Gravity Control

The simplest system for complex data search and management

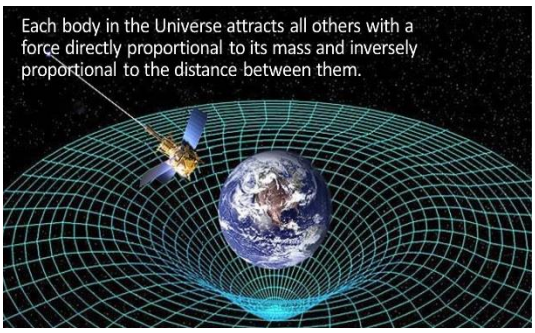
How It Works

HOW IT WORKS

The Original Idea

All products in the Gravity product family are based on the innovative Gravity Control™ graphic user interface for searching, sorting and managing information.

It uses a new graphic organization of the workspace, which allows the user to search and sort the results and group the results by several criteria simultaneously while viewing levels of relevance and connections between groups.



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In Gravity Control™ every data object attracts others with a force directly proportional to their coinciding attributes or the extent of similarity between them.

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Loading objects onto the work space

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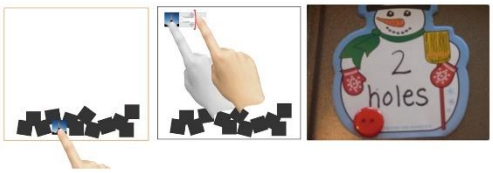
Choosing and object of interest



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Grouping similar object together

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Simultaneous sorting by multiple criteria

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Reports on grouping results

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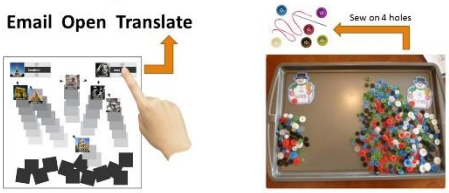
Performing further actions



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What it does?

The aim of Gravity Control™ is to handle data in every format we work with from any source in one environment and provide easy access and a context based overview.

1. Gathers all your data from all your sources

- Works with data and files in all formats - office documents, emails, contacts, media files, etc.
- Data from local, network and online drives - Mirosoft Active Directory, Onedrive, Dropbox, Google Drive, etc.
- Data from email platforms - Otlook Server and standardized protocols
- Data from databases and SQL-based APIs - open, professional and custom databases
- Data from standrdized APIs - web search engines like Bing and Google, social networks like Facebook and LinkedIn, e-trade sites, etc.
- RSS sources - news, blogs, stock quotes, etc.
- Data from URLs - crowling of content, links, media, files and structured data
- Data from files - importing from other users and applications

2. Searches, sorts and groups all your data in a natural way

- By keywords
- By example
- By classification
- Simultaneus sorting by several criteria
- Simultaneous handling of all data types from all sources

3. Manages your data and files in a natural way

- Internal viewing and editing
- Open in another program
- Send by email as attachment or report
- Tag internally and by changing system attributes
- Mathematical calculations
- Best interface fo tactile devices of any size

4. Analyses and processes data

- Advanced data analysis for big data
- Term frequency analysis
- Search term propositions based on similarities and differences
- Statistical calculations
- Cross table analysis

5. Generates data reports and presentations

- Timeline presentations
- CSV, XLS, PDF, HTML reports
- Export and import capabilities

6. Provides collaboration in a natural way

- Simultaneous access of several contributors to the same workplane
- Sharing results and workspaces with importable spreadsheet files
- Data access secured by certified systems

1. GATHERS ALL YOUR DATA FROM ALL YOUR SOURCES

The tool currently usedProvides collaboration in a natural way in the most common search engines

2. SEARCHES, SORTS AND GROUPS DATA IN A NATURAL WAY

The Feed Panel
Contains internal Gravity database feeds with objects and external dynamic feeds

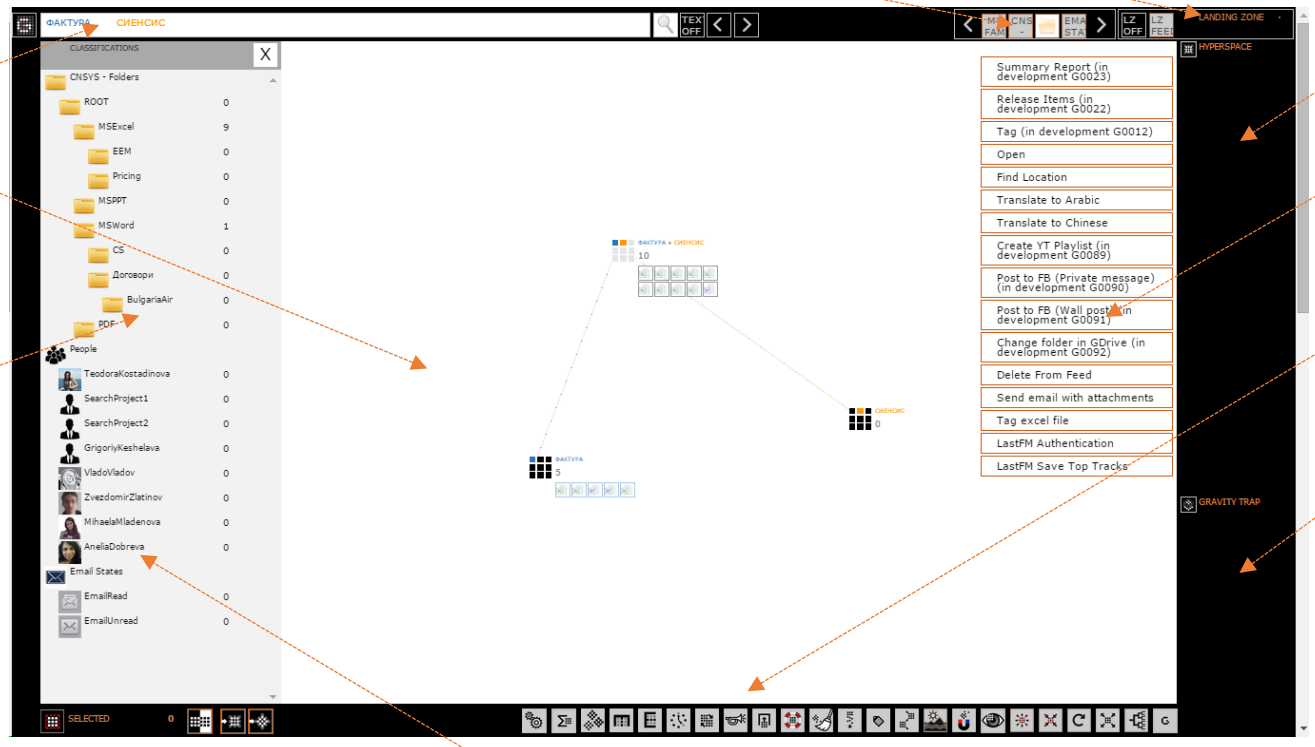
The Landing Zone
For entering data by hand or via a link or file.

3. MANAGES ALL YOUR DATA AND FILES IN A NATURAL

The Search Bar
The tool currently used in the most common search engines

The workSPACE
The field where all operations with data files are performed

The Predefined Classifications Gives an option to browse through predefined classifications in different areas



The Hyperspace
A field designated to operate with objects from different containers

The Hyperspace Operations

The Application Control
A variety of operations and actions with the grouping points and objects in the workSPACE

The Gravity Trap
A field where the user can place any objects that are not currently needed in the

Frequency analysis

The Event Horizons

4. ANALYZES AND PROCESSES DATA

The Control Panel
Displays information about an object, a feed, a grouping point, the SPACE, etc.

List reports

5. GENERATES DATA REPORTS AND PRESENTATIONS

Standardized export/import files

Multiuser environment
Displays information about an object, a feed, a grouping point, the SPACE, etc.

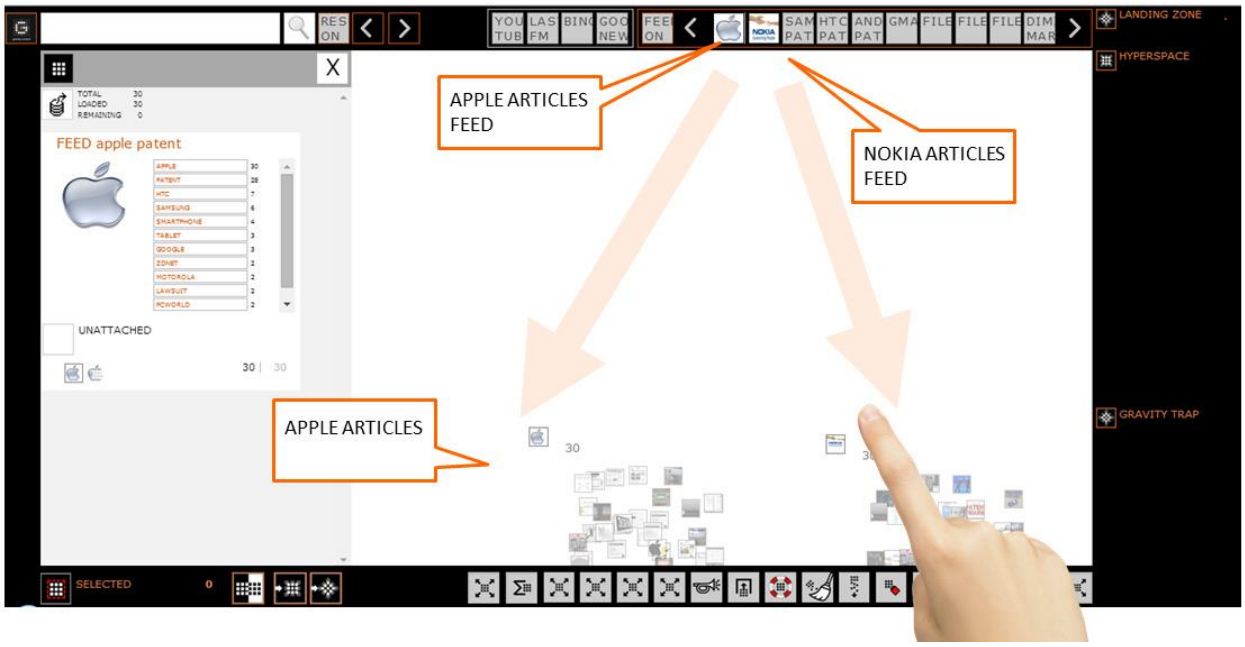
6. PROVIDES COLLABORATION IN A NATURAL WAY

A practical example

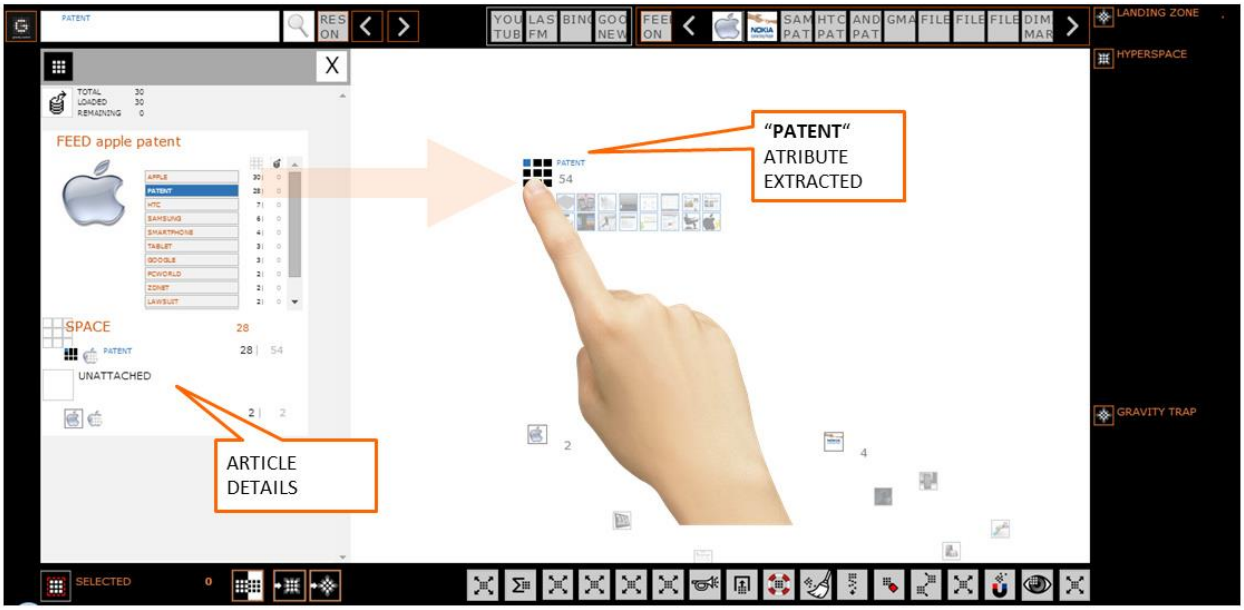
Working with Gravity Control™ comes naturally to users as it is based on the way we handle palpable objects and at the same time preserves the most widely used software conventions. Below you we give an example of the basic functions and ways to work with data.

Starting with the data

1. For starters, create some chaos in the workspace by loading feeds onto it. In this case – articles for APPLE and NOKIA.

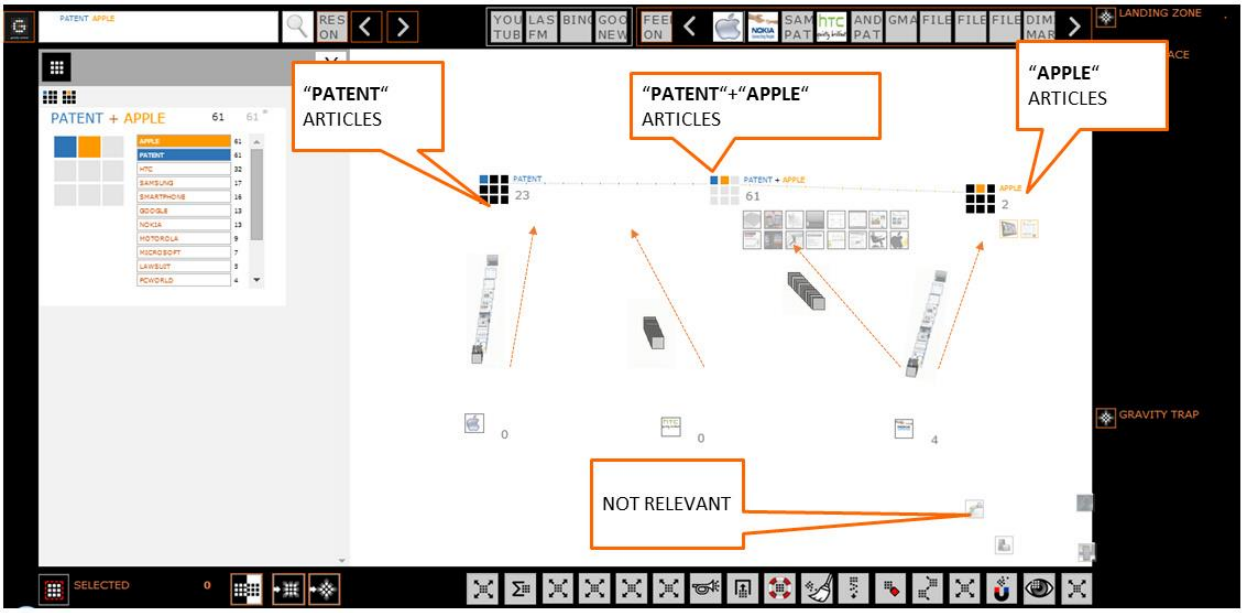


2. Create some „sense" by browsing through the objects and their properties (attributes)
   In this case: an object from the APPLE PATENT feed is selected and the attributes "PATENT" and "APPLE" from its list of attributes are dragged out onto the workSPACE as search criteria.



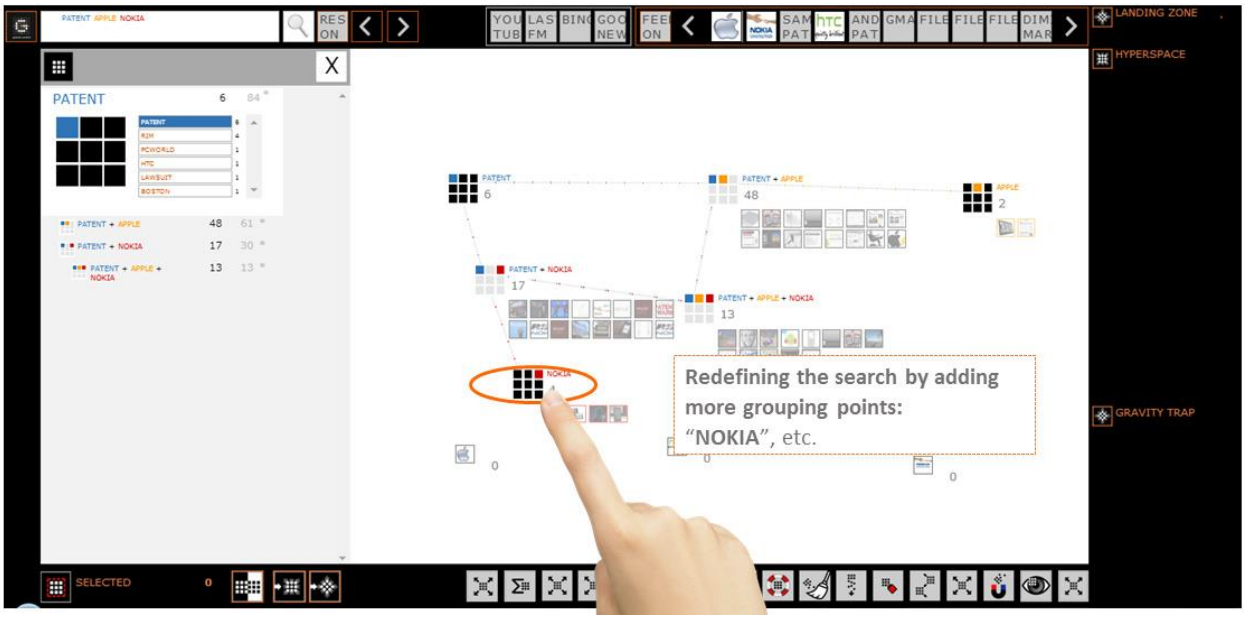
3. Let the Gravity to do the work

   Once the grouping criteria are dragged out onto the workspace, the grouping starts automatically and all elements from the currently loaded feeds, which correspond to those criteria, are distributed among the grouping points according to their relevance.

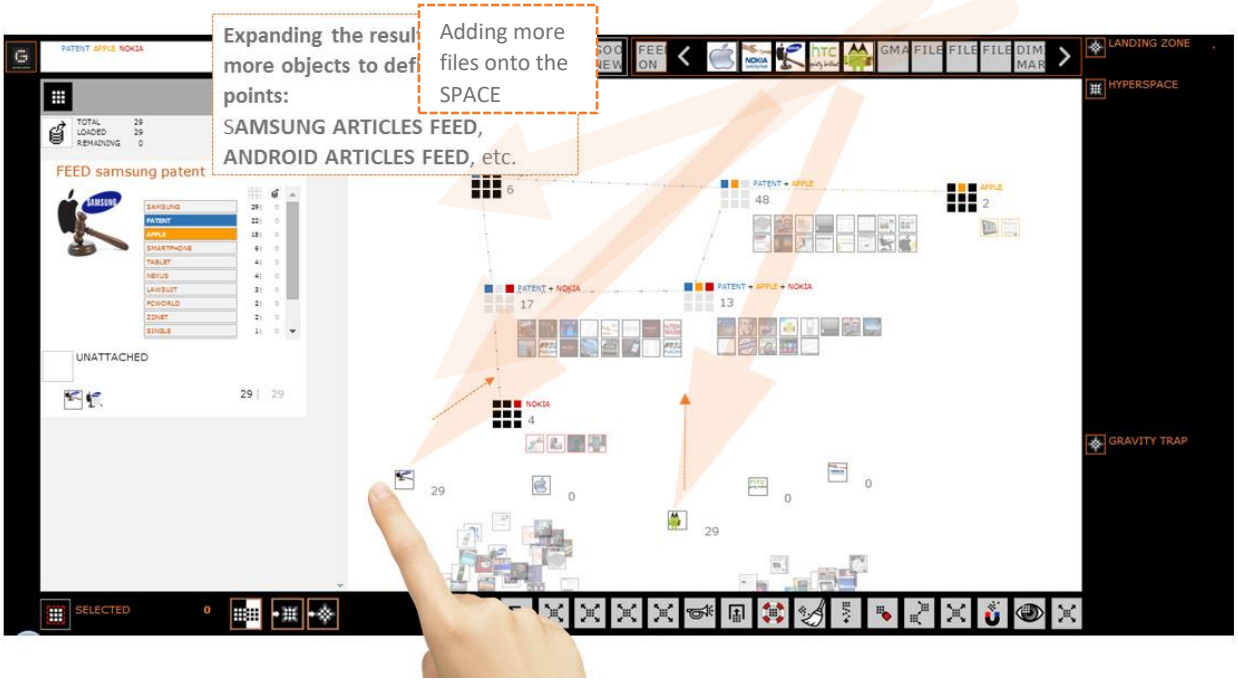


4. Add even more sense by refining the search criteria.

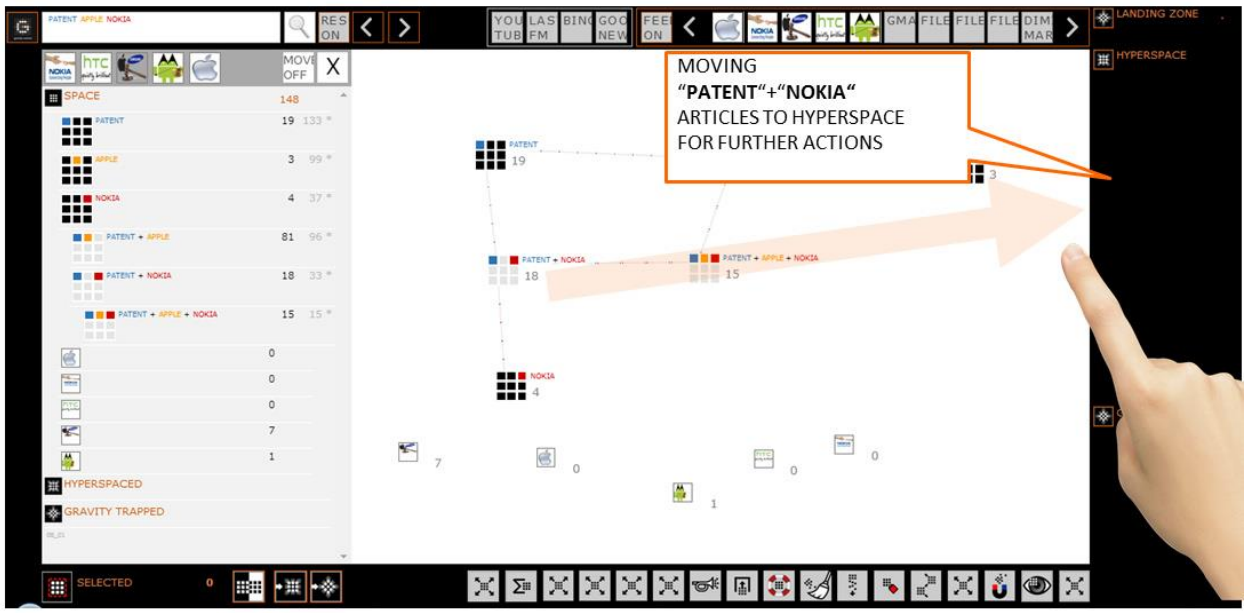
   In this case by adding a NOKIA onto the workspace.



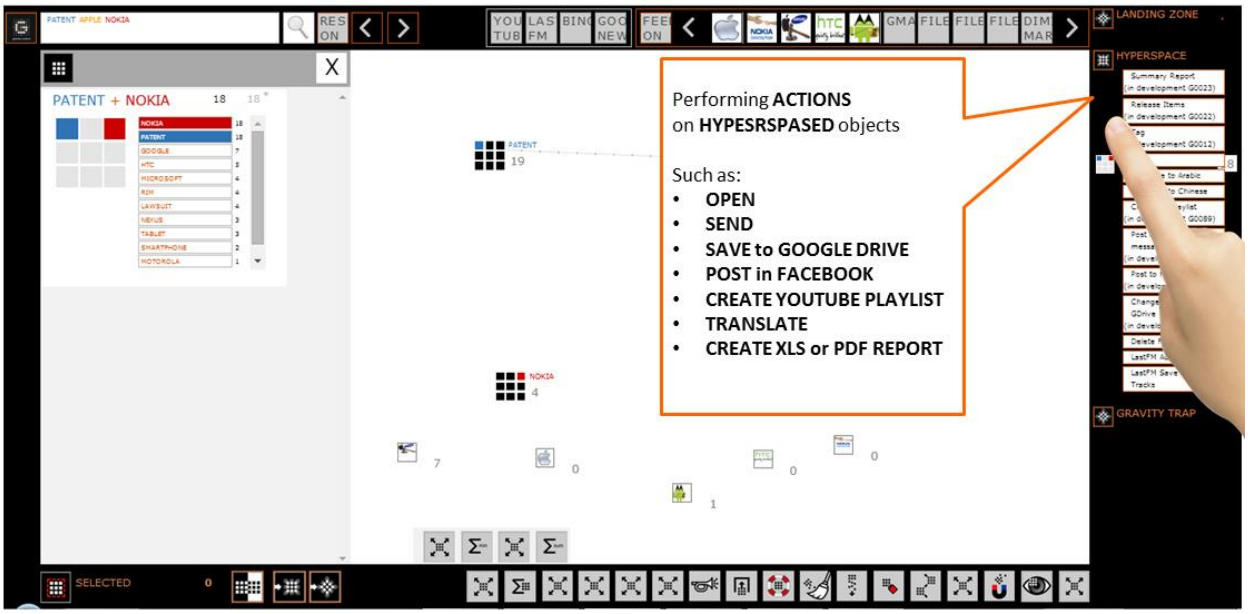
5. Or you can increase the chaos by adding more files in the workspace. Here these are the SAMSUNG PATENT and ANDROID PATENT feeds.



6. When you have found files that interest you, you can perform actions with them. For that you may need to move the files from the Workspace to the Hyperspace. You can move them one by one or drag and drop entire grouping points or all selected objects from the Workspace.

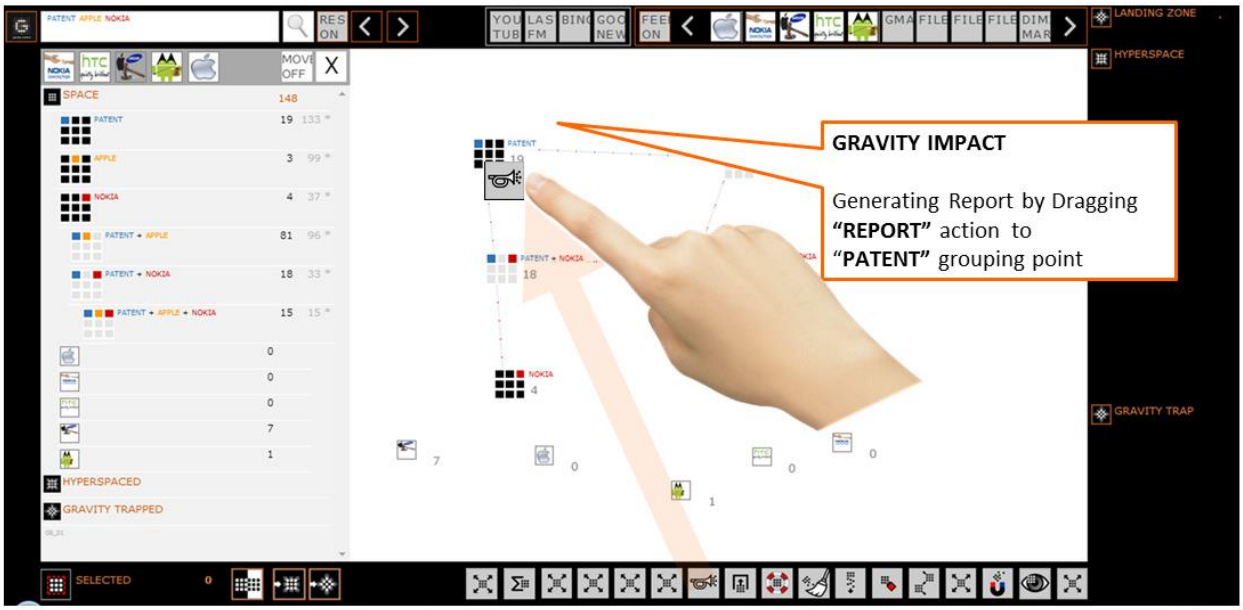


7. Then head to the Hyperspace, open the list of available operations and select the desired option. The availability of operations depends on the data you are working with but they include, among others, common commands like opening in another program, sending in an email, saving, moving and tagging.



8. You can also perform operations on objects in the Workspace. For that you can use the buttons on the operations bar. Dragging and dropping an operation button on the workspace will apply that operation to all the objects on it. Dragging and dropping in on a single object of grouping point will impact only that object or group.

   Hyperspace and Workspace operation lists differ from each other – some actions are available at both locations and others just at one of the locations.



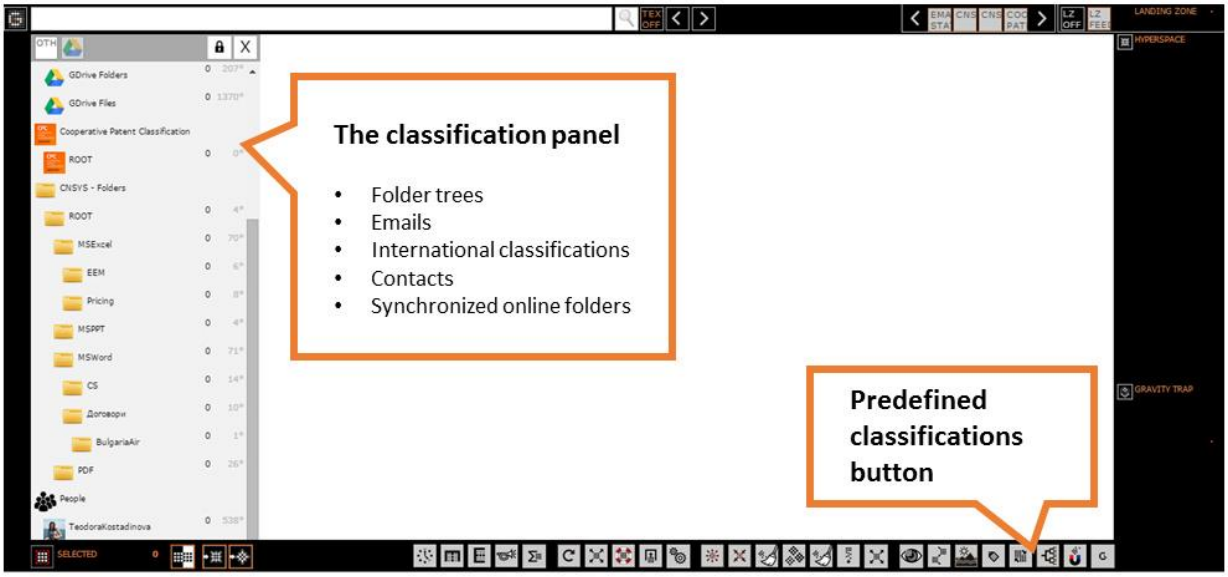
Starting with keywords

When you know what you are looking for but not where to look for it, you can use the traditional search bar. Input PATENT and APPLE as search terms in the search bar textbox and hit on the spyglass. The interface will return a list of results allowing you to choose which ones to load. You can choose to load all or only some.

Starting form a classification

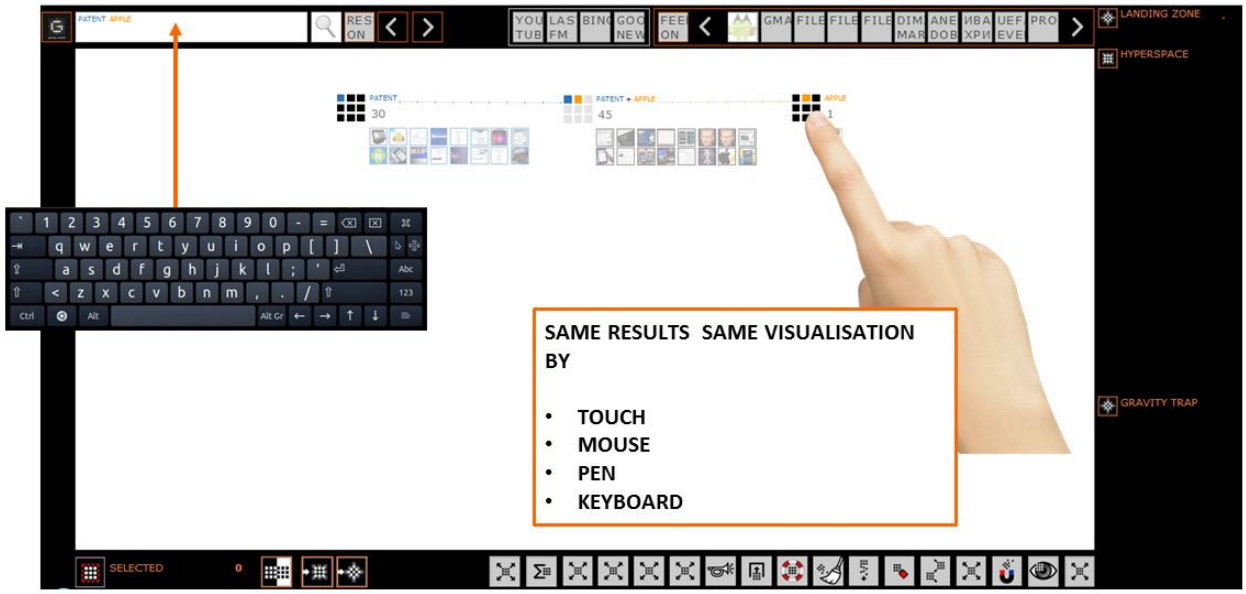
When you know the type or location of the data you are looking for, you can start with the classifications. Click the classification button to open the classification panel and find the category you are looking for in the list.

Currently the classification panel contains contacts, emails, file and folder trees from Microsoft drives and Google Drive and the International Patent Classification.



Work with everything the same way

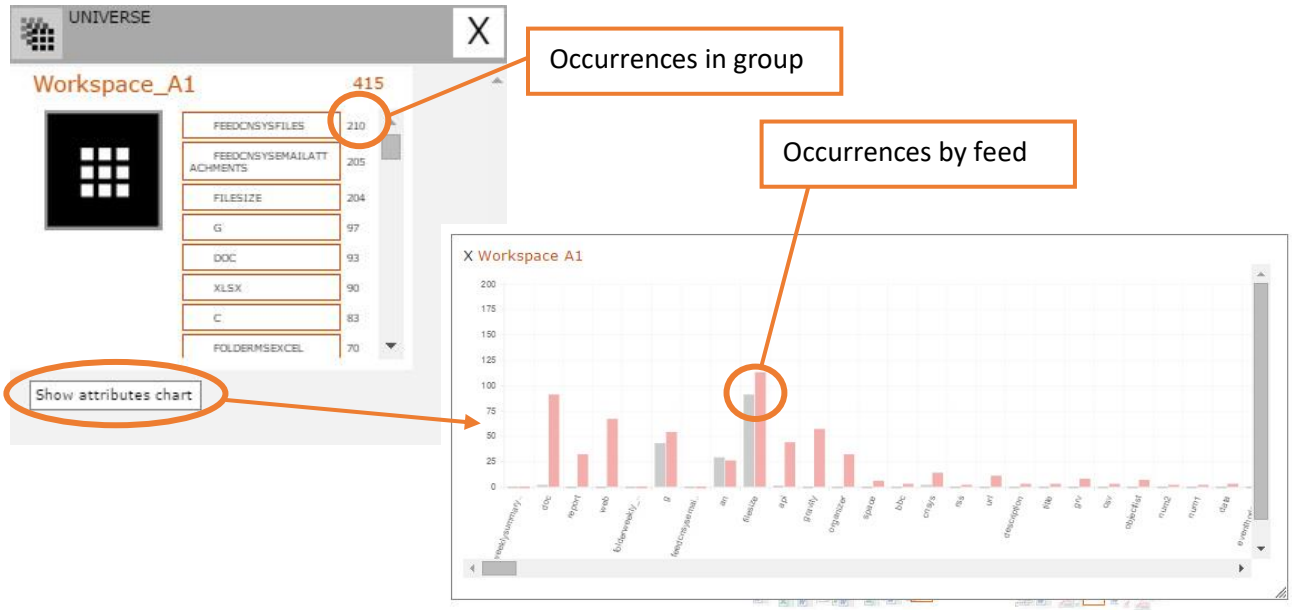
Regardless of how you start your search or how you combine search strategies while you work, your results will be shown in the same workspace, visualized the same way and handled together. It does not matter if you prefer to drag and drop, type or use lists frequently – Gravity Control™ makes provides your preferred tools.



Analytical tools

Attribute Charts

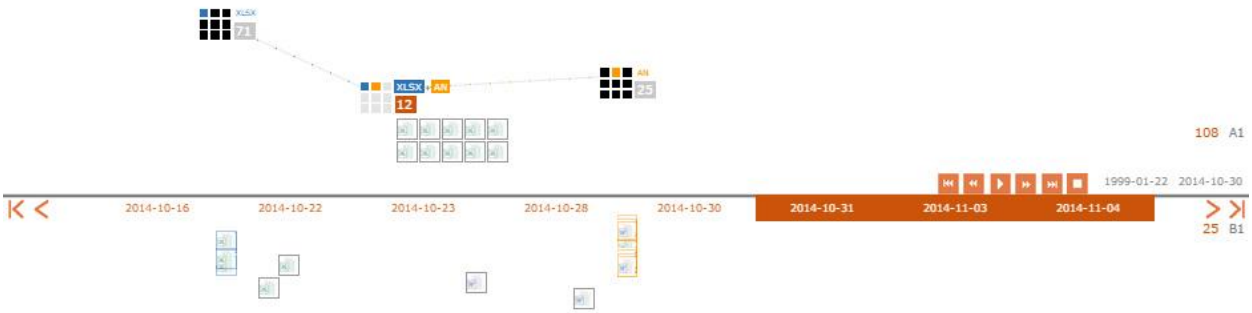
Any group of objects in Gravity Control™ is analyzed for recurring or unique attributes and a summary is available in the control panel of the group. The results are visible as numbers beside each attribute label in the attribute list and show the number of occurrences of the attribute in the group. Below each group's control panel there is an Attributes Chart button that reveals the same information in chart view and with the results differentiated by feed. Depending on the needs of the user the differentiation criteria can be changed.



Timeline

When there is a Gravity System in the workspace, the Timeline feature allows the user to see an animated presentation of how the grouping points get populated over time. This can be a useful tool for observing and demonstrating tendencies over a period of time.

The animation starts with a Gravity System of empty points that are populated with objects at each step of the demonstration. Steps are spaced at preset periods of time that can vary from minutes, to days, to years, divide the span between the oldest and the newest object in a specific number of steps or be set at specific moment that are not equally spaced in time.



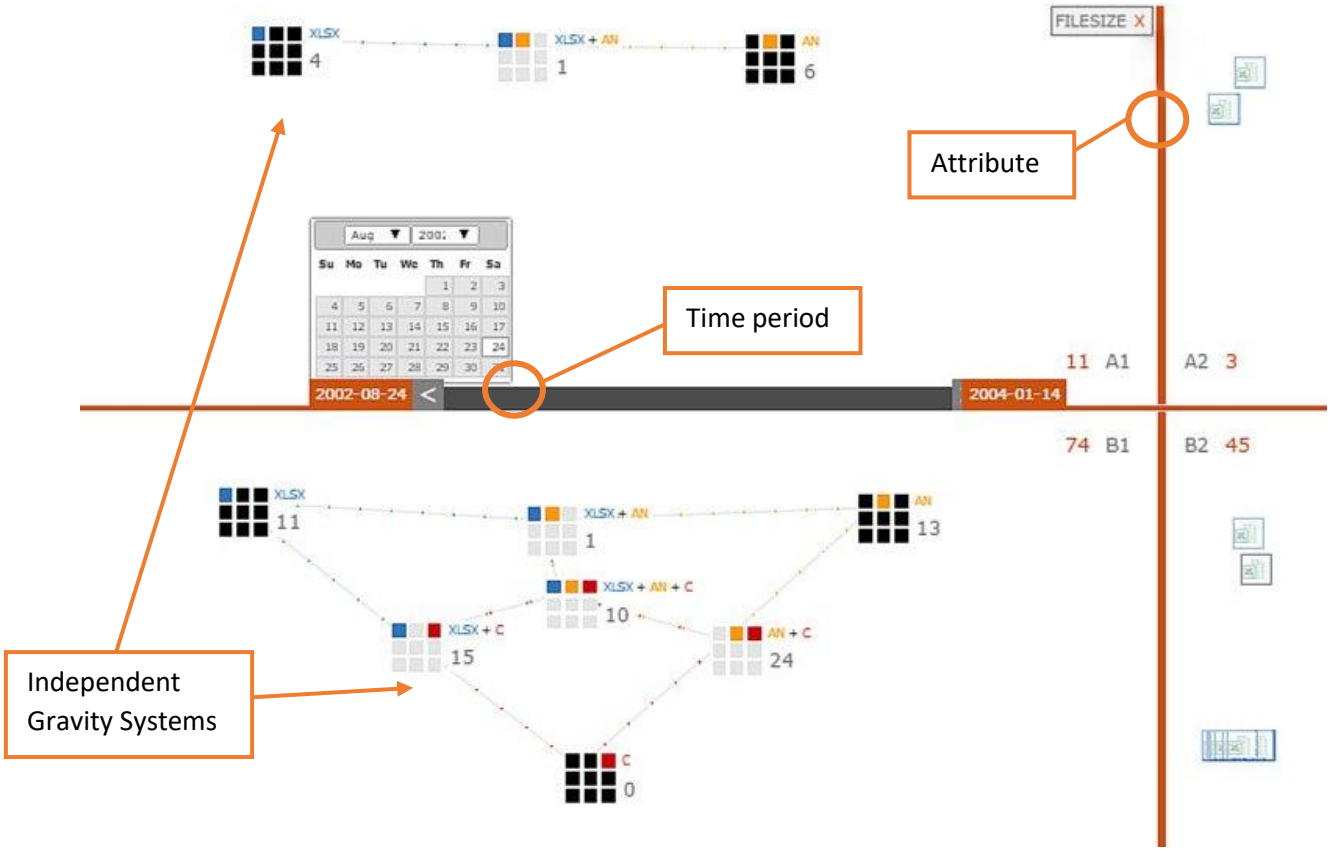
Event Horizons

The Event Horizons are barrier lines that divide the workspace in sectors, distributing the loaded objects among those sectors according to user set criteria. Objects on side of the line possess the attribute and objects on the other side of the line do not.

Event Horizons can be placed either horizontally or vertically. At the moment the horizontal and vertical horizons function differently. The horizontal one is used for filtering by date. The criterion date is set by dragging and dropping on the line either an object or just the date from and object control panel. After that it can be altered by drag and drop or manually and set to any desired date or the period between two dates.

The vertical Event Horizon is used for filtering by attribute. The criteria can be multiple, forming a logical expression. Depending on the attribute, its value can be set to Boolean (present/non-present), a strict numeric value or a value interval. Values can be set separately for each attribute.

In the example below the two horizons divide the workspace in four sectors. The gravity systems in each sector are independent from one another and can be identical, have some criteria in common or be completely different.

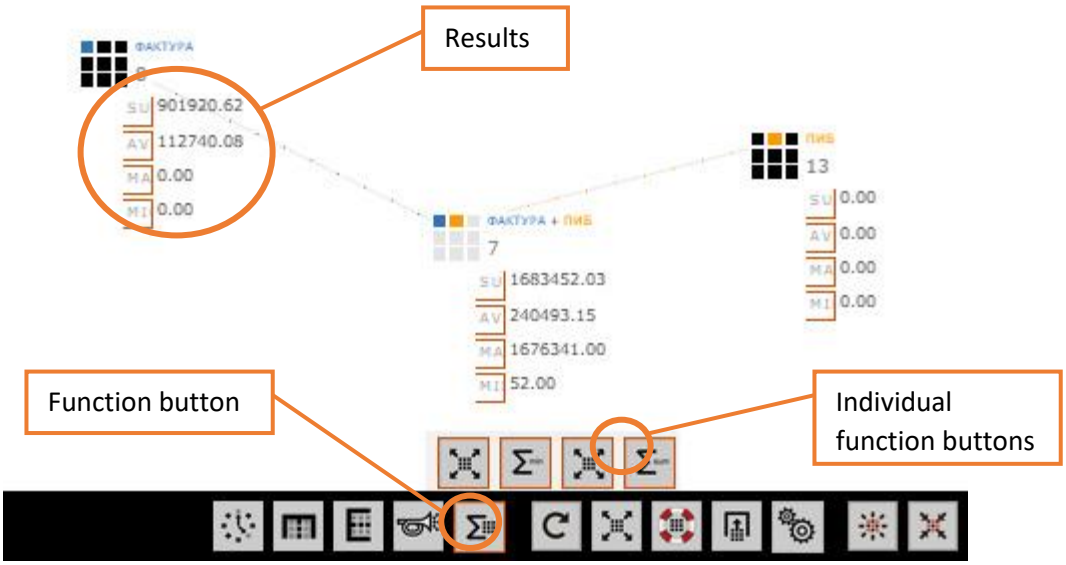


Calculations

Some objects in Gravity Control have attributes with numeric values different from 1 and 0, making it possible to conduct calculations. This proves useful when working with amounts of any type.

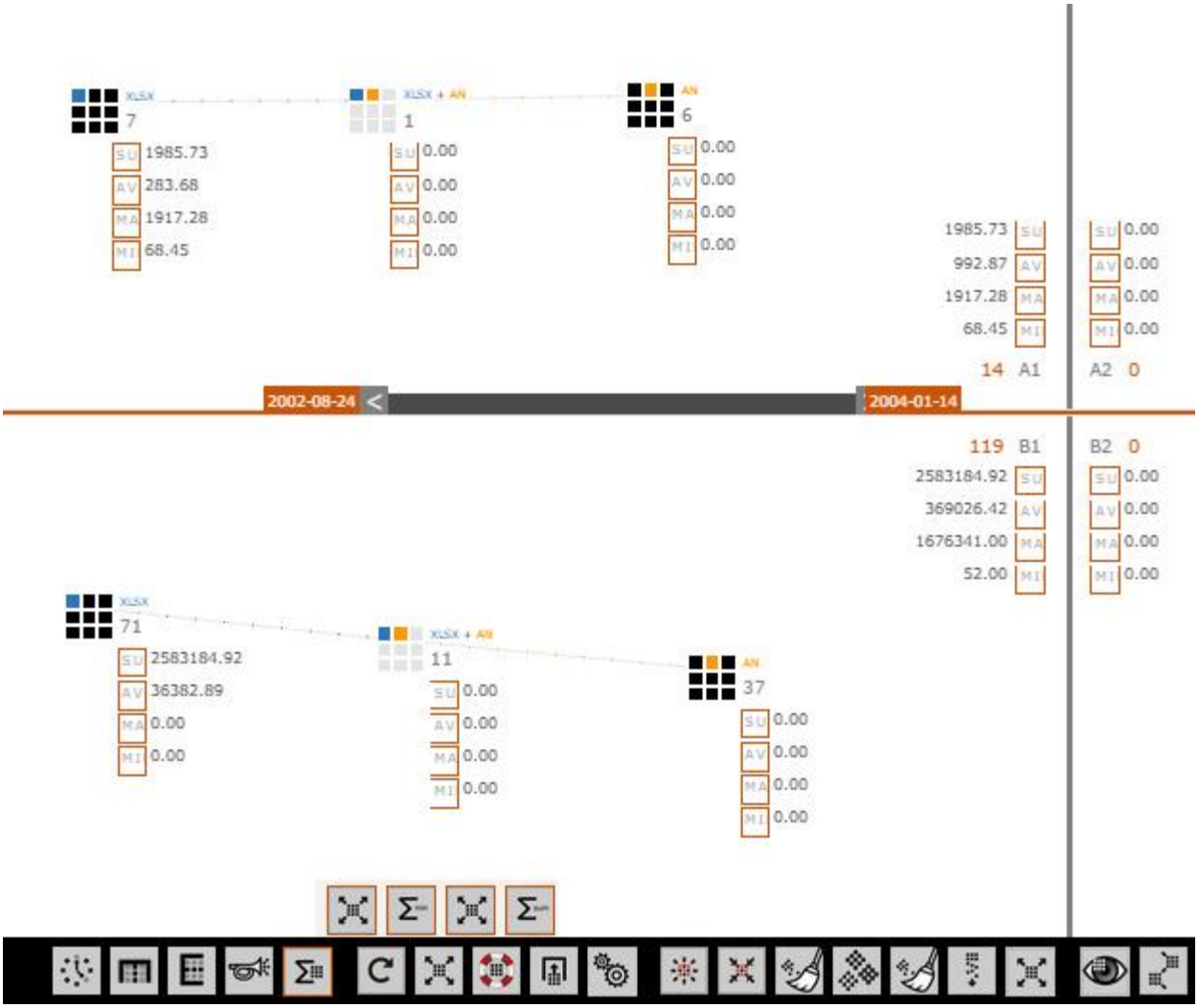
Currently Gravity Control™ can provide four different values for any grouping point – sum, average, minimum and maximum amount. They can be activated and deactivated all at once or one by one depending on the needs of the user. The operation is activated for all grouping points, by clicking the button or dragging and dropping it on an empty area of the workspace, or for a specific grouping point, by dragging and dropping the respective button on that grouping point.

Calculations can also be included in the reporting tools of the interface – data lists, exportable reports and emails.



Using tools in combination

Depending on the type of task, the user may need to use a combination of analytical tools and operations. In Gravity Control™ this poses no problem. The example below shows calculations and Event Horizons used together but it is far from the only possibility.



Tagging

Gravity Control™ searches and sorts objects according to their attributes. For new objects attributes are automatically retrieved from the file system and the file details or from the source database. But once in the application the attribute list can be edited and expanded. This process is essentially tagging and untagging that can be done on two levels.

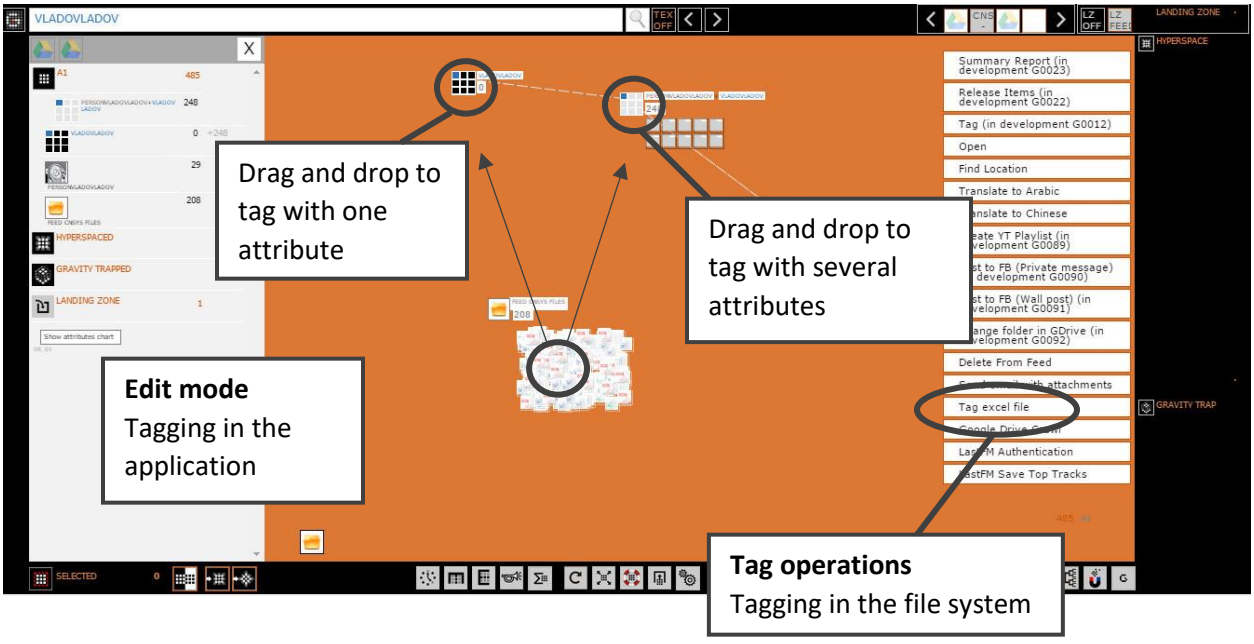
Internal Tagging

By activating Edit Mode, the user can change the attribute list of any object or group of objects loaded on the workspace. The orange background is an indication that the user is working in Edit Mode. Changes to the attributes can be made by typing in the text fields of control panels, or by dragging objects across the workspace and dropping them on a grouping point that has the desired new attributes or tags.

This type of tagging changes the object properties in the application database. Thus the tags are usable only in the Gravity Control™ work environment and can be exported to share between Gravity Applications.

System Tagging

System tagging is accessible in all modes as an option in the Hyperspace menu. It changes the attributes of the objects both in the application database and in the file system. The changed attributes appear are added to the original file as tags, the format of which depends on the conventions used by the file format. It has been tested with MS Office files on a network drive accessible under Microsoft Active Directory.



List of functionalities for an application managing document flow

1. Gathers all your data from all your sources

The Gravity Interface retrieves, indexes and handles data from all sources and in all formats. This includes office file formats, media files, emails with attachments, calendar events, contacts, web pages and specific data from webpages, folders and their contents, data from databases and data files. The information can be retrieved from local, networks and online drives, RSS, database and webservice APIs, including social networks and search engines or the Internet. Web crawling allows gathering large amounts of data and tracking corporate visibility or trends and term.

1. File Types – Gravity office space works with every type of file and data format.
    - Office files - DOC, DOC, RTF, PPT, XLS, CSV, Goggle Doc formats, open formats, etc.
    - Media files – MP3 and other audio, MOV and other video, PNG, JPEG, GIF, etc.
    - Other file formats according to user needs.
    - Emails – EML, etc.
    - Calendar events and tasks
    - Web pages
    - Folders - folders objects remain linked to the files and subfolders they contain. Files and folders remain linked to the containing folder.
2. Data and files from local, network and online drives
    2.1. Files from a local hard drive or a network drive – using Microsoft Active Directory
    2.2. Data from online drives via standardized APIs
        - OneDrive
        - Dropbox
        - Google Drive
        - Others
3. Data from emails – via Outlook Server and standardized protocols
    3.1. Emails
        - Retrieves contents
        - Retrieves status and tags
    3.2. Attachments – automatically creates separate file objects. Objects are linked to the containing email and emails are linked to all contained files and objects
    3.3. Contacts – Creates contact objects
        - Contact list
        - Email senders and addressees
    3.4. Calendar – Creates event objects
4. Data from external databases and SQL-based APIs
    - Data from online drives as mentioned in 1.4. above
    - Data from open, professional or custom databases
5. From standard APIs – configured according to provider formats and user needs
    - Bing search
    - Facebook
    - Google search
    - Google News

- YouTube
- Others

6. Data from RSS
   6.1. On demand retrieval
   6.2. Preconfigured retrieval
   - At opening feed
   - At app startup
   - At fixed intervals
7. Data from a single URL or list of URLs – URLs may be provided by the user as individual links or in a file or they may be retrieved by the system from another object, i.e. email, web page, RSS feed.
   - Extraction of page content and creation of a gravity object
   - Links on page
     - Automatic extraction as links – data is saved in the original URL object
     - Extraction of data as new URL objects to – the process is repeated to a user set depth
   - Extraction of video on page – automatic extraction of all video files and embedded video as separate video objects
   - Extraction of images on page – automatic extraction of image files and linked images that are stored in the original URL object
   - Extraction of files on page – automatic extraction of known or preconfigured file formats and creation of separate file objects
   - Extraction of structured data on page – prices, nutritional information, ratings, etc. Data is stored as attributes in the original URL object.
8. Data from files
   8.1. As single file objects
   - Office documents – DOC, RTF, etc.
   - TXT
   - Images

   8.2. Gravity data report files
   - CSV
   - XLS

   8.3. Structured data files - TXT, XLS, CSV, tab delimited
   - Setting structure filters on import - manual setup of correspondence between columns/rows/fields and attributes in the structure of the object
   - Saving structure filters – for repeated use on files with matching structures; makes possible the automated creation of objects from report files of other systems.
9. Data indexing on import
   - System attributes
   - Tags
   - Full text search
   - Relevance to predefined classifications
   - Indexing by search term set

2. Searches, sorts and groups all your data in a natural way

The gravity interface allows the user to comfortably view and handle all their data in a uniform way regardless of the file format or source. There are three possible search strategies – by keyword, by example and by classification. The user can easily switch between them or combine them on the same search in order to obtain more relevant results. The new multidimensional graphic organization allows simultaneous grouping and sorting by several criteria and graphically representing levels of relevance of the objects.

1.1 Search capabilities

1. Searching by keywords and logical expressions
    - Searching in online sources – See *Data Gathering*
    - Searching in object attributes of existing objects
    - Full text search of existing objects
2. Searching by similarity
    - Searching in object attributes
    - Full text search – activated on demand
3. Searching by classification
    - Predefined classifications
    - Flexible user classification
    - Classification editing capabilities
    - Tools for searching by related terms
        - In attributes
        - Full text
    - External sources

1.2 Sorting capabilities

1. Grouping Points – automatic grouping
2. Manual

2.1. Gravity Trap

2.2. Hyperspace

2.3. Selected items

- Selecting individual items
- Selecting groups of items
    - Selecting grouping points
    - Selecting all from a feed
    - Selecting all containing attribute
- Invert selection
    - For an object list
    - Overall

1.3 Grouping

- Automatic – grouping points
- Manual - Selections tools

3. Manages your data and files in a natural way

Data can be managed from the workspace, special fields and control panels. Operations can be used on single objects or groups of objects. Some of them are performed within the application only. Others use external programs (Open, Translate, Send as Email, etc.) or change the original file (Tag, etc.) so that the

changes can be detected and used by other applications and systems. This makes it possible to manage corporate document flow, manage and edit data in databases, start routine operations on objects and use sorting and tagging results in across applications and systems.

1.4 The workspace

- Operations in grouping points
- Dragable operations

1.5 The Gravity Trap

- Reserving
- Sending back to feed
- Deleting from feed

1.6 The Hyperspace

- Open
  - In another program
  - View details
- Edit
  - Edit detailes
  - Tag
- Report
- Send via email
  - As an attachment
  - As a report
- Apply analysis tools
- Create a new Space

4. Analyses and processes data

Advanced tools include frequency analysis that can outline similarities and differences within groups of documents and/or relevance to classifications based on the classification definitions or similarity to other files in a category. Numeric data can be used to perform calculations that can range from simple to very complex.

1. Lexical spectra
   - Frequency Analysis
     - Relevance to a classification
     - Relevance to a group of documents
   - Similarities
   - Differences within a group
2. Calculations

5. Generates data reports and presentations

The gravity interface can be used as a dynamic presentation tool that demonstrates processes and tendencies over time according to user set criteria. It is especially suited for touch screens including large touch boards. The results of searching, sorting, grouping, and data analysis are exportable into reports and saved in different formats.

- Reporting

- Timeline

6. Provides collaboration in a natural way

Multiple users can share the same workspace with adjustable viewing rights. They can either take turns managing the screen or view without making changes. Access to the data itself is determined according the each user's credentials and the system access rights associated with them. When sharing a workspace online is not an option, reports exported by one user can be sent to another as a file and imported into another instance of the application or viewed and modified in other programs and systems allowing collaboration even when not all participants are using a gravity application.

- Multiuser access to the same workspace
- Export/import tools

7. System Functions

This is a description of functions that are not mentioned above but are a part of the gravity application core.

Loading data on the workspace

1. Manual
    - Dragging feeds from feed panel
    - Dragging files from feeds that have not been loaded
    - Loading remaining files from partially loaded feeds
2. Automatic
    2.1. Preconfigured
    - RSS
    - Updates in file system
    - Saved sessions
    - Others set by user

    2.2. Data from landing zone after import (points 5-7 in part 1 above)
3. Selective – loading only relevant
    3.1. From search results – keywords and/or logical expressions typed in the search bar
    - Internal database – existing objects
    - External sources – online search engines and services

    3.2. From object attribute – dragged from control panel. Searching by example
    - Internal database – existing objects
    - External sources – online search engines and services