

Ejub Kajan

# Information Technology Encyclopedia and Acronyms



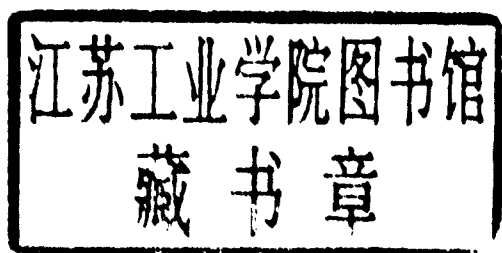
Springer

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# Information Technology Encyclopedia and Acronyms

With 244 Figures



Springer

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# Preface

Or I should say: “An Introduction to a Never Ending Story”. This book contains over 4000 acronyms. By the time this book has reached the audience, there will be many new acronyms around. According to current estimates, as a rule of thumb, 100 acronyms appear every 3 months. From the early computing days, when the first computer was developed (ENIAC), up to today, computer jargon has always been full of acronyms. As a consequence of open systems, the appearance of the Internet and the Web, the increasingly rapid development of new technologies, and specifically the wide integration of computing and telecommunication technologies, the number of such acronyms, neologisms, etc. has risen to tens of thousands. One part of this jargon is still used by a relatively small group of professionals. Examples of such acronyms are pin assignments, names of registers, buffers and other functional units in computer architectures, commands in different operating systems, expressions used in a huge number of programming languages, etc. Thanks to the widespread use of computer and telecommunication technologies, and especially to the Internet and the Web, which have made computers a daily reality for millions of people, the rest of this jargon is of interest to an almost unlimited group of people. Managers, marketing people, salespersons, various IT professionals, end-users, and even scientists and researchers meet mysterious acronyms from time to time.

Sometimes this just awakens curiosity to find out more; at other times, however, this leads to the individual feeling frustrated due to his/her relative lack of knowledge. Often, the only way to satisfy this curiosity or to try to resolve the confusion is to consult the Web. Unfortunately, this takes time and may not produce an adequate answer. Let us suppose, for example, that the reader encounters the two acronyms CAVE and TWAİN, both well-known regular words in the English language. The usual fast Web searching will probably not reveal their IT meanings – TWAİN is “Technology Without An Interesting Name” and CAVE is “CAVE Automated Virtual Environment”. This book explains these acronyms and over 4000 others.

In general, the chosen acronyms are classified into four groups. The most important group gives an up-to-date overview of modern architectures and tech-

nologies in use now or which are going to be in use very soon. Such acronyms require longer explanations than others, and very often they are supported with an appropriate illustration and many cross-references. Examples include AI, ATM, CAE, CAPI, CIM, COM, CORBA, C/S, DNS, DVB, DW, EC, EIS, EJB, FDDI, FTP, FTTC, GPS, GUI, HPCC, HTML, HTTP, I2-DSI, Internet, IP, ISDN, LAN, MIME, NGI, NII, ODBC, OO\*, ORB, OSI, PGP, QoS, RAID, RDBMS, RISC, RP, RTS, SNA, SPI, TAPI, Tcl, TCP/IP, TCSEC, UAA, UIMS, UML, WAP, WWW, X.500 and XML. The second group covers major companies (e.g. AT&T, CDC, HP, IBM, NCR, SCO, SGI, etc.), research organizations (e.g. CERN, MIT, SRI, etc.), and organizations founded as standardization bodies or professional associations involved in specification and/or technology development (e.g. ACM, ANSI, DMTF, IEEE, IETF, ISO, OMG, OSF, W3C, etc.). Relevant journals, conferences and workshops are also covered in this group. In most cases, terms are supported by Web links to the relevant homepages, and many homepage screenshots are also included as figures to show their look and feel etc. Terms of common interest fall into the third group and include file-names, common electronics terms, chat terms, business terms, measurement units, miscellaneous terms, and also some terms which have been in use for a long period of time (e.g. COBOL, FORTRAN, RAM, ROM, OS, etc.). The fourth group covers some historical terms such as ARPANET, CP/M and ENIAC, and interesting acronyms such as S4L, WOMBAT and YANTSWIBTC, etc.

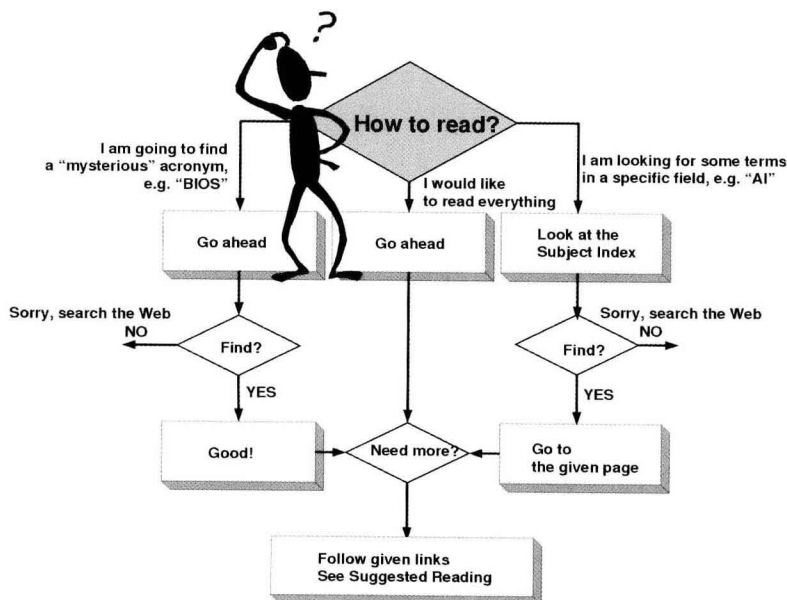
The main body of the book consists of 27 chapters that cover acronyms in alphabetical order from the numbers and symbols chapter (“#”) to the letter “Z”. For every acronym a clear explanation of its origin is given in red. In most cases where the acronym’s pronunciation differs from the spelling, it’s also given (e.g. GUI is pronounced “goo-ee”). The second part of the book has two chapters. The “Suggested Reading” chapter covers many reference books and/or important articles, websites, etc., where the reader may find deeper explanations. The last chapter is the “Subject Index” which covers all the terms explained in the main body of the book, categorizing them (e.g. “OSI Reference Model”, “Conferences & Workshops”, “Software Tools”, “WWW”, etc.) and listing the relevant main-body page numbers. Where an acronym can be classified in several categories, it’s listed in its primary (wider) category.

While writing the book I referred to primary and definitive sources of information as far as possible – e.g. technical reference manuals, academic journal articles, established textbooks, international published standards, the websites of major

corporations etc. However, the experienced reader will not be surprised to hear that this field is characterized by variations in definitions. By its nature the Web encourages the creation and proliferation of neologisms, but much information on the Web is inaccurate, and these errors replicate quickly. On the other hand, if even only a few people agree on and use a new term then it's not my role to tell them that they're "wrong". Thus, obviously, in this book I've tried to strike a balance on this issue, and to present here the terms and definitions that are most widely used, or that are of most benefit to the reader. Consistency in representation was another issue during the project, and while the websites of even major corporations show inconsistencies – one word vs. two, mixed capitalization and hyphenation etc. – I've tried here to accurately represent trademarks, product names and other "official" terms etc. and to consistently represent all others.

## How to read the book

The following figure shows how this book can be read and used. The left branch of the diagram is for readers looking for a particular acronym (e.g. BIOS), while the right branch is useful for readers interested in a particular area (e.g. AI).





## Acknowledgements

Many people helped me during the course of the project. I would like to thank first the people who have been involved in this since the early days. The idea was born seven years ago when my book about open systems appeared and I found that acronyms are very important in the understanding of the subject matter. The next trigger came from Prof. Dr. Živko Tošić who suggested that computer-related acronyms should be covered in a book. My wife, Prof. Dr. Slobodanka Djordjević-Kajan, immediately stood behind the idea, and I found myself deeply involved in the project before it had been formally recognized as a book proposal. So, the project had started.

Here I would like to put on record four names of people from whom I got significant support. First of all, Antonija and Dejan Mitrović gave me much useful advice during all stages of the project, and incredible support. They are definitely responsible for my final decision to make a book proposal. Dr. Antonija Mitrović also submitted several terms (e.g. CAPIT, KERMIT and ITS etc.). Then I met Alfred Hofmann, the Springer-Verlag editor, who immediately reserved the book for Springer-Verlag and put me into the checkmate position. That is not the end of the story, of course. During the summer of 2000 we had dozens of phone conversations and exchanged e-mails with useful advice about how to finish the project. And, thus, the whole summer holiday of 2000 disappeared. My relative, Alija Kajan, who works at CSIRO Australia, also had an important influence on turning the project into a book. Thus, the book grew from an idea, to a proposal, to a project, and finally to a book.

I asked a number of people to offer independent opinions on the book. Most reviewed a chapter or two, and they give their contributions in the section "First Impressions of Early Readers". These contributions by Phil Carroll, David Duce, Phil Ho, Bob Hopgood, Colin Jacka, Dejan Mitrović, J.J. O'Reilly, Rade Petrović, Vladimir Tošić, Živko Tošić, Ivan Veselinović and Aco Vidović were of specific and valuable importance – they gave me additional confidence in the project.

When I requested permission to use copyrighted materials in the book, such as screenshots of homepages etc., I was pleasantly surprised by the great efficiency and kindness shown. I'd like to thank, in alphabetical order of affiliation, Emilie David and Nan Broadbent (AAAS), Stacy Leistner (ANSI), Elizabeth Compton (AOL), Tina Geist (ASCILITE), Michael Clark (CDT), Renilde Vanden

Broeck (CERN), Julia O'Brien and Heather Harvey (DISA), Prof. Phil Willis (EG), Dr. Jason Leigh (EVL), Anke Varcin (ISO), Kara Herzog (MAPICS), Carol de Groot (TERENA), Dr. Hendrik Berndt (TINAC) and Jami Heldt (YAHOO! Inc.).

Finally, in the production stage, the Springer-Verlag professionals did their job just fine. From the technical point of view, the whole project was led by Ulrike Stricker, who is also responsible for the modern and nice layout of the book. She was working with me all the time, almost day by day, until the book was finished. Copyediting was done by Ronan Nugent, who did an excellent job, and he also contributed some terms and finetuned certain entries etc. I have to express especial thanks to Ulrike and Ronan as they gave me additional inspiration during the final stages of the project.

## Trademarks

Many trademarks are mentioned in the book. Unfortunately, a full list of these would be unsuitable here – it would be too long, and there is the possibility that some would be unintentionally omitted. I believe that the book will be useful for readers who want to find out about products they require and vendors who can satisfy these requirements. Thus, I would like to list here just those trademarks closely related to the tools used in the manuscript preparation and/or which appear in certain figures (all material was prepared with the required permission from and/or courtesy of the respective owners, and taking EULAs into account etc.): AcuBench, ACUCOBOL and AcuODBC are trademarks of Acucorp; Adobe Acrobat Reader and Adobe Photoshop are trademarks of Adobe; Netscape 6 was used for screenshots of webpages and it's a trademark of Netscape Communications Corporation; the screenshot illustrations were made using HiJaak PRO, a trademark of Quarterdeck; CorelDRAW was used for drawings, and it's a trademark of Corel Corporation; finally, the book was written using Microsoft Word with Arial (a trademark of Agfa Monotype Corporation) font, and some 3-D drawings were prepared using either PowerPoint or Visio, and these are trademarks of Microsoft, as are Access, Excel and MSDN.

Niš, October 2001

Ejub Kajan



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# First Impressions of Early Readers

The aim of this chapter is to present some independent opinions on how the book may be used by readers. In order to provide such advice, the author asked various professionals – engineers, managers, programmers, researchers, academics, end-users etc. – to provide their opinions about the book, its content, and the approach it is based on. The author is extremely grateful for the contributions. The contributors and their impressions are given in alphabetical order.

I've noticed that in recent years IT has attracted specialists from outside the traditional computing and engineering disciplines, and this book will give them very useful knowledge about the technology underlying their work. In contrast, engineers now tend to move from working on technical projects to responsibility for their business applications, so I particularly like the fact that the book covers those terms you don't come across in your formal education, but are still somehow expected to know. The acronyms are explained as well as defined, so this book is much more informative than simple Web searching etc., and there are cross-references to related entries and original sources so that you get a good context for each term. The index classified by subject gives you a fast introduction to a whole field and not just a definition of a single term. This book will be very valuable for the modern engineer or IT practitioner. On a lighter note, I grew up watching "Road Runner" cartoons and I never knew what "ACME" stood for!

Phil Carroll  
R&D Manager,  
Europlex Technologies,  
Dublin, Ireland

This book is a very valuable guide to the "acronym soup" that pervades our discipline. It will be of value to researchers, practitioners and students alike and should have a place in the reference section of every library. Readers are es-

pecially likely to appreciate the extensive diagrams which illustrate key concepts and terms.

Prof. David Duce  
School of Computing  
and Mathematical Sciences,  
Oxford Brookes University, UK

I am impressed with this book for its comprehensive collection of technical acronyms that are everywhere in the Information Technology and Telecommunication industry. The author not only provides the origin of the abbreviation but also includes a brief technical explanation of the acronym itself. This will definitely be handy for a wide range of readers that are interested in the field. The overall information in the book is up to date and accurate. One thing I really enjoyed was "WOMBAT", I had never heard of it. Now I can arm myself with useful acronyms for some future project meetings.

Phil Ho  
Research Engineer,  
Telecommunications  
and Industrial Physics (TIP),  
CSIRO,  
Marsfield, Australia

The idea that somebody would produce a book of this size completely devoted to describing acronyms in the IT industry took me by surprise. However, when I thought about it, the number of times per day that I come across an unknown acronym is quite high. So I tried to find a few of these in the dictionary and was pleasantly surprised. Not only did they appear, but there was sufficient information for me to understand the topic and where to look for more information. In places, there were URLs cited for the reader to find further information. The illustrations are very good and I was drawn into reading it; something that you do not normally do with a dictionary.

Prof. Bob Hopgood  
W3C,  
London, UK

The book covers a good selection of IT and telecommunications terms that are used by the professionals, and those that confront the layman as we begin the new millennium. Many people are turned away from being part of the new

economy because of the language. This book could prevent that type of disillusionment. Both the computer and the telecommunication industries have for some time had their own bewildering vocabulary of acronyms. In today's convergent world the newcomer is confronted by the acronyms from both these industries, and in some cases they conflict or overlap. The inclusion of the three most commonly used definitions for ATM allows the layman to understand what is meant when he calls in to his bank, then proceeds to work where he prints out his PostScript documents, and then sends them down the broadband network. The book includes a good cross-section of IT terms that cover both the business/commercial sectors and the more technical environments of electronic engineering and computer science. The book would be an invaluable reference for the student of electronic engineering, telecommunications, or in fact any of today's university courses. Some of the definitions are extremely informative, e.g. C/S (Client/Server) has over one page devoted to it and provides an extremely good description. I would find it an invaluable book for my bookshelf, or close at hand at work or at home. It could well save some embarrassment when approached by "I believe you are an expert in the field of ..., so tell me what ... stands for".

Colin Jacka, Ph.D.  
Discipline Leader,  
Electronic Systems,  
Telecommunications  
and Industrial Physics (TIP),  
CSIRO,  
Marsfield, Australia

The computer industry and computer-related research cover a huge range of various technologies and products. For over half a century of computer history, many hundreds of thousands of people have worked in this area. In order to efficiently communicate, they have developed a separate computer jargon. Although this jargon has developed on top of the English language, it is often a mystery for non-specialists. Learning computer jargon is part of introductory computer courses, since it is not possible to develop a deeper understanding without knowing the jargon. Acronyms form a very important part of computer jargon. This book represents a unique attempt to help people to find their way through the ever-changing world of computer-related acronyms. It could be useful for both novices (to learn the basics of computer jargon) and experienced computer professionals. Due to extensive cross-references, this book

could be used as a textbook for learning many computer topics, particularly new advances in computer networking. A large number of illustrations makes the reading and understanding of complex topics easy. Such a book should be part of the reference library of each computer professional.

Dejan Mitrović, M.Sc.  
Solutions Development,  
Trimble,  
Christchurch, New Zealand

Modern telecommunications has changed rapidly from being a specialist's domain to one where decisions are made in meetings attended by engineers, application programmers, accountants, and sales and marketing managers etc., some of whom have only a sketchy understanding of the acronyms on the agenda. I'd recommend this book because it outlines the business environment as well as the literal meaning of telecommunications and IT acronyms. I'm often frustrated when reference material on the Internet is either inaccurate or too simplified, or when a search throws up too many "hits" etc. Using this book you can go directly to the acronym in question, or browse the subject index to skip to related topics and get a broader picture. Even people with expertise in the telecommunications and IT fields will discover new aspects in this book, while any reader's general knowledge can be improved by knowing the precise meaning of "ISO", the quirks of the main time zones, what "TÜV" stands for on a compliance sticker etc.

J.J. O'Reilly  
Datacomms Manager,  
Damovo  
(Ericsson Business Communications),  
Dublin, Ireland

Everybody can recall feeling helpless and frustrated by meaningless acronyms obstructing comprehension or constantly escaping one's short-term memory. A reference book like this could alleviate these feelings and aid the retention of information. It is particularly useful for professionals in other fields struggling through the ubiquitous acronyms in the area of computers and communications.

Rade Petrović, Ph.D.  
Vice President of Technology,  
Verance,  
San Diego, CA, USA

I like that abbreviations of various research journals, magazines, and transactions are included and well explained. As space available for research papers is usually limited, one way to save it is to use abbreviations in references. Sometimes, this causes problems for the reader who has to “chase down” the references. Graduate students have to “chase” many research papers, and this is just one of many examples of how this valuable book can help them.

Vladimir Tošić  
Ph.D. Student,  
Carleton University,  
Ottawa, Canada

Very often, people move towards rationalizing their activities as much as possible. As a consequence of such rationalization, there are many abbreviations in use, especially in computing and communications. Everyday, there are many times when people have unknown acronyms in front of them, while reading a journal, a book, a manual, or just searching the Web. Furthermore, the chances of coming across an unfamiliar computer acronym are sometimes independent of the current knowledge of the reader. This book represents a successful attempt to select the most important (and interesting) computer and communications acronyms and to explain them in an acceptable manner for most potential readers. In my opinion, this book could be valuable to a wide group of readers in their everyday work.

Prof. Dr. Živko Tošić  
Dean of Faculty  
of Electronic Engineering,  
University of Niš,  
Yugoslavia

Many years ago, in the early 1980s, I noted that reading some articles on IT achievements did not coincide with a complete understanding of the topics. Additional “investigations” of the meaning of new acronyms occupied more and more of my time, and in the 1990s it became a real problem. Very often while reading IT and communications articles I’m confronted with a lack of understanding of the substance. Discovering the meaning of a text swamped with acronyms becomes a real feat. The time needed for that discourages the thirst to be informed, but consolation that it happens to others, also to young engineers, is not an excuse. The appearance of this book was a pleasant surprise for me, particularly because it came from my friend and associate. During my first

reading I discovered that I am not a lost cause any more. With this book close to hand I can come back and be “in” without any frustration. To be sincere, my incomparable surprise is that this dictionary can be read as a book, and not only used as a reference.

Ivan Veselinović, B.Sc.  
General Manager,  
Softis,  
Niš, Yugoslavia

This is a comprehensive and sometimes fun book that covers the wide scope of IT terms, acronyms and definitions. It will be of great help for all those who need to stay in touch with the ever changing IT terminology. The website URLs and figures that accompany certain topics allow the readers to get more in-depth information on their areas of interest, which makes this book much more than another computer glossary, IYSWIM!

Aco Vidović  
IBM International Technical  
Support Organization,  
Rochester, MN, USA



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- \*.\* – Star-dot-star. Any file, any filename extension. Used in some operating systems for the global copy, move or delete file operations under the specified directory. Also used in two other possible file combinations: any file with a particular file extension (for instance, \*.doc), or a particular filename with any filename extension (dict.\*).
- 1-2-3 – The name of the first publicly available spreadsheet program developed for personal computers by Lotus Corporation in 1982. The unusual name stands for the three basic functions of 1-2-3: graphics, spreadsheets and data management.
- 10-100 – Common name for a Ethernet/Fast Ethernet designation that has rates of both 10 and 100 Mbps, but not on the same port.
- 10Base2 – 10 Mbps Baseband 200 m. A kind of Ethernet LAN that uses 50-Ohm thin coaxial cable with a maximum length of 200 m per segment. See Fig. #-1.
- 10Base5 – 10 Mbps Baseband 500 m. A kind of Ethernet LAN that uses a thick coaxial cable (full specification) with up to 500-m-long segments. For longer-distance LANs, it is necessary to build in an appropriate number of repeaters.
- 10BaseF – 10 Mbps Baseband Fiber. An IEEE Ethernet specification for fiber-optic cabling. See also 10BaseFB, 10BaseFL and 10BaseFP.
- 10BaseFB – 10 Mbps Baseband Fiber Backbone. A part of the IEEE 10BaseF specification that provides a synchronous signaling backbone, a maximum of 2000 m long, that allows extra network segments and repeaters to be connected to the network.
- 10BaseFL – 10 Mbps Baseband Fiber Link. A part of the IEEE 10BaseF specification that provides an inter-repeater link, a maximum of 2000 m long.
- 10BaseFP – 10 Mbps Baseband Fiber Passive. A part of the IEEE 10BaseF specification that allows a number of computers to be organized in a star topology without repeaters. Segments can be up to 500 m long.
- 10BaseT – 10 Mbps Baseband Twisted Pair. An Ethernet that allows twisted pair cable as a backbone. The maximum speed of this kind of Ethernet is limited to 10 Mbps.

10BaseX – 10 Mbps Baseband any (X) Ethernet. A standard root for several baseband Ethernet specifications that operate at 10 Mbps or slower speeds. See 10Base2, 10Base5, 10BaseF and 10BaseT.

10Broad36 – 10 Mbps Broadband 36 MHz. An Ethernet network that uses a 75-Ohm coaxial cable based on the IEEE802.3 bus or a tree topology. It can operate at up to 10 Mbps. The distance supported is limited to 1800 m. Each of the two channels operates at 18 MHz, so the number 36 in the network name refers to twice 18 MHz.

Name	Cabling	Maximum segment distance
10Base2	thin coaxial	200 m
10Base5	thick coaxial	500 m
10BaseF	fiber cable	2000 m
10BaseFB	fiber cable	2000 m + extra segments
10BaseFL	fiber cable	2000 m + link
10BaseFP	fiber cable	500 m
10BaseT	twisted pair	100 m
100BaseFX	multimode fiber	400 m
100BaseT	unshielded twisted pair	100 m
100BaseT4	unshielded twisted pair 4	100 m
100BaseTX	twisted pair	100 m
100BaseVG	VG twisted pair	100–150 m
1000BaseCX	copper wire 150 Ω	25 m

Fig. #-1. Summary of baseband technologies

100BaseFX – 100 Mbps Baseband Fast Ethernet. The IEEE standard for Fast Ethernet (100 Mbps) over multimode fiber optic cabling. Segments can be up to 400 m long. See also 100BaseX.

100BaseT – 100 Mbps Baseband Twisted Pair. A series of IEEE802.3 standards for fast (100 Mbps) Ethernet using unshielded twisted pair cables.

100BaseT4 – 100 Mbps Baseband Twisted Pair (4). A series of IEEE802.3 standards for fast (100 Mbps) Ethernet using unshielded twisted pair cables with 4 wires.

100BaseTX – 100 Mbps Baseband Twisted Pair X. A Fast Ethernet specification based on twisted pair cables, either unshielded or shielded, with a