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

NCHC

End Users/ecologists

End Users/ecologists

Software & Modeling

Domain Knowledge Center

Network Backbone

TERN/LTER Research Sites/Access Points

Computer

Storage/Data

Tern

Radar

Reservoir

Rainfall Gauge

Data logger (CR10X,campbell)

River Gauge

soil Gauge

Observation Station

[Source: NCHC, Taiwan]
Sensor Grid in Taiwan

Ken-Ting coral reef at Third Nuclear Power Station

 адаптировано из NCHC, Taiwan
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

- OpenVCE.net project
- Virtual University of Edinburgh (Vue), University of Edinburgh, UK
- NCHC (National Center for High-performance Computing), Taiwan
- Academic Sinica, Taiwan
Images from Ken Ting National Park, Taiwan

Thank you for listening