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Research poster: Architecture and usability aspects of environmental data portals

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NSF Nevada EPSCoR
Architecture and Usability Aspects of Environmental Data Portals
Victor Ivanov – University of Nevada, Reno

**Features and Usability**
- Search
- Expected navigation
- Meta information
- Visual information
- Interactive content
- Extra audience targeting

**Features**
- Expected
- Extra

**Evaluation model**
- **Generic usability evaluation**
  - **Effectiveness** – How well does the system perform its task?
  - **Efficiency** – What is the quality of the features?
  - **Safety** – Does the system protect users from unwanted situations?
  - **Utility** – What is the value of the system?
  - **Learnability** – How easy is it to learn how to use the system?
  - **Memorability** – How easy is it to remember how to use the system?
- **Accessibility**
  - 14 W3C guidelines: Be client independent, be standards compliant, be diverse in presentation, ensure user is in control, clarify natural language, and other.

**General Architecture**
- **Architecture Components**
  - **Clients** – Any consumers of data or services provided by the system.
  - **Web / Data Portal** – Provides general content (static and dynamic), data access and search capabilities, transformation services, and tools related to the project.
  - **Data Sources** – Includes entities that generate, aggregate, or otherwise store and ultimately expose data. Data sources may be imported permanently or dynamically accessed.
  - **Data Flow**
    - Illustrates simple data acquisition from sensors at towers installed for the project to the local database. Data may, however, be acquired from any source.
    - Connectivity limitations make the exact data transfer medium / mechanism variable at each location.

**Data Flow**

**Graduate Research Assistant: Victor Ivanov**
Victor Ivanov is a student in the University of Nevada, Reno Master of Science in Computer Science program. He possesses a Bachelor of Science of Computer Science degree (2009) from the same university. For his current assignment as a Research Assistant at UNR, Victor participates in the NSF-funded project "Nevada Infrastructure for Climate Change, Education, and Science" as a member of the Cyber-infrastructure team. Victor’s research is centered on determining best software engineering practices that could be applicable to the development of the Nevada climate change data portal.