

## Reference Prices of Pre-approved Technologies with Application as a Digital Platform

(Note: \*All prices are based on the information provided by the product vendors as of October 2022 which are subject to change and for reference only. Vendors shall be enquired regarding the product price and the items included. The prices do not represent in any means the fund grant under the Construction Innovation and Technology Fund (CITF). The actual fund grant amount shall be assessed and determined by the Vetting Sub-committee.)

PA Code	Product Type	Digital Platform Application Area	Product name	Vendor	Contact	Product Descriptions	Reference Price (HK\$)	Yes / No
PA18-001	Movement Sensors	SIM-A Site Environment Condition Monitoring	WISENMESHNET <sup>®</sup> System	Wuxi Wisen Innovation Co. Ltd / Digital G Limited	Tel: 9202 5335	In comparison with traditional wired measurement, the design of system is principled as (a) ultra low powered; (b) completely wireless mesh communication system; (c) minimum in size; (d) broadly compatible with different type of sensors, i.e, turn traditional sensors into self powered, wireless, automated wireless sensor network. It replaces traditional wired measurement in the midst of complicated excavation works which could be vulnerable and the repair for damaged cables are dangerous and the cost of the loss of real-time monitoring data is huge.	Reference for 10 Tilting Sensors in a Foundation Project:  Dual-axis Tilt Sensors: \$4,471/ sensor  Gateway (incl. 3-year software platform): \$17,240/ item	<input type="checkbox"/>
PA18-002	3D Reality Simulation / Data Management (CDE-related)	Common Data Platform	Geosys VR3D data management system	Geosys Hong Kong Ltd	Tel: 6198 5234 / +86 13088880388	Geosys VR3D data management system support the visualisation of 3D GIS and BIM data in one integrated viewer for users with 2D and 3D measurement and analysis functions. Web based 3D Measurement tools such as distance, path, angle, height, Volume, Section are provided.  Cloud and server-based system allows users to open the application without software installation and maintenance for different end-user's PCs.  <i>(Note: This product is CDE-related platform which the vendor shall be inquired for details.)</i>	\$150,000 (Standard Cloud hosting, 1 year)  \$250,000 (Professional Cloud hosting, 1 year)  \$400,000 (Ultimate Cloud hosting, 1 year)	<input type="checkbox"/>
PA18-007	Safety Monitoring System	SaM-A PPE Checking  SaM-B Well-being Monitoring	Construction Stage Tunnel Access Control System (TACS)	ATAL Technologies Limited	Tel: 9488 0410 (updated 31/12/2020)	The system, incorporated RFID Technology, 3G telecommunication, custom-designed software is used for real-time safety monitoring of on-site human resources and incident management.  Legend: 14, 15	Project-based solution HK\$5M approx. for TACS for Express Rail Link (XRL) [Key components for XRL project includes 185 sets RFID reader and directional antenna, 45 sets local controller, 2500 pcs RFID Tags, 10 pcs industrial PCs and other related items]	<input type="checkbox"/>

Legend of Discipline

- 14. Locally developed innovations or products
- 15. Safety-related Technologies

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PA Code	Product Type	Digital Platform Application Area	Product name	Vendor	Contact	Product Descriptions	Reference Price (HK\$)	Yes / No
PA18-009	3D Reality Simulation / Data Management (CDE-related)	Common Data Platform	Altizure.com (3D mapping. Modelling and publishing cloud system platform)	Everest Innovation Technology Limited	<del>Tel: 2688-6392</del> Temporarily suspended - vendor out of contact	This product enables reconstruction and transformation of 3D model with automated photo captured by different means e.g. cell phones, drones etc., enhancing off-site construction process monitoring, easy sharing of models for project redevelopment. Geo-referenced applications add value to BIM, GIS and AEC applications.  (Note: This product is CDE-related platform which the vendor shall be inquired for details.)  Legend: 14	Currently suspended	<input type="checkbox"/>
PA18-032	Safety Monitoring System	SaM-A PPE Checking	Visual Intelligence Safety Compliance Monitor (VISCMon) system	VHSoft Technologies Co. Ltd	Tel: 2619 8034	The VISCMon system comprises with the sensor and sensing technologies. In collaboration with artificial intelligence technologies and the latest telecommunication technologies, it provides a solution to meet the needs on safety. Specialized cameras operate like the CCTV system when monitoring work area. The cameras monitor workers and check if the required safety standards are met. Once the required safety gear is not detected, a message will be sent to site safety officer via telecommunication network.  Legend: 15	\$15,000/ camera sensing system	<input type="checkbox"/>
PA18-033	Project Management Software (DWSS-related)	SWM-A Site Record SWM-B Inspection Checklist SWM-C Defect/ Outstanding Work Monitoring	VHSmart	VHSoft Technologies Co. Ltd	Tel: 2836 0099	VHSmart is a cloud base field management platform. With the engagement of Cloud Platform and Advance Mobile Technology, VHSmartTH provides an integrated construction life cycle solution which facilitate end-user from access control, field safety management, progress monitoring, quality control, asset management, material tracking & inventory in every stage.  (Note: This product has certain DWSS functions which the vendor shall be inquired for details.)	Part 1 - VHSmart Mobile Attendance Recorder: a. Hardware:\$21,800/ set (unlimited users registration, CIC Attendance Apps and WHSMart Attendance Apps)  Part 2 - Installation and Implementation: \$14,400/ job  Part 3 - VHSmart Cloud Service: \$400/ month	<input type="checkbox"/>

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PA18-034	Project Management Software (DWSS-related)	SWM-A Site Record SWM-B Inspection Checklist SWM-C Defect/ Outstanding Work Monitoring	Digital Record of Works (dROW)	Build I.T. Ltd.	Tel: 2752 7508	Digital Record of Work (dRoW) is a site record information system. Featuring a user-friendly, versatile interface and a flat learning curve, dRoW is the system for construction projects with its compatibility with a wide variety of site records, which includes Document, NEC Contract, Drawing, Design Management Systems, Safety, QMS, tests registry etc  <i>(Note: This product has certain DWSS functions which the vendor shall be inquired for details.)</i>	Reference Initial Set-up Cost: \$30,000 - \$100,000; Reference: DWSS Cost: \$5,000 - \$20,000 a. Contract sum equal or less than \$0.3b: HK\$5,000 subscription fee / month b. Contract sum within \$0.3b & 0.6b: HK\$10,000 subscription fee / month c. Contract sum within \$0.6b & 1b: HK\$20,000 subscription fee / month d. Contract sum larger than \$1b: HK\$20,000 / per billion e. Read only: HK\$2,000 / 1T	<input type="checkbox"/>
PA18-035	Project Management Software (DWSS-related)	SWM-A Site Record SWM-B Inspection Checklist SWM-C Defect/ Outstanding Work Monitoring	Novade	Spatial Technology Ltd	Tel: 2636 6102	Novade is a full range of solutions for your project – Manage Quality, Safety, Logistics, Maintenance, Workforce & Activity. The Mobileready Platform Includes Key Functionalitie:- - Forms & Checklists - Drawing Mark-ups - Digital Signatures - Map Locations - QR Codes & NFC Tags - Picture Annotations  <i>(Note: This product has certain DWSS functions which the vendor shall be inquired for details.)</i>	1. Reference Price of Use Case:  HK\$185,000 for 1 year of use for unlimited no. of users including set-up for a 27-storey private residential development project of HK\$452M. 2. Reference Standard Price: a. Quality: HK\$200,000 / 1 project, 1 year subscription b. Safety: HK\$200,000 / 1 project, 1 year subscription c. Activity: HK\$200,000 / 1 project, 1 year subscription d. Maintenance: HK\$280,000 / 1 project, 1 year subscription e. Logistics: HK\$400,000 / 1 year subscription f. Workforce: HK\$200,000 / 1 project, 1 year subscription	<input type="checkbox"/>
PA18-036	Concrete Strength Maturity Sensor	SIM-B Building Element Monitoring	The Converge System	Digital G Limited	Tel: 9202 5335	The System is a hardware and software product that enables wireless monitoring of concrete temperature and compressive strength (when the correct calibration data is provided for a particular mix design). The System is made up of five parts: 1. a temperature Sensor; 2. the “Node” to transmit sensor data; 3. the “Repeater”, extends range; 4. the “Hub”, a 3G cellular gateway sends data to the Converge Platform; and 5. The Converge Platform	<u>Reference for 60 Sensors in a Civil Project:</u>  Software Licence, Network Maintenance and Support: \$9,200/ month; Hub: \$4,200/ month; Node Pack (4 in pack): \$3,500/ month; Sensor Pack (4 in Pack): \$3,200/ month  Lab Calibration Monitoring (One mix, including coordination with lab and producing a Calibration Certificate): \$9,000	<input type="checkbox"/>

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PA19-004	Force, Underground Water Level, Inclination, and Environmental Monitoring Sensor	SIM-A Site Environment Condition Monitoring	Automated Internet of Things (IoT) Construction Monitoring Devices and Monitoring System	LR Construction Technologies Ltd	Tel: 2137 0877	IoT monitoring devices measure force, underground water level, inclination, and also environmental quantities such as temperature, humidity, barometric pressure, and air pollutant concentrations. Readings can be automatically measured at 1-minute intervals round-the-clock regardless of weather conditions, and are stored on the cloud. The monitoring system's multi-platform user interface allows users to view readings in real time. Instantaneous risk analysis can also be carried out and warnings can be instantly issued according to user-configured safety thresholds.	Typical setup cost for a site with 12 water level sensors for 24-month monitoring: \$568,668	<input type="checkbox"/>
PA19-006	Vibration and Tilting Monitoring System	SIM-A Site Environment Condition Monitoring	GSS wireless sensors GSS 3G and Vibration Sensor (3GV), GSS Wireless Mesh Dongle (WMD), GSS Wireless Mesh Manager with 3G Gateway (WMM3G), GSS Wireless Tilt & Vibration Sensor	Global Sensing Solutions Ltd	Tel: 9087 1215	GSS wireless sensors offer a complete vibration and/or tilting monitoring solution that has been designed to deploy on construction and blast sites. It can reduce labour cost, save time and cost on installation and maintenance, ensure staff safety and provide real-time alerts.  Legend 14	3GV Kit – \$40,000/ item WMM3G – \$30,000/ item WMD – HK\$20,000/ item WMS – HK\$28,000/ item	<input type="checkbox"/>
PA19-010	3D Reality Simulation / Data Management (CDE-related)	Common Data Platform	ArcGIS Desktop Type: Standard, Advanced, Data Interoperability	Esri China (Hong Kong) Limited	Tel: 3768 5962	ArcGIS Desktop Standard provides the tools and environment for map creation and interactive visualisation, multiuser editing, and advanced data management capabilities. It integrates GIS information with BIM models to enhance productivity, collaboration with different trades, improve decision making and design quality.  <i>(Note: This product is CDE-related platform which the vendor shall be inquired for details.)</i>	Advanced \$268,270 (Perpetual); \$157,530 (upgrade from PA19-010) Data Interoperability	<input type="checkbox"/>

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PA19-013	Movement Sensors	SIM-A Site Environment Condition Monitoring	UtterBerry	UtterBerry	Tel: +44 07411166491	UtterBerry is a wireless sensor used for displacement monitoring on construction sites with high accuracy and autonomy. A group of sensors can form a mesh network and relay data between each other which are supported by a base station providing connectivity to the internet or a local network in order to get real-time access to the sensor data. It can reduce manpower for manual measurement and surveying which improves productivity and safety risk exposure.	Hardware Lease: 20-100 sensors for 1 year: \$2,300/ month for 2 features (tilting and displacement);  Additional feature (e.g. humidity, temperature, tidal, traffic and people counting) at \$100/ month / sensor;  Data warehousing: \$70,134/ site  Data Analysis: \$53,359/ site	<input type="checkbox"/>
PA19-024	Project Management Software (DWSS-related)	SWM-A Site Record  SWM-B Inspection Checklist  SWM-C Defect/ Outstanding Work Monitoring	SnagR	SnagR Ltd.	Tel: 6055 4002	SnagR is a cloud-based quality management system, designed to monitor the progress of complex projects. The system can capture onsite data, automate reporting, visualise the process and analyse data.  <i>(Note: This product has certain DWSS functions which the vendor shall be inquired for details.)</i>	Vendor to be approached for price information	<input type="checkbox"/>
PA19-025	Asset Management Software	SIM-C Equipment Status Monitoring	ON!Track	Hilti (Hong Kong) Limited	Tel: 8228 8118 (update 10.9.2021)	ON!Track is a digitalised asset management solution designed for construction industry. It uses cloud-based server for information storage and can be retrieved or updated with two interfaces which are web portal and mobile app.  User can attach a robust 2-D barcode /QR code on the asset for unique identification purpose and the information can be retrieved by scanning. Asset information include picture, documents, location, purchase information, warranty expiration date and scheduled services.	1. Reference Price of Use Case:  \$536,947 for 120 pcs. of Base module 2500 On!Track, including asset tagging, set-up, training and 25 pcs. Smart big tag @100 tags  2. Reference Standard Price:  a. Asset tagging ON!Track \$4,299; b. Basic customer analysis ON!Track \$2,499; c. Basic set-up service ON!Track \$1,499; d. Basic training: \$3,499; e. On!Track Tag: i) Type 1 - \$7.5/ pc.; ii) Type 2 - \$34/ pc.	<input type="checkbox"/>

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PA19-031	Safety Monitoring System	SaM-A PPE Checking SaM-B Well-being Monitoring SaM-C Workers' Behaviour Monitoring SaM-D Hazardous Area Zoning/ Access Control	Dasloop IoT Smart Helmet with Cloud Based Management Platform	Beeinventor Limited	Tel: 9757 2952	This system could track and locate workers in both outdoor and indoor environment. Information can be visualised in 3D BIM model in the cloud based management platform. Real-time monitoring could improve the efficiency in site supervision and management. The heartbeat rate and body temperature sensors could provide instant alert through SMS if abnormal readings are detected. The accelerometer sensor could detect accidental fall and motionless conditions so that quick actions could be taken. Users could also press the panic button to call for help in emergency. Collision warning could also be given to workers to minimise injuries.  Legend: 14, 15	Reference Standard Price: a. Standard model: HK\$1,565/ helmet; b. 8-Slot charger: \$378/ unit; c. Project set-up and training: \$30,450/ job; d. Indoor positioning beacon: \$473/pc. e. Set-up for indoor positioning 3D model in portal : \$39,900/ job; f. Flash light: \$126/ no.; g. Panic button: \$294/ no.; f. Fanst: \$242/ no.; g. Subscription fee per month per device: \$55 (5-minute interval sensing) to \$150 (5 second interval sensing)	<input type="checkbox"/>
PA19-033	Project Management Software (DWSS-related)	SWM-B Inspection Checklist SWM-C Defect/ Outstanding Work Monitoring	FieldConnect v3.0	Letsapp Limited	Tel: 5225 4679	FieldConnect is a cloud-based workflow management system application for the construction industry. It runs on computers and mobile devices. FieldConnect makes use of latest mobile technologies, including photo capacity, realtime push technology, team chatroom and GPS information. It provides multi-media information, Geo-data and AI-based analysis/projection via big data.  <i>(Note: This product has certain DWSS functions which the vendor shall be inquired for details.)</i>	FieldConnect V4.0 Cloud-based Workflow Web System: a. \$440,000/ 10 users; b. \$550,000/ 50 users; c. \$660,000/ unlimited users  FieldConnect V4.0 Cloud-based Workflow Web System (DWSS compliant): a. \$600,000/ 10 users; b. \$780,000/ 50 users; c. \$960,000/ unlimited users	<input type="checkbox"/>
PA19-034	Project Management Software (DWSS-related)	SWM-A Site Record SWM-B Inspection Checklist SWM-C Defect/ Outstanding Work Monitoring	Inspecto	Digital G Limited	Tel: 9202 5335	Inspecto is a digital solution for site inspection process among contractors, consultants and clients. It is a mobile App which enables the performing of all Request for Inspection and Survey Checklist process tasks including RISC status monitoring, on-spot inspection, result endorsement etc.  <i>(Note: This product has certain DWSS functions which the vendor shall be inquired for details.)</i>	Annual subscription fee of HK\$7 per million of project value with a min. charge of HK\$20,000. Project setup cost HK\$20,000	<input type="checkbox"/>

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PA19-042	3D Reality Simulation / Data Management (CDE-related)	Common Data Platform	CHAIN Hybrid Reality Platform	Chain Technology Development Co., Ltd.	Tel: 3746 3788	<p>Hybrid Reality Platform (HRP) is a unified cloud management platform for managing 3D models such as BIM, Reality Meshes, Point Clouds and other 3D formats altogether in a single web platform. Apart from providing 3D visualisation to users, the platform also provides functions for manipulating 3D model and optimizing the spatial information such as integrating 2D file management with 3D models, 4D progress management and simulation, asset management, facility management.</p> <p><i>(Note: This product is CDE-related platform which the vendor shall be inquired for details.)</i></p>	<p>1. Reference Price of Use Case: a. \$1M for 41-month subscription for contract sum of HK\$303M (at \$24,390/ month)</p> <p>2. Sample Reference Case: a. \$931,320 per year 50 users with 1TB (at \$18,626/ user/ year)</p>	<input type="checkbox"/>
PA19-043	3D Reality Simulation / Data Management (CDE-related)	Common Data Platform	GeoConnect+ Common Data Environment	Professional Construction Strategies Group Limited	Tel: +44 2086804120	<p>The GeoConnect+ Common Data Environment enables digitisation of estates, capturing asset/project data and maintains this golden thread of information throughout the asset lifecycle. It is able to plan, manage and schedule construction project in one 4D environment. It can also integrate with BIM model and CAD software and visualise image in 3D and VR.</p> <p><i>(Note: This product is CDE-related platform which the vendor shall be inquired for details.)</i></p>	<p>HK\$300 per user per month (Based on 251 to 500 users) (i.e. \$75,300-150,000/ month)</p>	<input type="checkbox"/>
PA19-044	Noise, Dust and Vibration Monitoring System	SIM-A Site Environment Condition Monitoring	iSmartBuild Real-time Monitoring System	Novox Limited	Tel: 2690 9881	<p>iSmartBuild Monitoring System aims at providing cost-effective real-time noise, dust and vibration monitoring platform. It minimises the manpower and boots the capability of professional environment monitoring works during construction period and under required situation. Moreover, warnings in the form of SMS / email alert can be instantly issued according to user-configured safety thresholds.</p>	<p>1. Reference Price of Use Case: \$720,000 for 18-month monitoring of 14vibration pointsincluding set-up ( @\$2,857/month/sensor )</p> <p>2. Reference Standard One-off Price: \$30,000 Server Station Type; \$18,00 Portable Type Rental-monthly; \$2,000 Server Station Type; \$1,500 Portable Type</p>	<input type="checkbox"/>

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PA Code	Product Type	Digital Platform Application Area	Product name	Vendor	Contact	Product Descriptions	Reference Price (HK\$)	Yes / No
PA19-045	Safety Monitoring System	<p>SaM-A PPE Checking</p> <p>SaM-B Well-being Monitoring</p> <p>SaM-C Workers' Behaviour Monitoring</p> <p>SaM-D Hazardous Area Zoning/ Access Control</p>	Artificial Intelligence Computer Vision Cloud viAct	Customindz Limited	Tel: 9125 3390	<p>This product is a one-stop artificial intelligence and video surveillance platform for equipment, safety and quality detection. This product uses API and graphical user interface, and can perform custom detection and predefined detection. Predefined detection includes detecting: (i) people and facial and body attributes, (ii) objects and (iii) actions.</p> <p>Legend:14, 15</p>	<p>\$48,000/ AI detection module per camera</p> <p>(Module options: Safety PPE, Danger Zone, Unauthorised Access, Machinery Tracking, Dump Truck Cover Condition, Material Tracking, etc.);</p> <p>Admin. user account with 1,000 email alerts: \$26,000/ year;</p> <p>Admin. user account without email alertsbut review function only: \$18,000/ year;</p> <p>IP Camera: \$3,000/ set;</p> <p>IP Camera set-up and installation: \$5,000/ set;</p> <p>AI processor: \$30,000/ year;</p> <p>AI processor setup and installation: \$3,000/ set</p> <p>Local storage and monitoring: \$8,000 - \$35,000</p> <p>On-site Alert light and buzzer: \$10,000/ set</p>	<input type="checkbox"/>
PA19-046	Project Management Software (DWSS-related)	<p>SWM-A Site Record</p> <p>SWM-B Inspection Checklist</p> <p>SWM-C Defect/ Outstanding Work Monitoring</p>	InfoSMART™ xTrack - Quality, Progress and Defect Management System	Infotronic Technology Ltd.	Tel: 9106 7601	<p>InfoSMART™ xTrack provides real-time site progress and inspection recording, and can auto-generate instant report to facilitate quality control, progress and defect management throughout the whole construction period by using IoT and big data technologies. The system operates with cloud-based platform and allows real-time logging archive.</p> <p><i>(Note: This product has certain DWSS functions which the vendor shall be inquired for details.)</i></p> <p>Legend: 14</p>	<p>1. Reference Case:</p> <p>a. \$437,000 including:</p> <p>i. technical proposal/ data validation etc.;</p> <p>ii. Project set-up;</p> <p>iii. 200 SmarTag (helmet by client);</p> <p>iv. 6 Zoners (for geo-fencing of 40m radius) for 2 work zone;</p> <p>v. 1 Alert Zoner for 1 control zone;</p> <p>Dashboard for real-time work zone monitoring (e.g. unauthorised entry)</p> <p>b. \$206,000/ 1-year subscription for 300 landmark (@\$687/ landmark)</p>	<input type="checkbox"/>

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PA19-047	Safety Monitoring System	SaM-A PPE Checking  SaM-B Well-being Monitoring	InfoSMART™ Attend – Real Time Manpower Attendance in-site Record System	Infotronic Technology Ltd.	Tel: 9106 7601	InfoSMART™ Attend is a real-time construction worker activity tracking and management system. This product not only provides workers' gate-in/gate-out records via worker-card reader and biometric device at turnstiles, but also enables real-time visibility and tracking of workers in sites, provide reliable attendance record to reduce disputes over wages and injuries, and generate workers' work/trade report for fleet management.  Legend: 14	\$1,113,800 for 1-year licence with 100 SmarTag & Helmet with Endorsement Certificate and 2 manday for installation (@\$11,138/ SmarTag/ year or \$928/ SmarTag/ month)	<input type="checkbox"/>
PA20-003	3D Reality Simulation / Data Management (CDE-related)	Common Data Platform	ARCHIBUS Extending BIM to Enterprise Asset Management	AFM Limited	Tel: 3103 1481	ARCHIBUS provides a centralized platform and integrated solution for enterprise asset management and facility management. It is designed to seamlessly integrate data with other systems such as BIM, CAD, IoT and more. In order to update and collect BIM information during construction period, ARCHIBUS Enterprise Asset Management BIM Extensions can provide graphical bi-directional link to Revit, enabling an easy and incremental approach for adopt and transition into BIM technology.  <i>(Note: This product is CDE-related platform which the vendor shall be inquired for details.)</i>	ARCHIBUS Extending BIM to Enterprise Asset Management:  \$532,000/ Year	<input type="checkbox"/>
PA20-010	3D Reality Simulation / Data Management (CDE-related)	Common Data Platform	Jarvis CDE	isBIM Limited	Tel: 2382 8380	Jarvis CDE is a Common Data Environment platform based on BS1192. It serves as the central repository and digital knowledge process unit. It stores all BIM data, provides developed functions as well as API to connect to other software products. It uses BIM models, drawings and data from JARVIS for online collaboration work.  <i>(Note: This product is CDE-related platform which the vendor shall be inquired for details.)</i>	<u>Quick Version:</u> \$12,800 annual subscription for 5 users (100G Storage)/ project  \$1,550/ ITB Storage/ Year Download data \$8,650/ 1TB/ year  <u>Professional Version:</u> \$48,800 annual subscription for unlimited users (1TB Storage)/ project  \$1,550/ ITB Storage/ Year Download data \$8,650/ 1TB/ year	<input type="checkbox"/>

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PA Code	Product Type	Digital Platform Application Area	Product name	Vendor	Contact	Product Descriptions	Reference Price (HK\$)	Yes / No
PA20-013	Concrete Strength Maturity Sensor	SiM-B Building Element Monitoring	SMARTROCK - Wireless temperature and strength sensor for concrete	Gear Up Materials Limited	Tel: 6196 3369	The sensors can estimate the early-age and compressive strength of in-place concrete based on the maturity method, according to ASTM C1074. The goal of these sensors is to measure the temperature of concrete in real-time and correlate this data to the concrete's strength. Temperature data is collected by the sensor and uploaded to any smart device within an app using a wireless connection. This information is then used to calculate the compressive strength of the in-situ concrete element based on the maturity equation that is set up in the app.	<p>1. Reference Price of Use Case:</p> <p>a. \$357,865 for 250 pcs. sensors, 2 pcs. SmartHub automated wireless and remote sybcng of sensor data, 1 monthly online dashboard Premium access (@\$1,432/ sensor point)</p> <p>2. Reference Standard Price</p> <p>a. \$1,275/ sensor;                      b. \$1,500/ long-cable sensor;                      c. \$14,350/ starter pack;                      d. \$22,500/ SmartHub;                      e. Giatex 360 Dashboard/ month - Premium Access: \$695/ month</p>	<input type="checkbox"/>
PA20-014	Movement Sensors	SiM-A Site Environment Condition Monitoring	Happy Monitoring System Model nos.: Happy GEM-X11, Happy GEM-X20	South Instruments Technology Limited	Tel: 9293 3993	Happy Monitoring collects real time settlement data. It collects data through GPS, uploads and stores it in the cloud server and uses its artificial intelligence computing system to increase the GPS centimeter accuracy to millimeter accuracy level. It only needs to extract data through the Internet and has a wide monitoring range, all-weather application, installation only requires Plug-and-play, saving time and increasing productivity during the construction process.	GEM-X11: \$117,700/ item GEM-X20: \$117,700/ item	<input type="checkbox"/>
PA20-020	Safety Monitoring System	SaM-D Hazardous Area Zoning/ Access Control	BLAXTAIR Pedestrian / Machinery Anti-collision Camera	EBSL	Tel: 2345 1882	The BLAXTAIR® System allows users to set detection zone and provides audible alarm and flashing signals on the driver's screen if there are pedestrians or objects within the set zone. A monitor installed in the cabin provides continuous footage captured by the sensor head. It can ensure the safety of the pedestrians nearby the work site.  Legend: 15	5,970EUR (approx. HK\$46,702)/ item	<input type="checkbox"/>

Legend of Discipline

- 14. Locally developed innovations or products
- 15. Safety-related Technologies

## Reference Prices of Pre-approved Technologies with Application as a Digital Platform

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PA Code	Product Type	Digital Platform Application Area	Product name	Vendor	Contact	Product Descriptions	Reference Price (HK\$)	Yes / No
PA20-021	3D Reality Simulation / Data Management (CDE-related)	Common Data Platform	Varadise Twin	Varadise Limited	Tel: 2312 6880	<p>Varadise Twin is a Digital Twin platform that serves as Digital Construction Management Hub. All construction progress and data will link with BIM for monitoring and collaboration. With built-in BIM analytic engine, engineers will receive notifications if progress is delayed or manufacturing progress is behind.</p> <p><i>(Note: This product is CDE-related platform which the vendor shall be inquired for details.)</i></p> <p>Legend: 14</p>	<p>1. Reference Price of Use Case:</p> <p>a. \$672,000 for 24 months for a \$390M site formation and infrastructure work</p> <p>2. Reference Standard Price:</p> <p>a. \$30,000/ month/ project</p>	<input type="checkbox"/>
PA20-024	Project Management Software (DWSS-related)	<p>SWM-A Site Record</p> <p>SWM-B Inspection Checklist</p> <p>SWM-C Defect/ Outstanding Work Monitoring</p>	SIMple	Cerebro Strategy Limited	Tel: 2272 3670	<p>SIMple is an innovative app making site management simple and sustainable. It digitalises three major aspects of site management including site diary, site inspection checklist (Request for Inspection / Survey Check Form) and site safety management records.</p> <p><i>(Note: This product has certain DWSS functions which the vendor shall be inquired for details.)</i></p>	<p>Monthly subscription fee: HK\$8,985</p> <p>One time set up: HK\$68,000</p> <p>No price for hardware</p>	<input type="checkbox"/>
PA20-025	Safety Monitoring System	<p>SaM-A PPE Checking</p> <p>SaM-B Well-being Monitoring</p> <p>SaM-D Hazardous Area Zoning/ Access Control</p>	SmartWorks	SmarTone Mobile Communications Limited	Tel: 3128 2467	<p>SmartWorks is an integrated platform to enhance construction workers' health, safety and operational efficiency. The platform incorporates five modules to promote and manage worksite safety, namely Smart Helmet for worker's real-time condition sensing, SmartHealth Station for workers' health surveillance checking, Environmental Station for environmental monitoring, danger rader concerning of Safety Triggering System and Dump Truck Management.</p> <p>Legend: 15</p>	<p>1. Reference Price of Use Case:</p> <p>a. \$300,000/ year for dump truck AI monitoring at site entrance</p> <p>b. \$700,000 for 24 months for 200 Smart Helmets (\$146/ helmet/ month)</p>	<input type="checkbox"/>

Legend of Discipline

- 14. Locally developed innovations or products
- 15. Safety-related Technologies

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PA Code	Product Type	Digital Platform Application Area	Product name	Vendor	Contact	Product Descriptions	Reference Price (HK\$)	Yes / No
PA20-032	Safety Monitoring System	SaM-B Well-being Monitoring SaM-D Hazardous Area Zoning/ Access Control	Ultra-wide Band Wireless Positioning Safety System	Transcendence Company Limited	Tel: 2862 1724	The product is a "Worker Real-Time Positioning System" which incorporates smart watches and a central monitoring platform. By applying ultra-wide band positioning technology, it can track workers' locations and health parameters even in sealed off space.  Legend: 15	1. Reference Price of Use Case: \$336,000 for 50 workers for 17-month adoption including e-platform (@\$396/ worker/ month)  2. Reference Standard Price: Hardware part: HK\$69,100 Software part: HK\$100,000	<input type="checkbox"/>
PA20-033	Safety Monitoring System	SaM-B Well-being Monitoring SaM-D Hazardous Area Zoning/ Access Control	SmartWorks – Safety Alert System for Temporary Lift Shaft Gate	SmarTone Mobile Communications Limited	Tel: 9451 4017	"SmartWorks – Safety Alert System" can provide alerts for unauthorised access to the restricted equipment and areas like lift shaft, which reduce the chance of injuries and accidents at construction site.  Legend: 15	Reference Price of Use Case: \$287,040 - including basic set-up and IoT platform, 18-month subscription period, 140 sensors ( @\$114/sensor/month )	<input type="checkbox"/>
PA20-034	3D Reality Simulation / Data Management (CDE-related)	Common Data Platform	MissionOS	Maxwell GeoSystems Limited	Tel: 2581 2288	MissionOS is a cloud-based data management system for the acquisition, monitoring, analysis, visualisation and reporting of geotechnical and other project-related data in construction projects. It contains alert and alarm functions which can improve risk management performance and reduce cost.  <i>(Note: This product is CDE-related platform which the vendor shall be inquired for details.)</i>	1. Reference Standard Cost Structure: a. MissionOS License: 60%; b. Set-up: 15%; c. Maintenance:20% d. Training: 5%  2. Reference Price of Use Case: a. Tsueng Kwan O-Lam Tin Tunnel: \$2,000,000	<input type="checkbox"/>

Legend of Discipline

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- 15. Safety-related Technologies

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PA Code	Product Type	Digital Platform Application Area	Product name	Vendor	Contact	Product Descriptions	Reference Price (HK\$)	Yes / No
PA20-040	Movement Sensors	SIM-A Site Environment Condition Monitoring	4DBloc (Deformation Monitoring Device)	Sixense Limited	Tel: 2439 7833	4DBloc is a GPS based single frequency device designed to be deployed on the field with multiple connected devices in a network. After connection to the web-based Geoscope platform, the system provides 3D mapping with time evolution for displacement monitoring in buildings or on ground surface.	\$66,000/ Console bundled with the Set-up and yearly monitoring & maintenance fee, including: a. \$25,000 product cost; b. \$5,000 installation; c. \$36,000/ year monitoring fee	<input type="checkbox"/>
PA20-046	3D Reality Simulation / Data Management	SWM-B Inspection Checklist SWM-C Defect/ Outstanding Work Monitoring SIM-C Equipment Status Monitoring	Building Component Management System (BCMS)	Hong Kong RFID Limited	Tel: 3426 9511	Building Component Management System helps to maintain daily operations of managing building components with the help of RFID technology. The platform links the building components to the elements in the BIM model to update the work progress and element database on a real-time basis.	1. Reference Price in Project: \$600,000 / project (in proportion to the scale of construction project) 2. Reference Standard Price: a. UWB Location Anchor (200m dia.) - \$8,000/ set; b. UWB Tag - Smart Watch (with heartbeat function) - \$900/ set c. UWB online monitoring platform - \$100,000	<input type="checkbox"/>
PA20-047	3D Reality Simulation / Data Management (CDE-related)	Common Data Platform	GEOMON	Digital G Limited	Tel: 9202 5335	GEOMON is a cloud-based instrumentation data storage and reporting system. It is an agnostic platform that can digitise and visualise data from any sensors such as tilt, vibration, settlement, groundwater and strain gauge sensors etc. Its interface includes graphical data, maps and videos. GEOMON is accessible on desktop, laptops and any mobile device.  <i>(Note: This product is CDE-related platform which the vendor shall be inquired for details.)</i>	Sensor: HK\$20,000 - 100,000 depending on no. of sensor data Monthly Subscription: HK\$4,000 - 9,000	<input type="checkbox"/>

Legend of Discipline

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- 15. Safety-related Technologies

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PA Code	Product Type	Digital Platform Application Area	Product name	Vendor	Contact	Product Descriptions	Reference Price (HK\$)	Yes / No
PA20-049	Project Management Software (DWSS-related)	SWM-B Inspection Checklist SWM-C Defect/ Outstanding Work Monitoring	Jobs Approve Application Flow Management System	Epic Comm Company Limited	Tel: 2320 8160	The system have three levels of authentication. The user may use the mobile app to submit application form with photo, the supervisor or management grade to approve. All application forms have the detailed information such as time stamp, user, status, result remarks, user in charge with detail flow information.  <i>(Note: This product has certain DWSS functions which the vendor shall be inquired for details.)</i>	\$198,800 (product only); \$199,998 (including cloud server 30G/ year, \$4,000)	<input type="checkbox"/>
PA20-055	Safety Monitoring System	SaM-A PPE Checking SaM-C Workers' Behaviour Monitoring SaM-D Hazardous Area Zoning/ Access Control	UWB Collision Warning System	Beeinventor Limited	Tel: 9757 2952	Collision warning system could provide real-time safety alert for workers and plant operator by using UWB technology. Many accidents happening on site involve workers being hit by moving plant and machines. An accurate collision warning system can prevent this kind of accidents in a cost effective way. The system adopts the latest UWB - Ultra Wide Band technology. The plant with a UWB detector sets a virtual working perimeter and any worker with an UWB tag entering the perimeter will trigger the alarm to warn workers and the operator to stop the plant so as to prevent collision accidents. The accuracy is up to centimeter level and in all directions.  Legend: 14, 15	Software per project: HK\$32,000; Collision warning module (installed in Dasloop Helmet): \$495/ helmet	<input type="checkbox"/>
PA20-064	Movement Sensors	SiM-A Site Environment Condition Monitoring	ShapeArray Model: SAAV & SAAX	Sixense Limited	Tel: 2439 7833	ShapeArray (SAAV & SAAX) is an automated shape-measuring, inclinometer-style instrument used to monitor deformation of soil and structures like dams, tunnels, walls, and buildings. ShapeArray data are available in real-time, enabling engineers and designers to reduce risk and save money by making smarter, faster decisions. By having this automated system, workers are not required to perform manual measurements.	\$300,000/ pc. (35-40m long @\$8,572/ metre length of sensor) \$60,000/ Annual monitoring and maintenance fee	<input type="checkbox"/>

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PA Code	Product Type	Digital Platform Application Area	Product name	Vendor	Contact	Product Descriptions	Reference Price (HK\$)	Yes / No
PA20-065	Movement Sensors	SIM-A Site Environment Condition Monitoring	Loadsensing Wireless Monitoring System	Sixense Limited	Tel: 2439 7833	This product is a data acquisition and monitoring system which combines wireless monitoring and advanced software tools for connecting and monitoring infrastructures in remote locations. Load sensing devices are battery-powered and equipped with long-range, low-power wide area network (LPWA) radio communications and are compatible with a wide range of geotechnical sensors. The software suite is web-based and facilitates real-time data capture and analytics. It is also possible to set automatic alarms.	Reference Standard Price: a. \$5,000/ sensing device hardware; b. \$2,000/ set-up; c. 20,000/ annual monitoring and maintenance fee; d. \$30,000 / gateway for receiving data from different dataloggers or tiltmeters	<input type="checkbox"/>
PA20-068	3D Reality Simulation / Data Management (CDE-related)	Common Data Platform	ArcGIS Enterprise Standard	Esri China (Hong Kong) Limited	Tel: 3768 5962	ArcGIS Enterprise Standard is a GIS software system for online mapping, visualization, real-time spatial analysis, APIs, and data management. It is closely integrated with ArcGIS Desktop for mapping and authoring, and also integrated with ArcGIS Online for sharing content between systems.  <i>(Note: This product is CDE-related platform which the vendor shall be inquired for details.)</i>	\$442,480/ license (Perpetual)	<input type="checkbox"/>
PA20-069	3D Reality Simulation / Data Management (CDE-related)	Common Data Platform	ArcGIS Online	Esri China (Hong Kong) Limited	Tel: 3768 5962	ArcGIS Online is a web-based GIS mapping platform with spatial analysis and 3D visualization capabilities. It is a SaaS (Software as a Service) platform with field apps for creating, editing and managing 2D and 3D data at any time and place. It can be fully integrated with ArcGIS Desktop.  <i>(Note: This product is CDE-related platform which the vendor shall be inquired for details.)</i>	New purchase:  ArcGIS Online GIS Professional Standard Term License (standard level incl. 500 service credits per user): \$28,750/ license  ArcGIS Online Creator Term License (standard level incl. 500 service credits per user): \$5,230/ license  ArcGIS Online Viewer Term License (lite level without service credits per user): \$1,050/ license	<input type="checkbox"/>

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PA Code	Product Type	Digital Platform Application Area	Product name	Vendor	Contact	Product Descriptions	Reference Price (HK\$)	Yes / No
PA20-070	Digitised Reporting Tool for Underground Pipe Survey	SiM-B Building Element Monitoring	Drainage Condition Assessment and Management System (DCAMS)	MSDI (China) Limited	Tel: 2784 0109	<p>Drainage Condition Assessment and Management System (DCAMS) is the system developed for underground utility in Hong Kong. DCAMS adopts Conduit Condition Evaluation Codes (CCEC) in its system design. The codes are particularly used to evaluate of deterioration of pipelines.</p> <p>The conditions of pipelines and manholes can be assessed in a more accurate and effective way. Site data can be smartly converted to reports. Historical data can also be compared with the current data to generate analysis for management decision. With DCAMS, site operators can work safely and more efficiently.</p> <p>DCAMS has also been accredited by the two recognized utility institutes in the industry, i.e. International Institute of Utility Specialists (IIUS) and Hong Kong Institute of Utility Specialists (HKIUS).</p>	\$86,000/ license (Perpetual)	<input type="checkbox"/>
PA20-072	3D Reality Simulation / Data Management (CDE-related)	Common Data Platform	AlphaBIM Project Management and Control Platform	isBIM Limited	Tel: 2382 8380	<p>AlphaBIM is a project management and control platform which provides a centralized platform for recording, tracking, statistical analysis, visualization, sharing and documentation of issues relating to construction progress and workflow management, cost management, and safety and quality problems found on site.</p> <p><i>(Note: This product is CDE-related platform which the vendor shall be inquired for details.)</i></p>	<p>Basic Prices for unlimited user accounts, unlimited period of use, unlimited storage:</p> <p>\$175,000 (Design version)                      \$230,000 (Construction version)                      \$460,000 (Owner Design version)</p> <p>Maintenance fee: 20%</p>	<input type="checkbox"/>
PA20-073	Safety Monitoring System	SaM-C Workers' Behaviour Monitoring  SaM-D Hazardous Area Zoning/ Access Control	I-Vision Smart Monitoring System	Kong Chun Construction Machinery Services Centre Limited	Tel: 2475 1083	<p>This product is a safety monitoring system installed on heavy construction plant for obstacles detection and real-time acquisition of surrounding environment. It provides synthesized image with 360° bird's-eye view, panoramic detection of obstacle within 1 metre, and siren and signal light when there are obstacles in the detection range, thus improving workers' safety when plant is in the operation.</p> <p>Legend: 14, 15</p>	<p>\$ 35,000 / unit (for mobile plant up to 51 tonne)                      \$ 39,000 / unit (for mobile plant from 51 to 250 tonne)</p> <p>Including :                      Set-up                      3 no. AI camera                      4 no. camera                      1 no. sensor                      4 no. radar                      1 no. vision exchange                      1 no. DVR                      1 no. warning buzzer</p>	<input type="checkbox"/>

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PA Code	Product Type	Digital Platform Application Area	Product name	Vendor	Contact	Product Descriptions	Reference Price (HK\$)	Yes / No
PA20-074	3D Reality Simulation / Data Management (CDE-related)	Common Data Platform	Scenario	Projection (HK) Limited	Tel: 2973 6243	<p>The product is a Project Management Information System (PMIS), which provides functionality for paperless document &amp; information management, online collaboration, electronic drawing reviews, QA/QC management, with an integrated BIM viewer. The software can also run budget, cost, progress &amp; forecast controls, all underpinned by the comprehensive workflow manager, dashboards &amp; reporting functions.</p> <p><i>(Note: This product is CDE-related platform which the vendor shall be inquired for details.)</i></p>	Vendor to be approached for price information	<input type="checkbox"/>
PA20-078	Project Management Software (DWSS-related)	SWM-A Site Record SWM-B Inspection Checklist SWM-C Defect/ Outstanding Work Monitoring	Construction Resource Planning	Yonyou (Hong Kong) Co. Ltd	Tel: 3907 3052	<p>This product is a project management platform with the major functions of form digitization, instant issuance and approval of forms, approval flow management, task tracking and data visualization to facilitate effective collaboration. It includes various modules such as safety, environmental, site and asset management and RFI.</p> <p><i>(Note: This product has certain DWSS functions which the vendor shall be inquired for details.)</i></p>	\$666,000 including following key items:  I. Software and license (a) Platform for PC - HK\$400,000, for 100 named users or 50 concurrent users, permanent license Remarks (for PC): - For placing order, the minimum no. of users is 50 concurrent license or 100 named users for PC - Additional licenses are HK\$18,000 for 10 named users, or HK\$30,000 for 10 concurrent user (b) Mobile App - HK\$50,000, for 100 named users or 40 concurrent users, permanent license	<input type="checkbox"/>
PA20-079	3D Reality Simulation / Data Management (CDE-related)	Common Data Platform	G-Site	Glodon (Hong Kong) Software Limited	Tel: 2333 7535	<p>G-Site is a BIM-based project information management platform for recording, tracking, analysis, sharing and documentation of issues relating to construction process, quality control and safety management. It allows component tracking by numbering each element with QR code for users to scan, report and track quality issues. G-Site allows merging of several BIM models, and to integrate with 2D drawings and progress chart for project management.</p> <p><i>(Note: This product is CDE-related platform which the vendor shall be inquired for details.)</i></p>	1-year subscription: \$200,000 (50 users & 500GB storage)  3-year subscription: \$500,000 (100 users & 1000GB storage)	<input type="checkbox"/>

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PA Code	Product Type	Digital Platform Application Area	Product name	Vendor	Contact	Product Descriptions	Reference Price (HK\$)	Yes / No
PA20-081	3D Reality Simulation / Data Management (CDE-related)	Common Data Platform	SkylineGlobe - TerraExplorer (Desktop, Web and Mobile)  SkylineGlobe - CityBuilder  (Plug-in for TerraExplorer for Desktop (PA20-081 )	Ambit Geospatial Solution Limited	Tel: 3462 3320	TerraExplorer is a family of software designed for viewing, querying, analysing and presenting geospatial data in a high resolution 3D environment. This TerraExplorer family comprises 3 products, including: (i) TerraExplorer for Desktop, which is a standalone desktop software for viewing, analysing and editing data; (ii) TerraExplorer for Web, which is a web-based software to be used in conjunction with SkylineGlobe Server (PA20-082) for building up cloud platform; and (iii) TerraExplorer for Mobile, which is a mobile app for viewing data only.  CityBuilder is a plug-in module for 'TerraExplorer for Desktop' (PA20-081). The major function of CityBuilder is to merge 3D city models generated by PhotoMesh (PA20-083), with classification layers, individually modeled layers, and BIM datasets, into a stream-optimized, fully textured, and geospatially-enabled mesh layer (3DML). The generated 3DMLs can be made available to the users of TerraExplorer (PA20-081) which supports visualization and geospatial analysis.  <i>(Note: This product is CDE-related platform which the vendor shall be inquired for details.)</i>	For Desktop: \$98,000/ license (Perpetual);  For Web: \$210,000/ license (bundled in the price of SkylineGlobe Server);  For Mobile: free app on Android and IOS;  CityBuilder: Bundled price with PA-180	<input type="checkbox"/>
PA20-082	3D Reality Simulation / Data Management (CDE-related)	Common Data Platform	SkylineGlobe - SkylineGlobe Server	Ambit Geospatial Solution Limited	Tel: 3462 3320	SkylineGlobe Server (SGS) is an enterprise software and private cloud solution that provides a comprehensive set of web services for publishing, storing, managing and streaming 3D spatial data. When SGS is used together with 'TerraExplorer for Web' (PA20-081), it can serve analytic and visualization functions such as distance and area measurement, as well as graphic terrain profile. While SGS is used alone, it can solely serve the storage, retrieval and sharing functions.  <i>(Note: This product is CDE-related platform which the vendor shall be inquired for details.)</i>	\$210,000/ license (Perpetual)	<input type="checkbox"/>

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PA Code	Product Type	Digital Platform Application Area	Product name	Vendor	Contact	Product Descriptions	Reference Price (HK\$)	Yes / No
PA20-085	Safety Monitoring System	SaM-B Well-being Monitoring SaM-D Hazardous Area Zoning/ Access Control	BLE Material & Attendance Tracker	Hornbird Technology Limited	Tel: 6705 0848	This product is a location and attendance tracker called "meTrack" which consists of "NearBy", "realTime" and "safetyMeter" modules. This Bluetooth based product will help keep track of the exact locations of workers, thereby maximising safety.  Legend: 15	Rough Reference Price: \$177,100/ 200ppl <b>Option 1. 4G Full Package: Real Time Attendance Tracker</b> with Panic SOS button, Nearby and Telemetry Description / MOQ (pcs.) / Unit Price HK\$ per pc. - BLE Tag / 100 / \$163.8 - BLE 4G Gateway / 20 / \$1,404 - 4G Data fee / - / \$1,320 per year per person - Software license / - / \$468 per year per BLE tag (HK\$39 per month per BLE tag) - Setup / Configuration / - / \$150 per tag <b>Option 2. NB-IoT Full Package: Real Time Attendance Tracker</b> with Panic SOS button, Nearby and Telemetry <b>Description / MOQ / Unit Price HK\$ per pc.</b> - BLE Tag / 100 / \$163.8 - BLE NB IoT Gateway / 20 / \$1,170 - NB-IoT Data fee / - / \$110 per year per person - Software license / - / \$468 per year - Setup / Configuration / - / \$150 per tag	<input type="checkbox"/>
PA20-088	Project Management Software (DWSS-related)	SWM-A Site Record SWM-B Inspection Checklist SWM-C Defect/ Outstanding Work Monitoring	Innoshare - Digital Works Supervision System (DWSS)	Innovative Associate Technology Limited	Tel: 2466 9566	Innoshare – DWSS provides a secured platform with mobile app and web portal that supports the entire process of site activities, including (i) Electronic Request for Inspection System (E-RISC), (ii) Electronic Site Diary & Labour Return Record System (E-Diary), and (iii) Electronic Safety & Environmental Checklist System.  (Note: This product has certain DWSS functions which the vendor shall be inquired for details.)	License subscription: \$450 per user per month (hosting at client's office) including system set-up, maintenance and training;  Google Cloud subscription: \$150 per user per month including 50G storage/ user and 30G download traffic/ user/ month	<input type="checkbox"/>

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PA Code	Product Type	Digital Platform Application Area	Product name	Vendor	Contact	Product Descriptions	Reference Price (HK\$)	Yes / No
PA20-090	Safety Monitoring System	SaM-D Hazardous Area Zoning/ Access Control	Danger zone Alert Sensoring System	Customindz Limited	Tel: 9125 3390	<p>This product is a sensing system installed on construction vehicles to provide both visual alert on monitor and audio sound alert to the operator when there are pedestrians walking or standing nearby the vehicle, thus ensuring workers' safety during plant operation. This product allows users to adjust the zoning distance. It can also detect default objects (e.g. vehicles) to avoid false alarms.</p> <p>Legend: 14, 15</p>	<p>Hardware: \$87,500/ set including sensor heads, processing units, screen, cables</p> <p>Set-up cost: \$10,000/ set</p> <p>(Note: This product is an add-on module to be used with the AI monitoring platform of PA19-045. Thus the cost of the platform is not included in this PA20-090 but under PA19-045.)</p>	<input type="checkbox"/>
PA20-091	3D Reality Simulation / Data Management (CDE-related)	<p>SWM-B Inspection Checklist</p> <p>SWM-C Defect/ Outstanding Work Monitoring</p>	BIM 360 Build - User Pack CLOUD New Subscription	Autodesk Inc	Tel: 2824 2338	<p>This is a construction project management software which can improve construction quality control and safety programmes, create, assign, and manage issues, RFIs, and submittals, and track field performance with dashboards and reports.</p> <p><i>(Note: This product is CDE-related platform which the vendor shall be inquired for details.)</i></p>	<p>\$6,679/ license (single user, annual subscription)</p> <p>\$18,038/ license (single user, 3-year subscription)</p>	<input type="checkbox"/>
PA20-092	3D Reality Simulation / Data Management (CDE-related)	Common Data Platform	<p>BIM Collaborate Pro - CLOUD Commercial New Subscription (formerly known as BIM 360 Design)</p> <p>update: 9.2.2021</p>	Autodesk Inc	Tel: 2824 2338	<p>It is a design collaboration software which allows real-time Revit cloud worksharing and collaboration workflows for Civil 3D and Plant 3D, securely co-author Revit models and access Civil 3D and Plant 3D files, across one firm or multiple firms, thereby improving productivity, reducing rework and accelerating project delivery.</p> <p><i>(Note: This product is CDE-related platform which the vendor shall be inquired for details.)</i></p>	<p>\$7,020/ license (single user, annual subscription)</p> <p>\$18,964/ license (single user, 3-year subscription)</p>	<input type="checkbox"/>

Legend of Discipline

- 14. Locally developed innovations or products
- 15. Safety-related Technologies

## Reference Prices of Pre-approved Technologies with Application as a Digital Platform

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PA Code	Product Type	Digital Platform Application Area	Product name	Vendor	Contact	Product Descriptions	Reference Price (HK\$)	Yes / No
PA20-093	3D Reality Simulation / Data Management (CDE-related)	SWM-C Defect/ Outstanding Work Monitoring	<del>BIM 360 Docs - Packs - CLOUD Commercial New Subscription</del> Autodesk Docs - CLOUD Commercial New Subscription (26.7.2021)	Autodesk Inc	Tel: 2824 2338	It is a construction document management software which can share, view, markup, and manage your construction drawings, documents, and models at anytime and anywhere. It can reduce errors, facilitate decision making and improve project outcomes.  <i>(Note: This product is CDE-related platform which the vendor shall be inquired for details.)</i>	\$3,559/ license (single user, annual subscription) \$9,604/ license (single user, 3-year subscription)	<input type="checkbox"/>
PA20-094	3D Reality Simulation / Data Management (CDE-related)	Common Data Platform	BIM Collaborate - Packs CLOUD Commercial New Subscription (formerly known as BIM 360 Coordinate)  update: 9.2.2021	Autodesk Inc	Tel: 2824 2338	It is a BIM collaboration software to conduct constructability review process on the jobsite or in the office and to identify costly issues during preconstruction. It can speed up multi-discipline coordination with clash resolution workflows.  <i>(Note: This product is CDE-related platform which the vendor shall be inquired for details.)</i>	\$5,217/ license (single user, annual subscription) \$14,089/ license (single user, 3-year subscription)	<input type="checkbox"/>
PA20-097	3D Reality Simulation / Data Management (CDE-related)	Common Data Platform	Vault Professional Commercial New ELD Subscription	Autodesk Inc	Tel: 2824 2338	It is a product data management (PDM) software for users to works from a central source of organized data. It facilitates collaboration, reduces errors and time saving.  <i>(Note: This product is CDE-related platform which the vendor shall be inquired for details.)</i>	\$5,460/ license (single user, annual subscription) \$14,723/ license (single user, 3-year subscription)	<input type="checkbox"/>

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PA Code	Product Type	Digital Platform Application Area	Product name	Vendor	Contact	Product Descriptions	Reference Price (HK\$)	Yes / No
PA20-099	3D Reality Simulation / Data Management (CDE-related)	SWM-B Inspection Checklist SWM-C Defect/ Outstanding Work Monitoring	ProjectWise Connect Edition (無中文名)	Bentley Systems Hong Kong Limited (沒有中文名) Digital BIM Limited	Tel: 2802 1030 Tel: 9275 1155	It is a project collaboration and content management platform that helps project-intensive companies avoid risk and stay competitive by enabling high performance project delivery. It provides information sharing, cross-functional work process management, and content management required to improve agility and increase transparency throughout the project lifecycle. With ProjectWise, the user can build your CDE and have the ability to integrate data, people, and process to ensure successful project delivery.  (Note: This product is CDE-related platform which the vendor shall be inquired for details.)	\$28,470/ annual license	<input type="checkbox"/>
PA20-100	3D Reality Simulation / Data Management (CDE-related)	Common Data Platform	Bricsys 24/7 Project Collaboration Platform (Cloud based) (無中文名)	Bricsys NV	Tel: 3950 3353	Bricsys 24/7 offers safe and easy document management. Access user's documents from anywhere. Share, annotate and collaborate on building projects in a common data environment with your teams across the globe. View them on any device. Key functions include: •Manager documents securely •Role-based access control •BIM Model Manager •Automate repetitive tasks  (Note: This product is CDE-related platform which the vendor shall be inquired for details.)	Bricsys 24/7 Enterprise - a. 10 GB 1-Year Subscription: \$16,800/ license b. 30GB - 1 Year Subscription: \$46,400/ license	<input type="checkbox"/>
PA20-116	Safety Monitoring System	SaM-B Well-being Monitoring SaM-D Hazardous Area Zoning/ Access Control	EverHigh Precise Positioning & Safety Management System	XenseTech Limited	Tel: 5616 6382	This product uses Ultra-wide Band (UWB) technology to achieve positioning with an accuracy of 10 cm, effectively managing the labor force, monitoring the status and distribution of workers, ensuring worker safety and improving management quality. At the same time, the system provides high-precision alarms through different configurations to reduce common accidents in construction sites and improve site safety.  Legend: 15	depends on the project scale and equipment deployed & user requirement  1. Equipment HK\$392,000 including 9 邊距離室外定位基站 (HK\$13,000/unit), 10 測距防撞基站 (HK\$9,500/unit), 50 安全帽定位標籤 (HK\$800/unit), 50 工牌定位標籤 (HK\$800/unit), 1 定位引擎 (HK\$100,000/unit) 2. Services HK\$186,800 including 現場施工費用 (20% Equipment cost), Training (10,000/day), Maintenance (20% Equipment cost)	<input type="checkbox"/>

Legend of Discipline

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PA Code	Product Type	Digital Platform Application Area	Product name	Vendor	Contact	Product Descriptions	Reference Price (HK\$)	Yes / No
PA20-119	Safety Monitoring System	SaM-A PPE Checking SaM-B Well-being Monitoring SaM-C Workers' Behaviour Monitoring	Karta-X AI Assisted Construction Safety Analytic (KACSA)	Karta-X Technologies Limited	Tel: 3619 0620	This product is a construction site safety monitoring platform. It has an AI analytical tool for determining workers behavior captured by CCTVs with functions including workers' attendance and PPE identification, machine identification and suspicious personnel detection for better site management. Alert could be delivered by web, emails or APPs.  Legend: 15	<u>Reference for 24-month subscription for 5 sets of KACSAA v2.0 SaferAI-CC on crawler cranes (total \$468,000):</u>  \$55,680 per year/ set, incl. 2 cameras (IP67), AI computer, monitor, external warning lights, AI software, web-based UI for data analytics, data export and video review, configurable danger zone and worker detection, mobile web UI for real-time alert with photo of non-compliant event, free upgrade during subscription period;  Set-up \$23,880/ set;  Annual Maintenance: HK\$14,040/ set	<input type="checkbox"/>
PA20-120	Project Management Software (DWSS-related)	SWM-A Site Record SWM-B Inspection Checklist	Jarvis freeFORM	isBIM Limited	Tel: 2382 8380	This product is a project management platform with the core functions of form digitization and approval, approval flow management, data visualization and analysis, and report generation. It support real-time and multi-project management. Users can collect and update site data record with mobile devices through customized forms and approval workflow. This system has 50+ standard forms including Request for Inspection/Survey Check (RISC) forms, site diary, site cleanliness, labour return and site safety, etc. Through dashboard and reports, users can closely track and monitor the site and project status.  (Note: This product has certain DWSS functions which the vendor shall be inquired for details.)	<u>Hong Kong DWSS:</u> \$48,000/year/ project (unlimited users, including 0 checklist templates, 1TB storage, setup, technical support and software updates included)  \$2,000/ additional sheet of checklist template  <u>Quick Version:</u> \$28,000/year/ project (unlimited users, including 20 checklist templates, 100GB storage, setup, technical support and software updates included)  \$2,000/ additional sheet of checklist template  <u>Professional Version:</u> \$48,000/year/ project (unlimited users, including 50 checklist templates, 500GB storage, setup, technical support and software updates included)  \$2,000/ additional sheet of checklist template	<input type="checkbox"/>

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PA Code	Product Type	Digital Platform Application Area	Product name	Vendor	Contact	Product Descriptions	Reference Price (HK\$)	Yes / No
PA20-124	Movement Sensors	SIM-A Site Environment Condition Monitoring	South Real Time Monitoring System (SMOS)	South Instruments Technology Limited	Tel: 9293 3993	This product is a web / APP based monitoring system that includes various GPRS- and GNSS-based sensors for site condition monitoring such as inclination, settlement & positioning and 2D laser displacement sensors. It can reduce labour cost, save time and cost on installation and maintenance, ensure workers' safety and provide real-time alerts by warning calls, emails, SMS, or other forms of instant messages such as loudspeaker alarm system.	SMOS web-portal Cloud server and frameware setup: \$19,000  SMOS sensor service: \$6,000 / sensor / year  Real-Time Inclinometer Monitoring Sensor: \$22,425 / set  GNSS Settlement and Positioning Sensor (Base): \$38,000 / 1 set  Real-Time 2D laser displacement sensor: \$17,090 / 1 set	<input type="checkbox"/>
PA20-125	3D Reality Simulation / Data Management (CDE-related)	Common Data Platform	Synchro Pro	Bentley Systems Hong Kong Limited	Tel: 2802 1030	SYNCHRO Pro is an advanced construction project management software in 4D environment. The platform provides a fully integrated CPM scheduling engine with interoperable CAD capabilities that enables the users to create, edit, analyze and track multiple project views side- by-side in one 4D visual interface.  <i>(Note: This product is CDE-related platform which the vendor shall be inquired for details.)</i>	\$32,100 / 1-year subscription (Single User)  \$101,196 / 3-year subscription (Single User)	<input type="checkbox"/>
PA20-126	Concrete Strength Maturity and Site Environment Data Sensor	SIM-A Site Environment Condition Monitoring  SIM-B Building Element Monitoring  SIM-C Equipment Status Monitoring	LumiCon End-to-End IoT Solutions for Smart Construction Sites	AOMS Technologies	<a href="https://www.aoms-tech.com/">https://www.aoms-tech.com/</a>	This product is a cloud-based IoT sensor management and monitoring platform by using LoRa (Short for Long Range)-enabled sensor for concreting, site environmental and asset data by using various sensor units such as 1) Concrete strength and maturity, 2) Site environmental conditions (such as temperature, relative humidity, harmful gases concentration level, air quality, pressure, noise, lightning, and water leakage detection) 3) Asset and material management such as tools, machinery, assets, precast elements by tracking and asset utilization analysis using GPS and accelerometers. as well as FOS solution that is designed for permanent strain monitoring embedded in the concrete.	Vendor to be approached for price information	<input type="checkbox"/>

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PA Code	Product Type	Digital Platform Application Area	Product name	Vendor	Contact	Product Descriptions	Reference Price (HK\$)	Yes / No
PA20-128	Project Management Software (DWSS-related)	SWM-A Site Record SWM-B Inspection Checklist	Varadise DWSS	Varadise Limited	Tel: 9034 3844	<p>Varadise DWSS is a cloud-based project management platform with web portal and web app, designed to optimize workflows in construction. The 5 core modules allow site supervisory staff to standardize approval workflow, customize forms and automate reporting. The system also supports 4D BIM integration and synchronize with Varadise Twin platform as an optional add-on.</p> <p><i>(Note: This product has certain DWSS functions which the vendor shall be inquired for details.)</i></p>	<p>1. Reference Price of Use Case:</p> <p>a. \$2,120,000 for 40-month subscription of DWSS (\$12,500/month) for 200 users of which 50 nos. are concurrent, including E-RISC form, analytical dashboard, set-up and cloud service (\$500,000), Digital Twin for 40-month for 200 users of which 10 are concurrent users (\$28,000/ month) with 12-month maintenance period and following digital applications:</p> <p>i. AI Chatbot (Progress management, site photo management, safety incident report, Permit-to-Work System)</p> <p>ii. 4D photogrammetry - uploading model to platform once per month with terrain analysis;</p> <p>iii. CCTV for AI Safety management</p> <p>iv. GPS dump truck location monitoring</p> <p>2. Reference Standard Price:</p> <p>a. HK\$280,000 / set (One-off license project based)</p>	<input type="checkbox"/>
PA20-133	3D Reality Simulation / Data Management (CDE-related)	Common Data Platform	Revizto	Digital G Limited	Tel: 9202 5335	<p>This is a cloud-based real-time BIM-based project data visual collaboration platform for architects, engineers and contractors to communicate their design within project team in a navigable 3D environment. Using gaming technology and cloud solutions, this software can bring together various BIM/CAD data and workflow for collaboration and issue tracking in one centralized and interactive 3D environment.</p> <p>This platform works as a complementary tool alongside a CDE platform and which could extend the access to the construction database for future Facility Management purpose.</p> <p><i>(Note: This product is CDE-related platform which the vendor shall be inquired for details.)</i></p>	<ul style="list-style-type: none"> <li>• For 5-9 users: \$8,500 per user per year, including 2-hours online training;</li> <li>• For 10-19 users: \$7,500 per user per year, including 4-hours online training;</li> <li>• For 20-49 users: \$6,500 per user per year, including unlimited e-training;</li> <li>• For 50+ users: \$6,000 per user per year, including unlimited e-training</li> </ul>	<input type="checkbox"/>

Legend of Discipline

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PA Code	Product Type	Digital Platform Application Area	Product name	Vendor	Contact	Product Descriptions	Reference Price (HK\$)	Yes / No
PA20-136	3D Reality Simulation / Data Management (CDE-related)	Common Data Platform	EcoDomus	Global Virtual Design and Construction Limited	Tel: 3199 0388	<p>Integrated Platform - EcoDomus brings together a host of software for easy gathering and aggregation of information as it is a highly flexible system. Because of this, the platform can provide accurate information and actionable insights that are appropriate for user's needs. Scalable Solution EcoDomus is a scalable software suite. It can adapt to support the Internet of Things and Big Data solutions. As such, you can enhance your data collection from a broader range of information sources. Site-Based Work - EcoDomus empowers your ambulatory workforce, as the software has mobile and web interfaces that support on-site working. With this, mobile employees can be productive and can access data relevant to make intelligent decisions. Best Practices Implementation - To ensure that the assets are profitable for a long time, you have to be certain that employees and partners observe best practices when it comes to your facilities. EcoDomus enables you to make sure of that by providing you with the related information on one window. EcoDomus can also acts as the Common Data Environment (CDE) and Integrated Web Services BIM Hub, tying together various disconnected systems and workflows, and enables handover between all the participants in building's lifecycle: architects, engineers, contractors, operators, managers, commissioning agents, etc.</p> <p><i>(Note: This product is CDE-related platform which the vendor shall be inquired for details.)</i></p>	<p>Single 1 year Cloud version: \$13,572/ license</p> <p>Single 1 year On-premises: \$13,572/ license (Annual subscription)</p> <p>117,000/ license (Perpetual)</p>	<input type="checkbox"/>
PA20-137	3D Reality Simulation / Data Management (CDE-related)	Common Data Platform	Trimble Connect Business Premium (TRCBP-C-R12)	CivilConnect Limited	Tel: 2628 0933	<p>Open-BIM Cloud-based Collaboration platform and Tekla Workflow Tools that connects and enables Owners, Architects, Engineers, Contractors, Detailers and Fabricators to communicate and work together efficiently throughout whole project lifecycle with up-to-date Constructible Model and project information through a Common Data Environment and 4 Device Platforms ( Mobile, Desktop, Web and Mixed Reality)</p> <p>Provides Information synchronisation &amp; notification, Clash detection, Design &amp; Constructibility Reviews, Revision Management, Activity History, Request for Action/Information and Workflow Tools for Construction &amp; Supply Chain activity and Status update and Sharing.</p> <p><i>(Note: This product is CDE-related platform which the vendor shall be inquired for details.)</i></p>	<p>Single 1 year: \$2,140/ license;</p> <p>Single 3 years: \$6,420/ license</p>	<input type="checkbox"/>

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PA Code	Product Type	Digital Platform Application Area	Product name	Vendor	Contact	Product Descriptions	Reference Price (HK\$)	Yes / No
PA20-138	3D Reality Simulation / Data Management (CDE-related)	Common Data Platform	ShareBIM	MES Digital Limited	Tel: 3188 5230	<p>Model Integration includes: Sectioning, Measurement, Walkthrough, Component Filtering, Component Search, Viewing Properties, Viewpoint Management.</p> <p>Data Management (CDE) Document Management Collaboration Management includes Engineering Issue Management, Engineering Issue Pushpin, Project Activities, Task Management.</p> <p>Quality Management, Safety Management, Progress Management, Workflow Management, Material Management, QR Code</p> <p><i>(Note: This product is CDE-related platform which the vendor shall be inquired for details.)</i></p>	Single 1 year: \$6,988/ license	<input type="checkbox"/>
PA21-002	Project Management Software (DWSS-related)	SWM-A Site Record SWM-A Site Record	Pre-cast Component Inspection Online System	Hong Kong Smart City Technology Company Limited	Tel: 9256 6684	<p>This product is a cloud based mobile APP platform specially designed for precast concrete component inspection and quality checking including 1) online precast component status checking, 2) online site supervision workflow and record (quality check) and 3) review workflow and documents through mobile APP on a real-time basis.</p> <p><i>(Note: This product has certain DWSS functions which the vendor shall be inquired for details.)</i></p>	\$150,000 /annual subscription fee	<input type="checkbox"/>
PA21-003	3D Reality Simulation / Data Management (CDE-related)	Common Data Platform	dRofus (version 2.5)	Forida Limited	Tel: 2412 4590	<p>This product is a CDE, Project Information Management (PIM) and collaboration system which provides Room data and Furniture, Fixture and Equipment (FFE) management tools to enable the input of user requirements for data-driven design and access to a common BIM-based database for collaboration throughout the project life cycle.</p>	<p>\$1,410 / Monthly subscription fee</p> <p>\$5,640 project set up</p>	<input type="checkbox"/>

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PA Code	Product Type	Digital Platform Application Area	Product name	Vendor	Contact	Product Descriptions	Reference Price (HK\$)	Yes / No
PA21-010	Concrete Strength Maturity Sensor	SiM-B Building Element Monitoring	COMMAND Center Concrete Temperature and Maturity Monitoring System	The Transtec Group Products, LLC	<a href="https://www.commandcenterconcrete.com">https://www.commandcenterconcrete.com</a>	A concrete maturity monitoring system that measures and logs concrete temperature history, calculates maturity and evaluates in-place strength.	Vendor to be approached for price information	<input type="checkbox"/>
PA21-012	Movement Sensors	SiM-A Site Environment Condition Monitoring	High-Precision Monitoring Solution	Hi-Target International Group Limited	Tel: 3188 8923	The product is a GNSS solution designed to provide automated and continuous deformation monitoring where up-to-date positioning data is shown on the software platform.	\$60,000/ item (product & maint.); \$120,000/ item (software/ system)	<input type="checkbox"/>
PA21-013	Automatic water-spraying dust control system	SiM-A Site Environment Condition Monitoring	iSmartBuild Auto Sprinkler Control System	Novox Limited	Tel: 2690 9881	<p>An automatic water spraying dust control system designed to remotely control water sprinklers to spray water to suppress dust pollution according to air quality. Dust sensors placed at various control points monitor the site's real-time dust levels.</p> <p>A main control unit triggered by the dust sensors (Pre-approved item no. PA19-044 iSmartBuild Real-time Monitoring System) operates the solenoid valves which turn on/off the water sprinklers.</p> <p>Legend: 14</p>	<p>Dust Station Laser Type 6C: One-off HK\$11,000/ unit or rental HK\$1,800/month</p> <p>Dust Station Laser Type YZ: One-off HK\$9,000/ unit or rental HK\$1,800/ month</p> <p>Control Unit: One-off HK\$12,000/ unit or rental HK\$1,800/ month</p> <p>Cloud Service w/ Smartphone App: HK\$12,000/ year or rental HK\$1,000/month</p>	<input type="checkbox"/>

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PA Code	Product Type	Digital Platform Application Area	Product name	Vendor	Contact	Product Descriptions	Reference Price (HK\$)	Yes / No
PA21-016	Project Management Software (DWSS-related)	SWM-A Site Record SWM-B Inspection Checklist	Cerebro Inspection	Cerebro Strategy Limited	Tel: 2272 3670	The product is a project management software for the management of inspections and work progress under four inspection categories namely Site, Quality, Environmental and Safety. A cloud platform stores all relevant data and offers multi-project management capability.  <i>(Note: This product has certain DWSS functions which the vendor shall be inquired for details.)</i>	\$250,000 / single project licence	<input type="checkbox"/>
PA21-018	AI Inspection software	SWM-C Defect/ Outstanding Work Monitoring	RaSpect-Inspectica	RaSpect Intelligence Inspection Limited	Tel: 3594 6600	RaSpect-Inspectica is an online platform for building inspection management. It allows project team to store the related documents on the system and perform A.I. analysis on captured data.  User is able to access & manage data via online platform.  Legend 14	\$3,000/ month subscription per user email;  \$8/ sq.m inspection area	<input type="checkbox"/>
PA21-023	Force, Underground Water Level, Inclination, and Environmental Monitoring Platform	SiM-A Site Environment Condition Monitoring	SqueeSAR - An Advanced Interferometric Synthetic Aperture Radar (InSAR) Algorithm	TRE Altamira Srl	<a href="https://site.tre-altamira.com/">https://site.tre-altamira.com/</a>	A geodetic method which uses InSAR technology for remote ground and long period infrastructure settlement monitoring. All changes in land surface altitudes are displayed on a web platform.	Cost for area of 1 – 10 sq.km, including all appropriate InSAR deliverables, reporting, access to online GIS platform; TREMaps, SqueeSAR processing and regular client care service (meetings, discussions, technical explanations, etc.); 1-year historical analysis (baseline) with 2 satellite options (only one option per project):  <ul style="list-style-type: none"> <li>• Standard-resolution (20x5m pixel size): from €7,000 (approx.HK\$55,000 ) per analysis</li> <li>• High-resolution (3x3m pixel size): from €13,000 (approx.HK\$102,000) per analysis</li> </ul>	<input type="checkbox"/>

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PA Code	Product Type	Digital Platform Application Area	Product name	Vendor	Contact	Product Descriptions	Reference Price (HK\$)	Yes / No
PA21-024	Fire Safety Monitoring System	SIM-A Site Environment Condition Monitoring	FireWatcher Fire Alarm Web Application	Letsapp Limited	Tel: 5225 4679	The product is a cloud-based fire alarm system monitoring platform which alerts users of occurrences of fire and/or smoke through mobile application.  Legend: 15	Web/Mobile system \$200,000 / 2-year single site version (up to 2,000 sensors);  \$600,000 / 2-year multi-site enterprise version (up to 10 sites and total of 20,000 sensors);  Hardware \$660 / LoraWAN IoT fire/smoke signal receiver \$3,000 / IoT Gateway \$3,000 / Modbus or BACnet Gateway Kit	<input type="checkbox"/>
PA21-028	Electrical Power Consumption Monitoring System	SIM-C Equipment Status Monitoring	Buildings intelligent energy monitoring system	Verdigris Technologies Inc. Taiwan Branch	<a href="https://verdigris.co/">https://verdigris.co/</a>	This product is a non-intrusive electricity meter for the detection of irregularity in electricity power consumption and visual reports are provided for further energy consumption analysis.  Legend: 15	\$11,336 / Building Management System Gateway; \$ 893 / Generic Integrated Module (for 3 phase breaker); \$ 2,718 / Data software annual subscription fee; \$ 6,600 / Analytics software annual subscription fee	<input type="checkbox"/>
PA21-031	Safety Monitoring System	SaM-B Well-being Monitoring  SaM-C Workers' Behaviour Monitoring	Driver Status Monitor System	Transcendence Company Limited	Tel: 2862 1724	The product is designed to analyse machine operator's behaviour via an infra-red camera. The captured images are interpreted by artificial intelligence (A.I.) and big data to recognise unsafe and abnormal behaviours. An instant alert will be issued to both the driver and site management when unwanted operator behaviour is spotted.  Legend: 15	\$15,600 / item  Including: - Set-up - Product 1 no. MDVR-D5X-XR(HDD)-LHH0601 Hard disk 1 no. Car Camera 1 no. R-Watch 1 no. 4G antenna 1 no. GPS antenna - Hosting 20G data via SIM card 1-year HUAWAI cloud server (approx. \$3,600/year after Year 1) 1-year Mangrove Platform (approx. \$1,700/year after Year 1)	<input type="checkbox"/>

Legend of Discipline

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PA Code	Product Type	Digital Platform Application Area	Product name	Vendor	Contact	Product Descriptions	Reference Price (HK\$)	Yes / No
PA21-032	Electrical Power Consumption Monitoring System	SIM-C Equipment Status Monitoring	Intelligent Electrical System	Transcendence Company Limited	Tel: 2862 1724	The product assists management staff in the remote monitoring of a construction site's power usage. Both a web portal and mobile app show real-time power consumption figures and reports electrical supply related data to help technicians identify faults in the electrical system.  Legend: 15	\$7,400/ item  Including : RZES-143DT/010X 繼電器控制 x 1 电流互感器 x 3 剩余电流互感器 x 1 PT1000 温度线 x 4 Set up	<input type="checkbox"/>
PA21-033	Project Management Software (DWSS-related)	SWM-A Site Record SWM-B Inspection Checklist	DWSS Version 1	MES Services Limited	Tel: 2180 6144	The product is a Digital Works Supervision System (DWSS), which is a web-based centralised portal for the digitisation of various construction workflows and collection of construction works data.  (Note: This product has certain DWSS functions which the vendor shall be inquired for details.)  Legend: 14	\$30,000 - Implementation; \$550,000 - Software Permanent license; \$20,000 - Trainig	<input type="checkbox"/>
PA21-037	Vibration and Tilting Monitoring System	SIM-A Site Environment Condition Monitoring	6600D Bluetooth Wireless Tiltmeter	MyBIM Limited	Tel: 2806 2699	This product is a tiltmeter with wireless transmission capability and an acceleration sensor to monitor change in vertical and horizontal rotations of buildings and structures.	\$43,750/ item	<input type="checkbox"/>

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PA Code	Product Type	Digital Platform Application Area	Product name	Vendor	Contact	Product Descriptions	Reference Price (HK\$)	Yes / No
PA21-039	Safety Risk Assessment Software	SaM-B Well-being Monitoring	Risk Assessment Conduct Everywhere (RACE) Mobile App	Ideas & Technology Company Limited	Tel: 9313 6043	This is a mobile app for onsite safety-related staff to carry our risk assessment effectively and share relevant information to the electronic platform with the project team.  Legend: 14, 15	Every 10 Users - HKD \$3,000-\$4,000 per month (discount will be given for more than 50 users);  Server rental fee - HKD \$500 per month  Company account / project activation and initial setup - HKD \$10,000 - \$12,000 per project (incl. initial meeting/ training)	<input type="checkbox"/>
PA21-044	Safety Monitoring System	SaM-C Workers' Behaviour Monitoring	Package A: Advanced Driving Assistance System (ADAS) + Drowsiness Monitoring System (DMS) Package B: Advanced Driving Assistance System (ADAS)	GreenSafety Technology Limited	Tel: 2662 6460	<b>Advanced Driving Assistance System (ADAS)</b> is a dual-camera device that provides real-time driving assistance by alerting the driver of possible dangerous driving situations. The detection is made possible with the use of video analytics technology.  <b>Driver Monitoring System (DMS)</b> uses sophisticated face recognition technology to provide audible and vibrating alerts when fatigue or bad driving behavior is detected.  Legend: 15	Package A: \$24,730/set (ADAS + DMS) Package B: \$16,530/set (ADAS) Package C: \$16,530/set (DMS)	<input type="checkbox"/>
PA22-001	3D Reality Simulation / Data Management (CDE-related)	Common Data Platform	Gwork	Glodon (Hong Kong) Software Limited	Tel: 23337560	Gwork is a cloud-based collaboration platform that allows different parties to share BIM models and drawings, manage variation orders (VO's), approve modifications and circulate various types of documents. The platform maintains close connection between the office and the construction site through the sharing of the most up-to-date project information and progress.	Gwork Project Based Standard Package, 3-year subscription: \$500,000 (100 users & 1TB storage);  DWSS Standard Template and Localisation Workflow Set-up: \$60,000  Training for Gwork (Max. 20 persons, 4 classes): \$24,000	<input type="checkbox"/>

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PA Code	Product Type	Digital Platform Application Area	Product name	Vendor	Contact	Product Descriptions	Reference Price (HK\$)	Yes / No
PA22-003	3D Reality Simulation / Data Management (CDE-related)	SWM-A Site Record SWM-B Inspection Checklist SWM-C Defect/ Outstanding Work Monitoring	Jarvis Eagle Eye - Digital Twin Platform for Site Management	isBIM Limited	Tel: 2382 8380	A platform that offers a web-based digital twins representation of building assets and processes throughout the lifecycle of a project. The database is used for site checks, work progress updates and communication between project teams.	<p><u>Quick Version:</u> \$28,000 annual subscription/ project for site area less than 10,000 sq.m, including unlimited users, 100GB Storage, 12,800 photos, technical support, software update, 5 modules namely 動態, 360, 雙生, 筆記, 整改表單</p> <p>\$5,000 set-up fee</p> <p><u>Professional Version:</u> \$48,000 annual subscription/ project for site area of 10,000-200,000 sq.m, including unlimited users, 500GB Storage, 64,000 photos, technical support, software update, 5 modules namely 動態, 360, 雙生, 筆記, 整改表單</p> <p>\$10,000 set-up fee</p> <p><u>Special Version:</u> \$68,000 annual subscription/ project for site area of 10,000-200,000 sq.m, including unlimited users, 1TB Storage, 128,000 photos, technical support, software update, 5 modules namely 動態, 360, 雙生, 筆記, 整改表單</p> <p>\$10,000 set-up fee</p>	□

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PA Code	Product Type	Digital Platform Application Area	Product name	Vendor	Contact	Product Descriptions	Reference Price (HK\$)	Yes / No
PA22-005	Safety Monitoring System	<p>SaM-A PPE Checking</p> <p>SaM-B Well-being Monitoring</p> <p>SaM-D Hazardous Area Zoning/ Access Control</p>	A.I. Surveillance System for Construction Site Safety	iSafety Limited	Tel: 2408 8008	<p>A safety management system incorporating artificial intelligence (A.I) and 5G Internet of Things (IoT) technologies. It can provide real-time monitoring and issue instant warnings for unauthorised entry to dangerous zone and workers without safety helmets. Supervisory staff members can receive real-time alert notifications for timely response.</p> <p>Legend: 15</p>	<p><b>SYSTEM 1</b> – \$35,000/ set: - A.I. Edge CAM with A.I. function: Detection of Safety Helmet, Dangerous zone entry, Face mask capture - Only one single A.I. function to be operated for one system</p> <p><b>SYSTEM 2</b> – \$35,000/ set - A.I. Edge CAM (Pan Tilt Zoom Series, angle of camera can be controlled via internet) with A.I. function: Detection of Dangerous zone entry</p> <p><b>SYSTEM 3</b> – HK\$30,000/ set - A.I. Edge CAM with A.I. function: License Plate Recognition with warning alert during unauthorized entry</p> <p>The followings are included in all of the above systems: - Only one single A.I. function to be operated for one system - Resolution: 1920 x 1080 - Local Storage: MicroSD Card (Max 256GB) - External Buzzer (to be installed on camera pole) - 4G sim Router (for site with mobile network) - Basic Software Installation setup and training</p>	□

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PA Code	Product Type	Digital Platform Application Area	Product name	Vendor	Contact	Product Descriptions	Reference Price (HK\$)	Yes / No
PA22-007	3D Reality Simulation / Data Management (CDE-related)	Common Data Platform	AutoCDE	Llewellyn and Partners Company Limited	<a href="mailto:info@lpchku.com">info@lpchku.com</a>	<p>An ISO-compliant integrated asset information management platform that incorporates Artificial Intelligence (A.I.) technology.</p> <p>Over a Common Data Environment (CDE), the platform provides a single source of Building Information Modelling (BIM), Geographic Information System (GIS) and Internet of Things (IoT).</p> <p>High-value geometry and information of the built assets can be extracted and utilised for informed decisions to achieve smart operation.</p> <p>The platform's AutoBIM feature can create ISO-compliant BIM models from CAD drawings through the patented AI technologies.</p>	<p>Project Version: \$6,000 to \$19,200 / user / year;</p> <p>Enterprise Version: \$18,000 to \$36,000 / user / year</p> <p>Price determined by no. of users and file size uploaded for handling.</p> <p>Including :</p> <ul style="list-style-type: none"> <li>- 5 nos. persons training for 4 hours</li> <li>- 100GB for uploading files in any formats specified in the quotation for 10 users.</li> </ul>	<input type="checkbox"/>
PA22-008	Project Management Software (DWSS-related)	SWM-A Site Record SWM-B Inspection Checklist	ESIA (DWSS)	Bex Solutions Limited	Tel: 3469 9699	<p>A Digital Works Supervision System (DWSS) that digitises inspection and site monitoring processes like RISC management, Site Diary, Safety and Cleansing Inspection and keeping of Labor Return record.</p>	<p>\$90,000 for 50 users per year</p> <p>Including :</p> <ul style="list-style-type: none"> <li>- Set-up</li> <li>- max. 15 nos. of customised eforms</li> <li>- 4-day on-site training for 40 persons</li> <li>- Warranty (system bugs fixes, scheduled system backup and restoration)</li> </ul>	<input type="checkbox"/>

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PA Code	Product Type	Digital Platform Application Area	Product name	Vendor	Contact	Product Descriptions	Reference Price (HK\$)	Yes / No
PA22-011	Safety Monitoring System	SaM-B Well-being Monitoring SaM-D Hazardous Area Zoning/ Access Control	Respect-ACE-Safety	RaSpect Intelligence Inspection Limited	<a href="https://raspect.ai/en/about/contact-us">https://raspect.ai/en/about/contact-us</a>	This product is a platform aimed at monitoring onsite activities and moving equipment to improve safety. Sensors and cameras on site allows computer analysis on the collected data for the detection and alert of safety issues. The analyzed data is shown on a web dashboard with alerts for timely response.  Legend: 15	\$536,000/ unit  Including : \$236,000 Supply and set-up on fixed location or vehicle for item below: - 4 nos. 4K CCTV cameras (@\$7,000 each) - 1 no. rope monitoring sensor (@\$100,000 per set) - 5 nos. vibration sensors (@\$5,000 each) - 1 no. sensor gateway (@\$7,000 each) - 1 no. edge processing computer (@\$40,000) for data analysis before upload data to cloud - Software and data storage for 1 year subscription (@\$36,000 per year): - 50 nos.users account for one year subscription of the web platform access and auto update. - 20 GB cloud storage for result analytics. * Video streaming from camera are stored at local edge computing server.  Price for detection of additional object: \$300,000 customization object detection model for each type of object such as void on floor.	<input type="checkbox"/>
PA22-014	3D Reality Simulation / Data Management	SWM-C Defect/ Outstanding Work Monitoring	OpenSpace ClearSight	OpenSpace Construction Technology (HK) Limited	support@openspace.ai info@openspace.ai	This product turns 360 images into actionable data and dashboards by automatically tracking and quantifying work-in-place for key trades and project milestones.	Price by value of construction work:  a. Set-up/ installation: 45 min Onboarding and training - 0.15% of construction value at the high end 0.01% at the low end. (with unlimited data storage)  b. Warranty: Openspace will keep customer's project data for 10 years  c. Maintenance: Telephone technical support included Excluding Hardware - Safety helmet, 360 camera	<input type="checkbox"/>

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PA Code	Product Type	Digital Platform Application Area	Product name	Vendor	Contact	Product Descriptions	Reference Price (HK\$)	Yes / No
PA22-033	AI Inspection software	SWM-C Defect/ Outstanding Work Monitoring	A.I. Unmanned Aerial System for Scaffolding Inspection	RaSpect Intelligence Inspection Limited	Tel : 39788425	<p>A.I. Unmanned Aerial System for Scaffolding Inspection The system offers overhead power line and metal scaffolding inspections through image analysis powered by A.I. technology. It records the conditions of the overhead power line and scaffold which is able to identify abnormal conditions, e.g. safety net damages, accumulated debris, deformation of scaffold, defects of overhead line tower &amp; etc.</p> <p>Legend: 14</p>	<p>\$280,000 per package per year</p> <p>including: a. UAS Operation Setup; b. Online Cloud Platform for Data Management c. Artificial Intelligence Engine Analytics</p>	<input type="checkbox"/>
PA22-035	Safety Monitoring System	SaM-D Hazardous Area Zoning/ Access Control	Construction Machines Crash Detection System	Hong Kong Telecommunications (HKT) Limited	Tel : 28836577	<p>Construction Machines Crash Detection System The Crash Detection System (CDS) uses sensors to measure positions of machineries and compute a 3D model with machineries and structures' real-time positions to determine if there is a potential risk of collision. Alert will be given to the operators to take immediate action to prevent accidents. The solution can be deployed to a site with multiple machineries and will function in adverse weather conditions.</p> <p>Legend: 15</p>	<p>\$10,000 per month (min. 12-month service subscription)</p> <p>Including : - CDS hardware unit x 1 - CDS backend system and support - 5G router with 30G mobile data connection (thereafter \$10/GB) - 1-hour training for 2 to 3 persons - Installation of hardware and calibration - Testing and commission - Training to signalman and crane/machinery operator</p>	<input type="checkbox"/>

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