

# THE ENGINEERING SUBJECT GATEWAY (ViFaTec)

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## Abstract

Engineers are always looking for an easy way to find information they are interested in.

A short look at the engineer's way of research is taken. This has to be taken into consideration when developing and advancing a technical gateway. A review of literature about this theme and personal experience revealed that engineers have certain ways of reaching information due to their tasks and everyday work challenges.

The origin and backbone of the Engineering Subject Gateway/ViFaTec the Technical Information Library (TIB) is described. It is the central subject library of Germany for technology and their related subjects, especially chemistry, physics, mathematics and computer sciences.

There are different features at the Engineering Subject Gateway, ViFaTec like a collection of databases, which shall be a Meta Search Engine in the future. Others are TIBORDER the document delivery system of the library, GetInfo the web service for full text supply, the Subject Guide and the Specialised Search Engine.

The idea of the gateway originates from 1998 and it went first online in April 2000. It is developed further on and improved ever since. The goal of the engineering subject gateway was and is to offer competent and compact information. The sources of the gateway are conventional information sources like literature, databases liable for costs and free, special chosen Internet resources and others. The major numbers of the chosen Internet sources are not company websites that offer their products but websites of organizations, unions and others which offer competent and well sorted information of a broad range.

Closing up a summary is given and a look at the goals and perspectives of the gateway is taken like planned cooperation's with other institutions to develop the content offered further on.

## 1. Engineers ways of research

The main focus when developing the Engineering subject gateway was and is the users interest. The target group here are people from the engineering branch and other in technical matters interested people.

A review of literature about the research habits of engineers and personal experience revealed that engineers have certain methods for gathering information due to the nature of their tasks and everyday work challenges. A user evaluation is in progress.

It is not possible to put the target group into a consistent definition group. A Survey shows that there is a big difference in the research habits of engineers themselves.<sup>4</sup> They invest between 5 and 80 hours a month for research or any kind of information work depending on the kind of work they are involved. For example R & D people invest the highest amount of time researching. Also the tasks of engineers change so often that the need for information is constantly high. Another important aspect is the pressure of time under which engineers usually have to work and make their decisions which influences their way of researching.

The two main aspects of information for engineers are:

- To solve a (technical) Problem,
- To prepare a well founded decision.

The literature states that the first step an engineer takes when he exhausted all his sources for information on hand is that he asks the people surrounding him.

Advantages of asking his/her colleagues are

- They have the same way of thinking,
- They use the same technical terms and therefore understand the problem right away,
- They seem the trustworthiest since those are the people one seems to know best,
- Misunderstandings can be cleared right away.

The disadvantages are

- The information is very exclusive,
- Other people of the working team are/might be excluded from the flow of information,
- There are only a limited number of contacts.

Since engineers mainly are searching for information to solve a practical problem the following terms are most important for an information source:

- The source must be easy to handle
- Access must be fast and without a time limit
- There must be a high relevance of the information
- A high quality of the information should be given
- The information should be reliable

Therefore document collections that need to be judged and evaluated are not so useful. <sup>2,3,4,5</sup>

## 2. The Origins of the Engineering Subject Gateway, ViFaTec

The origin and backbone of the Engineering subject gateway/ViFaTec is the Technical Information Library (TIB). It is situated in Hannover in the northern parts of Germany.

The TIB is the national central subject library of Germany for technology and their related subjects, especially chemistry, computer sciences, mathematics and physics. Though an institution of the State of Lower Saxony, it is financed jointly by all Federal States (70%) and the Federal Government (30%).<sup>1</sup>

### 2.1. A Brief History of the Technical Information Library (TIB)

One of the reasons that the TIB was founded in Hannover was that there were practical no losses of the book stock during World War II due to early evacuation. So the Stock recovered in Hannover was very complete and the TIB was founded in 1959 as a central library for technical issues in Germany.

The founding is based on a federal treaty between the States of Germany how to finance scientific research facilities. This treaty was suggested and under controlling interest of the German Research Society. Today the structure is in change.<sup>1</sup>

### 2.2. Today's status of the Technical Information Library (TIB)

The Technical Information Library (TIB) and the Library of the University of Hannover (UB) are an organizational unit (UB/TIB) jointly housed in the same building. The management and administration of both libraries are integrated in spite of separate budgets. The same is for the book processing and document supply inside and outside of the University.

At the 31<sup>st</sup> of December 2000 the two libraries together had a permanent staff of 247,5 people (TIB: 155,5; UB: 92), plus diverse time limited third-party funded jobs and part-time jobs.

Primarily the academic staff and the students of Hannover University use the TIB. But the TIB is also used directly by private persons, industry, research institutions and other corporations all over Germany and abroad, if they need literature within the TIB's scope. Also libraries and other institutions, national and abroad use the TIB, direct or by the interlibrary loan service. The fast supply with information of all kinds is the main goal of the TIB.<sup>6</sup>

## 3. The Engineering Subject Gateway/ViFaTec

The target group of the engineering subject gateway are people from the engineering branch and other in technical matters interested people.

### 3.1. Idea of the gateway

The idea of the gateway originates from 1998 and it went first online in April 2000. The integration of new media into the library world and the urge to meet the demands of Science, Industry and other users for current and high quality information lead to the idea of the Engineering Subject Gateway. The emphasis is placed on the supply with digital information, Internet Resources etc. and access rather than ownership.

The goals of the engineering subject gateway were and are to offer competent and compact information. It is developed further on and improved ever since.

### 3.2. Realization

The engineering subject gateway offers an integrated access to relevant information and other services.

The user expects an easy and comfortable access to the listed information. The Engineering Subject Gateway ViFaTec shows the way for example through our own document delivery system TIBORDER.

Through cooperations with other external providers of information we want to improve the access to external information. For example if somebody is looking for a special book and finds out that it is out of stock he can try to search for and order it through our library catalogue system.

Since the integration of all sources is impossible, the engineering subject gateway is based on the integration of existing offers and redundant work shall be avoided.

Some gateways in the Internet try to integrate all sources available but fail due to the vast amount. But the user needs good sorted, cumulated and complete sources.

The engineering subject gateway goes for it in a different way. It is looked for specialised and in technical matters relevant information and for experts in information.

We take the information that are important from the ocean of information offered and offer them bundled and put in order for the customer.

The standard information sources of a library like technical literature, books, professional articles in journals, microfiche, cd-rom collections, databases, free and liable for costs, and others are offered.

Added to that are special choosen Internet ressources. The major number of the choosen sources are not company sites which offer their products but sites of organizations, unions and others which offer competent and well sorted link collections and other information of a broad range.

In addition to conference calendars, patents, standards and reference works you find numerical data, software offers, training offers, products, services and other things at the gateway.

There are different features to use when researching in order to make this clear and easy to handle for the user.

### 3.3. The Features

The offered features for use are:

- A Meta-Search Engine in development.
- TIBORDER the document delivery system of the Technical Information Library, TIB
- GetInfo, an electronic system for the supply of full-text in science and technology
- The Subject Guide and
- The Specialised Search Engine

#### 3.3.1. A Metasearchengine/ TIBORDER/ GetInfo

There is offered a list of free databases available via the Internet as long as the Meta-Search Engine is not working. The Meta-Search-Engine for technical literature shall, when in action, offer a parallel research in the stock of the TIB through TIBORDER, GetInfo and other databases liable for costs and free ones. Databases liable for costs will be integrated if the research itself is free and it is charged for when you need the bibliographical data.

TIBORDER is a web based comfortable document delivery system for research and ordering in databases. The search is free. But ordered full-text is charged for. There is direct online access to electronic catalogues and documents. The whole range of the libraries stock can be ordered electronically. For example print Literature is scanned and converted in pdf files. There are various possibilities to get the literature, through email, download etc..

GetInfo is a joint venture of the TIB and FIZ Karlsruhe for the supply of full-text in science and technology. In cooperation with its partners in the USA and Japan, FIZ Karlsruhe is operating the host STN International offering public access to databases with scientific, technical, and supplementary business information.<sup>1,3,6</sup>

#### 3.3.2. The Subject guide

Information in a clear and well-structured form is offered through the subject guide. Only collections of relevant printed and electronic sources are listed not single publications or very specialised Websites like from a little company. A clear collection of information sources for each subject is offered. Therefore only special chosen Information sources of high quality are indexed.

Some of the sources are free of charge others are not. Indexing depends on the technical relevance. The user shall be informed about high quality sources and decide himself which source he wants to use.

There are filters installed in order to make the handling easier and clearer. The user can decide if he wants to look for technical literature, conferences, organisations, research

projects, products, and others or if he wants to look up the whole offer of one subject. The subject headings are given in German and English.

For example in the sector technical literature the following information sources are listed:

- Technical bibliographic databases  
The subject guide refers to databases at hosts. So the user can reach further information about the database at the site of the host.
- List of books: List of new acquisitions from the libraries stock through the online delivery system, so that any user can order the literature online
- The current collection of technical literature from the TIB library or of amazon
- Collections of journals
- Also important reference books are listed<sup>3</sup>

### 3.3.3 The Specialised Search Engine

At the Specialised Search Engine the server of the professional associations of engineers and expert gateways are indexed. They cover up best the demand of engineers or technical interested people for information in this branch. Major parts are the Websites of the Fraunhofer Society as one very important research institution in Germany. Especially since they lay a lot of emphasis on the consulting and Service in the technical environment. The Search Engine has a strong practical orientation. It does a very good job when looking for a contact partner for a special theme. Naturally the search results depend upon the Contents of the organization and the Website offering.

If the Specialised Search Engine is compared to one of the regular Search Engines like Google or AltaVista often times you will find similar results at both Search engines. The important difference is that at AltaVista you have a lot to do to sort out the important hits from a lot of hits that are of no interest to the subject. This can be set aside at this Search Engine because of the strong technical emphasis. Therefore at the list of results the relevant information is usually shown right at the top. The advantage of this kind of expert search system is that the number of hits for certain technical terms is a lot smaller and a lot better to handle than at the regular search engines. If you take for example the term “ screw “: Google gives you 2,420,000 hits, AltaVista 831,135 hits, and the Specialised Search Engine of ViFaTec gives you 143 results. If you check the results you will find results related directly to the term of screws within the first ten. This shows the dimensions and the major advantages of a Specialised Search Engine.

Currently in development is a service to find available capacities of University and other research Institutions. The service range goes from free laboratory space to consulting offers.

Completing the search engine you can expand your search through the German University servers and the international All Engineering web site.

Further cooperations with other institutions to develop the content offered are wished and in progress.<sup>3</sup>

#### 4. Summary and Perspective

In the previous talk we took a look at the target group of a technical gateway who are mainly engineers. They have certain ways of reaching for information that were described. They put the emphasis on the nearby information due to working and time pressure. Also this kind of information seems the most reliable.

Then I described the background of the Engineering Subject Gateway The Technical Information Library (TIB) with a short glimpse at its origin and history that goes back to 1959.

The main issue of this talk were the Engineering Subject Gateway and its features, which are a Meta-Search Engine in development, TIBORDER the document delivery system, GetInfo a full-text supply, The Subject Guide and The Specialised Search Engine.

To sum up the key aspects of our work:

These are, besides the technical work of evaluation, development and the supply of information sources,

- To get in touch with the users through user evaluation
- Cooperation with people who can offer content
- To do marketing for our Website and Work

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