provides customized health management services, to improve the emergency medical system (depending on the capabilities of emergency medical agencies), to establish balanced emergency medical services across the nation, and to develop a medical and nursing care cooperative system in preparation for aging society	Opening of geospatial data Geospatial data DB establishment Geospatial analysis/decision making

국정과제	공간정보 관련내용	공간정보 활용방안
산·학·연·지역 연계를 통한 신산업 창출기능 강화(17)	• 지역 대학·산업·연구소와 지자체를 과학기술을 매개로 융합공동체 육성	공간정보 전문인력 양성 공간정보 융복합 산업
세계 최고의 인터넷 생태계 조성(19)	• 클라우드, 빅데이터 등을 활용한 신규 서비스 창출, 클라우드 발전법 제정, 기술개발 및 인력양성사업을 통하여 기반 조성	공간정보 개방 공간정보 R&D 공간정보 전문인력 양성
정보통신 최강국 건설(20)	• 콘텐츠(C)·플랫폼(P)·네트워크(N)·기기(D)를 아우르는 정보통신 생태계 조성, 오픈소스 SW 인력양성 및 활성화 기반 마련 등 SW산업 육성 ICT 창의인재 양성, 디지털콘텐츠산업 한국스타일 창조	공간정보 개방 공간정보 융복합 산업 공간정보 R&D
소상공인·자영업자 및 전통시장의 활력 회복(33)	• 상권정보시스템 : 전국 1,200개 주요상권의 동종·경쟁업소, 임대시세, 유동인구 등 정보제공, 지역 역사·문화·관광과 연계한 특성화시장 육성	공간정보 개방 공간정보 DB구축 공간분석/의사결정 공간정보 융복합 산업
부동산시장 안정화(37)	• 주택 공급물량 조정	공간정보 개방 공간분석/의사결정
안정적 식량수급체계 구축(39)	• 우량농지 확보(농지보전부담금 부과기준 조정), 곡물 수급불안 대응, 국가곡물조달시스템 구축	공간정보 DB구축 공간분석/의사결정
공공부문 부채 및 국유재산 관리 효율화(42)	• 유관 시스템 및 DB를 상호 연계하고 GIS등 최신의 IT기술을 활용하는 국유재산 통합관리시스템 구축	공간정보 DB구축 공간분석/의사결정
국민중심의 맞춤형 복지전달체계 개편(44)	• 범정부·지자체 사회보장정보시스템 구축하여 국민, 지자체, 각 부처에 정보제공	공간정보 개방 공간정보 DB구축 공간분석/의사결정
건강의 질을 높이는 보건의료서비스체계 구축(49)	• 국민중심의 효율적 의료공급체계로 개편, 맞춤 건강관리서비스를 제공하는 혁신형 건강플랫폼 모형 구축, 응급의료체계 개선(응급의료기관 기능에 따라 개편), 응급의료서비스 전국 균형설치, 고령화 대비 의료·요양 연계체계 구축	공간정보 개방 공간정보 DB구축 공간분석/의사결정

Policy Task	Content Relative to Geospatial Data	Geospatial Data Application Plan
To protect the rights and interests of the disabled and increase services for them	• To enhance the mobility of the disabled, to guarantee their residential rights, and to resolve their digital divide	Opening of geospatial data Geospatial data DB establishment Geospatial analysis/decision making
To enhance the livability of farming and fishing communities by increasing welfare	• To expand the customized social safety net that reflects rural conditions and characteristics	Opening of geospatial data Geospatial data DB establishment Geospatial analysis/decision making
To provide customized job matching services and expand the employment service network	• To solve job mismatching through personalized and step-by-step training programs customized according to life cycle stages as well as through career development programs	Development of manpower with expertises in geospatial data Geospatial data convergence industry
To increase professional social service jobs	• To expand life cycle customized services through interagency service linkages and convergence	Opening of geospatial data Development of manpower with expertises in geospatial data
To help ensure a care-free pregnancy and childbirth	• To establish and operate integrated regional centers for high risk mothers and newborns, and to enhance medical support for the areas with limited access to obstetrics and gynecology physicians	Opening of geospatial data Geospatial data DB establishment Geospatial analysis/decision making
To create conditions conducive to raising children without anxiety	• To expand daycare centers established by governments and non-profit organizations, to improve the requirement for the establishment of workplace nurseries, to operate an integrated support system for personalized child care services	Geospatial data DB establishment Geospatial analysis/decision making
To work for the normalization of public education	• To strengthen student participation and cooperative learning, to operate educational programs to help students' dream come true as well as to promote their own talents, and to establish a textbook-only (digital textbook) learning system which does not need reference books	Development of manpower with expertises in geospatial data
To promote specialized education at universities and expand financial assistance	• To reconstruct the financial support project for the higher education specialization such as cultivating local universities and colleges and strengthening graduate students' global competitiveness	Development of manpower with expertises in geospatial data
To strengthen the vocational training for nurturing professionals	• To enhance employment-focused high school vocational education system, and cultivate professionals in special fields (for example, actively fostering national and local strategic industries in preparation for FTA)	Development of manpower with expertises in geospatial data
To intensively nurture community colleges as key players in higher vocational training	• To provide financial support for specialization of community colleges to culture key personnel working in different fields of industries, to strengthen vocational training tailored to meet demands, to establish industrial technology Master graduate schools in community colleges, to nurture a lifelong vocational education colleges, and to provide community college graduates with assistance for seeking overseas jobs	Development of manpower with expertises in geospatial data

국정과제	공간정보 관련내용	공간정보 활용방안
장애인 권익보호 및 편의증진(50)	• 장애인 이동권 증진, 장애인 주거권 보장, 장애인 정보격차 해소	공간정보 개방 공간정보 DB구축 공간분석/의사결정
누구나 살고 싶어하는 복지 농어촌 건설(52)	• 농어촌 여건과 특성을 반영한 맞춤형 사회안전망 확충	공간정보 개방 공간정보 DB구축 공간분석/의사결정
맞춤형 취업지원 및 고용서비스망 강화(58)	• 생애주기별·단계별 맞춤형 직업훈련·취업알선으로 일자리 미스매칭 해소	공간정보 전문인력 양성 공간정보 융복합 산업
고부가가치 사회서비스 일자리 확충(60)	• 부처간 서비스 연계·융복합을 통한 생애전주기별 맞춤형 서비스 확충	공간정보 개방 공간정보 전문인력 양성
행복한 임신과 출산(62)	• 권역별 고위험 산모·신생아 통합센터 설치·운영, 임신 분만 취약지역에 대한 의료지원 강화	공간정보 개방 공간정보 DB구축 공간분석/의사결정
안심하고 양육할 수 있는 여건 조성(63)	• 국공립 및 공공형 어린이집 확충, 직장어린이집 설치 기준 개선, 맞춤형 보육서비스, 범정부 돌봄서비스 통합지원 시스템 운영	공간정보 DB구축 공간분석/의사결정
학교교육 정상화 추진(66)	• 학생참여와 협력 학습 강화, 꿈과 끼를 살려주는 교육과정 운영, 참고서가 필요 없는 '교과서 완결 학습 체제' 마련(디지털 교과서)	공간정보 전문인력 양성
대학 특성화 및 재정지원 확대(68)	• 지역대학 및 전문대학육성, 대학원생의 글로벌 역량 강화 등 대학 특성화를 위한 고등교육 재정지원사업 재구조화	공간정보 전문인력 양성
전문인재 양성을 위한 직업교육 강화(70)	• 취업중심 고교 직업교육 체제 강화, 특수분야(국가·지역 전략산업, FTA대비 집중 육성 산업 등) 전문인재 양성	공간정보 전문인력 양성
전문대학을 고등직업교육 중심기관으로 집중 육성(71)	• 산업분야별 핵심인력을 길러낼 수 있도록 전문대학 특성화 강점 분야 집중투자, 수요자 요구에 부응하는 맞춤형 직업교육 강화, 전문대학 '산업기술명장대학원' 설치, 평생직업교육대학 육성, 전문대학생의 해외진출 활성화	공간정보 전문인력 양성

Policy Task	Content Relative to Geospatial Data	Geospatial Data Application Plan
To establish a national lifelong education system in preparation for a time when the average life span reaches one hundred	• To establish an online/offline-based comprehensive management system for lifelong education, to offer region-customized continuing education utilizing Smart-based learning tools, and to develop and disseminate continuing education programs customized according to life cycle stages and social classes	Development of manpower with expertises in geospatial data
To make a society safe from sexual violence	• To enhance sexual violence and harassment prevention system, and to conduct investigations dedicated to sexual violence, to strengthen the criminal management system	Opening of geospatial data Geospatial data DB establishment Geospatial analysis/decision making
To create a school environment free from bullying and other risks	• To improve and strengthen CCTV performance and management and to expand and disseminate SOS security services to make the people carefree	Opening of geospatial data Geospatial data DB establishment Geospatial analysis/decision making
To establish unparalleled food safety through food quality control	• To build an integrated food safety information network and to strengthen the measures to prevent improper food handling and the tracking management system	Opening of geospatial data Geospatial data DB establishment Geospatial analysis/decision making
To expand support and protection for the victims of crime	• To provide crime victims with medical and economic support, and to enhance consultation and legal assistance for the victims, and the support systems	Opening of geospatial data Geospatial data DB establishment Geospatial analysis/decision making
To reinforce the comprehensive national disaster management system	• To build a ubiquitous safety net for the people (u-119 report service environment improvement, field-based U-safety management systems implementation, U-city services-based national safety net building, and Smart-based inclement weather and earthquake early warning information provision) • To achieve our homeland environment worry free from flood and landslide disasters (disaster preventive land use systems establishment, flood risk mapping, forest hazards safety net building)	Opening of geospatial data Geospatial data DB establishment Geospatial analysis/decision making Geospatial data convergence industry
To advance traffic safety, including air and maritime transportation	• To build smart and safe roads (C-ITS) by analyzing digital trip recorders, and to implement projects to improve vulnerable road sections, dangerous roads, and high frequency accident locations • To implement inter-governmental maritime safety measures and to build advance maritime safety facilities	Opening of geospatial data Geospatial data DB establishment Geospatial analysis/decision making Geospatial data convergence industry
To enhance safety control at energy supply facilities	• To build a comprehensive management system for energy safety, and to enhance energy supply facility safety management	Opening of geospatial data Geospatial data DB establishment Geospatial analysis/decision making Geospatial data convergence industry

국정과제	공간정보 관련내용	공간정보 활용방안
100세 시대 국가평생학습체제 구축(72)	• 온·오프라인 평생학습 종합관리체계 구축, 스마트 기반 평생학습도구를 활용한 지역 맞춤형 평생교육 제공, 생애주기별·계층별 맞춤형 평생교육 프로그램 개발·보급 추진	공간정보 전문인력 양성
성폭력으로부터의 안전한 사회(74)	• 성폭력·성희롱 예방체계 강화, 성폭력전담 수사 및 범죄자 관리체계 강화	공간정보 개방 공간정보 DB구축 공간분석/의사결정
학교폭력 및 학생위험 제로 환경 조성(76)	• CCTV 성능 개선 및 관제강화, SOS국민안심서비스 확대·보급	공간정보 개방 공간정보 DB구축 공간분석/의사결정
먹을거리 관리로 식품안전 강국 구현(77)	• 통합 식품안전정보망 구축, 부적합 식품 차단 및 추적관리 시스템 강화(위해상품 판매차단시스템, 식품이력추적관리)	공간정보 개방 공간정보 DB구축 공간분석/의사결정
범죄피해자 보호 및 지원 강화(79)	• 범죄피해자에 대한 의료·경제적 지원, 상담·법률지원 및 지원시스템 강화	공간정보 개방 공간정보 DB구축 공간분석/의사결정
총체적인 국가 재난관리체계 강화(83)	• 유비쿼터스형 국민중심 안전망 구축(U-119 신고서비스 환경개선, 현장 중심의 U-안전관리시스템 구현, U-city 서비스 바탕의 국민안전망 구축, 스마트형 위험기상 및 지진조기경보 정보 제공 • 홍수·산사태 등 재해걱정 없는 안심국토 실현(재해예방적 토지이용체계 확립, 홍수위험지도 제작, 산림재해 안전망 구축)	공간정보 개방 공간정보 DB구축 공간분석/의사결정 공간정보 융복합 산업
항공, 해양 등 교통안전 선진화(84)	• 디지털 운행기록장치 분석, 스마트하고 안전한 도로 구현(C-ITS 도입), 도로환경취약구간 및 위험도로·사고잦은곳 개선사업 시행 • 범정부 해사안전대책 시행 및 첨단 해상안전 시설 구축	공간정보 DB구축 공간분석/의사결정 공간정보 R&D 공간정보 융복합 산업
에너지공급 시설의 안전관리 강화(87)	• 에너지안전 종합관리체계 구축, 원별 시설안전관리 강화	공간정보 R&D 공간정보 DB구축 공간분석/의사결정 공간정보 융복합 산업

Policy Task	Content Relative to Geospatial Data	Geospatial Data Application Plan
To facilitate adaptation to the consequences of climate change such as abnormal weather conditions	• To secure climate change monitoring and prediction capability, to enhance climate change response capacity (e.g., launching environmental satellites), to establish a climate-ecology change monitoring system, to prevent health hazards caused by climate change, and to strengthen management of infectious diseases	Geospatial data DB establishment Geospatial analysis/decision making Geospatial data convergence industry
To expand the supply of new and renewable energy and promote related industries	• To build a nationwide smart grid base in a timely manner to efficiently manage electric power demands • To upgrade renewable energy resources maps, including information on the nation's solar, wind and tidal power potential, and other renewable energy resources potential as well as information on their location and possibilities of taking advantage of those resources in different cities and regions	Geospatial data DB establishment Geospatial analysis/decision making Geospatial data convergence industry
To pursue land development in harmony with nature	• To link land use and urban planning with environmental planning, to integrate the procedure for approving and permit land use, and reflect residents' opinions in the course of the procedure • To expand the integrated national geospatial data system to establish a geospatial big data system, and to develop national environmental maps	Opening of geospatial data Geospatial data DB establishment Geospatial analysis/decision making
To strike a balance between preservation and development of the maritime environment	• To specify the type of management depending on the needs of development and preservation of uninhabited islands, to promote planned development, to expand monitored areas with coastal erosion, and to designate a buffer zone off the coast	Geospatial data DB establishment Geospatial analysis/decision making
To strengthen the system for managing public conflict	• To build a systematic management system to prevent and resolve conflicts resulting from policy implementation and projects (i.e., participatory conflict prevention and management)	Opening of geospatial data Geospatial data DB establishment Geospatial analysis/decision making
To promote balanced regional development for national cohesion	• To formulate development strategies customized according to the needs of each metropolitan area, to establish personalized urban regeneration policies, and to build an infrastructure for the people's happiness	Geospatial data DB establishment Geospatial analysis/decision making
To expand support for local universities	• To cultivate local universities as a local growth base to lead local industrial development and human resource development	Development of manpower with expertises in geospatial data
To enhance regional economic and industrial vitality	• To promote job creation-focused regional industrial redevelopment, to upgrade old industrial parks and to reorganize the specialized region system	Geospatial data convergence industry
To increase availability of cultural opportunities and narrow the gap in access to cultural activities	• To create and expand cultural and artistic programs for culture and arts education in schools and during Saturdays and holidays, to establish complex culture community centers and to build cultural cities and villages suited to regional characteristics	Development of manpower with expertises in geospatial data

국정과제	공간정보 관련내용	공간정보 활용방안
기상이변 등 기후변화 적응(90)	• 기후변화 감시·예측 능력 확보 및 이상기후 대응능력 강화(환경위성체 발사), 기후-생태변화 모니터링 시스템 구축, 기후변화기인 건강피해 예방 및 감염성 질병관리를 강화	공간정보 DB구축 공간분석/의사결정 공간정보 융복합 산업
신재생에너지 보급 확대 및 산업육성(92)	• 태양광·풍력·조력 등 신재생에너지 국내잠재량, 입지정보, 시도별 설치가능성 등이 포함된 신재생에너지 자원지도 업그레이드 • 전력수요 효율적 관리를 위한 전국적 스마트그리드 기반 조기구축	공간정보 DB구축 공간분석/의사결정 공간정보 융복합 산업
환경과 조화되는 국토개발(94)	• 국토·도시계획과 환경계획 연계, 토지이용 인·허가 절차 통합, 인·허가 절차 과정에서 주민의견 수렴도 내실화 • 국가공간정보통합체계를 확장한 공간 빅데이터 체계 구축, 국가환경지도 개발	공간정보 개방 공간정보 DB구축 공간분석/의사결정
해양환경 보전과 개발의 조화(95)	• 무인도서별 개발·보존 필요성 등에 따라 관리유형을 지정, 계획적 개발 도모, 연안침식 모니터링 대상지역 확대, 바닷가 연안완충구역 지정	공간정보 DB구축 공간분석/의사결정
공공갈등 관리시스템 강화(100)	• 정책·사업으로 인한 갈등 예방 및 해소를 위한 체계적 관리시스템 구축, 참여적 갈등예방·관리	공간정보 개방 공간정보 DB구축 공간분석/의사결정
국민대통합을 위한 지역균형발전(102)	• 도시권별 맞춤형 발전전략 수립, 맞춤형 도시재생, 국민행복 생활 인프라	공간정보 DB구축 공간분석/의사결정
지방대학 지원 확대(103)	• 지역의 산업발전 및 인력양성 주도할 수 있도록 지역성장 거점으로 육성	공간정보 전문인력 양성
지역경제와 산업의 활력 제고(106)	• 일자리 창출 중심의 지역산업 재정비, 노후산단 재창조 및 지역특구 제도 정비	공간정보 융복합 산업
문화참여 기회 확대와 문화격차 해소(108)	• 학교 문화예술 교육 및 토요·방학 문화예술 프로그램 확대, 복합형 문화커뮤니티센터 조성, 지역 특성에 맞는 문화도시·문화마을 조성	공간정보 전문인력 양성

Policy Task	Content Relative to Geospatial Data	Geospatial Data Application Plan
To expand ecological living spaces and other sites for the enjoyment of leisure and culture in daily life	• To investigate, restore, and connect the Korean peninsula's core ecosystem areas such as Baekdudaegan Mountain Range and DMZ, to create neighborhood rest areas, urban agriculture space, one-day life zone village forests, and ecological playground, to restore natural style rivers, and to develop a national landscape axis	Geospatial data DB establishment Geospatial analysis/decision making
To better preserve cultural assets and make them more accessible to the public	• To improve cultural heritage management system and to take advantage of such cultural content as a resource	Geospatial data DB establishment Geospatial analysis/decision making
To promote the humanities and an understanding of Korea's cultural ethos	• To build a database (DB) for Korean culture archive	Geospatial data DB establishment Geospatial analysis/decision making Overseas expansion of geospatial data
To cultivate the cultural content industry as a key engine to achieving a Creative Economy	• To cultivate Five Killer Content (music, movies, animation/ character, musical, game, etc.), to found "Content Korea Lab" as a space for cultural convergence and creation, and to support for enterprises to lead a new idea into a new product • To cultivate creative talents with expertise in convergence content • To create "Korea Fund for Awe-inspiring Content": to create and expand funds for small and medium-sized content firms	Opening of geospatial data Geospatial data convergence industry Development of manpower with expertises in geospatial data Overseas expansion of geospatial data
To promote tourism as a high value-added industry with various possibilities for convergence of related sectors	• To cultivate tourism with possibilities for convergence of related sectors such as MICE, medicine, Korean wave, cruises, history and traditional culture experience, leisure and sports, nature and eco-based tourism, and IT	Geospatial data convergence industry
To take practical measures to strengthen unification capabilities	• To strengthen a cooperative system between associated agencies in preparation for the reunification and to develop content for future generations of Unified Korea.	Geospatial data DB establishment Geospatial analysis/decision making
To promote the Northeast Asian Peace and Cooperation Initiative and expand cooperation with Eurasia	• To enlarge collaboration with ASEAN, South Asia, EU and countries within Central Asia and to build trust between the Korean peninsula and the other countries within Northeast Asia for economic growth	Geospatial data DB establishment Geospatial data convergence industry Overseas expansion of geospatial data
To strengthen cooperation for industrial resources for the purpose of expanding Korea's presence in emerging markets	• To bestow industry development experience on promising resource development countries such as BRICs, Vietnam, the UAE, and Mozambique, to support small and mid-sized businesses for their overseas market expansion and project contracts	Geospatial data DB establishment Geospatial data convergence industry Overseas expansion of geospatial data

국정과제	공간정보 관련내용	공간정보 활용방안
생태휴식 공간 확대 등 행복한 생활문화 공간 조성(110)	• 동네쉼터, 도시농업 공간, 생활권 마을숲, 생태놀이터, 자연형 하천 복원, 백두대간·DMZ 등 한반도 핵심생태축 조사·복원·연결 추진, 국토경관축 조성	공간정보 DB구축 공간분석/의사결정
문화유산 보존 강화 및 활용 확대(112)	• 문화유산 관리체계 개선 및 콘텐츠자원화	공간정보 DB구축 공간분석/의사결정
인문·정신문화의 진흥(113)	• 한국문화 데이터베이스(DB) 구축 : 한민족 문화아카이브	공간정보 DB구축 공간분석/의사결정 공간정보 해외진출
콘텐츠 산업, '한국 스타일'의 창조(114)	• 5대 킬러콘텐츠(음악, 영화,애니메이션/캐릭터, 뮤지컬, 게임 등) 집중 육성 • 문화융합과 창조의 공간, '콘텐츠코리아랩' 설립, 아이디어가 창업으로 이어지는 전 과정 체계적 지원 • 융합형 콘텐츠 창의인재 양성 • '위풍당당콘텐츠코리아펀드' 조성 : 중소 콘텐츠 기업 및 영세 사업자 투·융자 확대를 위한 펀드 조성	공간정보 개방 공간정보 융복합 산업 공간정보 전문인력 양성 공간정보 해외진출
고부가가치 융·복합 한국관광 실현(115)	• MICE, 의료, 한류, 크루즈, 역사·전통문화 체험, 레저·스포츠, 자연·생태기반 관광, IT 융·복합 관광 육성	공간정보 융복합 산업
통일 대비 역량강화를 통한 실질적 통일준비(126)	• 유관부처 간 통일 대비 협조체제 강화 추진, 통일미래세대를 위한 콘텐츠 개발	공간정보 DB구축 공간분석/의사결정
동북아 평화협력 구상과 유라시아 협력 확대(127)	• ASEAN, 남아시아, EU 및 중앙아 국가들과 협력 확대, 한반도와 동북아 신뢰 구축 조력자, 우리 경제의 성장동력원으로 확보	공간정보 DB구축 공간정보 융복합 산업 공간정보 해외진출
신흥시장 진출확대를 위한 산업자원협력 강화(129)	• BRICs, 베트남, UAE, 모잠비크 등 자원개발 유망국에 산업개발경험 전수, 중소·중견기업 해외진출 및 프로젝트 수주 지원	공간정보 DB구축 공간정보 융복합 산업 공간정보 해외진출

Policy Task	Content Relative to Geospatial Data	Geospatial Data Application Plan
To contribute to world peace and progress in fulfillment of the role of a responsible middle power	• Active participation and contributions of multilateral forums such as G20, APEC, ASEM, the OECD	Geospatial data convergence industry Overseas expansion of geospatial data
To protect the safety and rights of Korean nationals residing abroad and expand both public diplomacy and jobs diplomacy	• To optimize the crime/accident prevention and response system to prevent Korean nationals residing or travelling abroad from crimes and accidents and to rapidly react such crimes and accidents, to enhance overseas Koreans' convenience, and to expand young people's job opportunities overseas through "The Global Youth Project"	Geospatial data convergence industry Overseas expansion of geospatial data Development of manpower with expertises in geospatial data
To strengthen the capacity for economic cooperation, including through the FTA network	• To cooperate with Mexico, Brazil, and Myanmar by taking advantage of industrial and infrastructure projects in the Middle East, reconstruction projects in Iraq and Libya, and KSP (projects for sharing experiences with economic development), and to participate in the development of the Arctic passage thorough the nation's opportunity to participate as an observer in the Arctic Council meetings in 2013	Geospatial data convergence industry Overseas expansion of geospatial data
To promote continuous expansion of ODA and implement exemplary integrative development cooperation practices	• To continue to develop comparative advantage programs among development project practices to apply to recipient countries, in line with their reality and needs	Overseas expansion of geospatial data
To establish a people-centered and services-oriented "Government 3.0"	• Active sharing of public information, building an infrastructure to have private sector entities to take advantage of public data, to encourage collective intelligence and strengthen governance of public and private actors through the expansion of public participation, to build cooperative partnerships and communication systems by removing unnecessary red tape, to enhance a knowledge-based administrative system for cooperation and interaction between agencies, to perform scientific and future-oriented administrative tasks by utilizing big data, and to provide beneficiary-centered administration and welfare services	Opening of geospatial data Geospatial data DB establishment Geospatial analysis/decision making

국정과제	공간정보 관련내용	공간정보 활용방안
세계평화와 발전에 기여하는 책임 있는 중견국 실현(130)	• G20, APEC, ASEM, OECD 등 다자협의체 적극 참여·기여	공간정보 융복합 산업 공간정보 해외진출
재외국민 안전·권익 보호와 공공외교·일자리 외교 확대(131)	• 해외사건·사고예방 및 사후 대응시스템 최적화, 해외진출 국민 편익 증진, 글로벌 한민족 네트워크 확충, '글로벌 청년 프로젝트'를 통한 젊은 세대의 해외진출 적극 확대	공간정보 융복합 산업 공간정보 해외진출 공간정보 전문인력 양성
FTA 네트워크 등 경제협력 역량 강화(132)	• 중동의 신산업·인프라 프로젝트, 이라크·리비아 등 재건 프로젝트 적극 진출, KSP(경제개발경험공유사업) 등을 활용 멕시코, 브라질, 미얀마 등과 협력, '13년 북극이사회 옵저버 진출을 통해 북극항로 개발 참여	공간정보 융복합 산업 공간정보 해외진출
ODA 지속확대 및 모범적·통합적 개발협력 추진(133)	• 발전경험 중 비교우위가 있는 프로그램을 수원국 현실에 맞춰 지속 개발·적용	공간정보 해외진출
국민 중심 서비스 정부 3.0 구현(134)	• 공공정보 적극 공개, 공공데이터 민간 활용 기반 조성(개방), 시민참여 확대로 집단지성 구현 및 민·관 협치 강화, 정부 내 칸막이를 없애는 협업·소통체제 구축, 협업·소통을 위한 지식 기반 행정시스템 강화, 빅데이터를 활용한 과학적·미래지향적 행정 구현, 수혜자 중심 맞춤형 행정·복지서비스 제공	공간정보 개방 공간정보 DB구축 공간분석/의사결정

Further Readings

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