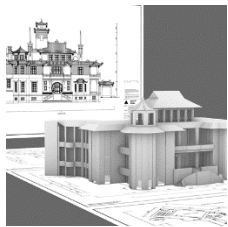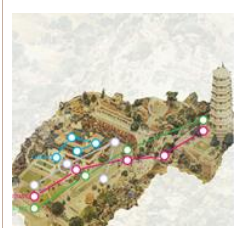# *Multiple VR CAVE Systems for Collaborative & Team Learning*

QESS – Quarterly Progress News Update
Newsletter #1   01.12.2020 – 31.05.2021
Project: *Development of real-time cooperative VR multi-CAVE systems for collaborative and team learning*

Event Highlights

December 2020

- ✓ **01.09.2020 – 01.12.2021** – Liaison with various stakeholders in HSUHK, HKU Space, CHCHE and HKU in preparing for the project, e.g. recruitment, content management, subject matter experts invitation, etc.
- ✓ **07.12.2021** – First kick-off meeting of Project Management Team.
- ✓ **15.12.2021**– Started to recruit project manager, project analysts, multimedia designers and programmers.
- ✓ **22.12.2021** – Identification of academic modules for applying three VR development themes – Heritage, Logistics and Journalism.

January 2021

- ✓ **04.01.2021** – First kick-off meeting on Heritage VR Development Team.
- ✓ **08.01.2021** – Project Manager onboard.
- ✓ **18.01.2021** – First kick-off meeting on Logistics VR Development Team.
- ✓ **20.01.2021** – Evaluation on CAVE specifications of three institutions for hardware and software upgrade and alignment.

February 2021

- ✓ **18.02.2021** – Subject Matter Experts invitation on three VR themes – Heritage, Logistics and Journalism.
- ✓ **23.02.2021** – Meeting and Site Visit in DHL Express Service Centre.
- ✓ **25.02.2021** – Data collection and content development on Sichuan earthquake for Journalism VR.
- ✓ **26.02.2021** – Content development on Heritage VR – Tiger Balm Garden.

What's next? *Content development on Heritage, Logistics and Journalism VR; Multiple VR Systems Cooperation Development; Collection of Tiger Balm Garden photos from AMO.*
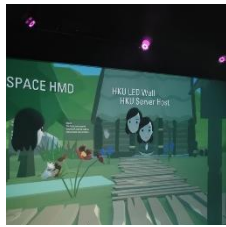
香港恒生大學 THE HANG SENG UNIVERSITY OF HONG KONG   珠海學院 CHU HAI COLLEGE OF HIGHER EDUCATION   HKUSPACE 香港大學專業進修學院 HKU School of Professional and Continuing Education   香港大學 THE UNIVERSITY OF HONG KONG

VRC VIRTUAL REALITY CENTRE   DHL EXPRESS   KERRY LOGISTICS 嘉里物流   IISE INSTITUTE OF INDUSTRIAL & SYSTEMS ENGINEERS   HKIE THE HONG KONG INSTITUTION OF ENGINEERS Logistics & Transportation Division 物流及運輸分部
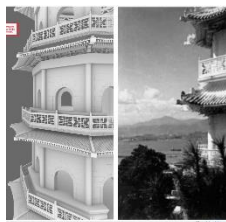
Multiple VR CAVE Systems for Collaborative & Team Learning

QESS – Quarterly Progress News Update
Newsletter #1
Project: *Development of real-time cooperative VR multi-CAVE systems for collaborative and team learning*

Event Highlights

March 2021

- ✓ **01.03.2021** – VR Programmer of CHCHE onboard.
- ✓ **08.03.2021** – Process flow mapping and derivation of incident handling cases of X-ray screening and DG related operations in DHL Express.
- ✓ **09.03.2021** – Visit to Antiquities and Monuments Office in exploring photos and information about Haw Par Mansion and Tiger Balm Garden.
- ✓ **19.03.2021** – First meeting with representative, Mr. Roger Wu, Haw Par Music at Haw Par Mansion.
- ✓ **25.03.2021** – Conduct 3D Modelling on Pagoda Tower and Haw Par Mansion.
- ✓ **28.03.2021** – Selection and review on potential sculpture for scanning and drawing.

April 2021

- ✓ **07.04.2021** – Multimedia designer of CHCHE onboard.
- ✓ **12.04.2021** – Developed three incident cases on DG handling for Logistics VR.
- ✓ **19.04.2021** – Obtained drawings and resource kit from Architecture Service Department of HKSAR.

May 2021

- ✓ **03.05.2021** – First demonstration of VR 3D modelling on Tiger Balm Garden by the project development team.
- ✓ **10.05.2021** – Group visit to Tiger Balm Garden, Haw Par Mansion and Haw Par Music.
- ✓ **17.05.2021** – Project Analyst of CHCHE onboard.
- ✓ **18.05.2021** – Trial on cooperative functionalities on multiple CAVE and VR systems.
- ✓ **25.05.2021** – Site visit and meeting with Kerry Freight in Kerry Logistics Cargo Centre
- ✓ **26.05.2021** – Journalism VR Meeting and Brainstorming Session

What's next? *3D Modelling on Tiger Balm Garden; Content development on three themes in heritage, Sichuan Earthquake and logistics DG Handling; Further functionality testing VR systems cooperation.*
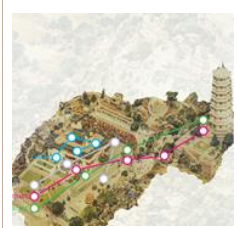
Multiple VR CAVE Systems for Collaborative & Team Learning

QESS – Quarterly Progress News Update
Newsletter #3   01.06.2021 – 31.08.2021
Project: *Development of real-time cooperative VR multi-CAVE systems for collaborative and team learning*

Event Highlights

June 2021
- ✓ **07.06.2021** – Journalism VR Meeting, Heritage VR Meeting, Logistics VR Meeting with subject matter experts.
- ✓ **21.06.2021** – Project management meeting.
- ✓ **22.06.2021** – Requirement collection with subject matter experts of journalism VR.

July 2021
- ✓ **01.07.2021 – 23.07.2021** – Develop journalism VR storyboards.
- ✓ **02.07.2021** – Logistics VR team visit DHL Service Center for material collection.
- ✓ **05.07.2021** – Journalism VR Meeting, Heritage VR Meeting, Logistics VR Meeting with subject matter experts.
- ✓ **05.07.2021–30.07.2021** – Draft sample game UI and basic menu functions of Journalism VR content.
- ✓ **14.07.2021** – Requirement collection with subject matter experts of journalism VR.

August 2021
- ✓ **02.08.2021 – 20.08.2021** – Develop heritage VR storyboard.
- ✓ **05.08.2021–31.08.2021** – Draft sample game UI and basic menu functions of heritage VR content.
- ✓ **09.08.2021** – Logistics VR Meeting with subject matter experts for identifying target audience and user needs.
- ✓ **23.08.2021** – Programmer of HKUSPACE onboard.
- ✓ **27.08.2021** – Votantic XR workshop at the University of Hong Kong

***What's next?** Create prototype of the VR environment. Research for 3D model references. Set up checkpoints in each content.*

Enquiries:
vrc@hsu.edu.hk

Multiple VR CAVE Systems for Collaborative & Team Learning

QESS – Quarterly Progress News Update
Newsletter #4   01.09.2021 – 30.11.2021
Project: *Development of real-time cooperative VR multi-CAVE systems for collaborative and team learning*

Event Highlights

September 2021

- ✓ **01.09.2021** – Journalism VR meeting with subject matter experts.
- ✓ **14.09.21** — Logistics VR meeting with subject matters experts.
- ✓ **15.09.2021** — Project management meeting.
- ✓ **20.9.2021** — Development team conduct a lidar scanning on interior of Haw Par Mansion.
- ✓ **28.09.21** — Logistics VR meeting with subject matters experts.

October 2021

- ✓ **11.10.2021** – Multimedia designer of HKU Space onboard.
- ✓ **12.10.2021** — Logistics VR meeting with subject matters experts.
- ✓ **18.10.2021** — Testing on connectivity and stability of multiple VR devices for conducting collaborative learning in VR platform.
- ✓ **22.10.2021** — Logistics VR team VR CAVE site visit.
- ✓ **26.10.2021** — Logistics VR meeting with subject matters experts.

November 2021

- ✓ **09.11.2021** – Logistics VR meeting with subject matter experts.
- ✓ **12.11.2021** — Interview subject matter experts for requirement collection.
- ✓ **25.11.2021** — The journalism VR content is demonstrated in the Symposium of HKU Space.

What's next? *Content development on Heritage, Logistics and Journalism VR; Multiple VR Systems Cooperation Development; Collection of Tiger Balm Garden photos from AMO.*

香港恒生大學 THE HANG SENG UNIVERSITY OF HONG KONG　　珠海學院 CHU HAI COLLEGE OF HIGHER EDUCATION　　HKUSPACE 香港大學專業進修學院 HKU School of Professional and Continuing Education　　香港大學 THE UNIVERSITY OF HONG KONG

VRC VIRTUAL REALITY CENTRE　　DHL EXPRESS　　KERRY LOGISTICS 嘉里物流　　IISE INSTITUTE OF INDUSTRIAL & SYSTEMS ENGINEERS　　HKIE THE HONG KONG INSTITUTION OF ENGINEERS Logistics & Transportation Division 物流及運輸分部

Enquiries:
vrc@hsu.edu.hk

Multiple VR CAVE Systems for Collaborative & Team Learning

QESS – Quarterly Progress News Update
Newsletter #5   01.12.2021 – 28.02.2022
Project: *Development of real-time cooperative VR multi-CAVE systems for collaborative and team learning*

Event Highlights

December 2021
- ✓ **08.12.2021** – VR content connectivity testing in CAVE.
- ✓ **14.12.2021** — Logistics VR meeting with subject matters experts.
- ✓ **17.12.2021** — VR development team visit to HSUHK VR CAVE.
- ✓ **22.12.2021** – VR content lighting and 3D rending testing in CAVE.

January 2022
- ✓ **04.01.2022** — Logistics VR meeting with subject matters experts.
- ✓ **10.01.2022** — VR content connectivity testing.
- ✓ **17.01.2022** — VR content connectivity testing in CAVE
- ✓ **24.01.2022** — VR content user interface testing.
- ✓ **26.01.2022** — Logistics VR meeting with subject matters experts.

February 2022
- ✓ **07.02.2022** — Start development of "News Reporting and Interview Skills" checkpoint of Journalism VR.
- ✓ **16.02.2022** — Logistics VR meeting with subject matters experts.
- ✓ **17.02.2022** — VR content interface and readability testing in CAVE

What's next? *Content development on Heritage, Logistics and Journalism VR; Multiple VR Systems Cooperation Development.*

香港恒生大學 THE HANG SENG UNIVERSITY OF HONG KONG

珠海學院 CHU HAI COLLEGE OF HIGHER EDUCATION

HKUSPACE 香港大學專業進修學院 HKU School of Professional and Continuing Education

香港大學 THE UNIVERSITY OF HONG KONG

VRC VIRTUAL REALITY CENTRE

DHL EXPRESS

KERRY LOGISTICS 嘉里物流

IISE INSTITUTE OF INDUSTRIAL & SYSTEMS ENGINEERS

HKIE THE HONG KONG INSTITUTION OF ENGINEERS Logistics & Transportation Division 物流及運輸分部

Multiple VR CAVE Systems for Collaborative & Team Learning

QESS – Quarterly Progress News Update
Newsletter #6   01.03.2022 – 31.05.2022
Project: *Development of real-time cooperative VR multi-CAVE systems for collaborative and team learning*

Event Highlights

March 2022
- ✓ **09.03.2022** — Logistics VR meeting with subject matter experts.
- ✓ **16.03.2022** — VR device compatibility test.
- ✓ **28.03.2022** — Start development of "Cargo Acceptance" checkpoint in DHL Express VR.
- ✓ **30.03.2022** — Logistics VR meeting with subject matter experts.

April 2022
- ✓ **04.04.2022** — Start development of "Concurrent Incident Handling" checkpoint of journalism VR.
- ✓ **13.04.2022** — VR content CAVE testing on connectivity and stability.
- ✓ **20.04.2022** — Logistics VR meeting with subject matter experts.

May 2022
- ✓ **01.05.2022** — VR content scene lighting test in CAVE.
- ✓ **16.05.2022** — Logistics VR meeting with subject matter experts.
- ✓ **23.05.2022** — Conduct enhancement in the "Cargo Building" checkpoint of DHL Express VR.

What's next? *Content development on Heritage, Logistics and Journalism VR; Multiple VR Systems Cooperation Development.*

香港恒生大學 THE HANG SENG UNIVERSITY OF HONG KONG
珠海學院 CHU HAI COLLEGE OF HIGHER EDUCATION
HKUSPACE 香港大學專業進修學院 HKU School of Professional and Continuing Education
香港大學 THE UNIVERSITY OF HONG KONG

VRC VIRTUAL REALITY CENTRE
DHL EXPRESS
KERRY LOGISTICS 嘉里物流
IISE INSTITUTE OF INDUSTRIAL & SYSTEMS ENGINEERS
HKIE THE HONG KONG INSTITUTION OF ENGINEERS Logistics & Transportation Division 物流及運輸分部

Multiple VR CAVE Systems for Collaborative & Team Learning

QESS – Quarterly Progress News Update
Newsletter #7   01.06.2022 – 31.08.2022
Project: *Development of real-time cooperative VR multi-CAVE systems for collaborative and team learning*

Event Highlights

June 2022

- ✓ **06.06.2022** — Start development of "Live News Reporting" checkpoint of journalism VR.
- ✓ **10.06.2022** — VR content user interface testing in CAVE.
- ✓ **16.06.2022** — Meeting with Kerry Logistics representatives for requirement collection.
- ✓ **20.06.2022** — Start development of "X-ray Screening" checkpoint of DHL Express VR.
- ✓ **29.06.2022** — VR content connectivity testing in CAVE.

July 2022

- ✓ **04.07.2022** — Logistics VR meeting with subject matter experts.
- ✓ **13.07.2022** — VR content game logic testing.
- ✓ **22.07.2022** — Demonstration of DHL Express VR to students.

August 2022

- ✓ **04.08.2022** — Logistics VR meeting with subject matter experts.
- ✓ **05.08.2022** — VR content game logic testing.
- ✓ **17.08.2022** — VR content game logic and scoring test in CAVE.
- ✓ **22.08.2022** — Start development of "Hospital and Conveyor Chute" checkpoint of DHL Express VR.
- ✓ **24.08.2022** — Demonstration of DHL Express VR to students.

What's next? *Content development on Heritage, Logistics and Journalism VR; Multiple VR Systems Cooperation Development; testing and debugging.*
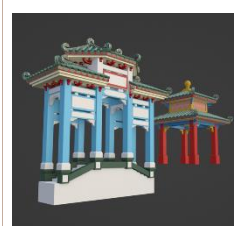
Multiple VR CAVE Systems for Collaborative & Team Learning

QESS – Quarterly Progress News Update
Newsletter #8   01.09.2022 – 30.11.2022
Project: Development of real-time cooperative VR multi-CAVE systems for collaborative and team learning

Event Highlights

September 2022

- ✓ **05.09.2022** — Start development of "Interview Injured Person with Family Loss" of journalism VR.
- ✓ **08.09.2022** — VR content testing in CAVE.
- ✓ **16.09.2022** — Progress update meeting with subject matter experts.
- ✓ **22.09.2022** — First day of promotional video shooting for heritage VR.
- ✓ **22.9.2022** – Conducted a Culture and Technology Talk about reconstructing the lost heritage of Tiger Balm Garden with Ms. Aw Sian Sally invited as speaker.
- ✓ **28.09.2022** — VR content testing in CAVE.

October 2022

- ✓ **03.10.2022** — start development of "New Reporting with Multiple TV Stations Under the Same Scene" of journalism VR.
- ✓ **10.10.2022** — Start development of "Cargo Building" checkpoint of Kerry Logistics VR.
- ✓ **24.10.2022** — Progress update meeting with subject matter experts.

November 2022

- ✓ **08.11.2022** — Content development teams visit HSUHK VR CAVE.
- ✓ **09.11.2022** — Meeting with Kerry Logistics representatives.
- ✓ **14.11.2022** – Second day of promotion video shooting for heritage VR.
- ✓ **21.11.2022** — Progress update meeting with subject matter experts.
- ✓ **21.11.2022** — Start development of "Cargo Acceptance" checkpoint of Kerry Logistics VR.
- ✓ **22.11.2022** — Content development team visit to DHL Express Service Centre.
- ✓ **23.11.2022** – Showcase and demonstration of logistics VR in an international forum (ALMAC) at HKCEC in Hong Kong.

What's next? Content development on Heritage, Logistics and Journalism VR; Multiple VR Systems Cooperation Development; testing and debugging.

Enquiries:
vrc@hsu.edu.hk

Multiple VR CAVE Systems for Collaborative & Team Learning

QESS – Quarterly Progress News Update
Newsletter #9   01.12.2022 – 28.02.2023
Project: *Development of real-time cooperative VR multi-CAVE systems for collaborative and team learning*

Event Highlights

December 2022

- ✓ **01.12.2022** — VR content connectivity test in CAVE.
- ✓ **07.12.2022** — VR content performance test in CAVE.
- ✓ **19.12.2022** — Progress update meeting with subject matter experts.
- ✓ **28.12.2022** — VR content user interface test in CAVE.

January 2023

- ✓ **03.01.2023** — Start development of "Interview with Victims at Residual Place" checkpoint of journalism VR.
- ✓ **03.01.2023** — Start development of "Cargo Measurement" checkpoint of Kerry Logistics VR.
- ✓ **06.01.2023** — VR content performance test in CAVE.
- ✓ **16.01.2023** — Progress update meeting with subject matter experts.

February 2023

- ✓ **01.02.2023** — Start development of "Selection of Appropriate Tools" and "Q&A Classroom" checkpoints of journalism VR.
- ✓ **07.02.2023** — VR content connectivity test in CAVE.
- ✓ **13.02.2023** — Start development of "Tour Mode" in Kerry Logistics VR.
- ✓ **21.02.2023** — VR content color and lighting test in CAVE.

What's next? *Content development on Heritage, Logistics and Journalism VR; Multiple VR Systems Cooperation Development; testing and debugging.*
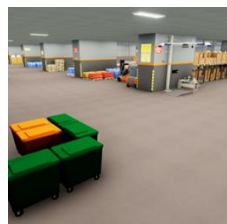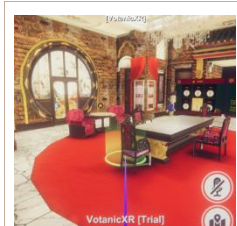
Multiple VR CAVE Systems for Collaborative & Team Learning

QESS – Quarterly Progress News Update
Newsletter #10   01.03.2023 –31.05.2023
Project: *Development of real-time cooperative VR multi-CAVE systems for collaborative and team learning*

Event Highlights

March 2023
- ✓ **06.03.2023** — Progress update meeting with subject matter experts.
- ✓ **06.03.2023** — Start development of "X-ray Screening" in Kerry Logistics VR.

April 2023
- ✓ **02.04.2023** — Start development of "Cargo Measurement" checkpoint of Kerry Logistics VR.
- ✓ **19.04.2023** — Logistics VR meeting with subject matter experts.
- ✓ **24.4.2023** – Meeting with DHL Express representatives about planning of pilot rollout in the company.

May 2023
- ✓ **08.05.2023** — Start development of "Tour Mode" of DHL Express VR.
- ✓ **19.05.2023** — Showcase of heritage VR and DHL Express VR to students of campus tour.
- ✓ **23.05.2023** — VR content connectivity and performance test in CAVE.

What's next? *Content development on Heritage, Logistics and Journalism VR; Multiple VR Systems Cooperation Development; testing and debugging; collect users' feedback.*
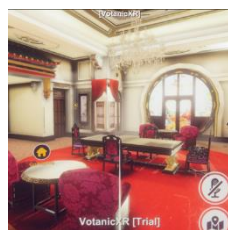
香港恒生大學 THE HANG SENG UNIVERSITY OF HONG KONG

珠海學院 CHU HAI COLLEGE OF HIGHER EDUCATION

HKUSPACE 香港大學專業進修學院 HKU School of Professional and Continuing Education

香港大學 THE UNIVERSITY OF HONG KONG

VRC VIRTUAL REALITY CENTRE

DHL EXPRESS

KERRY LOGISTICS 嘉里物流

IISE INSTITUTE OF INDUSTRIAL & SYSTEMS ENGINEERS

HKIE THE HONG KONG INSTITUTION OF ENGINEERS Logistics & Transportation Division 物流及運輸分部

Multiple VR CAVE Systems for Collaborative & Team Learning

QESS – Quarterly Progress News Update
Newsletter #11   01.06.2023 – 30.09.2023
Project: Development of real-time cooperative VR multi-CAVE systems for collaborative and team learning

Event Highlights

June 2023
- ✓ **26.06.2023** — Start development of "Smart Classroom" in DHL Express VR.

July 2023
- ✓ **08.07.2023** — DHL EXPRESS (HK) Ltd is awarded for Best Practice in Decision Analytics Outstanding Award Presentation Ceremony 2023.
- ✓ **11.07.2023** — Visitor from Nanyang Technological University visited HSUHK VR CAVE.

August 2023
- ✓ **08.05.2023** — Start development of "Tour Mode" of DHL Express VR.
- ✓ **19.05.2023** — Showcase of heritage VR and DHL Express VR to students of campus tour.
- ✓ **23.05.2023** — VR content connectivity and performance test in CAVE.

September 2023
- ✓ **20.09.2023** — The Launch Ceremony of the Metaverse Platform for Problem-based Collaborative Learning on Logistics, Heritage and Journalism is held in HSUHK, including a media showcase and student sharing sessions.

What's next? *Content development on Heritage, Logistics and Journalism VR; Multiple VR Systems Cooperation Development; testing and debugging; collect users' feedback.*
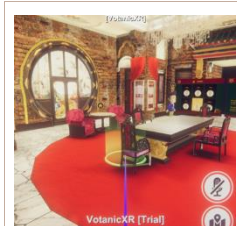
THE HANG SENG UNIVERSITY OF HONG KONG | CHU HAI COLLEGE OF HIGHER EDUCATION | HKU SPACE HKU School of Professional and Continuing Education | THE UNIVERSITY OF HONG KONG

VRC VIRTUAL REALITY CENTRE | DHL EXPRESS | KERRY LOGISTICS 嘉里物流 | IISE INSTITUTE OF INDUSTRIAL & SYSTEMS ENGINEERS | HKIE THE HONG KONG INSTITUTION OF ENGINEERS Logistics & Transportation Division 物流及運輸分部

Enquiries:
vrc@hsu.edu.hk