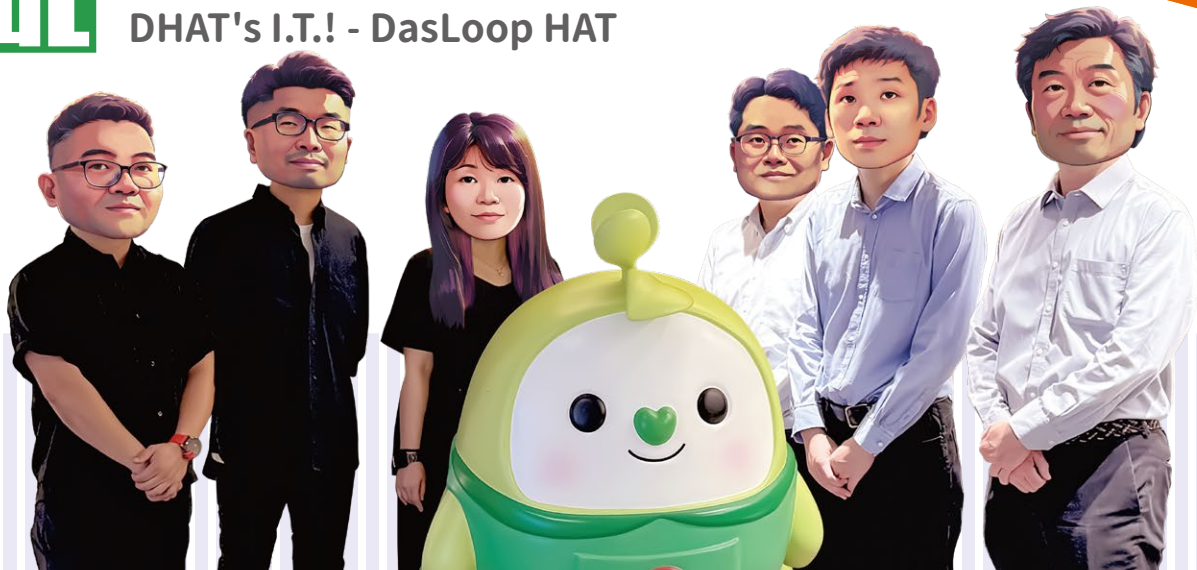




臻善圈決賽隊伍提案摘要 Project Summaries of WIT Finalists

物聯網智能安全帽連雲端平台

DHAT's I.T.! - DasLoop HAT



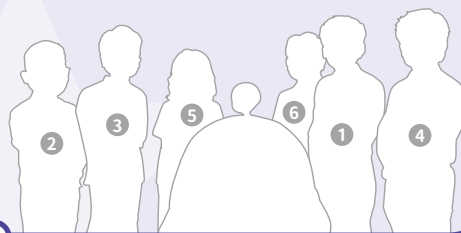
圈員資料 Team's Information

成立日期 Date of Team Formation 03/2024

圈長 Team Leader 黃仲賢 WONG Chung Yin | 1

促導員 Facilitator 鄭嘉栢 CHENG Ka Pak | 2

圈員 Team Members 周沛恒 CHOW Pui Hang | 3
張頌濤 CHANG Chung To | 4
蕭惠欣 SIU Wai Yan | 5
陳一波 CHAN Yat Po | 6



問題剖析 Problem Analysis

- 香港的地盤普遍存在「趕工文化」。工人們為生計，在極端天氣（包括高溫、強風暴雨等）下仍無間斷加班，忽視身體狀況。
- 他們時刻面對危險的工作環境，加上在信號不良的地方工作，一旦不幸發生事故，便難以即時求救。
- 在傳統的監督方式下，監督人員或無法即時收到工人求助或掌握工人狀態，導致救援延誤。
- 由於工地範圍大、環境複雜且存在盲點，有限的監督人手難以全面監察地盤狀況並掌握工人實時位置，容易有失救情況發生。
- "Demanding culture" commonly exists in Hong Kong construction sites. To earn a living, workers often endure continuous overtime even under an extreme weather (like elevated temperature or heavy rain), neglecting their physical well-being.
- They constantly face dangerous working environments with poor signal coverage. It will be difficult for them to seek immediate help once an accident occurs.
- Supervisors are unable to immediately workers' calls for help or ascertain their status using traditional supervision method, leading to delays in rescue.
- Owing to the large area and complexity of the construction site, with the presence of blind spots, limited supervisory manpower makes it difficult to comprehensively monitor site conditions and track the real-time location of workers, leading to delayed or missed rescue.



改善方法 Improvement Methods



傳統監督方式(人手巡查)難以實時全面監察工人的身體和安全狀況，以致意外發生時未能採取適切措施應對。

Traditional supervision methods (relying on manual patrols) make it difficult to comprehensively monitor workers' physical and safety conditions in real-time. As a result, when accidents occur, appropriate measures cannot be taken to respond effectively.

- 團隊引入智能安全帽，實時記錄工友體徵(如體溫、脈搏)及位置，以無死角網絡將數據傳送到雲端平台作全天候監察。
- 其平台監察系統，結合3D模型以及團隊共同研發的多樓層儀表板顯示組合，更容易掌握工友實時狀態。當數據異常時(包括體徵異常、突然下墜、靜止不動或沒有數據感應一段時間)，即時通知監督人員應對，使工人的安全更受保障。
- 工友遇險時，可按安全帽的緊急按鈕立即求助。
- 定期舉辦講座，增強工友對智能安全帽的認知。
- The team introduced “DasLoop HAT” to record workers' real-time vital signs and location, and the data will be sent to the cloud platform via the seamless network for continuous monitoring.
- The platform monitoring system, which integrates a 3D model with a multi-floor dashboard display, makes it easier for supervisors to grasp the real-time status of workers. In the event of data anomalies, supervisors are instantly notified to take appropriate action, thereby better ensuring worker safety.
- Workers can use dedicated help button of the “DasLoop HAT” when workers are in emergency.
- Regularly organise talks to enhance workers' awareness and understanding of the “DasLoop HAT”.

智能安全帽實時記錄工友數據(包括位置，體溫，脈搏等)，透過感應器和無線網絡將數據傳送到雲端平台，作全天候監察。

Smart safety helmets record worker data (including location, body temperature, pulse, etc.) in real-time, transmitting this data via sensors and wireless networks to a cloud platform for round-the-clock monitoring.





利用雲端平台結合大數據訂立不同警示標準，數據異常時即時通知監督人員應對，提早預防因過勞或健康問題導致的事故發生。

Leveraging the cloud platform combined with big data, different alert standards are established. When data anomalies occur, supervisors are instantly notified to take action, enabling early prevention of accidents caused by overwork or health issues.



總結成果 Summary of Achievements

有形得益

- 省卻進行安全工作所需的額外人手，扣除成本後，每年節省港幣 \$68,736 開支。
- 透過及早介入協助工友預防意外，已成功避免可引致的巨額保險索償和因停工造成的潛在損失 842 次 (統計自 2023 年 12 月 5 日至 2025 年 4 月 30 日的平台數據，並持續更新中)。

Tangible Benefits

- Eliminates the need for extra manpower for safety-related tasks. After deducting costs, this leads to an annual saving of HK\$68,736 in expenses.
- Proactive intervention has prevented 842 potential incidents and avoided substantial insurance claims and work stoppage losses. (Based on platform data collected from 5 December 2023 to 30 April 2025; which is continuously updated).

無形得益

- 採用智慧安全工地系統 (SSSS) 的理念，並透過科技進行實時監測，使安全水平得以顯著提升。
- 產品具備極大擴充可能性，所收集的數據可用於產品的優化。
- 其應用範圍涵蓋所有工地 (包括密閉空間)，並具備延伸至其他工地或已落成的物業項目的潛力。

Intangible Benefits

- Through adopting the Smart Site Safety System (SSSS) concept, and using technology to implement real-time monitoring, the site safety level has been significantly strengthened.
- The product possesses significant potential for expansion, and the data collected can be used for its optimization.
- It's application scope covers all worksites, including confined spaces, and has the potential to extend to other worksites or existing buildings.