

Geographic Information Technology Training Alliance (GITTA) presents:

GITTA - Geographic Information Technology Training Alliance

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1. GITTA - Geographic Information Technology Training Alliance

LATEST NEWS (09.10.2013): the lessons "Spatial queries" and "General introduction to the GITTA case studies" are now available in English! And after some technical issues, the lesson "Terrain analysis" on intermediate level is online again. Check it out, you'll find the links on the **module overview** page. New infos about the results of our user survey **see here**.

GITTA (Geographic Information Technology Training Alliance) is a platform offering e-learning content as Open Educational Resources (OER). A pool of over 40 e-learning lessons covers the following thematic areas: GI Systems, Data Capture, Data Management, Spatial Modeling, Spatial Analysis, and Cartographic Presentation. Content is in large parts multi-lingual, with English, German, and French materials. Additionally 15 CartouCHE lessons on multimedia and internet cartography are available via GITTA website. You need only to subscribe to the GITTA newsletter to receive a full access link. [Register now](#)

GITTA content was originally developed by a consortium of ten institutes at seven Swiss universities and released as open content under the creative commons license. In 2008 GITTA was among the winners of the Medida Prix, the most important international award for new media didactics in Europe. Read more about the [GITTA project...](#)

GITTA is managed by an Association open to every active member or sponsor interested in using, developing or promoting GITTA materials. The statutes, membership fee, contact person etc. can be found [here](#).

GITTA, as an open community, welcomes people who would like to help developing GITTA materials. In particular native speakers willing to translate lessons to additional commonly spoken languages are welcome as well as authors willing to contribute updated versions of existing lessons or a new content. If you want to contribute to the development of GITTA content, have a look [here](#)

1.1. More Information about GITTA

The GITTA project



The steadily growing global interest in spatial information and its presentation in the academic, administrative and managerial sector asks for qualified personnel to cope with *GIST*¹ in order to form an overall pleasing and beneficial final GIS product, especially in economically challenging times of competition. This reason was decisive to establish the e-learning course *GITTA*² giving better and more coordinated access to educational material covering comprehensive and in-depth information over spatial distances using up-to-date technology.

GITTA was funded by the *SVC*³, a program initiated by the Swiss Confederation. In order to achieve a truly integrated Virtual Campus of relevant players in *GIST* education in Switzerland, the *GITTA* consortium, made up of **10 partners** spread throughout the country, covers a wide variety of disciplines and specifically integrates partners from universities, federal institutes of technology, and universities of applied sciences with a multilingual distribution (German, French and Italian). The consortium partners offer over 80% of the capacity in academic *GIST* education in Switzerland.

Out of this initiative, easily accessible teaching modules for basic and intermediate study programs, that are available via the internet, have been created. *GITTA*, the ambassador for a newly conceived concept teaching *GIST* and geomeia design combined in one study course, is responding to those needs.

¹ *GIST* is the abbreviation for Geographic Information Systems Technology.

² *GITTA* is a Swiss e-Learning project about GIS and it is the abbreviation for Geographic Information Technology Training Alliance. For more information about *GITTA* have a look at www.gitta.info.

³ *SVC*, the Swiss Virtual Campus, was founded in 1999 after a decision of the Swiss Parliament that over 50 Million Swiss Francs should be used to build up e-Learning projects at Swiss universities. In the first project phase out of about 200 project drafts a total of 50 projects were accepted and supported. *GITTA* was one of them. For more information have a look at the *SVC*-website.

It focuses on supplying an interactively programmed and IT-based, multilingual environment, to cope with increasing numbers of students for both basic and intermediate level and all types of academic curricula. Studies with GITTA are no longer static-, reactive- or text-based learning but a multimedia-enriched course while sticking to a consistent educational structure with large emphasis on flexibility and self-exploration.

The first phase of the project which started in 2001 and ended after a prolongation of half a year in June 2004. In July 2004 GITTA started the two year consolidation and maintenance phase, financially supported by the SVC. This phase will be used to make GITTA even more sustainable and for opening GITTA to the general public. The release of the first GITTA lessons as open content under the *creative commons license*⁴ has started in February 2006.

1.1.1. The idea behind GITTA

The motivation within *GITTA* lies in exploiting synergies, increasing the teaching capacity as well as improving the quality by redesigning the course on a modular basis to offer high flexibility. That means: flexibility in time and content to be chosen, individually adapted to the students needs, where theory is no longer separated from practical experiences.

The idea behind GITTA is to supplement, and partly substitute, the actual GIS education by internet based learning modules. Its organization is modular and divided into two levels complemented by case studies:

- **Basic Level:** Foundations and basic methods in each technical domain are introduced. Each of the 6 GITTA modules offers between 3 to 7 basic level lessons. In total GITTA consists of 29 basic level lessons.
- **Intermediate Level:** The knowledge of the basic techniques is further developed. The level of abstraction is higher. The tackled techniques move from a general point of discussion down to a specialized level. All modules except for the data capture module offer intermediate level lessons. In total GITTA plans to have about 20 intermediate level lessons available.
- **Case Study:** Accompanying the learning units, real world case studies are an essential part of every level of learning; focusing on deepening the theoretical knowledge in a case based and interdisciplinary form of studying GIS. Conceptual formulations are aligned so that students can prepare their individual work based on knowledge of the level they have completed. In total about 10 GITTA case studies are planned.

The learning environment is designed to be flexible to meet the users requirements and to apply learning material either class-accompanied, or, for self-guided studying. Great emphasis lies on adding a surplus value to this way of education, and, the idea is to give the students the possibility to discover GIS concepts interactively on their own.

The project organization is built up by six modules as you can retrieve from the following graphic:

⁴ Creative Commons (CC) is a nonprofit organization that offers flexible copyright licenses for creative works. CC allows authors of music, films, photos, texts etc. to share their work under a specific license they can define on the creative commons website. In the case of GITTA: You may use the GITTA content for non-commercial purposes as long as you cite GITTA as the author (including a link to our website) and publish your derivatives under the same license. For more information have a look at the creative commons deed or at the full legal code.

	M O D U L E S					
	Data Capture	Spatial Modeling	Data Mgt & Ex	Systems / Sys. Design	Presentation	Analysis
Case Studies				CS n		
				CS 6		
				CS 4		
				CS 3		
				CS 2		
				CS 1		
Intermediate Level		I-SM	I-DM	I-SD	I-PR	I-AN
Basic Level	B-DC	B-SM	B-DM	B-SY	B-PR	B-AN

The six available GITTA modules

The modules are educational components which bound a specific field of knowledge and lead to well-defined expertise and skills. Each module touches a number of methods and techniques as well as their applications. The six modules cover the following topics (see also illustration above):

1. **Data Capture**
2. **Spatial Modeling**
3. **Data Management**
4. **Spatial Analysis**
5. **Cartographic Data Presentation**
6. **Geographic Information Systems/Design**

Each of these modules are made of three to seven lessons. The entire course organization is modular down to the lesson level, what means that the choice of content to be integrated in a course can be made on this level. This guarantees in-depth information in small learning units that can be successfully completed step-by-step, as well as guaranteeing high flexibility whereby a clear learning target is defined to the student.

The smallest building block is the Unit. Units are based on the *ECLASS*⁵ model, which is described in detail on the next page about the **pedagogical concept behind GITTA**.

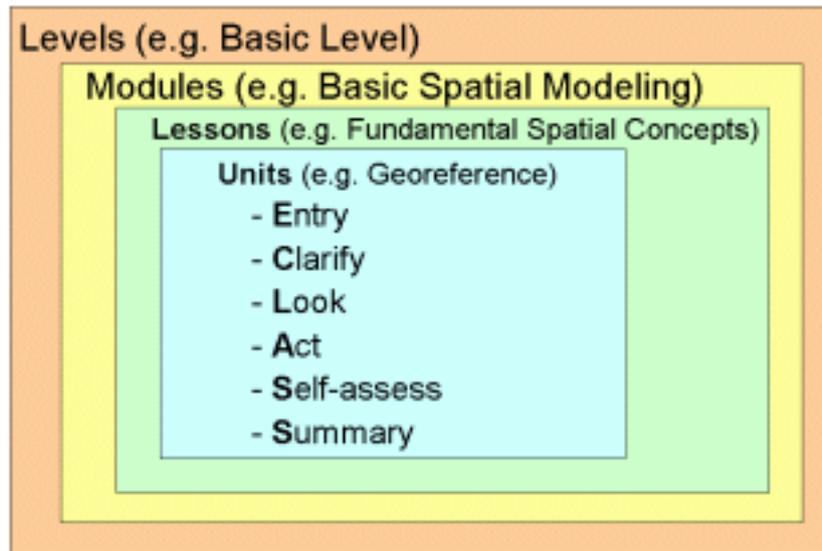
1.1.2. The pedagogical concept ECLASS

To derive adequate methods of resolution for the conception of the GITTA's learning environment, the analysis of the pedagogical surrounding and the educational problem was focused. GITTA was developed problem-driven, not technology-driven. GITTA's target lies in creating a course fitted onto the user group. Besides content and its presentation with different media, the main focus is laid on the methods of how to get the content across to the student.

⁵ ECLASS is based on Steven Gersons Guide to develop online courses. It is an abbreviation for the terms E = Entry; C = Clarify; L = Look; A = Act; S = Self-Assessment; S = Summary. Described in detail in the concept chapter.

Within the lessons, the students have to solve self-assessments, covering content learned before, followed by feedback. Also the students get the opportunity of "learning by doing" and solving small projects or case studies on their own.

The pedagogical design phase covered thoughts concerning the conception, production, the implementation and execution of a lesson and last but not least the quality control at the end of each lesson. Part of this conception is beneath the user group definition, learning organization and content adaptation, finding a didactic structure. Various effort has been set on doing research for finding an adequate didactic structure. Now GITTA uses *eLML*⁶ which is based on the *ECLASS* structure (Gerson 2000). We adapted the model according to our need as described below:



The structure of GITTA. On unit level the ECLASS model is used.

- Entry equals to the introductory statements made before each single lecture unit in a class. An example for an entry could be: What is to be discussed? Why is this topic being introduced? Originally the first E stood for "explain" which is what the introduction also does.
- Clarify represents the core of what is being taught in a unit and its key concepts. In this section the reading of facts is inevitable. *GIST* concepts are conveyed, depending on the module. In our case, Data Presentation, a short example is shown to make the problem visual for the students.
- Look allows the student to review examples or samples of a model that will be taught. It defines the important aspects of the unit through illustrations, animations, videos, white board activities etc.
- Act is to encourage the student to practice what he or she has just been taught. It should be an important integrative part of the online learning course, as it actively engages the student.
- Self-assessments should give students the opportunity to test for themselves, what they have learned. Important here is the feedback that needs to be given on each finished test to involve the learner and show him, compared to a traditional teacher, what has been good or bad - a constructive description is postulated, prepared in advance!

⁶ eLML, the eLesson Markup Language, is an XML framework developed by the GITTA project. The Swiss e-Learning project GITTA started working with XML in 2001 but it was only after the official ending of the project in 2004 that its XML structure was released as an open source project under the name of eLML. For more information read the implementation chapter, visit www.eLML.ch or follow the citation link.

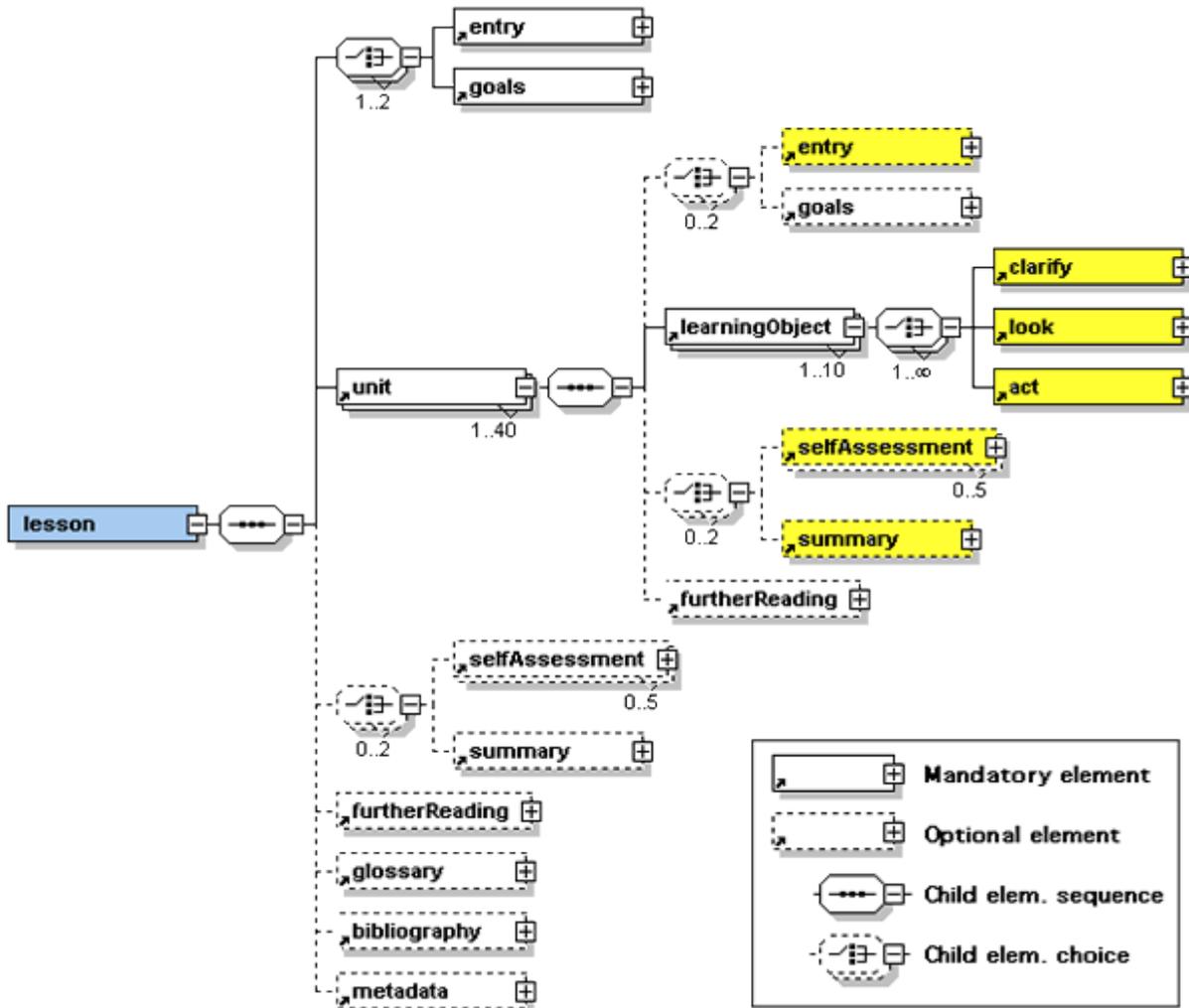
- Summary is a new point added to M. Gersons structure. It should round up a unit and point out the main facts shown in this unit. It should contain what was learned and possibly also further expectations. In (2000) the second S stood for share, meaning group exercises. In the self-developed learning structure eLML we introduced the Summary as second S and used only one exercise object, the self-assessment.

The case studies proceed with an independent teaching model, related to the approach of the constructive learning method. You will find more information about the pedagogical model behind the case studies in [this PDF document](#) (only available in German).

1.1.3. Technical implementation of GITTA using XML

Techniques for the development of common agreed module content had to be elaborated to avoid gaps as well as redundancies within the course materials. Therefore we mapped the *ECLASS* concept into an *XML*⁷ structure which since 2004 is known under the name *eLML*, the eLesson Markup Language:

⁷ XML, the eXtensible Markup Language, is a standard of the World Wide Web Consortium (W3C). XML documents use elements (tags) known from other markup languages like HTML. Using XSL transformations XML files can be transformed into other formats like XHTML or PDF. Many common used languages are based on XML: XHTML, SVG, GML, RSS, MathML etc. For detailed information about XML visit the W3C or read Wikipedias explanation.



The first three levels of the eLML structure in detail. The yellow elements gave the ECLASS model its name. The blue "lesson" element is the root element of eLML.

Interactive content is mainly created using Adobe Flash and SVG⁸. To prepare the content ready for common internet browsers the XML files are transformed using XSLT⁹ provided by eLML. The final user interface is determined by easy to maintain eLML layout templates (mostly based on CSS) and served both as XHTML and as PDF. Within the GITTA community, the authors use CVS¹⁰ to store and update the lessons on the central GITTA server.

⁸ SVG, the Scalable Vector Graphics, is a standard of the World Wide Web Consortium (W3C). It is an open, XML-based format to describe graphics and animations and can be used as an alternative to the proprietary Adobe Illustrator and Adobe Flash formats. To view SVG within a browser use either a modern browser (like Firefox or Apples Safari) that has native support for SVG or download a plugin like the Adobe SVG Viewer. For detailed information about SVG visit the W3C or read Wikipedias explanation.

⁹ XSLT, the XSL Transformations, is part of the Extensible Stylesheet Language (XSL) family and is a standard of the World Wide Web Consortium (W3C). XSLT files are used to transform XML files into other formats like HTML or formatting objects (FO) for generating PDF files. For detailed information about SVG visit the W3C or read Wikipedias explanation.

Thanks to the use of standards like *XML*, *XSLT* or *SVG* GITTA lessons can be viewed with any web-browser (see image below) on any platform and are totally software-independent. But because *eLML* supports both the *IMS Content Package*¹¹ and since 2006 the *SCORM*¹² standard, the content can easily be imported into any modern *Learning Management System*¹³ like **WebCT** or *OLAT*¹⁴. Please refer to the **download page** for some installation movies or to the eLML website for more technical background information.

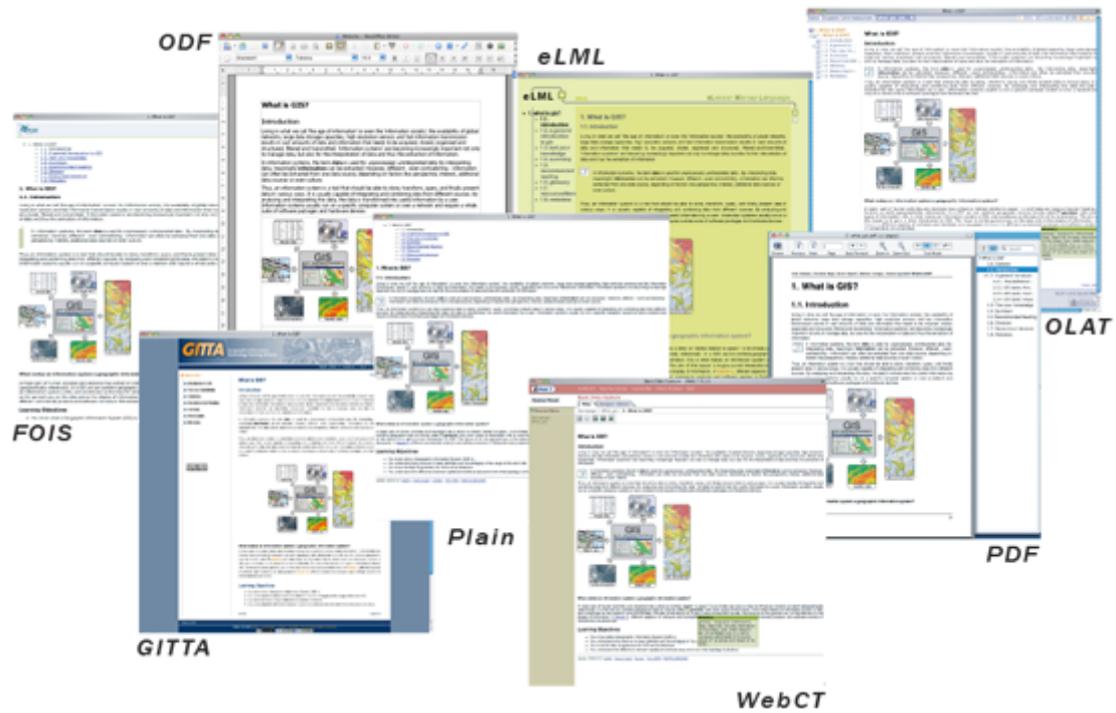
¹⁰ CVS, the Concurrent Versions System, is the most widely used tool for controlling different versions of a source code and for a group of programmers to work simultaneously on a source code. Before working with a file, a user needs to do a "checkout" of the file from a "repository" stored on the project server. When writing updates back to the repository (called "committing"), CVS checks issues like access privileges, actual status of code and if no other group member meanwhile altered the code, CVS writes it back to the repository. By doing a "update" all project group members get the latest version of the code. CVS of course stores information about who altered which part of the code and automatically stores different versions of the code. Therefore using CVS it is possible to always reconstruct a former state of the code. eLML, and therefore also GITTA, uses CVS to store the XML code, images and multimedia elements of a lesson.

¹¹ The IMS Global Learning Consortium (usually known as IMS) is a non-profit standards organization concerned with establishing interoperability for learning systems and learning content and the enterprise integration of these capabilities. Their mission is to "support the adoption and use of learning technology worldwide". Some famous IMS standards are the CP (Content Package) standard used to import/export of content, the "Learning Resource Meta-data Specification" (LOM) or the QTI standard for question and test interoperability.

¹² The Shareable Content Object Reference Model (SCORM) is a standard for web-based e-learning. It defines how the individual instruction elements are combined on a technical level and sets conditions for the software needed for using the content. SCORM is distributed by the Advanced Distributed Learning (ADL) Initiative, a US organization under the Department of Defense (DoD).

¹³ A Learning Management System (or LMS) is a software package, usually on a large scale (that scale is decreasing rapidly), that enables the management and delivery of learning content and resources to students. Most LMS systems are web-based to facilitate "anytime, anywhere" access to learning content and administration. Some widely known open source LMS are OLAT and Moodle, famous commercial LMS are WebCT and Blackboard.

¹⁴ The development of the open source LMS OLAT (Online Learning And Training) was started at the University of Zurich in 1999 and won the Medida Prix for best e-learning software in 2000. Today OLAT is already in its fourth version and is the strategic platform of the University of Zurich. Besides Zurich other universities like Bern, Sachsen (Germany) etc. are using OLAT as their main LMS. More information and download of the software can be found on the OLAT website.



The same GITTA lesson in different layouts using eLML layout templates (click on image for large view)

1.1.4. GITTA consortium: Partner institutes and staff list



The GITTA partners are spread across Switzerland (© Atlas der Schweiz)

The participating universities:

University of Zurich (Leading House)

Department of Geography **GIUZ**: GIS Division

- Address: 25L04, **Winterthurerstr. 190, 8057 Zurich**
- Phone: +41 44 635 5191 / Fax: +41 44 635 6848
- Head: Prof. Dr. Robert Weibel
- Staff: Helmut Flitter
- Former staff: Anna M. Leonowicz, Thomas Grossmann, Sandro Bischof, Marcel Frehner, Stefan Hofstetter, Marco Hugentobler, Patrick Laube, Eric Lorup, Sabine Timpf, Felix Hebel



**Universität
Zürich**^{UZH}

Université de Fribourg

Département de Géosciences: **Unité de Géographie / Groupe de Géomatique**

- Address: **Ch. du Musée 4, 1700 Fribourg**
- Phone: +41 26 300 9023 / Fax: +41 26 300 9746
- Head: Prof. Dr. Claude Collet
- Staff: Chloe Barboux, Stephanie Rogers
- Former staff: Dominique Schneuwly, Moe Myint



The participating federal institutes of technologies:

Ecole polytechnique fédérale de Lausanne (EPFL)

Laboratoire de Systèmes d'information géographique **LaSIG**

- Address: EPFL ENAC INTER LASIG (Laboratoire de SIG), Bâtiment GR, **Station 2, 1015 Lausanne**
- Phone: +41 21 693 5785 / Fax: +41 21 693 5790
- Head: Prof. Dr. François Golay
- Staff: Stéphane Joost
- Former staff: Regis Caloz, Corinne Plazanet



Swiss Federal Institute of Technology (ETH) Zurich

Chair of Land Use Engineering **LUE**

- Address: HG G 21.2, **Raemistr. 101, ETH Zurich, 8092 Zurich**
- Phone: +41 44 632 6194 / Fax: +41 44 632 1575
- Head: Prof. Dr. Hans Rudolf Heinimann
- Staff: Monika Niederhuber, Daniel Trüssel
- Former staff: Mario Gellrich, Pauline Bart, Bernd Hebel, Laurance Mazard, Tobias Meyer



Institute of Cartography and Geoinformation **IKG**

- Address: HIL G 25.1, **Wolfgang-Pauli-Str. 15, ETH Zurich, 8093 Zurich**

- Phone: +41 44 633 3033 / Fax: +41 44 633 1153
- Head: Prof. Dr. Lorenz Hurni
- Staff: Samuel Wiesmann
- Former staff: Sandra Demarmels, Boris Stern, Marion Werner

The participating universities of applied sciences:

University of Applied Sciences Northwestern Switzerland (FHNW)

School of Architecture, Civil Engineering and Geomatics **HABG**:

Institute of Geomatics Engineering **IVGI**

- Address: **Gründenstrasse 40, 4132 Muttenz**
- Phone: +41 61 467 4242 / Fax: +41 61 467 4460
- Head: Prof. Dr. Stephan Nebiker
- Former staff: Susanne Bleisch



University of Applied Sciences Rapperswil (HSR)

Institute for Software and Institute for Landscape and Open Space

GISpunkt HSR

- Address: **Oberseestrasse 10, 8640 Rapperswil**
- Phone: +41 55 222 4111 / Fax: +41 55 222 4400
- Head: Prof. Dr. Stefan Keller
- Former staff: Matthias Gfeller, André Kälin



Former partners:

University of Zurich

Department of Informatics **IFI**

- Address: 27J32, **Winterthurerstr. 190, CH-8057 Zurich**
- Phone: +41 44 635 4311 / Fax: +41 44 635 6809
- Head: Prof. Dr. Klaus R. Dittrich
- Former staff: Anca Dobre

Swiss Federal Institute of Technology (ETH) Zurich

Institute of Geodesy and Photogrammetry **IGP**: **GIS** and Theory of Errors Group

- Address: HIL D45.3, **ETH Hönggerberg, 8093 Zurich**
- Phone: +41 44 633 3055 / Fax: +41 44 633 1101
- Head: Prof. Dr. Alessandro Carosio
- Former staff: Claudia Dolci, Dante Salvini

Institute of Geodesy and Photogrammetry **IGP**: GeoInformation Technologies Group **GeoIT**

- Address: HIL D 45.2, **ETH Hönggerberg, 8093 Zurich**
- Phone: +41 44 633 3051 / Fax: +41 44 633 1101
- Head: Prof. Dr. Christine Giger

- Former staff: Valeria Agnolotti, Christine Najar, Simon Speich

Scuola Universitaria Professionale della Svizzera Italiana (SUPSI)
Istituto CIM della Svizzera italiana **ICIMSI**

Scuola Universitaria Professionale
della Svizzera Italiana

- Address: **Galleria 2, CH-6928 Manno**
- Phone: +41 91 610 8960 / Fax: +41 91 610 8988
- Head: Dr. Bernardo Ferroni
- Former staff: Simone Abruzzi, Massimo Sargenti, Caroline Westort

1.1.5. Users' feedback

In the year 2010, quite a while ago, we asked our newsletter subscribers for feedback about the GITTA project (use, content, quality, possible improvements, etc.). Based on the feedback we are making efforts to improve the content. Please understand that we do not have the money nor the time to fulfill all your wishes. However, do not hesitate to contact us if you want to contribute to the project in one way or the other!

You can view and download a summary of the results:

[Users' Feedback \(Download pdf\)](#)

1.1.6. Important links about GIS and e-Learning

For links to the websites of our partners, please check the **partners page**.

Other GIS eLearning Projects

- [WebGeo](#) (University of Freiburg, Germany)
- [Gimolus](#) (University of Stuttgart, Germany)
- [FerGI](#) - Fernstudium Geoinformatik (Hochschule Vechta, Germany)
- [geoinformation.net](#) (University of Bonn, Germany)
- [UniGIS Salzburg](#) (University of Salzburg, Austria)
- [ELAN](#) - eLearning Academic Network Niedersachsen
- [GEOvLEX](#) - Webbasierte Geovisualisierungen, virtuelle Landschaften und Exkursionen
- [e-MapScholar](#) (University of Edinburgh, England)
- [ESRI Virtual Campus](#)
- [Intergraph Training](#)

e-Learning Links

- [SVC](#) - Swiss Virtual Campus
- [EduTech](#) - Providing Technological Support to the SVC
- [ELC](#) - eLearning Center (University of Zurich)
- [NET](#) - Network for Educational Technology (ETH Zurich)
- [eLearning@GeoWiss](#) - eLearning-Koordination Fachbereich IV (Geowissenschaften) der MNF (UNIZH)
- [e-competence](#) (FH HB MuttENZ)
- [LMML](#) - Learning Material Markup Language Frameworks

- [IEEE](#) - Learning Technology Standards Committee (LTSC)
- [IMS](#) - Global Learning Consortium, Inc.
- [SCORM](#) - Advanced Distribution Learning
- [ARIADNE](#) - Foundation for the European Knowledge Pool
- [Medida Prix](#) - Mediendidaktischer Hochschulpreis

Have a look at the glossary for an explanation of terms like *IMS*, *SCORM* or *LMS*.

Geography/GIS Organisations

- [ASG](#) - Verband Geographie Schweiz **ERROR: Please define link text!**
- [IGU](#): Schweizerisches Landeskomitee
- [SGK](#) - Schweizerische Gesellschaft für Kartographie **ERROR: Please define link text!**
- [VSGg](#) - Verein Schweizerischer GeographielehrerInnen
- [GEOForum CH](#) - SANW-Forum der Geowissenschaften
- [ecoGIS](#) - Werkzeug zur Darstellung und interaktiven Abfrage von Umweltdaten
- [SOGI](#) - Schweizerische Organisation für Geo-Information
- [e-geo](#) - Impulsprogramm von KOGIS im Rahmen der nationalen Geodaten-Infrastruktur NGDI
- [envirocat](#) - Umweltdatenkatalog der Schweiz vom BUWAL
- [swisstopo](#) - Schweizerische Landestopographie
- [Interlis](#) - GeoLanguage
- [Geomatik Schweiz](#)
- [SIK-GIS](#) - Arbeitsgruppe GIS der Schweizerischen Informatikkonferenz (SIK)
- [GEObranchen.de](#) - Geobusiness & Geowissenschaft (Vom Harzer Verlag)
- [Oddens' Bookmarks](#): A huge list with Geosciences links.

For more swiss organisations have a look at [swissgeography's link](#) list. For international geographical organisation, please consult [this extensive list](#).

Geography/GIS Conferences

- [AGIT](#) - Symposium und Fachmesse für Angewandte GeoInformatik
- [EUGISES 2004](#) - Fourth European GIS Education Seminar
- [EUGISES 2006](#) - Fifth European GIS Education Seminar
- [INTERGEO](#) - Kongress und Fachmesse der Geodäsie und Geoinformation

For more links have a look at our **list of conferences** where GITTA was presented.

Software Links

- [WebCT](#) (Commercial LMS)
- [OLAT](#) (Open Source LMS. Project lead: [MELS](#)@University of Zurich - see also *OLAT*)
- [Blackboard](#) (Commercial LMS)
- [BSCW](#) (Groupware)
- [ESRI Schweiz](#)

For web design links the GIUZ eLearning Center maintains a [list with bookmarks to HTML, Java, CSS, CGI stuff](#)

1.1.7. Conferences where GITTA was presented

Below you find a list of eLearning- or GIS-conferences where GITTA was presented. If available, you can directly download the according PDF document. Please check also our list of [publications](#).

Only pictures can be viewed in this version! For Flash, animations, movies etc. see online version. Only screenshots of animations will be displayed. [\[link\]](#)

1.1.8. GITTA News-Archive 2004-2013

New case study and two lessons online

(12 June 2013) The lessons "Continuous spatial variables" and "Accessibility" (on basic level) are now available in English! And we have a new case study, the "Mountain goats and bighorn sheep in Yellowstone NP"

ESRI ArcGIS licenses for students

(14 January 2013) ESRI simplified the procedure to get a free 1-year full license "ArcGIS for Desktop Student Trial". How to get it is described [here](#) (for students in Switzerland only).

ESRI ArcGIS Desktop 9.3.1 licences available for GITTA users

(December 07th 2009) Student licenses of ArcGIS Desktop 9.3.1 are now available. More information on conditions and ordering can be found [here](#).

GITTA project on 2nd place at Medida Prix

(September 18th 2008) GITTA has finished on second place at this year's [MedidaPrix](#), a prestigious award for projects implementing the use of new learning technologies in higher education in Germany, Austria and Switzerland. The prize money of Euro 100,000 was split into three parts: The winner [MatheVital](#) receives Euro 50,000, and us as well as third place [e-teaching.org](#) receive Euro 25,000 each. The award is the result of the work of many people. We'd like to thank all of you who contributed to the project in one way or the other.

The prize money will be invested in setting up a network with other interested groups in emerging nations and developing countries in Latin America and Eastern Europe, to help with translation to other languages (content is now in German, English, French).



Award ceremony (click on image to enlarge)

Additional access to CartouCHe content

(August 11th 2008) From now on, subscribing to the GITTA newsletter gives you full access to the contents of the [CartouCHe](#) project as well. Find an overview of the available content [here](#).

GITTA in the final round of MedidaPrix 2008

(July 3rd 2008) We are happy to announce that GITTA has reached the final round of [MedidaPrix 2008](#). This means that we are one of 19 finalists of a total number of 77 candidates that all achieved the formal criteria.

OLAT accepted at the Google Summer of Code students program

(March 18th 2008) [OLAT](#), an open source learning management system founded by the University of Zurich, has been accepted at the Google Summer of Code program. The GSoC initiative offers students the possibility to work for open source projects and be paid by Google (around \$5000 for a summer job). The aim of GSoC is to foster open source projects, to recruit talented programmers for the project and probably also for themselves. Students interested in receiving such a grant should apply until March 31st, 2008. For interested students a free visit of the first int. [OLAT conference 2008](#) in March 27th/28th could be organized. More information [here](#):

Workshop: Exchange of Experiences in e-Learning and Curriculum Integration

(October 24th 2007) The GITTA association would like to proceed a workshop with focus on "Exchange of Experiences in e-Learning and Curriculum Integration". In order to help us with the organization of the logistics, we would appreciate if you could indicate your interest in attending this workshop by casting your vote on the following [Doodle poll](#).

New ESRI ArcGIS Desktop 9.2 one year site licences available for students

(July 18th 2007) ESRI offers one year site licences of ArcGIS Desktop 9.2. The order form can be downloaded [here](#).

First steering committee meeting on January 17th 2007

(January 3rd 2007) The first meeting of the steering committee responsible for the new **GITTA Association** will take place on January 17th 2007 at the University of Zurich. The GITTA newsletter will inform about outcomes and news as soon as possible.

GITTA Association founded

(November 21st 2006) On November 16th 2006 the association for promoting GITTA (in German "Föderverein") was founded at the Institute of Geography of the University of Bern. This new GITTA Association is open to every active member or sponsor interested in using, updating and/or promoting GITTA materials. The statutes, membership fee, contact person etc. can be found on the **GITTA Association page**. A redesign of the GITTA website in 2007 will hold extensive information about this new association and about how the project members will work together in future.

New GITTA lessons online: Basic level complete

(November 3rd 2006) We are very happy to announce that with the release of the "Spatial Modeling Module" (containing 5 lessons in French) the GITTA basic level is fully online and available without any limitations. Furthermore, intermediate lesson 1 and 2 (both in English) of the "Spatial Analysis Module" have been put online today. Please register to our newsletter to get our "Full Access Link" and have a look at the new lessons.

GITTA lessons available as IMS CP or SCORM Module

(May 30th 2006) All GITTA lessons available as open content can now be downloaded as ZIP archives in both the *IMS Content Packages* and the *SCORM* format. These content packages can directly be imported into any *learning management system (LMS)* supporting one of these popular standards. On the **content package download page** you can find the zip files and an installation tutorial movie for both *OLAT* and *WebCT*, two widely used LMS. The layout used is kept plain, no chapter numeration and navigation elements are used, since these parts will be provided by the LMS. If you tried out one of our content packages, we kindly request to provide us a short feedback including the LMS you are using, version and experiences. Thank you very much. Older GITTA news can be found in our [archive](#).

Foundation of GITTA Association

(October 18th 2006) In 2006 we opened the project to the public and released our lessons under the *Creative Commons license* freely for non-commercial purposes. Now we continue our "opening strategy" and change the legal form: The existing consortium of **ten partner institutes** will be dissolved and a new "**GITTA Association**", accessible to every interested person or organisation, will be established. We would like to invite interested circles to take part in the future growth of the GITTA project both with respect to content and quality. The new GITTA Association will be open to interested persons and organisations and allow them to become an active member or a sustaining member (individual or organisation). Sustaining memberships are directed to persons and organisations, who are using GITTA and/or would like to support the purpose of GITTA.

The founders meeting will be held on *Thursday November 16th, 2006 at 7pm at the University of Berne*: Department of Geography of the University of Berne, Hallerstrasse 12, CH-3012 Bern, Room 302.

You can [download the statutes draft here](#) (in German only).

AGIT publication about GITTA online

(July 6th 2006) On July 5th GITTA was presented at the AGIT conference in Salzburg (Austria) by the coordinator Joël Fisler. The presented publication (Fisler et al. 2006) and the presentation itself can both be found on the [GITTA conferences page](#). The paper was published by the Wichmann-Verlag in the AGIT Fachtagung "Geoinformation in der Schule" proceedings entitled "[Lernen mit Geoinformation](#)".

First Intermediate lessons available

(July 4th 2006) Today the first intermediate and all the basic data capture lessons have been released. Please have a look at the [lesson overview page](#) for a complete list of all available lessons.

Conference update

(April 26th 2006) After the release of the first GITTA basic lessons under the *creative commons license* we plan to present our project at various conferences. The GITTA Coordinator Joël Fisler will be in May at the 2nd "GIS-Ausbildungstage" in Potsdam (Germany), in July at the Austrian AGIT in Salzburg and in September at the EUGISES conference in Poland. You can find a list of all conferences including the download-links for the papers and the conference website links on our [conferences page](#). If you are also participating at one of these conferences and would like to meet the coordinator to discuss possible cooperations or have other questions, feel free **contact** Joël Fisler before the conference.

GITTA lessons released as open content



(February 13th 2006) The GITTA lessons are finally available for free under the *creative commons license*. This means that you can use, copy, distribute, translate or even make derivative works of our lessons under the following conditions: Non-commercial use only, GITTA has to be cited as author of the lesson (Attribution) and derivative works have to be distributed under the same license (Share Alike). Please have a look at the [legal code](#) and if you agree continue by **subscribing** our newsletter for **full access to all lessons**.

GITTA presented at cartography conference in Bulgaria



(January 30th 2006) The GITTA project was presented during a (unfortunately poorly visited) poster session at the first [International Conference on Cartography and GIS](#) in Borovets (Bulgaria). Hopefully this presentation will help finding new partners within Europe. You can download the poster on the [conference page](#).

ESRI ArcGIS 9.1 available free for GITTA users

(November 29th 2005) ESRI Switzerland informed us that the ArcGIS 9.1 "GITTA students bundles" boxes have arrived. The boxes include a full version of ArcView 9.1 including Spatial Analyst, 3D Analyst and Geostatistical Analyst (with PDF Tutorials etc.) and more. Students and tutors using GITTA can apply for a unlimited one year license, all other GITTA users will receive a two-month try-out version. For more information visit our **GIS software page**.

ArcAktuell GIS magazine presented GITTA

(October 11th 2005) The German ESRI magazine **ArcAktuell** published in their "Education" edition an article about GITTA by Joël Fisler. You can download a PDF version of the article "Virtueller Schweizer GIS-Campus" from our website. (Fisler 2005)

GITTA presented at the XII International Cartographic Conference

(August 14th 2005) The **International Cartographic Conference (ICC)** takes place every 2nd year and at the last one we could present GITTA in Durban (South Africa) and show the development directions and ideas (Werner et al. 2003). At this years ICC conference in A Coruña (Spain) we showed GITTA's state of affairs and the great development in direction of open content- and open source-development it made. One major focus lays also on the didactic aspects, how the Institute of Cartography of the Swiss Federal Institute of Technology is going to implement its lessons in a hybrid learning arrangement. (Werner et al. 2005)

GITTA presentation at the International Commission on Education and Training Meeting at ICC 2005

(August 14th 2005) The **Commission on Education and Training of the ICA (ICA CET)** produces an ICA-sponsored Internet cartography teaching program on modular base. Authors participating are coming from all over the world. Their modules are partly written, but without any unity in length, style and format. GITTA with its eLML structure could provide an uniform developing and presentation opportunity. The GITTA news and way of use were presented at the commission's meeting, together with the experiences and contributions the Institute of Cartography could make to the ICA CET's Aims. General future activities will have to be:

- Spreading information about GITTA and especially the content about the "Data Presentation Module" to the interested author's community
- Building up a discussion board that is accessible for ICA CET members world-wide to discuss the future wishes in depth
- Spreading information and discussing about the use of hybrid learning arrangements and online lectures – the consequences for planning lectures from a pedagogical-didactical point of view
- In the far future: transferring existing material into eLML-format and using it for lecturing cartography world-wide as online or hybrid learning arrangement (also blended-learning)

The presentation hold at the ICA CET Meeting can be found on the **GITTA conference page**. Interested? For further information on ICA CET and GITTA in Swiss Cartography, please contact: **Marion Werner** at the Institute of Cartography of the Swiss Institute of Technology.

Presentations at the GFZ in Potsdam (Germany)



(June 6th 2005) Two conferences took place at the Geoforschungszentrum (GFZ)

Potsdam: The **ISPRS Workshop** about "Tools and Techniques for E-Learning" and the **DDGI Tagung** about "Innovationen in Aus- und Weiterbildung mit GIS". On Thursday the eLML paper about "Development of sustainable e-learning content with the open source eLesson Markup Language eLML" (Fisler et al. 2005) was presented by Joël Fisler to the ISPRS members, on Friday over 100 conference participants listened to the talk about GITTA and its plans to release lessons under an open license. The paper and both presentations can be found on the **GITTA conference page**.

GITTA Newsletter available

(May 20th 2005) Today the GITTA Newsletter was introduced. Please use the form on the left (below the Menu) to get subscribed. There is also a **detailed information page** to login and to access the archive. This is a low traffic list. Subscribers will not get more than one mail per month.

SVC Monitoring: Summer semester questionnaire for students

(May 12th 2005) The new **SVC questionnaire** for the summer semester 2005 is available in German, French and Italian. Students from any partner institute using GITTA this semester should fill out questionnaire until the end of the semester.

GITTA content free available under Creative Commons license

(April 25th 2005) Last week the GITTA consortium decided to release all 50 lessons and 10 case studies under the *creative commons license*. This means that GITTA content will be available freely for non-commercial use. First lessons are planned to be available in late summer. Before being opened all copyright issues have to be solved. Furthermore we are waiting for the final version of the **Swiss Creative Commons license**.

eLML is now an official Sourceforge project

(December 1st 2004) eLML, the *eLesson Markup Language*, that evolved out of the GITTA project, now became an independent Sourceforge OpenSource Project with its own **www.eLML.ch** and **eLML Sourceforge website**. For interested developers we offer newsletter, forums, bug tracker, CVS- and Binary-downloads etc. Subscribe to the eLML Newsletter **here**.

GITTA enters the consolidation and maintenance phase

(July 1st 2004) GITTA went through a first phase of e-course development during 07/2001 and 06/2004. Since July 2004, GITTA entered a new phase. For a period of two years (until 06/2006), the *Swiss Virtual Campus* program provides additional funding for the consolidation and maintenance of the projects resources. Compared to the funds received during the development phase, the financial contributions will be more limited. However, they will allow us to consolidate the content, the technical infrastructure, and the work processes of GITTA in order to ensure that course offerings will be truly self-sustainable in the time when external funding will come to an end. The focus during the consolidation and maintenance phase will be on the following tasks:

- Integration of GITTA into curricula of **partner institutions**

- Consolidation of content: enhancements in response to student evaluations, enhanced interactivity
- Migration of GITTA content to new *eLML* XMLSchemas
- Consolidation and enhancement of technical infrastructure
- Preparation for Open Content strategy: open GITTA content – initially for external users, then external authors
- General maintenance of GITTA content and services

New GITTA coordinator: Joël Fisler follows Eric Lorup

(*June 1st 2004*) Since the first phase of the GITTA project officially ended in June 2004, the former GITTA project coordinator Eric Lorup left the project and now works for an eLearning software company. We would like to thank him very much for his work and efforts during the last years. For the maintenance phase (see above) the new GITTA coordinator will be Joël Fisler, former GITTA developer.

GITTA and EduTech present the eLML XML framework

(*May 2nd 2004*) Based on the GITTA DTD, Susanne Bleisch and Joël Fisler realized the EduTech-financed XML framework eLML, the *eLesson Markup Language*. The GITTA DTD itself was created by Susanne Bleisch and Stefan Hofstetter based on the German **LMML** project. It was then, while in use for creating over 50 lessons, updated and simplified. In late 2003 EduTech proposed to offer a *XML Framework* based on the GITTA DTD for all interested SVC projects, which lead to the creation of eLML. In comparison to the old GITTA DTD, eLML is even simpler and lighter and is now based on XML Schema. Also we added extensive tutorials and an example lesson.

1.1.9. Recommended Reading

Conference Papers:

- **Bleisch, Susanne, Fisler, Joël**, 2005. eLesson Markup Language eLML – eine XML basierte Applikation für die beschreibende Auszeichnung von nachhaltigen und flexiblen e-Learning Inhalten. *In: Muttentz, Switzerland: Fachhochschule beider Basel (FHBB).*
Download: ../download/gitta/delfi2005/DeLFI2005_eLML_Paper.pdf
- **Bleisch, Susanne, Nebiker, Stephan**, 2004. The Swiss Virtual Campus Project GITTA - A multi-disciplinary, multi-lingual learning platform for Geographic Information Technology. *In: XXth ISPRS Congress, July 12th-23rd 2004. Istanbul, Turkey.*
Download: ../download/gitta/isprs2004/Bleisch_GITTA_ISPRS2004.pdf
- **Fisler, Joël, Bleisch, Susanne**, 2006. eLML, the eLesson Markup Language: Developing sustainable e-Learning Content Using an Open Source XML Framework. *In: WEBIST 2006 - International Conference on Web Information Systems and Technologies, April 11th-13th 2006. Setubal, Portugal.*
Download: ../download/gitta/webist2006/WEBIST2006_eLML.pdf
- **Fisler, Joël, Bleisch, Susanne, Niederhuber, Monika**, 2005. Development of sustainable e-learning content with the open source eLesson Markup Language eLML. *In: ISPRS Workshop, June 2nd/3rd 2005. Potsdam, Germany.*
Download: ../download/gitta/potsdam2005/Potsdam2005_ISPRS_eLML.pdf

- **Fisler, Joël, Bleisch, Susanne, Weibel, Robert**, 2006. Das e-Learning-Projekt GITTA: Freizugängliche Inhalte für die akademische Ausbildung in Geoinformation. In: **Thomas Jekel, Alfons Koller, Josef Strobl**, ed. *Lernen mit Geoinformation (AGIT proceedings - Themenschwerpunkt Geoinformation in der Schule)*, 5.-7. Juli 2006, Salzburg, Austria. Wichmann Verlag.
Download: [../download/gitta/agit2006/agit_gitta.pdf](#)
- **Fisler, Joël, Weibel, Robert**, 2006. GITTA: Open Content Material for GIS Education. In: *EUGISES 2006 Conference, September 7th-10th 2006, Krakow*. Krakow, Poland: Faculty of Forestry, Agricultural University.
Download: [../download/gitta/eugises2006/eugises2006.pdf](#)
- **Grossmann, T., Weibel, R.**, 2008. Integration of GITTA e-Learning content into the curriculum of GIScience. In: Sofia, Bulgaria.
- **Lorup, Eric, Bleisch, Susanne**, 2004. Schweizweite GI-Ausbildung mit GITTA - Aufbau und Organisation. In: **Jochen Schiewe**, ed. *E-Learning in Geoinformatik und Fernerkundung*, 16./17. Februar 2004, Vechta, Germany. Heidelberg, Germany: Herbert Wichmann Verlag.
Download: [../download/gitta/vechta2004/03_lorup_bleisch.pdf](#)
- **Niederhuber, Monika, Heinemann, Hans-Rudolf, Hebel, Bernd**, 2005. e-Learning basierte Fallstudien zur akademischen Ausbildung in der Geoinformatik: Methodisches Konzept, Umsetzung und Erfahrungen. In: Zurich, Switzerland: ETHZ.
Download: [../download/gitta/delfi2005/niederhuber_cs_2005.pdf](#)
- **Plazanet, Corinne, Caloz, Regis**, 2002. Which place for Spatial Modelling in GIS education? The example of the GITTA project. In: *European GIS Education Seminar EUGISES, September 13th, 2002*. Girona, Spain: University of Girona.
Download: [../download/gitta/eugises2002/Paper-EUGIS2002-Girona.pdf](#)
- **Purves, R., Mackaness, W. A., Medyjcki-Scott, D. J., Weibel, R.**, 2004. Learning from difference: GITTA and e-MapScholar - contrasting experiences in developing e-learning for GIScience. In: *European GIS Education Seminar EUGISES, September 2nd-5th, 2004*. Villach, Austria: University of Applied Sciences - School of Geoinformation, 10.
Download: [../download/gitta/eugises2004/EUGISES04_paper_purves.pdf](#)
- **Weibel, Robert**, 2004. GITTA - Baustein für einen virtuellen Campus zur akademischen Ausbildung von Geoinformation in der Schweiz. In: **Plümer/Asche**, ed. *Geoinformation - Neue Medien für eine neue Disziplin*, 29./30. März 2004, Universität Bonn, Deutschland. Heidelberg, Germany: Herbert Wichmann Verlag, 131.
Download: [../download/gitta/geoinformation2004/Weibel_GITTA_Wichmann.pdf](#)
- **Werner, M., Bleisch, S., Fisler, J.**, 2005. E-Learning Materials in GIS-Technology and Cartography - Towards an Open-Content Solution. In: *Proceedings of the 22st International Cartographic Conference - Mapping Approaches into a Changing Future, July 9-16, 2005, A Coruña, Spain*.
Download: [../download/gitta/icc2005/Werner_Marion_e-Learning_materials_in_GISTechnology_and_Cartography_PAPER.pdf](#)
- **Werner, M., Stern, B.**, 2003. Active and self-controlled web based education in GIS-technology and cartography: the GITTA Project. In: *Proceedings of the 21st International Cartographic Conference - Cartographic Renaissance, August 10-16, 2003, Durban, South Africa*. ICA, 10.
Download: [../download/gitta/icc2003/GITTA_Paper_ICA_Durban_Aug_2003.pdf](#)

E-Journal Articles:

- **Gerson, Steven M.** (2000). E-CLASS: Creating a Guide to Online Course Development For Distance Learning Faculty. *Online Journal of Distance Learning Administration* [online], Volume 3, Issue 4. Available from: <http://www.westga.edu/~distance/ojdla/winter34/gerson34.html> [Accessed 20.01.2006].
Download: ../download/eclass_gerson.pdf

Journal Articles:

- **DiBiase, David**, 2009. Freeing CP: GIS&T and NACIS in the Open Educational Resources Movement. *Cartographic Perspectives*, 64, 5-20.
- **Lorup, Eric**, 2003. GIS-Lehre aus einem Guss. *GeoBit*, 4, .
Download: ../download/gitta/geobit2003/GeoBIT_article_42003.pdf
- **Lorup, Eric**, 2002. Virtual Campus Projekt: GITTA. *GEOForum*, 12. Mai, .
Download: ../download/gitta/geoforum2002/GEOForum%20-%20Kurz%20vorgestellt%20Virtual%20Campus%20Projekt%20GITTA.pdf
- **Schnabel, O., Wiesmann, S.**, 2009. Kartografische E-Learning Inhalte frei verfügbar. *Kartographische Nachrichten*, 4, 219.
- **Weibel, R., Bleisch, S., Nebiker, S., Fisler, J., Grossmann, T., Niederhuber, M., Collet, C., Hurni, L.**, 2009. Achieving more sustainable e-Learning programs for GIScience. *Geomatica*, 63 (2), 109-118.

Newspaper Articles:

- **Benz, Roman**, 2006. Projekt GITTA am Geografischen Institut: Neue E-Learning-Software, die nicht bloss Fro#schen hilft. *unijournal*, No. 3, 8. Mai, 7.
Download: ../download/gitta/unijournal2006/unijournal-2006-3.pdf
- **Fisler, Joël**, 2005. Virtueller Schweizer GIS-Campus. *ArcAktuell*, 1. Oktober, 22-23.
Download: ../download/gitta/arcaktuell/arcaktuell_2005_03_campus_gitta.pdf

Thesis:

- **Lütolf, Gregor**, 2006. *Zugänglichkeit von geographischen E-Learning-Kursen für Sehbehinderte und Blinde am Beispiel von GITTA*. Thesis (Master). University of Zurich.
Download: ../download/gitta/luetolf/gluetolf_diplomarbeit.pdf

1.2. The available GITTA content and how to access it

GITTA Introduction - Short information about GITTA and how to use it

Before you access *GITTA* please read this introduction if you didn't take the time to explore the complete **About GITTA** part. The most important points you have to know before you start working with GITTA:

- You **have to subscribe** to the **GITTA newsletter** to get the full access link!
- **GITTA can be used, copied, distributed, adapted, updated etc. for non-commercial use free of charge.** Please refer to the *creative commons license* for more information.
- The whole course is divided into 6 modules each containing about 4 to 7 lessons in a basic and intermediate level. **More...**
- **Currently only the basic level is open to the public.** The intermediate level will follow.
- All materials are stored in *XML files* and are transformed into XHTML or PDF using the *eLesson Markup Language*.
- Our partners import the lessons into their *learning management system* using either the *IMS Content Package* or the *SCORM* interface provided by eLML. This means that each partner only uses a selection of all available GITTA courses in the order of their choice.

1.2.1. Subscribe to the newsletter to get access to GITTA and CartouCHE

Our Policy:

Please subscribe to our newsletter to receive the GITTA access link. This registration is free! We just would like to know who is using GITTA and have your Email address to inform you about news and updates. Visit our [newsletter-archive](#) to read old news about GITTA.

Subscribe to the Newsletter:



Subscribe to the GITTA newsletter by filling out the following form. You will be sent email requesting confirmation, to prevent others from gratuitously subscribing you. As soon as you have confirmed that your email address is correct, the link to all GITTA lessons will be sent to you. Please remember that all GITTA lessons are published under the terms of the *creative commons license*.

Note for PDF version: Subscribing the GITTA newsletter is either possible via the [GITTA website](#) or by sending an Email with the subject "subscribe" to eLML-GITTA-request@lists.sourceforge.net

Updating or Deleting your Subscription:

To change your subscription (i.e. to set options like digest and delivery modes, get a reminder of your password, or unsubscribe from the eLML-GITTA mailing list), enter your subscription email address:

Note for PDF version: Updating the subscription is only possible via the [GITTA website](#)!

Becoming a GITTA author

The GITTA Consortium does not only welcome tutors or students who want to work with GITTA lessons but also authors wanting to contribute new content or native speakers willing to translate lessons to additional commonly spoken languages. All lessons have been released under the *creative commons license* and you

are free to alter or update the content for non-commercial (e.g. education) purposes. If you think that your updates could be a benefit for the whole GITTA community, please send a short application as described in the following box:

Becoming a GITTA author:

Becoming a GITTA author means that you are allowed to directly alter and update our lessons. You must fulfil these four points to become an active author:

1. You are subscribed to the GITTA newsletter
2. You have sent us your application (see below)
3. You have basic *XML* knowledge, especially of our *eLML* framework
4. You have worked with *CVS*, the versioning-system we use, before

The GITTA consortium is responsible for granting access to the GITTA community. Please send a short application to the [project coordinator](#) containing the following points:

- Your name, address, institution or company you work for etc.
- Short curriculum including your credentials, expertise and experience in *GIST*
- Your technical skills, especially *XML*, *CVS* and programming skills
- Your motivation: Why do you want to become part of the GITTA community? What will you contribute?

We do require this application because we would like to know who the active members of the GITTA community are. Thank you for your understanding.

1.2.2. Overview of available modules

If no links are shown on this page, you have to **subscribe to the GITTA newsletter** to get full access!

The GITTA teaching material on the website is continuously updated from the CVS repository and corresponds to the latest version. This means that content may change at any time if it is updated. If you need stable content, e.g. to teach classes, you are strongly advised to download the module(s) as SCORM / IMS package and import it into a learning environment such as [Moodle](#) or [OLAT](#). Please contact the GITTA coordinator if you need an older version.

The GITTA modules

The CartouCHE modules

GI-Systems Module

The module offers a basic introduction to Geographic Information Systems Technology (GIST), and provides information about existing commercial products and their areas of application. The module is also intended to explain the most commonly followed software architectures of Geographic Information Systems (GIS) and their impact on system usage.

Basic Level (in English)

1. What is a GIS?	1MB	IMS (.zip)	SCORM (.zip)	[all versions]
2. What do we need to work with a GIS?	1MB	IMS (.zip)	SCORM (.zip)	[all versions]
3. Into the GIS market	0.5MB	IMS (.zip)	SCORM (.zip)	[all versions]

Intermediate Level (in English)

1. Spatial partitioning and indexing	3MB	IMS (.zip)	SCORM (.zip)	[all versions]
2. Structures for data compression	6MB	IMS (.zip)	SCORM (.zip)	[all versions]

Database Management and Systems Module

The Database System module incorporates the concepts and architectures associated with databases. First, specific terms are discussed, then the characteristics of such a database approach are compared with other systems. After an overview of database architectures, data models and the Structured Query Language (SQL) are introduced. Exercises and self-tests help to augment the theory.

Basic Level (in German and partially English):

1. Einführung in Datenbanksysteme (GE-Version)	2.3MB	IMS (.zip)	SCORM (.zip)
Introduction to database systems (EN-Version)	2.3MB	IMS (.zip)	SCORM (.zip)
2. Datenbanksysteme: Konzepte und Architekturen (GE-Vers.)	1.5MB	IMS (.zip)	SCORM (.zip)
Database systems: concepts and architectures (EN-Vers.)	1.5MB	IMS (.zip)	SCORM (.zip)
3. Das relationale Datenmodell (GE-Version)	7.2MB	IMS (.zip)	SCORM (.zip)
The relational database model (EN-Version)	Not available yet		
4. Die relationale Anfragesprache SQL (GE-Version)	11.1MB	IMS (.zip)	SCORM (.zip)

Structured Query Language SQL (EN-Version)	Not available yet
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Data Capture Module

The Data Capture module introduces students to sources of geographic data and to the broad process of digital capture and data preprocessing. It focuses on selected capture procedures in order to detail strategies and methodologies for the production of relevant geographic information. This module is structured into 4 lessons, with the following content: Overview of sources, Primary sources, Derived sources, and Metadata and quality. Each lesson comprises exercises and a self-test.

Basic Level (in English):

1. Overview of sources and methods	2MB	IMS (.zip)	SCORM (.zip)
2. Primary sources and methods	20MB	IMS (.zip)	SCORM (.zip)
3. Derived sources and methods	2.7MB	IMS (.zip)	SCORM (.zip)
4. Metadata and quality	3.3MB	IMS (.zip)	SCORM (.zip)

Spatial Modeling Module

This module presents the main concepts - projections, location, and topology - that drive the modeling of the Geographic Space (GS). It gives an overview of GS modeling processes, using regularly and irregularly distributed observation units (raster and object models). The properties of spatial information are then analyzed from the point of view of its measurement scale and origin (measured, derived, or interpreted). Finally, the process of digitization is presented.

Basic Level (in French):

1. Spatial perception and modeling	2.2MB	IMS (.zip)	SCORM (.zip)
2. Fundamental spatial concepts	2.8MB	IMS (.zip)	SCORM (.zip)
3. Spatial information and its properties	0.6MB	IMS (.zip)	SCORM (.zip)
4. Digital models	3.4MB	IMS (.zip)	SCORM (.zip)
5. Conceptual data modeling	0.6MB	IMS (.zip)	SCORM (.zip)

Spatial Analysis Module

The main goal of the module is to contribute the technical knowledge required for informed development of GIS applications. Therefore, the key concepts and techniques of spatial analysis are presented at a basic and intermediate level. Lessons include fundamentals and techniques for dealing with continuous and discrete spatial variables, spatial queries, terrain analysis, suitability analysis, accessibility analysis, and uncertainty handling. There is a close relationship with the Spatial Modeling module.

Basic Level (in German and partially English):

1. Einführung in die räumliche Analyse (German version)	6.5MB	IMS (.zip)	SCORM (.zip)
Introduction to spatial analysis (English version)	6.5MB	IMS (.zip)	SCORM (.zip)
2. Discrete spatial variables (in English)	38MB	IMS (.zip)	SCORM (.zip)
3. Kontinuierliche Räumliche Variablen (German version)	12MB	IMS (.zip)	SCORM (.zip)
Continuous spatial variables (English version)	12MB	IMS (.zip)	SCORM (.zip)
4. Geländeanalyse	7.5MB	IMS (.zip)	SCORM (.zip)
5. Räumliche Abfragen (German version)	37MB	IMS (.zip)	SCORM (.zip)
Spatial queries (English version)	37MB	IMS (.zip)	SCORM (.zip)
6. Erreichbarkeit (German version)	20MB	IMS (.zip)	SCORM (.zip)
Accessibility (English version)	20MB	IMS (.zip)	SCORM (.zip)
7. Eignungsanalysen	2.6MB	IMS (.zip)	SCORM (.zip)

Intermediate Level (in English):

1. Spatial analysis of the reality	3.4MB	IMS (.zip)	SCORM (.zip)
2. Discrete spatial distributions	2.8MB	IMS (.zip)	SCORM (.zip)
3. Terrain analysis (intermediate)	4.0MB	IMS (.zip)	SCORM (.zip)

4. Accessibility (network analysis) (still under revision!)	8MB	IMS (.zip)	SCORM (.zip)
5. Suitability analysis (intermediate)	1.1MB	IMS (.zip)	SCORM (.zip)
6. Introduction to time change and spatial dynamics	1.0MB	IMS (.zip)	SCORM (.zip)
7. Thematic change analysis	2.4MB	IMS (.zip)	SCORM (.zip)
8. Spatial change analysis	3.5MB	IMS (.zip)	SCORM (.zip)

Data Presentation Module

The Data Presentation module describes the history and use of maps, while introducing the different map types available. Its emphasis is on topographical cartography and the components required for map development, including graphical design with text and color by reference to readability rules. A further focus concentrates on cartographic generalization concepts, procedures, and methods. Within the intermediate lessons, thematic map design as well as mapping with a GIS and cartographic software are discussed.

Basic Level (in English):

1. Presentation and visualization needs	19MB	IMS (.zip)	SCORM (.zip)
2. Layout design settings / graphical semiology	26MB	IMS (.zip)	SCORM (.zip)
3. Cartographic data representation	12MB	IMS (.zip)	SCORM (.zip)
4. Generalization of map data	17MB	IMS (.zip)	SCORM (.zip)
5. Topographic cartography	36MB	IMS (.zip)	SCORM (.zip)

Intermediate Level (in English):

1. Statistics for thematic cartography	10MB	IMS (.zip)	SCORM (.zip)
2. Thematische Kartografie (English will follow)	57MB	IMS (.zip)	SCORM (.zip)
3. Mapping with GIS and cartographic software	9.9MB	IMS (.zip)	SCORM (.zip)

4. From GIS data sets to cartographic presentation	21MB	IMS (.zip)	SCORM (.zip)
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Case Studies

Students, confronted with realistic and practice-relevant GIST cases, must then solve such a case independently. Original, not preprocessed, case material is provided and a tutor is helping the students to find solutions for solving the case.

Deutsche Version:

1. Allgemeine Einführung in GITTA-Fallstudien	2.4MB	IMS (.zip)	SCORM (.zip)
2. Habitatanalyse im Schweizerischen Nationalpark	3.6MB	IMS (.zip)	SCORM (.zip)
3. Vergleichende Analyse von Gewässereinzugsgebieten	0.5MB	IMS (.zip)	SCORM (.zip)
4. Aufbau GIS für Industrielehrpfad "Zürcher Oberland"	1MB	IMS (.zip)	SCORM (.zip)
5. Aufbau GIS für Hochwasserschutz an Fließgew. im Kt. ZH	1.1MB	IMS (.zip)	SCORM (.zip)
6. Zonenplanrevision Rüti/Dürnten nach Gemeindefusion	3.9MB	IMS (.zip)	SCORM (.zip)

Version Française:

1. Les études de cas	1.3MB	IMS (.zip)	SCORM (.zip)
2. Analyse d'habitats dans le parc national suisse	2MB	IMS (.zip)	SCORM (.zip)

English Version:

1. General introduction to the GITTA case studies	3.4MB	IMS (.zip)	SCORM (.zip)
2. Habitat analysis in the Swiss National Park	4.0MB	IMS (.zip)	SCORM (.zip)
3. Mountain goats and bighorn sheep in Yellowstone NP	14MB	IMS (.zip)	SCORM (.zip)

Overview of available CartouCHe modules

Since August 2008, content of the [CartouCHe](#) project is available as well. CartouCHe (Cartography for Swiss Higher Education) is an eLearning project funded by Swiss Virtual Campus, imparting knowledge about the multimedia and internet cartography to advanced students. The modules "Multimedia Cartography" and "Location Based Services" are public:

Multimedia Cartography Module (in English):

1. Introduction to multimedia cartography
2. Computer graphics
3. Internet techniques and web formats
4. Planning multimedia projects
5. Data storage and structure
6. Cartographic design for screen maps
7. Navigation - concepts and tools
8. Graphical user interface - layout and design
9. Animation and interactivity
10. Open geospatial consortium (OGC) and web services (WMS, WFS)

Location Based Services Module (in English):

1. Foundations of location based services
2. Techniques for LBS cartography
3. Designing maps for LBS
4. Solutions for LBS maps
5. WebPark: LBS in action

Please note that we are looking for partners who are interested in using, updating, translating and cooperating with us. Please read the paragraph about becoming a full GITTA community member on the [register page](#).

1.2.3. Download GITTA lessons as IMS or SCORM CPs

Using GITTA lessons within a learning management software (LMS)

You can download any GITTA lessons as a *IMS Content Package* or as a *SCORM Module* from the "[Modules Overview](#)" page. These content package ZIP files are needed to import a GITTA lessons into a course hosted on a *learning management system (LMS)*. Please note that all content package ZIP files contain the lesson in a plain (white) layout without title numeration. This is because usually the LMS provides both the layout and the chapter numeration. For further questions please do not hesitate to **contact us**.

Installation remarks:

The exact installation procedures to import a IMS or SCORM package into your learning management system (LMS) is described in detail within your LMS manual. To give you an idea, we provide three short installation screenshot movies for the open source software *OLAT* and for the commercial WebCT platform:

Import IMS CP into OLAT	2.4MB QuickTimeOLAT 4.2 Demo
Import SCORM into OLAT	1.4MB QuickTimeOLAT 4.2 Demo
Import IMS CP into WebCT CE 4.1	2.7MB QuickTimeWebCT CE 4.1 Demo
Import SCORM into WebCT CE 6	5.5MB QuickTimeWebCT CE 6 Demo
Import SCORM into WebCT Vista	3.9MB QuickTimeWebCT Vista Demo

Please note that when importing a SCORM module into WebCT, the resulting error can be ignored. It appears because we referenced the SCORM schema by absolute URL (<http://...>) and not using relative paths. It works perfectly.

Important Terms:

LMS:

A Learning Management System (or LMS) is a software package, usually on a large scale (that scale is decreasing rapidly), that enables the management and delivery of learning content and resources to students. Most LMS systems are web-based to facilitate "anytime, anywhere" access to learning content and administration. Some widely known open source LMS are *OLAT* and [Moodle](#), famous commercial LMS are [WebCT](#) and [Blackboard](#).

IMS:

The [IMS Global Learning Consortium](#) (usually known as IMS) is a non-profit standards organization concerned with establishing interoperability for learning systems and learning content and the enterprise integration of these capabilities. Their mission is to "support the adoption and use of learning technology worldwide". Some famous IMS standards are the CP (Content Package) standard used to import/export of content, the "Learning Resource Meta-data Specification" (LOM) or the QTI standard for question and test interoperability.

SCORM:

The Shareable Content Object Reference Model (SCORM) is a standard for web-based e-learning. It defines how the individual instruction elements are combined on a technical level and sets conditions for the software needed for using the content. SCORM is distributed by the [Advanced Distributed Learning \(ADL\) Initiative](#), a US organization under the Department of Defense (DoD).

1.2.4. Bugtracker: Found an error in one of the GITTA lessons?

If you found an error using a GITTA lesson, have critics about an available lesson, would like to suggest improvements, found animations that don't work etc., please submit it using the form below! The responsible person will fix the error. If you would like to be contacted after your issue is fixed, you will need to [create a Sourceforge account](#) and login at Sourceforge.net before you submit a bug!

You can also [browse the list of submitted errors](#) before submitting one yourself. Maybe your question has already been answered.

Note for PDF version: The Bugtracker (Bug submission form) is only available via the GITTA website www.GITTA.info!

1.2.5. GIS Software you could use while working with GITTA

Overview

If you start working with GITTA and especially GITTA case studies, you will need to install a GIS software. This page presents the most common GIS software products used. Please note that with some vendors we have special "GITTA-deals" (e.g. for ArcGIS) and for other we just provide the links to the demo- or trial version. For a detailed list of GIS software products please have a look at our lesson "Into the GIS market".

Product	Company	Operating System (OS)	EDU?
ArcGIS	ESRI	Windows	Yes: 1 year free
GeoMedia	Intergraph	Windows	Yes: 1 year free
MapInfo	MapInfo	Windows	YES: EDU Price or 20-day demo
TNT	MicroImages	Windows, MacOS X, Linux and Unix	YES: EDU Price or free TNTlite
Quantum GIS	-	Windows, MacOS X, Linux and Android	Open Source! (free)
GRASS	-	Windows, MacOS X, Linux and Unix	Open Source! (free)

ESRI: ArcGIS

Undoubtedly the most widely used software in the GIS market. For students, [ESRI](#) offers a "1-year trial of ArcGIS 10.1 for Desktop Advanced" (which includes all relevant extensions!). Below is a description how you can get it, if you are a student in Switzerland. For students outside Switzerland please contact the [ESRI office of your country](#).

Only pictures can be viewed in this version! For Flash, animations, movies etc. see online version. Only screenshots of animations will be displayed. [link]

For non-educational GITTA users we can offer a 60 day trial version. If you would like to receive a trial version please fill out the [form](#) of ESRI Switzerland (for people living in Switzerland) or contact the [ESRI office of your country](#).

Intergraph: GeoMedia

[Intergraph's](#) GeoMedia is another very popular professional GIS application. They do have a special [education program](#) with a free one year licence of the GeoMedia Professional full version available for every student!

MapInfo

MapInfo is also amidst the three most used GIS software solutions. They do offer both educational discounts and a 20 day trial license on [their website](#).

MicroImage: TNT

MicroImage offers various products from the professional TNTmips to the free TNTlite version. They do also offer special [academic licenses](#). TNT is not as popular as the three other commercial products presented above but it runs on nearly every operating system and they have an amazing [long list of translations](#) available.

Quantum GIS (Open Source)

Quantum GIS is a quintessential user friendly, cross platform (win/lin/mac) free and open source GIS desktop application.

GRASS (Open Source)

Another popular open source GIS solution available is **GRASS**, the Geographic Resources Analysis Support System. It offers both a graphic (GUI) and text mode, is very popular amongst universities and it is available in nearly every operating system (Windows, MacOS X, Linux and many Unix flavors). And of course it is free!

1.3. The GITTA Association

On November 16th, 2006 the association for promoting GITTA (in German "Förderverein") was founded at the Institute of Geography of the University of Bern. This new GITTA Association is open to every active member or sponsor interested in using, updating and/or promoting GITTA materials. The statutes, membership fee, contact person etc. can be found on this page.

The bylaws of the GITTA Association can be downloaded in [German](#) or in [English](#). Consider that the English version is just a translation. Legal standard remains the German original. The minutes of the founders meeting are [available in German only](#).

Steering committee

The steering committee consists of up to 7 persons elected by the general assembly for two years. The current committee consists of:

- Collet, Claude (IGUF, President)
- Ertz, Olivier (HEIG-VD, Special Projects)
- Joost, Stéphane (EPFL, Secretary General / Vice-President)
- Weibel, Robert (UZH, Treasurer)
- Niederhuber, Monika (ETHZ, Project Coordinator)
- Schenkel, Roland (ETHZ, Special Projects)

Membership fee

Since 2007 you can become a member of the GITTA Association. We divide between active members (using the material and e.g. also updating the lessons) and passive sponsoring members (supporting the project). Furthermore there are memberships for individuals and for collectives like institutions or companies. The fees are:

Active individual	CHF 50.-
Active collective	CHF 200.-
Sponsoring individual	At least CHF 50.-
Sponsoring collective	At least CHF 300.-

Please contact the [project coordinator](#) if you are interested in a GITTA Association membership.

1.3.1. Our sponsoring members

Below you find a list of members who kindly support our project financially and with their spirit.



ESRI Schweiz AG

Josefstrasse 218

CH-8005 Zürich ([map](#))

Phone: +41 44 360 19 00

Fax: +41 44 360 19 11

info@esri.ch

<http://esri.ch>

1.4. GITTA Contact

You can contact the project coordinator during normal business hours under the address below.

Address	University of Zurich Department of Geography Geographic Information Systems Unit GITTA coordinator Winterthurerstrasse 190 8057 Zürich Switzerland
Phone	+41 44 635 52 17
Fax	+41 44 635 68 48
Email	coordinator@gitta.info
Web	http://www.gitta.info

For a complete list of all our partner institutes, staff and former staff members, please consult the **partners section**. To stay informed about GITTA, subscribe to our newsletter using the form on the left side below the menu.

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1.5. Glossary

Creative Commons:

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CVS:

CVS, the Concurrent Versions System, is the most widely used tool for controlling different versions of a source code and for a group of programmers to work simultaneously on a source code. Before working with a file, a user needs to do a "checkout" of the file from a "repository" stored on the project server. When writing updates back to the repository (called "committing"), CVS checks issues like access privileges, actual status of code and if no other group member meanwhile altered the code, CVS writes it back to the repository. By doing a "update" all project group members get the latest version of the code. CVS of course stores information about who altered which part of the code and automatically stores different versions of the code. Therefore using CVS it is possible to always reconstruct a former state of the code. *eLML*, and therefore also *GITTA*, uses CVS to store the XML code, images and multimedia elements of a lesson.

ECLASS:

ECLASS is based on Steven Gersons Guide to develop online courses. It is an abbreviation for the terms E = Entry; C = Clarify; L = Look; A = Act; S = Self-Assessment; S = Summary. Described in detail in the [concept chapter](#). (Gerson 2000)

eLML:

eLML, the eLesson Markup Language, is an XML framework developed by the *GITTA* project. The Swiss e-Learning project *GITTA* started working with XML in 2001 but it was only after the official ending of the project in 2004 that its XML structure was released as an open source project under the name of eLML. For more information read the [implementation chapter](#), visit www.eLML.ch or follow the citation link. (Fisler et al. 2006)

GIST:

GIST is the abbreviation for Geographic Information Systems Technology.

GITTA:

GITTA is a Swiss e-Learning project about GIS and it is the abbreviation for Geographic Information Technology Training Alliance. For more information about *GITTA* have a look at www.gitta.info.

IMS:

The [IMS Global Learning Consortium](#) (usually known as IMS) is a non-profit standards organization concerned with establishing interoperability for learning systems and learning content and the enterprise integration of these capabilities. Their mission is to "support the adoption and use of learning technology worldwide". Some famous IMS standards are the CP (Content Package) standard used to import/export of content, the "Learning Resource Meta-data Specification" (LOM) or the QTI standard for question and test interoperability.

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OLAT:

The development of the open source *LMS* OLAT (Online Learning And Training) was started at the University of Zurich in 1999 and won the **Medida Prix** for best e-learning software in 2000. Today OLAT is already in its fourth version and is the strategic platform of the University of Zurich. Besides Zurich other universities like Bern, Sachsen (Germany) etc. are using OLAT as their main LMS. More information and download of the software can be found on the **OLAT website**.

SCORM:

The Shareable Content Object Reference Model (SCORM) is a standard for web-based e-learning. It defines how the individual instruction elements are combined on a technical level and sets conditions for the software needed for using the content. SCORM is distributed by the **Advanced Distributed Learning (ADL) Initiative**, a US organization under the Department of Defense (DoD).

SVC:

SVC, the Swiss Virtual Campus, was founded in 1999 after a decision of the Swiss Parliament that over 50 Million Swiss Francs should be used to build up e-Learning projects at Swiss universities. In the first project phase out of about 200 project drafts a total of 50 projects were accepted and supported. GITTA was one of them. For more information have a look at the **SVC-website**.

SVG:

SVG, the Scalable Vector Graphics, is a standard of the **World Wide Web Consortium (W3C)**. It is an open, *XML*-based format to describe graphics and animations and can be used as an alternative to the proprietary Adobe Illustrator and Adobe Flash formats. To view SVG within a browser use either a modern browser (like **Firefox** or Apples Safari) that has native support for SVG or download a plugin like the **Adobe SVG Viewer**. For detailed information about SVG **visit the W3C** or read **Wikipedias explanation**.

XML:

XML, the eXtensible Markup Language, is a standard of the **World Wide Web Consortium (W3C)**. XML documents use elements (tags) known from other markup languages like HTML. Using *XSL transformations* XML files can be transformed into other formats like XHTML or PDF. Many common used languages are based on XML: XHTML, SVG, GML, RSS, MathML etc. For detailed information about XML **visit the W3C** or read **Wikipedias explanation**.

XSLT:

XSLT, the XSL Transformations, is part of the Extensible Stylesheet Language (XSL) family and is a standard of the **World Wide Web Consortium (W3C)**. XSLT files are used to transform XML files into other formats like HTML or formatting objects (FO) for generating PDF files. For detailed information about SVG **visit the W3C** or read **Wikipedias explanation**.

1.6. Index

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