

立法會 *Legislative Council*

LC Paper No. CB(1)1042/2023(08)

Ref: CB1/PL/DEV

Panel on Development

Meeting on 28 November 2023

Background brief on the development of the Common Spatial Data Infrastructure

Purpose

This paper provides background information on the development of the Common Spatial Data Infrastructure (“CSDI”) and summarizes the views and concerns expressed by Members on the subject at relevant committees of the Legislative Council (“LegCo”).

Background

2. As stated in the 2017 and 2018 Policy Address, establishing the CSDI forms part of the implementation of the Smart City Blueprint. In the 2019-2020 Budget, the Financial Secretary announced that \$300 million¹ would be earmarked to expedite the development of digital infrastructure, with a view to facilitating the dissemination, utilization and innovative application of geospatial data.

3. With the support from the Innovation, Technology and Industry Bureau (“ITIB”), the Development Bureau (“DEVB”) takes the lead in the development of CSDI and its portal. It aims to provide a map-based digital infrastructure as a one-stop data platform to open up and centralize

¹ The Administration estimated that the total non-recurrent expenditure of the proposed development of CSDI and three-dimensional (“3D”) digital map to be \$300 million over five years from 2019-2020 to 2023-2024, made up of \$150 million for DEVB and its family of departments to expedite the implementation of CSDI, and \$150 million for the Lands Department to develop the 3D digital map in a progressive manner. Approval of the \$300 million funding was sought in the context of the Appropriation Bill 2020, which was passed on 14 May 2020.

standardized spatial data, allowing free use by government departments, businesses, academia and the public. To allow the public and private sectors to enjoy early benefits of using spatial data ahead of the full operation of CSDI, the Administration launched four quick-win projects in 2020 and 2021, namely Map Application Programming Interface (“API”), Geo-tagging Tool, District-based Spatial Information Dashboard and Address Data Infrastructure (GeoAddress). The Geospatial Lab established by DEVB in 2021 further provides a platform to encourage the younger generation, startups and creative minds to explore and exchange ideas for harnessing the potential of spatial data.

4. In December 2022, the CSDI portal (<https://portal.csd.gov.hk/>) and the first 3D Visualisation Map dataset were launched for public use. More than 500 spatial datasets from various government departments have been made available through the CSDI portal, covering aspects such as planning, lands, buildings, works, population and transport. In addition, government bureaux/departments (“B/Ds”) are required to submit annual spatial data plans to set out the datasets they plan to release in the coming three years. Through the Common Spatial Data Advisory Committee (“CSDAC”),² the Administration also taps the views of outside experts on suitable types of datasets to be made available on the CSDI portal.

5. As regards the implementation arrangements for CSDI, the Common Spatial Data Steering Committee (“CSDSC”).³ Co-chaired by DEVB and ITIB and attended by key government spatial data owners, CSDSC provides strategic directions for and monitors the progress of the development of CSDI. It also oversees the usage of the \$300 million funding. Meanwhile, the Spatial Data Office (“SDO”)⁴ established under DEVB and staffed by a multi-disciplinary team serves as CSDSC’s executive arm.

² CSDAC is chaired by the Director of Lands and comprises official members from five B/Ds as well as non-official members from relevant sectors, including the construction industry, geospatial and information technology related groups, academics, social services, public utilities and transport operators. CSDAC advises the Government, through the Common Spatial Data Steering Committee, on the enhancement and promotion of the development of CSDI in Hong Kong.

³ CSDSC reports to the Steering Committee on Innovation and Technology (“SCIT”) chaired by the Chief Executive and seeks policy steer from SCIT on key policy issues that may arise from the CSDI implementation.

⁴ In November 2019, the Administration proposed to create one supernumerary Chief Land Surveyor (D1) post to lead SDO in steering and expediting the development of CSDI, and one supernumerary Government Land Surveyor (D2) post to head the Mapping Management Centre to be established in the Survey and Mapping Office of LandsD for supporting the rolling out of CSDI. The funding proposal ([EC\(2019-20\)13](#)) was endorsed by the Establishment Subcommittee on 18 December 2019 and approved by the Finance Committee on 15 May 2020.

Major views and concerns expressed by Members

6. The major views and concerns expressed by Members on the development of CSDI from the 2018-2019 session to the 2020-2021 session are summarized in the ensuing paragraphs.

Functionality of the Common Spatial Data Infrastructure portal

7. Expressing support for the development of CSDI in general, Members called on the Administration to expedite the CSDI development which could be widely used in many meaningful aspects, such as flood forecasting particularly in village areas, promotion of heritage conservation and green tourism. Members also enquired whether application developers in the private sector were allowed to use the data on the CSDI portal to develop innovative applications that brought convenience to the public, and whether the Administration would make it mandatory for all B/Ds to release data in a machine-readable format through the CSDI portal.

8. The Administration advised that all B/Ds would be encouraged to progressively release data under their purview through the CSDI portal unless there were security, privacy and other policy concerns and depending on the availability of resources. The CSDI portal would release data for free in an open, standardized and machine-readable format on a continuous and real-time basis, and offer APIs so that data could be easily shared, processed and used by application developers. Businesses would be allowed to use the data for commercial purposes, but they would be required to keep the spatial data in the standardized format, so that the data could be easily used by others.

9. Some Members pointed out that the information of the CSDI portal had to be duly updated to cater for the needs of users. The Administration advised that it recognized the importance of data update for CSDI, and planned to align the deadline for B/Ds to update their data standards and set up a common standard. Dataset update tag would also be available in the CSDI portal so that data users could stay informed of the data source and the time when the dataset was last updated

Release of spatial data

10. Members considered that the CSDI portal as a one-stop data platform should include not only data held by DEVB's family of departments but also government data held by other departments as well as private sector data (e.g. real-time traffic information). They were concerned about how the Administration would convince private enterprises to open up their data

and take part in the development of the CSDI portal. Some Members opined that to speed up the process of spatial data sharing, one option was to include provisions for free open data when the Government entered into contracts with private enterprises (e.g. when entering into franchise agreements with public transport operators).

11. The Administration advised that the private sector, including public transport operators and utility companies, was generally positive towards releasing their data. For instance, public bus companies and the MTR Corporation Limited had been providing their real-time bus/train arrival information to the Office of the Government Chief Information Officer (“OGCIO”) for release through the Public Sector Information Portal. To realize more fully the potential of CSDI in the longer run, it was one of the major duties of SDO to secure the cooperation of the private sector to make available their spatial data for sharing through the CSDI portal.

12. In addition, Members pointed out that the current practice of the Administration to aggregate the Territorial Population and Employment Data Matrix (“TPEDM”) data from 454 Planning Data Zones into 26 larger Planning Data Districts before releasing the data was not conducive to use of the data by industry players. In this regard, Members asked whether the Administration would release the TPEDM data by Planning Data Zone when including the dataset in the CSDI portal with a view to facilitating use of the data by industry players. The Administration replied that Members’ view would be relayed to the Planning Department, which was responsible for publishing the TPEDM data.

Digital security

13. Members expressed concern on how the Administration would protect the digital infrastructure of the CSDI portal from national security threats and cyber threats/attacks, and opined that open source software should not be used for the CSDI portal as no local round-the-clock technical support service would be available.

14. The Administration stressed that it attached great importance to the digital security in the development of the CSDI portal. DEVB and the Lands Department had worked closely with and sought advice from OGCIO to ensure that the core technologies adopted for the portal and the associated technical support service would meet the Government’s high standards in terms of digital security, service stability and system sustainability. The Lands Department had also worked with the contractor to review the choice of technical system for the portal. Regarding the cloud platform, the portal made use of the Government Cloud Infrastructure Services developed by

OGCIO. Furthermore, to protect the CSDI portal from cyber threats/attacks, digital security measures/technologies recommended by OGCIO, such as firewalls, anti-virus software and intrusion detection systems, would be adopted.

Implementation and management

15. Noting that CSDSC was co-chaired by DEVB and ITIB, Members expressed concern that such arrangement would lead to unclear delineation of responsibilities. The Administration advised that most of the datasets to be released through the CSDI portal up to 2022 were managed by DEVB's family of departments. With the cooperation of ITIB, DEVB would take the lead in the CSDI development during the period. As a further step, CSDSC would work with other data owners including B/Ds, public utilities companies and private companies to release datasets which might be of interest to users through CSDI beyond 2022.

Council questions

16. At various Council meetings between December 2019 and January 2022, Members raised a number of questions on matters relating to the development of CSDI. The hyperlinks to the questions and the Administration's replies are provided in the **Appendix**.

Latest development

17. At the meeting of DEV Panel to be held on 28 November 2023, the Administration will brief members on the latest progress of the development of the CSDI portal, and the proposal to increase the financial commitment for the project by \$160 million. The Administration plans to seek LegCo's approval for the funding in the context of the Appropriation Bill 2024.

Relevant papers

18. A list of the relevant papers on the LegCo website is in the **Appendix**.

Development of the Common Spatial Data Infrastructure

List of relevant papers

| Committee | Date of meeting | Paper |
|----------------------------|------------------|---|
| Panel on Development | 25 June 2019 | Agenda Item IV: Development of Common Spatial Data Infrastructure and 3D Digital Map Minutes of meeting |
| | 19 November 2019 | Agenda Item I: Proposed creation of two supernumerary posts of one Chief Land Surveyor in Development Bureau and one Government Land Surveyor in Lands Department for rolling out the Common Spatial Data Infrastructure Minutes of meeting |
| | 22 June 2021 | Agenda Item V: Progress report on the development of the Common Spatial Data Infrastructure Minutes of meeting Follow-up papers (1) (Chinese version only), (2) |
| Establishment Subcommittee | 18 December 2019 | Agenda Item I: Proposed creation of two supernumerary posts of one Chief Land Surveyor (D1) in the Planning and Lands Branch of the Development Bureau and one Government Land Surveyor (D2) in the Lands Department with effect from 1 April 2020 or upon approval of the Finance Committee (whichever is later) up to 31 March 2025 to oversee the implementation of the Common Spatial Data Infrastructure, thereby ensuring that major deliverables can be rolled out on schedule according to the pledged timetable Minutes of meeting Follow-up paper |

| Council meeting | Paper |
|------------------------|--|
| 18 December 2019 | Question No. 8: <u>Addressing the threats of inundation</u> |
| 15 July 2020 | Question No. 10: <u>Common Spatial Data Infrastructure</u> |
| 29 September 2021 | Question No. 15: <u>Common Spatial Data Infrastructure</u> |
| 26 January 2022 | Question No. 4: <u>Using smart technologies for land identification and housing production</u> |