



*Empowered lives.
Resilient nations.*

Information/Knowledge Management System for Improved Monitoring of the Global Environment in Georgia

12th session of the Joint Task Force on
Environmental Statistics and Indicators

17-18 November, 2016
Geneva, Switzerland



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■ Environmental Information and Education Centre

Established in 2013 under the Ministry of Environment and Natural Resources Protection of Georgia the EIEC aims to:

- raise public awareness on environmental protection;
- support public participation in the decision-making process
- facilitate access to justice
- promote better availability of timely, relevant and reliable environmental information to various stakeholders

via

Environmental Information Management System



UNDP/ GEF Project

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GOAL

To make the best practices and innovative approaches for meeting and sustaining the Rio Conventions through national development of policies and programmes

OBJECTIVE

To develop individual and organizational capacities in the Ministry of Environment and Natural Resources Protection (MENRP), in particular at the Environmental Information and Education Centre (EIEC) for improved monitoring of environmental impacts and trends for better environmental management.

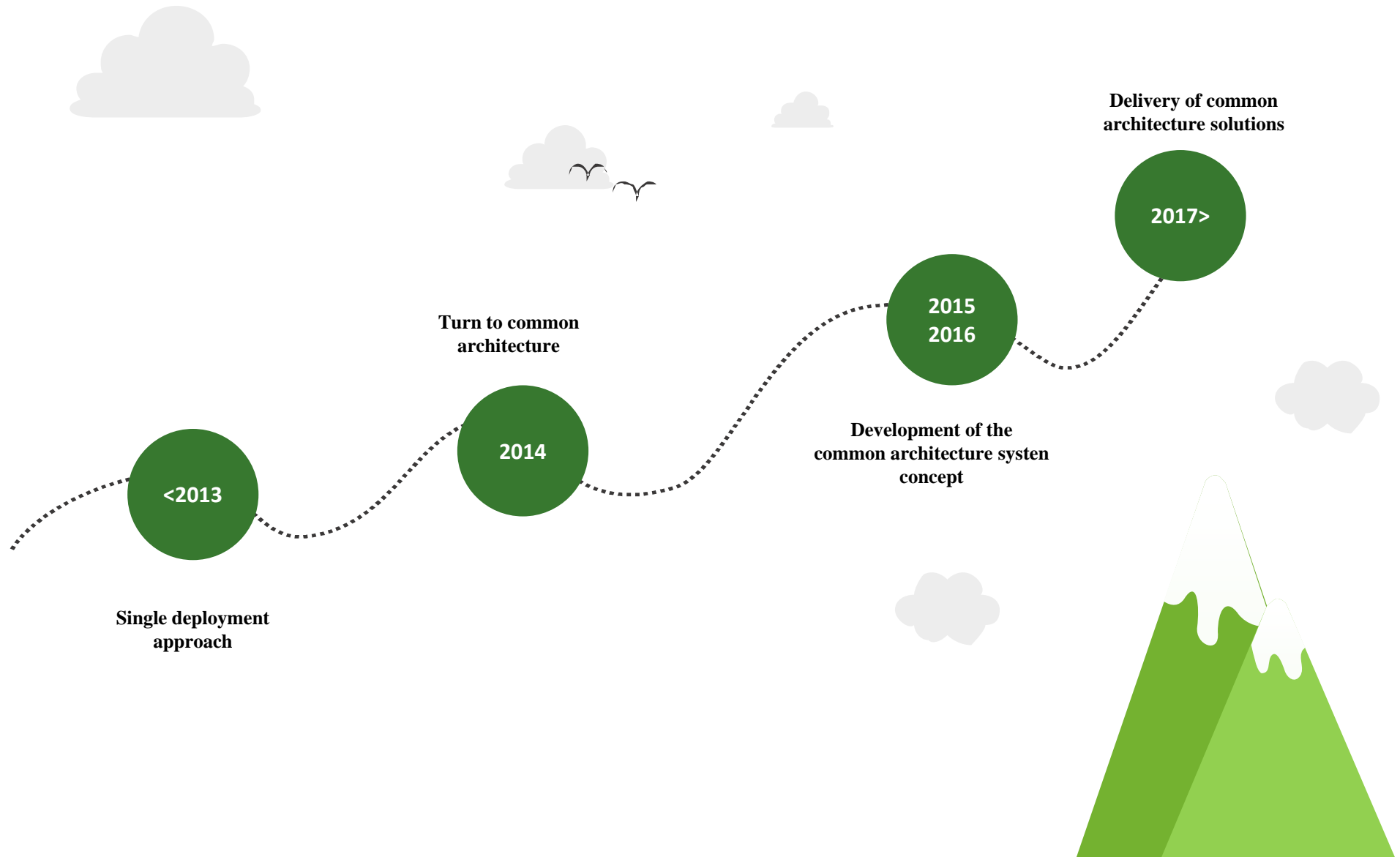
Project duration – 3 years (2016-2018)

Stakeholders

- Ministry of Environment and Natural Resources Protection
- Line Ministries and National Statistics Office
- Academic Sector and NGOs
- Business



Why the system matters



■ EU Association Agenda



Directive No 2011/92/EU on the assessment of the effects of certain public and private projects on the environment¹



Directive 2007/2/EC of the European Parliament and of the Council of Establishing an Infrastructure for Spatial Information



Directive No 2003/4/EC on public access to environmental information and repealing Directive No 90/313/EEC



■ Thematic focus

- UNFCCC (Articles 4 and 5);
- UNCBD (Articles 12, 14, 17 and 26)
- UNCCD (9, 10 and 16).

Project addresses the following components:

- Integration
- Monitoring
- Reporting

Aarhus Convention

System is designed in line with the spirit of Aarhus Convention
Providing necessary tools for enforcing all three pillars.



Pillar 1

Access to information: any citizen should have the right to get a wide and easy access to environmental information



Pillar 2

Public participation in decision making: the public must be informed over all the relevant projects and it has to have the chance to participate during the decision-making and legislative process



Pillar 3

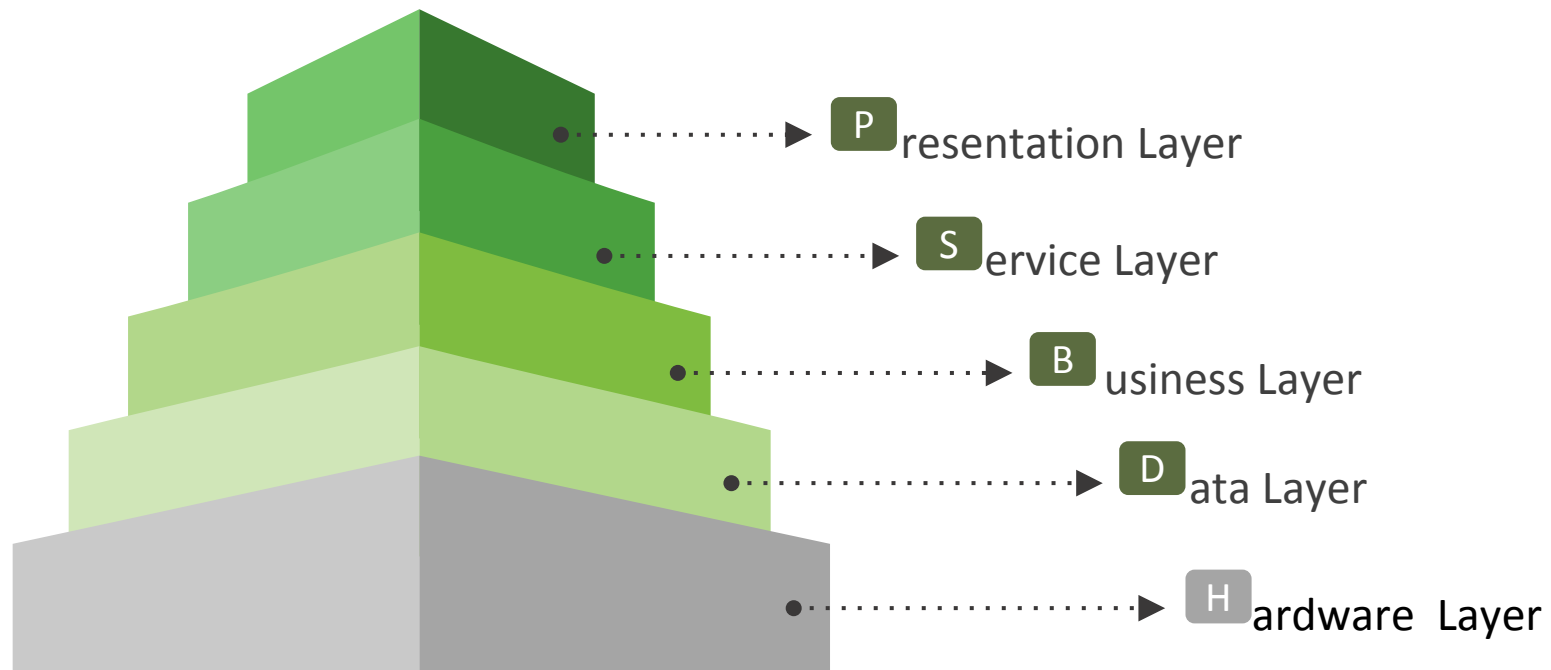
Access to justice: the public has the right to judicial or administrative recourse procedures

Pillar 1

Pillar 2

Pillar 3

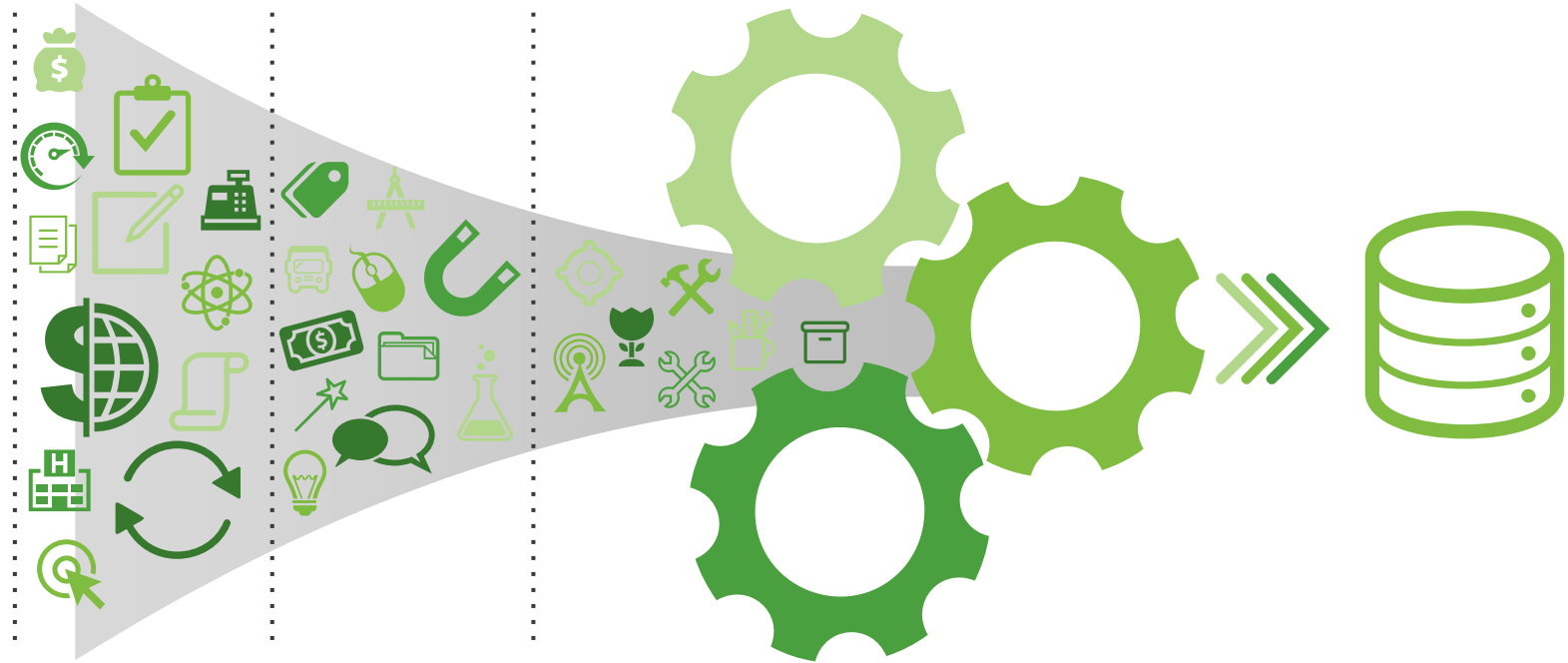
System Layers



Data Collection

Authenticaton Verification Confirmation

Data Sources



■ Sensor Network

System Collects Data from various sources, providing necessary connectivity options and setting respective packet standards.

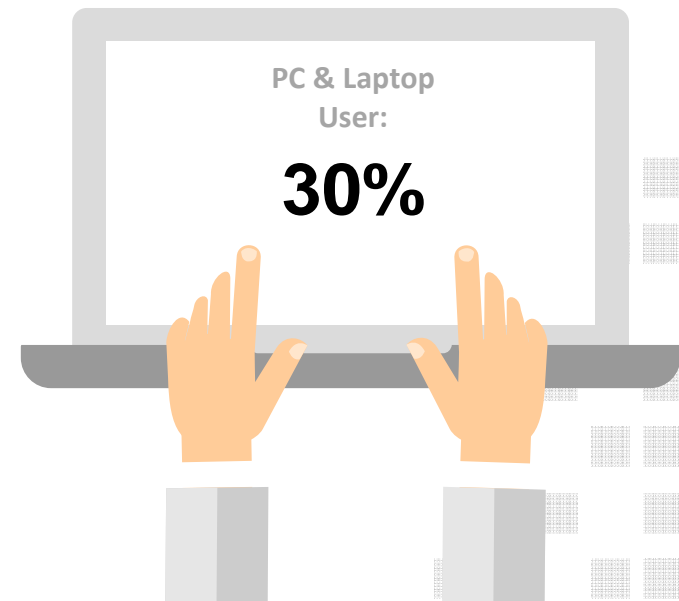
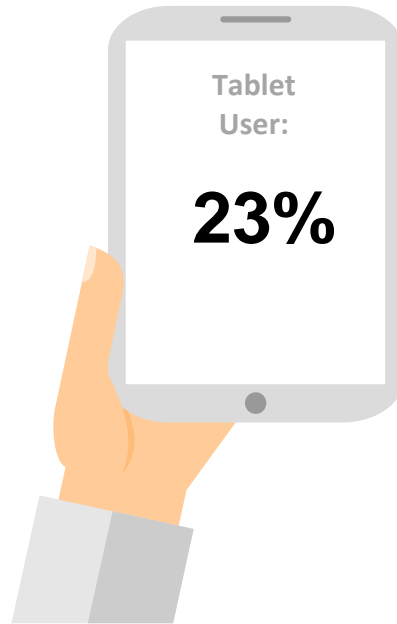
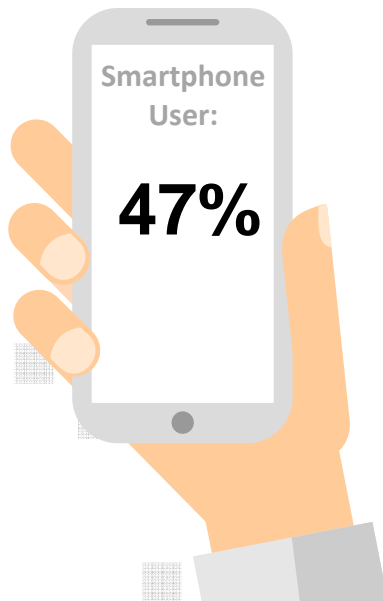


Mobile

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System target growing number of mobile devices for convenient and ad-hoc use.

2015 statistics for general online services usage



Citizen Data

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Reports

There is an increasing demand from general public on easy and convenient ways to report infringements and crime



IoT Links

With the rapid development of the Internet of Things, lot of service providers would link environmental data with the behavior of IoT Devices



Measurements

Every new generation of mobile phones are equipped with more and better sensors. IoT devices may also provide data to public services.



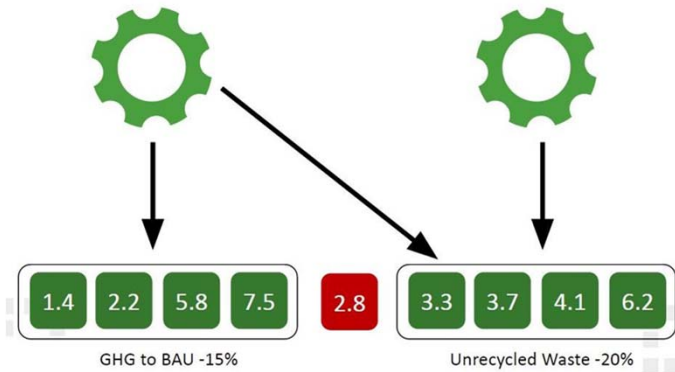
Feedback + Polls

While measurements remain key source for EIS/KMS, public opinion is a significant driver for government's effectiveness

System Tools

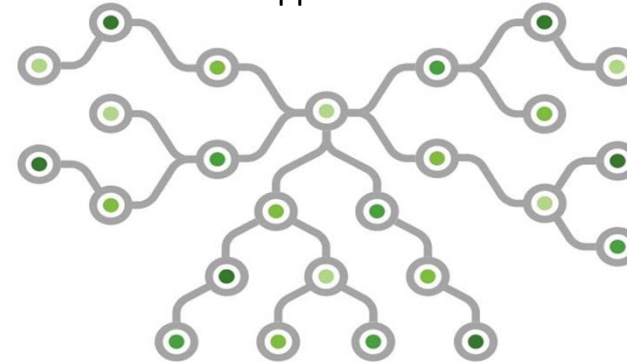
Planning

System allows better planning by ensuring avoidance of overlapping and omissions



Alert and Early Warning Systems

AEKI encapsulates existing and new EW/Alert systems Providing additional layer of safeguarding and analytical support.



Decision Support Tools

Decision Support Systems are integral part of system. Both human and machine based models should be possible



Live Measurement



	%	Shift	Flow
JAN	47	9	751
FEB	48	92	541
MAR	33	47	514
APR	69	55	445
MAY	55	73	487
JUN	41	25	648
JUL	63	47	711
AUG	41	12	448
SEP	66	38	512
OCT	64	67	441
NOV	45	3	498
DEC	79	23	693

Data Series

Risk Assessment

System helps us to set proper priorities to handle most of the risk with limited resources



System Tools

GIS Integration

To improve interoperability, System concept considers higher level of GIS consolidation and centralization, than for other applications.



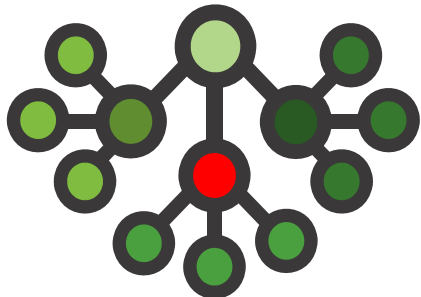
Remote Sensing

Remote sensing is rapidly growing discipline significantly redefining observation methods and procedures, becoming as regular as GIS.



Reporting

Reporting is one of the most crucial components of the System, because of its data model, ensures customizable reporting.

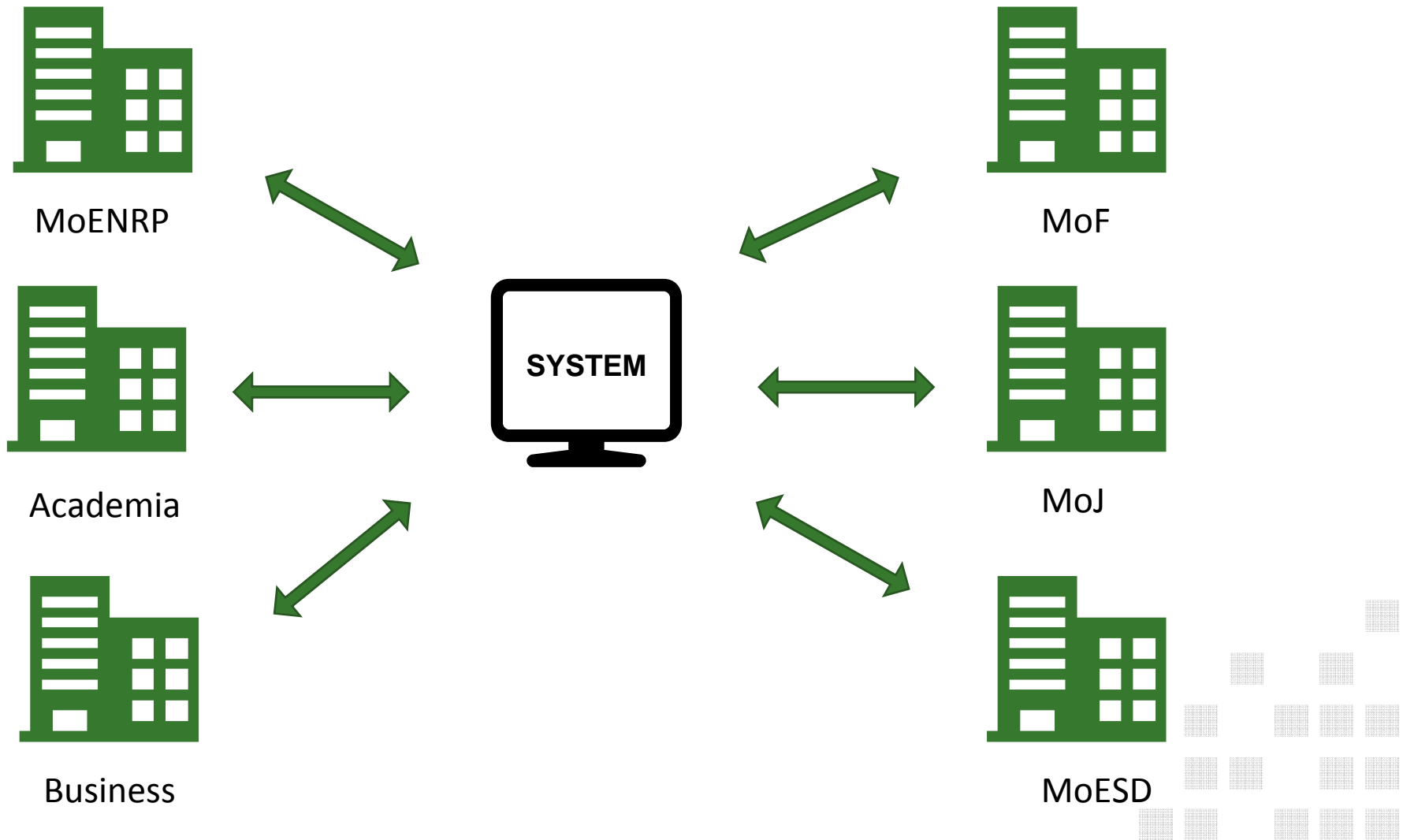


“Recall all affected flora and fauna species in for the forest fire withing the given GIS shape”

“Recall and rank all degraded land zones within Kakheti region particularly considered as a result of climate change”

“Recall total GHG Reduction for under NDC commitment within the project N component M”

■ Data Sharing and security



Summary

Advantages of System concept

Adaptive

It is **virtually impossible**, to predict long term development paths for modern IT systems. Thus, well designed infrastructure should adapt to new tendencies and requirements

Modular

No system may handle all possible tasks, AEKI builds on modules of various level of complexity. It provides necessary tools for proper connectivity and unified user experience.

Agile

Development never stops within system ecosystem. Improvements does not necessarily need developers' involvement, advanced users are able to customize system after their needs and new challenges.

■ Long term maintenance - EIEC

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