VIRTUAL GLOBES MUSEUM 2.0
ADDING THE POWER OF COMMUNITY

M Gede – Zs Ungvári – L Zentai
Outline

- Introduction
- Changes in visualization: from VRML to X3DOM
- New background database
- Novelties in the user interface
- Crowdsourcing
- Conclusions, further plans
Introduction

The old website
### Virtual Globes Museum

**16.5 cm German political earth globe - 1 : 75 000 000**

<table>
<thead>
<tr>
<th>General description</th>
<th>Political globe with country boundaries, coloured continents with boundary bands.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>1844</td>
</tr>
<tr>
<td>Publisher</td>
<td>F[ranz] L[eopold] Schönninger bürgl. Buchbinder</td>
</tr>
<tr>
<td>Place of publication</td>
<td>Vienna, Austria</td>
</tr>
<tr>
<td>Author</td>
<td>Design and lithography: Fr[anz] von Elekes (Elekes Ferenc)</td>
</tr>
<tr>
<td>Technology</td>
<td>The globe was made by assembling 20° paper print segments on a support globe, manual colouring added later. The 18 pieces of globe segments – from pole to pole – are completed with 2 pieces of 10° polar caps. The virtual globe was compiled by georeferencing and assembling a large number of high resolution digital photographs of the copy kept in the Woldan Collection of the Austrian Academy of Sciences (with the kind permission of the director of the collection, Mag. Gerhard Holzer).</td>
</tr>
<tr>
<td>Support</td>
<td>The globe is fitted on an axis tilting 66.5° to the horizontal, placed in a copper meridian ring on a turned wooden stand. On the meridian ring there is a scale of 1° with every 10° written. One half of the ring shows the numbers growing from the Equator towards the poles, while on the half the numbers run from the poles towards the Equator from 0° to 90°.</td>
</tr>
<tr>
<td>Virtual instance’s origin</td>
<td>A copy of the globe is kept in the library (Woldan Collection) of the Austrian Academy of Sciences and is registered as OSTERREICHISCHE AKADEMIE DER WISSENSCHAFTEN SAMMLUNG WOLDAN CL-V/LJ. Woldan, Erich (1901–1989), a private collector in Vienna, who collected a most comprehensive Austrian library of geographical books and maps. The collection has about 20,000 volumes, most of them from 1500 to 1812.</td>
</tr>
</tbody>
</table>
Introduction

- The former Virtual Globes Museum website
  - Since 2007
  - VRML plugin / Java VRML applet for 3D visualization

- Problems
  - English and German translations came slowly
  - Database structure not flexible
  - Compatibility issues of VRML plugins

- Complex renewing of the website was needed
3D Visualization

- Former solution: VRML (using a plug-in or Java)
- New solution: X3DOM
  - X3D code embedded into HTML
  - Based on WebGL
Background database
New user interface

- Globes
- Descriptions – each globe can have several descriptions
- Collections – descriptive text for a subset of globes
- Users with various rights can create or modify objects
- All pages have direct URL (object pages are easily linkable)
- Thumbnails for all globes
New user interface

Information page

VGM 2.0 - Virtual Globes Museum

What’s new? - Information - Globes - Collections - Interactive gazetteer

English – Magyar

User: [ ] Password: [ ] login

This virtual exhibition is intended to present the earth and celestial globes made in or related to Hungary.
The site uses WebGL with the X3DOM framework to view the virtual globes. If your browser fails to display the 3D models, it is advisable to upgrade to a newer browser version.
Installing Google Earth is also recommended to reach all functions of the museum.

Usage:

Clicking the “Globes” menu will show you the list of the currently available globes with their primary properties. Selecting an item from the list will load the globe’s 3D model.
The list can be shortened by defining searching criteria. The results will include all the records in which the specified data field contains the word fragment typed into the “Search” textbox.
Detailed information of the globes can be present in different languages. Please click on the language you prefer at section “Detailed information”. Detailed data sheets also include a link to a Google Earth file of the globe.

Virtual Globes Museum

Founder editor
MÁRTON Mátýás

Web page created and maintained by
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New user interface

„What’s new?” page

![Virtual Globes Museum](image)

<table>
<thead>
<tr>
<th>Date</th>
<th>Diameter</th>
<th>Body</th>
<th>Publisher</th>
<th>Globe</th>
<th>Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>1700</td>
<td>10.5 cm</td>
<td>Earth</td>
<td>Scherer</td>
<td>10.5 cm latin politikai földgömb (1700) - (Scherer)</td>
<td>magyar</td>
</tr>
<tr>
<td>1987</td>
<td>33 cm</td>
<td>Earth</td>
<td>VEB Räthgloben-Verlag</td>
<td>33 cm magyar politikai földgömb (1987) - (VEB Räthgloben-Verlag)</td>
<td>magyar</td>
</tr>
<tr>
<td>2012</td>
<td>13 cm</td>
<td>Io</td>
<td>ELTE TEGETA</td>
<td>13 cm Latin globe of Io (2012) - (ELTE TEGETA)</td>
<td>English</td>
</tr>
<tr>
<td>1878</td>
<td>10.5 cm</td>
<td>Earth</td>
<td>[jetrich] Reimer ([mst] Vohsen) Kartographische Institut</td>
<td>10.5 cm német politikai-domborzati földgömb (1878) - [jetrich] Reimer ([mst] Vohsen) Kartographische Institut</td>
<td>magyar</td>
</tr>
<tr>
<td>2012</td>
<td>132 cm</td>
<td>Earth</td>
<td>ELTE Térképtudományi és Geoinformatikai Tanszék</td>
<td>10.5 cm German political and physical earth globe (1878) - [jetrich] Reimer ([mst] Vohsen) Kartographische Institut</td>
<td>English</td>
</tr>
</tbody>
</table>
New user interface

Globe with description
New user interface

Collection page

VGM 2.0 - Virtual Globes Museum

Celestial and Planetary Globes of the VGM

Although the majority of globes show the surface of the Earth, there are numerous items depicting the sky above us or other celestial objects. The following list introduces these spheres of the Virtual Globes Museum.

Celestial Globes

Celestial (or sky) globes show the stars of the sky and the constellations they form. These spheres use celestial coordinates in geocentric equatorial system (declination; right ascension).
Some of these globes served mostly as ornaments; therefore the constellations were beautiful, detailed paintings.

These two globes were made by the famous Dutch cartographer Willem Janszon Blaeu in the beginning of the 17th Century.

Three sky globes of Coronelli in different sizes were made using photographed prints of a facsimile atlas. Unfortunately some parts of the bigger globes are missing.

The oldest "modern" celestial globe of the museum (placing emphasis to the position of stars, not the artistic visualization of constellations) is the work of the Hungarian geographer Károly Nagy, created in 1840.
New user interface

Edit collection

**Edit collection**

Collection's title:

**Celestial and Planetary Globes of the VGM**

Language:  ○ English  ○ magyar

**Description text**

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**Add globes**

<table>
<thead>
<tr>
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<th>Diameter</th>
<th>Publisher</th>
</tr>
</thead>
<tbody>
<tr>
<td>1600</td>
<td>Sky</td>
<td>Willem Janszoon Blaeu</td>
</tr>
<tr>
<td>1630</td>
<td>Sky</td>
<td>Willem Janszoon Blaeu</td>
</tr>
<tr>
<td>1646</td>
<td>Earth</td>
<td>Willem Janszoon Blaeu</td>
</tr>
</tbody>
</table>

Select stylesheet

- Gray
- Red
- Green
- Blue
- Orange
- Brown
- Pink
- Purple
- Yellow
- Moccasin

[Preview] [Submit]
Crowdsourcing

- The new structure of the site enables users with appropriate rights to create or edit globe description sheets and/or collection pages.
- Hopefully this feature will help us to increase the number of items in the museum faster.
Conclusions

- Use of new web 2.0 technologies
- Easier and more flexible user interface
- User-created collections: a tool for cartographic education
Further plans

- Online globe georeferencer
  - Crowdsourcing
  - Using OpenLayers and GDAL
  - Detailed user manual
  - Quality checking
Thank you for your attention