



December 17
January 18



Encouraging the acquisition of foreign language skills in VET

Keeping pace with the skills in the workplace

New assessment round of national research programmes



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Education and Research EAER
**State Secretariat for Education,
Research and Innovation SERI**

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Dear reader,



"It would be a real opportunity for sport, the economy and society in our country." That's one of the arguments we often hear (quite understandably) in favour of hosting the Winter Olympics in Switzerland in 2026. The federal government intends to support a Swiss bid to the tune of CHF 8 million francs. And if the bid were to be successful, it would be prepared to spend up to CHF 1 billion.

Although admittedly nowhere near as high profile as the Olympic Games, the WorldSkills competitions, which have been taking place since 1950 and are open to participants up to the age of 23, also showcase considerable talent. At the recent edition in Abu Dhabi in October, the Swiss team brought home almost 20 medals, including eleven gold medals. In the country rankings it came second behind China. What is particularly remarkable about this success is the fact that Swiss vocational education and training is not some abstract sideshow grafted onto the education system, but rather it is its backbone. In addition, the participants are young professionals enrolled in regular VET programmes. They do not undergo years of special coaching, nor do they have to hone their technical knowledge and practical skills specifically for the WorldSkills competition.

Against this backdrop, it is gratifying that Switzerland's future bid to host the next WorldSkills competition is on the political agenda. For this competition would be a real opportunity for the country, its economy and society too.

Switzerland would be in the media spotlight worldwide. At the same time, it could also draw attention to vocational education and training at national level. Families and young people with a migration background, but also those who are more familiar with our education system, would be able to experience first-hand what dual-track VET can do for their personal careers and what prestige it can have.

It will be possible to get a taster of just what the WorldSkills competition would mean for Switzerland on a smaller scale when the SwissSkills competition is held in Bern in 2018.

A handwritten signature in black ink, which appears to read 'Mauro Dell'Ambrogio'. The signature is fluid and stylized, with a large initial 'M' and a long, sweeping underline.

Mauro Dell'Ambrogio
State Secretary for Education, Research and Innovation

VET Autumn Conference well-attended

VET and career growth

On 28 November, around 700 people discussed the topic of “VET and career growth” at the autumn VET conference. In speeches, short presentations and panel discussions, they received answers to questions about the various career opportunities available through VET. During the lunch break, participants were also able to gather additional information on current VET projects at over 30 stands. The date of the next VET Autumn Conference has already been scheduled for 13 November 2018.



The Autumn VET Conference organised by SERI met with great interest: around 700 participants were present in Bern.



Josef Widmer, SERI Deputy Director, opens the 2017 VET Autumn Conference.



Rémy Hübschi, head of SERI's Professional Education Division provides an update of the situation.

Further information



www.sbf.admin.ch/herbsttagung



Jessica Kanagalingam, an apprentice at SERI, and moderator, Roberto Pirola, co-hosted the conference.



In the morning and afternoon, six freely selectable focus presentations provided a glimpse of vocational education and training from various angles. Among other things, Prof. Andreas Hirschi, from the University of Bern, presented research findings showing the impact of VET on career trajectories.



During the lunch break visitors were able to find out more about current VET projects at over 30 stands.



From apprentice to top management: Lukas Gähwiler, Chairman of the Board of Directors of UBS Switzerland AG, chatted with Christine Maier at the podium. In his opinion, commitment and a bit of luck help people to achieve success by being in the right place at the right time.



Speeches and panel discussions by and with different generations highlighted the range of VET challenges. In the afternoon, co-host Jessica Kanagalingam interviewed professors from the F+F School of Art and Design in Zurich about its training area.

Encouraging mobility

Scholarship applications for European higher education institutions now open

In 2018, the State Secretariat for Education, Research and Innovation (SERI) will be awarding four scholarships for one-year Master's degree programmes at the College of Europe in Bruges (Belgium) or Natolin (Poland). In addition, a scholarship will be awarded for the four-year PhD programme at the European University Institute in Florence. Both institutes offer a variety of interesting study programmes. The aim of awarding scholarships is to foster individual educational excellence among young researchers.



Photo: Collège d'Europe

What motivates young researchers from Switzerland to study at the European University Institute (EUI) in Florence, for example? Perhaps it is the prospect of an exciting research career in an international environment. Perhaps it is an interest in relevant questions about the future of Europe and the will to address them in a culturally diverse environment.

Innovative study programmes at the EUI and at the College of Europe

In 1972, a few EU Member States established the ECI in Florence. Since then, Austria, Belgium, Bulgaria, Cyprus, Cyprus, Belgium, Bulgaria, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Greece, Ireland, Italy, Latvia, Luxembourg, the Netherlands, Poland, Portugal, Romania, Slovenia, Spain, Sweden and Switzerland have all supported young researchers at the EUI through scholarships. The study programmes in the fields of history and cultural history, political science and social sciences, as well as law and economics, are open to young researchers from Europe. In most cases, these studies lead

to a PhD after four years. In addition, lawyers have the opportunity to obtain a Master's degree in international law within one year. Admission to studies is granted only to doctoral students with a scholarship paid by the respective national authorities.

The College of Europe in Bruges was founded in 1949. In 1993 another campus was added in Natolin, near Warsaw. The study programmes lead to corresponding Master's degrees in the fields of International and Diplomatic Relations of the EU, Political Science and Administration, Law, Economics and Interdisciplinary European Studies (Natolin).

Scholarship application procedure

Persons holding Swiss citizenship or those who have completed more than two years of education and training within the Swiss education system may apply for a scholarship at both institutes. The deadline for applications for the College of Europe is 17 January 2018, and the deadline for the European University Institute is 31 January 2018.

The prerequisites are a university degree (Master's degree) and sufficient language skills (English for EUI; English and French for the College of Europe). In the case of the EUI, additional qualifications, research or work experience, as well as a research topic proposal corresponds with the Institute's programme are also required.

The institutes accept direct applications and decide on admission after consulting SERI. The respective admissions committees essentially take into account the candidates' potential for excellence on the basis of their academic career to date. They also check the availability of places per discipline and whether the research topic specified by the applicants can be included in an ongoing project. SERI announces its final decision on the award of scholarships by the middle of the year at the latest. It arranges for the scholarship of around EUR 20,000 to be paid directly to scholarship holders in two instalments.

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Further information

Information about scholarships at the EUI in Florence
🌐 www.sbfi.admin.ch/d-eui

Information about scholarships at the College of Europe in Bruges/Natolin
🌐 www.sbfi.admin.ch/d-eui

Growing internationalisation of working life

Encouraging the acquisition of foreign language skills in VET programmes

In early November, the Federal Council adopted a report on encouraging the acquisition of foreign language skills in VET programmes. According to the report, increased foreign language support helps to equip young people for the labour market in the best possible way. This also includes ensuring that the skills acquired by the end of training are identified in a uniform and clear manner.



The report approved by the Federal Council is intended to encourage more learners in VET programmes to acquire foreign language skills, to provide holders of vocational qualifications with the best possible preparation for the labour market, and to ensure that evidence of acquired foreign language skills is as standardised, simple and reliable as possible. Photo: Iris Krebs

Foreign language skills are becoming more important with the increasing internationalisation of working life in many occupations. With the adoption of the report by the Federal Department of Economic Affairs, Education and Research (EAER) drafted in response to the Buillard-Marbach Postulate of 2014 (14.4258), the Federal Council is showing its commitment to greater promotion of foreign languages in Swiss VET programmes. Since 2011, this has been part of the joint work pursued by the Confederation, the cantons and professional organisations to further develop vocational education and training. Efforts are being made in different areas, including in particular:

- Support for bilingual instruction;
- Support for the federal vocational baccalaureate;
- Carrying out language exchanges and other mobility activities (national and international), also with the aim of establishing best practice models;

- Information and awareness-raising of available options (including free courses at vocational schools or in-house measures);
- Start-up project funding from the Confederation through Articles 54 and 55 of the Federal Vocational and Professional Education and Training Act (VPETA).

Three objectives – different approaches

The report provides an overview of current practices and suggests subsequent steps based on the work done so far by the Confederation, the cantons and professional organisations. The various recommendations also take into account the challenges facing vocational education and training. The aim is to encourage more learners to acquire foreign language skills, to optimally prepare them for the labour market and to ensure that proof of their acquired language skills is as standardised, simple and reliable as possible.

Legal basis

With the entry into force of the Vocational and Professional Education and Training Ordinance (VPETO), the Confederation laid the foundations for courses to be taught in a second national language or in a foreign language. Art. 12 para. 2 states: 'As a rule, learners are required to attend a foreign language course. This requirement shall be met in accordance with the needs of the VET programme.'

Following the entry into force of the new Federal Vocational and Professional Education and Training Act (VPETA) in 2004, VET ordinances were issued for over 230 different occupations. 38 VET ordinances provide for mandatory instruction in a foreign language. In 2016, the Federal Statistical Office (FSO) estimated that over half of learners (around 54%) enrolled in Swiss VET programmes lacked standard access to instruction in a foreign language at their vocational school. It should also be noted that compulsory foreign language instruction can vary greatly depending on the occupation. Often it is not so much the ability to understand and communicate in a foreign language as the ability to teach technical terminology. As a result, an international language diploma is rarely applied for.

This means that all the players involved should intensify their efforts, expand existing services and encourage young people to make use of them. In order to reach as many young people as possible and build on the basic knowledge acquired in primary and lower-secondary school, efforts must be made to ensure that foreign language instruction becomes mandatory in an increasing number of

VET programmes. In addition, the new “Movetia” agency, which is supported by the Confederation and the cantons, is designed to provide targeted and needs-based support for the development and implementation of national and international exchange and other mobility activities. In all its promotional efforts, the Federal Council deems it important for national languages to be adequately taken into account.

Proof of foreign language skills based on European standards

With regard to the evidence of language skills acquired, the report assesses international language diplomas as having the greatest (labour market) relevance and significance. Accordingly, more opportunities should be created and learners should be encouraged to obtain such diplomas. If possible, proof of foreign language skills that do not lead to an international diploma should be provided on the basis of a generally clear classification based on European standards. The Swiss Federal Institute for Vocational Education and Training (SFIVET) will provide a corresponding grid for bilingual instruction.

The decision as to whether and which foreign language is taught (on a mandatory basis) in Swiss VET programmes lies with professional organisations (see infobox) in keeping with the responsibilities assigned to them within the VPET system. The main objective of the language courses is to ensure the employability of qualification holders. Not every occupation requires foreign language skills. In addition, more and more content is already being added to two- to four-year VET programmes, which means that any new training content can only be taught at the expense of other areas.

The Federal Council favours solutions geared to the specific needs of the respective economic branches and occupations. The recommendations set out in the report also take this into account.

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Federal project funding

Over the past five years, SERI has supported projects aimed at facilitating the acquisition of foreign language skills and promoting mobility. A total of over CHF 1.6 million has been allocated to this endeavour.

Multilingualism within the occupation

In the niche occupation of musical instrument maker, the vocational school and branch courses have been combined into a national competence centre. Only a few learners from different language regions are trained together each year. As a result, a model for multilingual instruction was developed. The model is applicable to all occupations where learners attending the VET programme predominantly come from different linguistic backgrounds.

Bilingual instruction in VET programmes for international companies

The ‘CFC bilingue’ project was launched in the canton of Geneva to encourage more English-speaking companies and organisations in Switzerland to offer apprenticeships as part of Swiss VET programmes. The French-English training course is open to learners enrolled in the VET programme leading to issuance of a Bilingual Federal VET Diploma in Commerce.

Internationalisation of VET

The project being developed by the Canton of Zug is also intended for internationally-oriented companies. It will initially be run on a trial basis for two occupations (commercial employee and IT worker). The training will take place mainly in English at all three learning locations (i.e. host company, vocational school and branch training centre). The VET programme is designed for young people who are proficient in both German and English, regardless of which language is their mother tongue.

Swiss Mobility

Under the project launched by the cantons of Lucerne and Ticino, the aim is to develop and test practical models to sustainably anchor domestic exchange programmes in vocational education and training. Initially, those who complete their VET programme will be given the opportunity to combine a traineeship with a language course for a period of three to nine months.

visite – Learners visit learners

The ‘visite’ association founded by the Rotary Club Switzerland/Liechtenstein, has been organising exchanges for learners in VET programmes for the past 17 years. Having previously focused on the Italian and German-speaking cantons, this SERI-funded project now seeks to create the necessary structures for exchanges in the French-speaking region of Switzerland. The aim is increase the overall number of exchanges from around 40 to 60.

Further information

 www.sbfi.admin.ch/pubbb

Keeping pace with the skills in the workplace

Confederation launches new support programme Basic Skills in the Workplace

Digitalisation, automation and new organisational processes are changing the demands placed on employees. In order to ensure that workers do not fall behind these developments and are able to hold onto their jobs, SERI has decided to support courses aimed at consolidating basic skills in the workplace from 1 January 2018. On 8 November the Federal Council decided to make this a funding priority and launched it at the high-level meeting on vocational and professional education and training on 13 November under the slogan "Simply better at work!"



„Einfach besser!... am Arbeitsplatz“. Under this title, the Confederation seeks to promote adult acquisition of basic skills intended to enable workers to face challenges at the workplace.

In order for a company to function properly, its employees need to have a whole range of skills. Job-related basic skills are those that are closely matched to the requirements of the workplace. These include reading, writing, the ability to speak a national language, everyday maths and basic skills in information and communication technologies (ICT).

The aim of the support programme is to provide employees with basic skills in courses that enable them to keep pace with the continually changing demands of working life. This enables them, for example, to fill in work reports electronically, record measurements and product codes, perform calculations and conversions, follow dosage instructions or use the computer to perform simple tasks.

About Basic Skills at the Workplace

‘Basic Skills at the Workplace’ is a support programme developed by the Federal Council as part of the ‘Skilled Workers Initiative’. The focus is on companies that want to train their employees more effectively for future challenges in the workplace.

This support programme will be implemented by SERI over a limited period of three years and will be evaluated in preparation for the budgetary period 2021-2024. It is based on the Vocational and Professional Education and Training Act (VPETA) and funding will come from the budget allocation already approved by Parliament in the Federal Council Dispatch on the Promotion of Education, Research and Innovation for 2017-2020. A total of CHF 13 million have been set aside for the period 2018-2020.

Support programme design

Federal support for the programme will be limited to measures designed to enable adults to acquire basic work-related skills. These must be tailor-made continuing education and training courses funded by VPET funds or professional organisations, or offered as in-company training courses. These CET courses must be closely related to the specific everyday needs of working life and its challenges. The skills learned should be of benefit both to the employee and the employer straight away. The measures supported by the Confederation are intended for all employees who require help with basic skills. Special emphasis, however, is placed on the needs of older workers. Federal funding is provided in the form of a lump sum payment of CHF 15 per lesson per participating worker.

When developing a new training course, a flat-rate federal subsidy of CHF 3,000 may also be claimed, regardless of the intended duration of the training course.

Awarding of subsidies

A two-phase procedure is used for awarding subsidies. The first step is for the employer to submit an application to SERI. This application must be submitted before the planned measure begins. SERI will

then decide whether the planned course is eligible for a federal subsidy.


Once the measure has been completed, a reporting form is submitted as part of the second phase of the procedure. This includes a report on the course given. The federal subsidy will be paid to the company after the course has been given.

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Further information

Application and reporting forms as well as the information sheet on support measures to enable acquisition of job-related basic skills:

 www.sbfi.admin.ch/einfach-besser

Award of lump-sum federal subsidies: eligibility criteria

- In terms of content, the measure is intended to ensure acquisition of work-related basic skills.
- An attendance certificate is issued at the end of the course. This certificate explains the skills that were imparted during the course.
- The training course must be free of charge for participants and must take place during working hours.
- The training course must comprise between 20 and 40 lessons lasting at least 45 minutes each. There must be no more than three lessons per day. The minimum number of participants per course is six, the maximum number is twelve.

Further details are provided in the SERI information sheet (see Further information below).

Swiss participation in CONFITEA VI Mid-Term Review 2017

International exchange of experiences to promote lifelong learning

At the end of October in Suwon, South Korea, a UNESCO Mid-Term Review of CONFITEA VI was held to take stock of progress made towards implementation of the Belém Framework for Action adopted back in 2009. At the time, a series of objectives were decided in Belém, Brazil to further promote adult learning and education (ALE). At this year's conference, Switzerland presented its Continuing Education and Training Act (CETA), which came into effect this year, together with the various measures taken to implement this piece of legislation. The conference resulted in invaluable exchanges of experiences.



The following delegates presented Swiss interim reports at the Mid-Term Review of CONFITEA VI in South Korea: Benedikt Feldges, IKW President, Andrea Ernst Barth from SERI, Bernhard Grämiger, SVEB Director. Photo: zVg.

The International Conference on Adult Education (CONFITEA) plays a key role in the international development of lifelong learning. The aim of the conference, which takes place every twelve years, is to initiate and accompany processes that promote the further development of the framework conditions for lifelong learning. Accordingly, objectives and recommendations are adopted at CONFITEA. Their implementation in the participating countries is evaluated and discussed in the form of interim balance sheets. CONFITEA is organised by the UNESCO Institute for Lifelong Learning in Hamburg in cooperation with the UNESCO Institute for Lifelong Learning.

At CONFITEA VI 2009 in Brazil, 144 states, including Switzerland, adopted the Belém Framework for Action. This includes objectives in the following fields of action: basic skills, policy, governance and financing as well as participation, inclusion, equity, quality and monitoring. This year's mid-term review took place in South Korea. Switzerland was given the opportunity in plenary session to present the measures that have been implemented so far.

Presentation of Continuing Education and Training Act (CETA)

The Continuing Education and Training Act (CETA) is very much in line with the objectives of the Belém Framework

for Action. For this reason, SERI took the opportunity to present CETA at the Mid-term Review of CONFITEA VI as an example of a completed regulatory framework. In addition, a second presentation was given by the Swiss delegation, which included not only SERI officials but also representatives of the Intercantonal Conference for Adult Education (IKW) and the Swiss Association for Adult Learning (SVEB). The free structure of the event enabled the different roles of the Confederation, the cantons and adult education organisations to be explained in detail. It was also possible to show how the actors were involved in both the development and implementation of CETA.

With CETA, which has been in force since 2017, Switzerland has completed its legal foundations in the field of education and integrates continuing education and training, i.e. non-formal learning, into the Swiss education landscape. It also lays down the corresponding principles and legally anchors the acquisition of basic skills as a prerequisite for lifelong learning.

Mixed results of the mid-term review

According to member state reports, progress has been made in all areas. Some countries have improved the legal basis, are striving to involve stakeholders and in some cases have allocated more financial resources. It is gratifying that there has been a slight overall increase in participation in continuing education and training. Nevertheless, many countries are still far from achieving the objectives set forth in the Belém Framework for Action. Reasons for this include rampant poverty, social and political unrest or war.

Discussions in South Korea were generally positive. In the various panel discussions, delegations benefited from the viewpoints of different countries. These differentiated viewpoints and sometimes surprising questions enabled delegations to critically examine their own premises and ideas.

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Further information

🌐 www.uil.unesco.org

🌐 www.sbfi.admin.ch/weiterbildung

Symposium on 13 March 2018

In order to share the specific points covered at the Mid-Term Review of CONFITEA VI in detail, SVEB will be holding a symposium on 13 March 2018 in cooperation with SERI and IKW.

More information can be found here:
www.alice.ch.

Public expenditure for education, research and innovation: 2017 ERI Bulletin published

Cantons and Confederation are interdependent within the ERI sector, because public management and funding of the ERI sector may be handled exclusively by the cantons (e.g. in the case of compulsory education), exclusively by the federal government (e.g. in the case of the Federal Institutes of Technology Domain) or jointly (e.g. VPET system, cantonal universities and UAS).

An overview of public expenditure, bringing together all cantonal and federal contributions to the ERI sector, is essential to fully understand how the ERI sector operates. An annual report (and every four years a comprehensive report) jointly produced by the SERI and the General Secretariat of the Swiss Conference of Cantonal Ministers of Education (EDK) provides such an overview. The latest figures can be found in the recently published 2017 ERI Bulletin.

The 2017 ERI Bulletin shows that

- total funding (cantonal and federal) increased from CHF 32.8 billion in 2008 to CHF 38.3 billion in 2015 (see chart),
- the cantons continue to provide most – four-fifths – of public sector funding for the ERI sector and,
- the distribution of funding between the two sources of funding has

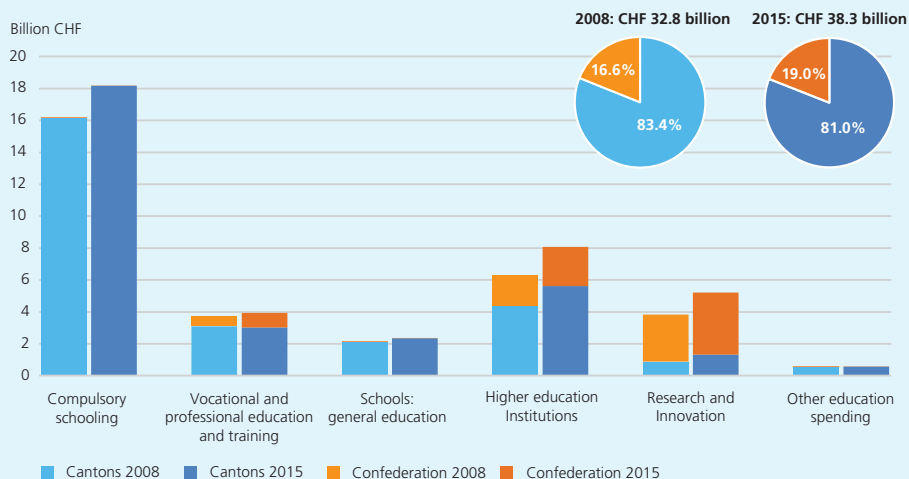
changed, with the cantons' share of ERI funding falling from 83.4% in 2008 to 81% in 2015 and the Confederation's share increasing from 16.6% to 19%.

Further information

ERI Financial Report 2017:

🌐 www.sbfi.admin.ch/erir

Public expenditure on education, research and innovation in Switzerland, 2008-2015



Source: Financial Statistics 2015, Federal Finance Administration. The entry "Other education spending" refers to expenditure that does not fall into other categories.

Access to universities of applied sciences for holders of general baccalaureates

Development of best practices for one-year work experience requirement

In order to be admitted to a Swiss university of applied sciences, holders of a general baccalaureate must have at least one year of work experience. Each UAS establishes its own admission procedures and decides on admission. In 2017, the Rectors' Conference of the Swiss Universities of Applied Sciences (KFH) and the Swiss Conference of Rectors of Higher Education Institutions (swissuniversities) adopted a best practices document to ensure uniform work experience requirements. This document presents the relevant processes and procedures, outlines practical instruments for implementation and explains the competence certificate requirement. The best practices document is a standardised tool enabling all participants to successfully plan and design the work year and maintain records of the knowledge and skills acquired as a result.



The Higher Education Act (HEdA) stipulates that holders of the general baccalaureate must complete one year of work experience in a profession related to the field of studies before they may enrol in a study programme at a Swiss university of applied sciences. Each UAS establishes its own admission procedures and decides on admission. Photo: FHNW / Stefano Schroeter

In Switzerland, the classical route to a university of applied sciences is via the federal vocational baccalaureate. This is an optional qualification that may be obtained by learners in a VET programme who also attend a preparatory course covering general education topics. The result is two qualifications: the standard vocational qualification (i.e. the Federal VET Diploma), which provides direct entry into the labour market or the option of pursuing tertiary-level professional education; and the federal vocational baccalaureate, which allows the holder to enrol in a degree programme at a Swiss university of applied sciences.

Access to universities of applied sciences for holders of general baccalaureates

Holders of general baccalaureates, however, have a different skill set. They at-

tend a broad range of general education subjects at baccalaureate school, which leaves no room for the acquisition of work-related knowledge and know-how.

However, baccalaureate school graduates can also begin their studies at a university of applied sciences. The average proportion of general baccalaureate holders enrolled in the first-year of studies at a Swiss UAS is around 20% per year. In order to enable baccalaureate school graduates to attend a Swiss UAS, the Higher Education Act (HEdA) stipulates that they must have at least one-year of work experience in a profession related to their field of study before commencing their studies at a UAS. This work experience is intended to provide them with a minimum amount of practical and theoretical knowledge needed to attend a UAS study programme. Of course, a one-year traineeship does not

provide the same comprehensive set of professional competences that would be acquired by attending a three- or four-year VET programme. Nevertheless, it is enough to enable holders of the general baccalaureate to attend the practice-oriented studies at a university of applied sciences.

Best Practices as a frame of reference

Until only recently, there were few guidelines on how the work experience requirement could be applied in practice. Some UAS were very much in favour of work experience: they provided detailed information on this subject to prospective UAS students. Others offered less information on work experience. This was also confirmed by the Federal Council in a 2010 report on UAS admission practices. As a result, UAS were asked to ensure uniform requirements for the whole of Switzerland. swissuniversities, SERI and the relevant professional organisations set about developing 'Best Practices for Implementation of the Work Experience Requirement'. This broad-based process lasted for the next several years. The resulting document is intended to help companies, prospective students and UAS to find their bearings. It also facilitates implementation of the work experience requirement to ensure a purposeful and successful experience for prospective students holding a general baccalaureate.

Coordination with professional organisations

For each economic branch, the relevant professional organisation has drawn up a corresponding list of competences. These lists are based on the same competence profiles used for Swiss three-year and

four-year VET programmes. For the work experience requirement, professional organisations chose professional competencies that may be expected of both students and host companies within the framework of a one-year internship. The guidelines of professional organisations were taken into account in the selection of mandatory and optional competences, which include practical aspects (e.g. standard contract between the host company and prospective UAS student) or information and recommendations on holiday time.

Trainees who, based on assessment by the host company, have achieved the

learning objectives established for the given traineeship are deemed to have satisfied the admission requirements for the corresponding Bachelor's degree programme at the UAS. However, the final decision on admission is still made by the respective UAS. The competence certificates obtained upon completion of the traineeship are generally valid for an unlimited period of time. Commencement of studies at the UAS does not have to take place immediately after completion of the traineeship. Early contact with the desired UAS is the best prerequisite for a smooth transition from the traineeship to UAS enrolment.

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Further information

Best Practices for Implementation of the
Work Experience Requirement, List of
Required Competences, etc.:

🌐 www.arbeitswelterfahrung.ch

BFI | Photo of the month



The Swiss Innovation Agency (Innosuisse) will begin its activities on 1 January 2018. Its remit will for the most part be a continuation of CTI's current mandate: helping small and medium-sized enterprises (SMEs) to improve their innovation capacity and focus. Innosuisse is a federal institution under public law with its own legal personality. It is independent in its organisation and management and has its own accounting. The Federal Council manages Innosuisse through strategic objectives.

A publication "Mit Innosuisse in die Zukunft" ("The future with Innosuisse") has been released to mark the transition from CTI to Innosuisse. This publication presents examples of CTI-funded initiatives and historical milestones over the past 21 years. It also provides information about Innosuisse bodies and funding instruments.

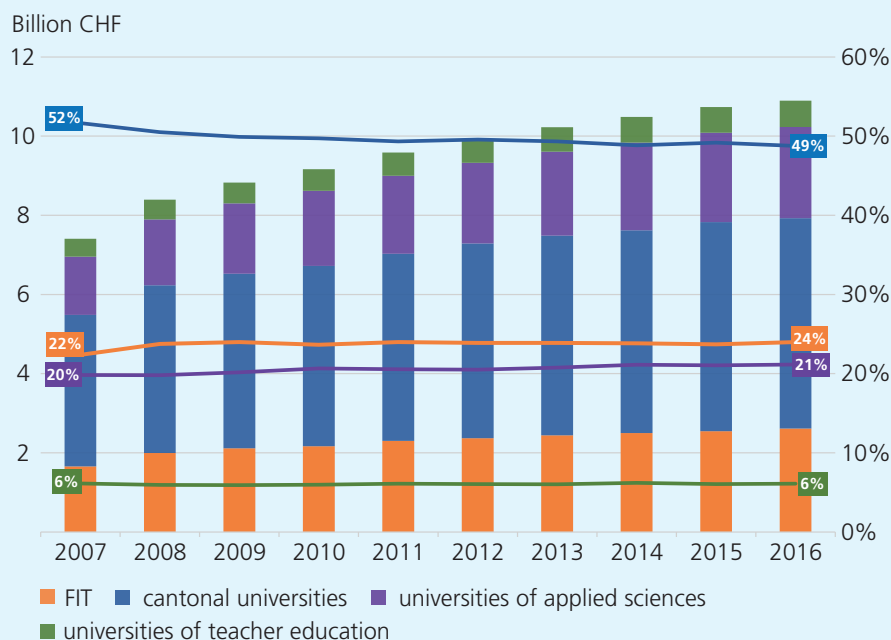
Click here for more information and to download this publication: www.innosuisse.ch

New information service

Swiss higher education sector funding

A new service available on the SERI website (www.sbf.admin.ch/erir) offers the opportunity to observe the development of higher education funding in different ways. Based solely on data from the Federal Statistical Office (FSO), this service, for example, makes it possible to study the development of funding by source. It is also possible to track developments by the nature of subsidy. Below are a few examples of observations that can be made using this documentation.

Total funding of Swiss higher education sector by type of HEI



Total funding by type of higher education institution

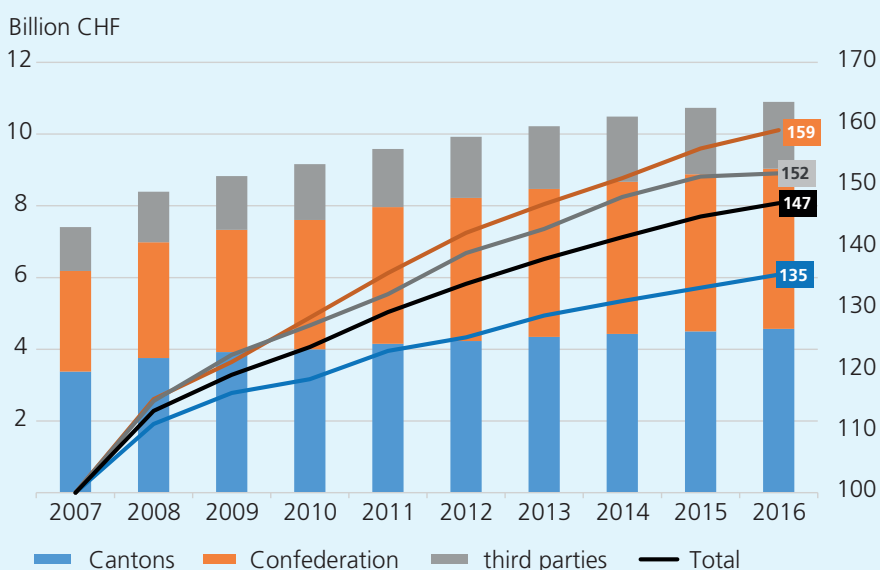
Total funding (public and private) of the Swiss higher education sector (cantonal universities, federal institutes of technology, universities of applied sciences and universities of teacher education) increased from CHF 7.4 billion in 2007 to CHF 10.9 billion in 2016. As expenditure for all four types of HEI has run more or less in parallel, the distribution of funding among them has varied very little. Cantonal universities continue to receive almost half of total funding.

Explanation: this figure shows the amounts allocated to the various HEIs (bars stacked in CHF billion on the left-hand scale) and the evolution of the shares of each type of HEI (horizontal curves in % on the right-hand scale); SFO data.

Funding of Swiss higher education sector by source

Total funding of the Swiss higher education sector comes from three sources: the cantons, the Confederation and third parties. All three sources have increased their HEI funding. The strongest growth between 2007 and 2016 was from the Confederation. (2007:100%; 2016:159%).

Total funding of Swiss higher education sector by source of funding

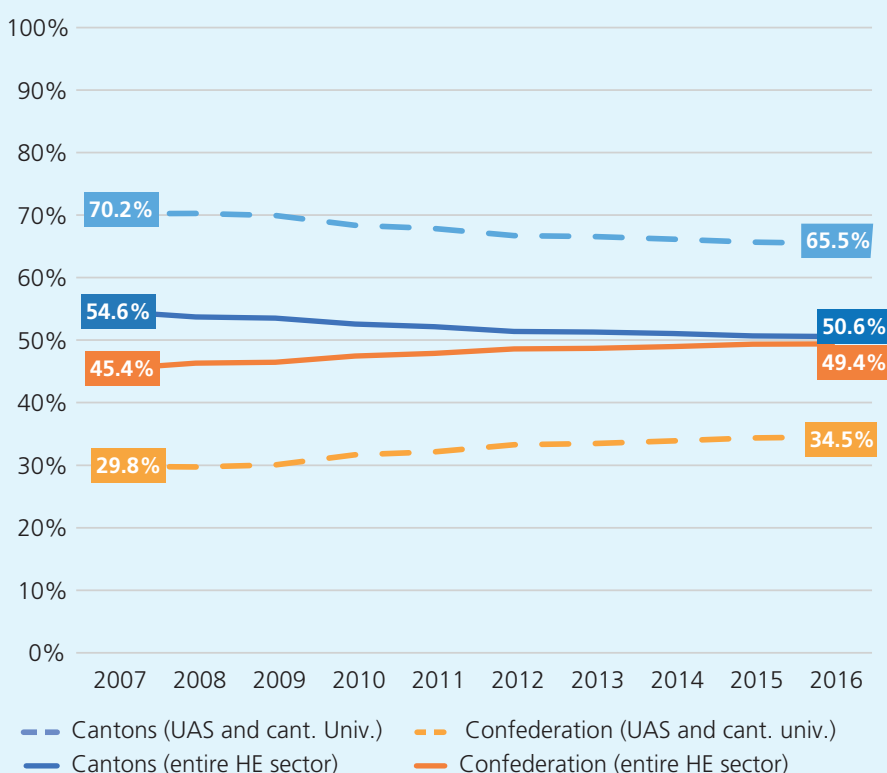


Explanation: this figure shows the amounts allocated by the three sources to the various types of HEIs (bars stacked in CHF billion on the left-hand scale) and the indexed evolution of funding by type of donor (horizontal curves indexed to 100 in 2007; right-hand scale); FSO data.

Public funding of Swiss higher education sector

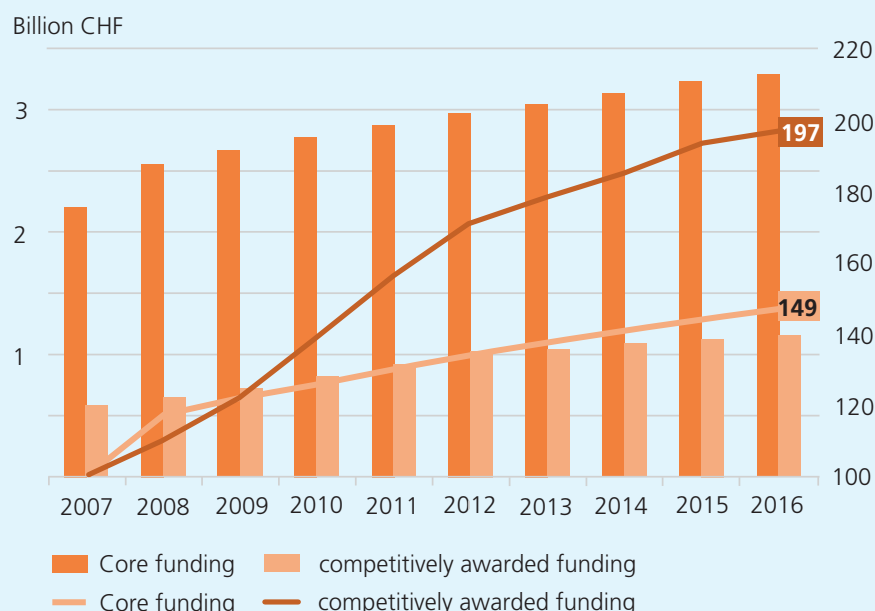
In the case of public funding of the Swiss higher education sector, there was an increase in the federal proportion of funding from 45.4% (2007) to 49.4% (2016) and a decrease in the cantonal share from 54.6% to 50.6%. If only the funding of cantonal universities and universities of applied sciences is taken into account (i.e. excl. federal institutes of technology and universities of teacher education), the Confederation accounts for 34.5% of funding and the cantons for 65.5%.

Public funding of Swiss higher education sector by source of funding



Explanation: the figure shows the share of the cantons (in blue) and the Confederation (in dark orange) for the entire higher education sector (dotted lines) and the corresponding shares for co-funded HEIs, i.e. cantonal universities and universities of applied sciences (solid lines); SFO data, etc.

Federal funding of Swiss higher education sector: Project and basic funding



Explanation: This figure shows the amount of competitively awarded funding (SNSF, CTI/Innosuisse and EU) that Swiss higher education institutions were able to secure thanks to federal subsidies (bars in CHF billion on the left scale). We also see changes in funding by type (horizontal curves indexed to 100 in 2007; right scale); SFO data.

Core funding and competitively awarded funding of Swiss higher education sector


Federal funding towards the Swiss higher education sector includes both core funding and competitively awarded funding. Core funding includes the basic subsidies, subsidies for cooperation projects and building subsidies. Swiss HEIs secure competitively awarded funding by submitting project proposals to the Swiss National Science Foundation (SNSF), the Commission for Technology and Innovation (CTI, Innosuisse from 2018), the European Union (EU) and other sources. Competitively awarded funding has been a significant factor in the growth of federal funding. In 2016, it accounted for over a quarter of federal funding to the higher education sector in 2016, compared to 2007, when it accounted for a fifth.

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Data and charts on funding of Swiss higher education sector:

 www.sbfi.admin.ch/erir

New national competence centre for research

Confederation encourages new ways and alternative methods of animal research

SERI supports the new Swiss competence centre 3RCC as a research institute of national importance, allocating a total of CHF 2.9 million for the period 2018-2020. In this manner, the Confederation seeks to promote 3R principles in animal experimentation (refine, reduce, replace). These mainly include refining methods to ease the burden on animals, reducing the number of animal experiments and replacing experiments with alternative methods.

The respectful, competent and responsible handling of animals in animal experiments is not only an ethical and legal obligation, but also a prerequisite for meaningful research. According to Swiss animal welfare legislation, animal experiments may only be carried out if no alternative methods are available.

Detailed examination

The State Secretariat for Education, Research and Innovation (SERI) and the Federal Food Safety and Veterinary Office (FSVO) commissioned the Swiss Conference of Rectors of Higher Education Institutions (swissuniversities) to develop a concept for a national 3R competence centre in cooperation with Interpharma, the Swiss National Science Foundation (SNSF) and the FSVO. Swissuniversities sent SERI a funding request on 30 March under the terms of Article 15 of the Federal Act on the Promotion of Research and Innovation (RIPA). The Swiss Science and Innovation Council (SSIC) reviewed the request and summarised its findings and recommendations in a report that was then submitted to SERI. The Federal Department of Economic Affairs, Education and Research (EAER) approved this request at the end of November.

Broad-based competence centre

The new Swiss competence centre 3RCC is intended to promote and implement 3R principles in research practice. Further aims include anchoring the development of 3R-related methodologies in universities, deepening and expanding the current strategy to raise researcher awareness of 3R through initial and continuing education and training. Finally, 3RCC will develop an information system for 3R research.

The Swiss competence centre 3RCC is an association. Its members include eleven

The 3R concept

3R stands for Replacement, (methods that avoid or replace the use of animals in experiments), Reduction (methods that minimise the number of animals used per experiment) and Refinement (methods that minimise animal suffering and improve welfare). The 3R concept was formulated in 1959 by two English researchers who analysed the situation in experimental laboratories and showed how animal experiments can be carried out in a more tolerable manner.

Replacement Replacement refers to technologies or approaches which directly replace or avoid the use of animals in experiments where they would otherwise have been used. Examples of replacement include computer models or in-vitro techniques using human cells or human organotypical tissue.

Reduction Reduction refers to methods that minimise the number of animals used per experiment or study while at the same time delivering comparable or even more information. Examples of this include the use of imaging modalities which allow longitudinal measurements in the same animal to be taken (rather than for example culling cohorts of animals at specific time points).

Refinement Refinement refers to improved scientific research methods that avoid or minimise the pain, suffering, anxiety, stress or lasting harm that may be experienced by research animals. Evidence suggests that careful handling of laboratory animals increases the reliability of experimental results.

Source: Future of 3R Research Foundation and Alternative Methods to Animal Experiments - Federal Council Report in response to Postulate 12.3660 submitted by the National Council's Science, Education and Culture Committee (SECC-N) on 17 August 2012

higher education institutions (seven cantonal universities, the two federal institutes of technology and two universities of applied sciences), Interpharma, Swiss Animal Protection and Federal Food Safety and Veterinary Office (FSVO). The 3RCC is housed at the University of Bern. In addition to SERI funding, the budgeted costs of the competence centre, which total CHF 10.41 million in 2017-2020, are covered by the FSVO and HEIs matching funds and third-party funding from the private sector.

In the 2015 report on the fulfilment of Postulate 12.3660 'The Future of the 3R Research Foundation and Alternative


Methods to Animal Experimentation', the Federal Council outlined measures to strengthen 3R competence in Switzerland. One of the key measures included examining the feasibility of creating a 3R competence centre.

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Information about "Research institutes of national importance":

 www.sbf.admin.ch/fvn

Information about the Federal Food Safety and Veterinary Office (FSVO):

 www.blv.admin.ch/blv/de/home/tiere/tierversuche.html

What is a research institute of national importance

SERI will support around 30 research institutes of national importance in the period 2017-2020. These include research institutes such as the Swiss Group for Clinical Cancer Research (SAKK), the Swiss Peace Foundation (swisspeace) in Bern and the Centre Suisse d'Electronique et de Microtechnique (CSEM), which is based in Neuchâtel and has additional sites elsewhere in Switzerland.

As a federal support instrument, research institutes of national importance are regulated in Article 15 of the Federal Act on the Promotion of Research and Innovation (RIPA). The main objective is to provide a high quality research basis in very specific fields. Federally-funded research institutes help to create scientific added value in the relevant fields and complement the research activities conducted at cantonal universities and within the ETH domain.

Basic funding comes from both the public sector (e.g. cantons, cantonal universities) and the private sector (e.g. private individuals), which is why support provided by the Confederation under Article 15 RIPA is subsidiary in nature.

SERI newflash

Visit to Israel and the Occupied Palestinian Territories



Swiss delegation at a presentation.
Photo: zVg

At the end of October, Federal Councillor Johann N. Schneider-Ammann led an economic and scientific delegation to Israel and the Occupied Palestinian Territories. This delegation included most of the members of the Innosuisse board of directors. Innovation, particularly digitalisation, was the main focus of the visit. Innosuisse's board of directors was mainly interested in learning about strategies, incentives and experience in the field of innovation and start-up companies.

Known as a "start-up nation", Israel presents an interesting case study for Switzerland, because the two countries share many common points: both are small countries that invest heavily in research and development and both countries regularly feature at the top of competitiveness and innovation rankings. With nearly 1,500 additional start-up companies formed each year on its territory, Israel hosts the "Silicon Wadi" and is a model of success in the field of technology, particularly in cybersecurity, FinTech and mobility. For its part, the Palestinian start-up sector has also been growing rapidly and offers fresh potential for cooperation. The OPTs offer several advantages: a large number of young highly educated graduates, geographical proximity to Israel and opportunities throughout the Middle East.

Prof. Willy Benz elected new President of ESO Council




Photo: Universität Bern / © Alessandro Della Bella

The European Southern Observatory (ESO) is the leading European organisation for astronomical research. It provides modern research facilities for astronomers and astrophysicists, allowing them to conduct research under optimal conditions. In early December, Willy Benz, Professor of Physics and Astrophysics at the University of Bern and Director of the National Centre of Competence in Research (NCCR) PlanetS, was elected President of the ESO Council. His one-year term of office begins on 1 January 2018. He may be re-elected twice.

With its telescopes and instruments, ESO creates the conditions for top-class astronomical research. The organisation is supported by its member countries, including Switzerland. Construction and operation of several of the world's most powerful ground-based astronomical telescopes make outstanding scientific discoveries possible. At the same time, they provide opportunities for cooperation with industry and technology transfer. ESO's headquarters are located in Garching near Munich. In addition to its headquarters in Santiago, ESO operates three unique observation sites in Chile: La Silla, Paranal and Chajnantor. ESO is currently building what promises to be the world's largest optical telescope: the Extremely Large Telescope (ELT), which will have a diameter of 39 meters.

Further information:

 www.eso.org

ESA Business Incubation Centre off to a good start

Large partner network developed within one year

In November 2016 the European Space Agency ESA, working in conjunction with SERI, opened the Swiss ESA Business Incubation Centre (ESA BIC) based at the ETH Zurich. This is an attractive funding programme aimed at promoting start-ups. According to Johann Richard, a specialist advisor at SERI's Swiss Space Office, there is huge interest in the centre's offering: "In each application round we have received considerably more applications than places available."



Johann Richard, Scientific advisor, Space Affairs Division, SERI

Have expectations in ESA BIC Switzerland been met?

Johann Richard: After just one year, it's still a bit early to draw any firm conclusions. But there are several things worth mentioning. For one, in its first year the programme has aroused a large amount of interest, and has attracted the types of start-up that we had hoped to attract. Secondly, we have a great mix of start-ups from different fields, from drones and robotics through additive manufacturing (production technology), semiconductors,

energy and precision measuring instruments, to software for self-driving cars (or even rockets). There are many promising young companies among them, spin-offs from the two Swiss federal institutes of technology and from the cantonal universities and universities of applied sciences.

We are also impressed by the pace and energy which the ETH Zurich-based consortium brings to the project. ESA BIC Switzerland presents a dynamic programme which complements existing promotion programmes such as those run by Venture Kick or initiatives set up by the Commission for Technology and Innovation (Innosuisse from 2018).

How popular is the programme?

Considering that the programme has only been running for a year, it is fair to say: fairly popular! We have had considerably more applications than places in each application round. So, a lot of great ideas competing with each other. The ESA representatives and the jury members were

really impressed by the quality and range seen in each of the selection rounds. It is also worth mentioning that it wasn't long before we received the first serious applications from abroad. To be accepted on the programme, companies need to be independent and registered in Switzerland, so that is quite something.

We are also delighted that we had start-ups from all over Switzerland in the programme within the first twelve months. The "virtual" model that we selected has clearly paid dividends. It means that the companies involved are not forced to move to a particular location. We don't just pay lip service to this – it is reality, and surely an expression of the quality and attractiveness of the programme. A further factor is the value to the start-ups of the "ESA Approval" label. For many of their clients, participation in an ESA BIC indicates high standards, quality and reliability of the promoted products and technologies.

From what you have learnt so far, what improvements could be made?

The rapid pace at which we recruited companies, and the speed at which things went during our first year, was a challenge for everyone concerned, in particular for the consortium. We could certainly slow down a bit, from a sprint to a steady jog perhaps, without losing too much dynamism. Over the past year we were also able to form an idea of which start-ups can best benefit from the programme. We are going to need to adapt certain factors, such as maximum age of the start-up (currently five years) or its "space connection" (space technology or data that the start-ups want to develop or use). This will also help us to focus the programme more and to further highlight the way it complements private and institutional initiatives.



To mark its first anniversary, ESA BIC Switzerland held a demonstration day in Zurich, at which projects were presented, experiences exchanged and contacts made and maintained. Photos: ESA BIC zVg



As quite a few aspects of the model are new even for ESA, there are several areas in which we could improve cooperation and some other features of the programme. But this won't be a problem, because in many areas our work is pioneering in the ESA BIC network. The experiences and changes we make are already being translated into an adapted modular programme to serve as a model for the ESA BICs, and this will benefit all the ESA member states.

We have developed and implemented a huge number of new elements, but that is no real surprise – rather, it confirms that the path we have taken, although challenging, is an effective one.

There are ESA Business Incubation Centres in other European countries too. What is different about the Swiss one?

Firstly, the funding we provide. Whereas the BICs in other countries provide up to EUR 50,000, we are able to make up to EUR 500,000 available. Forty per cent of

Technology transfer for start-ups

The Swiss ESA Business Incubation Centre offers start-ups both funding and operational and technical support. It promotes space innovation and the transfer of applications to other areas. Launched in 2016, the programme is initially due to run for five years. Up to ten start-ups receive support each year.

Currently there are 18 ESA BICs in 15 different European countries. In 2017 these BICs promoted 140 start-ups. Over 500 start-ups have received funding and support since the first ESAs were established, which in turn has led to the creation of jobs and boosted regional economies.

Revision of the Swiss Space Implementation Plan 2018-2020

ESA BIC Switzerland results from the first Swiss Space Implementation Plan (SSIP), first presented in 2014. The Federal Department of Economic Affairs, Education and Research – that is to say, SERI – recently announced that the SSIP is to be revised. Between 2018 and 2020 new measures will be introduced to further strengthen and consolidate the achievements so far. Responses to the changed conditions and a dynamic environment will be developed. SSIP download:

 www.sbf.admin.ch/ssa


this – CHF 200,000 – is a subsidy from ESA, the rest is private funds from investors, private partners and angel investors, who help start-ups to grow.

The second element is the virtual model already mentioned. In all other BICs, start-ups have to move or set up a branch on the physical site of the BIC. In Switzerland we decided to avoid this for several reasons. But we still regularly hold 'community events', at which entrepreneurs can come together to exchange their ideas and experiences.

The Swiss BIC's network also distinguishes it from other BICs. The programme is not only a public-private partnership in the way it is funded, it also operates as a consortium between the ETH Zurich and the organisations IFJ, Venture Kick, Impact Hub and Expenditure Policy-Swiss. Because these organisations are so well known and so well connected, the Swiss BIC has been able to build up a huge network of over 50 international partners, providing technical and operational support in various forms to the start-ups. The size of its network is very impressive compared to those of other BICs.

One final factor is what we expect the start-ups to have in terms of a space connection. Because of the high degree of interest, but also because we are expected to promote excellence, we set rather higher demands in this respect than other ESA BICs may have. We know from experience with other ESA programmes that start-ups which are highly technological and which have a certain something have better chances of successfully launching their ideas on the market, provided, of course, that other factors are also right, such as the team, entrepreneurial spirit and ability to convince the market.

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 <http://esabic.ch>

New assessment round of national research programmes

Studies commissioned to determine the feasibility of NRPs on digitalisation

National research programmes (NRPs) are a federal instrument used to support the development of knowledge for policymaking and action aimed at solving current social and economic problem. In November 2017, SERI commissioned the Swiss National Science Foundation (SNSF) to conduct a feasibility study on three NRP proposals: impact of digital transformation on education, digital trust and ethics and the digital economy and working life.

A bottom-up process is used to select topics for national research programmes. In July 2017, SERI invited all interested parties to submit proposals for new national research programmes (see SERI News, September 2017). This initiative was a follow-up on the Federal Council's decision to focus on «Digital transformation in the economy and society» in the 2017/2018 NRP Review Round. A total of 92 NRP proposals were submitted by mid-September.

Grouping of proposals into thematic areas

SERI reviewed submitted proposals in light of federal research policy criteria for NRPs and potential thematic areas. This work was guided by a group of experts from various federal offices, professional organisations and higher education institutions. The result was the following three programme proposals (see box):

- Impact of digital transformation on education
- Digital trust and ethics
- Digital economy and working life

SERI has now commissioned the Swiss National Science Foundation (SNSF) to conduct a feasibility study on these three programme proposals. If the SNSF feels that a given proposal is feasible, then it will draft a corresponding programme concept. If it does not, then the SNSF will explain its conclusions in a short report. In the latter case, SERI will decide whether the given programme proposal should be rejected entirely or whether changes can be made to make it more feasible.

Federal Council launches new series of NRPs

According to the Federal Council's decision of 5 July 2017, the planned series of

NRPs will comprise two to three coordinated NRPs with a research duration of five years each. The Confederation intends to allocate a total of CHF 30 million to this new series of NRPs.

The SNSF feasibility study is expected to be completed in the spring of 2018. The programme concepts will then be developed by the autumn of 2018. The Federal Council is expected to decide on the launch of the new NRP series at the end of 2018.

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National research programmes (information about the current NRP round «Digital transformation in the economy and society»):
🌐 www.sbfi.admin.ch/nfp

Digital transformation: the following three programme proposals have been submitted to the SNSF for a feasibility study

Impact of digital transformation on education

The aim of this programme is to analyse the effects and mechanisms of digitalisation on education - from early childhood education through all levels of the education system, including non-formal education. The programme aims to generate knowledge about the challenges and opportunities associated with digital change in education and to develop the foundation needed for challenges and opportunities to be addressed in an optimal fashion.

Digital trust and ethics

The aim of this programme is to analyse opportunities and risks. On the one hand, in terms of the security (stability/resilience) of digital infrastructures and services. And on the other by analysing measures taken on the part of various users and user groups to instil and maintain confidence in these infrastructures/services. Research findings will be used to develop scientifically supported solutions and/or recommended action steps for each topic area.

Digital economy and working life

In Switzerland today, business leaders and politicians are faced with the task of identifying at an early stage the relevant impact of digital transformation on the economy and working life. At the same time, there is a need for government intervention in the private sector to create the conditions needed for Swiss companies to remain competitive. This, in turn, will enable those companies to create and maintain appealing, future-oriented jobs. The aim of the programme is to examine the impact of digital transformation on the economy and on working life and to use fresh insights to identify potential opportunities and risks.