

# Spatial Data Infrastructures by 2020

## Where do they go?

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# Background

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- Spatial Data Infrastructure – Mapping enterprise as the aggregate of agencies, people, procedures, technologies and data
- SDIs date back to the 80s
- New thinking about SDIs today
  - Digital Earth

# Outline

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- Disaster Management
  - Disaster management infrastructure
- Knowledge infrastructure
- Spatial Data Infrastructures
  - Their role in the knowledge infrastructure
- Challenges ahead

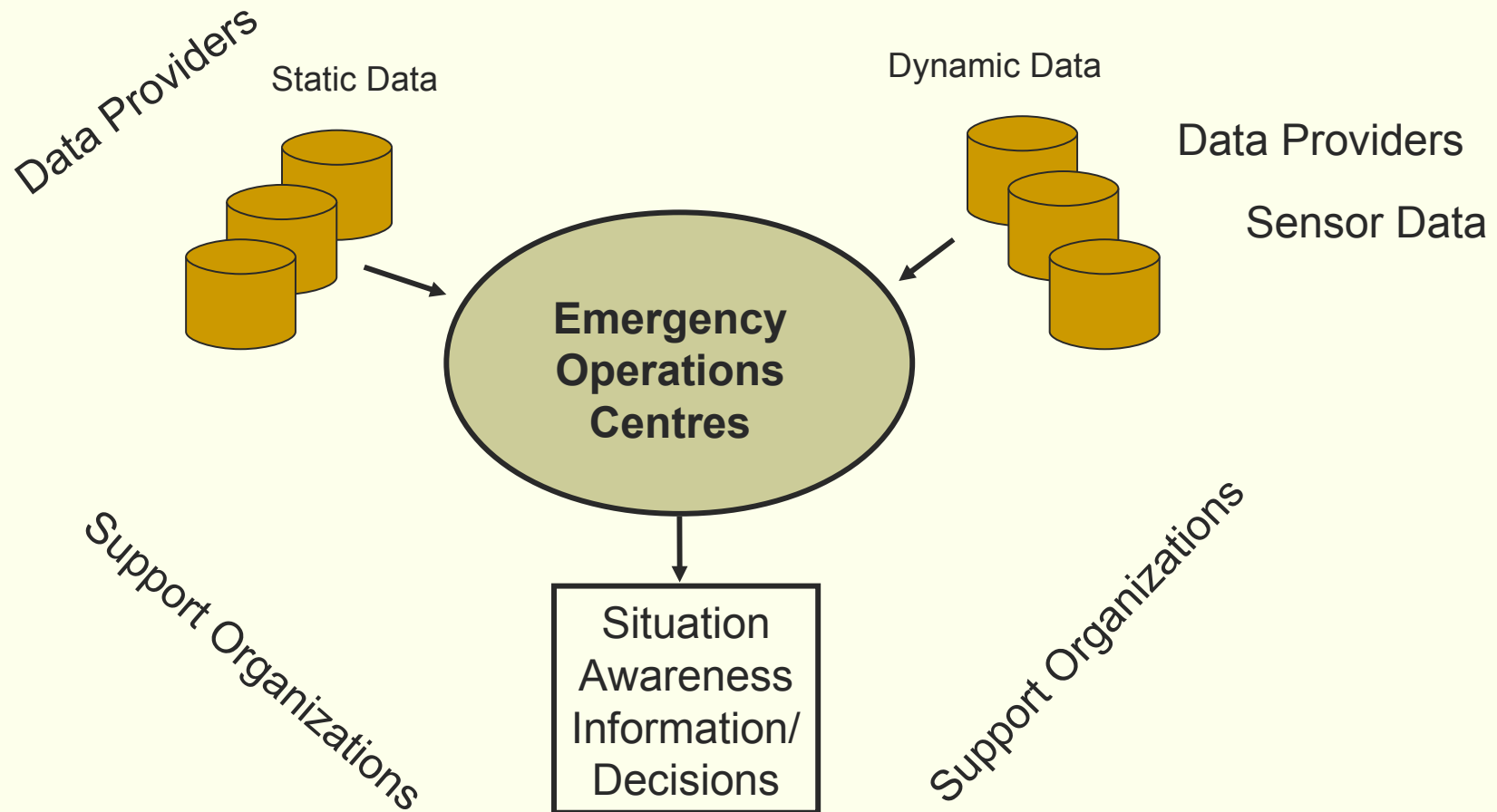
# Disaster Management defined

- “Serious disruption of the functioning of a community or a society causing widespread human, material, economic or environmental losses” [UN]
- Disasters occur at a certain space and at a certain time
- Requires collaboration between many actors
- Requires effective organization

# Disaster Management – Data Need

- Static Data
  - Base maps, POIs (location of hospitals etc.), Population, technical data of vehicles or instruments, contact persons in committees or health organisation and all information on support-potentials for personnel, material and infrastructure
- Dynamic Data
  - meteorological data, radioactivity, Water levels, forecast data of hazard warning systems
- Location is important

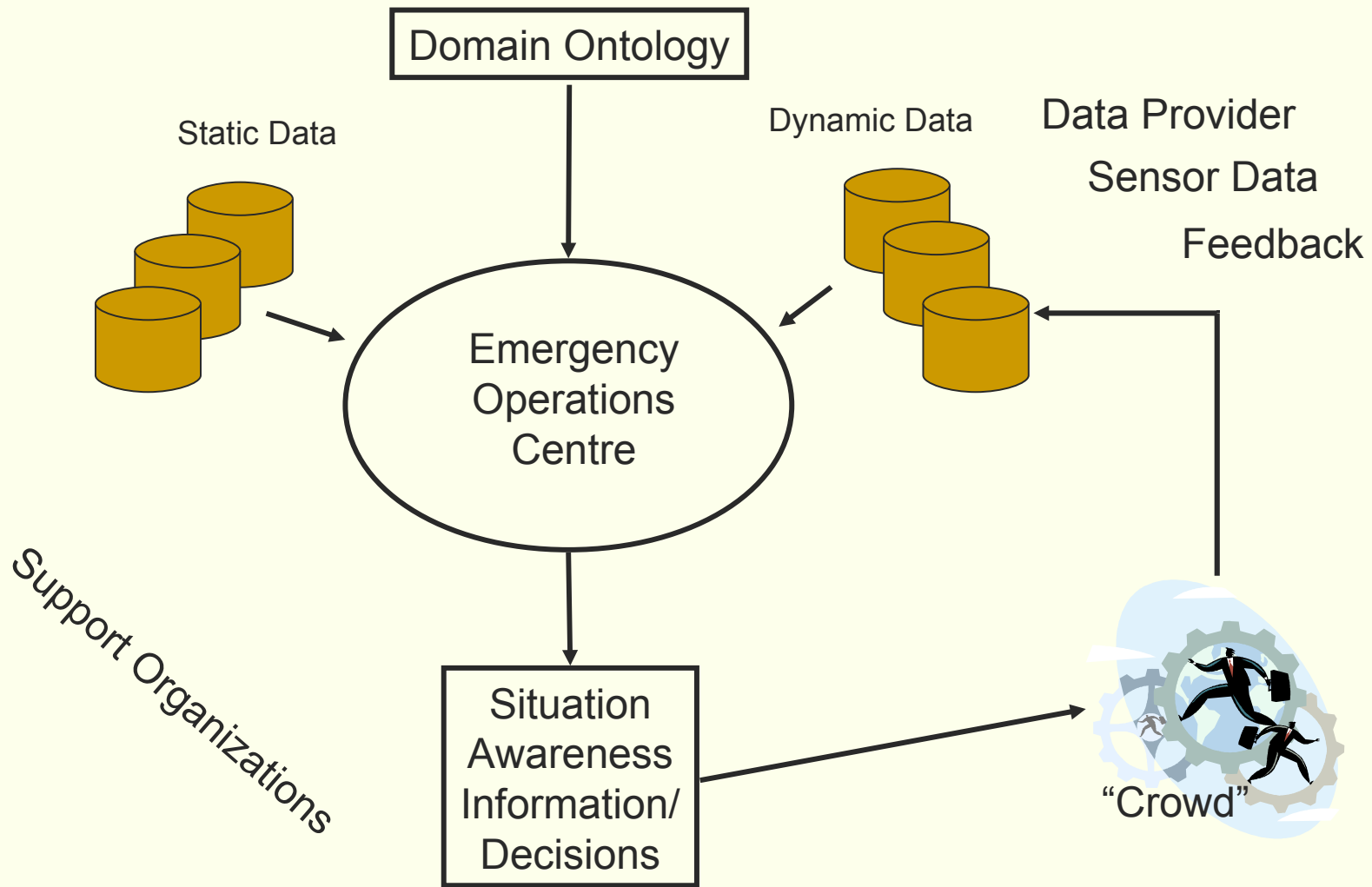
# Disaster Management Infrastructure - DMI



# Disaster Management - New Technology

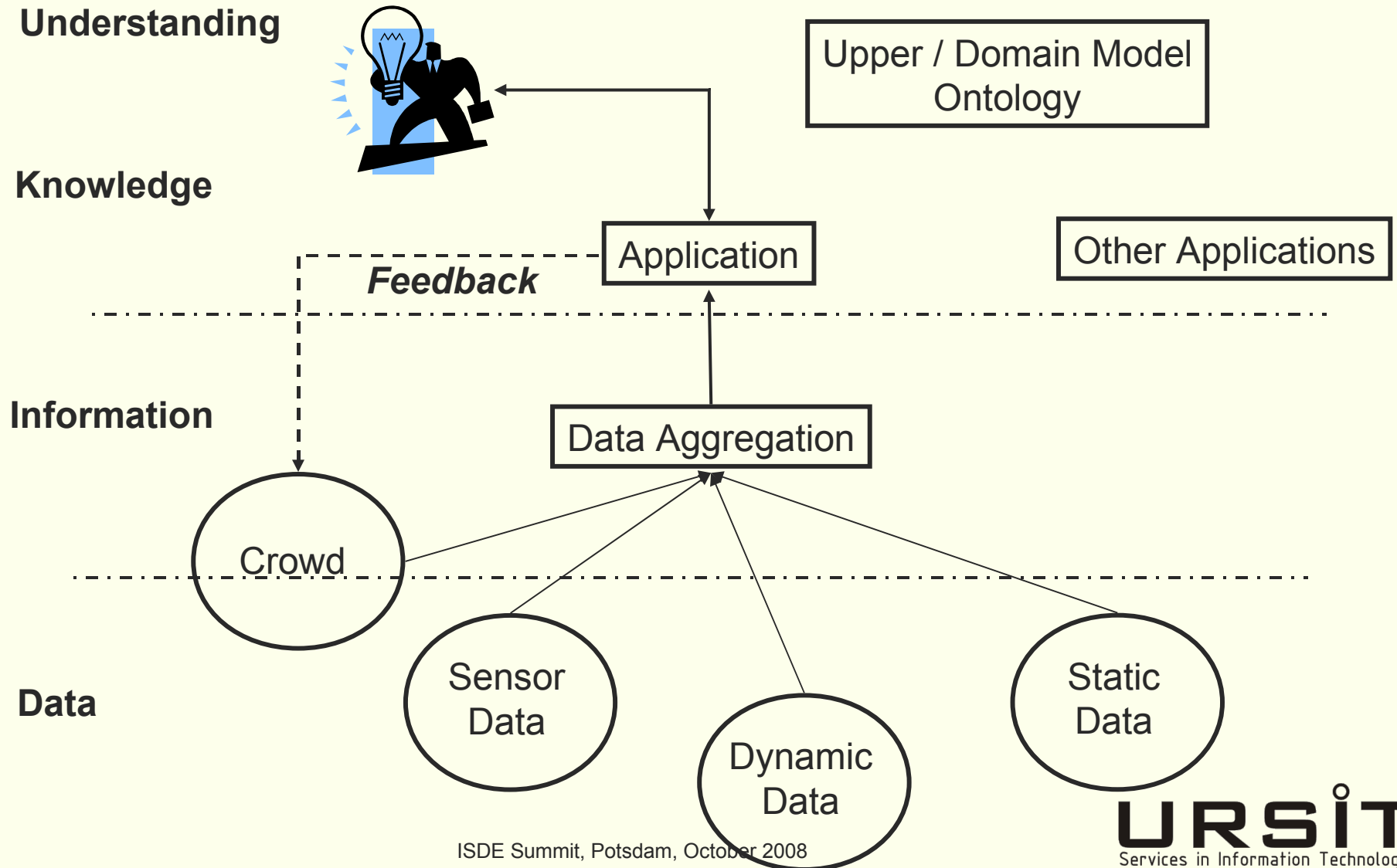
- Interoperability and standards
  - OGC, OASIS, EIC, W3C
- Open Source solutions
  - SAHANA, InSTEDD
- Disaster Management ontology
  - Open ontology
- Participation of actors (Web 2.0)
  - Experiments that combine various technologies
- Still a long way to adoption

# DMI revised





# Generalisation: Knowledge Infrastructure



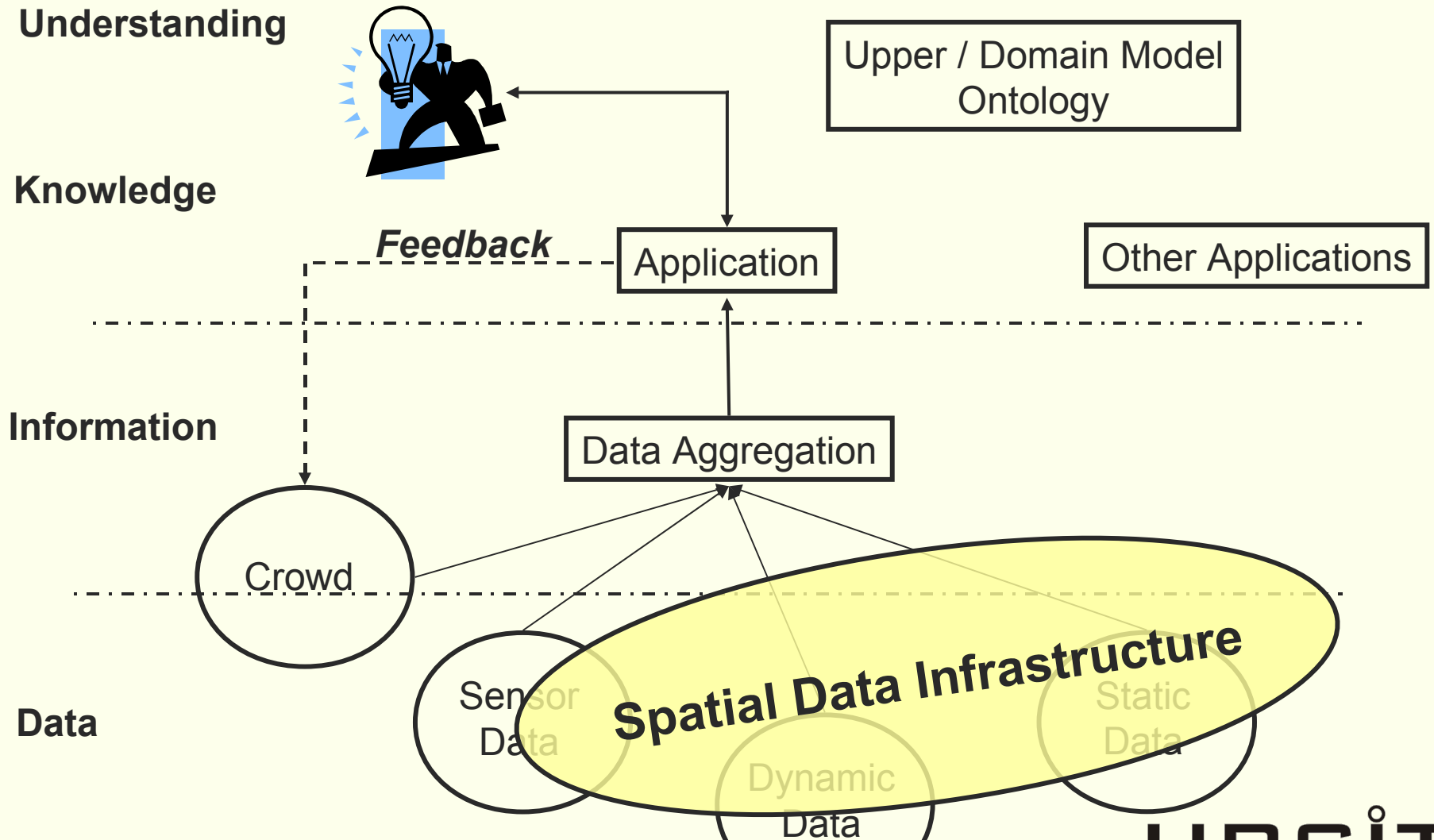
# Knowledge Infrastructure

- Data, Information, Knowledge, Understanding
- Knowledge is implemented by using ontologies
  - Ontology: conceptual and semantic representation of a knowledge domain
  - Upper, domain, personal, geo- ontology
  - Concepts refer to a location
- User participation (crowd sourcing)
  - Anyone can contribute more knowledge
  - Open environment
  - Users create tags (meta data)

# The role of SDIs

- Aggregate of agencies, people, procedures, technologies and data as a nation's mapping enterprise
- Access to spatial data via meta data
- Disaster management
  - Need for spatial data
  - Need for other types of data – many data sources
  - DMI (KI) and SDI interact

# The role of SDIs



# Challenges

- Integration of spatial data and other data
- Geo-referenced ontologies
  - Guide access to spatial data
  - Visualisation of concepts
- Organization of content
  - Folksonomy vs. Semantics
  - Tags vs. ontologies
  - Meta Data: formal vs. user created
- New forms of maps
- “Next-Generation Digital Earth”
  - Need for the level of knowledge

# Thank you for your attention !

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