

# Digital documents should allow different types of interaction

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Collections of digital documents (like in large websites or digital libraries) are superior over printed material **for users** most often only in two ways:  
--- access around the clock, for many persons at the same time,  
--- they can provide multimedia material beyond text and pictures

Of course they can provide more information for the information provider (like what is accessed how often for how long). However, in my talk I will concentrate today on user aspects.

**Let me start with what happened to me recently:**

I wanted to contact an airline about an issue I could not find on their graphically impressive Web-pages

## **I found on the server:**

- Huge amounts of information and advertisements for special deals
- A variety of newsletters
- A long list of FAQs (none relevant to my case)

## **I did not find:**

- an email address I could write to

## **I did find (hurrah!)**

- a phone number
- however, when I called: 15 minutes of music, then an incompetent person, forwarding me to a competent person, another few minutes of music, **then...**

A message:

Sorry, the person is on holiday

I am running a large (1,4 million multimedia objects) information server myself: [austria-forum.org](http://austria-forum.org) . Part of a typical page looks like this:

## Der Adler

von [Peter Diem](#)

*"Der mächtigste König im Luftrevier ist des Sturmes gewaltiger Aar. Die Vöglein erzittern, vernehmen sie sein rauschendes Flügelpaar. Wenn der Löwe in der Wüste brüllt, so erzittert das tierische Heer ... "*

Mit diesen Versen besingt ein Volkslied aus dem 20. Jahrhundert den "König der Vögel". Gleichzeitig bestätigt es die alte Ansicht, dass der König der Tiere zu Lande der Löwe sei. **Adler** und **Löwe** sind die beiden wichtigsten Wappentiere Europas. Beginnen wir mit den Bedeutungen, die dem Symbol des Adlers, als des "Königs der Lüfte", seit alters her beigemessen werden. Heute eine vom Aussterben bedrohte Art (Aquila Möhr), zählt der Adler zu den am weitesten verbreiteten und weit in die Geschichte zurückgehenden politischen und religiösen Symbolen. An dieser Stelle soll freilich noch nicht auf seine genaue heraldische Beschreibung eingegangen werden, die ja gerade für Österreich, dessen uraltes Wappentier der Adler ist, große Bedeutung hat. Hier soll vielmehr versucht werden, einige der Assoziationen, einige der "**archetypischen**" **Konnotationen** aufzuzeigen, die mit diesem majestätischen Tier verbunden wurden und - gemäß der Theorie vom Fortwirken mythologischer Bestände im kollektiven Unbewussten - vermutlich noch verbunden werden.

Seinem Biotop gemäß gilt der Adler zunächst **als Symbol für den Himmel, die Sonne und die göttliche Herrschaft**. Seine Kraft, seine Ausdauer, sein scharfer Blick, mit dem er aus größter Höhe seine Beute erspäht, machen ihn zum Symbol des Herrschens und Besiegens. Im weiteren steht er aber auch für das geistige Prinzip, für Befreiung aus der Knechtschaft, für Stolz und königliche Würde.

Der Adler, von dem **Aristoteles** annahm, er sei imstande, bis an die Sonne zu fliegen und diese mit unverwandtem Blick ins Auge zu fassen, um geradezu mit ihr zu verschmelzen, galt weiters als Symbol der Kontemplation, der spirituellen Erkenntnis, des intellektuellen Höhenflugs. Den Kampf mit erdgebundenen Tieren gewinnt in der Regel der Adler, er stellt so den **Sieg des Geistes**



Adler am Heldenplatz - Foto: P. Diem

Feedback

Notice: Every page has an author with an extensive vitae, so users can judge credibility. Every contribution has a „Feedback“ button. More on this later. **But let me first show you a bit of our [austria-forum.org](http://austria-forum.org)**

Austria-Forum - das Wissensnetz aus Österreich

Ein Projekt an der TU Graz

Kurzvideos und mehr

Neuigkeiten

Highlights

Sponsoren

Slideshow

Bitte unten Kategorie wählen oder oben Suchbegriff eingeben.



Bundesländer



Suchhilfe



Biographien



Web-Books



NID



AEIOU



AustriaWiki



Essays



Natur



Kunst / Kultur



Videos



Bilder



Europa



Wissenschaft



Unternehmen



Allgemeinwissen



Geography



Community



Ehrenbeirat

Impressum

Informationen

Bilderbogen

Corona Virus News

Note: There is a A general search field but there are also many „categories“ to choose from.

Why? To avoid too many answers that are not fitting

**Austria-Forum**

Kategorie: Austria-Forum Maurer Hermann

**Austria-Forum - das Wissensnetz aus Österreich**  
 Ein Projekt an der TU Graz

**Kurzvideos und mehr** **Neuigkeiten** **Highlights** **Sponsoren** **Slideshow**

Bitte unten Kategorie wählen oder oben Suchbegriff eingeben.

<a href="#">Bundesländer</a>	<a href="#">Suchhilfe</a>	<a href="#">Biographien</a>	<a href="#">Web-Books</a>	<a href="#">NID</a>	<a href="#">AEIOU</a>
<a href="#">AustriaWiki</a>	<a href="#">Essays</a>	<a href="#">Natur</a>	<a href="#">Kunst / Kultur</a>	<a href="#">Videos</a>	<a href="#">Bilder</a>
<a href="#">Europa</a>	<a href="#">Wissenschaft</a>	<a href="#">Unternehmen</a>	<a href="#">Unterrichtsmaterialien</a>	<a href="#">Geography</a>	<a href="#">Community</a>

**Ehrenbeirat** **Impressum** **Informationen** **Bilderbogen** **Corona Virus News**

Suppose I am looking for a flower like Enzian (gentian). I will be overwhelmed with hits.

Hence: First choose „Natur“ (nature):

And then „Flora“ (plants)

<a href="#">Fauna</a>	<a href="#">Flora</a>	<a href="#">Fossilien</a>	<a href="#">Mineralien</a>	<a href="#">Haus- und Gartenpflanzen</a>

And then search for the flower you are interested in. Let us choose „Seidelbast“. We get pictures, botanical information and at the bottom an entry:

[Die Giftgewächse der österreichischen Alpenländer](#)

A click leads to the page of a book:

## Vergiftungen durch Gnadenkraut.

### Erste Beobachtung.

Ein junges Frauenzimmer von 19 Jahren sollte, um einen schmerzhaften Zustand zu bekämpfen, Klystiren aus Abkochungen des Gnadenkrautes nehmen. Aber anstatt sich mit einem zu begnügen, nach welchem Stuhlentleerungen erfolgten, ließ sie sich mehrere beibringen. Nach dem vierten bekam sie lebhafteste Leibschmerzen, worauf sich die scheußliche Mutterwuth mit wahnsinnigen Anfällen einstellte. Dieser fürchterliche Zustand wurde erst nach drei Wochen beseitigt, aber die junge Person behielt, als sie wieder zu sich selbst kam, einen solchen Kummer und Scham wegen der mit ihr vorgefallenen Ereignisse, daß sie sich 3 Monate später in einen Brunnen stürzte und darin ihr Leben verlor. (Pecirka, die Giftgewächse Oesterreichs und Deutschlands).

### Zweite Beobachtung.

Eine junge Frau bekam ähnliche Zufälle, weil sie auf Anrathen eines Kräutermannes 3 Tage lang eine Klystir von der Abkochung des Gnadenkrautes genommen hatte, in der Absicht, eine vermeintliche Verstopfung zu heben. Ihr Zustand nach diesen Klystiren wurde sehr heftig, daß man sie in ein Irrenhaus einsperren mußte, das sie erst nach 2 Monaten geheilt verließ. (Pecirka, die Geschichte Oesterreichs und Deutschlands).

### Dritte Beobachtung.

Nach zwei Klystiren aus einem Aufsatze von Gnadenkraut, das ein Kräutermann gegen tägliches Fieber verordnete, verfiel eine Frau in einen ausdauernden ähnlichen Zustand, wodurch ihr Mann eine solche Abneigung gegen sie bekam, daß er sich von ihr trennte. (Pecirka, die Giftgewächse Oesterreichs und Deutschlands).

### Vierte Beobachtung.

Ein Mädchen von 24 Jahren litt an einer unangenehmen Schwere in der Nierengegend. Man versicherte ihr, daß sie mit der Abkochung einer tüchtigen Handvoll Gnadenkraut zu einem Klystier geheilt



Daphne Mezereum.  
Der gemeine Seidelbast.

Maybe many of today's pupils cannot read this old font any more.

One click and it is converted to a modern font.



## Vergiftungen durch Gnadekraut.

### Erste Beobachtung.

Ein junges Frauenzimmer von 19 Jahren sollte, um einen schmerzhaften Zustand zu bekämpfen, Klystiren aus Abkochungen des Gnadekrautes nehmen. Aber anstatt sich mit einem zu begnügen, nach welchem Stuhlentleerungen erfolgten, ließ sie sich mehrere beibringen. Nach dem vierten bekam sie lebhaft Leibscherzen, worauf sich die scheußliche Mutterwuth mit wahnsinnigen Anfällen einstellte. Dieser fürchterliche Zustand wurde erst nach drei Wochen beseitigt, aber die junge Person behielt, als sie wieder zu sich selbst kam, einen solchen Kummer und Scham wegen der mit ihr vorgefallenen Ereignisse, daß sie sich 3 Monate später in einen Brunnen stürzte und darin ihr Leben verlor. (Pecirka, die Giftgewächse Oesterreichs und Deutschlands).

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Der gemeine Seidelbast.

So you have seen by now three advantages of our system vs. e.g. Wikipedia contributions:

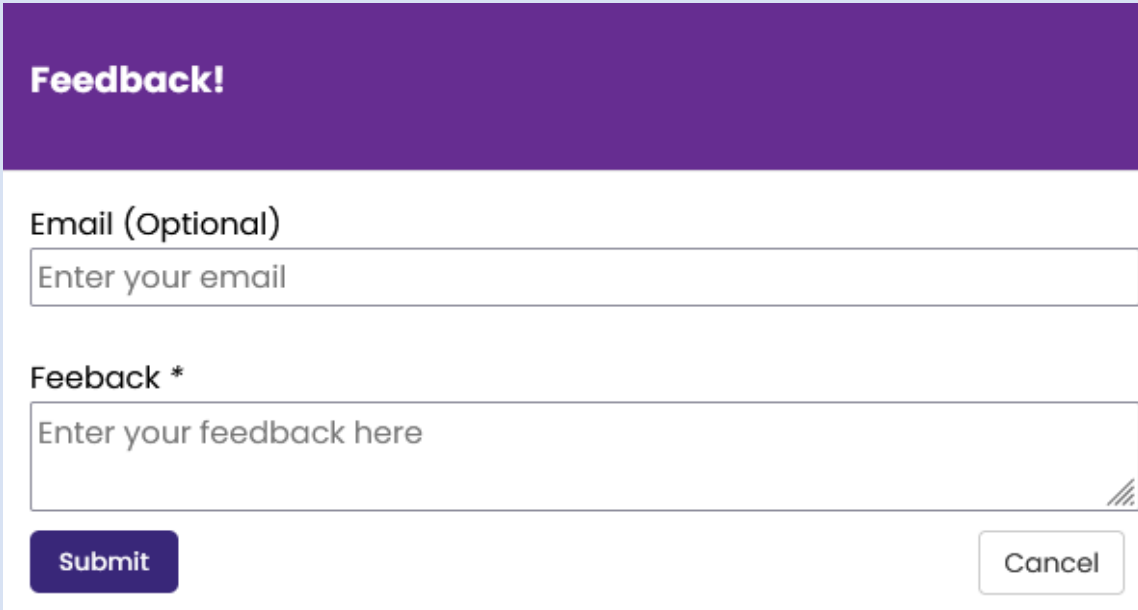
--- They have an author or reliable source

--- They can use one of 4.000 books for more explanations

--- Each contribution allows to send a feedback

--- I will show a bit of this and more in my life demo, tomorrow, but now return to the issue of Feedback

## Example of Feedback button:



**Feedback!**

Email (Optional)  
Enter your email

Feedback \*  
Enter your feedback here

Submit Cancel

Note: Author of feedback is unknown except if E-Mail address is provided (e.g. to receive an answer)

**My challenge to the WWW world:  
Every page of every server should  
have a feedback button!**

Why is this not done? ... Because there is a fear of a flood of feedbacks!

However: First, flood on „ordinary issues“ does not happen. Second, CRITICAL, feedbacks to pages or a group of pages **must not** go to one person, but to few persons familiar with the material at issue.

By the way, such **feedbacks** have helped a lot to improve our information server [austria-forum.org](http://austria-forum.org) with 1,4 million media objects, some technical innovations and a slight Austrian orientation one of the more interesting Web resources in Austria.

Great? Not quite.

**Two problems emerged when I used the system:**

**One**, I got the same questions over and over.

**Two**, to avoid it, it would make sense to add a paragraph, a picture etc.

However, this would destroy all the formatting, potential links, the page numbering, the table of contents, etc., particularly in large documents on a server (in a database)

Hence, my friend and former student Dr. Bilal Zaka and I decided to design and develop a completely new system **NID**, standing for **Net Interactive Documents**

## The basic idea of Net Interactive Documents (NID)

--- A NID Document offers a feedback button on every page

--- **The crucial idea:**

One can highlight any area on a page (even in a picture). When readers move their mouse to such a highlight called „annotation“, a window opens that is **overlaid**. It can contain text, pictures, links, clips or a combination thereof (opening new windows if necessary). Thus information can be added to the document later. All this can also be done by users, but never destroys the underlying format or content of the document; the owner of the document decides for whom the additions („annotations“) should be visible

--- As the system developed, many other sophisticated functions have been added, some to be discussed later, some more technical ones tomorrow.

## Summarizing :

By allowing feedback of users directly to experts, large (collections of) large documents offer more interactivity.

By allowing anyone (in a controlled fashion) to add „annotations“ (text, pictures, links, clips,...) anywhere, the information in documents keeps growing. Also, the owner of the document can see what is often studied and what is ignored. The author can thus potentially expand some sections by annotations (explanations). And by using links to pictures, rather copying them, almost any picture on the Web can be used in annotations as you will see. Also, NID allows communication between users, and users and authors.

... and NID offers much more, some features to be mentioned a bit later

NID has many application areas such as:

--- Advertising reports on achievements in organizations or government institutions (see e.g. <https://www.nid-library.com/Home/Collections/37>)

--- Support of E-Learning including use of groups

--- Conference proceedings and journals, see e.g.

<https://www.nid-library.com/Home/Collections/31>

--- Digital libraries (see e.g. <https://nid-library.com>)

--- Company internal and external documentation

--- Touristic information (see e.g. <https://www.nid-library.com/Home/BookDetail/857> )

--- Support of ordinary Web Servers (see e.g.

[https://austria-forum.org/af/Biographien/Fuchs, Ernst \(geb 1851\)](https://austria-forum.org/af/Biographien/Fuchs,_Ernst_(geb_1851)))

--- IT learning in schools or other educational institutions (see e.g. the following pages describing a project that obtained an award by the ministry of Education and Research)

A number of examples will be shown live in my talk tomorrow.

Dr. D. Camby and I have used the system e.g. in the „FIDEL“ Project with a school South of Graz:

Subcategories in "FIDEL: Die Bibliothek der Zukunft."



2 Books Found. (FIDEL: Die Bibliothek der Zukunft.)



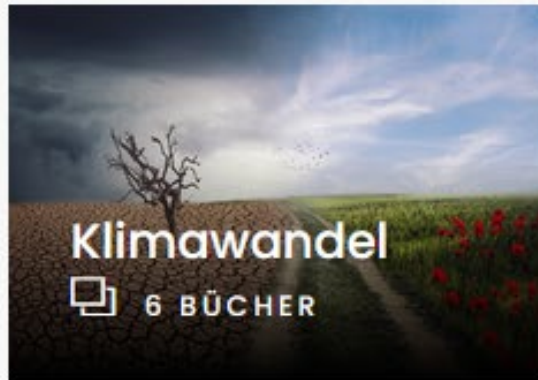
We asked students what topics they are interested in.

We would then prepare a list of documents for each topic, ask the students to study them and add annotations (comments).

The main topics for the first group turned out to be the following.



## Subcategories in "Polytechnische Schule Leibnitz I".



Let us look as an example at a part of one page of one document in the section Klimawandel (climate change)

### Der natürliche Treibhausgaseffekt

Dass die durchschnittliche Temperatur auf der Erde +15°C beträgt, verdanken wir dem natürlichen Treibhausgaseffekt. Dieser bewirkt, dass nur ein Teil der langwelligen Wärmestrahlung die Atmosphäre verlassen kann und der Großteil absorbiert und zum Teil zur Erde zurückgestrahlt wird, was einen wärmenden Effekt auf die Erdoberfläche und die tieferen Schichten der Atmosphäre hat.

Ein Treibhaus funktioniert ganz ähnlich. Das Glasdach ist durchlässig für die kurzwellige Sonnenstrahlung, jedoch nicht für die langwellige Wärmestrahlung, so dass sich das Innere des Treibhauses erwärmt. In der Atmosphäre übernehmen sogenannte Treibhausgase die Rolle des Glasdachs. Wasserdampf und Kohlendioxid (CO<sub>2</sub>) sind die wichtigsten Treibhausgase. Daneben haben aber auch Methan (CH<sub>4</sub>), Stickoxide (NO<sub>x</sub>), Ozon (O<sub>3</sub>) und weitere Gase der Atmosphäre eine Treibhausgaswirkung. Insgesamt machen die Treibhausgase jedoch nur einen sehr geringen Teil unserer Atmosphäre aus. Ca. 99 Prozent der Atmosphäre besteht aus Stickstoff und Sauerstoff, die keine Treibhausgaswirkung haben. Verändert man die Konzentration der Treibhausgase in der Atmosphäre, verändert sich somit auch der Treibhausgaseffekt und hat Auswirkungen auf die Temperaturen und das gesamte Klimasystem der Erde.

Everything you see in a bluish rectangle indicates that a student made an annotation.

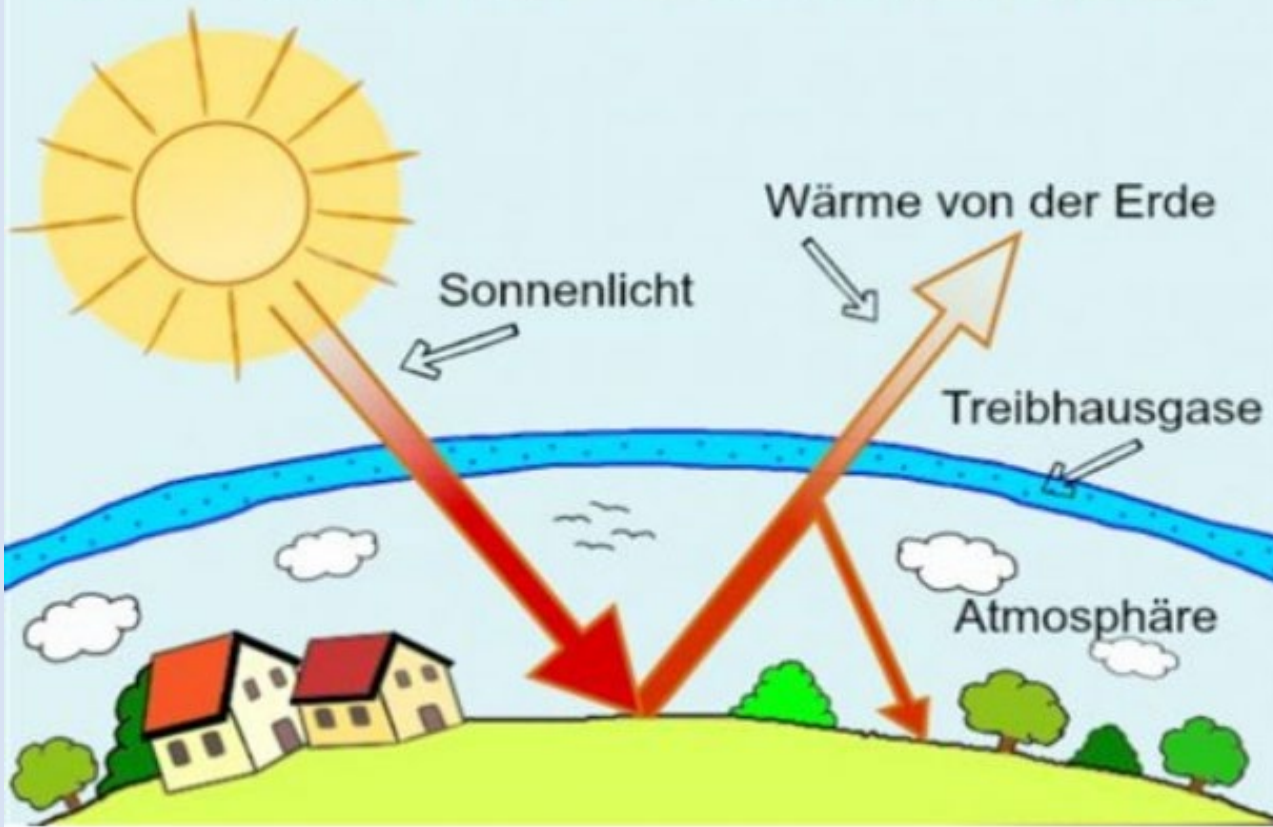
Clicking at the third one would show a movie on the change of the atmosphere because of emissions greenhouse gases.

But let us have a closer look at the second entry.

Example taken from page

<https://nid.kinderphilosophie.at/Home/ViewBook/253/2/view>

## Der natürliche Treibhauseffekt



Bildquelle: By Lars Ebbersmeyer (Own work) [CC BY-SA 4.0], via Wikimedia Commons/Westfalium

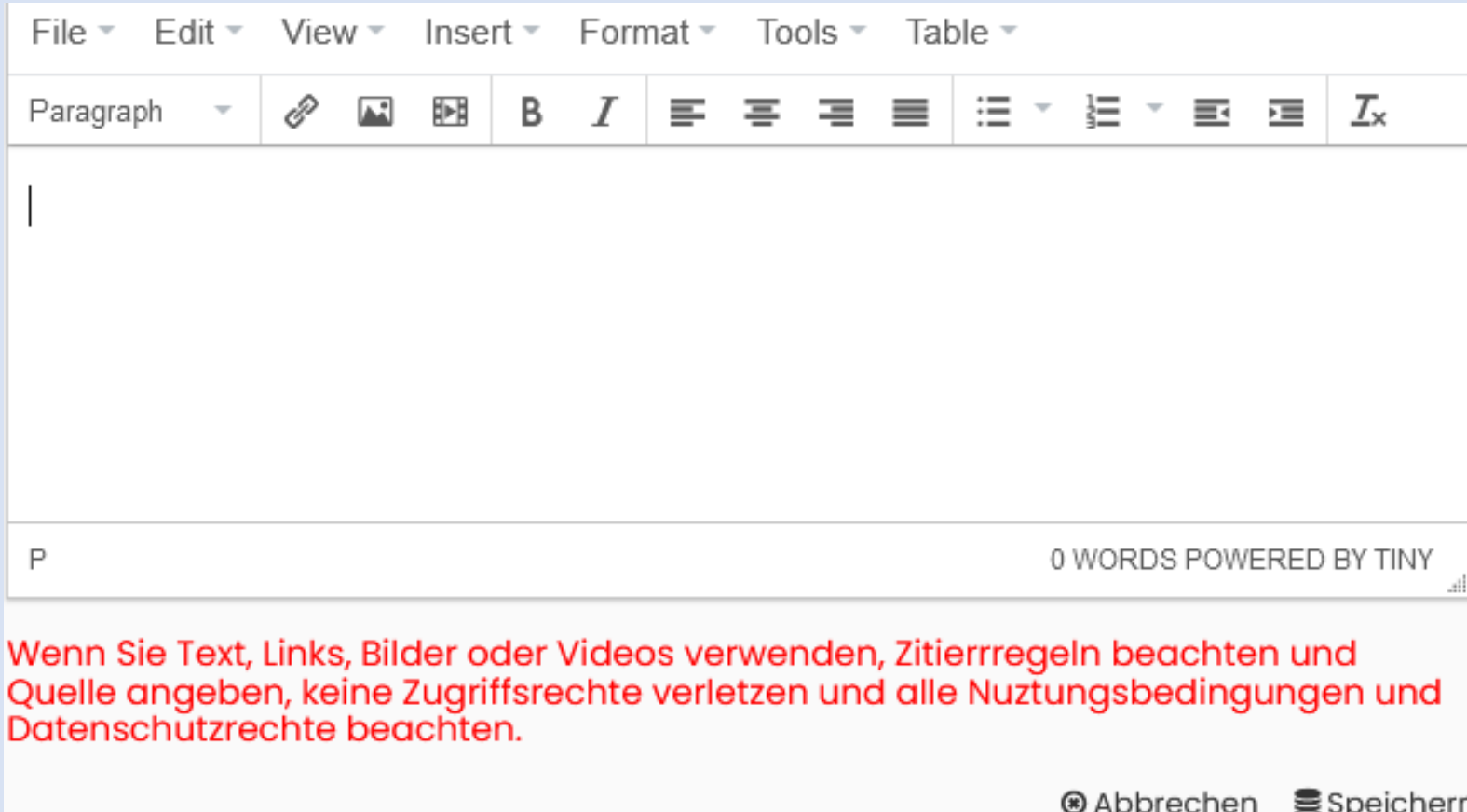
[Erklärung des Treibhauseffekts](#)

You can see that the student has used a picture that she was allowed to use under a Creative Commons License, added where it came from, and a link to a major contribution on the Greenhouse effect.


However, one crucial aspect of NID is that **even pictures that cannot be copied because of copyright can** usually be used in annotations, by not copying them, but by just incorporating their graphic address.


For the observer it looks exactly like the picture was copied, but actually whenever the annotation is activated the picture is shown on the original server. This is completely legal... exactly as legal as links are in general.

To understand this, let us briefly look at the annotation process. You highlight a spot where you want to add something. In doing so, the following window appears:



You can now enter a text (do not plagiarize!).

A click at the link icon  allows to add a link and a description.

A click on the picture icon  next to it gives the form shown next.

Insert/edit image ✕

General Upload

Source

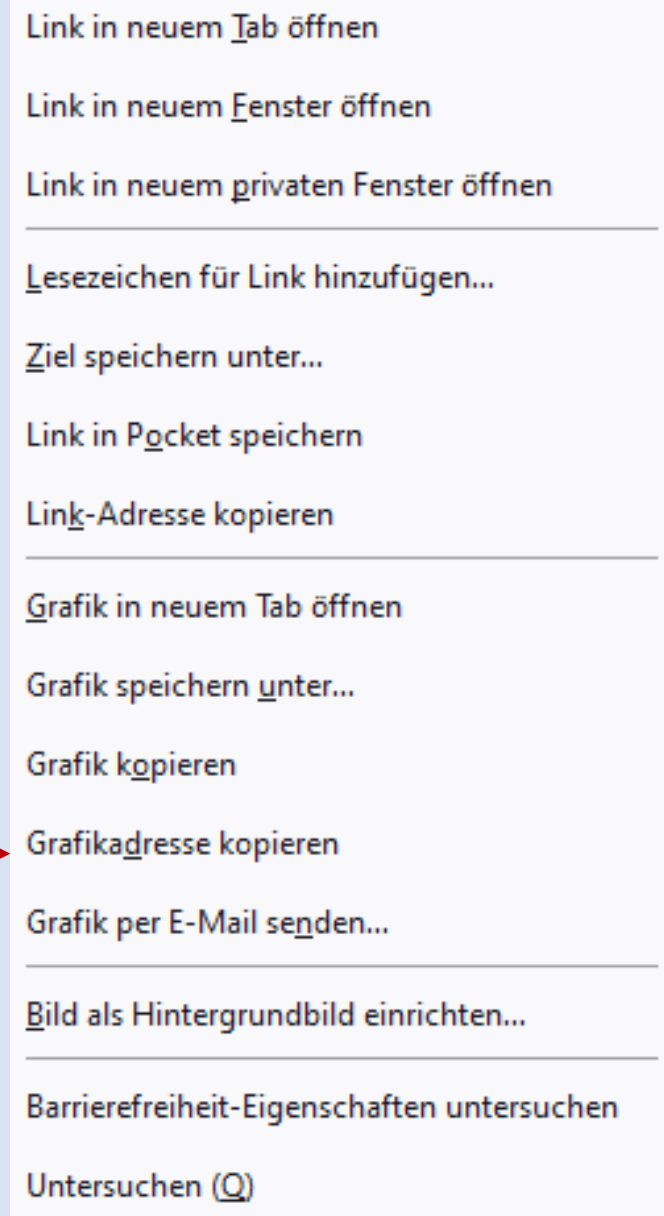
Image description

Dimensions  x   Constrain proportions

In contrast, if you choose the option Upload you can upload any picture, but **you must not upload a picture unless it is yours, or you have permission to use it (it is open source, or under CC or such)**

In this mode **you are not expected to upload a picture.** Rather just about any picture on the WWW offers (right click with mouse) what you see to the right, the option to copy address (Grafikadresse kopieren)

Doing so allows you to incorporate almost any picture without copyright violation!!



**We have found that using this NID approach even with quite young students they suddenly:**

- **enjoy reading** (short, interesting contributions) , since they **learn** and have to be **active** and others see what they have **accomplished**
- learn how to **use computers** and certain **software aspects**
- get an **understanding of plagiarism** and **copyright**
- some have said this is as **much fun** as computer gaming

## **NOTE:**

We have found that making interesting documents available to persons and challenging them to find and add material is possibly the best way to:

- ... make them „computer and internet fit“

- ... allow communication that is controlled, eliminating hate postings and fake news

- ... makes users understand topics as „side-product“, i.e. makes general learning a pleasure

This has worked well for schools, universities and other groups, and can be reinforced by offering rewards (e.g. better grades, diplomas, gifts, ... ) for those doing a good job

## **Let us now look at some other important features.**

You will find quite a few documents on our sever <https://nid-library.com>  
So you can test, if NID digital-library is suitable for you.

We can install a separate part for you on our server: Then you have no installation or update worries, but of course you can also have your own NID server as Dr. Camhy has done for the school application discussed.

For now, have a look what you get when going to the main <https://nid-library.com> server.



# NETINTERAKTIVE DOKUMENTE

Suche nach Metadaten wie Titel, Autor, Verlag

Autor, Titel oder Gebiet eingeben



Metadata  Full-Text



+546 Bücher

Mit Kategorien arbeiten



Online lesen

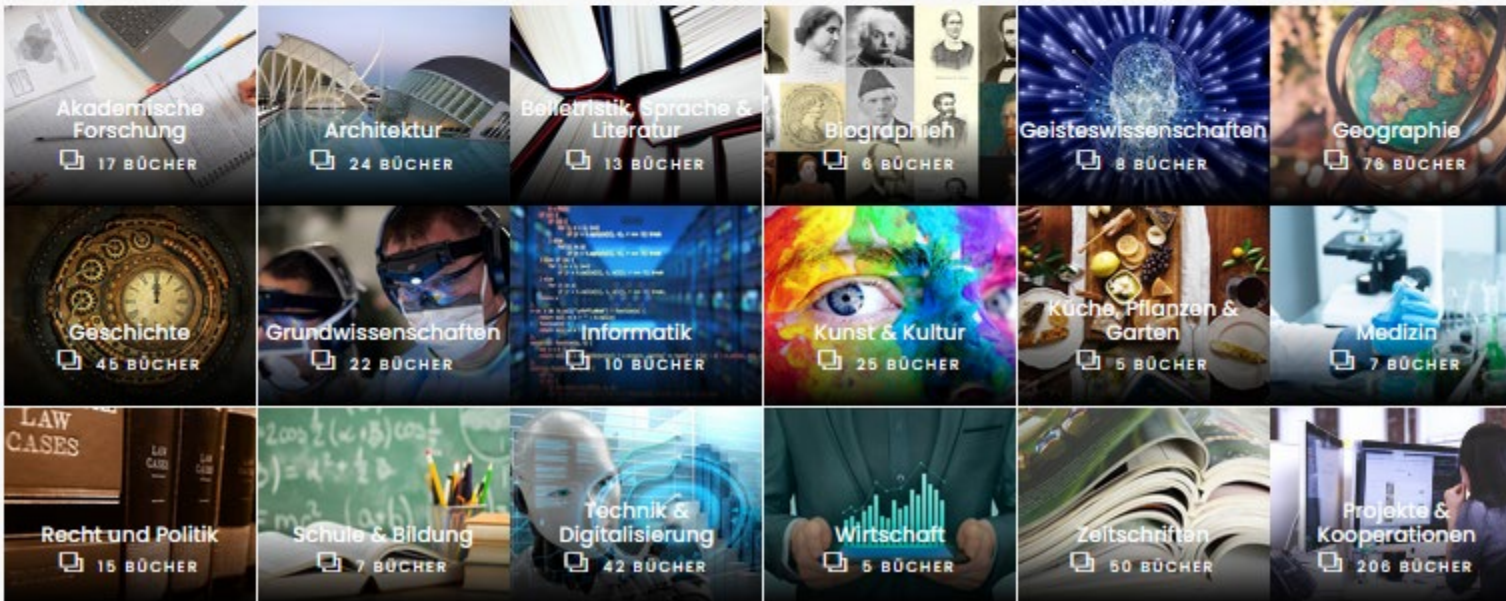
Sie können online lesen



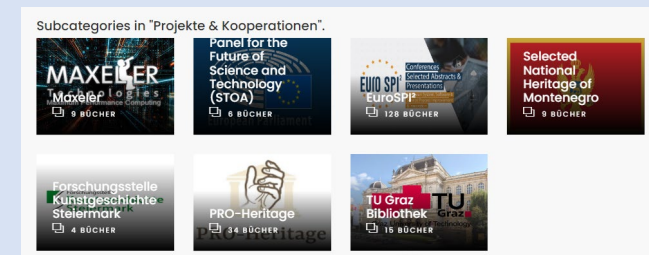
Suchbar

Bücher mit Textsuche

## Bibliothekssammlung



Here is the entry page of one of NIDs main server: nid-library.com. The first row shows books “rotating” by priority (too time consuming to explain here). The one on the bottom right shows you partners who are currently testing:



Notice that you can search for documents by title, name or keywords, or you can go to one of the subcategories

Searching e.g. for „IIASA“ we find at the moment 9 reports from IIASA, 8 are shown below. (IIASA stands for the internationally financed „International Institute for Applied System Analysis“ near Vienna). Notice that documents have been accessed quite frequently: The 4.7K on the left lower corner means it has been accessed already 4.700 times!



It is worthwhile to browse through the journals, since not only have they been read a lot, but many users left interesting annotations pointing to further material. And there are also interesting discussions. We will show an example a bit later.


## Let us now turn attention to searches within a specific document.

NID documents are full text searchable, except if the font is e.g. an unusual one, or if the text is handwritten. In most systems, searching is restricted to plain text. In NID, OCR is even experimentally applied to text within pictures!

Annotations are added after a document has been made available as NID document, i.e. at a time when the index used for textual search is finished. The NID Team has started to even provide search within annotations. This is work in progress: when choosing search, use the option „annotation“ if you want to search within annotations.


Search is done based on a phrase as input. Places in documents where that phrase is found are shown. NID offers experimentally in addition to this a search for objects! I.e. it is possible to search for „person“ and every page containing the word person **or an object of the type person** is found! This is implemented only for a limited number of objects, since advanced AI techniques have to be applied to define the properties typical for a certain type of object.

In what follows there a few examples.

The search icon  is a small looking-glass in the left upper corner. Clicking on it and searching for “solar” gives:

Search in book ▼

solar

 Search

---

Search results for: solar

Showing 1 - 3 out of 3


- 16 ...power versus *solar* or wind power ...
- 16 ...also how many *solar* photovoltaic ...
- 24 ...of fresh water, abundant *solar* energy, rich biodiversity, ...

Thus, 3 pages in the issue contain the words “solar.” They show up on the pages surrounded by a broken outline. Now, if before we search, we click at “Search in the book” we switch to “Search in annotation” and type “biodiversity” the system comes up with:

Thus it does not directly point to the annotation containing the word, but to the page where one of the annotations contains it. (Work in progress!)

Search in Annotation ▼

biodiversity

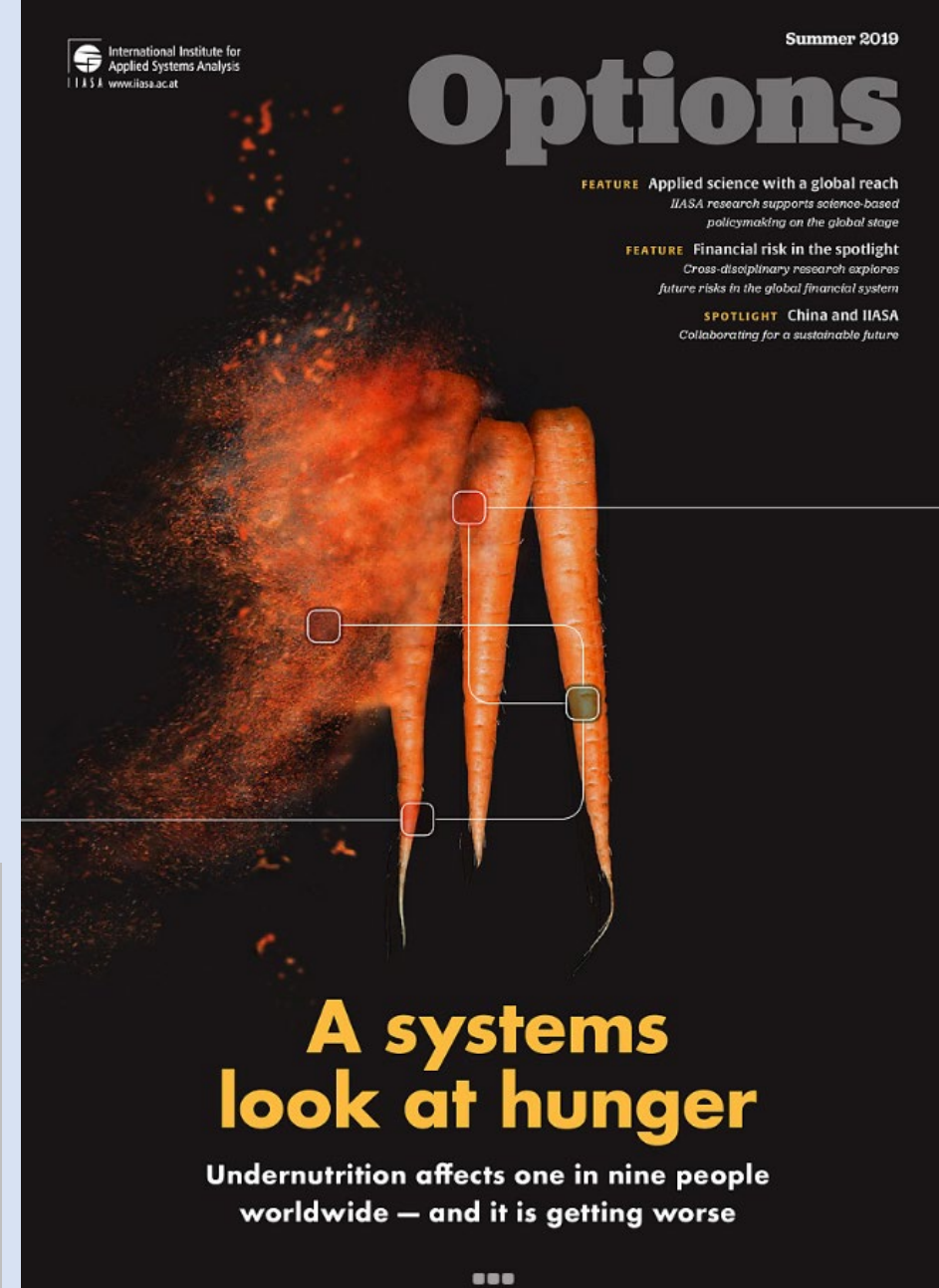
 Search

---

Search results for: biodiversity

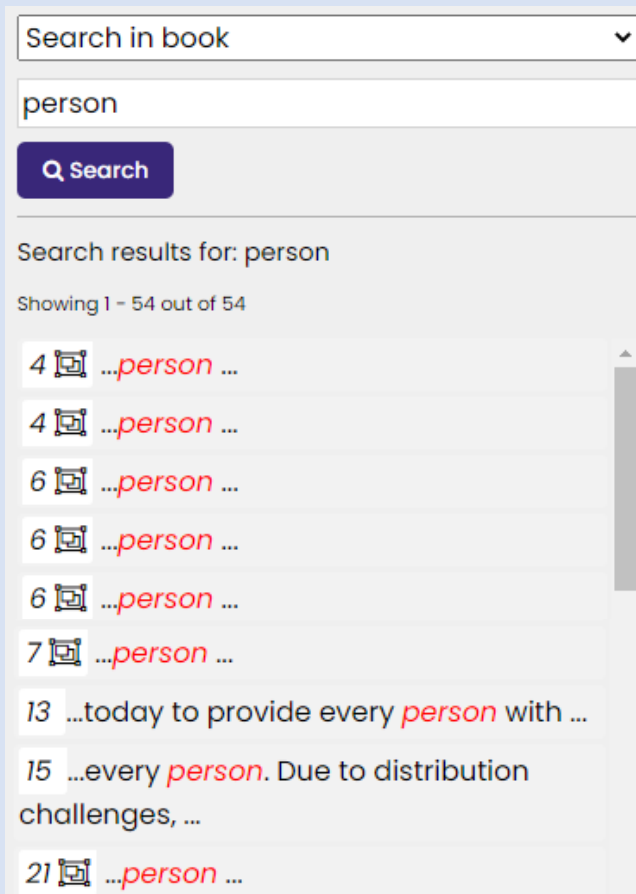
Showing 1 - 1 out of 1

- 15 ...the preservation of *biodiversity* and the reduction o...



This is the issue <https://nid.iicm.tugraz.at/Home/ViewBook/127>

Next we show how „clever“ the system is in detecting objects (as mentioned, at them moment, a limited set. But could be expanded to fit a customer’s need). Using again the same search icon we type person. We get a long list. Only a part is shown below, starting as follows:



Search in book


person

Q Search

Search results for: person

Showing 1 - 54 out of 54

- 4 ...*person* ...
- 4 ...*person* ...
- 6 ...*person* ...
- 6 ...*person* ...
- 6 ...*person* ...
- 7 ...*person* ...
- 13 ...today to provide every *person* with ...
- 15 ...every *person*. Due to distribution challenges, ...
- 21 ...*person* ...

This time, the system has found two pages 13 and 15 containing the word “person” but quite a few with the object person (as indicated by the icon  )

In particular, it has found two objects “person” on page 4.

The next slide shows this page 4.  
NID hopes you are impressed.



This is the issue

<https://nid.iicm.tugraz.at/Home/ViewBook/127>

### Extreme temperatures hit rural residents harder

Extreme temperatures bring greater mortality risk to people living in China's rural communities than in urban areas, according to IIASA research. The disparity between urban and rural mortality risk was found across the entire population, but was greater for women than men, and for people over 65.

The researchers used six years of detailed weather, air pollution, population density, and mortality data from Zhejiang Province to estimate the numbers of urban and rural deaths attributable to hot and cold temperatures.

The findings suggest that by omitting important differences between rural and urban areas and populations, previous studies may have underestimated the overall impact of extreme temperatures



© FrankBisli / Dreamstime

on population mortality.

"These findings go against the assumption that urban residents are at higher risk due to the urban heat island effect, which raises temperatures in cities compared to surrounding areas," says IIASA researcher Stefan Hochrainer-Stigler, a coauthor of the study led by 2016 Young Scientists Summer Program participant Kejia Hu in collaboration with other researchers in China and at IIASA.

IIASA researcher and coauthor Wei Liu says, "While fast urbanization

is taking place, in the developing world there is still a large percentage of population living in rural areas. They are more likely to be working long days outdoors and also to have poor public health system coverage. Both these factors lead to greater vulnerability."

**Further info:** Hu K, Guo Y, Hochrainer-Stigler S, Liu W, Shen L, Yang X, Zhong J, Pei F, et al. (2019). Evidence for Urban-Rural Disparity in Temperature-Mortality Relationships in Zhejiang Province, China. *Environmental Health Perspectives* 127 (3): e037001. [pure.iiasa.ac.at/16773]  
**Stefan Hochrainer-Stigler:** hochrainer@iiasa.ac.at



© Shantanu / Dreamstime

### Cooling needs in the Global South

A cool indoor space on a sweltering summer day is an expensive luxury in many parts of the world: only 8% of the 2.8 billion people living in the world's hottest regions have an air conditioning unit. In addition, more than one billion people lack access to electricity and at least one billion live in

slum conditions, making access to space cooling challenging.

IIASA researchers compared residential cooling needs and access to air conditioning for countries in the Global South to determine the location of populations potentially exposed to heat stress. The results revealed large gaps in access to essential space cooling, especially in India, South-East Asia, and sub-Saharan Africa.

The study gives a first estimation of the energy required to fill this gap. Providing air conditioning for all who need it would require an increase in energy consumption of 14% of current global residential electricity consumption. Since air conditioning units however tend to use a lot of energy, the researchers point out that increased air conditioning access could come with high costs and environmental impacts, unless equal attention is paid to energy efficiency and building design.

IIASA researcher Alessio Mastrucci led the study. He says, "Filling the cooling energy poverty gap requires integrated strategies beyond providing access to affordable, efficient, and low-emitting air-conditioning. Access to electricity and affordable, energy efficient homes is of critical importance in this respect."

**Further info:** Mastrucci A, Byers E, Pachauri S, Rao ND (2019). Improving the SDG energy poverty targets: residential cooling needs in the Global South. *Energy & Buildings* 188: 506-516 [pure.iiasa.ac.at/16793]  
**Alessio Mastrucci:** mastrucci@iiasa.ac.at

Is it not surprising that AI ( deep neural networks) are able to identify the heavily clad women in the upper picture and the man seen from the back in the lower pictures as humans, as "person"?

If you are interested in learning more about such object recognition look at Dr. Zaka's document <https://nid-library.com/Home/BookDetail/305>

Let me take this opportunity to state very explicitly that the ideas of NID have been developed by me and Bilal ZAKA together, but the actual implementation and extensions were carried out by a team lead by the true genius ZAKA. We will continue our joint work on NID till at least end of 2023 to obtain a final product. However, it is already quite useable as is!

NID allows to define user-groups. Certain books, or certain annotations are only visible for persons belonging to a particular group. This can serve very different purposes as we explain with three examples.

## **Consider a complicated mathematical formula.**

It may be shown as such to university students in mathematics.

But it must be shown with a short explanation to senior students in high school.

And it may be shown only with extensive explanations, including maybe links leading to still easier to understand material for less experienced persons.

**Or consider an application for a car company. A picture of a new car is shown.**

--- For the general population, annotations will explain some great features

--- For sales personnel, annotations might explain advantages over rival products

--- For engineers, annotations will give more detail on technicalities

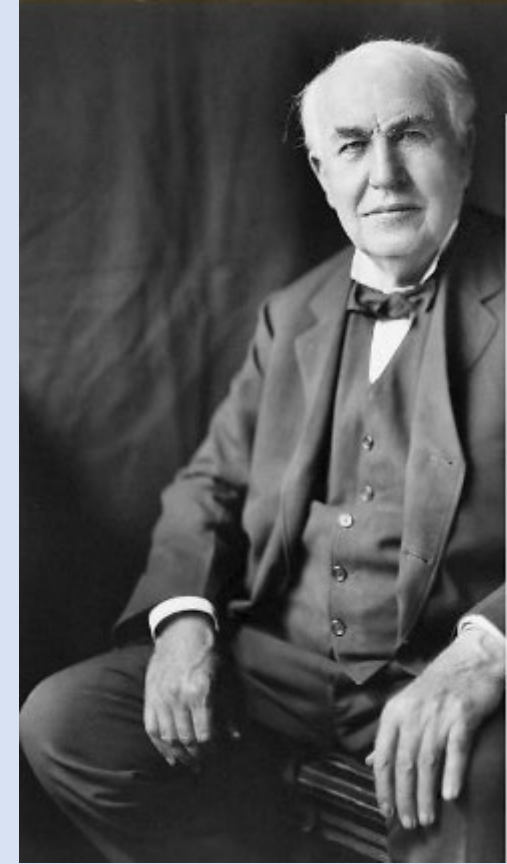
--- For repair crews, annotations will give hints how to handle potential problems, those annotations getting longer as more incidents happen



**Or NID applied for an organization can be used for presentation to the outside world or as internal information system.**

Here, the group concept is of course critical. Different information is visible for different groups. Much information might not be available for the public, but even within an organization different groups will possibly see only certain NID documents or parts of them. Further, through annotations and discussions, information will be improved and will keep growing, and will become obsolete much slower. Even more important: new information is added and will remain even if there are changes in personell. I.e. NID can be seen as knowledge information system!

And here is yet another of the many application of different annotations visible to different groups.



New Window Edit Delete

Added By: Marco Fuchs on: 19-Oct-2020

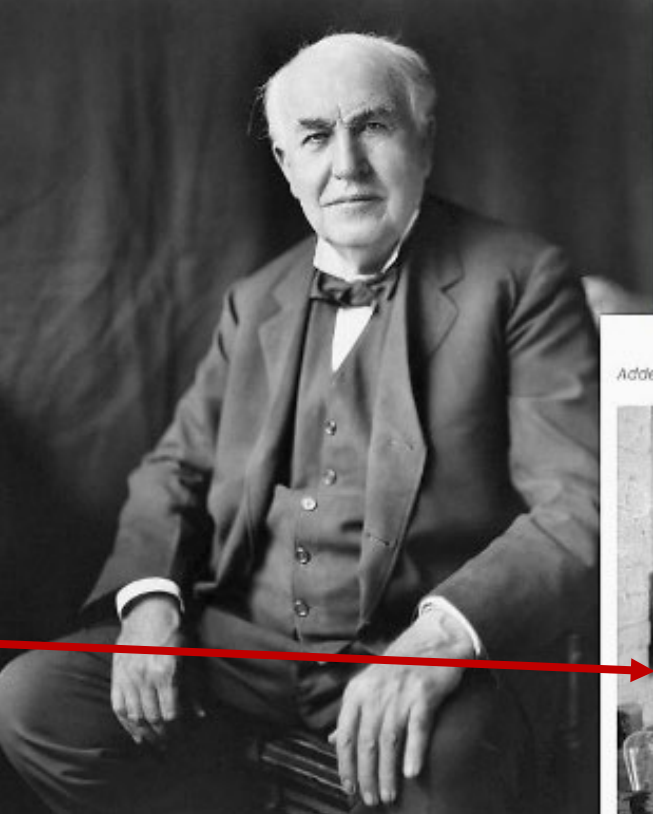
**Thomas Alva Edison** (February 11, 1847 – October 18, 1931) was an American inventor and businessman who has been described as America's greatest inventor.



Wohl ein Mikroskop. (Nach einer Photographie.)

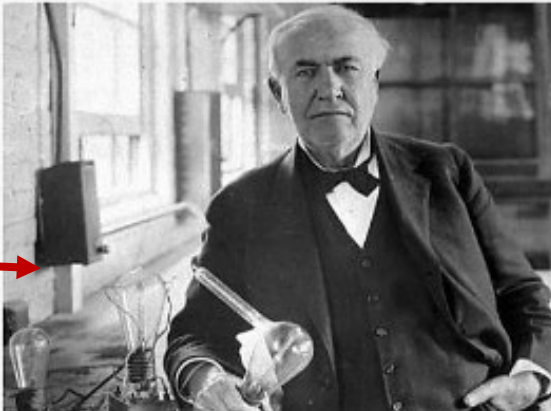
This annotation shows Edison with his famous phonograph, for reasons unknown rather thoughtful or even unhappy.

This annotation also shows Edison in his lab, but this time in an elegant jacket.



New Window Edit Delete

Added By: H Maurer on: 17-Aug-2021



It was mentioned before that NID books allow discussions. Here is the right upper part of page 5 of a book. The fact that the word Diskussionen is lit up shows there is a discussion on this page.

5 ▾ **Diskussionen** ▾ **Einstellungen** ▾

iiasa research  
research news

A photograph of a person wearing a dark cap, seen from the side, holding a white sign with green text that reads "THE CLIMATE IS CHANGING WHY AREN'T WE?". The background is a bright, slightly blurred outdoor setting.

© Nicole S. Glavin | Shutterstock

### Thinking outside the box on climate mitigation

According to IIASA researchers, international policymakers need a broader range of scenarios as they seek to limit climate change to below 2°C above pre-industrial levels, and to avoid the potential negative environmental and social consequences of negative emissions technologies.

#### 'Modest' climate benefits from LPG cooking

Switching from wood to liquefied petroleum gas (LPG) cooking, could provide modest climate benefits, but these vary based on the extent of sustainable wood use, according to a new analysis focused on India. Young Scientist Summer Program researcher Devyani Singh found that switching to LPG would reduce net emissions by up to 6.73 metric tons of CO<sub>2</sub> equivalent, if 30% wood is assumed non-renewably sourced. Switching would also reduce pressure on woodlands.  
[www.iiasa.ac.at/news/LPG-cooking-17](http://www.iiasa.ac.at/news/LPG-cooking-17)

#### Climate change policy and future wellbeing

What is the best mix of mitigation and adaptation when it comes to climate change? Fabian Wagner and his team found that the answer depends on whether we care about the aggregate wellbeing of humanity or the average wellbeing. They also suggest that lowering population growth could save tens of billions of dollars annually and improve overall wellbeing, while a larger population will leave future generations at greater risk from climate-related damage.  
[www.iiasa.ac.at/news/Climate-wellbeing-17](http://www.iiasa.ac.at/news/Climate-wellbeing-17)

➤

Clicking at the word Diskussionen one gets a page (see next slide) where the gray part above is filled with the the initial part of a discussion.

iliasa research

## research news



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### Thinking outside the box on climate mitigation

According to IIASA researchers, international policymakers need a broader range of scenarios as they seek to limit climate change to below 2°C above pre-industrial levels, and to avoid the potential **negative environmental and social consequences** of negative emissions technologies.

Ecosystems Services and Management Program Director Michael Obersteiner, led research to develop alternative scenarios that place less reliance on negative emissions technologies.

"Many currently used emissions pathways assume that we can slowly decrease fossil fuel emissions today and make up for it later with heavy implementation of negative emissions technologies," says Obersteiner. "This is a problem because it assumes that

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[www.iliasa.ac.at/news/Climate-wellbeing-17](http://www.iliasa.ac.at/news/Climate-wellbeing-17)

#### Who pays for climate loss and damage?

There is increasing emphasis on adaptation to climate change and the need to address the



Anonymous

Climate change and size of population

**Everyone seems to talk about measures to control climate.** It seems to me that one important point is forgotten: There are too many living people. In 1900 we had some 1,3 billion, now some 8 billion. It is time to not just stabilize population, but to try to cut it a bit year, by year. Why is this not addressed?

30-Jul-2022 11:11 PM



Anonymous


**A very good point.** Does anybody realize that India (then including Pakistan and Bangladesh and today's Sri Lanka) had 97 million people in 1900 but now India alone has 1,3 billion

[Link](#) **B** *I* Ux

Post

To see more, one has to scroll. To make following the discussion easier, it can be extended to the full page using the  symbol, see next slide.


→✕



**Anonymous**  
**Climate change and size of population**


**Everyone seems to talk about measures to control climate.** It seems to me that one important point is forgotten: There are too many living people. In 1900 we had some 1,3 billion, now some 8 billion. It is time to not just stabilize population, but to try to cut it a bit year, by year. Why is this not addressed?

30-Jul-2022 11:11 PM




**Anonymous**  
**A very good point.** Does anybody realize that India (then including Pakistan and Bangladesh and today's Sri Lanka) had 97 million people in 1900 but now India alone has 1,3 **billion** people!

30-Jul-2022 11:13 PM




**Anonymous**  
**However:** It is not the sheer numbers that count but also the living standard. The USA and other highly developed countries are contributing to climate warming much more than e.g. most poor countries in Africa.

30-Jul-2022 11:16 PM




**H.M**  
**We do have a dilemma.** Are richer countries not morally obliged to help poorer countries to better their living standard, thus increasing use of technology, need for more energy, etc.? To get enough energy in Africa is not possible fast enough with wind or solar, but will require energy produced by e.g. using fossil fuels.

30-Jul-2022 11:21 PM



**Anonymous**  
**Burning fossil fuels again?**  
Does this not mean that we will increase the speed of climate change with dramatic consequences?

31-Jul-2022 09:43 PM



**Anonymous**  
**Many unproven statements**

🔗BI🔗

🚩 Post

You still have to scroll to see the full discussion, but now it is easier to read. You can still post a contribution by typing in the open space at the bottom. By clicking at the arrow in left upper corner you can revert to the situation shown before.

NID has many other interesting features. I can just try to give an idea of further things possible using NID, referring otherwise to the ample literature on NID on <https://austria-forum.org/af/AEIOU/NID> or suggesting to contact me for info or a virtual meeting via [hmaurer100@gmail.com](mailto:hmaurer100@gmail.com).

One interesting feature of NID is that it allows to search for a phrase in a number of books at the same time.

Also, books may have a table of content added. In this case it can be used on **any** page of the book. We choose a book on Tesla:

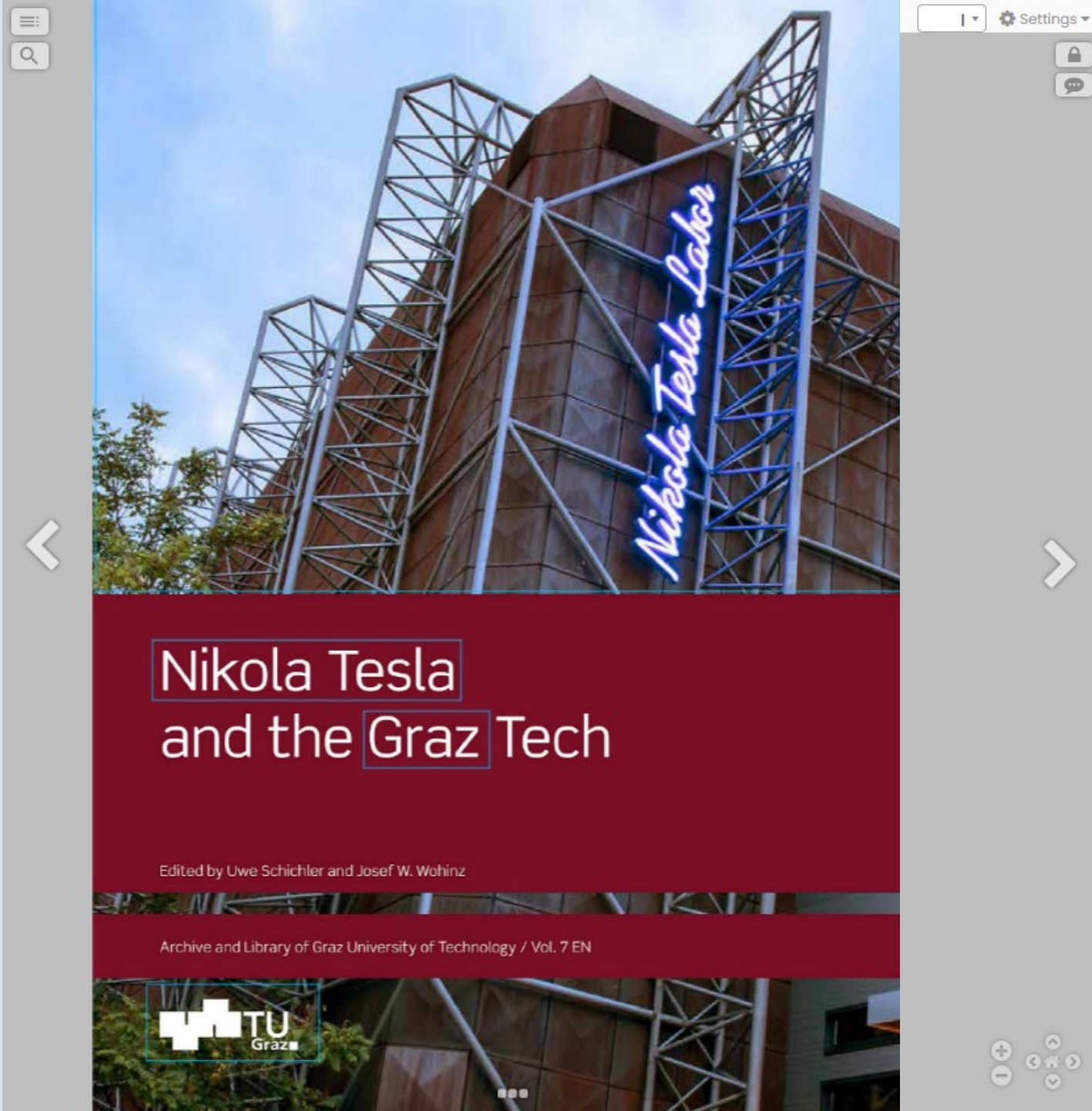
<https://nid-library.com/Home/ViewBook/172>

To explain this and some other aspects, see first page of the book on the next page.



Notice the arrows < and > allowing to browse through the book; the icons at the right bottom corner allow zooming and shifting the current picture shown.

The icons in the upper right corner show the current page number (in this case:1). The option „Settings“ allows the choice of interface language (e.g. English or German) and other options: When uploading the document, suitable starting choices can be made.

The closed lock means that the page is accessed anonymously. By logging in, the lock opens, and many more menu options become available. The icon for Feedback below the lock it has already been discussed earlier.



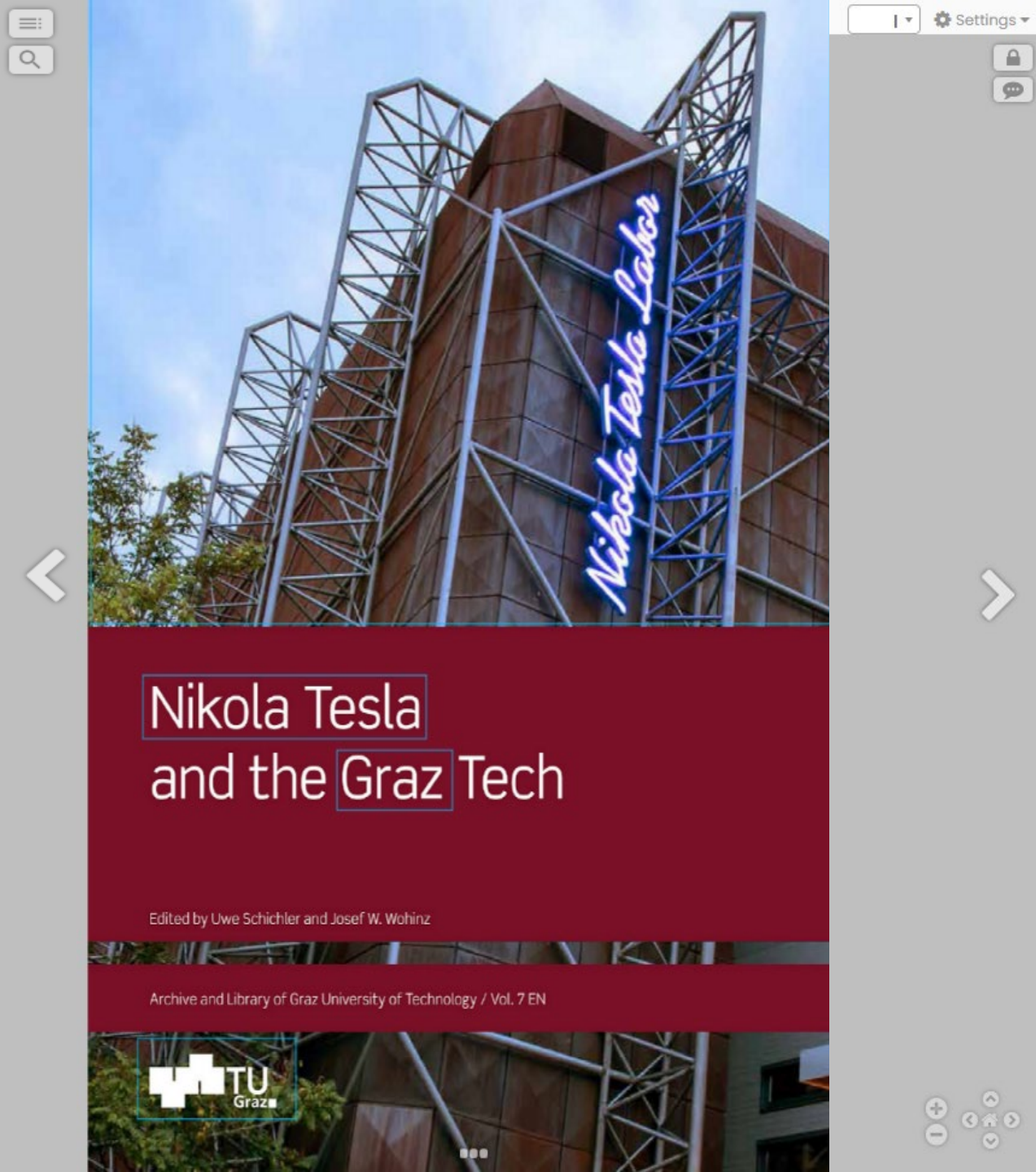
Now to the icons in the left upper corner:

The search icon  has been discussed before. The first icon  shows that this book has an automated table of contents. It will appear on each page. When clicked, the table of contents appears. The top part of the table is shown to the right.

Note the mark indicating the current place one is at.

 **Nikola Tesla and the Graz Tech** 

- **Front Cover**
- Last Page
- Editor's foreword
- Nikola Tesla and the Graz Tech
- The Graz Tech: A tradition of innovation
- Nikola Tesla: Milestones in his life
- Nikola Tesla: Student at the Graz Tech
- Nikola Tesla: Honorary doctor of technical sciences
- People shape the development of the Tech
- References
- Nikola Tesla: Visionary and Inventor
- Development of electrical engineering from 1850 to 1950
- The problem of the commutator
- The rotating magnetic field: Polyphase alternating current system
- The Niagara Falls power station: Direct current or alternating current?
- High frequency, the Tesla transformer and Wardencllyffe Tower
- Remote-controlled ships and robots
- Hotel room 3327 in New York
- Tesla's innovations: visible in the 21st century





Note that the options beyond < and > are very limited, so that anonymous users are not confused by too many choices. If one logs in (after a one-time registration) the menus extend (or have been set to appear with more options when uploading the book also for anonymous users). The menu in the left upper corner looks then typically like this:



The pencil icon is particularly important and easy to use: it allows to add annotations at any place of the current page. The icon explains the very easy steps to create an annotation, so we skip the description here. The icon allows to hide annotations, and with a double click to open the way for „Fancy annotations“, annotations that have a border-colour different from the ordinary blue, or a contour shape different from a rectangle. It is best to try this out: anyone making logged-in an annotation can change or delete it again afterwards, so you cannot ruin anything.

Actually, a special „Book for experiments“: <https://nid-library.com/Home/BookDetail/220> is available where you can fool around at will, since once in a while I will clean it up again!

The ? icon allows to ask a question (sent to the author of the document) who will then hopefully answer it, see next page.

On page 28 of the beautiful document „Warum Pöllau?“ at <https://nid.iicm.tugraz.at/Home/ViewBook/650>



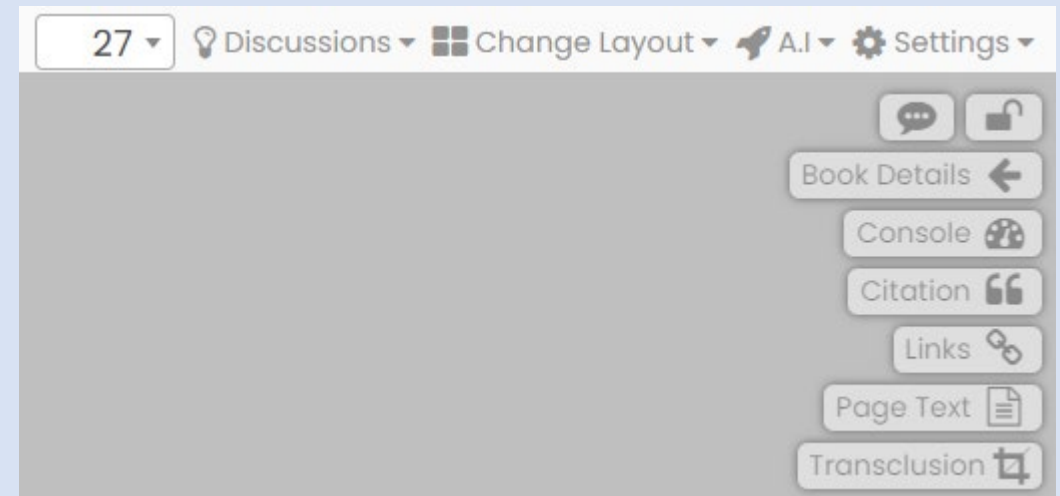
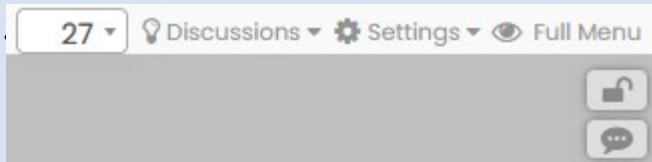
Someone just dragged the ? icon into the creek, typed a question ( „What is the name of the creek?“) and the authors of the book answered as you can see below:



The answer (Antwort in German ) was: „It is the „Pöllauer Safen“.

After discussion of the major menu items in the left upper corner as visible for logged in users we look at the right upper corner. Here one can e.g. select whether one wants just simple menu options for simple tasks, or more.

On the left you see the Short Menu with the option to switch to Full Menu, on the right you see the Full Menu with options available via Settings.



„Discussions“ allows to start a discussion on the current page and check if there are any discussions ongoing in the document. If there is already a discussion on the page, the word is lit up as mentioned earlier to alert visitors.

Some of the Full Menu options are: „Change Layout“ allows to place more than one page on the same screen and work with them independently. E.g. English text on the left, German one on the right, see next slide.

„Settings“ provides language choice, group definition, quizzes and more. „Citation“ allows to automatically generate the correct citation according to a format of your choice for publishing. „Transclusion“ allows to create a link to part of a book-page, an unusual and powerful feature that can be used for anything much as graphic addresses are used for pictures.

# Two pages from two different books!



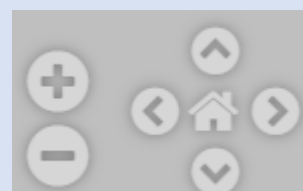
The importance of the specific, indeed unmistakable, character of a university lies in the particularly close link between scholarly research and teaching. In this way, insights are obtained which, as a further development of knowledge and in particular of the respective state of technology, justify the reputation of such an institution. Our world today is crucially shaped by technology, which entails both negative and positive aspects. The shared responsibility for our fellow human beings and for the environment is reflected in necessary decisions and programmes of action derived from them. Here, many contributions have been and are being made.

Fig.: Joanneum (Raubergasse 10) entrance gate with a row of coats of arms and a commemorative plaque (photo: H. Tezak)



Die Bedeutung und der spezifische, ja unverwechselbare Charakter einer Universität liegt in der besonders engen Verknüpfung von wissenschaftlicher Forschung und Lehre. Damit werden auch jene Einsichten erzielt, die als Weiterentwicklung des Wissens, im Speziellen des jeweiligen Standes der Technik, den Ruf einer solchen Einrichtung begründen. Unsere Welt von heute ist entscheidend durch die Technik geprägt, was positive wie negative Aspekte in sich birgt. Die gemeinsame Verantwortung für Mitmenschen und Umwelt findet ihren Niederschlag in notwendigen Entscheidungen und daraus abgeleiteten Handlungsprogrammen; hier wurden und werden vielfältige Beiträge erbracht.

Abb.: Joanneum (Raubergasse 10) Eingangsportal mit Wappenband und Gedenktafel (Foto: H. Tezak)



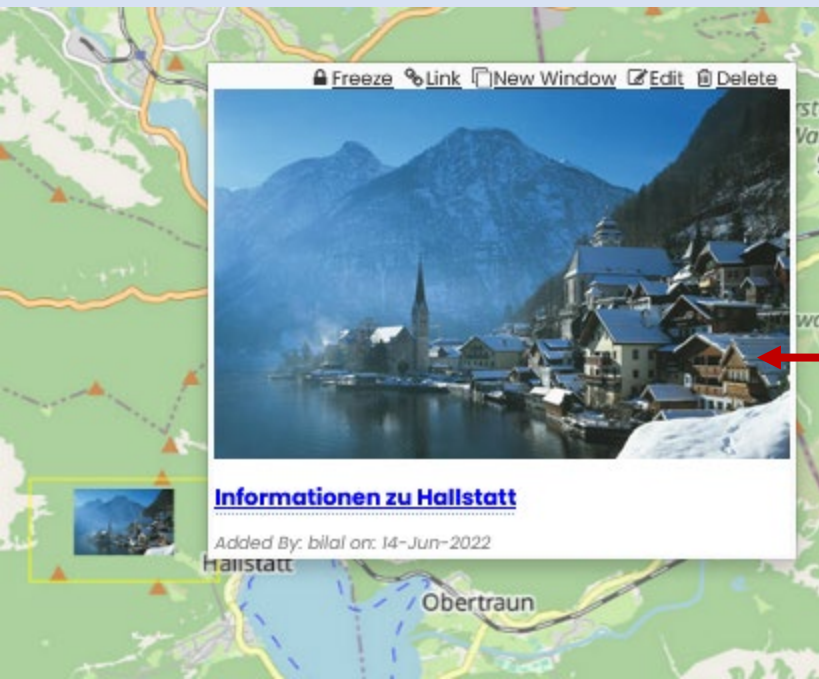
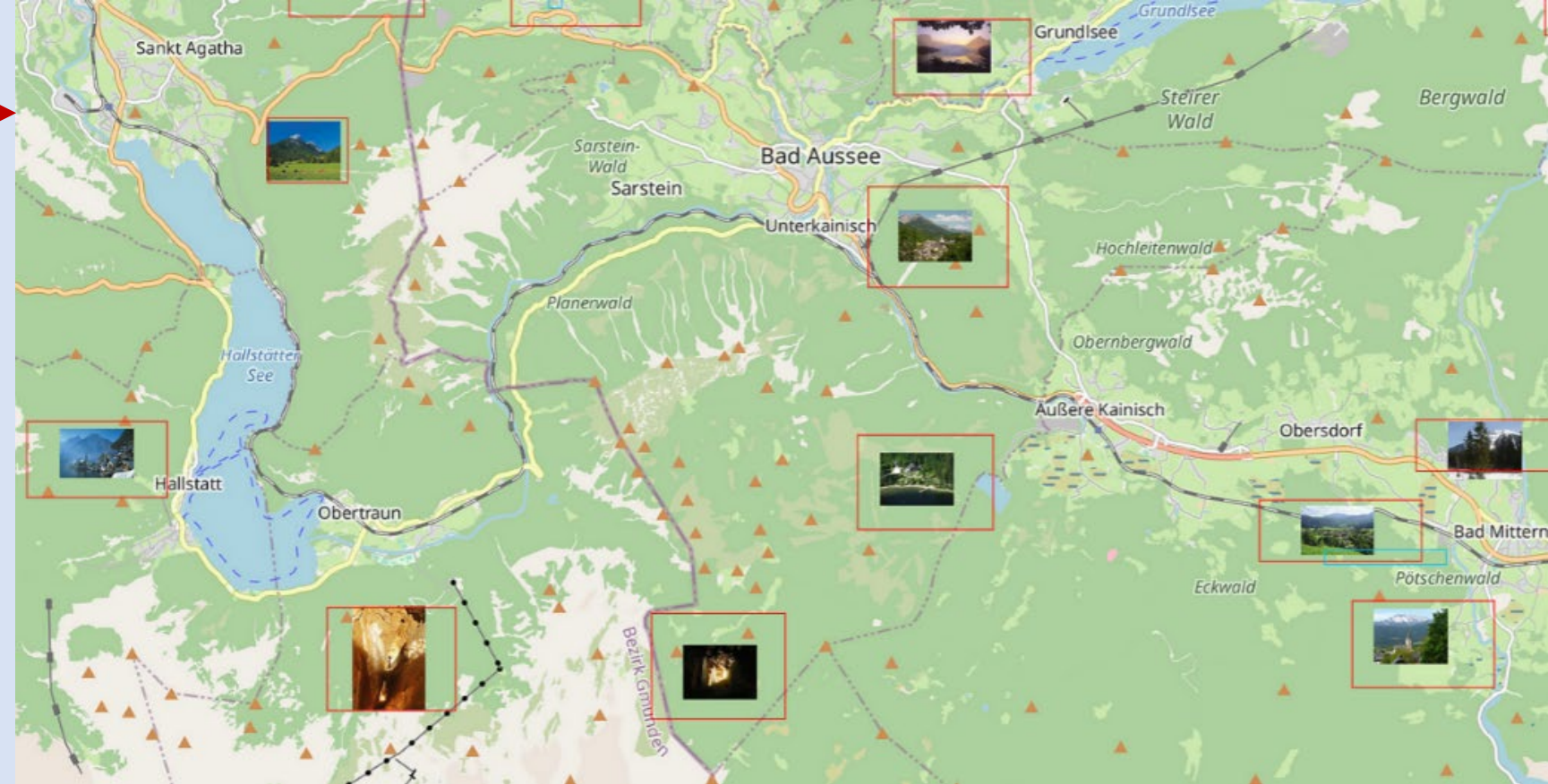
There are additional possibilities that are quite unique:

It has been mentioned that annotations of any type including links can be put into pictures--- in most systems e.g. links can only be added to textual objects. A typical example of using this feature of adding information in a picture is seen on the next page.

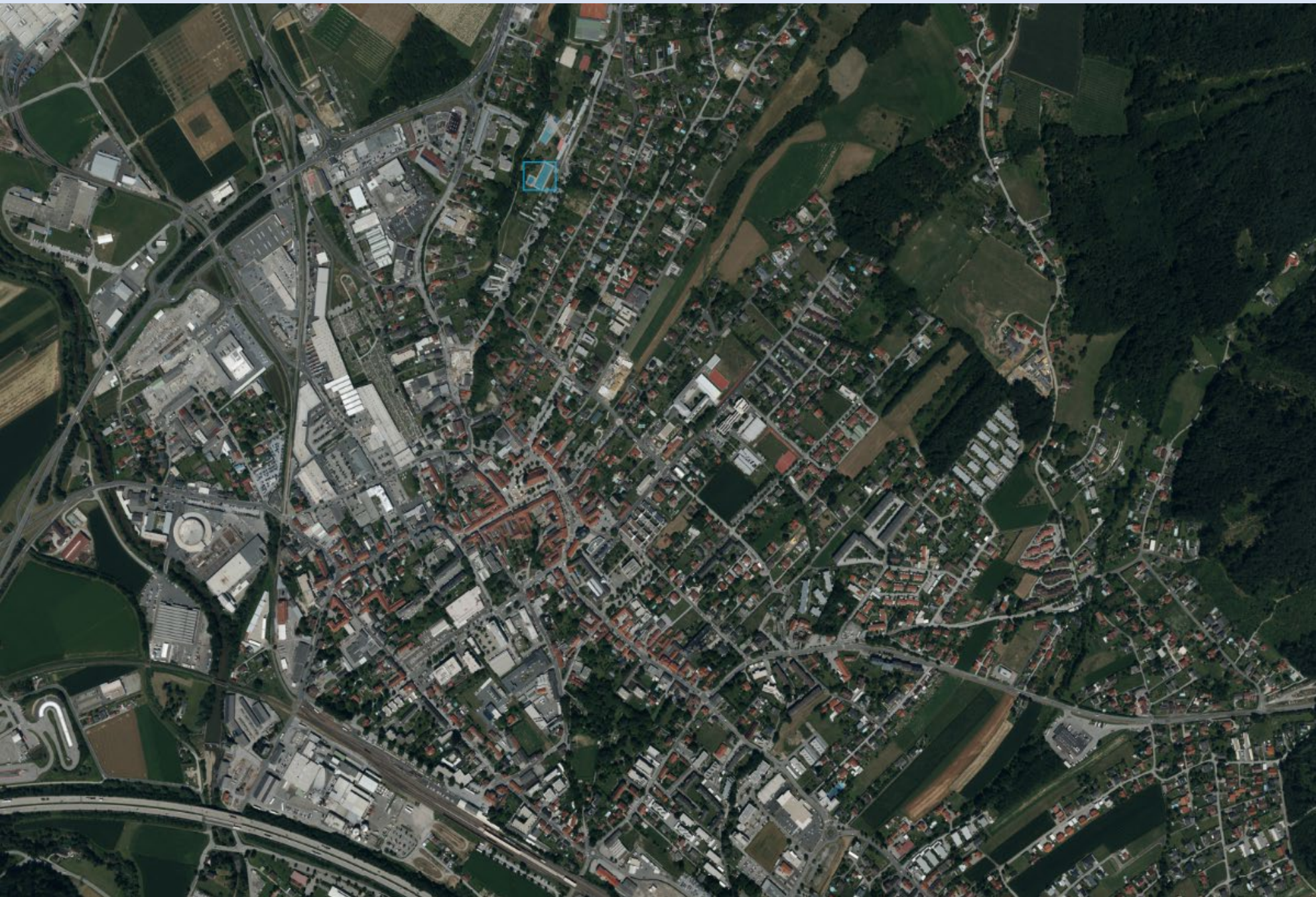
The system allows to load pictures with arbitrary resolution where one can zoom in maybe 50 fold or more. An example of a high-resolution picture of a city is shown on the next but one page, with a small blue spot. Zooming in on the blue spot it turns out to be a swimming pool, showing still waves of swimmers.

Part of the page

<https://nid-library.com/Home/ViewBook/634>



When clicking at the leftmost annotation (Hallstatt) in above picture, the picture of the place with a link to extensive information is made available



This is from page

<https://www.nid-library.com/Home/ViewBook/411/33/view>

Zooming in on the blue spot can be done to the extent that it covers the full page and is seen as a swimming pool, see next page!



The blue spot was hardly recognizable as pool in the previous picture!

So we have now zoomed in by a factor of 40 or more!



Very important:

A NID System has as main component a collection of NIDs (Documents and books)

But it also has a built-in modern Wiki systems if users just prefer to upload HTML pages. Then annotations are not possible, but feedback is allowed.

Links in both directions increase visibility of information as I mentioned with the IIASA example.

# Summary

I have explained some details of what NID can do. I have omitted many features, and the powerful administrative tools to set up, and maintain a NID server, and all the functions and parameters one can choose when uploading a NID document. This and interesting life examples I will show in my life presentation tomorrow.

If you are interested in trying out NID we offer you a subcategory on one of our servers, i.e. we make a computer, network, software and installation of documents available to you. You make documents available as Word-, PDF- or PPT-file and we upload them for you. Of course we can also install NID on one of your computers, but we believe that you first should try it out!

Why don't you send me a message to [hmaurer@iicm.edu](mailto:hmaurer@iicm.edu) if interested in some aspects. If you want to do this anonymously, go to any page of [austria-forum.org](http://austria-forum.org) and use the green Feedback button on the right. In any case thanks for your attention!

Prof. Dr. Hermann Maurer, [hmaurer100@gmail.com](mailto:hmaurer100@gmail.com)

## Here are some of the life demos April 21

**Austria-Forum:** Kunst und Kultur [https://austria-forum.org/af/Kunst\\_und\\_Kultur](https://austria-forum.org/af/Kunst_und_Kultur) : Symbole; Musik-Lexikon; Heimatlexikon

Video Alpengold: <https://austria-forum.org/af/Heimatlexikon/Alpengold>;

Blogmobil Video: <https://www.youtube.com/watch?v=etxPMWWxUG4> Start, then jump to 3:40

Essays: (In Kulturwandel durch Technik, Teil 3): [https://austria-forum.org/af/Geography/Cross-country\\_information/Stability\\_of\\_digitized\\_information](https://austria-forum.org/af/Geography/Cross-country_information/Stability_of_digitized_information)

Allgemeinwissen: <https://austria-forum.org/af/Allgemeinwissen/Geographie> (Summary of relevant topics)

Bilder: [https://austria-forum.org/af/Bilder\\_und\\_Videos/Kronprinzenwerk](https://austria-forum.org/af/Bilder_und_Videos/Kronprinzenwerk) (Choose a picture, e.g. in Dalmatien, Ragusa= Dubrovnik), then bookpage, then OCR)

Suche nach Energie: <https://austria-forum.org/af/AEIOU/Energie>

Geography: Montenegro: <https://austria-forum.org/af/Geography/Europe/Montenegro> (Choose pictures; and panoramas under special information; then maybe same for Croatia)

**NID:** <https://nid-library.com>

Montenegro: <https://www.nid-library.com/Home/Collections/41> (Note interface-language can be switched to e.g. Serbian)

Support of ordinary Webservers (e.g. [https://austria-forum.org/af/Biographien/Fuchs,\\_Ernst\\_\(geb\\_1851\)](https://austria-forum.org/af/Biographien/Fuchs,_Ernst_(geb_1851))) (see Link to NID Book!)

IIASA: <https://www.nid-library.com/Home/Collections/37> (Note frequency of access!)

Conference Proceedings: <https://www.nid-library.com/Home/Collections/31>

Das grüne Juwel: <https://www.nid-library.com/Home/BookDetail/243> (Look at one discussion)

Touristic Information: <https://www.nid-library.com/Home/BookDetail/857> (Try Suche in Annotationen, go to 200 page book) Demo of annotation. Use Graphic address of a picture of Podgorica.e.g. from [https://www.tripadvisor.at/Attractions-g304088-Activities-Podgorica\\_Podgorica\\_Municipality.html](https://www.tripadvisor.at/Attractions-g304088-Activities-Podgorica_Podgorica_Municipality.html) Search in NID-Books „Hoamatland“, noting crossreferences to Austria-Forum, or „Mein Altausee“ as touristic application, or grünes

Stephansdom <https://www.nid-library.com/Home/BookDetail/944>

Bauerhöfe <https://www.nid-library.com/Home/BookDetail/956>

### Some of the administration tools

Transclusion, language choice, layout, searching over categories, uploading Pdf file e.g. Ursula von der Leyen, My agenda:

[https://austria-forum.org/attach/Europa/political-guidelines-next-commission\\_en.pdf](https://austria-forum.org/attach/Europa/political-guidelines-next-commission_en.pdf) Ursula