

TECH OFFER

Common Data Environment



KEY INFORMATION

TECHNOLOGY CATEGORY:
Infocomm - Smart Cities

TECHNOLOGY READINESS LEVEL (TRL): **TRL9**
COUNTRY: **HONG KONG**
ID NUMBER: **TO175155**

OVERVIEW

With the increasing complexity and scale of projects, the need for efficient collaboration and information management has become more apparent, especially in large-scale initiatives. In response, many countries have mandated the use of Building Information Modelling (BIM) to enforce stringent construction project management and document control standards. As a result, BIM has been widely adopted across the industry, demonstrating its significant benefits.

To better integrate work processes and connect stakeholders throughout the construction and building lifecycle, a Common Data Environment (CDE) is essential. The CDE provides a single source of truth with ISO 19650 full compliance approach to creating, organizing, and communicating information for project collaboration and lifecycle management of facilities.

As a key component of digital transformation, the CDE integrates seamlessly with BIM workflows. It is regarded as one of the pillars of construction digitalization, enhancing BIM's effectiveness by serving as a central repository for collaboration throughout the entire project lifecycle.

The technology provider seeks collaboration with construction firms, architects, BIM specialists, IT consultants, and facility managers.

TECHNOLOGY FEATURES & SPECIFICATIONS

One of the major deliverables of CDE is the information models, e.g., Project Information Model (PIM) and Asset Information Model (AIM), which contains federated information deliverables produced through the CDE workflow to address the needs of all interested parties.

Essentially, CDE is composed of major components:

- **Electronic Document Management System (EDMS):** This component ensures secure storage, retrieval, and version control of documents, enabling easy access to project information for all stakeholders.
- **Workflow management:** It automates and streamlines project processes, ensuring that tasks are executed in a structured and timely manner, improving efficiency and collaboration across the team.
- **2D and 3D coordination:** This component facilitates the integration and visualization of 2D drawings and 3D models, enhancing design coordination, clash detection, and overall project accuracy.
- **Dashboard, Gantt Charts, Kanban:** Visual tools for tracking progress, timelines, and tasks. Dashboards offer real-time data, Gantt charts manage schedules, and Kanban streamlines task flow.

POTENTIAL APPLICATIONS

- **Project Management:** Facilitates project planning, execution, and monitoring, ensuring efficient resource allocation and goal achievement.
- **Task Management:** Organizes, prioritizes, and tracks tasks, ensuring timely completion of project activities.
- **Document Management:** Manages creation, storage, and sharing of documents, ensuring access to the latest versions for all stakeholders.
- **2D/3D BIM Viewer:** Enables visualization and interaction with 2D/3D models for better design understanding and decision-making.
- **BIM-GIS-IoT:** Integrates BIM with GIS and IoT for enhanced spatial analysis, real-time monitoring, smart building and smart city management.
- **Cloud Options:** Provides scalable, accessible platforms for data storage and sharing, facilitating team collaboration.
- **System Integration:** Ensures seamless operation and data exchange between different project software and systems.
- **4D-7D BIM Applications:** Extends BIM beyond 3D, adding time (4D), cost (5D), sustainability (6D), and facility management (7D).
- **A.I. BIM Analysis:** Uses A.I. to optimize designs, predict outcomes, and identify issues, improving efficiency and reducing risks.

MARKET TRENDS & OPPORTUNITIES

The market potential for Common Data Environments (CDE) with ISO 19650 full compliance is strong, driven by the global construction industry's growth, especially in emerging markets. As digital transformation accelerates, there is increasing demand for technologies that enhance project management and construction processes. Rising project complexity and scale necessitate effective collaboration and information management, particularly for large, multidisciplinary projects across borders. Advances in cloud computing and mobile access enable remote work and real-time collaboration, with CDEs integrating smoothly into existing

project management systems. Key stakeholders—architects, engineers, contractors, owners, and regulators—benefit from CDE by boosting efficiency, cutting costs, speeding up decision-making, and reducing risks. As sustainability and green building gain focus, CDEs support these goals and, with advanced data analytics, help project teams better predict and manage performance, further increasing their value.

UNIQUE VALUE PROPOSITION

Enhance connection between the physical and digital world for sustainable built assets:

- **Reduce Time in Digitalization:** Accelerates digital transformation, enabling faster implementation and adoption of digital tools in construction projects.
- **Improve Data Quality:** Ensures accurate, consistent, and reliable data throughout the project lifecycle, reducing errors and enhancing decision-making.
- **Enhanced Health & Safety:** Promotes safer work environments through real-time data access and better safety management processes.
- **Boost Productivity:** Increases efficiency by streamlining workflows and improving collaboration across project teams.
- **Lower Operation Cost:** Reduces operational expenses by optimizing resource usage and minimizing waste.
- **Achieve Carbon Neutrality Goals:** Supports sustainability initiatives by optimizing processes to reduce carbon emissions and energy consumption.