



**GiGa**  
infosystems

## **GST User Meeting 2021**



## Webex Meetings

- \* Everyone is muted by default
- \* Raise your hand if you want to ask an immediate questions
- \* Use “Questions & Answers” or “Chat” to ask a general question;  
will be answered later
- \* Easy chat/Further questions during break



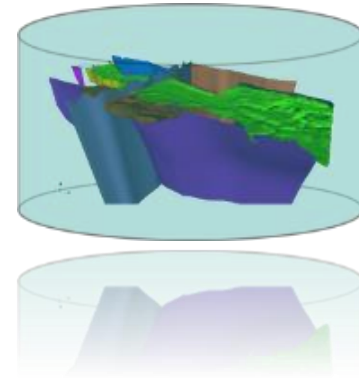
## Agenda

- \* 9.00 – 10.20 Developments 2020, Paul Gabriel
- \* 10.20 – 10.50 GST[AR], Björn Wiczorek
- \* 10.50 – 11.15 Break, Everyone
- \* 11.15 – 11.45 GST Use Cases @ Swisstopo,  
Roland Baumberger, Lance Reynolds
- \* 11.45 – 13.00 Roadmap 2021/22, Paul Gabriel and all



# GiGa infosystems

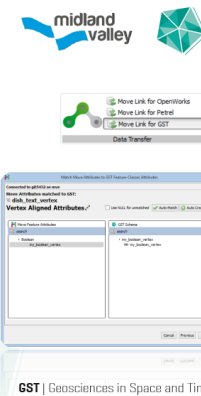
- \* Team of 7  
[2 Backend, 1 Desktop, 2 Web, 1 DevOps, ]
- \* **Oracle Partner, GIS Award**
- \* Cooperation with
  - \* TU Bergakademie Freiberg
  - \* Petex [MOVE]



In [app plugin](#)

## Move link to GST

- \* Direct save/load models to GST
- \* define Project Extents to be used for the current session
- \* work with features from GST (retrieve, lock/unlock, save edits, upload and delete)
- \* view a summary of work undertaken during the session



10



# Development Customers 2020

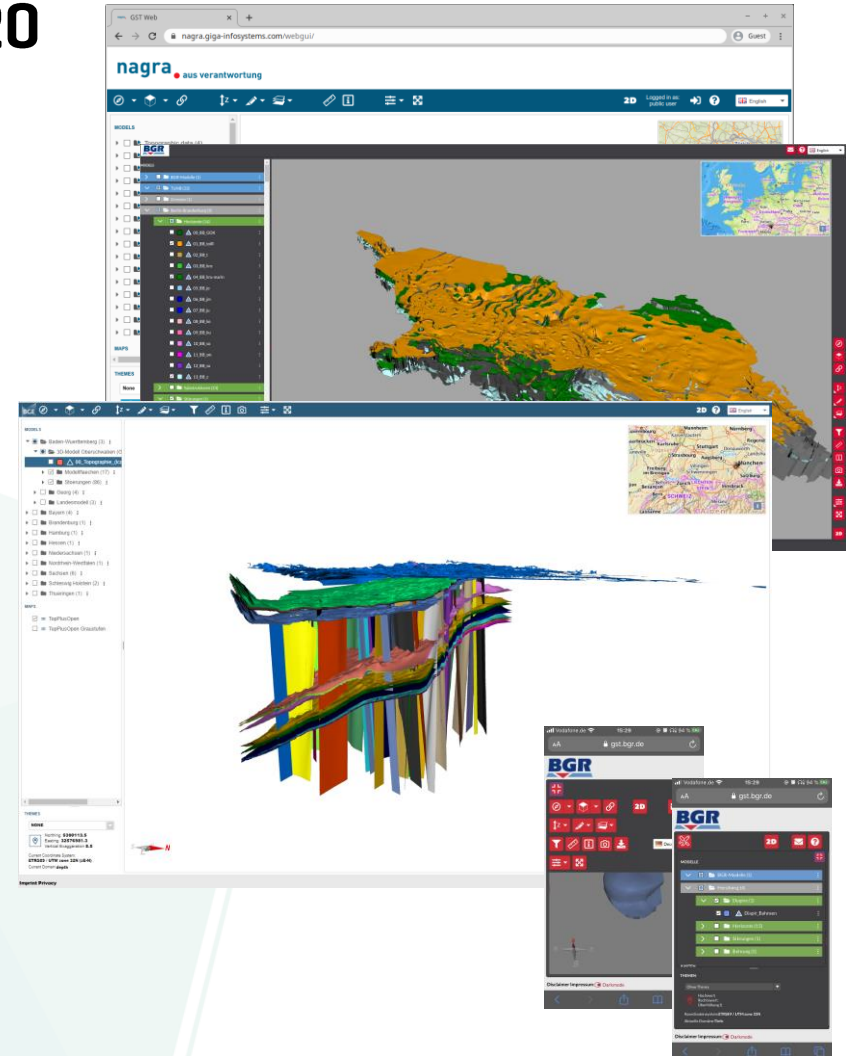
Nagra [SaaS]

BGE [SaaS]

BGR

LUNG

Software as a Service-Modell







## Developments 2020

- \* Main developments with BGR, Bavaria and Swisstopo:
  - \* **Query Feature per polygon**
  - \* **Change Owner of MoMa Element or Feature Class**
  - \* **Snapshot of Feature Class**
  - \* **Snapshot of Feature Selection**
  - \* **Improve Feature and Feature Class View**
  - \* **Color Maps for discrete Feature Properties**



## Developments 2020

- \* Main developments with BGR, Bavaria and Swisstopo:
  - \* **Alias for Feature names**
  - \* **Grid Shift Files in SRS Definitions**
  - \* **Transform SRS of Feature Class**
  - \* **Features with Z-Axis Domain in Time**
  - \* **Smaller Improvements**





## Developments 2020

- \* Main developments with BGR and Swisstopo:
  - \* **Labels for Features**
  - \* **Screenshot functionality**
  - \* **Improved support for mobile**
  - \* **Store default views for Features and MoMa Elements**
  - \* **Point and Line geometries use the projected 2D geometry on maps**
  - \* **Snap to geometry interaction in the 2D view**



## Developments 2020

- \* Main developments with BGR, Bavaria and Swisstopo:
  - \* **Speedup of common operations**
  - \* **Pre-defined names for Feature Class Snapshot**
  - \* **Auto-fix name conflicts on ownership change**
  - \* **Better error report when downloading multiple Features**
  - \* **Sort lists by name**
  - \* **Scalebar in Section Images**
  - \* **Sort Child Nodes by Name**
  - \* **Admin can reset user passwords**
  - \* **More information in Desktop title and name**



## Developments 2020

- \* Main developments with Bavaria, Saxony:
  - \* **Direct Import of SEGY**
  - \* **Constrained Tables / Joined Tables**
  - \* **Color Map management**
  - \* **Color Map Export and Import**
  - \* **Maintenance mode on GST Server**
  - \* **Read and Write Gocad Voxet Integer Properties**
  - \* **Up- and Download a subset of Feature Properties**
  - \* **Read and Write Gocad Voxet Regions**



## **GST Desktop**

- \* Database like functions
- \* Improvements of the GUI
- \* Renewed Color Map Management
- \* Admin can reset user passwords
- \* More information in Desktop title and name
- \* Integer properties for Voxets
- \* Regions for Voxets

# Speedup of common operations



- \* We worked on improving the performance of some common operations:
  - \* connecting and refreshing,
  - \* opening a Feature Class,
  - \* upload and deletion of certain geometries,
  - \* expanding a MoMa Tree Node, esp. one with many Feature Nodes.
- \* You should notice a significant speedup.
- \* Furthermore, client- and serverside RAM usage has been optimized for certain operations.



# Pre-defined names for Feature Class Snapshot

GST Desktop 3.5.7 - daniel@dev:50051

Connect Feature Selection Models Commits Logs

Sel	Feature Class Name	Geometry Type	SRS	Feature Count	Simplex Properties
1 <input type="checkbox"/>	EVERYBODY_pool.Horizons	TIN	EPSG:31469 (DHDN...	12	-
2 <input type="checkbox"/>	EVERYBODY_pool.Horizons_copy(1)	TIN	EPSG:31469 (DHDN...	12	-

Add Feature Class ... Update Features (key required) Theme [Native] Refresh

Ready.

# Auto-fix name conflicts on ownership change



GST Desktop 3.5.7 - daniel@dev:50051

Connect Feature Selection Models Commits Logs

Sel	Feature Class Name	Geometry Type	SRS	Feature Count	Simplex Properties
<input type="checkbox"/>	daniel.Horizons	TIN	EPSG:31469 (DHDN...	0	-
<input type="checkbox"/>	EVERYBODY_pool.Horizons	TIN	EPSG:31469 (DHDN...	12	-
<input type="checkbox"/>	EVERYBODY_pool.Horizons_1	TIN	EPSG:31469 (DHDN...	12	-
<input type="checkbox"/>	EVERYBODY_pool.Horizons_2	TIN	EPSG:31469 (DHDN...	12	-

Add Feature Class ... Update Features (key required) Theme [Native] Refresh

Ready.



# Better error report when downloading multiple Features

The screenshot shows the GST Desktop 3.5.7 interface. The main window has tabs for 'Connect', 'Feature Selection', 'Models', 'Commits', and 'Logs'. The 'Feature Selection' tab is active, displaying a table with the following data:

Sel	Feature Class Name	Geometry Type	SRS	Feature Count	Simplex Pr
1 <input type="checkbox"/>	EVERYBODY_pool.Horizons	TIN	EPSG:31469 (DHDN...	12	-

Below the table are buttons for 'Add Feature Class ...', 'Update Features (key required)', 'Theme [Native]', 'Refresh', and a funnel icon. The status bar at the bottom left says 'Ready.'.

On the right, there is a 'Global Selection' panel. It contains a 'Gocad File (.vs,.pl,.ts,.so,.vo)' dropdown, an 'Options' section with a 'Clear Global Selection' button, and several checked/unchecked options: 'Inside an Area...', 'Set Lock (editing)', and 'Transform to ...'. Below these is a text field containing '<none>'. At the bottom of the panel are 'Create Snapshot' and 'Download' buttons.



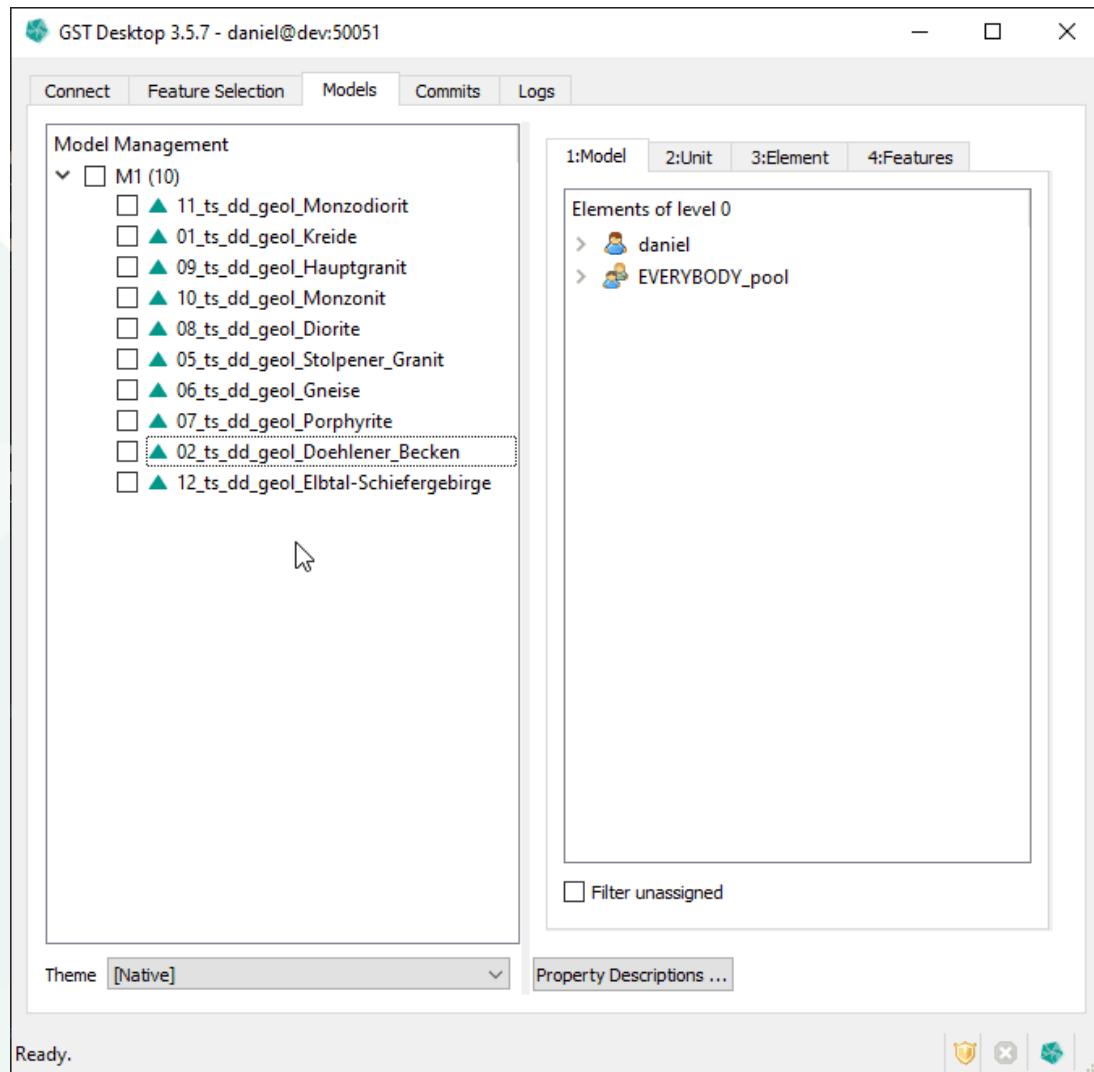
# Sort lists by name



- \* Lists in GST Desktop are now sorted by name, this includes:
  - \* Users and Groups
  - \* SRS
  - \* Feature Classes
  - \* Attributes and Properties
  - \* Features
  - \* Colormaps
  - \* MoMa Elements

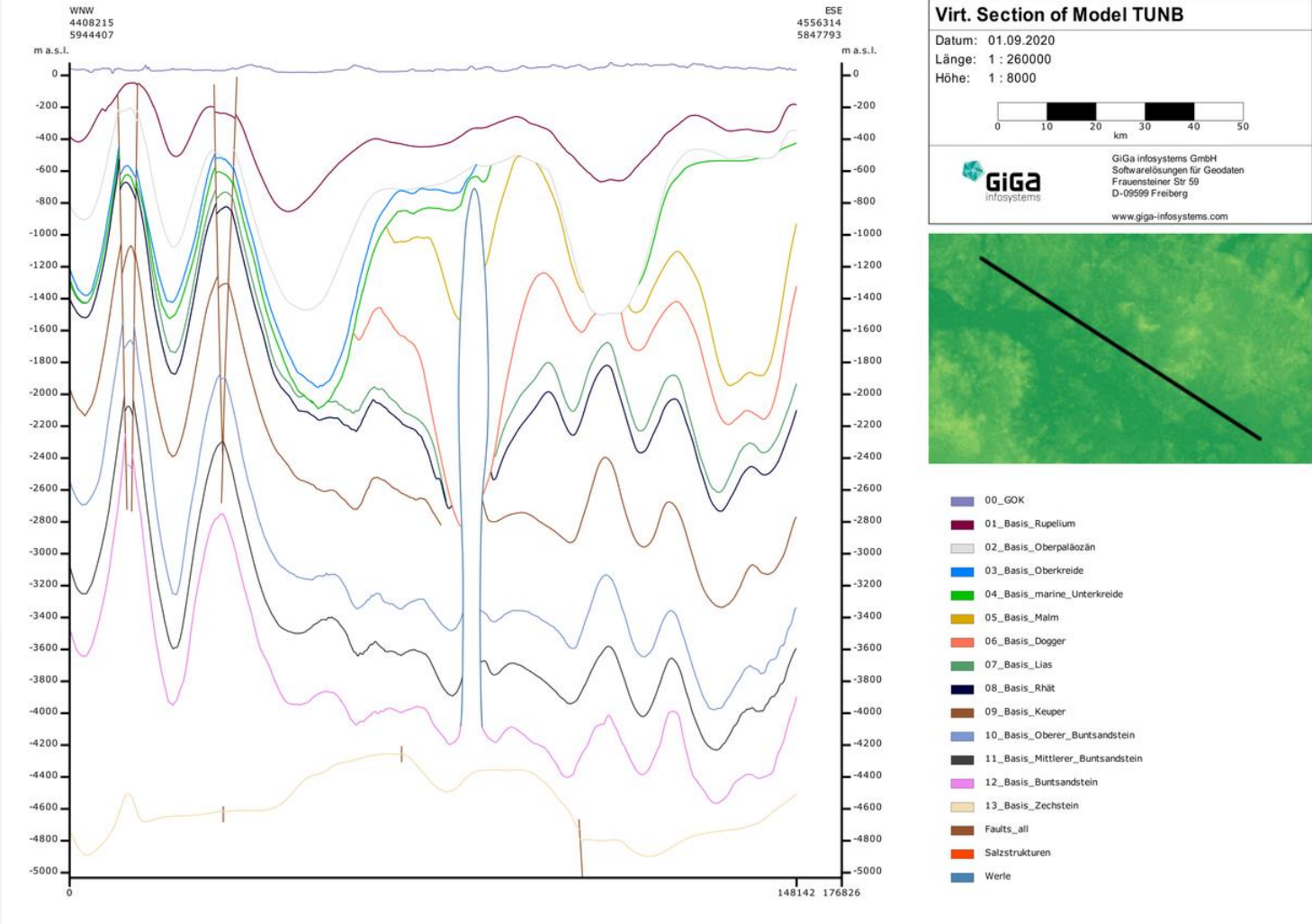


# Sort Child Nodes by Name





# Scalebar in Section Images





# Import/Export Color Maps

GST Desktop 3.6.3 - paul@paul:50051

Connect Feature Selection Models Commits Logs

Sel	Feature Class Name	Geometry Type	SRS	Feature Count	Simplex Properties
<input checked="" type="checkbox"/>	paul.segy2	Line	EPSG:31467 (DHDN...	4	trace_data: float 4 bytes vector
<input type="checkbox"/>	paul.segy3	Grid	EPSG:31468 (DHDN...	1	trace_data: float 4 bytes
<input type="checkbox"/>	paul.tetras_2_test	Solid	EPSG:21781 (CH190...	7	azi: float 8 bytes, depth: float 8 bytes, dip: float 8 bytes, maech

Ready.

GST Desktop 3.6.3 - paul@paul:50051

Connect Feature Selection Models Commits Logs

Sel	Feature Class Name	Geometry Type	SRS	Feature Count	Simplex Properties
<input type="checkbox"/>	paul.segy2	Line	EPSG:31467 (DHDN...	4	trace_data: float 4 bytes vector
<input type="checkbox"/>	paul.segy3	Grid	EPSG:31468 (DHDN...	1	trace_data: float 4 bytes
<input type="checkbox"/>	paul.tetras_2_test	Solid	EPSG:21781 (CH190...	7	azi: float 8 bytes, depth: float 8 bytes, dip: float 8 bytes, maech

Ready.



# Editing of Color Maps

The screenshot shows the GST Desktop 3.6.3 interface. At the top, there are tabs for 'Connect', 'Feature Selection', 'Models', 'Commits', and 'Logs'. Below the tabs is a table with the following columns: 'Sel', 'Feature Class Name', 'Geometry Type', 'SRS', 'Feature Count', and 'Simplex Properties'. The table contains three rows of data:

Sel	Feature Class Name	Geometry Type	SRS	Feature Count	Simplex Properties
<input type="checkbox"/>	paul.segy2	Line	EPSG:31467 (DHDN...	4	trace_data: float 4 bytes vector
<input type="checkbox"/>	paul.segy3	Grid	EPSG:31468 (DHDN...	1	trace_data: float 4 bytes
<input type="checkbox"/>	paul.tetras_2_test	Solid	EPSG:21781 (CH190...	7	azi: float 8 bytes, depth: float 8 bytes, dip: float 8 bytes, maect

At the bottom of the window, there are buttons for 'Add Feature Class ...', 'Update Feature (key required)', a 'Theme' dropdown menu set to '[Native]', a 'Refresh' button, and a filter icon. The status bar at the very bottom indicates 'Ready.' and includes system icons for help, close, and refresh.



# SEGY import

The screenshot displays the GST Desktop 3.6.3 interface. The main window has a menu bar with 'Connect', 'Feature Selection', 'Models', 'Commits', and 'Logs'. Below the menu is a table with the following data:

Sel	Feature Class Name	Geometry Type	SRS	Feature Count	Simplex
1 <input type="checkbox"/>	paul.segy2	Line	EPSG:31467 (DHDN...	4	trace_data: float 4 bytes vector
2 <input type="checkbox"/>	paul.segy3	Grid	EPSG:31468 (DHDN...	1	trace_data: float 4 bytes
3 <input type="checkbox"/>	paul.tetras_2_test	Solid	EPSG:21781 (CH190...	7	azi: float 8 bytes, depth: float 8 bytes, dip: float 8 bytes

Below the table are buttons for 'Add Feature Class ...', 'Update Features (key required)', 'Theme [Native]', 'Refresh', and a funnel icon. The status bar at the bottom left says 'Ready.' To the right is a 'Global Selection' window with a large empty canvas. Below the canvas is a dropdown menu for 'Gocad File (.vs,.pl,.ts,.so, .vo)', an 'Options' button, a 'Clear Global Selection' button, and 'Create Snapshot' and 'Download' buttons. The system tray at the bottom right shows a shield icon, a close button, and a refresh icon.



# SEGY Display

Nicht sicher | paul/gstweb/webgui/gui2.php?en

2D Logged in as: public user

English

**MODELS**

- [-] SEG Y (2) :
  - [+] 3d (1) :
    - [-] 2d (4) :
      - [icon] [color] [line] [arrow] [icon]
      - [icon] [color] [line] [arrow] [icon]
      - [icon] [color] [line] [arrow] [icon]
      - [icon] [color] [line] [arrow] [icon]

**MAPS**

- Stratig II
- Stratigraphie
- TopPlusOpen
- Topo
- OpenStreetMap WMS - by terre

**THEMES**

None

Northing:  
Easting:  
Vertical Exaggeration 1

Current Coordinate System:  
**ETRS89 / UTM zone 32N**  
Current Domain: **depth**

About Impressum Login (Logged in as: public user)

# SEGY Display



The screenshot shows a web browser window displaying the SEG Y Display application. The browser address bar shows the URL `paul/gstweb/webgui/gui2.php?en`. The application interface includes a top toolbar with various icons for navigation and editing. On the left side, there is a sidebar with a tree view under the heading "MODELS" showing a folder structure: "SEG Y (2)" containing "3d (1)" and "2d (4)". Below this is a "MAPS" section with radio buttons for "Stratig II", "Stratigraphie", "TopPlusOpen" (which is selected), "Topo", and "OpenStreetMap WMS". At the bottom left of the sidebar, there is a "THEMES" section with a dropdown menu set to "None" and a location pin icon. Below the dropdown, it displays "Northing:", "Easting:", and "Vertical Exaggeration 1". At the bottom of the sidebar, it shows "Current Coordinate System: ETRS89 / UTM zone 32N" and "Current Domain: depth". The main content area is currently blank. At the bottom left of the main area, there is a compass rose with "N" at the top, "S" at the bottom, "W" on the left, and "E" on the right. At the bottom of the browser window, there is a footer that reads "About Impressum Login (Logged in as: public user)".



# Joined Tables / Constrained Tables



The screenshot displays the GST Desktop 3.6.3 interface. The main window is titled "GST Desktop 3.6.3 - paul@paul:50051". It features a "Feature Selection" tab with a table of feature classes. The table has columns for "Sel", "Feature Class Name", "Geometry Type", "SRS", "Feature Count", and "Simplex". The data rows are as follows:

Sel	Feature Class Name	Geometry Type	SRS	Feature Count	Simplex
<input type="checkbox"/>	paul.eln	TIN	EPSG:31469 (DHDN...	25	temperature: float 8 bytes
<input type="checkbox"/>	paul.segy	Line	EPSG:31468 (DHDN...	1	trace_data: float 4 bytes vector
<input type="checkbox"/>	paul.segy2	Line	EPSG:31467 (DHDN...	4	trace_data: float 4 bytes vector
<input type="checkbox"/>	paul.segy3	Grid	EPSG:31468 (DHDN...	1	trace_data: float 4 bytes
<input type="checkbox"/>	paul.tetras_2_test	Solid	EPSG:21781 (CH190...	7	azi: float 8 bytes, depth: float 8 bytes, dip: float 8 b

Below the table, there are buttons for "Add Feature Class ...", "Update Features (key required)", "Theme [Native]", and "Refresh".

To the right, a "Global Selection" panel is visible, which is currently empty. Below it, there is a "Gocad File (.vs, .pl, .ts, .so, .vo)" dropdown menu, an "Options" button, a "Clear Global Selection" button, and "Create Snapshot" and "Download" buttons.

The status bar at the bottom left shows "Ready." and the bottom right has system icons.



## **GST Web**

- \* Labels in 3D
- \* Improved Mobile Support
- \* Screenshot functionality
- \* Default View for Elements
- \* Snapping
- \* Display of Lines and Pointsets
- \* Statistics [SaaS only]



# Labels for Features

The screenshot displays a 3D GIS web application interface. At the top, there is a toolbar with icons for navigation, layer management, and search. The main area shows a 3D terrain model with various colored features (blue, green, brown, white) representing different geological or topographic elements. A 2D map inset in the top right corner shows the geographic context with labels for cities like Hamburg, Berlin, and Leipzig. The left sidebar contains a 'MODELS' tree with folders like 'TUNB (4)', 'Salt (27)', 'Faults (1)', 'Horizons (1)', and 'Sax (13)'. Below this is a 'MAPS' section with checkboxes for 'TopPlusOpen' and 'TopPlusOpen Graustufen'. The 'THEMES' section shows a dropdown menu set to 'None' and provides coordinate information: Northing: 5893280.4, Easting: 32620114.1, Vertical Exaggeration 1, Current Coordinate System: ETRS89 / UTM zone 32N (zE-N), and Current Domain: depth. The bottom left corner shows 'Impressum Login (Logged in as: public user)'.

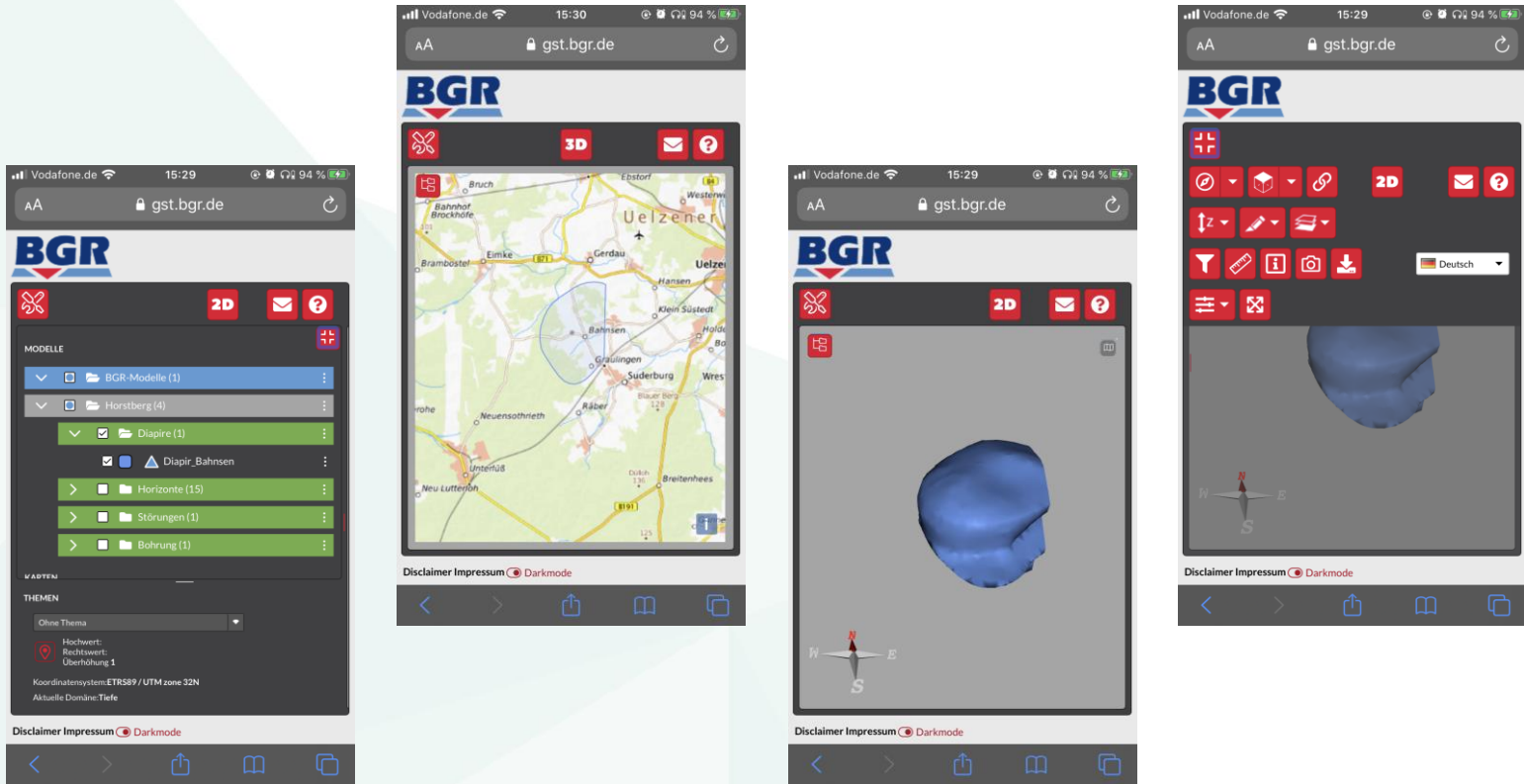


# Screenshot functionality

The screenshot displays a geological software interface with a 3D perspective view of a subsurface model. The interface includes a top toolbar with icons for navigation, editing, and viewing. On the left, there are panels for 'MODELS' and 'MAPS'. The 'MODELS' panel shows a tree structure with folders for 'TUNB (4)', 'Salt (27)', 'Faults (1)', 'Horizons (1)', and '00\_GOK', and a selected folder for 'Sax (13)'. The 'MAPS' panel has two checked items: 'TopPlusOpen' and 'TopPlusOpen Graustufen'. Below these is a 'THEMES' section with a dropdown menu set to 'None'. A location information box shows coordinates: Northing: 5680294.1, Easting: 32788454.6, Vertical Exaggeration 1, and coordinate system: ETRS89 / UTM zone 32N (zE-N). The 3D model shows a subsurface with various colored layers (green, brown, pink, cyan) and a blue line representing a fault or boundary. A compass rose is visible in the bottom left of the 3D view. An inset map in the top right shows the location of the model area in Central Europe, with labels for cities like Leipzig, Dresden, and Prague. The top right of the interface shows '2D' view mode, 'Logged in as: public user', and a language dropdown set to 'English'. At the bottom left, there is a footer: 'Impressum Login (Logged in as: public user)'.



# Improved support for mobile





# Store default views for Features and MoMa Elements

The screenshot displays a web-based geology software interface. At the top, there are tabs for 'Geology' and 'Config'. Below the tabs is a toolbar with various icons for navigation and analysis. The main area is divided into a left sidebar and a central 3D view.

**Left Sidebar:**

- MODELS:** A list of models with checkboxes. 'TUNB (4)' is unchecked, and 'Sax (13)' is checked.
- MAPS:** A list of maps with checkboxes. 'TopPlusOpen' is checked, and 'TopPlusOpen Graustufen' is unchecked.
- THEMES:** A dropdown menu set to 'None'.
- Coordinates:** A location pin icon with 'Northing:', 'Easting:', and 'Vertical Exaggeration 1' labels.
- Coordinate System:** 'Current Coordinate System: ETRS89 / UTM zone 32N (zE-N)'. 'Current Domain: depth'.

**Central 3D View:** A 3D geological model showing a cross-section of the earth's crust. The model is color-coded by geological units. A river system is visible on the surface. A compass rose is located in the bottom left corner of the 3D view.

**Top Right:** A small inset map showing the location of the model in Central Europe, with labels for Berlin, Köln, Deutschland, Praha, and Tschechien.

**Bottom:** A status bar with 'Impressum Logout (Logged in as: jo)' on the left and 'Upload status: No Uploads active' on the right.

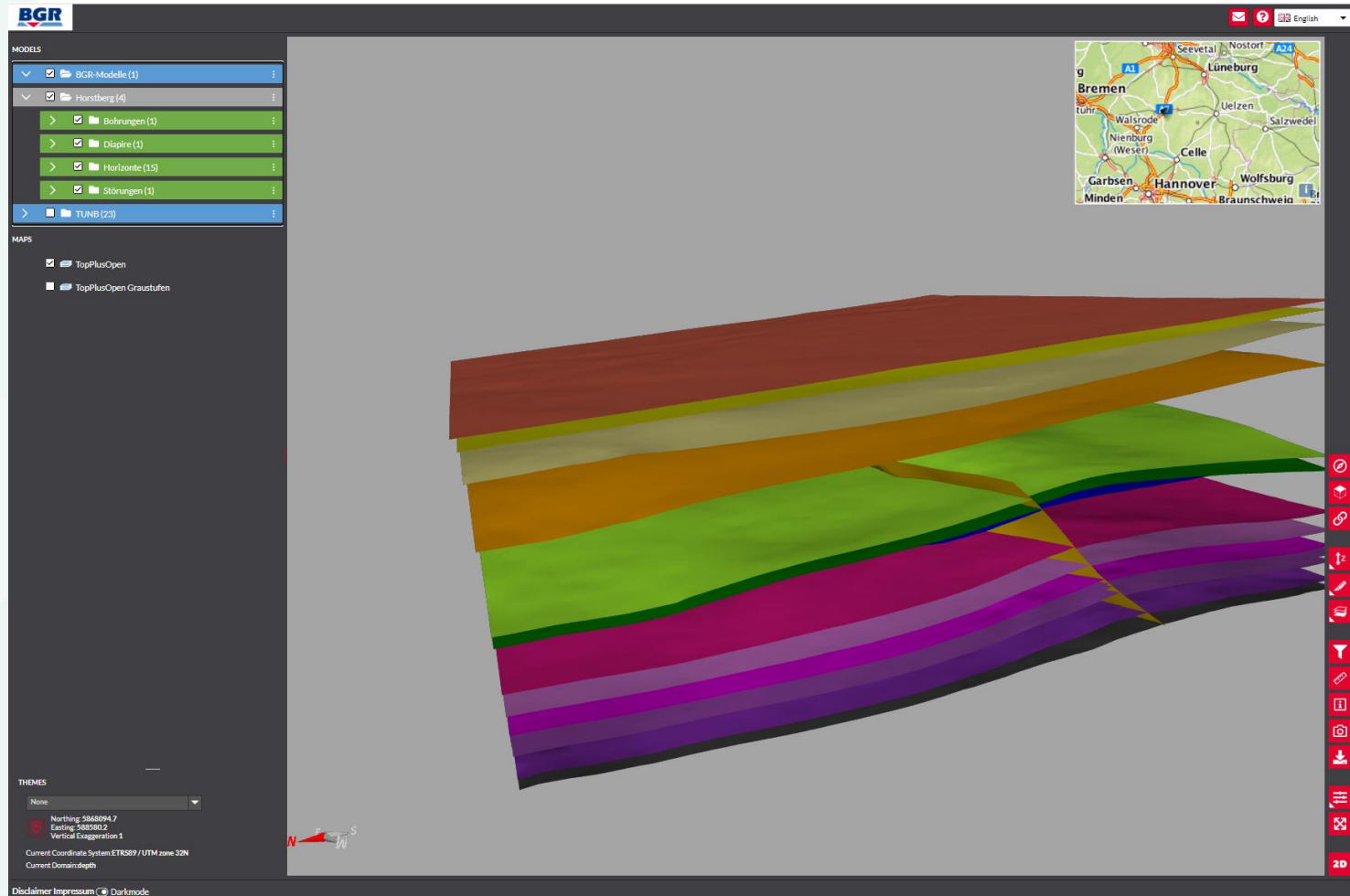


# Snap to geometry interaction in the 2D view

The screenshot displays a GIS web application interface. At the top, there is a toolbar with icons for home, layers, 2D/3D toggle, and other navigation functions. The user is logged in as a public user, and the language is set to English. The main map area shows a 2D view of Saxony, Germany, with various administrative boundaries overlaid in different colors. The left sidebar contains a 'MODELS' section with two checked items: 'TUNB (4)' and 'Sax (13)'. Below that is a 'MAPS' section with two items: 'TopPlusOpen' (unchecked) and 'TopPlusOpen Graustufen' (checked). The 'THEMES' section shows 'None' selected. The bottom status bar displays the current coordinate system as ETRS89 / UTM zone 32N (zE-N) and the current domain as 'depth'. The map shows various locations including Dresden, Meissen, Radebeul, and Radeberg.



# Dark Mode, Side Toolbar, Enhanced Disclaimer

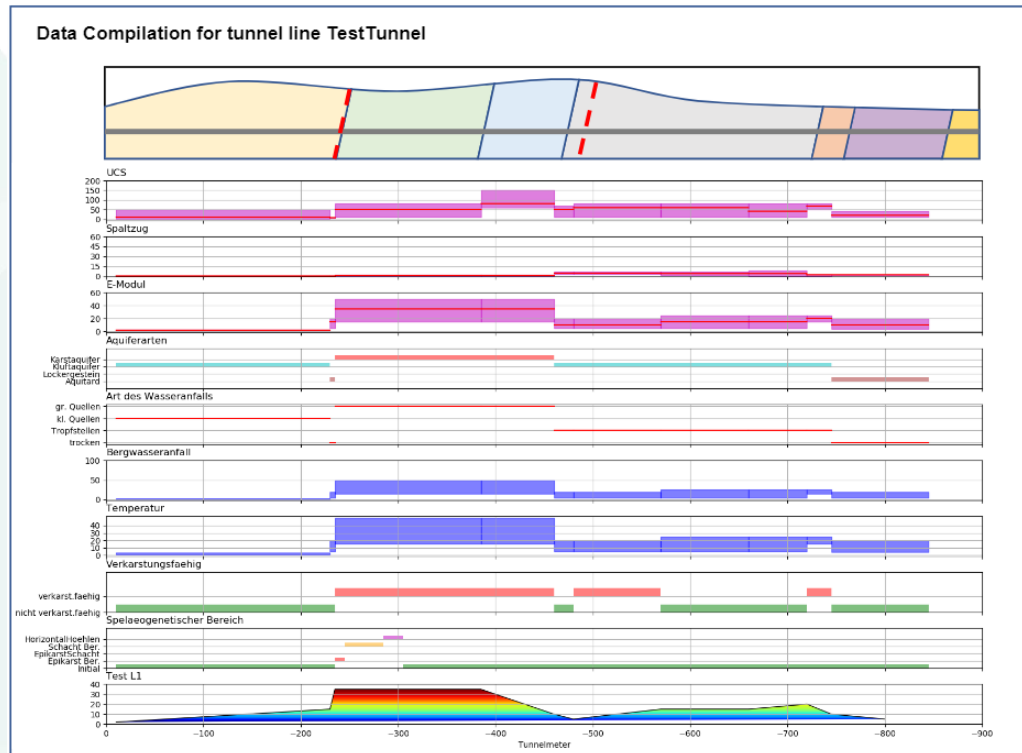






# BIM Sections

- \* Project with Nagra and Geoldee [CH]



# Server Maintenance Mode



```
Entered GST Server maintenance mode.

Please input a maintenance operation and press enter.
[1]) Vacuum the current database.
[2]) Reset the administrative password.
[3]) Clear orphaned files from GST Storage.
[4]) Clear orphaned entries from the database.
[5]) Track GST Server processes statistics.
[6]) Exit.

```

PID	NAME	START_TIME	CPU_USE	RAM (Kb)	READ (Kb)	WRITTEN (Kb)	STATUS
3725	-c;config.cop.toml	1615306558	0.02	59876	47247	0	Sleeping
3727	-c;config.cop.toml	1615306558	0.00	0	29	0	Sleeping
3728	-c;config.cop.toml	1615306558	0.00	0	127	0	Sleeping
3729	-c;config.cop.toml	1615306558	0.00	0	516	0	Sleeping
3740	-c;config.cop.toml	1615306558	0.00	0	848	0	Sleeping
3741	-c;config.cop.toml	1615306558	0.00	0	45	0	Sleeping
3742	-c;config.cop.toml	1615306558	0.00	0	57	0	Sleeping
3743	-c;config.cop.toml	1615306558	0.00	0	16	0	Sleeping
3744	-c;config.cop.toml	1615306558	0.00	0	57	0	Sleeping
3745	-c;config.cop.toml	1615306558	0.00	0	74	0	Sleeping
3746	-c;config.cop.toml	1615306558	0.00	0	49	0	Sleeping
3747	-c;config.cop.toml	1615306558	0.00	0	33	0	Sleeping
3748	-c;config.cop.toml	1615306558	0.00	0	848	0	Sleeping
3749	-c;config.cop.toml	1615306558	0.00	0	2482	0	Sleeping
3750	-c;config.cop.toml	1615306558	0.00	0	0	0	Sleeping
3751	-c;config.cop.toml	1615306558	0.00	0	496	0	Sleeping
3752	-c;config.cop.toml	1615306558	0.00	0	66	0	Sleeping
3753	-c;config.cop.toml	1615306558	0.00	0	471	0	Sleeping
3754	-c;config.cop.toml	1615306558	0.00	0	5153	0	Sleeping
3755	-c;config.cop.toml	1615306558	0.00	0	254	0	Sleeping
3756	-c;config.cop.toml	1615306558	0.00	0	0	0	Sleeping
3757	-c;config.cop.toml	1615306558	0.00	0	0	0	Sleeping
3758	-c;config.cop.toml	1615306558	0.00	0	61	0	Sleeping
3759	-c;config.cop.toml	1615306558	0.00	0	336	0	Sleeping

```
Press [any key] to return to maintenance menu.

```



**Questions?**

**Remarks?**

**Wishes?**



**Björn Wieczorek (GiGa infosystems)  
GST[AR]**



# **Roland Baumberger, Lance Reynolds [Swisstopo]**

## **Use Cases of GST @ Swisstopo**



## Roadmap 2021

- \* 2D Grids / Elevation Grids
- \* SGRIDs
- \* Texture Coordinates
- \* Query Features by polygon - complex polygons
- \* Write Protected Feature Classes
- \* Query Dialog



## Roadmap 2021

- \* Shape export
- \* Versioning of Feature Attributes
- \* GST[AR] Android
- \* GST Web Rewrite
- \* Boreholes
- \* Usermeeting 2022



**Questions?**

**Remarks?**

**Wishes?**



A decorative graphic in the top right corner consisting of several overlapping teal-colored triangles and polygons, creating a layered, geometric effect.

# Thank you!

[www.giga-infosystems.com](http://www.giga-infosystems.com)