

# Fish4Knowlege (F4K): a Virtual World Exhibition Space for a Large Collaborative Project

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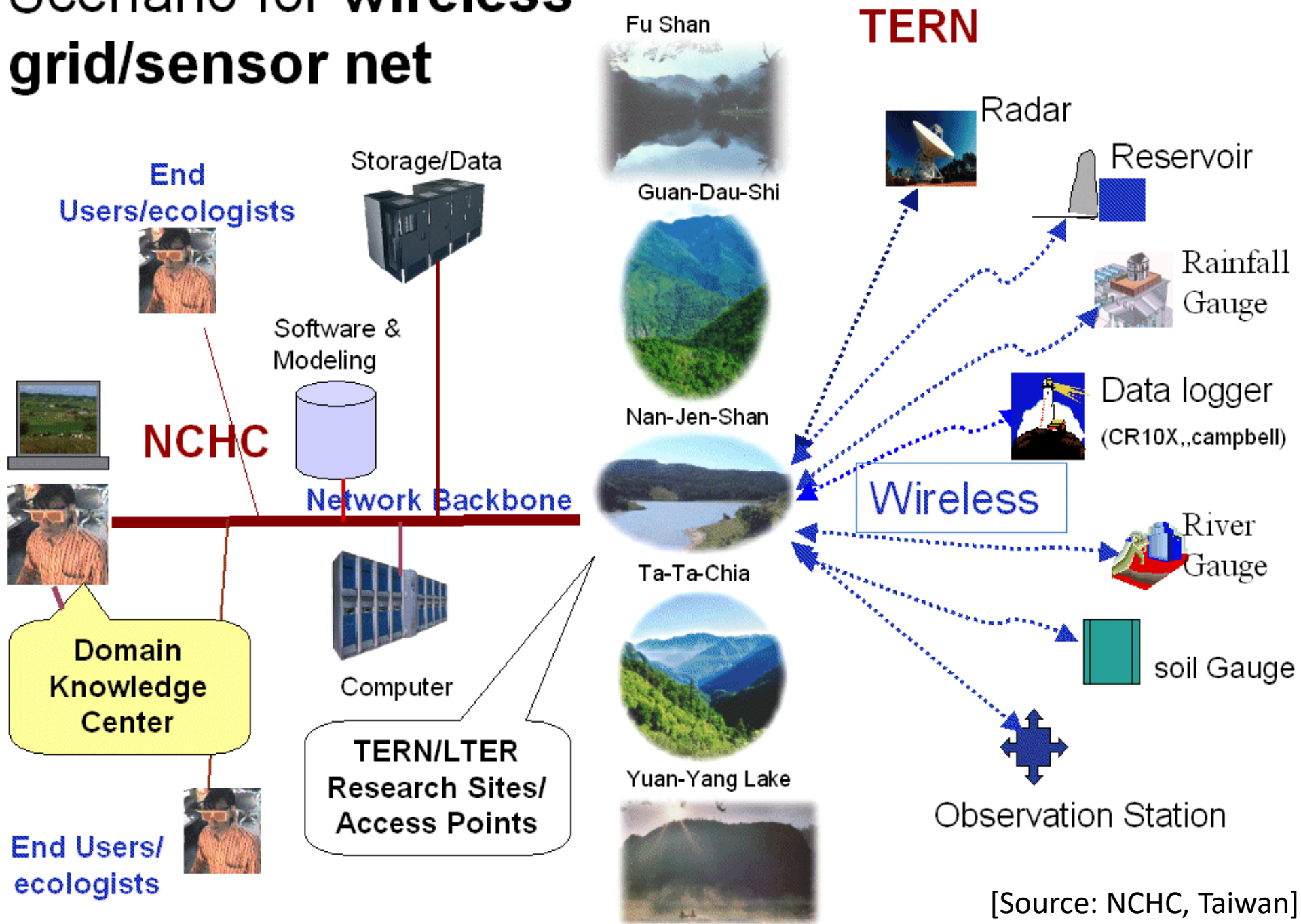
# What is F4K Project ?

- A EU funded 2.5 millions Euro FP7 project
- Detecting targets in noisy environments
  - open sea at sites of the south Taiwan
- Recognising fish species
- Exploiting ontologies to interpret user queries.
- Exploiting ontologies to convert queries into workflow sequences.
- Storing and accessing massive amounts of video and RDF data in a timely manner.
- Integration of the research in a publically usable web tool.
- Creation of a fish database suitable for behavioural and environmental studies.
- Training of staff in cross-disciplinary methods (computer vision with database and workflow scientists, computer scientists with biologists).

# PIs of F4K

- [Robert Fisher](#) (coordinator), Univ. of Edinburgh, UK – machine vision
- [Yun-Heh Jessica Chen-Burger](#), Univ. of Edinburgh, UK – intelligent workflow
- [Daniela Giordano](#), Università di Catania, Italy - machine vision
- [Lynda Hardman](#), Centrum voor Wiskunde en Informatica, Netherlands – user query
- [Fang-Pang Lin](#), National Applied Research Laboratories, Taiwan – HPC, data mgmt
- [Kwang-Tsao Shao](#), Biodiversity Research Center, Academia Sinica, Taiwan – marine biology

# Scenario for wireless grid/sensor net



[Source: NCHC, Taiwan]

# Sensor Grid in Taiwan



Ken-Ting coral reef at  
Third Nuclear Power Station

-  Natural Environment of Taiwan
-  Fu-shan, subtropical mixed evergreen hardwood forest 福山
-  Yuan-yang Lake, temperate wetland and lake ecosystem 鴛鴦湖
-  Guan-dau-shi, subtropical mixed evergreen hardwood forest 關刀溪
-  Ta-ta-chia, montane evergreen coniferous forests 塔塔加
-  Nan-jen-shan, subtropical monsoon forest 南仁山
-  Ken-Ting 墾丁
-  Orchid Island 蘭嶼

# Motivation for the F4K Virtual World Gallery

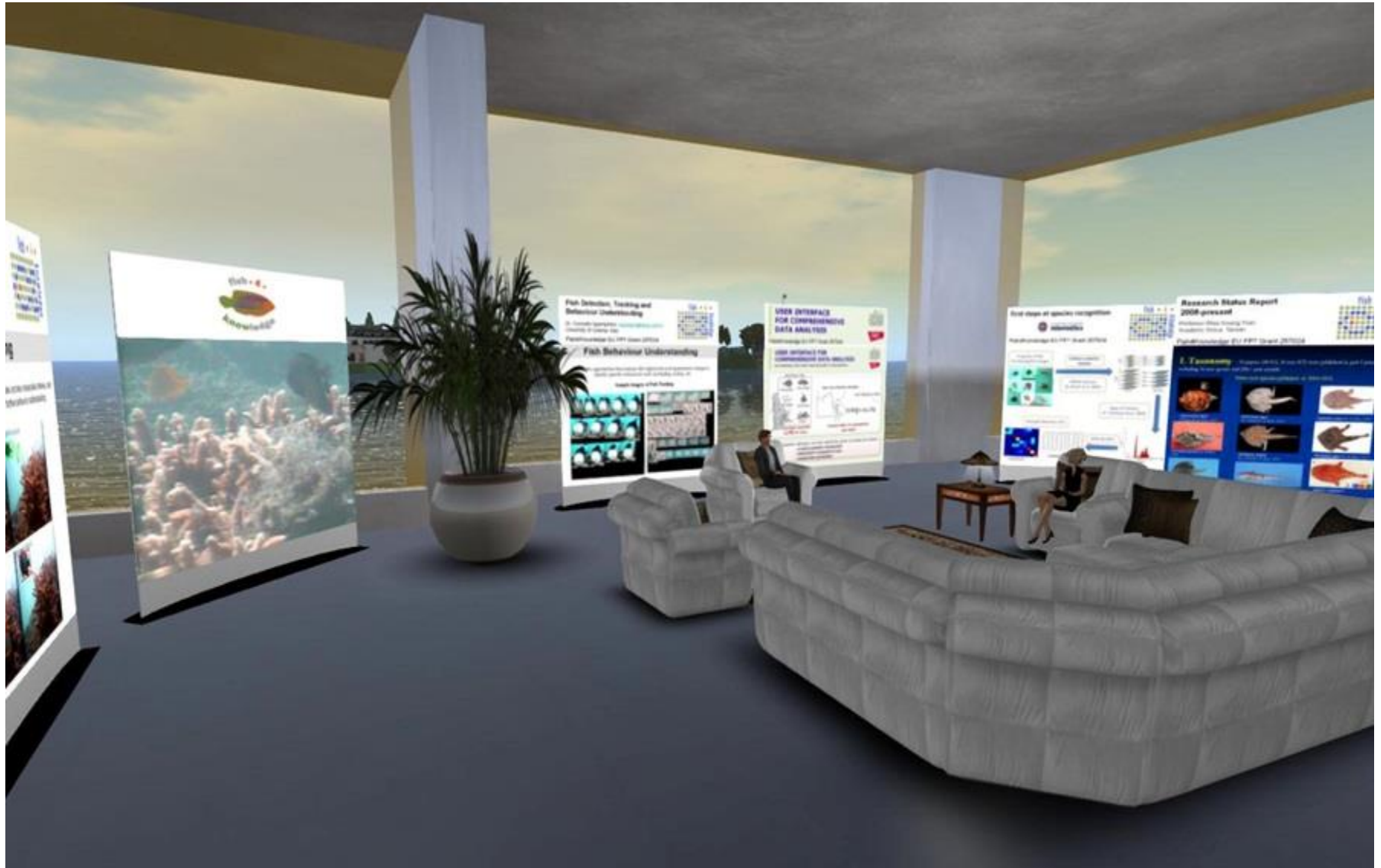
- Technologies for 3D interactive virtual environments for multiple simultaneous users are advanced and maturing
- Fish4Knowledge project has an important visual aspect to show marine life observations
- Addition outlet to traditional academic web sites, scientific conferences and journal publications.
- Second Life (and the OpenSimulator) supports user tailored environment



# Front of the F4K Gallery



# Ground Level Exhibition Hall





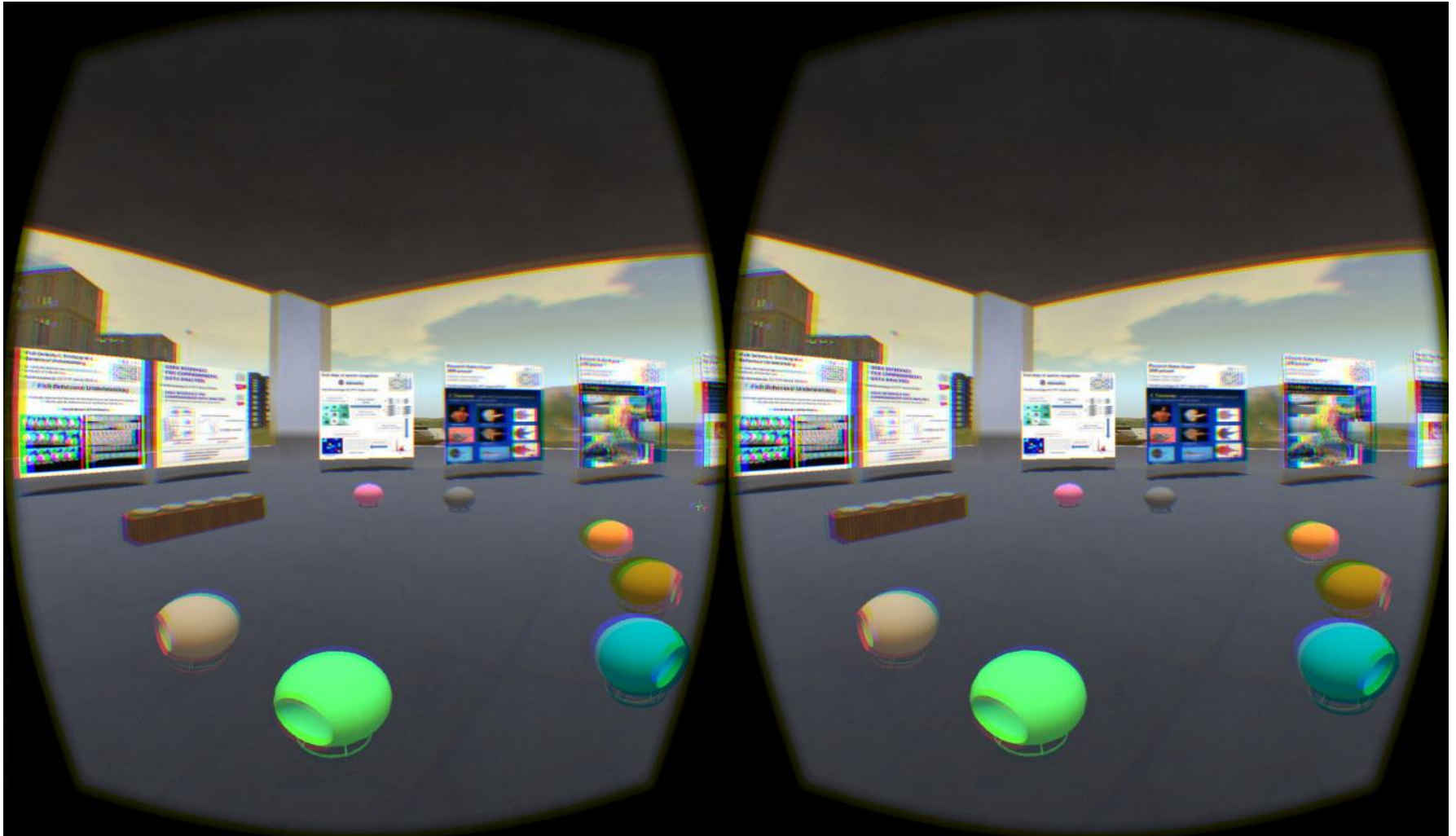
# Tunnel to the Underwater Level



# The Underwater Level



# Oculus Rift Virtual Reality View



# Conclusions and Discussion

- To provide a fun, interactive and educational space - to provide different learning experiences and to attract different audience
- Promotion of the virtual world site is difficult, due to technical requirements and issues
- Age limitation prevents young people's involvements: primary/secondary school children
- Nevertheless, this project has attracted people outside of normal research communities, and we are keen to have follow-up projects, when appropriate

# Additional Information

- The F4K virtual world gallery location:
  - F4K, Vue, general (238, 218, 23).
- F4K virtual world gallery web site
  - <http://www.aiai.ed.ac.uk/project/f4k/vwbpe/>
- F4K project web site:
  - <http://groups.inf.ed.ac.uk/f4k/>



# Co-Funders of the Project

- European Union Seventh Framework Programme [FP7/2007-2013]
- OpenVCE.net project
- Virtual University of Edinburgh (Vue), University of Edinburgh, UK
- NCHC (National Center for High-performance Computing), Taiwan
- Academic Sinica, Taiwan

Thank you for listening



Images from Ken Ting National Park, Taiwan