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Strategy for the construction of KIGAM geoscience data repository system

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Geoscience digital and physical data record the history of processes that operate on the earth today and in the past and provide insights that lead to improved prediction of potential hazards, both immediate and long term [1]. The purpose of this study is to establish a mid-long term strategy for the construction of geoscience data repository system of KIGAM (Korea Institute of Geoscience & Mineral Resources), which is the unique government-funded geoscience research institute with the history of 100 years in 2018. Currently, we are developing new integrated geoscience data repository system to manage digital research data and physical samples, and to share them with national and international people. KIGAM has amassed many geoscience data including digital data and physical samples such as experimental and observational data, and rock and drilled core produced by geological survey, mineral exploration, and on-shore and off-shore geophysical exploration, most of which remains potentially useful and would be costly to replace, and much of which is irreplaceable [2]. The diversity and quantity of these geoscience digital and physical data continue to expand, and as they have, so has need for data repository system to support the preservation of and access to those needing preservation. But these data are managed in separately and some data are managed without recording. And some data are lost. So, we are developing the new integrated geoscience data repository system in order to preserve and share with as many people. This data repository system will collects, manages and shares data which was produced from 100 years ago and will be produced in the future. The strategic plan focuses DMP (Data Management Plan) and IGSN (International Geo Sample Number) to build a data repository
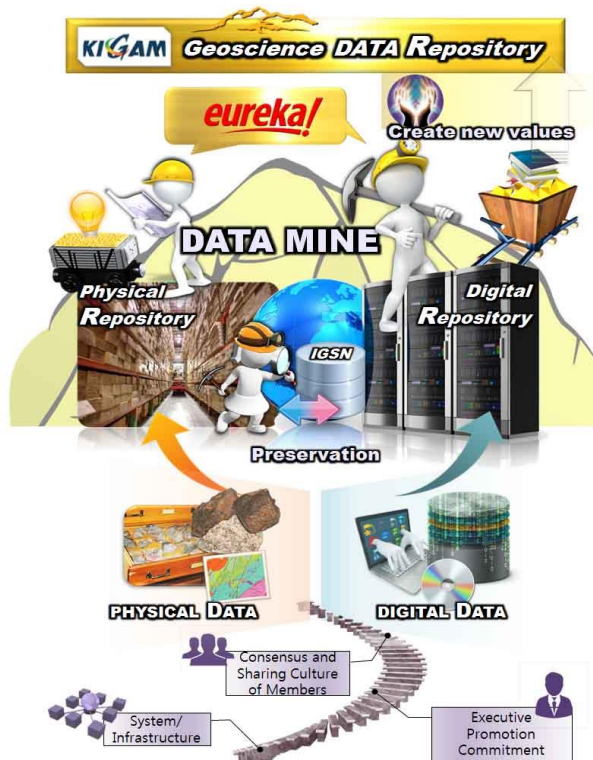
successfully. DMP is useful tool for metadata generation, data preservation, and analysis before the project begins; this ensures that data are well-managed in the present, and prepared for preservation in the future [3]. IGSN is 9-digit alphanumeric code that uniquely identifies samples from our natural environment and related sampling features [4]. We decided to apply the IGSN metadata schema into our data repository system for the sample registration. Currently, we are developing the repository system using DMP and IGSN metadata schema. In this year, the data repository system is operating on a trial basis. We expect that this data repository system will be one of most important systems to create new values in KIGAM. And in the mid-long term perspective, this system is expected to grow into Korea's representative repository system in the geoscience research and academic sector.

Figure 1. Big picture of KIGAM geoscience data repository system

References:

[1] National Academy of Sciences (2002), Geoscience Data and Collections: National Resources in Peril, 128p.

[2] J.G. Han et al. (2015), Mid-long term Strategic Planning for the Construction of KIGAM's Geoscience Information Management System, Korea Institute of Geoscience & Mineral Resources, 181p.

[3] https://en.wikipedia.org/wiki/Data_management_plan

[4] http://www.igsn.org/