GLOBE Technology Refresh

GTT Science Data Focus
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Overview

- Science Database Structure Re-organization
- Science Data Entry Modernization
- Data Visualization Modernization
Protocols Data Entry Modernization

- Data Entry Pages overly complex
- Lack of in form guidance
- Multi-language support not comprehensive
- Disconnect between data collection in field and data entry in classroom
Science Data Schema Refactor

Why?
● overly complex
  ○ reduce complexity, improve maintainability
● entered data hard to update
  ○ calculated values are stored
● same data type split by protocol
  ○ additional facet of complexity
● visualization data delayed up to 24 hours
● outdated: no GIS support

Approach
● store raw data
● store data by data type not protocol
● make data available real time
## Science Data Schema Re-factor

<table>
<thead>
<tr>
<th>Current</th>
<th>New</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjusted Values Stored</td>
<td>Raw Data Stored</td>
</tr>
<tr>
<td>Single Data Type values stored in multiple protocol tables</td>
<td>Single Data Type stored in single table</td>
</tr>
<tr>
<td>Visualization data materialized once a day</td>
<td>Visualization data updated on the fly</td>
</tr>
</tbody>
</table>
Protocols Data Entry Modernization

- Make data entry easier
  - Immediate User Feedback on Errors
  - Consistent Interface across protocols

- Allow data to be easily editable

- Foundation for mobile device support

- Reduce maintenance cost
GLOBE Science Data Access

Provide consistent standards based data access API

- for Scientific Data Analysis
- for Data Visualization
- for use by associated sites
Data Visualization Modernization

- Open Geospatial Consortium standards
- Modern tools
- Ease of use
- Integration with GLOBE web site

e.g.
- Google Earth Land Cover photos
- Google Earth Air Temperature visualization