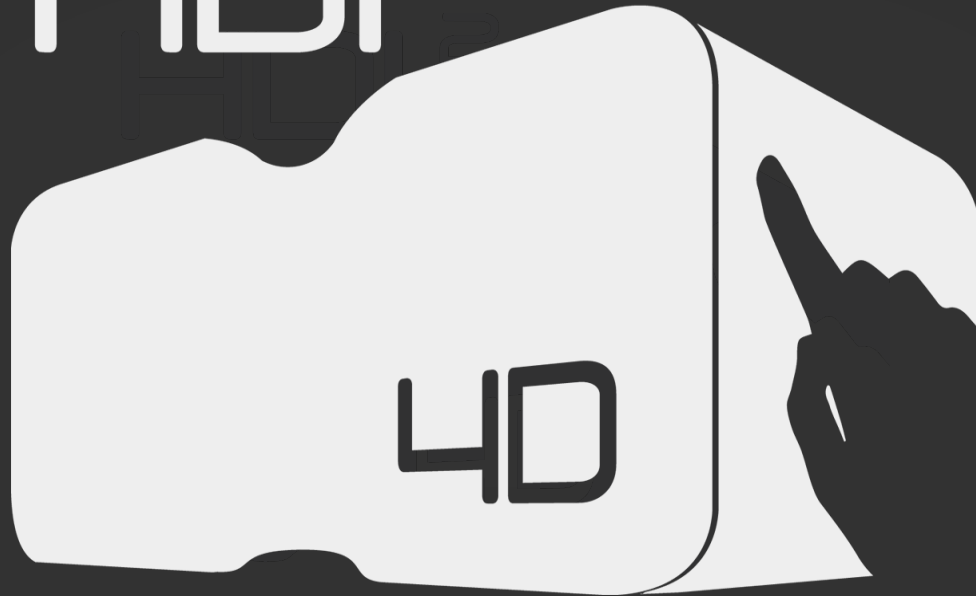
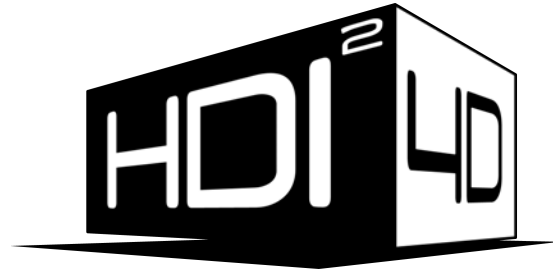


HDI²



Human-Digital Content Interaction for Immersive 4D Home Entertainment
The 1st New Zealand-Korea Strategic Research Partnership Workshop



Human-Digital Content Interaction for Immersive 4D Home Entertainment 2015

The 1st New Zealand-Korea Strategic
Research Partnership Workshop

25th February 2015

Tena Koutou - 환영합니다



WELLINGTON



WELLINGTON



Courtney Place



Cuba Street

BACKGROUND

MBIE supports NZ-Korea research collaboration

Monday, 9 February 2015, 11:43 am

Press Release: **Ministry of Business Innovation and Employment**

Media release

9 February 2015

MBIE supports NZ-Korea research collaboration

The Ministry of Business, Innovation and Employment (MBIE) has announced three multi-institutional joint research projects with the Republic of Korea, supported through a newly established bilateral funding scheme.

[<http://www.scoop.co.nz/stories/PO1502/S00092/mbie-supports-nz-korea-research-collaboration.htm>]

BACKGROUND

The three projects focus on the priority areas agreed by the two governments: Health, Advanced Technologies and Environment/Antarctica.

Otago and Massey Universities are collaborating with Seoul National University, Samsung Biomedical Research Institute, and Korean Institute of Science and Technology (KIST) to develop new treatments for repairing damaged or diseased cartilage and bone – an alternative to total joint replacement and costly revision surgery.

Victoria University of Wellington and the University of Canterbury are working with Ewha Womans University and Korea University to develop a new type of 4D home entertainment that will use mixed reality technology to provide immersive visualization and tangible interaction between the viewers and digital content.

Four New Zealand research agencies, including the New Zealand Antarctic Research Institute, Universities of Canterbury and Waikato, GNS Science and the National Institute of Water and Atmospheric Research (NIWA) will be joined by the Korean Polar Research Institute to investigate the impacts of a warming climate on Antarctica as well as flow-on effects, which is of particular relevance to New Zealand.

[<http://www.scoop.co.nz/stories/PO1502/S00092/mbie-supports-nz-korea-research-collaboration.htm>]



4D ?



4D at Home + Interaction



PROJECT OBJECTIVE

- The next generation 4D Home Entertainment
 - Interactive & Immersive
- Multi-Institutional Joint Research for 3 years
 - Joint Publications, IP
 - International Collaboration
 - ✓ tight collaboration within the team
 - ✓ broaden collaboration beyond the current team
- Contribution to NZ-KOR industry
 - Prototype of possible commercialization



MULTI-INSTITUTION

- New Zealand
 - Victoria University of Wellington
 - University of Canterbury
- Korea
 - Ewha Womans University
 - Korea University
- Potential Industry Partners

Research Activities

Ewha W. Univ.



Hand Animation and Force Feedback

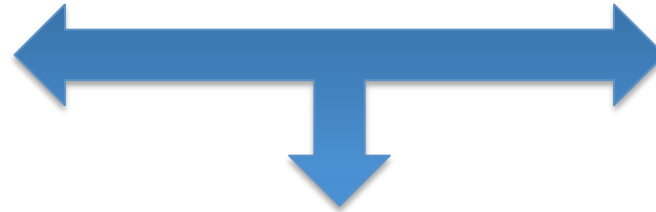
- Interference-free Hand Modeling
- Grasp Planning and Synthesis
- Haptic Rendering

Victoria Univ.

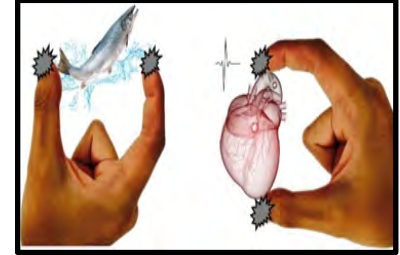


Perception-based Rendering

- Perceptually optimized rendering for reducing simulator discomfort in HMD
- Perceptually optimized rendering for seamless composites



Korea Univ.



Interaction Techniques using Wearable Devices

- Pinch-based Interaction
- Vibro-tactile Pseudo-haptic Feedback
- Full-body Interaction using Wearable Sensors

U. of Canterbury



Augmented Hand Interaction

- Augmenting immersive movie scene with user's body and environment
- Physical simulation-based natural hand gesture interaction in immersive movie

MULTI-DISCIPLINARY

- Computer Graphics
- Augmented/Virtual Reality
- Human Computer Interaction
- Digital Contents/Media Design
- Media/Entertainment Technologies
- Films
- Psychology

TO BROADEN COMMUNITY

- Annual Workshop
 - NZ – Beginning of the year (Feb)
 - Korea – End of the year (Nov)
- Advisory Board
- Meet up events
- International community

The 1st WORKSHOP

- Project Kick-off
 - Share project and research activities
 - Discuss future directions
- Feedback from wider community

PROGRAMME

Start	End	25 th (Wednesday)
9:00	9:30	Welcome
9:30	10:20	Introduction of Research Activities
10:20	10:50	Morning Tea
10:50	12:00	Research Presentation 1
12:00	13:00	Lunch
13:00	15:00	Research Presentation 2
15:00	15:30	Afternoon Tea
15:30	16:10	Panel Discussion 1 (The next generation 4D home entertainment)
16:10	16:40	Panel Discussion 2 (How to broaden network beyond the current team ?)
16:40	17:00	Closing
17:00	17:30	PI meeting (closed session)
18:00	21:00	Reception (Dinner)