Engineering Support Tool
Research Assistant

Powerful technical content analysis toolset, delivered on Engineering Workbench™
PCNs: RAS01-07

About Research Assistant

Research Assistant is a powerful content analysis toolset that allows technical professionals to discover answers and knowledge within the large body of a company's indexed content within Engineering Workbench, whether that includes internal content and/or Accuris content subscriptions such as Standards, Knowledge Collections, Expert Index Collection, and Patents Collection, and other sources.

With Research Assistant enabled in Engineering Workbench, users can take advantage of graphical and tabular tools, including more than 70 intelligent filters, or "content lenses," that perform like a "virtual subject matter expert." The lenses guide users through a body of content (internal and/or external, based on their search parameters) to obtain highly precise answers to their queries. For example, you can view definitions, advantages, disadvantages, applications, materials, causes and effects, parts, functions, interactions, and more related to a topic.

Using Research Assistant, technical professionals accelerate R&D and problem solving by quickly discovering solutions to technical challenges within technical reference content from vetted, trusted sources, including sources that they might not have thought to search, using queries they might not have thought to ask.

Engineers and others can also use Research Assistant to get up to speed on a topic or technology quickly. While it takes 8.2 years for an engineer to gain sufficient experience to make non-standard technical decisions (according to industry research), using Research Assistant, a new engineer can accelerate this process and very quickly make informed decisions based on the best internal and external knowledge.

With the Research Assistant Cloud Service, Accuris customers also have the ability to create custom indexes of public domain web content and internal web sites, and host these indexes in Engineering Workbench as "My Cloud Sources." For example, a company could index a competitor's web site and have information from the site displayed with other query results when running a search in Engineering Workbench.

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Content Lenses

Research Assistant organizes search results into the following general category types:

- General Facts
- Parts and Functions
- Parameters
- Causes and Effects

Each general category type includes a set of specific categories of results. Using tabular or graphical navigation, a user is able to drill down into specific categories to narrow search results, allowing the user to quickly surface relevant content matching the specific nature of their query, or to easily explore various facets of a topic area. The following tables list all the categories that make up each general category type. Examples of queries and their answers illustrate the kinds of answers that would be returned for each category of results.

General Facts

The General Facts category type includes the following results categories:

Category	Example of Queries and Answers
Definitions	Q: What is a laser? A: device emitting light through a stimulated emission
Properties	Q: What are the properties of water? A: liquid; corrosive
More Specific	Q: What birds nest in hollows? A: goose; canary
Concepts	Q: infrared spectroscopy A: infrared; infrared spectroscopy analysis
Advantages	Q: What are the advantages of Excel? A: efficient management of data
Disadvantages	Q: What are the disadvantages of aspirin? A: stomach damage; bowel injury
Failures	Q: What are the failures of an LCD panel? A: dust contamination due to electrostatic discharge; damage due to pressure
Applications	Q: What are the applications of aspirin? A: preclusion of headache; prevention of migraine
Methods	Q: How to reduce friction? A: lubrication of roller bearings
Conditions	Q: Under what conditions does Nc3N change to a crystalline form? A: room temperature
Locations	Q: Where is New Hampshire? A: between Maine and Vermont
Materials	Q: What is a car body made of? A: zincked aluminum

Parts and Functions

The Parts and Functions category type includes the following results categories:

Category	Example of Questions and Answers
Made Up Of	Q: What are the components of a computer? A: system unit; keyboard; mouse; monitor
Part Of	Q: What is a serial bus part of? A: motherboard
Objects Acted Upon	Q: What does the Library of Congress store? A: books; recordings; photographs; maps; manuscripts
Functions (Action + Objects)	Q: What does a boiler do? A: heating of water
Acting Subjects	Q: What circulates water? A: force-pump; pump
Interactions	Q: How do refrigerating fluid and a pump interact? A: pump circulates refrigerating fluid

Parameters

The Parameters category type includes the following results categories:

Category	Example of Queries and Answers
Speed	Q: How fast is data calculated? A: two billion operations per minutes
Distance	Q: How far can a bullet fly? A: 10 kilometers
Height	Q: How high is the Eiffel Tower? A: 300 meters
Depth	Q: How deep is a pressurizing chamber? A: 3.26 feet
Length	Q: How long is the bar? A: one inch
Mass	Q: What is the mass of the sun? A: 4 x 10^33 grams
Age	Q: How old is the Earth? A: 4.5 billion years
Size	Q: How big is the Earth? A: diameter is 7926 miles
Thickness	Q: What is the optimal thickness of a thermal insulation layer? A: 3.2 cm
Width	Q: How wide is the bar? A: 21.31 meters

Temperature	Q: How hot is the sun? A: 9900°F
Time	Q: When did World War II occur? A: between 1939 and 1945
Frequency	Q: What is the rotation frequency of a propeller? A: 15 Hz
Color	Q: What color is octopus blood? A: blue
Duration	Q: How long was the water heated? A: two hours
Shape	Q: What is the shape of a side bar rotated by the engine? A: rectangular
Number	Q: How many chromosomes does a human zygote have? A: 23 pairs of chromosomes
Amount	Q: How much fuel is consumed each second? A: 1 gallon
Values of Parameter	Q: What is the pressure of an airfuel mixture in a combustion chamber? A: 15.616 atmospheres
Quantity	Q: How much gas does a Boeing 777 consume? A: 14.4 Imperial gallons per engine per minute
Parameters	Q: What are the parameters of copper? A: melting temperature is 1034 degrees Celsius; specific gravity is 8.96

Causes and Effects

In addition to the Content Lenses, Research Assistant also provides filters that allow users to narrow down their search results based on:

- Content Classes, e.g., Codes & Standards, Books, Patents & Applications, Other Accuris Sources, Articles & Journals
- Publication date
- Publisher
- Publication
- Author
- Knowledge collections (eBook content subscriptions)
- Modification date
- Site or domain
- Document status

Research Assistant Cloud Service

Research Assistant Cloud Service (formerly known as Goldfire Cloud) enables a company to create custom indexes of public domain web content and internal web sites, and host these indexes in Engineering Workbench as "My Cloud Sources."

For example, a company might choose to use Research Assistant Cloud Service to index competitors' web sites so that results from those sites appear alongside other query results within Engineering Workbench. This can allow a company's engineers or product managers to track a competitor's technology advances or new product releases, for instance.

EWB Cloud Administrator access will be provided to customers to create and manage custom indexes. Note that the Research Assistant Cloud Service can access and index internal web sites that require Username and Password. However, secure VPN access is not supported by the Research Assistant Cloud Service.

Engineering Workbench

Engineering Workbench is a unified technical knowledge platform that enables engineers, researchers, scientists and others to rise above the challenges associated with accessing critical technical information. The three components of Engineering Workbench are **Content**, **Analytics** and **Tools**.

Content

Engineering Workbench allows an organization to provide its technical workforce with single source access to the must-have content they need to complete their projects, including eBooks, patents, journal articles, reports, design principles, and more. Engineering Workbench also can connect these professionals to internal content sources, fostering knowledge retention and discovery.

Analytics

Engineering Workbench incorporates next-generation content analytics and search capabilities that allow technical professionals to quickly extract answers and insights from these disparate content sources, breaking down barriers to informed decision making.

Tools

Accuris customers also have the opportunity to add advanced research, problem solving and analytical tools to their Engineering Workbench environment, such as root cause analysis, technology and patent trend analysis, consumer insights, or intelligence. These tools have been designed by technical professionals, for technical professionals, so they inherently support the daily workflows of engineers, scientists and other knowledge workers. As a result, engineers solve problems faster, researchers discover more efficient processes sooner, and product teams deliver innovations to market ahead of the competition – driving growth, profitability and risk mitigation.

Additional Content Knowledge Bases and Capabilities Available in Engineering Workbench

Knowledge Collections

Knowledge Collections, delivered on Engineering Workbench, is the most comprehensive library of trusted, authoritative engineering and technical eBook reference content, aggregated and readily accessible in one place, to help engineers, scientists and other technical professionals quickly make the best decisions.

With Knowledge Collections, users gain access to the critical knowledge they rely on for all stages of the engineering and project lifecycle – from ideation through production. Knowledge Collections features exclusive partnerships with leading technical publishers such as McGraw-Hill, Wiley, Industrial Press, Maney, Springer, University of Oxford Press and many others. *See separate information on the Knowledge Collections for more details on available collections and content sources.*

Expert Index Collection

The Expert Index Collection, delivered in Engineering Workbench, allows engineers and others to discover answers across a comprehensive, vetted collection of more than 75 million technical articles, publications, reports, design principles / best practices and more.

The content in the Expert Index Collection is provided by dozens of vetted, authoritative publishers, as well as Accuris sources, ensuring users can access trusted content from the best-known, most widely respected content providers. *See separate information on the Expert Index Collection for more details on available content sources.*

Patent Collection

This collection comprises more than 55 million patents, published in the original languages, fully searchable, with dynamic summaries in multiple languages.

Patents included:

- U.S. Granted Patents (USPTO): 1971 - current
- U.S. Patent Applications (USPTO): 2001 - current
- European Granted Patents (EPO): 1981 – current
- European Patent Applications (EPO): 1988 – current
- Great Britain Granted Patents: 1970 – current
- German Granted Patents: 1980 – current
- German Patent Applications: 1970 – current
- German Gebrauchsmusters (Utility Model): 1980 - current
- French Granted Patents: 1985 – current
- French Patent Applications: 1976 – current
- Japanese Patent Abstractions (JPO): 1976 – current
- Japanese Patent Applications: 1993 – current

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- Japanese Granted Patents: 1994 – current
- Chinese Granted Patents
- Chinese Granted Patents for Utility Models
- Chinese Patent Applications
- Chinese Utility Model Applications
- WIPO PCT Publications (WIPO): 1978 – current

Patent Intelligence

Patent Intelligence is a powerful graphical toolset allowing users to analyze technology trends and patent information based on the same set of more than 55 million patents that is included in the Patent Collection described above.

The patent analysis toolset helps technical researchers, engineers, and innovators understand the competitive landscape; discover new markets; spot influential trends, companies, and people; and stay on top of technology trends.

Engineers, scientists and other technical professionals can use Patent Intelligence to:

- Research technologies or companies
- Analyze patent references
- Find key people for a topic or industry

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