

**Engineering Information and  
Techniques on Dialog**

**Dialog**

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## Section 1: Planning the Search

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In this section you will:

- Determine the terminology and concepts to be used in your search
- Access thesauri to identify search terms
- Identify search terms with the EXPLODE command
- Use appropriate suffix fields to focus the search using the RANK command

### *Introduction*

Of the thousands of commercial and publicly available databases in the world, over 1000 contain scientific data: 760 of these are bibliographic and about 140 have more than half a million records. Dialog provides well over 180 databases specific to science; a broad selection of these serve the multidisciplinary field of engineering.

Engineering is one of the oldest professions. There are three main branches of engineering: civil, mechanical, and electrical engineering. Civil engineering is concerned with the building of bridges, dams, harbors, roads, tunnels, etc. It includes not only the actual construction but studies of traffic flow, fluid mechanics, soil mechanics, and geology. Mechanical engineering is concerned with the design, construction, and operation of engines and machinery and involves the practical application of the principles of thermodynamics, fluid mechanics, and the mechanics of materials. Electrical engineering deals with the whole field of applications of electricity, including power generation, power transmission, telecommunications, and electronic computers.

Efficient and effective searching requires some preparation and planning. This section presents search techniques that will help you translate key words identified during your analysis of a search question into more relevant terminology.

## ***Asking the Right Questions***

As you begin the search, you must be thorough and ask yourself or the client for whom you are searching the right questions. Review the Online Search Request Form in Appendix B. The following questions provide a basis for preparing your search.

- What are the key concepts, processes, keywords? Do you need a comprehensive search or is your intent to do a "quick query" search to locate just a few records? Comprehensive searches require the large OneSearch® categories or the use of DIALINDEX®.
- Are there any budget limitations? Do you charge back or does your department pick up the costs?
- What is the ultimate purpose of the search? Is it for a student or a manager of an engineering division? Generally speaking, an engineer with a bachelor's degree would not be able to comprehend a technical paper that has the treatment code theoretical. (e.g., TC=theoretical)
- What type of literature or directory information does your client need? Does the client want "peer-reviewed" papers, conference papers, or trade literature? Do they require directory information on research laboratories?
- What level of information is needed: experimental, practical, or general review? Some of the members of a newly formed engineering team may require general review vs. theoretical material.
- Should certain languages be excluded? Truly comprehensive searches should include all languages. Again, consideration should be given to the kind of documents needed. Engineers generally don't know databases, but they do understand the difference between dissertations, technical reports, and conference papers.
- What, if any, previous research has been done and by what authors, companies, cited people (experts)? If the researcher has an excellent but old paper of interest, you can search that paper in the appropriate database and use its descriptors and identifiers to find similar papers.
- What is the timeframe: retrospective or searching our vast archives, or using the CURRENT command to limit your search to recent information. Archival information is highly useful for trend or bibliometric analysis.
- Can the user of the information be present when the search is being done? The search process may assist them in finding better keywords, more exact dates, additional author information, etc. End users are often in search of concepts. Watching the search process allows them to help guide the path you take.

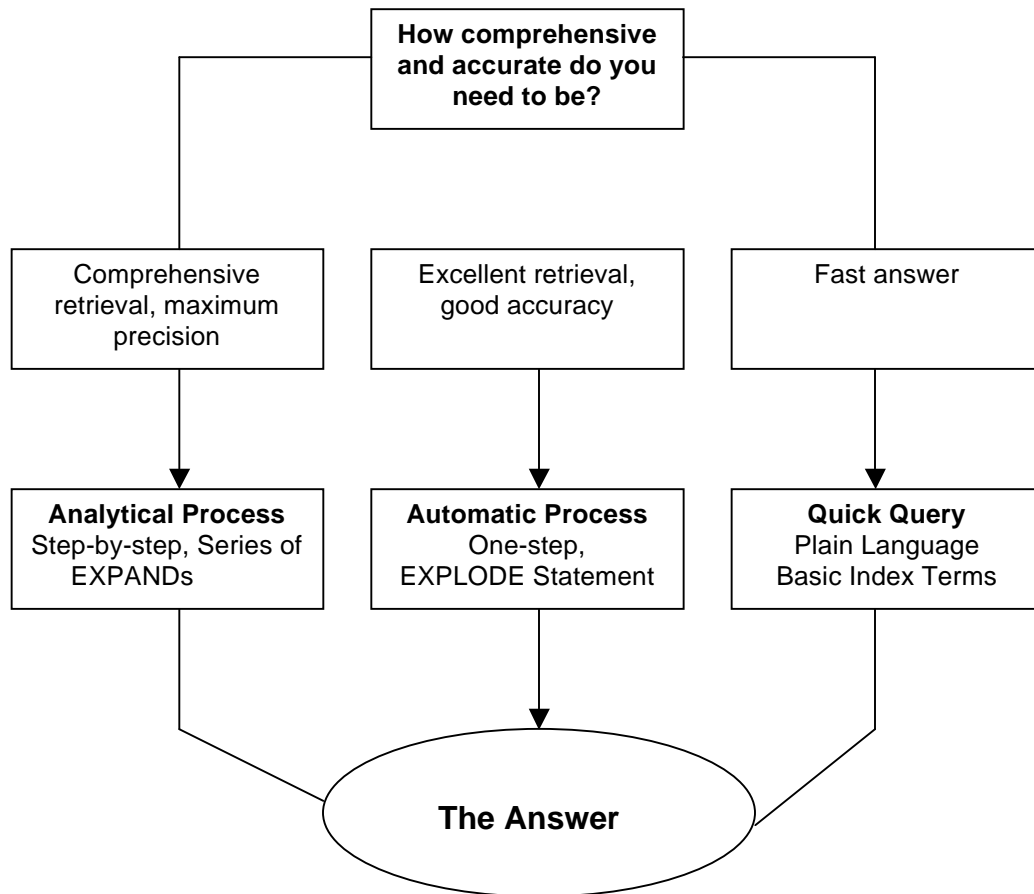
## Translating the Terminology

The key to searching the technical literature is identifying the correct terminology, descriptors, or subject terms for your topic. The databases of technical literature, as a rule, have a complex, detailed, and highly organized vocabulary. Dialog provides three techniques for revealing precise search terms while online:

1. using the database thesauri
2. using the EXPLODE command
3. using the RANK command

Each method is described and an example included. Try the exercises that follow Section 2 to become more familiar with each feature.

Thesauri are lists of recommended terms also referred to as "controlled vocabulary." They may be online, in print only, or both. The way you use thesauri depends on what you want from your search:



## Using the Thesauri

### Steps to accessing the online thesauri

1. To determine whether a word or phrase is appropriate as a search term, use the EXPAND command. EXPANDING results in an alphabetical listing of the database basic index roughly beginning at the word or phrase you entered (e.g., **EXPAND image processing**).
2. Note the RT column. The word or phrase may have *related terms*--words or phrases that may represent the same concept, but may not be alphabetically close to the term you entered.
3. To view the related terms EXPAND again, referencing the appropriate E number (e.g., **EXPAND e3**).
4. At any point, you can select appropriate reference numbers to create sets of the terms (e.g., **SELECT r1 or r2**).

**Tip:** EXPANDING on terms in parentheses allows you to go directly to a display of related terms (e.g., **EXPAND (image processing)**).

### Method 1: Using Thesauri to Obtain Comprehensive Results

Groups of people with a common interest develop and use acronyms as shortcuts in their communications, and engineers are no exception. The number of three-, four-, and even five-letter combinations that engineers use approaches infinity, but what do they mean? If your dictionary of acronyms isn't handy, or doesn't contain the acronym you're trying to decipher, several databases on Dialog, such as Inspec and Ei Compindex, have online thesauri to help you.

► **Topic** ◀ Find current articles that have been written on LCDs. You will need to find other search terms for this acronym.

Command Summary

B 4  
E lcd  
E e3

To access the online thesaurus, BEGIN in File 4, the file that contains the most current information from Inspec and EXPAND on the key term.

Entry E3 shows one related term available under the RT column.

```
File 4:INSPEC 1983-2009/Apr W1
      (c) 2009 Institution of Electrical Engineers

      Set  Items  Description
      ---  -
      ?e lcd

Ref  Items  RT  Index-term
E1   1       LCC6
E2   1       LCC6 CELLS
E3   9658   1  *LCD
E4   1       LCD ACTIVATION VOLTAGE TEMPERATURE
      DEPENDENCE
E5   1       LCD ACTIVE MATRIX DISPLAYS
E6   1       LCD ACTIVE PLATE
E7   1       LCD ADAPTIVE BRIGHTNESS INTENSIFIER
E8   1       LCD ADDRESSED CELL ASSEMBLY
E9   1       LCD ADDRESSED PHOTO-PRINTER SYSTEM
E10  7       LCD ADDRESSING
E11  1       LCD ALGORITHMS
E12  1       LCD ALIGNING TECHNOLOGY
E13  1       LCD ALIGNMENT
E14  1       LCD ALIGNMENT FILM
E15  1       LCD ALIGNMENT LAYERS
E16  2       LCD ALPHANUMERIC DISPLAY
E17  1       LCD ALPHANUMERIC LINE DISPLAY
```

```

E18      1      LCD ALPHANUMERICAL DISPLAY
E19      2      LCD AMPLITUDE SINUSOIDAL GRATING
E20      1      LCD ANALYZER
E21      1      LCD ANGULAR DEPENDENCY IMPROVEMENT
E22      1      LCD ANISOTROPY EFFECTS
E23      14     LCD APPLICATION
E24      18     LCD APPLICATIONS
E25      1      LCD ARCHITECTURE

Enter P or PAGE for more

EXPAND again to view the related term. → ?e e3

Ref  Items Type  RT  Index-term
R1   9658      1  *LCD
R2  12400    U   16  LIQUID CRYSTAL DISPLAYS (January
                        1981)

Enter P or PAGE for more
    
```

**Common Thesaurus Terms**

Type of Term	Scope Note Definition
F	Do not use, not the preferred term
U	Preferred term
NT or N	Narrower terms
BT or B	Broader terms
TT or T	Top terms
RT or R	Related terms
O	Old terms
Reference Terms	
CC	Classification codes
DI	Date of introduction
PT	Prior terms
DT	Entry date

## Using Thesauri (continued)

► **Topic** ◀ Find articles on instrumentation. The topic of instrumentation encompasses many areas. What are some additional terms you might use to retrieve information on this topic?

EXPAND on your subject term, noting the RT (related term) column.

```
?e instrumentation
Ref  Items  RT  Index-term
E1      1      INSTRUMENTARIUM OP 100 PANORAMIC UNIT
E2      3      INSTRUMENTATED
E3  77918  23  *INSTRUMENTATION (January 1969)
E4      1      INSTRUMENTATION & CONTROL
E5      1      INSTRUMENTATION & CONTROL INDUSTRY
E6      1      INSTRUMENTATION ABNORMALITIES
E7      2      INSTRUMENTATION ACCESS
E8      5      INSTRUMENTATION ACCURACY
E9      1      INSTRUMENTATION ACTIVITIES
. . . .
Enter P or PAGE for more
```

EXPAND on the E number containing the related term.

```
?e e3
Ref  Items Type  RT  Index-term
R1  77918      23  *INSTRUMENTATION (January 1969)
R2  72410  F      3  APPARATUS
R3  6185   N     22  AEROSPACE INSTRUMENTATION (January
    1969)
R4  19552  N     32  COMPUTERISED INSTRUMENTATION (January
    1977)
R5  3288   N     12  DIGITAL INSTRUMENTATION (January
    1969)
R6  3691   N     29  DISPLAY INSTRUMENTATION (January
    1977)
R7  64663  N     45  INSTRUMENTS (January 1969)
R8  619    N     11  NUCLEAR INSTRUMENTATION (January
    1969)
R9  4806   N     16  SIGNAL PROCESSING EQUIPMENT (January
    1985)
R10 457    R      5  INSTRUMENT TRANSFORMERS (January
    1991)
R11 625    R      5  INSTRUMENTATION AMPLIFIERS (January
    1985)
. . . .
Enter P or PAGE for more
```

EXPAND on the R number to see more related terms. Note that you now have many more possible search terms.

```
?e r7
Ref  Items Type  RT  Index-term
R1  64663      45  *INSTRUMENTS (January 1969)
R2  72410  F      3  APPARATUS
R3  539    F      1  MEASURING INSTRUMENTS
R4  77918  T     23  INSTRUMENTATION (January 1969)
R5  9553   N     14  ASTRONOMICAL INSTRUMENTS (January
    1969)
R6  5874   N      8  BALANCES (January 1969)
```

<b>Tip:</b> To find databases with online thesauri: BEGIN 415 SELECT SF=online thesaurus and robotics TYPE S1/6/ALL NOHEADER	BEGIN in the Bluesheets database SET FILES to online thesaurus and add search term(s) TYPE out titles with NOHEADER for continuous listing
---	--

**Tip:** Use the command **HELP THESAURI** to obtain information on how to view a thesaurus online and a list of the databases that contain an online thesaurus.

## Method 2: Using the EXPLODE Command

The EXPLODE feature is designed to take advantage of the hierarchical organization of online thesauri. It speeds retrieval by automatically selecting a term plus narrower related terms. Results vary depending on the type of thesaurus in the database. To EXPLODE a term, SELECT the term with an ending exclamation point: SELECT FUEL!

Dialog thesauri are constructed in two forms.

1. In one form, using the EXPLODE feature will retrieve all of the narrower terms for all hierarchies.
2. In the other form, EXPLODE retrieves only the narrower terms immediately below the descriptor. It works this way because the thesaurus does not group all hierarchies under one descriptor, but rather retains levels of hierarchies, all of which may have narrower terms. This is the type of thesaurus available in Inspec (File 2).

The EXPLODE feature works equally well with both types of thesauri, but you need to be aware of which thesaurus type you are EXPLODing from, and then review your results accordingly.

In these databases	EXPLODE retrieves...
GEOREF (File 89)	All levels of narrower terms
Energy Science and Technology (File 103)	
Inspec (File 2,3,4)	Only the next level of narrower terms
Metadex (File 32)	
Engineered Materials Abstracts (File 293)	

```

?b 4

File 4:INSPEC 1983-2009/Apr W1
      (c) 2009 Institution of Electrical Engineers

Set  Items  Description
---  -
?e liquid crystals
Ref  Items  RT  Index-term
E1      1      LIQUID CRYSTALLOGRAPHIC METHOD
E2      1      LIQUID CRYSTALLOGRAPHIC X-RAY METHOD
E3      8242  26 *LIQUID CRYSTALS (January 1969)
E4      1      LIQUID CRYSTALS ADDITIVE
E5      1      LIQUID CRYSTALS ADDITIVES
E6      1      LIQUID CRYSTALS ALIGN LIQUID CRYSTALS
. . . .
Enter P or PAGE for more

?s e3
S1      8242  'LIQUID CRYSTALS' (January 1969)

?e e3
Ref  Items  Type  RT  Index-term
R1      8242      R  26 *LIQUID CRYSTALS (January 1969)
R2      34      F  1  MESOMORPHIC STATE
R3      38247  T  12 FLUIDS (January 1969)
R4      50417  B  17 LIQUIDS (January 1969)
R5      1080  N  11 ANTIFERROELECTRIC LIQUID CRYSTALS
      (January 1993)
R6      2725  N  6  CHOLESTERIC LIQUID CRYSTALS (January
      1977)
. . . .
R13     204292  R  24 CRYSTALS (January 1969)
R14     1411  R  8  DISCLINATIONS (January 1974)
R15     418  R  5  FLEXOELECTRICITY (January 1979)
. . . .

Enter P or PAGE for more

?p

Ref  Items  Type  RT  Index-term
R26  44387  R  118 CC=E1710 Engineering materials
R27  1120  R  39  CC=E3644N Optoelectronics
      manufacturing

Enter P or PAGE for more

?s liquid crystals!
S2      37226  LIQUID CRYSTALS! (January 1969)

```

**EXPAND** on the keyword(s) of interest.

**EXPAND** on the E number to see the related terms.

Page down to see more of the related terms.

To avoid having to **EXPAND**, the **EXPLODE** command automatically retrieves the next level of narrower terms in Inspec.

### Method 3: Using the RANK Command

One way to obtain a statistical analysis identifying top players is to use the RANK command. Using RANK, the Dialog system extracts terms from a specified field and lists them in RANKed order. The term that appears most frequently is listed first, followed by the other terms, in descending order of frequency.

To use this command, enter RANK and the desired field(s) (e.g., RANK DE or RANK CS). Each ranked term is assigned a "rank number" that can be used to save a term for later use or to display desired records while in the RANK menu. RANK can be used in OneSearch or in single databases.

The RANK command works in most phrase-indexed Additional Index fields, most numeric Additional Index fields, and the phrase-indexed Descriptor (DE) and Identifier (ID) Basic Index fields.

Referring to online or print thesauri is a good way to become familiar with the terminology used in an area of research. In this example, we'll illustrate a useful technique for determining which descriptors or identifiers are used most frequently to describe the topic you are researching. In the example below, we have selected the acronym RGB--not knowing if it's a proper descriptor or not. Using the RANK command, we can analyze the set to see how frequently the term appears in the Descriptor (DE) or Identifier (ID) field.

**Tip:** Enter HELP RANK online for additional information on RANK.

#### ► Topic ◀ What terms are used most frequently when searching for medical imaging and rbgs?

##### Command Summary

B 6,8,4

S medical()imag? and  
rgb/ti,de,id  
Rd  
Rank de  
View 4/9/1

BEGIN in the "Big  
Three" databases  
which cover all aspects  
of engineering.

SELECT keyword(s)  
and the acronym  
restricted to titles,  
descriptors and  
identifiers.

Use the REMOVE  
DUPLICATES (RD)  
command to avoid  
paying twice for the  
same record.

RANK by descriptor  
(DE) to retrieve a  
listing of keywords  
mentioned in the  
descriptor field for your  
search terms.

```
?b 6,8,4
SYSTEM:OS - DIALOG OneSearch
File 6:NTIS 1964-2009/Apr W2
(c) 2009 NTIS, Intl Cpyrght All Rights Res
File 8:EI Compendex(R) 1884-2009/Apr W1
(c) 2009 Elsevier Eng. Info. Inc.
File 4:INSPEC 1983-2009/Apr W1
(c) 2009 Institution of Electrical Engineers

Set Items Description
--- ----
?s medical()imag? and rgb/ti,de,id
342975 MEDICAL
1296011 IMAG?
102080 MEDICAL(W)IMAG?
3487 RGB/TI,DE,ID
S1 133 MEDICAL()IMAG? AND RGB/TI,DE,ID

?rd
S2 130 RD (unique items)

?. rank de
Started processing RANK
Processing 100 of 130 records
Completed Ranking 130 records
DIALOG RANK Results
-----
RANK: S2/1-130 Field: /DE File(s): 6,8,4
(Rank fields found in 130 records -- 325 unique terms) Page 1 of
41
```

Page down to see  
more RANKed terms.

```

RANK No.  Items  Term
-----  -
      1      105  MEDICAL IMAGE PROCESSING
      2       75  IMAGE COLOUR ANALYSIS
      3       55  IMAGE SEGMENTATION
      4       28  SKIN
      5       23  BIOMEDICAL OPTICAL IMAGING
      6       23  FEATURE EXTRACTION
      7       20  CANCER
      8       18  IMAGE CLASSIFICATION
P = next page      Pn = Jump to page n
P- = previous page M = More Options      Exit = Leave RANK
To view records from RANK, enter VIEW followed by RANK number,
format, and item(s) to display, e.g., VIEW 2/9/ALL.
Enter desired option(s) or enter RANK number(s) to save terms.

```

```

?. P
DIALOG RANK Results
-----
RANK: S2/1-130  Field: /DE  File(s): 6,8,4
(Rank fields found in 130 records -- 325 unique terms) Page 2 of
41

```

```

RANK No.  Items  Term
-----  -
      9      13  CELLULAR BIOPHYSICS
     10      12  IMAGE ENHANCEMENT
     11      11  BIOLOGICAL TISSUES
     12      10  IMAGE RECONSTRUCTION
     13      10  MEDICAL IMAGING
     14       9  BIOLOGICAL ORGANS
     15       9  BIOMEDICAL MEASUREMENT
     16       9  IMAGE PROCESSING

```

```

P = next page      Pn = Jump to page n
P- = previous page M = More Options      Exit = Leave RANK
To view records from RANK, enter VIEW followed by RANK number,
format, and item(s) to display, e.g., VIEW 2/9/ALL.
Enter desired option(s) or enter RANK number(s) to save terms.

```

You can VIEW records  
from within the RANK  
menu.

```

?. view 16/9/1
>>>Resulting set contains 9 record(s) for 7 items

--RANK 16 ITEM 1 --

1209849530      E.I. COMPENDEX No: 20090111841236
A colour space selection scheme dedicated to information
retrieval tasks
Issue Title: Pattern Recognition in Information Systems -
Proceedings of the 8th International Workshop on Pattern
Recognition in Information
Systems, PRIS 2008; In Conjunction with ICEIS 2008
Raveaux, Romain; Burie, Jean-Christophe; Ogier, Jean-Marc
Corresp. Author/Affil: Raveaux, R.: L3I Laboratory, University
of La Rochelle, France
Corresp. Author email: Romain.Raveaux01@univ-lr.fr
Author email: Jean-Christophe.Burie@univ-lr.fr;
Jean-Marc.Ogier@univ-lr.fr
Conference Title: 8th International Workshop on Pattern
Recognition in Information Systems, PRIS 2008; In Conjunction with
ICEIS 2008
Conference Location: Barcelona Spain  Conference Date:
20080612-20080616
E.I. Conference No.: 74924

```

Notice that this record  
is a conference paper  
from the conference  
proceeding.

Pattern Recognition in Information Systems - Proceedings of the 8<sup>th</sup> International Workshop on Pattern Recognition in Information Systems, PRIS 2008; In Conjunction with ICEIS 2008 ( Proc. Int. Workshop Pattern Recogn. Inf. Syst. - PRIS; In Conjunction ICEIS ) (United States) 2008,(123-134)

Publication Date: 20081201

Publisher: Inst. for Syst. and Technol. of Inf. Control and Commun.

ISBN: 9789898111425

Document Type: Conference Paper; Conference Proceeding Record Type:

Abstract

Language: English Summary Language: English

Number of References: 15

The choice of a relevant colour space is a crucial step when dealing with image processing tasks (segmentation, graphic recognition...). From this fact, we address in a generic way the following question: What is the best representation space for a computational task on a given image? In this article, a colour space selection system is proposed. From a **RGB image**, each pixel is projected into a vector composed of 25 colour primaries. This vector is then reduced to a Hybrid Colour Space made up of the three most significant colour primaries. Hence, the paradigm is based on two principles, feature selection methods and the assessment of a representation model. The quality of a colour space is evaluated according to its capability to make colour homogenous and consequently to increase the data separability. Our framework brings an answer about the choice of a meaningful representation space dedicated to image processing applications which rely on colour information. Standard colour spaces are not well designed to process specific images (ie. Medical images, image of documents) so a real need has come up for a dedicated colour model.

Descriptors: Color; Digital image storage; Evolutionary algorithms; Image enhancement; **Image processing**; Imaging systems; Information services; Information systems; Optical properties; Pattern recognition; Technical presentations; Vectors; \*Pattern recognition systems

Identifiers: Colour informations; Colour models; Colour spaces; Computational tasks; Feature selection methods; Given images; Graphic recognitions; Image processing applications; Medical images; Representation models; Representation spaces; **RGB images**; Selection schemes; Selection systems

Classification Codes:

751.1 (Acoustic Waves)  
 901.2 (Education)  
 903.2 (Information Dissemination)  
 903.3 (Information Retrieval & Use)  
 921.1 (Algebra)  
 903.4 (Information Services)  
 741.3 (Optical Devices & Systems)  
 722.1 (Data Storage, Equipment & Techniques)  
 722.4 (Digital Computers & Systems)  
 723.2 (Data Processing)  
 741.1 (Light & Optics)  
 723.5 (Computer Applications)  
 746 (Imaging Techniques)  
 921 (Applied Mathematics)  
 723 (Computer Software, Data Handling & Applications)  
 716 (Electronic Equipment, Radar, Radio & Television)  
 741 (Light, Optics & Optical Devices)

Descriptors and identifiers provide additional keywords for this topic.

You can also search on Classification Codes to retrieve a specific category of information.

## Summary

### Prepare to Search

- Consider conducting a "reference interview" with yourself (or with your client) before going online.
- Use a search request form to get a complete picture of the search request.

### Use Online and Printed Thesauri to Translate Terminology

- **Method 1:** Refer to online (or print) thesauri to become familiar with the terminology used in an area of research.
  - Online, EXPAND on a term; then EXPAND on any related terms.  
**EXPAND internet**  
**EXPAND E3**
  - Online, EXPAND on terms within parentheses to go directly to a display of related terms:  
**EXPAND (internet)**
- **Method 2:** Use the EXPLODE feature to quickly search on a term and related narrower terms:  
**s internet!**
- **Method 3:** Use the RANK command to verify terms via statistical analysis.
  - RANK on the descriptor field to check how frequently a term appears in that field:  
**RANK DE**
  - SELECT terms directly from the RANKed list to create a SearchSave that contains the most relevant search terms:  
To save term(s), enter rank number(s):  
p = next page m = more options  
p-= previous page EXIT = exit RANK  
**?1,2**
  - You may VIEW records directly from the RANK menu.  
**view 1/6/3**

## Section 2: Choosing a Database

---

In this section you will:

- Identify appropriate databases and database categories for science and technology research
- Use DIALINDEX to isolate databases containing data on your specific subject

### ***Introduction***

There are two basic requirements for effectively using Dialog:

- knowledge of the command language
- selection of the appropriate database

This section addresses the second challenge: *selecting* the proper file or group of files for a given technical literature search. Engineers commonly expect numerical and deterministic results. To avoid possible disappointment, their mindset can be established with a brief description of what the Dialog files really contain. For example, engineers may not know that papers from conferences past are still available! On the other hand, they may not realize that some conference proceedings are never published.

### ***Key Engineering Databases***

The key engineering databases on Dialog cover all aspects of engineering and physical science. Dialog has long been the leader of online physical science bibliographic literature, vital to the world of physical scientists and engineers. Dialog has over 160 scientific databases. Some focus more generally on the field of engineering. These databases and more specialized ones are highlighted, along with specific information they cover and search tips for using them in the Table that follows.

### Engineering Databases

Name (File Number(s))	Start Dates	Updates	Online Thesaurus	Search Tips	Content
*Inspec (Files 2,3,4)	1898	Weekly	X	CC=Classification Code PA=Patent Assignee	Contains worldwide literature on physics, electronics and electrical engineering.
*NTIS (File 6)	1964	Weekly		SH=Subject Heading	Contains U.S. government sponsored research, development, and engineering.
*Ei Compendex (File 8)	1884	Weekly	X	CC=Classification Code	Contains the world's literature
Mechanical and Transportation Engineering Abstracts (File 14)	1966	Monthly	X	SC=Section Class Code	Indexes articles on all aspects of mechanical, production engineering and engineering management.
World Surface Coatings Abstracts (File 31)	1976	Monthly		Section Code or Heading. Consider British spellings of MAPable fields: CO,PA, PN, SY, TN	Contains comprehensive coverage of paints, coatings, pigments, inks and adhesives.
METADEX (File 32)	1966	Monthly	X	SH=Subject Heading	Covers international literature on the science and practice of metallurgy.
Aluminum Industry Abstracts (File 33)	1972	Monthly		CC=Classification Code SH=Subject Heading	Covers the world's technical literature on aluminum from ore processing to end uses.
Transportation Research (TRIS) (File 63)	1968	Monthly		Use RANK to find organizations	Includes regulations & legislation, energy, environmental & maintenance technology, operations on air, highway, rail, & maritime transport, mass transit and other modes.
Environmental Engineering Abstracts (File 64)	1990	Monthly		CL=Conference Location BN=ISBN # CT=Conf. Title	Contains technical papers on design, materials, and propulsion of automobiles and other self-propelled vehicles.

\*All-purpose, comprehensive major databases covering engineering and technical information.

Inside Conferences (File 65)	1993	Daily		CL=Conference Location; CT=Conference Title	Contains details of all papers given at every congress, symposium, conference, exposition, workshop, and meeting from the British Library Document Supply Centre.
TULSA Petroleum Abstracts (File 87)	1965	Weekly		CS=Corporate Source DT=Document Type BN=ISBN #	Contains references to worldwide technical literature related to oil and gas exploration and production.
HIS International Standards & Specifications (File 92)	1997 Historical govt docs	Closed in 1999		CS=Corporate Source DN=Document #	Contains references to industry standards and military and federal specifications and standards covering all aspects of engineering, and related industries .
FLUIDEX (File 96)	1974	Monthly	SH=Section Heading	SH=Section Heading BN=ISBN # PN=Patent #	Covers fluid engineering from theoretical research to the latest technology and applications.
Wilson Applied Science & Technology Abstracts (File 99)	1983	Monthly		GN=Geographic Name SN=ISSN # NM=Named Person	Contains scientific and technical publications on all areas of science, technology, and engineering.
Energy Science and Technology (File 103)	1974	Every two weeks	X	RN=Report # GL=Geographic Location CL=Conference Location	Contains references on all aspects of energy and related topics.
Aerospace and High Technology Database (File 108)	1962	Monthly	X	SF=Subfile DT=Document Type SH=Section Heading	This database supports basic and applied research in aeronautics, astronautics, and space sciences.
PAPERCHEM (File 240)	1967	Weekly		DT=Document Type PN=Patent #	Covers international patent and journal literature related to pulp and paper technology.
PIRA (File 248)	1975	Weekly		SF=Subfile SH=Section Heading PN=Patent # PA=Patent Assignee	Covers business and technical literature of the pulp and paper and packaging, printing, publishing, imaging industries worldwide.
Engineered Materials Abstracts (File 293)	1986	Monthly	X	CP=Country of Publication SF=Subfile RN=Report #	Covers literature concerning the science of polymers, ceramics, and composite materials.

Chemical Engineering & Biotechnology Abstracts (File 315)	1963	Monthly		SC=Section Code SH=Section Heading	Provides information on industrial practice and theoretical chemical engineering.
RAPRA: Rubber & Plastics (File 323)	1972	Every two weeks		TN=Brand Name	Dedicated to rubber, plastics, adhesives, and polymeric composites.
Ceramic Abstracts (File 335)	1976	Monthly		CT=Conference Title	Contains technical literature worldwide on all aspects of ceramics.
Scisearch: A Cited Reference Database (Files 34, 434)	1974	Weekly		RF=Research Front CR=Cited Ref. CW=Cited Work CA=Cited Author	Provides a multi-disciplinary index to the international literature of science and technology.

## ***Documentation***

### **Bluesheets**

Bluesheets supply much of the information you need when considering a search strategy. Bluesheet information may be found from a variety of sources.

- Bluesheets are online in File 415 at no online connect or record charge.
- Bluesheets are also available online via DialogWeb in the "databases" section.
- Bluesheets are also available on the Dialog corporate Web site.

### **Additional Indexes**

Bluesheets display the Additional Indexes of Dialog databases—special fields for data such as Author Names and Publication Years. These indexes were initially created to provide greater search precision. For example, the instrumentation search in Section 1 could be limited to papers published in English, or by authors from Stanford University. In effect, you can use Additional Indexes as screening devices to eliminate records from a large set.

Beyond this use, the data contained in the Additional Indexes has intrinsic value: if you know exactly what kind of data you want, you can qualify databases for consideration based on whether or not a particular Additional Index is present in the file.

## How Do I...? Series

This series is found at <http://support.dialog.com/howdoi/>. Each application supplies step-by-step instructions depending on the nature of the search (e.g., looking to rank companies or authors; finding conferences dealing with a specific subject, etc.).

### Sample Uses of Data

AU= (Author Name) to identify experts in a given field

CC= (Class Code) to specify general subject area, such as Physics or Computer and Control

CS= (Corporate Source) to identify companies, organizations involved in the technical field of interest

DT= (Document Type) to specify a particular type of publication: journals, papers, reports, etc.

LA= (Language) to ascertain national involvement in the technology

PY= (Publication Year) to track trends over time

SN= (ISSN) to identify professional society journals that provide coverage of the topic

SO= (Source Information)

SP= (Sponsoring Organization) to ascertain professional society sponsorship

TC= (Treatment Code) to specify type or materials (i.e., experimental, theoretical, applications, etc.)

## Individual Exercise

Using the Ei Compendex (File 8) Bluesheet, write search strategies to retrieve the following information:

1. Citations to bibliographic information
2. English language publications
3. Electrical engineering as a descriptor

## Database Selection Tools

### Using DIALINDEX®

Dialog offers two multiple-file search options: DIALINDEX (File 411) and OneSearch. DIALINDEX is an index to all the databases on Dialog. OneSearch allows you to search more than one database at a time.

As a first step in engineering research, use DIALINDEX to scan databases in engineering categories. This will identify the Dialog databases that contain the most information on the subject you are researching. It's a fast, inexpensive way to begin your search.

Then, use OneSearch to conduct a comprehensive search in those files. In OneSearch, you can search up to 60 databases, browse the indexes using the EXPAND command, display records, or use any of the available system features, such as Duplicate Detection, and RANK.

### DIALINDEX Categories

DIALINDEX categories are listed at <http://support.dialog.com/techdocs/dialogonesearch.pdf>. Some engineering DIALINDEX/OneSearch categories are listed below:

AEROSPAC	FOODREGS	PHYSICS
BIOTECH	GEOLOGY	PKGTECH
CHEMENG	GEOPHYS	PLASTICS
CIVILENG	INSTRUM	POLLUT
COMPSCI	MANUFACT	REGS
DEFTECH	MATERIAL	SAFETY
EECOMP	MATH	SCITECH
ELECTRON	MEDENG	SOFTWARE
ENERGREG	METALS	TELECOM
ENERGY	MSDS	TEXTILE
ENG	NUCSCI	TRANSPOR
ENVIRON	PATENTS	WATER
FOODSCI	PETROL	ASTRON

- New DIALINDEX/OneSearch categories are frequently added.  
For a list of new categories type: **?HELP DIALINDEX**
- To see what files are contained in a particular category in DialogClassic Web:  
**?b 411**  
**?sf <category name>**  
**?show files**

**Note:** This command does not work in DialogLink 5.

## Planning your DIALINDEX Search

1. Formulate the search question. For the sample search, we are looking to improve the design of laptop computers. We will use DIALINDEX/OneSearch to retrieve documents that identify opportunities in the design of laptop computers.
2. Plan the search strategy. In DIALINDEX we enter the search strategy in a single search statement.

**Tip:** If you use a combination of OR and AND operators in the search statement, place parentheses around the concepts that are ORed together to specify the order in which commands are executed. e.g., **s (earthquake? or seism? or tremor?) and disaster?**

3. Using the list of engineering categories on the previous page and your *Dialog DataStar Database Catalog*, we choose **EECOMP** (Electrical Engineering and Electronics) as the subject category.

**Tip:** DIALINDEX categories may be "customized" by adding or deleting specific files. For example, MathSci (File 239) is not included in the DIALINDEX category EECOMP but can be added to the search by changing the BEGIN command: **begin eecomp, 239.**

You can also delete files from a category using the NOT operator in your BEGIN statement: **begin eecomp not 25.**

Note the DIALINDEX example on the next page.

► **Topic** ◀ Identify limiting factors to the design of laptop computers.

Command Summary

b 411  
sf <categories,  
databases>  
s <search term(s)>  
save temp  
rank files  
b <databases>  
exs  
rd  
t s2/6/1-5 from each

You can add databases to a category by separating them with commas. You must use a single line command in DIALINDEX.

Remember to use parentheses for ORed terms.

Store the strategy using SAVE TEMP. The system assigns a SearchSave number and stores the strategy for seven days at no charge.

The RANK FILES (RF) command arranges DIALINDEX results in highest to lowest order.

Use the reference numbers (N#) from the RANKed list, or use file numbers to BEGIN in the desired database(s).

```
?b 411
File 411:DIALINDEX(R)
DIALINDEX(R)
(c) 2009 Dialog
*** DIALINDEX search results display in an abbreviated ***
*** format unless you enter the SET DETAIL ON command. ***
?sf eecomp, 239
You have 20 files in your file list.
(To see banners, use SHOW FILES command)
?s (lap()top? or laptop? or note()book? or notebook? or
portable()computer?)/ti,de and (trend? or advance?) and py=2009
Your SELECT statement is:
S (LAP()TOP? OR LAPTOP? OR NOTE()BOOK? OR NOTEBOOK? OR
PORTABLE()COMPUTER?)/TI,DE AND (TREND? OR ADVANCE?) AND PY=2009
Items File
----
2 2: INSPEC_1898-2009/Apr W1
3 8: Ei Compendex(R)_1884-2009/Apr W1
1 34: SciSearch(R) Cited Ref Sci_1990-
2009/Apr W2
1 56: Computer and Information Systems
Abstracts_1966-2009/Apr
2 57: Electronics & Communications
Abstracts_1966-2009/Mar
1 95: TEME-Technology & Management_1989-
2009/Mar W3
1 647: UBM Computer Fulltext_1988-2009/Feb
7 files have one or more items; file list includes 20 files.
?save temp
Temp SearchSave "TI671471359" stored
?rank files
Your last SELECT statement was:
S (LAP()TOP? OR LAPTOP? OR NOTE()BOOK? OR NOTEBOOK? OR PORTABLE
()COMPUTER?)/TI,DE AND (TREND? OR ADVANCE?) AND PY=2009
Ref Items File
---
N1 3 8: Ei Compendex(R)_1884-2009/Apr W1
N2 2 2: INSPEC_1898-2009/Apr W1
N3 2 57: Electronics & Communications
Abstracts_1966-2009/M
N4 1 34: SciSearch(R) Cited Ref Sci_1990-
2009/Apr W2
N5 1 56: Computer and Information Systems
Abstracts_1966-20
N6 1 95: TEME-Technology & Management_1989-
2009/Mar W3
N7 1 647: UBM Computer Fulltext_1988-2009/Feb
N8 0 6: NTIS_1964-2009/Apr W2
N9 0 25: Weldasearch_1966-2009/Mar
```

```

N10          0      36: MetalBase_1965-20090416
          7 files have one or more items; file list includes 20 files.

→ ?b N1:N7

SYSTEM:OS - DIALOG OneSearch
File 8: Ei Compendex(R) 1884-2009/Apr W1
      (c) 2009 Elsevier Eng. Info. Inc.
File 2: INSPEC 1898-2009/Apr W1
      (c) 2009 Institution of Electrical Engineers
. . . .

      Set  Items  Description
      ---  -
      Executing TI671471359
          5310  LAP/TI,DE
          347256 TOP?/TI,DE
             39  LAP/TI,DE(W)TOP?/TI,DE
          6177  LAPTOP?/TI,DE
          54168 NOTE/TI,DE
          16454 BOOK?/TI,DE
             22  NOTE/TI,DE(W)BOOK?/TI,DE
          9076  NOTEBOOK?/TI,DE
          35846 PORTABLE/TI,DE
          2686357 COMPUTER?/TI,DE
             4585 PORTABLE/TI,DE(W)COMPUTER?/TI,DE
          607745 TREND?
          1020844 ADVANCE?
          491929 PY=2009
      S1      11  (LAP()TOP? OR LAPTOP? OR NOTE()BOOK? OR
                  NOTEBOOK? OR PORTABLE()COMPUTER?)/TI,DE
                  AND (TREND? OR ADVANCE?) AND PY=2009

Use REMOVE
DUPLICATES (RD)
to eliminate
duplicate records
from a set.
→ ?rd
      S2      10  RD (unique items)

→ ?t s2/6/1 from each

TYPE out several
records in Format 6
using FROM EACH
to see the first record
from each database.

The titles of these
articles point to
some of the issues
facing laptop
computer makers.

2/6/1 (Item 1 from file: 8)
DIALOG(R)File 8: Ei Compendex(R)
(c) 2009 Elsevier Eng. Info. Inc. All rights reserved.

1209983815      E.I. COMPENDEX No: 20091311987248
Low cost, portable, fast multiparameter data acquisition system
for organic transistor odour sensors
  Publication Date: 20090402

2/6/4 (Item 1 from file: 2)
DIALOG(R)File 2: INSPEC
(c) 2009 Institution of Electrical Engineers. All rights reserved.

11474526
Title: The role of laptop as a platform in an outcome-based
learning environment
Publication Date: 2009
  Copyright 2009, The Institution of Engineering and Technology

2/6/6 (Item 1 from file: 57)
DIALOG(R)File 57: Electronics & Communications Abstracts
(c) 2009 CSA. All rights reserved.

```

```

0000729157      IP Accession No: 200904-90-0027357
Netbooks, smart phones' Will the twain meet?

Publication Date: 2009

2/6/8 (Item 1 from file: 34)
DIALOG(R)File 34: SciSearch(R) Cited Ref Sci
(c) 2009 The Thomson Corp. All rights reserved.

19053664  Genuine Article#: 427YR  Number of References: 0
The Proadlizer for the Next-Generation Notebook and Desktop PCs  (
ABSTRACT AVAILABLE )
Publication date: 20090300

. . .

```

## EXPANDING in DIALINDEX

You can use the EXPAND command in DIALINDEX (File 411) with individual databases and categories. No E numbers are shown in the EXPAND display, because they cannot be SELECTed in File 411. By using the SET DETAIL command, you obtain a listing of the number of records and the databases from which they can be retrieved.

► **Topic** ◀ Find additional terms which might be used in a search on image segmentation.

### Command Summary

b 411  
set files instrum  
e image segmentation  
s image segmentation  
algorithm?  
save temp instru

BEGIN in DIALINDEX  
(File 411) for cross-file  
searching.

Use the SET FILES  
command to identify  
the appropriate  
category(s).

SET DETAIL ON to  
view the number of  
records and the file(s)  
from which the records  
can be retrieved.

EXPAND on the term  
of interest.

```

?b 411
File 411:DIALINDEX(R)
DIALINDEX(R)
(c) 2009 Dialog
*** DIALINDEX search results display in an abbreviated ***
*** format unless you enter the SET DETAIL ON command. ***
?set files instrum
You have 13 files in your file list.
(To see banners, use SHOW FILES command)
?set detail on
DETAIL set on
?expand image segmentation
File      Items Total      RT      Index-term
          2          1          IMAGE SEGMENTAION
          2          1          IMAGE SEGMENTATIO
. . . .
          57         1111          IMAGE SEGMENTATION
          61         266          IMAGE SEGMENTATION
          95        6499          IMAGE SEGMENTATION
          108       1035          IMAGE SEGMENTATION
          118         9          IMAGE SEGMENTATION
          134         8          IMAGE SEGMENTATION
          136       1458          IMAGE SEGMENTATION
. . . .
          2          168          IMAGE SEGMENTATION
          ALGORITHM
          8          14          IMAGE SEGMENTATION
          ALGORITHM
          56         1          IMAGE SEGMENTATION

```

```

          95      3      ALGORITHM
          136     1      IMAGE SEGMENTATION
          ----- 187      ALGORITHM
                   2      1      IMAGE SEGMENTATION
                   2      1      ALGORITHM ANALYSIS
                   2      1      IMAGE SEGMENTATION
                   2      1      ALGORITHM DESIGN
                   2      1      IMAGE SEGMENTATION
                   2      1      ALGORITHM DEVELOPMENT
                   8      1      IMAGE SEGMENTATION
                   ----- 2      ALGORITHM EVALUATION
                   2      1      IMAGE SEGMENTATION
                   2      1      ALGORITHM PARAMETERS
                   2      61     IMAGE SEGMENTATION
                   8      68     ALGORITHMS
                   136     2      IMAGE SEGMENTATION
                   ----- 131     ALGORITHMS
                   2      1      IMAGE SEGMENTATION
                   2      2      ALGORITHMS DESIGN
                   IMAGE SEGMENTATION ALPHA
                   PLANE
          . . . . .
          ?set detail off
          DETAIL set off

          ?s image segmentation algorithm?

          Your SELECT statement is:
          S IMAGE SEGMENTATION ALGORITHM?

          Items  File
          ----  -
          235   2: INSPEC_1898-2009/Apr W1
          83    8: Ei Compendex(R)_1884-2009/Apr W1
          1     56: Computer and Information Systems
                Abstracts_1966-2009/Apr
          3     95: TEME-Technology & Management_1989-
                2009/Mar W3
          3    136: BioEngineering Abstracts_1966-2007

          5 files have one or more items; file list includes 13 files.

          ?save temp instru
          Temp SearchSave "INSTRU" stored
    
```

SET DETAIL OFF  
so terms are  
retrieved in a  
combined set.



SELECT from the  
additional terms you  
have just viewed.



SAVE TEMP so you  
can execute the  
search in the  
appropriate  
databases. Note  
that you can add a  
name of up to 6  
characters to your



**Summary**

The following commands allow you to scan multiple databases for your search terms, save your search strategy, and execute a search in one or more databases identified in the DIALINDEX search.

Commands	Abbreviation	Description
BEGIN 411	B 411	Connects to File 411
SET FILES	SF	SET FILES <File list> specifies the databases you wish to scan for your search terms. The file list can contain predefined categories, super-categories, file number(s) or a combination.
SELECT	S	SELECT search terms.
SAVE TEMP		Saves the search strategy for seven days at no charge.
RANK FILES*	RF	Displays a list of databases ranked by the number of records retrieved.
BEGIN <files>  BEGIN HITS	B	Begins OneSearch to search multiple databases at one time.  Begins all of the databases with records.
EXECUTE STEPS	EXS	Executes the saved search in the databases identified in the BEGIN command.
REMOVE DUPLICATES	RD	Removes duplicate records from the set.
TYPE s1/6/1-2 FROM EACH	T s1/6/1-2 FROM EACH	Displays records from each database in a multiple file search.

\*These commands are used in DIALINDEX only.

## ***Online Practice***

To practice the search techniques in Sections 1 and 2, complete the following searches online using Dialog's ONTAP databases. These are subsets of the regular files that you can search for free.

1. Use ONTAP DIALINDEX (File 290) to determine the best databases to use to find articles on transmission control protocol, also known as TCP.
2. Use the Online Thesaurus in the ONTAP Inspec (File 213) to find additional descriptors for the concept mobile communication. Restrict the search to journal articles.



## Section 3: The Engineering Process

In this section you will:

- Review the stages in the Engineering Process
- Explore applications as part of each stage in the process
- Use Dialog search features

### Phase I: Preliminary Design Stage

#### The Feasibility Process

**Step 1:** During the Preliminary Design Stage, the engineer tries to determine which of several alternatives is the best solution to the problem.

Important literature for emerging technology includes dissertations, conference papers, and technical reports. Searching the current technical literature for recent developments with a "300 millimeter" wafer provides us with many challenges. Is it 300mm or 300 millimeters? Remember, too, the British suffix is -re or millimetre.

► **Topic** ◀ Locate the current technical literature for recent developments with a "300 millimeter" wafer.

Command Summary

B 4  
S 300()(mil? or mm?)  
(2n)wafer?  
T s1/6/1-10  
T s1/9/1

BEGIN Inspec (File 4)  
to search the most  
current Inspec file.

SELECT search terms  
using alternate forms  
for the word millimeter.

TYPE out titles of  
records to see the  
latest developments for  
the three millimeter  
wafer.

```
?b 4
File 4:INSPEC 1983-2009/Apr W1
(c) 2009 Institution of Electrical Engineers

Set Items Description
--- ----
?select 300()(mil? or mm?) (2n)wafer?
      135406 300
      207558 MIL?
      202884 MM?
      63468 WAFER?
S1      750 300()(MIL? OR MM?) (2N)WAFER?

?t s1/6/1-10
1/6/1
DIALOG(R)File 4: INSPEC
(c) 2009 Institution of Electrical Engineers. All rights reserved.

11523397
Title: Mathematical modeling and analysis of double-sided
```

This record provides information on the 300 mm.

**polishing process for 300 mm silicon wafers**

**Publication Date:** June 2008

Copyright 2009, The Institution of Engineering and Technology

1/6/2

DIALOG(R)File 4: INSPEC

(c) 2009 Institution of Electrical Engineers. All rights reserved.

11500593

**Title: A 300-mm wafer-level three-dimensional integration scheme using tungsten through-silicon via and hybrid Cu-adhesive bonding**

**Publication Date:** 2008

Copyright 2009, The Institution of Engineering and Technology

1/6/3

DIALOG(R)File 4: INSPEC

(c) 2009 Institution of Electrical Engineers. All rights reserved.

11483898

**Title: Stress-void nucleation induced by local delaminations at Cu/Ta interfaces**

**Publication Date:** 2008

Copyright 2009, The Institution of Engineering and Technology

1/6/4

DIALOG(R)File 4: INSPEC

(c) 2009 Institution of Electrical Engineers. All rights reserved.

11483852

**Title: Integration of 50 nm half pitch single damascene copper trenches in black diamond/sup (R)/ II by means of double patterning 193 nm immersion lithography on metal hardmask**

**Publication Date:** 2008

Copyright 2009, The Institution of Engineering and Technology

1/6/5

DIALOG(R)File 4: INSPEC

(c) 2009 Institution of Electrical Engineers. All rights reserved.

11441636

**Title: A full factory simulator as a daily decision support tool for 300 mm wafer fabrication productivity**

**Publication Date:** 2008

Copyright 2009, The Institution of Engineering and Technology

. . . . .

TYPE out the complete record using Format 9.

→ ?t s1/9/1

Note this is a conference paper from a conference proceeding.

1/9/5

DIALOG(R)File 4: INSPEC

(c) 2009 Institution of Electrical Engineers. All rights reserved.

11441636

**Title: A full-factory simulator as a daily decision-support tool for 300 mm wafer fabrication productivity**

**Author** Bagchi, S.; Ching-Hua Chen-Ritzo; Shikalgar, S.T.; Toner, M.

**Author Affiliation:** Bus. Analytics & Math. Sci., I.B.M. T. J. Watson Res. Center, Yorktown Heights, NY, USA

**Conference Title:** 2008 Winter Simulation Conference (WSC) p. 2021-9

The DOI identifier lets you obtain the fulltext.

Notice the descriptors and identifiers to provide more search terms for this subject.

**Publisher:** IEEE , Piscataway, NJ, USA  
**Publication Date:** 2008 **Country of Publication:** USA  
**ISBN:** 978-1-4244-2707-9 **Material Identity Number:** YXA9-1900-086  
**U.S. Copyright Clearance Center Code:** 978-1-4244-2708-6/08/\$25.00  
**Conference Title:** 2008 Winter Simulation Conference (WSC)  
**Conference Date:** 7-10 Dec. 2008 **Conference Location:** Austin, TX, USA  
**Item Identifier (DOI):** [10.1109/WSC.2008.4736297](https://doi.org/10.1109/WSC.2008.4736297)

**Language:** English **Document Type:** Conference Paper (PA)  
**Treatment:** Practical (P); Theoretical (T)  
**Abstract:** We describe a discrete event simulator developed for daily prediction of WIP position in an operational **300 mm wafer** fabrication factory to support tactical decision-making. The simulator is distinctive in that its intended prediction horizon is relatively short, on the order of a few days, while its modeling scope is relatively large. The simulation includes over 90% of the wafers being processed in the fab and all process, measurement and testing tools. The model parameters are automatically updated using statistical analyses performed on the historical event logs generated by the factory. This paper describes the simulation model and the parameter estimation methods. A key requirement to support daily and weekly decision-making is good validation results of the simulation against actual fab performance. Therefore, we also present validation results that compare simulated production metrics against those obtained from the actual fab, for fab-wide, process, tool and product specific metrics. ( 10 Refs)

**Subfile:** B C  
**Descriptors:** decision support systems; discrete event simulation; electronic engineering computing; statistical analysis; wafer level packaging  
**Identifiers:** full-factory simulator; daily decision-support tool; wafer fabrication productivity; discrete event simulator; tactical decision-making; intended prediction horizon; statistical analyses; parameter estimation methods  
**Class Codes:** B2570 (Semiconductor integrated circuits); B0170J (Product packaging); B0240Z (Other topics in statistics); C7410D (Electronic engineering computing); C1140Z (Other topics in statistics); C7102 (Decision support systems)  
Copyright 2009, The Institution of Engineering and Technology

► **Topic** ◀ Locate the major players involved in recent developments of the “300 millimeter” wafer.

### Command Summary

B 2,8,32,34,64,108  
current2  
S 300() (mil? or mm?)  
(s)wafer?  
Rank cs

BEGIN in the files that are most specific to R&D. Use CURRENT2 to retrieve the current year plus two years back.

Note: Files 32,64,78,108 are available to corporate customers only.

Note: CURRENT is not supported in DialogLink 5.

SELECT terms appearing in the same subfield using the (S) connector.

RANK the corporate source field to see who is researching in the area of 300 millimeter wafers.

Note the top companies researching in this area.

You can choose RANK numbers to be saved and viewed later in another database, or you can view the items directly from the RANKed list.

```
?b 2,8,32,34,64,108 current2
SYSTEM:OS - DIALOG OneSearch
File 2:INSPEC 1898-2009/Apr W1
(c) 2009 Institution of Electrical Engineers
File 8:EI Compendex(R) 1884-2009/Apr W1
(c) 2009 Elsevier Eng. Info. Inc.
File 32:METADDEX 1966-2009/Mar
(c) 2009 CSA.
File 34:SciSearch(R) Cited Ref Sci 1990-2009/Apr W2
(c) 2009 The Thomson Corp
File 64:ENVIRONMENTAL ENGINEERING ABSTRACTS 1966-2009/MAR
(c) 2009 CSA.
File 108:Aerospace and High Technology Database 1962-2009/Apr
(c) 2009 CSA.
>>>CURRENT2 started

Set Items Description
--- ----
?s 300()(mil? or mm?) (s) wafer?
91130 300
272217 MIL?
212567 MM?
52319 WAFER?
S1 356 300()(MIL? OR MM?) (S) WAFER?

?. rank cs
Completed Ranking 356 records

DIALOG RANK Results
-----
RANK: S1/1-356 Field: CS= File(s): 2,8,32,34,64,108
(Rank fields found in 304 records -- 437 unique terms) Page 1 of 55

RANK No. Items Term
-----
1 5 STMICROELECTRON., CROLLES, FRANCE
2 4 IBM CORP., HOPEWELL JUNCTION, NY, USA
3 4 STMICROELECTRONICS, 850 RUE JEAN MONNET,
38926
4 3 IBM MICROELECTRON., HOPEWELL JUNCTION, NY,
USA
5 3 IBM T. J. WATSON RES. CENTER, YORKTOWN
HEIGHTS
6 3 IMEC, KAPELDREEF 75, B-3001 LEUVEN,
BELGIUM
7 3 ULTRATECH, INC., SAN JOSE, CA, USA
. . . .

P = next page Pn = Jump to page n
P- = previous page M = More Options Exit = Leave RANK
To view records from RANK, enter VIEW followed by RANK number,
format, and item(s) to display, e.g., VIEW 2/9/ALL.
```

For a broader search...

B eng current2  
S 300()(mil? or mm?) (s) wafer?  
Rank cs

Conference literature is a rich source of new and emerging technology. State-of-the-art technology may be found in conference literature much sooner than journal literature. The professional society conferences provide a platform for quicker dissemination of ideas. Journals are much slower to report literature than conferences and reports. It takes longer for literature to appear in scholarly journals due to a number of reasons, such as the lengthy peer review process.

► **Topic** ◀ Find conference papers on the topic of pattern recognition and simulation.

#### Command Summary

B 411  
Sf eng  
S dt=conference? and  
Pattern()recognition  
and  
Simulation?  
Rank files  
Save temp conf  
B n1:n6  
Exs  
S s1 and py=2009  
Rd  
S s3 and la=eng?  
T s4/3,k/1 from each  
B  
Exs  
ldo

BEGIN using  
DIALINDEX, File 411.  
Remember you can  
use a semicolon to  
stack commands.

SELECT DT= to  
retrieve conference  
proceedings on the  
topic of interest.

```
?b 411
File 411:DIALINDEX(R)

DIALINDEX(R)
(c) 2009 Dialog

*** DIALINDEX search results display in an abbreviated ***
*** format unless you enter the SET DETAIL ON command. ***

?sf eng
You have 39 files in your file list.
(To see banners, use SHOW FILES command)

?s dt=conference? and pattern()recognition and simulation?
Your SELECT statement is:
S DT=CONFERENCE? AND PATTERN()RECOGNITION AND SIMULATION?

      Items  File
      ----  ----
      2199   2:  INSPEC_1898-2009/Apr W1
      133    6:  NTIS_1964-2009/Apr W2
      3941   8:  Ei Compendex(R)_1884-2009/Apr W1
      69    14: MECHANICAL AND TRANSPORT ENGINEER
          ABSTRACT_1966-2009/MAR
      5     25: Weldasearch_1966-2009/Mar
      9     32: METADEX_1966-2009/Mar
      3     33: Aluminium Industry Abstracts_1966-
          2009/Mar
      19    36: MetalBase_1965-20090416
      609   56: Computer and Information Systems
          Abstracts_1966-2009/Apr
      137   57: Electronics & Communications
          Abstracts_1966-2009/Mar
      5     60: ANTE: Abstracts in New Tech &
          Engineer_1966-2009/Mar
      21    61: CIVIL ENGINEERING ABSTRACTS._1966-
          2009/MAR
      5     64: ENVIRONMENTAL ENGINEERING
          ABSTRACTS_1966-2009/MAR
      96    65: Inside Conferences_1993-2009/Apr 17
      35    68: Solid State & Superconductivity
          Abstracts_1966-2009/Apr
      159   95: TEME-Technology & Management_1989-
          2009/Mar W3
      1     96: FLUIDEX_1972-2009/Mar
      536  103: Energy SciTec_1974-2009/Apr B1
      572  108: Aerospace and High Technology
          Database_1962-2009/Apr
      1    118: ICONDA-Intl Construction_1976-2009
      4    134: Earthquake Engineering
          Abstracts_1966-2009/Apr
      807  144: Pascal_1973-2009/Apr W1
      4    240: PAPERCHEM_1967-2009/Apr W1
      2    315: ChemEng & Biotec Abs_1970-2009/Mar
```

RANK FILES to  
reorder files with the  
most records at the top  
of the list.

You can personalize  
SAVE TEMP with a  
name of up to six  
characters.

BEGIN the first four  
databases in your  
ranked list by using the  
N numbers as a  
shortcut.

Then EXECUTE  
your Search-Save.  
You can use the  
semicolon to stack  
commands.

Use a date range  
to narrow the  
search.

```

      2  323: RAPRA Rubber & Plastics_1972-2009
      1  335: Ceramic Abstracts/World Ceramics
           Abstracts_1966-2009/Apr

      26 files have one or more items; file list includes 39 files.
      One or more terms were invalid in one file.

?rank files

Your last SELECT statement was:
  S DT=CONFERENCE? AND PATTERN()RECOGNITION AND SIMULATION?

Ref      Items  File
----      -
N1       3941   8: Ei Compendex(R)_1884-2009/Apr W1
N2       2199   2: INSPEC_1898-2009/Apr W1
N3        807  144: Pascal_1973-2009/Apr W1
N4        609   56: Computer and Information Systems
           Abstracts_1966-20
N5        572  108: Aerospace and High Technology
           Database_1962-2009/A
N6        536  103: Energy SciTec_1974-2009/Apr B1
N7        159   95: TEME-Technology & Management_1989-
           2009/Mar W3
N8        137   57: Electronics & Communications
           Abstracts_1966-2009/M
N9        133    6: NTIS_1964-2009/Apr W2
N10       96    65: Inside Conferences_1993-2009/Apr 17

      26 files have one or more items; file list includes 39 files.

      - Enter P or PAGE for more -

?save temp conf
Temp SearchSave "CONF" stored

?b n1:n4
SYSTEM:OS - DIALOG OneSearch
  File 8: Ei Compendex(R) 1884-2009/Apr W1
        (c) 2009 Elsevier Eng. Info. Inc.
  File 2: INSPEC 1898-2009/Apr W1
        (c) 2009 Institution of Electrical Engineers
  File 144: Pascal 1973-2009/Apr W1
        (c) 2009 INIST/CNRS
  File 56: Computer and Information Systems Abstracts 1966-
        2009/Apr (c) 2009 CSA.

      Set  Items  Description
      ---  -
?exs
Executing CONF
      8452100 DT=CONFERENCE?
      844900  PATTERN
      479728  RECOGNITION
      170743  PATTERN(W)RECOGNITION
      2554769 SIMULATION?
      S1    7556  DT=CONFERENCE? AND PATTERN()RECOGNITION
           AND SIMULATION?

?s s1 and py=2008:2009
      7556  S1
      1763298 PY=2008 : PY=2009
      S2    523  S1 AND PY=2008:2009

```

REMOVE  
DUPLICATES to  
avoid paying for the  
same record twice.

Use LA=English  
(ENG?) to limit to  
English language  
records.

TYPE out records  
using Formats 3, K  
to see bibliographic  
information and  
keywords in the  
context of the  
article. Use FROM  
EACH to see  
sample records  
from each  
database.

```
?rd
      S3      463  RD  (unique items)

?s s3 and la=eng?
      463  S3
      34013695  LA=ENG?
      S4      460  S4 AND LA=ENG?

?t s4/3,k/1 from each
4/3,K/1 (Item 1 from file: 8)
DIALOG(R)File 8: Ei Compendex(R)
(c) 2009 Elsevier Eng. Info. Inc. All rights reserved.

1210021246      E.I. COMPENDEX No: 20091512028089
Application of the strain localization CAFE model to investigate
extrusion with various die shapes

  Issue Title: Materials Science and Technology Conference and
Exhibition MS and T'08
Madej, L.; Pietrzyk, M.; Hodgson, P.D.
  Corresp. Author/Affil: Madej, L.: Akademia Gorniczo-Hutnicza UST,
Al. Mickiewicza 30, 30-322, Krakow, Poland
  Conference Title: Materials Science and Technology Conference and
Exhibition, MS and T'08
  Conference Location: Pittsburgh, PA United States   Conference
Date: 20081005-20081009
  E.I. Conference No.: 75829
  Materials Science and Technology Conference and Exhibition, MS
and T'08 ( Mater. Sci. Technol. Conf. Exhib., MST ) ( United
States ) 2008 2/- (867-876)
  Publication Date: 20081201
  Publisher: Materials Science and Technology Conference
  ISBN: 9781605606217
  Document Type: Conference Paper; Conference Proceeding   Record
Type: Abstract
  Language: English   Summary Language: English
  Number of References: 15
  2008
  Document Type: Conference Paper ; Conference Proceeding
  Language: English
  ...objective of the present work. The proposed CAFE approach is
applied in this work to simulation of the extrusion with flat face
and convex dies and to investigate differences in the...
  Descriptors: Cellular automata; Dies; Flow simulation ;
Materials; Metal extrusion; Pattern recognition systems; Shear
bands; *Extrusion dies

4/3,K/369 (Item 1 from file: 2)
DIALOG(R)File 2: INSPEC
(c) 2009 Institution of Electrical Engineers. All rights reserved.

11519936
Title: 2008 10th International Conference on Control, Automation,
Robotics and Vision (ICARCV 2008)
Publisher: IEEE , Piscataway, NJ, USA
Publication Date: 2008   Country of Publication: USA
ISBN: 978-1-4244-2286-9   Material Identity Number: YXA9-1900-
369
U.S. Copyright Clearance Center Code: 08/$25.00
Conference Title: 2008 10th International Conference on Control,
Automation, Robotics and Vision (ICARCV 2008)
```

Conference Date: 17-20 Dec. 2008      Conference Location: Hanoi, Vietnam  
Language: English  
Subfile: C  
Copyright 2009, The Institution of Engineering and Technology  
Document Number:  
Language: English      Document Type: Conference Proceedings (CP)  
Abstract: ...control applications; control engineering education; man-machine interactions; process automation; intelligent automation; factory modeling and simulation ; home, laboratory and service automation; network-based systems; planning, scheduling and coordination; nano-scale automation... ...robotics; mechanism design and applications; image/video analysis; feature extraction, grouping and segmentation; scene analysis; pattern recognition ; learning in vision; human-computer interaction; tracking and surveillance; biometrics; biomedical image analysis; activity/behaviour...  
Identifiers: ... **pattern recognition** ; Astronomical Objects: 2008

4/3,K/437 (Item 1 from file: 144)  
DIALOG(R)File 144: Pascal  
(c) 2009 INIST/CNRS. All rights reserved.  
19043078      PASCAL No.: 09-012229

A novel state feedback control of based on SVR  
Mechatronics, MEMs, and smart materials : 5-6 December 2007, Gifu, Japan  
FAGUANG WANG; SEUNG KYU PARK; MIN CHAN KIM; GUN PYONG KWAK  
SASAKI Minoru, ed; GISANG CHOI SANG, ed; ZUSHU LI, ed; RYOJUN Ikeura, ed; HYUNGKI KIM, ed; FANGZHENG XUE, ed  
Department of Electrical Engineering, Changwon National University, Changwon, Gyeongnam, 641-773, Korea, Republic of; School of Mechatronics Engineering, Changwon National University, Changwon, Gyeongnam, 641-773, Korea, Republic of Gifu University, Japan; Society of photo-optical instrumentation engineers, United States  
ICMIT 2007 (Gifu JPN) 2007  
Journal: Proceedings of SPIE - The International Society for Optical Engineering, 2008, 6794  
(p.1) 67940F.1-67940F.6  
Language: English

Copyright (c) 2009 INIST-CNRS. All rights reserved.  
2008  
Document Type: P (Serial); C ( Conference Proceedings )  
Language: English  
Availability:  
... is one of the methods which can introduce the statistical learning theory for solving the **pattern recognition** problem with small samples and learning problems such as function estimation. The relationships between the...  
... states by using the above relationship and it gives the actual states feedback controller. And simulation results are provided to show the performance of the proposed control method. Finally, the results...

English Descriptors: **Pattern recognition** ; Algorithms; Feedback; Control method; Transfer functions; State feedback; State feedback; Closed loop control; Probability learning...

Some databases are made entirely of conference papers. Searching them is different since they have no document type field.

EXECUTE your SearchSave.

The IDO command lets you determine the number of duplicate records among databases.

TYPE out the conference paper citation of interest.

```
?b 65
File 65:Inside Conferences 1993-2009/Apr 17
(c) 2009 BLDSC all rts. reserv.

Set  Items  Description
---  -
?exs conf
Executing CONF
      6965741  DT=CONFERENCE?
      39957   PATTERN
      50319   RECOGNITION
      23714   PATTERN(W)RECOGNITION
      142814  SIMULATION?
S1    96      DT=CONFERENCE? AND PATTERN()RECOGNITION
      AND SIMULATION?
?ido
S2    8      IDO (duplicates only)
?t s2/5/1
2/5/1
DIALOG(R)File 65: Inside Conferences
(c) 2009 BLDSC all rts. reserv. All rights reserved.

0006341343  Inside Conference Item ID: CN060982921
A Simulation-Based Process Evaluation Approach to Enterprise
Business Process Intelligence
Tan, W.-A.; Tang, A.; Shen, W.-m.
Conference: Intelligent computing; ICIC 2006
LECTURE NOTES IN COMPUTER SCIENCE , 2006; NUMB 4113 P: 953-963
Berlin, Springer, c2006
ISSN: 0302-9743 ISBN: 3540372717
Language: English Document Type: Conference Selected papers
Editor: Huang, De-Shuang; Li, Kang; Irwin, G. W.
Location: Kunming, China
2006; Aug ( 200608 ) ( 200608 )
British Library Item Location: 5180.185000
Descriptors: Computational intelligence; Intelligent control
systems; Signal processing; Pattern recognition systems;
Intelligent computing; ICIC
```

Another important place to obtain literature on emerging technologies is by locating conference papers on similar topics.

► **Topic** ◀ Professor Narayanan gave a paper at the 2007 IEEE Global Telecommunications Conference. He wants to know if other papers besides his own mentioned Internet protocols.

#### Command Summary

```
B 8
S au=narayanan?
and internet
protocols/de
T s1/3,k/1
S cf=71422 and
internet protocols/de
S s2 not s1
T s3/3,k/1
```

BEGIN in Ei Compendex (File 8), a database that contains conference proceedings.

SELECT the author's last name followed by truncation to retrieve all authors named Narayanan and combine the author with the topic. You can also use the EXPAND command and SELECT the author from the EXPAND list.

TYPE out a few records to see the conference number which can be used to find other papers given at the conference.

```
?b 8
File 8: Ei Compendex(R) 1884-2009/Apr W1
(c) 2009 Elsevier Eng. Info. Inc.

Set Items Description
--- ----
?s au=narayanan? and internet protocols/de
S1 1 AU=NARAYANAN? AND INTERNET PROTOCOLS/DE

?t s1/3,k/1
2/3,K/1
DIALOG(R)File 8: Ei Compendex(R)
(c) 2009 Elsevier Eng. Info. Inc. All rights reserved.

0018209482 E.I. COMPENDEX No: 20080811112590
Signaling cost analysis of handoffs in a mixed IPv4/IPv6 mobile environment

Issue Title: IEEE GLOBECOM 2007 - 2007 IEEE Global Telecommunications Conference, Proceedings
Narayanan, Uday; Xie, Jiang
Corresp. Author/Affil: Narayanan, U.: Department of Electrical and Computer Engineering, University of North Carolina, Charlotte
Corresp. Author email: umnaraya@uncc.edu
Author email: jxiel@uncc.edu
Conference Title: 50th Annual IEEE Global Telecommunications Conference, GLOBECOM 2007
Conference Location: Washington, DC United States Conference Date: 20071126-20071130
E.I. Conference No.: 71422
GLOBECOM - IEEE Global Telecommunications Conference ( GLOBECOM IEEE Global Telecommun. Conf. ) ( United States ) 2007 , IEEE 07CH37886C (1792-1796)
Publication Date: 20071201
Publisher: Institute of Electrical and Electronics Engineers Inc.
ISBN: 1424410436; 9781424410439
Item Identifier (DOI): 10.1109/GLOCOM.2007.345
Article Number: 4411255
Document Type: Conference Paper; Conference Proceeding Record Type: Abstract
Treatment: T; (Theoretical)
Language: English Summary Language: English
Number of References: 9
Narayanan, Uday ; Xie, Jiang
Corresp. Author/Affil: Narayanan, U. : Department of Electrical and Computer Engineering, University of North Carolina, Charlotte
Corresp. Author email:
Descriptors: Cost effectiveness; Internet protocols ; Interoperability; Mathematical models; *Wireless networks
Identifiers:
```

Use the CF=field to search the Conference Title field. Note that this field is word-indexed, so proximity connectors must be used to search a phrase, and the phrase must be put in parentheses so that the prefix will be applied to each individual word.

NOT out the paper on Internet protocols by Narayanan you have already viewed.

TYPE out a few records to identify other authors who are also writing about Internet protocols.

```
?s cf=71422 and internet protocols/de
      1009 CF=71422
      9065 INTERNET PROTOCOLS/DE
      S2    43  CF=71422 AND INTERNET PROTOCOLS/DE

?s s2 not s1
      43 S2
      1  S1
      S3  42  S2 NOT S1

?t s4/3,k/1
4/3,K/1
DIALOG(R)File 8: Ei Compendex(R)
(c) 2009 Elsevier Eng. Info. Inc. All rights reserved.

0018210099    E.I. COMPENDEX No: 20080811113207
A mobility management scheme for wireless mesh networks

Issue Title: IEEE GLOBECOM 2007 - 2007 IEEE Global
Telecommunications Conference, Proceedings
Huang, Rongsheng; Zhang, Chi; Fang, Yuguang
Corresp. Author/Affil: Huang, R.: Department of Electrical and
Computer Engineering, University of Florida, Gainesville, FL 32611
Corresp. Author email: rshuang@ufl.edu
Conference Title: 50th Annual IEEE Global Telecommunications
Conference, GLOBECOM 2007
Conference Location: Washington, DC United States    Conference
Date: 20071126-20071130
E.I. Conference No.: 71422
GLOBECOM - IEEE Global Telecommunications Conference ( GLOBECOM
IEEE Global Telecommun. Conf. ) ( United States ) 2007 , IEEE
07CH37886C (5092-5096)
Publication Date: 20071201
Publisher: Institute of Electrical and Electronics Engineers Inc.
ISBN: 1424410436; 9781424410439
Item Identifier (DOI): 10.1109/GLOCOM.2007.965
Article Number: 4411875
Document Type: Conference Paper; Conference Proceeding    Record
Type: Abstract
Treatment: T; (Theoretical)
Language: English    Summary Language: English
Number of References: 14
E.I. Conference No.: 71422
Descriptors: Cost reduction; Internet protocols ; . . . .
```

## Phase I: Preliminary Design Stage

### Ongoing government research, development, test and evaluation

Sometimes you need to look in directory databases that specialize in providing information on the activities of private, public and government research laboratories, institutes or think-tanks. The following directories give you the broadest collection of those facilities around the world.

► **Topic** ◀ Who in the R&D world has expertise in very large scale data compression technologies?

#### Command Summary

B 114,115  
S very()large()scale?  
and data()  
compression?  
T s1/3,k/1  
Rank de cont percent  
<follow RANK menu>  
View 5/ab/1  
Exs  
S s1 and s2  
T s3/5/1

BEGIN in directory  
databases that  
specialize in  
information about  
R&D.

SELECT search terms.

TYPE out records  
using the KWIC format  
to see the kinds of  
activities the research  
center is working on.

```
?b 114,115
SYSTEM:OS - DIALOG OneSearch
  File 114:Encyclopedia of Associations 2008/Aug
              (c) 2008 Gale/Cengage
  File 115:Research Centers & Services 1994-2008/Mar
              (c) 2008 Gale/Cengage

      Set  Items  Description
      ---  ----  -
?s very()large()scale? and data() compression?
              200  VERY
              1406 LARGE
              896  SCALE?
              71  VERY(W)LARGE(W)SCALE?
              3705 DATA
              71  COMPRESSION?
              11  DATA(W)COMPRESSION?
      S1      3  VERY()LARGE()SCALE? AND DATA()
              COMPRESSION?

?t s1/3,k/1
1/3,K/1 (Item 1 from file: 115)
DIALOG(R)File 115: Research Centers & Services
(c) 2008 Gale/Cengage. All rights reserved.

09993067 DIALOG File 115: RESEARCH CENTERS AND SERVICES DIRECTORY

Stanford University
Information Systems Laboratory

Packard Electrical Engineering Bldg. 350 Serra Mall
Stanford, CA 94305-9510 USA
Prof. Abbas El Gamal, Dir.

Phone: (650)723-3473

Research Activities/Research Description
...array processing and adaptive filtering, broadcast and multiple
access communication systems, analog to digital conversion, data
compression , speech coding and recognition, multivariable
systems, identification and digital control, and algorithms and
architecture for very - large - scale integrated circuits.Adaptive
signal processing, pattern recognition, machine learning,
diagnostic medical imaging systems, fourier and...

Descriptors: ...Integrated circuits, Very - large - scale ;
Acronym:
```

RANK the descriptor field to determine the top subjects of interest. CONT provides a continuous display of the output, and percent shows the percentage the terms appear in the records.

Look at the 10 descriptors that appear most often in the records.

Enter a title for your RANKed list.

The VIEW command allows you to view records without leaving the RANK menu. Select the item number of the term you want to view, the part of the record you want to see, in this case the abstract, and the number of records to view.

```

?.rank de cont percent
Started processing RANK
Completed Ranking 3 records
Press ENTER to view the TOP 50 terms
  or enter a number N to view the top N terms
  or >N to view terms with more than N items
  or enter ALL to view all terms

?.10
Enter title for continuous output or press ENTER for current title
option

?.top ten topics
Adding title to results...
TOP TEN TOPICS
-----
RANK: S1/1-3   Field: /DE   File(s): 114,115
(Rank fields found in 3 records -- 28 unique terms)
RANK No.  Items  %Ranked  Term
-----  -
      1      3    100.0%  INTEGRATED CIRCUITS, VERY-LARGE-
                          SCALE
      2      2     66.7%  COMMUNICATION SYSTEMS
      3      2     66.7%  SIGNAL PROCESSING
      4      1     33.3%  BIOMOLECULES
      5      1     33.3%  COMPUTER ARCHITECTURE
      6      1     33.3%  COMPUTER-AIDED DESIGN
      7      1     33.3%  CONTROL SYSTEMS
      8      1     33.3%  DATA PROCESSING
      9      1     33.3%  HUMAN-COMPUTER INTERACTION
     10      1     33.3%  IMAGE PROCESSING
---end of results---

P = next page      Pn = Jump to page n
P- = previous page M = More Options      Exit = Leave RANK
To view records from RANK, enter VIEW followed by RANK number,
format, and item(s) to display, e.g., VIEW 2/9/ALL.
Enter desired option(s) or enter RANK number(s) to save terms.

?. view 1/ab/1

--RANK 1 ITEM 1 --

Organization/Company Description
FOUNDED: 1960. DESCRIPTION: Integral unit of Department of
ElectricalEngineering, Stanford University. STAFF: 15 Research, 10
Visiting Academic, 10 Postdoctoral, 100 Graduate. FINANCIAL
SUPPORT: Parent institution, U.S. government, industry.

Research Activities/Research Description
RESEARCH: Signal processing, information and communication theory,
error control coding, array processing and adaptive filtering,
broadcast and multiple access communication systems, analog to
digital conversion, data compression, speech coding and
recognition, multivariable systems,
identification and digital control, and algorithms and
architecture for very-large-scale integrated circuits. Adaptive
signal processing, pattern recognition, machine learning,
diagnostic medical imaging systems, fourier
and statistical optics, optical data processing and computing.

TOP TEN TOPICS

```

```

-----
RANK: S1/1-3  Field: /DE  File(s): 114,115
(Rank fields found in 3 records--28 unique terms) Page 1 of 4
RANK No.  Items  %Ranked  Term
-----
      1      3      100.0%  INTEGRATED CIRCUITS, VERY-LARGE-
      2      2      66.7%   COMMUNICATION SYSTEMS
      3      2      66.7%   SIGNAL PROCESSING
      4      1      33.3%   BIOMOLECULES
      5      1      33.3%   COMPUTER ARCHITECTURE
      6      1      33.3%   COMPUTER-AIDED DESIGN
      7      1      33.3%   CONTROL SYSTEMS
      8      1      33.3%   DATA PROCESSING

```

P = next page      Pn = Jump to page n  
P- = previous page    M = More Options      Exit = Leave RANK  
To view records from RANK, enter VIEW followed by RANK number,  
format, and item(s) to display, e.g., VIEW 2/9/ALL.  
Enter desired option(s) or enter RANK number(s) to save terms.

? . P

TOP TEN TOPICS

```

-----
RANK: S1/1-3  Field: /DE  File(s): 114,115
(Rank fields found in 3 records -- 28 unique terms) Page 2 of 4
RANK No.  Items  %Ranked  Term
-----
      9      1      33.3%  HUMAN-COMPUTER INTERACTION
      10     1      33.3%  IMAGE PROCESSING
      11     1      33.3%  IMAGING SYSTEMS IN MEDICINE
      12     1      33.3%  INFORMATION RETRIEVAL
      13     1      33.3%  INFORMATION SYSTEMS
      14     1      33.3%  INFORMATION THEORY
      15     1      33.3%  MACHINE VISION
      16     1      33.3%  MICROELECTRONICS

```

Let's look closer at  
Machine Vision, Item  
15 in the RANKed  
list.

P = next page      Pn = Jump to page n  
P- = previous page    M = More Options      Exit = Leave RANK  
To view records from RANK, enter VIEW followed by RANK number,  
format, and item(s) to display, e.g., VIEW 2/9/ALL.  
Enter desired option(s) or enter RANK number(s) to save terms.

? . 15

Save any terms of  
interest.

RANK numbers saved: 15

TOP TEN TOPICS

```

-----
RANK: S1/1-3  Field: /DE  File(s): 114,115
(Rank fields found in 3 records -- 28 unique terms) Page 2 of 4
RANK No.  Items  %Ranked  Term
-----
      9      1      33.3%  HUMAN-COMPUTER INTERACTION
      10     1      33.3%  IMAGE PROCESSING
      11     1      33.3%  IMAGING SYSTEMS IN MEDICINE
      12     1      33.3%  INFORMATION RETRIEVAL
      13     1      33.3%  INFORMATION SYSTEMS
      14     1      33.3%  INFORMATION THEORY
      15     1      33.3%  MACHINE VISION
      16     1      33.3%  MICROELECTRONICS

```

P = next page      Pn = Jump to page n  
P- = previous page    M = More Options      Exit = Leave RANK

EXIT the RANK menu and make sure any items have been saved.

EXECUTE the saved RANKed terms.

Combine the sets with the "very large scale" and the newly selected RANKed term.

TYPE a record to see which universities are researching in this area.

Note that the University of Illinois at Urbana-Champaign is also researching in this area.

To view records from RANK, enter VIEW followed by RANK number, format, and item(s) to display, e.g., VIEW 2/9/ALL.  
Enter desired option(s) or enter RANK number(s) to save terms.

?**.exit**

RANK results will be erased; have you saved all the terms of interest? (YES/NO)

?**y**

Temp SearchSave "TD649" stored  
Creating temporary SearchSave ... TD649  
Enter EXS to execute the SearchSave

?**exs**

Executing TD649  
S2 124 "MACHINE VISION"/DE

?**s s1 and s2**

3 S1  
124 S2  
S3 1 S1 AND S2

?**t s3/9/1**

3/9/1 (Item 1 from file: 115)  
DIALOG(R)File 115: Research Centers & Services  
(c) 2008 Gale/Cengage. All rights reserved.

09984750 **DIALOG File 115: RESEARCH CENTERS AND SERVICES DIRECTORY**  
**Source Book:** Research Centers Directory RCD  
**Internal No.:** 1001617000

**University of Illinois at Urbana-Champaign**  
**Coordinated Science Laboratory (CSL)**

1308 W Main St.  
Urbana, IL 61801-2307 USA  
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**URL:** http://www.csl.uiuc.edu/

**Organization/Company Description**

FOUNDED: 1951. DESCRIPTION: Integral interdisciplinary unit of College of Engineering at University of Illinois at Urbana-Champaign. RESEARCH BUDGET: US\$12,000,000. STAFF: 60 Faculty, 330 Graduate. FINANCIAL SUPPORT: Parent institution, industry, U.S. government, state government.

**Research Activities/Research Description**

RESEARCH: Computers, including applied computation theory, computer architecture, computer vision robotics, fault-tolerant computing, measurements and performance evaluation, parallel computing and parallelizing compilers, and supercomputer hardware and architecture; physical electronics, including electromagnetic communications, microwave acoustics, quantum electronics, radiation and scattering, semiconductor materials and high-speed devices, and surface science and thin-film electronics; systems, including communication systems, computer communication networks, data compression, decision and control, information retrieval,

information theory and coding, linear and nonlinear systems, and signal and image processing; and VLSI circuits, including analog and digital circuits, computer-aided design, simulation and verification, and testing and design for testability.

**Section Heading:** Multidisciplinary Programs ( 16 )

**Descriptors:** Communication systems; Computer architecture; Computer-aided design; Control systems; Human-computer interaction; Image processing; Information systems; Information retrieval; Integrated circuits, Very-large-scale; Machine vision; Microwaves; Parallel processing; . . . .

## Measurement

**Step 2:** The next step in the Preliminary Design Stage is to find Mathematical Models, Simulations, or Algorithms. We will look at models for laptop computers. Databases like Inspec (File 2) and Ei Compendex (File 8) can usually be used. Using a mathematics database such as MathSci (File 239) is also useful for all aspects of mathematics and software engineering.

Dissertations are also rich with new ideas. They may provide insight into new test and evaluation techniques pioneered and practiced by U.S., Canadian and universities outside of North America.

► **Topic** ◀ Locate the development of petrinet mathematics for machine simulation.

### Command Summary

B 35,239  
S (petrinet? or  
petri()net?)/ti,de,id  
S s1 and simulation?  
Sort s2/all/py,d  
T s3/8,k/1-2

SELECT keywords,  
making sure to use all  
forms of the word. Limit  
to the key parts of the  
record: Title,  
Descriptor, and  
Identifier fields.

SORT by publication  
year in descending  
order.

TYPE out records in  
Format 8 to see  
additional keywords  
and using Format K to  
see the keywords in  
the context of the  
record.

?b 35,239

```
SYSTEM:OS - DIALOG OneSearch
  File 35:Dissertation Abs Online 1861-2009/Mar
             (c) 2009 ProQuest Info&Learning
  File 239:Mathsci 1940-2009/May
             (c) 2009 American Mathematical Society
```

```
Set  Items  Description
---  -

```

```
?s (petrinet? or petri()net?)/ti,de,id
>>>Term "ID" is not defined in one or more files
      20  PETRINET?/TI,DE,ID
     2034  PETRI/TI,DE,ID
     73089  NET?/TI,DE,ID
      1947  PETRI/TI,DE,ID(W)NET?/TI,DE,ID
     S1   1960  (PETRINET? OR PETRI()NET?)/TI,DE,ID
```

```
?s s1 and simulation?
      1960  S1
     127730  SIMULATION?
     S2    140  S1 AND SIMULATION?
```

```
?sort s2/all/py,d
     S3    140  Sort S2/ALL/PY,D
```

```
?t s3/8,k/1-2
3/8,K/1 (Item 1 from file: 239)
DIALOG(R)File 239: Mathsci
(c) 2009 American Mathematical Society. All rights reserved.

04184937  MR 2009c#90032
```

First-order hybrid **Petri nets**. An application to distributed manufacturing systems.

2008

Descriptors: \* 90B30 -Operations research, mathematical programming-Operations research and management science-Production models ; 68Q85 -Computer science (For papers involving machine computations and programs in a specific mathematical area, see Section --04 in that area)- Theory of computing-Models and methods for concurrent and distributed computing (process algebras, bisimulation, transition nets, etc.) First-order hybrid Petri nets . An application to distributed manufacturing systems. ...of Distributed Manufacturing Systems (DMS), and some interesting optimization problems are also solved via numerical simulation.'

3/8,K/2 (Item 2 from file: 239)

DIALOG(R)File 239: Mathsci

(c) 2009 American Mathematical Society. All rights reserved.

04132507 MR 2008k#92018

A Petri net approach to the study of persistence in chemical reaction networks.

2007

Descriptors: \* 92C40 -Biology and other natural sciences-Physiological, cellular and medical topics-Biochemistry, molecular biology ; 92D40 -Biology and other natural sciences-Genetics and population dynamics- Ecology; 92E20 -Biology and other natural sciences-Chemistry (For biochemistry, see 92C40)-Classical flows, reactions, etc. (See also 80A30, 80A32)

A Petri net approach to the study of persistence in chemical reaction networks.

Petri net appears here as two words.

## Stage II: Intermediate Design Stage

### Human Aspects

In the Intermediate Design Stage, it is important to look at the human aspects of a technology. In this stage, you may want to consider the design from the point of view of a person's physical and mental well-being and factors such as heat, noise, light, etc.

► **Topic** ◀ Find out what some of the ergonomic considerations are when using the laptop computer.

#### Command Summary

B medeng,eng  
S (laptop? or lap()top?  
or notebook? or  
portable?) and  
computer? and  
ergonomic?  
Ds from each  
Save temp  
B 144  
Exs  
Sort s1/1-5/jn,py  
Type s2/3,k/all

SELECT multiple terms  
for laptop computer.  
Don't forget that laptop  
may be listed as two  
words!

DISPLAY SETS from  
each database to see  
which files provide the  
most records on your  
topic.

```
?b medeng,eng
SYSTEM:OS - DIALOG OneSearch
  File  2:INSPEC 1898-2009/Apr W1
          (c) 2009 Institution of Electrical Engineers
  File  5:Biosis Previews(R) 1926-2009/Apr W2
          (c) 2009 The Thomson Corporation
  File  6:NTIS 1964-2009/Apr W2
          (c) 2009 NTIS, Intl Cpyrght All Rights Res
  File  8:EI Compendex(R) 1884-2009/Apr W2
          (c) 2009 Elsevier Eng. Info. Inc.
  . . . .
  File 248:PIRA 1975-2009/Apr W2
          (c) 2009 Pira International
  File 293:ENGINEERED MATERIALS ABSTRACTS 1966-2009/MAR
          (c) 2009 CSA.
  File 315:ChemEng & Biotec Abs 1970-2009/Mar
          (c) 2009 DECHEMA

      Set  Items  Description
      ---  -
?s (laptop? or lap()top? or notebook? or portable?) and computer?
and ergonomic?
      21439  LAPTOP?
      86950  LAP
      6150919 TOP?
      1192   LAP(W)TOP?
      24839  NOTEBOOK?
      379168 PORTABLE?
      9734839 COMPUTER?
      112922 ERGONOMIC?
S1      847  (LAPTOP? OR LAP()TOP? OR NOTEBOOK? OR
          PORTABLE?) AND COMPUTER? AND ERGONOMIC?

?ds from each

Set  File  Items  Description
   2    134
   5    13
   6     7
   8   109
  34    34
  35     6
  65    13
  72    32
  73    36
  74     0
  92     0
  95    98
 136    17
 144    36
```

SAVE TEMP saves the search strategy for 7 days. Use the semicolon to stack commands. Execute the saved search in your choice of database.

BEGIN File 144, PASCAL that we see has 36 records.

Enter EXS to execute our SearchSave.

SORT the resulting set by journal and publication year from the most recent date.

TYPE Set 2 (S2) using Formats 3,K, which shows the bibliographic information and keywords in the context of the article.

```

      . . . .
      248      14
      293      1
      315      0
      323      2
      335      0
S1      847      (LAPTOP? OR LAP()TOP? OR NOTEBOOK? OR
              PORTABLE?) AND COMPUTER? AND
              ERGONOMIC?
?save temp
Temp SearchSave "TG672137240" stored
?b 144
File 144:Pascal 1973-2009/Apr W3
      (c) 2009 INIST/CNRS
      Set  Items  Description
      ---  ----  -
?exs
Executing TG672453564
      969  LAPTOP?
      3527 LAP
      267690 TOP?
      27  LAP(W)TOP?
      582  NOTEBOOK?
      15937 PORTABLE?
      555962 COMPUTER?
      13036 ERGONOMIC?
S1      36  (LAPTOP? OR LAP()TOP? OR NOTEBOOK? OR
              PORTABLE?) AND COMPUTER? AND ERGONOMIC?
? sort s1/1-5/jn,py
S2      5  Sort S1/1-5/JN,PY
?t s2/3,k/all
2/3,K/1
DIALOG(R)File 144: Pascal
(c) 2009 INIST/CNRS. All rights reserved.
18341190 PASCAL No.: 07-0443753

The effect of six keyboard designs on wrist and forearm postures

REMPEL David; BARR Alan; BRAFMAN David; YOUNG Ed
Ergonomics Program, Department of Medicine, University of
California, San Francisco, CA 94804, United States; Department of
Bioengineering, University of California, Berkeley, United States
Journal: Applied Ergonomics, 2007, 38 (3) 293-298
Language: English
Copyright (c) 2007 INIST-CNRS. All rights reserved.

... a gable angle of 8 Degree and they least preferred the
keyboard on a conventional laptop computer . These
findings may assist in recommendations regarding the selection
of keyboards for computer usage.

English Descriptors: Keyboard; Wrist; Forearm; Posture; Human;
Applied ergonomics ; Input output equipment; Computer hardware
      . . . .

```

► **Topic** ◀ If you are unsure of the terms used to describe the topic of ergonomics, you can use the online thesaurus available in many of the databases in the MEDENG and ENG categories.

Command Summary

B MEDENG, ENG  
E ergonomics  
E E3

```
?b medeng, eng

SYSTEM:OS - DIALOG OneSearch
File 2:INSPEC 1898-2009/Apr W1
(c) 2009 Institution of Electrical Engineers
File 5:Biosis Previews(R) 1926-2009/Apr W2
(c) 2009 The Thomson Corporation
File 6:NTIS 1964-2009/Apr W2
(c) 2009 NTIS, Intl Cpyrght All Rights Res
File 8:EI Compendex(R) 1884-2009/Apr W2
(c) 2009 Elsevier Eng. Info. Inc.

. . . . .

Set Items Description
--- ----
```

EXPAND on the term you want to view in the OneSearch categories and look for any related terms.

```
?e ergonomics

Ref Items RT Index-term
E1 1 ERGONOMICPLATELOADING
E2 1 ERGONOMICRELATED
E3 91833 40 *ERGONOMICS
E4 1 ERGONOMICS (MUSCULOSKELETAL DISEASES,
E5 5 ERGONOMICS (PERIODICAL)
E6 1 ERGONOMICS &
E7 1 ERGONOMICS - ACOUSTICS
E8 2 ERGONOMICS - ANALYSIS
E9 19 ERGONOMICS - APPLICATIONS
E10 1 ERGONOMICS - AUTOMATION
E11 1 ERGONOMICS - COMPUTER AIDED ANALYSIS
E12 2 ERGONOMICS - COMPUTER APPLICATIONS
E13 1 ERGONOMICS - COMPUTER INTERFACES
E14 1 ERGONOMICS - DATABASE SYSTEMS
E15 1 ERGONOMICS - DESIGN
E16 5 ERGONOMICS - INDUSTRIAL APPLICATIONS
E17 1 ERGONOMICS - MANAGEMENT
E18 11 ERGONOMICS - MARKETING
E19 1 ERGONOMICS - MATHEMATICAL MODELS
E20 1 ERGONOMICS - MEASUREMENTS
E21 1 ERGONOMICS - MEDICAL APPLICATIONS
E22 1 ERGONOMICS - OPTIMIZATION
E23 2 ERGONOMICS - RESEARCH
E24 1 ERGONOMICS - STANDARDS
E25 1 ERGONOMICS - VIBRATIONS
```

The RT column indicates related terms. In this example there are 40 related terms.

Enter P or PAGE for more

EXPAND on the E number with the related terms to see more terms for ergonomics.

```
?e e3

Ref Items Type RT Index-term
R1 36052 40 *ERGONOMICS
R2 10721 B 392 BIOMEDICINE
R3 138 S 2 ERGONOMY
R4 30885 F 58 HUMAN ENGINEERING
R5 40380 R 19 CYBERNETICS
R6 20187 R 42 ENVIRONMENTAL ENGINEERING
R7 979 U 34 HUMAN FACTORS
R8 3526 U 13 HUMAN FACTORS ENGINEERING
R9 7318 R 8 JOB ANALYSIS
```

Terms in the Type column include broader (B), narrower (N) and related (R) terms among others.

R10	5441	R	10	MAN MACHINE SYSTEMS
R11	16292	R	13	PHYSIOLOGY
R12	13844	R	13	SYSTEMS ENGINEERING
R13	90	F	1	WORKPLACE DESIGN
R14	7071	N	10	HUMAN COMPUTER INTERACTION
R15	200	N	6	JOB DESIGN
R16	416	N	14	NOISE (WORKING ENVIRONMENT)
R17	515	R	13	ANTHROPOMETRY
R18	5257	R	14	BEHAVIOURAL SCIENCES
R19	4894	R	20	BIOCYBERNETICS
R20	12392	R	18	CYBERNETICS
R21	1061363	R	23	DESIGN
R22	2236	R	19	ENVIRONMENTAL ENGINEERING
R23	34573	R	20	HUMAN FACTORS
R24	9280	R	11	MAN-MACHINE SYSTEMS
R25	2489	R	12	OCCUPATIONAL HEALTH

## Stage III: Testing and Evaluation Stage

Generally speaking, there are two approaches to locating test and evaluation information: the single or multiple database search. The single database approach allows you to take advantage of a database's unique characteristics. Inspec (File 4) is a perfect example of a database with powerful additional indexing that enables you to find technical papers that deal with information on testing results.

► **Topic** ◀ Locate the most current information on the test procedure “fault diagnosis” and telecommunications.

### Command Summary

B 4  
S fault()diagnosis? And  
ud=9999  
Help codes 4  
S s1 and cc=b6  
T s2/3/1

Use UD= for Update  
code to retrieve only  
those records from the  
most recent updating  
of the database.

Using the HELP  
command, you can see  
the class codes  
available in the  
database to help focus  
the search to a specific  
topic.

Note that the coding is  
divided by specific  
subject area, with  
individual topics listed  
for a subject.

```
?b 4
File      4:INSPEC 1983-2009/Apr W1
          (c) 2009 Institution of Electrical Engineers

          Set  Items  Description
          ---  ----  -
?s fault()diagnosis? and ud=9999
          111642  FAULT
          68547   DIAGNOSIS?
          25363   FAULT(W)DIAGNOSIS?
          14006   UD=9999
          S1     71   FAULT()DIAGNOSIS? AND UD=9999

?help codes 4
CODES for INSPEC (File 4)

Classification Codes are available in INSPEC to narrow to a topic
within a subfile. Each subfile (A, Physics; B, Electrical
Engineering and Electronics; C, Computers & Control; D,
Information Technology) has a different classification scheme, but
each scheme is hierarchical. The broadest classification is at
the two digit level, with increasing specificity with additional
digits, e.g.,
CC=B8      Power systems & applications
CC=B8100   Power networks & systems
CC=B8110   Power systems
CC=B8110B  Power system management, operation & economics
Please expand online using the two digit classification in order
to see more details of the classification system used in INSPEC

Section A: Physics

CC=A0      General
CC=A1      The physics of elementary particles & fields
CC=A2      Nuclear physics
CC=A3      Atomic & molecular physics
CC=A4      Classical areas of phenomenology
CC=A5      Fluids, plasmas & electric discharges
CC=A6      Condensed matter: structure, thermal & mechanical
CC=A7      Electron states in condensed matter
CC=A8      Cross-disciplinary physics & related areas of
           science and Technology
CC=A9      Geophysics, astronomy & astrophysics

Section B: Electrical Engineering and Electronics

CC=B0      General topics, engineering mathematics &
           materials science
CC=B1      Circuit theory & circuits
CC=B2      Components, electron devices & materials
```

For this topic we'll focus on communications (B6).

```

CC=B3      Magnetic & superconducting materials & devices
CC=B4      Optical materials & applications, electro-optics
CC=B5      Electromagnetic fields
CC=B6      Communications
CC=B7      Instrumentation & special applications
CC=B8      Power systems & applications

```

Section C: Computers & Control

```

CC=C0      General & management topics
CC=C1      Systems & control theory
CC=C3      Control technology
CC=C4      Numerical analysis & theoretical computer topics
CC=C5      Computer hardware
CC=C6      Computer software
CC=C7      Computer applications

```

Section D: Information Technology

```

CC=D1      General & Management aspects
CC=D2      Applications
CC=D3      General systems & equipment
CC=D4      Office automation - communications
CC=D5      Office automation - computing

```

SELECT the class code for communications to focus fault diagnosis to this area.

```

?s s1 and cc=b6
          71  S1
      1103086  CC=B6
          S2      7  S1 AND CC=B6

```

?t s2/3/1

2/3/1

DIALOG(R)File 4: INSPEC

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11530726

Title: Research on the maintenance support system for radar equipment based on the PHM

Author Wang Hanzhong; Yang Jiangping; Wang Shihua

Author Affiliation: Dept. of Postgrad. Manage., Air Force Radar Acad., Wuhan, China

Journal: Journal of the Academy of Equipment Command & Technology vol.19, no.4 p. 83-6

Publisher: Academy of Equipment Command & Technology ,

Publication Date: Aug. 2008 Country of Publication: China

ISSN: 1673-0127

Material Identity Number: DW34-2008-005

Language: Chinese

Subfile: B

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?t s2/5/1

2/5/1

DIALOG(R)File 4: INSPEC

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11530726

**Title: Research on the maintenance support system for radar equipment based on the PHM**

**Author** Wang Hanzhong; Yang Jiangping; Wang Shihua

**Author Affiliation:** Dept. of Postgrad. Manage., Air Force Radar

Acad., Wuhan, China  
**Journal:** Journal of the Academy of Equipment Command & Technology  
 vol.19, no.4 p. 83-6  
**Publisher:** Academy of Equipment Command & Technology ,  
**Publication Date:** Aug. 2008 **Country of Publication:** China  
**ISSN:** 1673-0127  
**Material Identity Number:** DW34-2008-005

**Language:** Chinese **Document Type:** Journal Paper (JP)  
**Treatment:** Practical (P)  
**Abstract:** In order to overcome the limitation of the traditional maintenance support and adapt to the development of the maintenance support for radar equipment, this article uses the prognostics and health management (PHM) technology to construct a new maintenance support system for modern radar equipment. This system can obviously improve the ability of **fault diagnosis**, reduce maintenance support expense, and effectively forecast the equipment's future status and remanent life-span. ( 6 Refs)  
**Subfile:** B  
**Descriptors:** failure analysis; **fault diagnosis**; maintenance engineering; radar equipment  
**Identifiers:** maintenance support system; radar equipment; prognostics-health management; **fault diagnosis**; remanent life-span  
**Class Codes:** B6320 (**Radar equipment, systems and applications**); B0160 (Plant engineering, maintenance and safety); B0170N (Reliability)  
 Copyright 2009, The Institution of Engineering and Technology

### ► Topic ◀ What is the reliability of Camac Systems?

#### Command Summary

B 411  
 Sf medeng  
 S camac system  
 S camac systems and reliability?  
 Save temp  
 B hits  
 Exs  
 Rd  
 T s2/3,k/all

EXPAND on your search term to see additional search terms related to your topic.

Note: Use SET  
 DETAIL ON to view the list of files and number of records from each file. (See page 27 for an example)

Modify your search strategy using the index term for CAMAC SYSTEMS.

```
?b 411

File 411:DIALINDEX(R)
(c) 2009 Dialog

?sf medeng
You have 26 files in your file list.

?e camac system

Items  Index-term
      1  CAMAC SUBSYSTEM
      1  CAMAC SUBSYSTEMS
     1710 *CAMAC SYSTEM
      1  CAMAC SYSTEM CONFIGURATION
      1  CAMAC SYSTEM CONTROLLER
      1  CAMAC SYSTEM DESIGN
      1  CAMAC SYSTEM EXTENSION
      1  CAMAC SYSTEM FLEXIBILITY
      1  CAMAC SYSTEM SOFTWARE
      83  CAMAC SYSTEMS
      3  CAMAC SYSTEMS: BASIC
      5  CAMAC SYSTEMS: BLOCK TRANSFERS
     11  CAMAC SYSTEMS: CRATE CONTROLLERS
      4  CAMAC SYSTEMS: GLOSSARIES
      . . .

?s camac()systems and reliabil?

Your SELECT statement is:
S CAMAC()SYSTEMS AND RELIABIL?
```

```

          Items  File
          ----  ----
            1    2: INSPEC_1898-2009/Apr W1
            1    6: NTIS_1964-2009/Apr W2
            5    8: Ei Compendex(R)_1884-2009/Apr W2

3 files have one or more items; file list includes 26 files.

SAVE TEMP to save your search strategy for 7 days.
→ ?save temp
Temp SearchSave "TB672138532" stored

BEGIN HITS to search all databases with records identified in DIALINDEX.
→ ?b hits

SYSTEM:OS - DIALOG OneSearch
File 2:INSPEC 1898-2009/Apr W1
      (c) 2009 Institution of Electrical Engineers
File 6:NTIS 1964-2009/Apr W2
      (c) 2009 NTIS, Intl Cpyrght All Rights Res
File 8:Ei Compendex(R) 1884-2009/Apr W2
      (c) 2009 Elsevier Eng. Info. Inc.

Set  Items  Description
---  ----  -
EXECUTE the saved search strategy in the databases that have been identified with records.
→ ?exs
Executing TB672138532
          6155  CAMAC
          4732293 SYSTEMS
            199  CAMAC(W)SYSTEMS
          459166 RELIABIL?
S1       7    CAMAC()SYSTEMS AND RELIABIL?

REMOVE DUPLICATES so that you are charged for only unique records.
→ ?rd
S2       6    RD (unique items)

TYPE out records using the K format to see search terms in the abstract.
→ ?t s2/3,k/all

2/3,K/1 (Item 1 from file: 2)
DIALOG(R)File 2: INSPEC
(c) 2009 Institution of Electrical Engineers. All rights reserved.

04072127  INSPEC Abstract Number: A88030828, C88015429
Title: TFTR CAMAC systems and components
Author Rauch, W.A.; Bergin, W.; Sichta, P.
Author Affiliation: Plasma Phys. Lab., Princeton Univ., NJ, USA
Journal: IEEE Transactions on Nuclear Science vol.NS-34, no.4
p. 970-5
Publication Date: Aug. 1987 Country of Publication: USA
CODEN: IETNAE ISSN: 0018-9499
U.S. Copyright Clearance Center Code: 0018-9499/87/0800-0970$01.00
Conference Title: Fifth Conference on Real-Time Computer
Applications in Nuclear, Particle and Plasma Physics
Conference Sponsor: IEEE; Lawrence Livermore Nat. Lab.; Stanford
Linear Accel. Center
Conference Date: 12-14 May 1987 Conference Location: San
Francisco, CA, USA
Language: English
Subfile: A C
Title: TFTR CAMAC systems and components
Abstract: ...instrumentation, and communication with the central
instrumentation control and data acquisition system. They discuss
CAMAC reliability and calibration, types of modules used,
summarize data acquisition and control points, and describe
various diagnostic maintenance tools used to support and

```

The Dialog eLink lets you check for a PDF document of the article to purchase.

```
troubleshoot typical CAMAC systems on the TFTR.  
Identifiers: ... CAMAC systems ; ... .. reliability ;  
Astronomical Objects:  
Dialog eLink: Check for PDF Download Availability and Purchase
```

## Online Practice

Now, practice the search techniques you just learned in the Stages of the Engineering Process by completing the following exercises online. Use the ONTAP databases to practice for free.

1. Find articles dealing with the use of crash dummies and tests to prevent accidents. Use the RANK DE command to determine appropriate descriptors to broaden your search. Use ONTAP DIALINDEX (File 290) to determine possible databases.
2. Find out what engineers are experimenting with to enhance the computer gaming experience. Use ONTAP DIALINDEX (File 290) to determine possible databases.
3. Use ONTAP DIALINDEX (File 290) to find out how firewalls are protecting corporate networks. Once you have executed the search in the databases, EXPAND DT= to find conferences or conference papers discussing the topic.

## Section 4: Wrap Up

---

This workbook has presented not only the basics of searching Dialog in the technical databases but has shown you features and searches that will help you in all stages of the engineering process.

There are other options to explore.

You can get assistance in selecting databases and/or formulating your search strategy by contacting the Dialog Knowledge Center by telephone at +1 800 3 Dialog (334 2564) in North America, or 00 800 33 Dialog (33 34 2564) outside North America or by email at [customer@dialog.com](mailto:customer@dialog.com) or [www.dialog.com/contacts/webform/](http://www.dialog.com/contacts/webform/).

Here are some other ways to obtain tips and techniques to search the engineering and technical files on Dialog.

- Sign up for an online training session on engineering or technical topics at [support.dialog.com/training](http://support.dialog.com/training)
- Try the online Web-based self-paced course at [http://training.dialog.com/onlinecourses/dclass\\_eng/](http://training.dialog.com/onlinecourses/dclass_eng/)
- Review the [How Do I...?](#) series for Engineering. These short applications take you step-by-step through the most common searches in the technical databases.
- Sign up for the free monthly [Chronolog](#) and quarterly [Training Updates](#). These e-newsletters keep you up to date on new databases, search techniques and tips, free files of the month, new training sessions and documentation and much more.
- Download the free [Dialog Database Selection Guide](#), containing OneSearch and DIALINDEX categories.



# Appendixes

---

## Appendix A: Review of Commands

### Truncation

Open Truncation	S program?	Program Programs Programmable
Restricted Truncation	S program??	Program Programs Programme
	S program? ?	Program Programs
Internal Truncation	S p?rl	Perl purl

### Logical Operators

OR	S internet or intranet	Either term may be present
AND	S spider? and updat?	Both terms must be present
NOT	S architecture not building	Term is excluded

Tip: Other ways to OR words together include: S CS,SP=IEEE

### Proximity Connectors

(w) or ()	S web()tool?	Order imposed with no terms between
(#w)	S web(1w)tool?	Order imposed – may have fewer or same number of intervening terms specified
(n)	S language(n)script?	Terms next to each other but in any order
(#n)	S invest?(3n)return?	Order not important – may have fewer or same number of intervening terms

### Searching on Special Characters—Phrase Indexing

When Dialog phrase-indexes a string of words containing punctuation or special characters, the entire string is indexed as a single “bound phrase.” Phrase-indexing is usually done only for Descriptors and Identifiers in the Basic Index.

**Note:** The Bluesheet should be consulted to determine which fields in a database have been phrase- and/or word-indexed.

Because many special characters (see list below) must be enclosed in quote marks to be searched, it is wise to enter quote marks around any full phrase containing special characters.

Example: 10.6 micron co/sub 2/ laser radiation

Search as: ?select 10.6 micron co2 laser radiation or ?'select 10.6 micron co2 laser radiation'

### Special Characters and Search Terms Requiring Quote Marks

=	(equal sign)	AND
*	(asterisk)	OR
+	(plus sign)	NOT
:	(colon)	FROM
/	(slash)	s1,s2,s3, etc. e1,e2,e3, etc. r1,r2,r3, etc.

**Note:** Single or double quotes may be used.

## **Appendix B: Answers to Online Practice Exercises**

### **Section 2: Individual Exercise** (page 19)

Using the Ei Compendex (File 8) Bluesheet, write the search strategies to retrieve the following information:

1. Citations to biographical material                   ?type s#/3/1
2. English language publications                   ?s s#/la OR s la=english
3. Electrical engineering as a descriptor           ?s electrical engineering/de

### **Section 2: Online Exercise** (page 27)

For the following exercises you will use the ONTAP databases you can use at no charge. These files contain portions of the complete databases.

1. Use DIALINDEX (File 290) to determine the best databases to use to find articles on transmission control protocol, also known as TCP.
  - Begin 290
  - SF 213,208,206
  - Select transmission()control()protocol?
  - Save temp
  - Begin hits
  - Exs
  - Select s1 and s2
  - Type s3/3,k/1-3
2. Use the Online Thesaurus in ONTAP Inspec (File 213) to find additional descriptors for the concept mobile communications. Restrict the search to general review articles (Hint: use the prefix TC=).
  - Begin 213
  - Expand mobile communication
  - Expand E9 (mobile communication systems)
  - Expand R4 (mobile radio systems)
  - Select R1 or R5 or R7
  - Expand TC=general
  - Select E4
  - Select S1 and S2

### **Section 3: Online Exercise** (page 54)

1. Use ONTAP NTIS (File 206) to find articles dealing with the use of crash dummy tests to help prevent accidents. Use the RANK DE command to determine appropriate descriptions to use in your search.
  - Begin 206
  - Select crash(w)dumm?
  - Rank de (follow the RANK menu)
  - 1-11; exit; yes
  - Exs
  - Display sets (DS)
  - S S# and accident()prevent?
2. Use ONTAP Ei Compendex (File 208) to find out how engineers are looking to enhance the computer gaming experience.
  - Begin 208
  - Select (gaming or game?) and enhanc?

3. Use ONTAP DIALINDEX (File 290) to find how firewalls are protecting corporate networks. Once you have executed the search in the databases, narrow the search to conferences or conference papers that discuss this topic. (Hint: EXPAND DT= for document type)

Begin 290

Sf 206,208,213,294

Select firewall and (safe? or secure? or protect?)

Save temp

Begin hits

Exs

Expand dt=conference

S e4 or e5

S s1 and s2