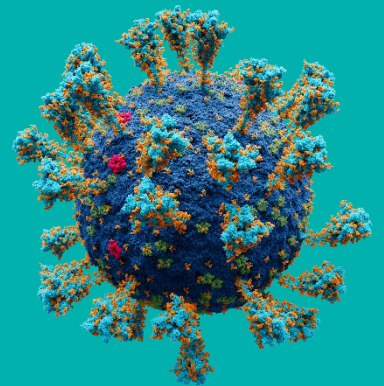




**Korea Institute of  
Science and Technology Information**

# Final Report



International Collaborative Research on Digital Data Exchange Cooperation  
Project between Korea and Thailand to guide the rapid response of the global  
epidemic

By Faculty of Informatics, Burapha University, October 2023

## Executive Summary

The collaborative research project between Burapha University in Thailand and the Korea Institute of Science and Technology Information (KISTI) in South Korea is focused on addressing the global epidemic. The project involves several key objectives:

- In-depth analysis of disease-related data provided by the Thai Government and Digitization for the use of data sharing between Korea and Thailand.
- Establishment of pilot solution for the collection and sharing of available source data in Thailand for the creation of learning datasets.
- Development of visualization technology to report the results of disease prediction in Thailand provided by KISTI on the solution.
- Joint discovery of predictive cases of disease in Thailand using KISTI technology.

Ultimately, the overarching goal of this project is to create a dataset and employ effective techniques to guide a rapid response to global epidemics. This research collaboration is expected to contribute to better understanding and management of epidemics, explicitly focusing on digital data exchange and predictive modeling.

According to the survey, the Open Government Data portal in South Korea, accessible at <https://www.data.go.kr>, promotes transparency and innovation through data sharing. It provides various government data, including economic, social, environmental, and demographic information, with reliable and regularly updated datasets. The portal offers user-friendly search and browsing, supports multiple data formats and APIs, and may include visualization tools. Users can engage with the community and access developer resources. Disease-related information is comprehensive, including symptoms, transmission, and prevention. The portal provides surveillance data, epidemiological reports, timely updates on outbreaks and response measures, risk assessments, and prevention guidelines. Publications and communication channels are available. The user interface is user-friendly and may offer multilingual support. Explore the website for accurate and up-to-date information.

This research further conducts a preliminary experiment on open datasets related to communicable diseases in Thailand, covering diseases such as Measles, Hand Foot Mouth, COVID-19, Dengue, Chikungunya, Zika, and Monkey Pox. Most of the data sources originate from the Department of Disease Control in the Ministry of Public Health. Detailed data sources and formats for each disease are provided as follows.

- Measles and Hand Foot Mouth data can be found on the ThaiHealthStat website (<https://www.hiso.or.th/thaihealthstat/>), offering district-level information, province data, and sick rates from 2017 to 2021.
- Hand Foot Mouth is sourced from [data.go.th](http://data.go.th) and includes district and province details and collected year information.
- COVID-19 data sources include multiple links, providing details like gender, age, nationality, and more. Data is available in XLSX, CSV, API, and XML formats, with the latest data from 2022.
- Dengue data is sourced from [data.go.th](http://data.go.th) and includes district and province details and collected year information.
- Chikungunya data is accessible on the ThaiHealthStat website (<https://www.hiso.or.th/thaihealthstat/>), offering year-wise details, gender, sick numbers, and more for the years 2017-2021.
- Zika data sources include links to datasets in XLSX, JSON, and CSV formats, providing information on various aspects related to Zika for the year 2016 (updated every two weeks).
- Monkey Pox data is available on Kaggle, offering details on confirmed and suspected cases, hospitalizations, and travel history in CSV format for 2023 (updated daily).

In addition to the research collaboration and data exploration, we have developed a visualization system using CKAN, which offers various visualization formats accessible within the system. These formats include line charts, bar charts, stacked bar charts, pie charts, sunburst charts, treemap charts, scorecards, and heat maps. This system enhances the understanding and interpretation of data, effectively managing disease outbreaks and other related datasets.