

Korea Group on Earth Observation

K-GEO



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Outline



1. K-GEO Organization Structure

2. K-GEO activities in support of the SDG

2.1 K-BON : Korea Biodiversity Observation Network

2.2 TUPIX : Satellite image Analysis and Visualization Platform

2.3 K-DMSS : Korea Decision Making Support System for Responding Natural Disaster

2.4 CMTFC : Carbon Mineralization Technology Flagship Center

1. K-GEO Organization Structure



K-GEO consists of 3 committees and a Secretariat

	National Strategy Committee	Practical Confrontation Committee	Science Technology Committee	Secretariat
Function and Role	<ul style="list-style-type: none"> ✓ Approves the national confrontation strategy on earth observation ✓ Monitors and supports the implementation of detailed confrontation strategies and plans for each ministry ✓ Coordinates and consults the related ministries 	<ul style="list-style-type: none"> ✓ Holds Prior consultation and coordination on national confrontation strategy and short/long-term implementation plan ✓ Evaluates for the result of short/long-term implementation plan and consultation on improvement measures ✓ Implements review and follow up on important decisions of the GEO plenary and Executive Committee 	<ul style="list-style-type: none"> ✓ Consults on a establishment, operation and activation plan of domestic integrated global earth observation system ✓ Consults on K-GEO's national confrontation strategy and short/long-term implementation ✓ Hold practical consultation on important decisions of the GEO plenary and the Executive Committee 	<ul style="list-style-type: none"> ✓ Provides identification of domestic and overseas trends, initial confrontation dissemination of relevant information ✓ Arranges committee open and administrative support of the Korean delegation ✓ Collects, manages and distributes observation data at home and abroad
Configuration	<ul style="list-style-type: none"> ✓ Vice-minister of Ministry of Science and ICT as a chairperson ✓ Composition of 15 persons or less (commissioners and director generals of the related ministries) 	<ul style="list-style-type: none"> ✓ Director General for Universal Nuclear Energy Policy of Ministry of Science and ICT as a chairperson ✓ Composition of 25 related experts or the directors of the related ministries 	<ul style="list-style-type: none"> ✓ Includes a chairperson, composition of 30 related experts or less ✓ Started on 3.25.2016 	<ul style="list-style-type: none"> ✓ a deputy director and a assistant director of Ministry of Science and ICT ✓ Transferred from Korea Meteorological Administration to Ministry of Science and ICT in 2017
Comparison with GEO's one	Ministerial Summit	Plenary	Program Board	Secretariat

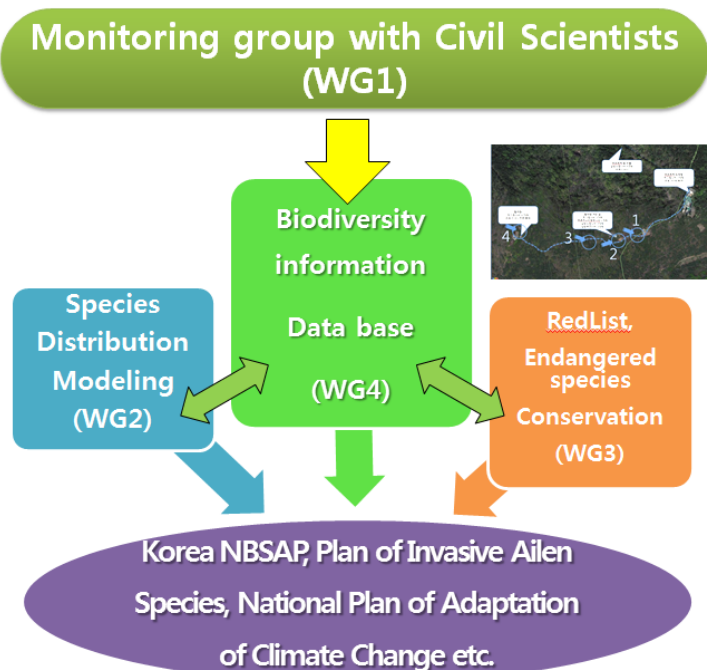
2. K-GEO activities in support of the SDG

2.1 K-BON (Korea Biodiversity Observation Network) Overview



- National BON and member of AP-BON
- Collecting of biodiversity data with integrates citizen science
- Mobile platform management to improve the convenience of citizen participation
- Collaborate to GTI(Global Taxonomy Initiative) and ESABII

4 working groups



Mobile platform management

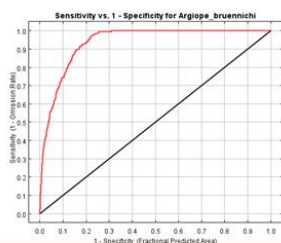
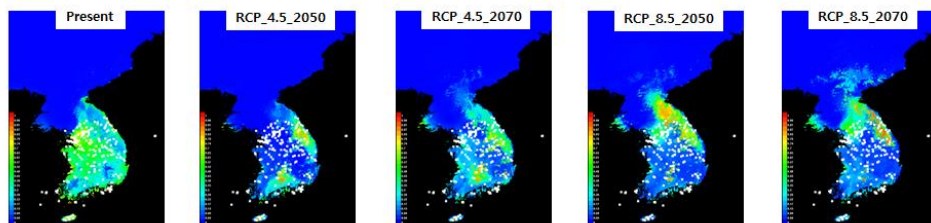


2. K-GEO activities in support of the SDG

2.1 K-BON (Korea Biodiversity Observation Network) Research & Outreach



Research for adaptation of Climate Changes from K-BON monitoring data



Banana spider
Argiope bruennichi Scopoli 1772

	Pre	RCP_4.5_2050	RCP_4.5_2070
Area (km ²)	124,071	40,892	63,726
		RCP_8.5_2050	RCP_8.5_2070
		63,838	61,075

Outreach

Start of K-BON Junior
: The training of future scientists



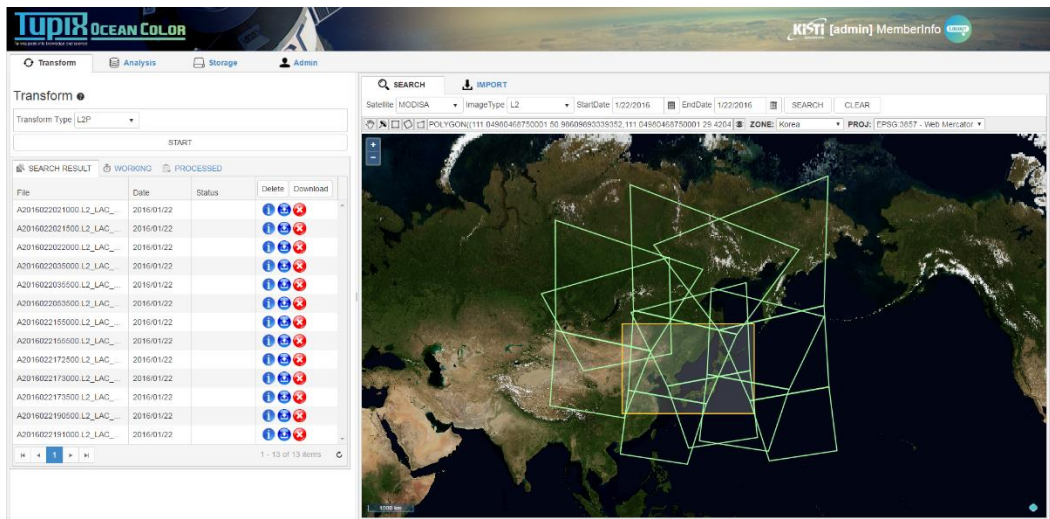
Capacity Building with civil scientists
: Organize to BioBlitz



2. K-GEO activities in support of the SDG

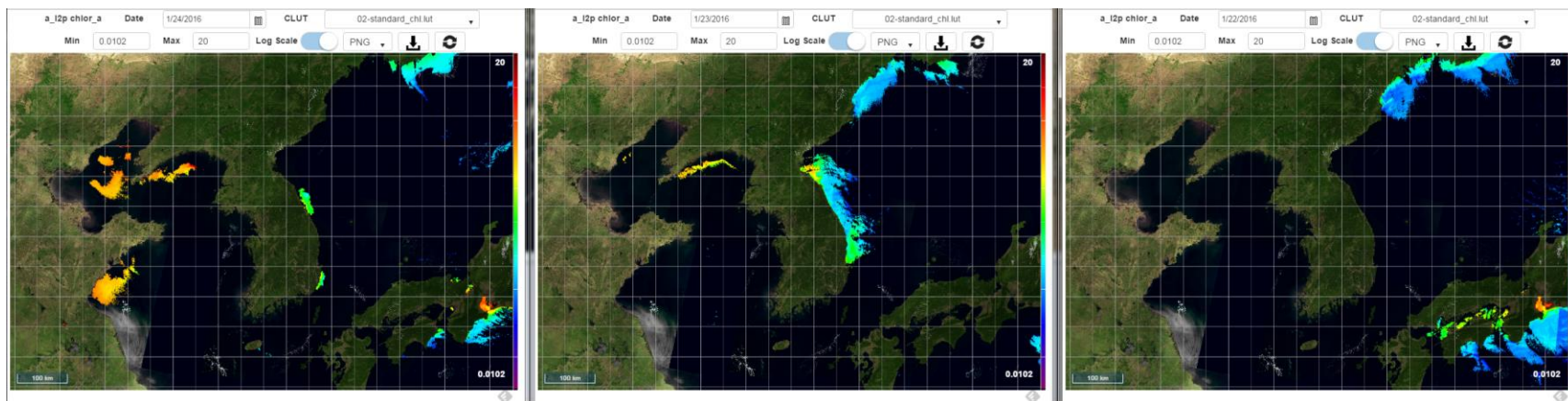
2.2. TUPIX (Turning Pixels into Knowledge and Science)

Satellite Image Analysis and Visualization Platform



Main functions

- Large scale satellite image processing
- Spatiotemporal search and management
- Applying various map projection methods
- Dynamic analysis using high-resolution images
- Unlimited big analysis and visualization
- Share data and algorithms through virtualization
- Create user defined functions and algorithms



2. K-GEO activities in support of the SDG

2.2 TUPIX (Turning Pixels into Knowledge and Science)

Satellite Image Analysis and Visualization Platform



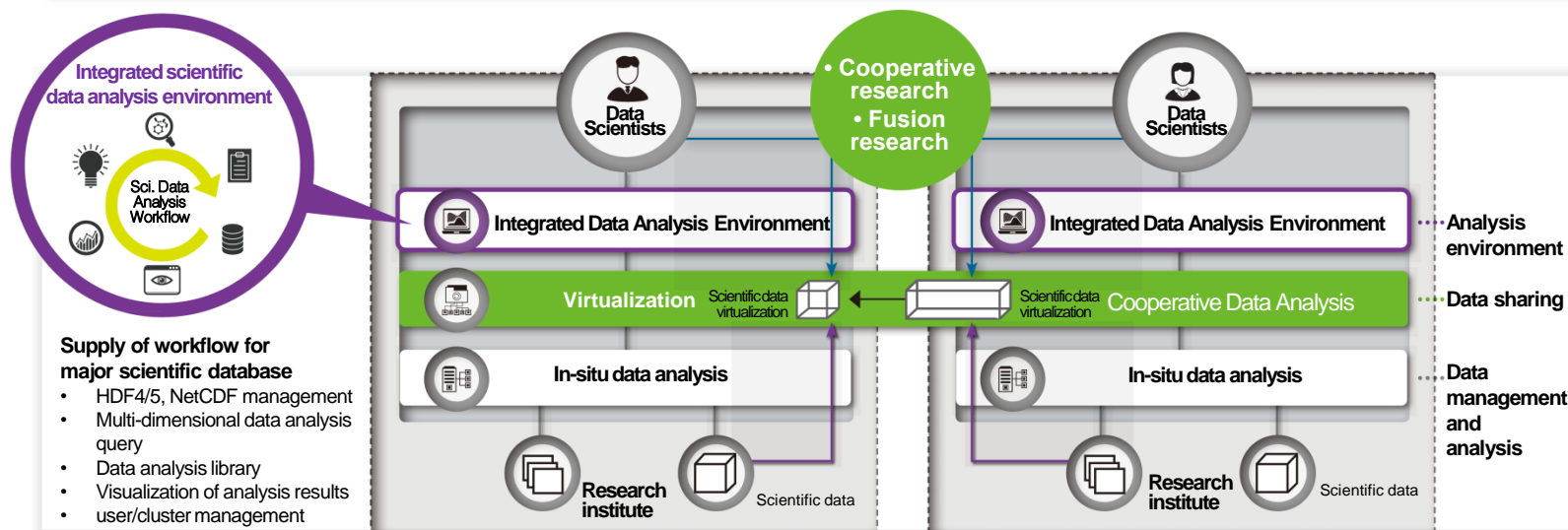
An integrated scientific data analysis environment to achieve cooperation and fusion research

Main Technology

- Sharing data and computing resources with a variety of research institutes
- Web-based data and cooperation environment
- Integrated UI for supporting workflow analysis

Effect

- Possible to share and analyze scientific data through an Integrated UI
- Concentration on main scientific research through the combined analysis environment based on the web
- Supply of UI for all work processes from pre-processing to analysis and visualization



2. K-GEO activities in support of the SDG

2.3 K-DMSS (Korea-Decision Making Support System)

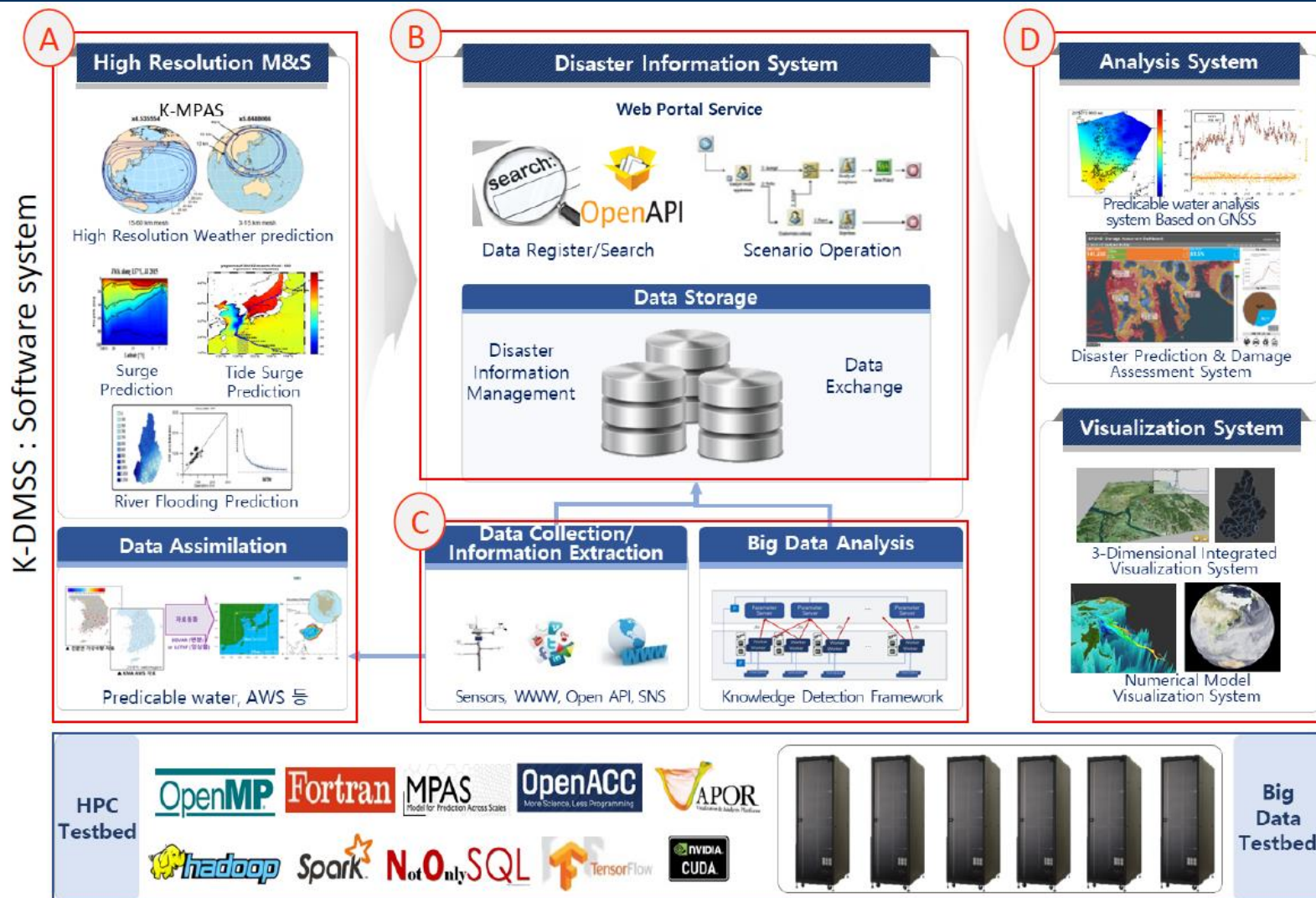
Overview



- Integrated **S/W Package** for Predicting Disasters & Damage Assessment
- Developed on **HPC** (high performance computing) & **Big Data** Platforms
- Supports for High resolution **Modeling & Simulation** for Atmosphere-Ocean & Hydrology
- Supports for Huge data **Visualization** & **AR** (augmented reality) for Scientific Analysis
- KISTI's independent **Decision-Making Support System for Disaster Management**

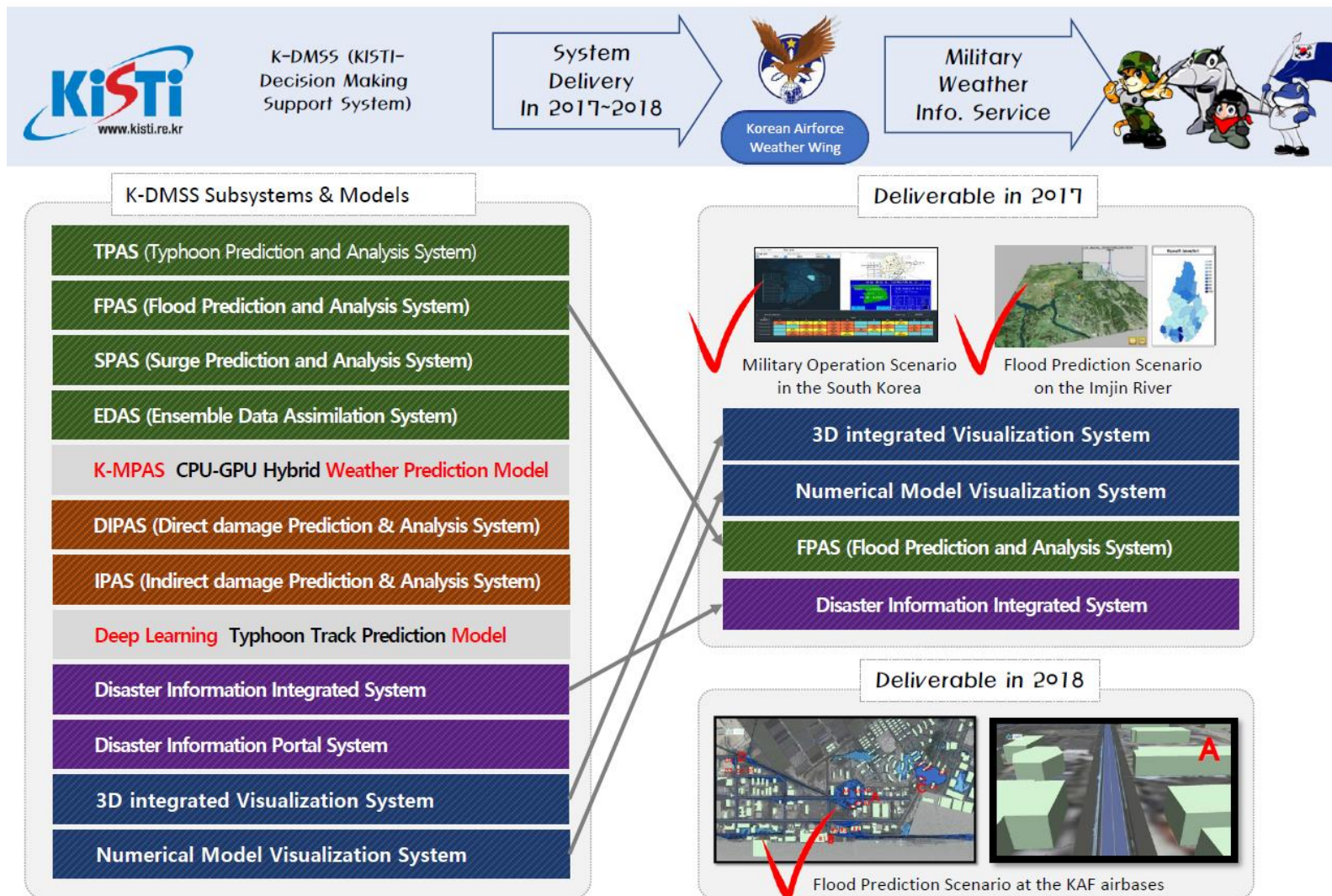
2. K-GEO activities in support of the SDG

2.3 K-DMSS (Korea-Decision Making Support System) Components



2. K-GEO activities in support of the SDG

2.3 K-DMSS (Korea-Decision Making Support System) Achievements & Plans



2. K-GEO activities in support of the SDG

2.4 Carbon Mineralization Technology Flagship Center Introduction



Government national strategic projects (2016.08.10)

Growth Engine



Self driving cars



Lightweight materials

Improving quality of life



Medical care



New medicine

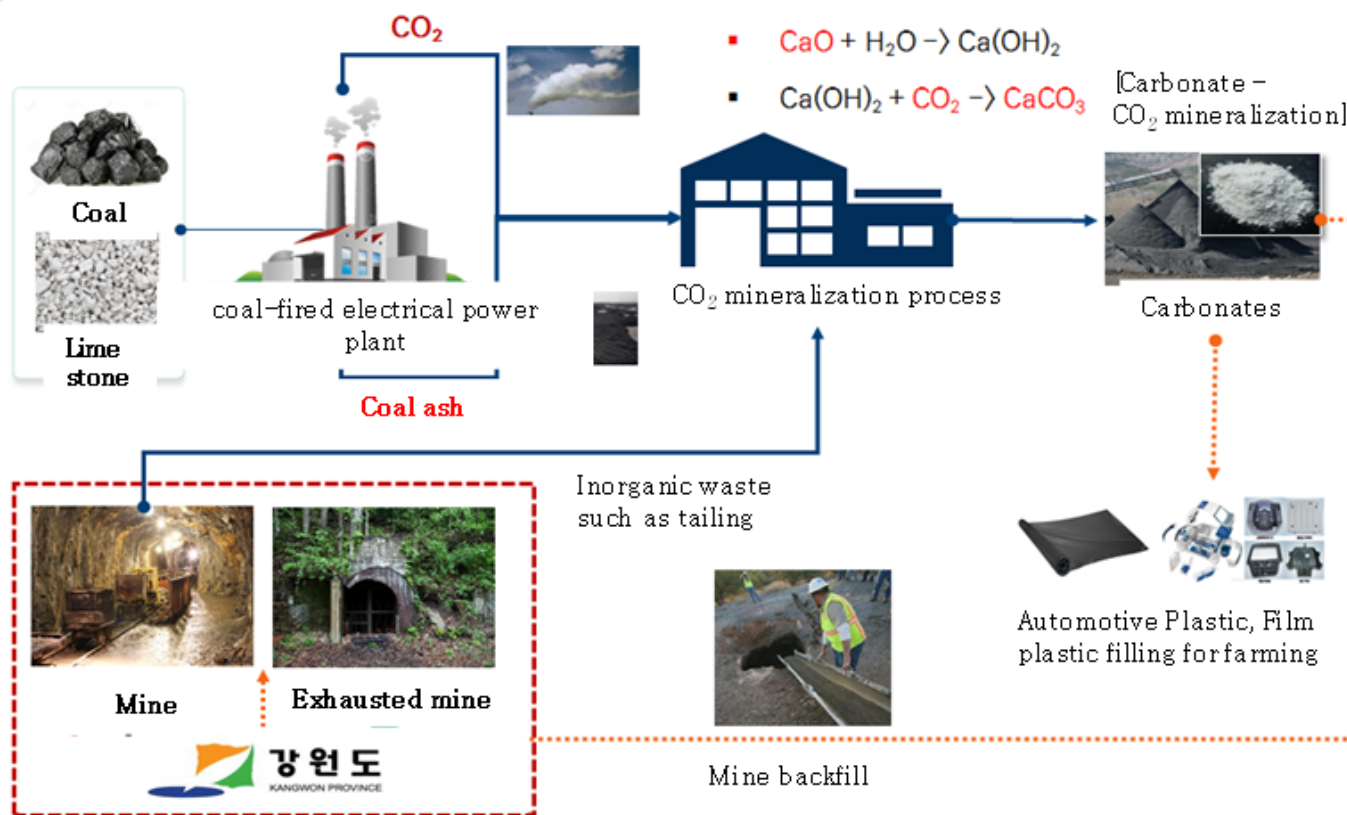


Carbon resource recycling



PM-10

Carbon mineralization flagship project



2. K-GEO activities in support of the SDG

2.4 Carbon Mineralization Technology Flagship Center Applications





Thank you

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