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### D4.1 Report on update of Design for All and Design for All related higher education and research policies in EU member countries and USA

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#### **Abstract:**

This deliverable presents state of the art in Design for All education and research strategies and policies in EU member countries. These findings are complemented with considerations on respective strategies in USA. The report identifies key issues to be further discussed and developed to produce recommendations for further development of DfA related strategies and policies in Europe.

**Keywords:** Design for All, Universal Design, education, research, strategy, policy

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# 1 Executive Summary

The purpose of this document is to present IDCnet's findings and considerations on Design for All education and research strategies and policies in EU member countries. These findings are complemented with considerations on Universal Design education and research strategies and policies in USA.

The work of IDCnet is to support the eEurope 2002 action programme's objective to produce curricula recommendations on Design for All for designers and engineers in the field of ICT.<sup>1</sup> IDCnet also supports the work of European Design for All e-Accessibility Network (EDeAN). National Design for All e-Accessibility networks were established in 2002 in all EU member countries, as a result of an objective defined in the eEurope 2002 action programme.

This document supports the above mentioned specific eEurope 2002 objective by identifying key issues to be further discussed and developed to produce recommendations for developing Design for All education and research strategies and policies in Europe. The recommendations will be presented in the final report on DfA education and research strategies and policies.

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<sup>1</sup> eEurope 2002 available at:

[http://europa.eu.int/information\\_society/eeurope/2002/action\\_plan/pdf/actionplan\\_en.pdf](http://europa.eu.int/information_society/eeurope/2002/action_plan/pdf/actionplan_en.pdf); and

eEurope 2005 available at

[http://europa.eu.int/information\\_society/eeurope/2005/index\\_en.htm](http://europa.eu.int/information_society/eeurope/2005/index_en.htm)

## 2 Introduction

In this document, Design for All education and research strategies and policies are discussed at a number of levels:

- Higher education institutions, primarily universities
- European networks of higher education institutions
- National professional organisations related to implementation of Design for All policies and practices
- European networks or professional umbrella organisations related to implementation of Design for All policies and practices
- Governmental bodies in EU member countries, primarily ministries of education and those related to information society issues
- National bodies funding Design for All research
- European bodies funding Design for All research
- IT industry

Information has been gathered and analysed of Design for All related education and research policies and strategies in EU member countries in above mentioned levels. Complementary information on good practice in the USA has also been gathered and analysed.

The task, as defined in the IDCnet Technical Annex has been:

- Information gathering, focusing on identification of Design for All and Design for All related higher education and research policies in EU member countries, with complementary information from the USA (Deliverable in hand, D4.1).

Further tasks, results of which will be presented in the final deliverable (D4.2) are:

- Assessment of and recommendations for development of DfA related higher education and research policies and strategies. Recommendations will be developed in close collaboration with the European Design for All e-Accessibility Network (EDeAN),<sup>2</sup> and existing higher education networks in design and engineering field, like CUMULUS,<sup>3</sup> a well-established design university network in Europe, and EIDD, the European Institute for Design and Disability,<sup>4</sup> a design-based network supporting inclusion of all citizens in the Information Society through design.

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<sup>2</sup> <http://www.eaccessibility.org/>

<sup>3</sup> The European Association of Universities and Colleges of Art, Design and Media, <http://tmo.uiah.fi/cumulus>

<sup>4</sup> <http://www.design-for-all.org/>

Results from information gathering and analysis of DfA related higher education and research policies will also be used to support development of innovative implementation strategies to produce a feasible model curriculum for DfA in the IDCnet Activity Phase 2, as defined in the Technical Annex.

The primary responsibility on issues related to higher education in the European Commission falls under the Directorate General on Education and Culture,<sup>5</sup> while the primary responsibility on issues related to the development of the European Information Society has been allocated to DG on Information Society, DG INFSO.<sup>6</sup>

The scope of this report is to shed light on challenges and possibilities related to Design for All education and research strategies and policies in Europe in the context of Information Society, and furthermore, Knowledge Society. The challenge of Information Society for All has been recognised in a number of occasions by the European Commission and by the EU member countries, and articulated in e.g., in Lisbon Strategy from 2000. "The Lisbon Strategy, Making change happen" also reacted to the need to develop an integrated strategy for Community education and research policies in 2002.<sup>7</sup>

As a policy statement, Information Society for All can be understood as a European value statement in support of an inclusive society based on the shared goal to provide equal participation to all its citizens. This report is based on this basic assumption, and has been written to provide a basis for further considerations on strategy and policy developments to improve the implementation of Design for All approach in higher education curricula, especially in academic fields integral to development of the European Information Society.

In the context of the European Information Society development, the following actions can be considered of primary importance, in the perspective of the IDCnet project:

The European Design for All e-Accessibility Network EDeAN and the national Design for All e-Accessibility networks in respective EU member countries and Norway, were established during the year 2002. The need for the creation of networks of excellence in the area of design was explicitly noted in terms of the eEurope 2002 initiative:

"By the end of 2002 [...]. Ensure the establishment and networking of national centres of excellence in design-for-all and create a European curriculum for designers and engineers."

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<sup>5</sup> DG Education and Culture:

[http://europa.eu.int/comm/dgs/education\\_culture/index\\_en.htm](http://europa.eu.int/comm/dgs/education_culture/index_en.htm)

<sup>6</sup> DG Information Society:

[http://europa.eu.int/comm/dgs/information\\_society/directory/index\\_en.htm](http://europa.eu.int/comm/dgs/information_society/directory/index_en.htm)

<sup>7</sup> Spring European Council in Barcelona 2002, The Lisbon Strategy, Making Change happen. [http://europa.eu.int/comm/barcelona\\_council/14\\_en.pdf](http://europa.eu.int/comm/barcelona_council/14_en.pdf)

Furthermore, the conclusion of the informal meeting of ministers for telecommunications and the information society (21–23 February, 2002, Vitoria, Spain) noted that:

“Accessibility to all kind of electronic services (e-government, e-learning, e-business, e-health, etc.) provided by any means, including those based on broadband internet access, 3G mobile communications or digital TV, should be ensured for people with disabilities and for the elderly”.

Over the last few years, it seems that the traditional approach to disability policy has undergone a revolution: it is increasingly being recognized on a global scale that human difference should be embraced as a phenomenon, which is both natural and beneficial to human society. The issue has been notably raised in the context of the major demographic change — ageing of population in all countries, developed and developing alike. The rapidly growing numbers of ageing population will mean that older members of society can no longer be considered as a minority group with special needs, claiming special solutions, but all in all, a part of the mainstream, with very diverse sub-groups with individual needs and individual lifestyles. Ageing of population will no doubt leave a clear mark on lifelong learning developments as well.

This is even more underlined in discussions and developments related to the information society. European Commission, Information Society Technologies Programme Strategy (from 2000-2002) states, that the surrounding is the interface to a universe of integrated services, and in this context the so called average user of IST related products is impossible to identify. IST related products and services are used by users with greatly diverse needs, and users fall not only in categories related to age or ability, but to variety of cultural or educational backgrounds. This will have to be clearly reflected in education of designers, and not only designers of information technology applications. More and more areas of production, both material and immaterial, at least include an element of information technology applied. Hence, Design for All education and research policies will need to reflect this major change.

One of the primary rationales behind the Design for All approach is that designing for the so called average user leads to products that do not cater for the needs of the broadest possible population, thus excluding categories of users, often even unconsciously. Going even further, the main report of CEN/ISSS project on Design for All and Assistive Technology (2001), after the investigation of a wide range of standards in the area of ICT and Internet services, states that

“... few people represent the average person, with the consequence that if a product is designed for the average person, it might be uncomfortable or impossible for most people to use it.”

Unless all people can access and use information society services, new barriers will be introduced resulting to human isolation, a situation that has also been termed the digital divide.

In terms of the EU Framework Programmes on Research and Development, RTD initiatives have taken Design for All issues on board since the 4<sup>th</sup> framework programme (FP), especially in the realm of IST programmes (Information Society Technologies Programmes). In the 5<sup>th</sup> FP, some RTD initiatives were started that addressed Design for All issues, especially those under action line 1.2 (Persons with special needs, including the disabled and the elderly). However, despite these important areas of work, there is still a need for incorporation of these results and the whole philosophy of Design for All to the learning process in a manner that may be taken up by higher education institutions and also, by industry. In this sense, both the eEurope 2005 action programme, and the new 6<sup>th</sup> Framework Programme on R&D will provide an interesting sounding board.<sup>8</sup>

At the national level, research policies are developed by a large number of actors, and countries vary from one another in this respect. Generally speaking, ministries of education play a crucial role in all EU member countries in development of research policies, especially concerning basic research. Applied research often falls under the umbrella of sector ministries. In the context of Information Society, the relevant ministry is often either a ministry of communication or a ministry of trade.

State of the art in higher education in EU member countries in relation to implementation of Design for All in curricula varies from one country to another, already because of the different systems to develop higher education in EU countries. In some countries, universities have a very independent role in terms of content of curricula and the governmental bodies in these cases have control primarily in the form of funding based on defined quality criteria. In other countries, relevant professional organisations together with the governmental bodies form a guidance and control system, with plenty of influence on curricula development, often through both an accreditation system and financial control based on regular external performance and quality evaluation. Different systems clearly affect the way the forthcoming IDCnet recommendations on Design for All education and research strategies and policies in EU countries can be implemented. Solid identification of key actors country by country will in all likelihood become one of the crucial success factors.

In the academia, one of the major developments in the European higher education systems during the last years has no doubt been the Bologna Declaration from 1999.<sup>9</sup> The Bologna agreement states, that all EU member countries will adjust their basic higher education degrees in two

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<sup>8</sup> EU RTD Framework Programmes 4,5,6: <http://www.cordis.lu/>

<sup>9</sup> Bologna Declaration: [http://www.bologna-berlin2003.de/pdf/bologna\\_declaration.pdf](http://www.bologna-berlin2003.de/pdf/bologna_declaration.pdf)



levels: Bachelor's degree (3 academic years) and respectively Master's degree (2 additional academic years, or comparable two cycle degrees. A view is widely shared, that programmes leading to a degree may, and should have different orientations and various profiles in order to accommodate a diversity of individual, academic and labour market needs).

At the same time, exchange of university students and staff from their own home university to another European university during the basic degrees has been greatly encouraged and supported (i.e. Socrates, Erasmus and Leonardo programmes, funded by the EC and run by the DG on Education and Culture). To ensure that studies undertaken during these exchange periods will count as a relevant part of the degree when the student returns to the home university, the European Credit Transfer System ECTS has been developed, and will come in force in all EU member country universities in 2005. Both the Bologna agreement on degrees and on ECTS will provide a crucial framework for integration of Design for All courses or modules in the curricula in European higher education institutions.

In 2002, the Education Council and the Commission endorsed a 10-year work programme to be implemented through the open method of coordination. Approved by the European Council, these agreements constitute the new and coherent Community strategic framework of co-operation in the fields of education and training.<sup>10</sup>

In this report — as listed in the beginning of the chapter — levels of actors have been identified as relevant for further inspection in relation to Design for All education and research strategies and policies. Relevant levels include European actors, national bodies and higher education institutions, but also professional organisations on both national and European level. A relevant group of actors is also industry, who at least in the Information Society Technologies sector can be estimated to have an influence and at least a keen interest on education and research policies.

It was stated in an earlier IDCnet document that Design for All is at the same time a philosophy and a movement and it should not be seen as a discipline. Design for All is neither a new genre of design, nor a separate topic.

Design for All is a socially conscious, general approach to designing in which designers ensure that their products, environment and services address the needs of the diversity of users of products, irrespective of

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<sup>10</sup> [http://www.europa.eu.int/comm/education/policies/2010/et\\_2010\\_en.html](http://www.europa.eu.int/comm/education/policies/2010/et_2010_en.html) with a link to the 10-year work programme. See also [http://www.europa.eu.int/comm/education/policies/2010/objectives\\_en.html](http://www.europa.eu.int/comm/education/policies/2010/objectives_en.html) with a link to working group reports relevant working group on Information Technologies. Report from November 2003.

users' age, ability or cultural background.<sup>11</sup> Knowledge sets and skills described and defined in IDCnet (Deliverable D3.2) are to be considered as topics to be picked up and incorporated into existing curricula. The same applies with Design for All related education and research strategies and policies — they can hardly exist on their own, but integrated in education and research policies related to design fields in general. Also, it is worth bearing in mind that in the business context, Design for All as a strategy issue needs to have a context. A reasonable context should be sustainable development, especially socially sustainable development and activities related to corporate social responsibility in the organisation, be it public or private.

Design for All has been on the European agenda since early 1990's, and during the years its position has become stronger. The disability movement has played an undeniably important role in this, but it can also be claimed that a paradigm shift in Design for All concept has been caused by the recognition of the impact the demographic change and the growing numbers of ageing people has had and will have to have on design related activities. Information Society actors have included the issue on the agenda. Furthermore it needs to be recognised, that also the changes within scientific disciplines are paving the way. Scientific disciplines are undergoing deep paradigm shifts, i.e. shift to cross- and multi-disciplinary approach is leading to re-design of curricula and research policies in areas that are fundamental to the Information Society. The impact of disability and other policy actions, but also the impact of changes in academic disciplines on universal design education and research has also been recognised in the USA (Welch and Jones, 2002).

In this report strategies will primarily be interpreted as the means with which actors/bodies can develop or implement policies.

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<sup>11</sup> For Design for All definitions, check i.e. <http://www.design-for-all.info>, <http://www.design-for-all.org> or <http://e-accessibility.org>

### **3 Design for All education and research - strategies and policies**

#### **3.1 Higher education institutions**

Organising design and engineering education varies from one country to another in Europe. In many countries by now, design universities offer Bachelor of Art, Master of Art and Ph.D. or relevant cycles of degrees, and they cover a full range of design studies from product to communication to new media design. The same is generally speaking true with engineering degrees. There are countries though, where especially design degrees may not cover masters or at least Ph.D. degrees.

In some cases design schools may have a Ph.D. route through a traditional university, based on mutual agreements. This is the case in Sweden, where some design schools have made agreements with the technical universities. Also in The Netherlands, engineering design degrees on industrial design are taught in Universities of Technology, while other design degree courses are taught in design schools. Dutch design schools only provide BA and MA degrees, while Universities of Technology also provide Ph.D. degrees.

Independently, whether design or engineering degrees are taught in Bachelor, Master or Ph.D. level, it can be safely said that information technology related elements are included in most education. Therefore, in the following, higher education institutions on design and engineering are considered generally, not limited to specific IT degrees.

Also, higher education systems as such vary in EU member countries. Typically, university degrees and curricula require the accreditation of a specific accreditation body. Ministries of education and/or professional organisations often have a role in accreditation.

There are EU member countries though, where universities independently decide for curricula. In these cases, ministries of education control the quality of university education primarily through funding. Quality criteria is typically quantitative, in most cases related to the relationship of student intake numbers and numbers of degree graduates annually, and number of Ph.D. degrees. Qualitative criteria are rarer. Inclusion or implementation of Design for All approach is nowhere among quality criteria, yet.

Design for All education — when it exists — is not yet always based on long term, strategic plans in higher education institutions. Rather, it seems more often to be based on committed educators. These teachers cover a wide variety of academic fields, from architecture to product design to communication design and from assistive technology to gerontechnology to information technologies, including new media design

or gerontology. No extensive information on exactly where and how in EU countries Design for All is taught in higher education institutions exist, academic fields mentioned above are based on the long term expertise and experience of those involved in Design for All education in a number of EU countries, and e.g. findings of GENIE project (GENIE, Gerontechnology Network in Europe, Socrates funded project coordinated by the University of Delft, The Netherlands, finished September 2001).

The wide variety of fields where elements of Design for All approach have already been integrated in higher education curricula, would suggest that what has been proposed in the IDCnet report D3.2 identifying core knowledge sets for DfA curricula, is true. The report suggests that there is a paradigm shift in curricula development as more inter-disciplinary and cross-disciplinary education is needed to meet the changing requirements of professions.

As a consequence this would also mean that a strategic approach could support the integration of Design for All in curricula in the university level. Even if the majority of Design for All courses taught in European universities can still be estimated to be dependant on the commitment of individual teachers, long term, strategic developments are on the way. Good cases and practices already exist. This development can be seen to be in accordance with the discourse going on in the US, where universal design education strategies are proposed to be developed using injection and infusion techniques. A further description of this approach can be found in the chapter 3.9 References — USA.

An example of a long term commitment on the inclusive design approach on a university level is the Royal College of Art in London, UK. Inclusive design has been taught in the Royal College of Art (RCA) since early 1990's, in its first years with a clear focus on design for ageing. Courses at the time developed for product and engineering designers mainly, have since developed into the Helen Hamlyn Research Centre, with a Fellowship Programme offering a substantial number of research students one-year fellowships in collaboration with industry.<sup>12</sup>

The Helen Hamlyn Research Centre has also played a key role in the production of policy papers on inclusive design education and research in collaboration with some other UK universities and the Design Council. *'Living longer. The new context for design'* was published in 2001 by the Design Council, edited by Roger Coleman, the director of Helen Hamlyn Research Centre. The publication finishes with recommendations 'to breathe life into the initiatives like the Council of Europe resolution and to ensure that the UK develops a competitive advantage through inclusive design'.<sup>13</sup> The recommendations include several points to develop inclusive design education and research:

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<sup>12</sup> Helen Hamlyn Research Centre, <http://www.hhrc.rca.ac.uk/>

<sup>13</sup> Living longer. The new context for design. Published by the Design Council, UK, p. 46

- The Department for Education and Skills DfES, Department of Trade and Industry DTI and Design Council work with the Qualifications and Curriculum Authority and other education influencers to develop a national education programme which integrates inclusive approaches to design, issues surrounding population ageing and capability ranges across the whole population, at all levels of design curricula.
- To support this, the RSA works with the DfES and appropriate industry and voluntary sector sponsors, to promote and extend their Student Design Awards '*New Design for Old*' competition at all levels of education. The RSA have undertaken more recent initiatives to promote inclusive design, including a major conference held at the RSA in November 2002 - 'Interface - User & Machine', a new Inclusive Worlds programme launched in Autumn 2003, and a new project, RSA Inclusive Design Toolkit, which will later this year provide a unique resource for designers, students and business people.
- The DfES, DTI and Design Council work with further and higher education institutions, Learning and Skills Councils and other representative bodies and trade associations to integrate inclusive design and inclusive environments into professional learning programmes.

The recommendations are, according to the publication, developed to provide 'the basis for a comprehensive range of actions by government, education organisations, businesses and designers to take advantage of the opportunity to improve both prosperity and well-being through inclusive design'.<sup>14</sup>

In the United Kingdom collaboration between some design universities/faculties and engineering universities/faculties have already led to strategy developments in research and research funding. For example, the i-design project influenced a number of key outputs, for example a new British Standard (BS7000-6) on inclusive design management, due for publication in 2005; a substantial body of publications, and the establishment of web-site resources.

In Spain some 20 universities (design, engineering, etc) are at present developing Design for All curricula modules. Many of the active partners in the Spanish project are also members of the Spanish EDeAN, European Design for All e-Accessibility Network and Cordinadora, the Spanish EIDD member network. A law was recently passed that obliges the government to develop a DfA curriculum in every educational programme, also in the areas of built environment and information society.

The practical experiences in Spanish universities about teaching DfA in ICT related courses so far have been the introduction of 'free option' modules

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<sup>14</sup> Ibid. Pp 46-53

in which the concepts and legislation are introduced together with some practical assignments about creating or evaluating accessible web design. This has been the case during 2003 in the Faculty of Psychology of the University of Valencia and in the Telecommunications School and Computer Science School of Polytechnic University of Madrid.

In Belgium faculties and schools of architecture initiated some two years ago a development project in Design for All curricula. The initiative for the project came from the schools of architecture, and more specifically, active members in the Belgian EIDD, the Belgian network in European Institute for Design and Disability.

Design for All and inclusion are fairly new subjects also in France, especially in the field of ICT or industrial design. There is no dedicated curriculum for the time being in higher education apart from few isolated research projects and initiatives. This, however, is probably going to change, as some action plans were decided during 2003, mainly in relation with the European Year of People with Disabilities, including a national call for research projects concerning disablement and Internet uses.<sup>15</sup>

In Sweden results of a two-year curricula development project with all universities of design as partners will be reported in May 2004. The initiative for the Swedish project came from some of the universities and from the Swedish EIDD, the Swedish network in European Institute for Design and Disability<sup>16</sup>

In Finland the Finnish Design for All Network, the Finnish member of EDeAN, has launched in November 2003 a three-year Design for All education development project, at present with six university and three polytechnics partners. All universities and polytechnics already teach DfA courses, but not as part of a strategic plan. The aim of the development project is to develop a multi-disciplinary, cross-disciplinary set of Design for All courses in the virtual university context, providing accessible online courses for students in all partner universities. A complete survey on state of the art of Finnish Design for All education in higher education will be done during spring term 2004. Accessibility training for content producers and the technical staff of virtual university units will be provided at the same time. The production of courses will begin fall term 2004 and finish by December 2006. The students can either choose the set as a minor subject in their degree or select courses that would fit in their individual study programmes.

The strategic approach in the Finnish project is that the same universities and polytechnics are members in another Design for All related project — University for All. The major objective of this project is to encourage universities to produce a Design for All strategy, with focus on built environment, communication, content of education (curricula), and

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<sup>15</sup> <http://www.recherche.gouv.fr/appel/2003/usagesinternet.htm>

<sup>16</sup> The Swedish EIDD network website, <http://www.eidd.nu/>

inclusion of university students and staff. The above mentioned Design for All education project is under the umbrella of the wider University for All project.<sup>17</sup> All above mentioned cases are examples of a bottom-up approach. The initiative for the projects has come from the university level, and to begin with, from individual, committed teachers, experts on Design for All.

Within Greece there is as yet little coordinated effort to introduce Design for All as a subject within the curriculum. This is not to say that there is not research going on in areas related to design for all, assistive technology, and special education needs. At present, this information is being compiled by the University of Crete, in its capacity as coordinator of GR-DeAN the Greek national network under EDeAN<sup>18</sup>. One of the benefits of this compilation, as well as helping to create a map of who is working on what within Greece, will be to use it to help to understand how best a national policy on design for all within Higher education can be fostered.

At present, in Ireland, several Universities and Institutions are making significant efforts to introduce elements of Design for All within existing curricula, however, there is very little communication between individual players in the field and little co-ordination. The majority of third level institutions in Ireland have developed support services to ensure the inclusion student's with disabilities but this has not been translated into new curricula in inclusion or DfA. There is no legislated requirement at present for inclusion of DfA coursework within particular educational curricula.

One example where the implementation of DfA within third level educational curricula is evident in Ireland is where the Central Remedial Clinic (CRC) is responsible for delivering DfA content as an optional module during the final year of the Bachelor of Science programme in Computer Science in Kevin Street DIT (Dublin Institute of Technology). This module has been in place since 1997 but has recently seen some revision to include new information reflecting the taxonomy developed as part of IDC-Net's activities as outlined in Deliverable 3.2.

Various aspects of DfA as it related to Assistive Technology products and services are also delivered as part of the Certificate and Diploma programmes in Assistive Technology in University College Dublin (UCD) for the last five years. The implementation of such courses has illustrated the benefits of partnerships between all players in the DfA field in the development and delivery of coursework.

Universities sometimes host National Centres of Excellence. One example is RINCE, the Research Centre for Networks and Communications

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<sup>17</sup> For more information, check <http://www.stakes.fi/DfA-Suomi>, the website of the Finnish DfA network

<sup>18</sup> <http://www.e-accessibility.gr/index.asp?auto-redirect=true&accept-initial-profile=standard>

Engineering at Dublin City University, Ireland. The centre includes eAccessibility lab, which is also a member of the EDeAN network; the Lab's research work concentrates mainly on web accessibility.<sup>19</sup>

A different case in scale and approach to some extent is Norway, where a large part of the activities round Design for All education — or as the Norwegians say, universal design, universell utforming — relate to the US experience on universal design education. The international Global Universal Design Educator's Network,<sup>20</sup> under the leadership of Elaine Ostroff, by now the former director of Adaptive Environments in Boston, was consulted by the Norwegians already some years ago to establish universal design courses in Norwegian universities. Simultaneously, the Norwegians developed a policy approach to universal design with the result, that Norway is now a country, where all sectorial ministries are since 2002 expected to have a universal design policy.<sup>21</sup> More on this can be found in the chapter 3.5.

In some cases the European universities have used implementation of the recommendations for Design for All education in the built environment, produced by the Council of Europe in 2001 as a relevant reference point when searching for financial support from the public bodies in their countries<sup>22</sup>. The public bodies can have been relevant ministries or other funding organisations.

The EU, through DG on Education and Culture and its programmes Socrates and Erasmus has funded a large number of curriculum development projects. These projects have, according to the IDCnet report on identification of DfA core knowledge sets, supported three types of activities in the area of curricula jointly developed by universities.

- Projects for the *joint development of "study programmes"* at any level, from undergraduate to intermediate, advanced (Masters degree) and Ph.D. level;
- Projects for the *joint development of European "modules"*, such as specialised language modules; courses on history, society, culture, politics of other European countries; aspects on European integration or comparative aspects relating to the content of a given discipline;

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<sup>19</sup> <http://eaccess.rince.ie/>

<sup>20</sup> <http://www.universaldesign.net/>

<sup>21</sup> The Norwegian policy/action programme on Design for All / universal design: Handlingsprogram for Universell utforming, published by Miljøverndepartementet November 2002

<sup>22</sup> Council of Europe, Committee of Ministers: Resolution ResAP(2001)1 on the introduction of the principles of universal design into the curricula of all occupations working on the built environment, Adopted by the Committee of Ministers on 15 February 2001, at the 742<sup>nd</sup> meeting of the Ministers Deputies



- Projects for the *implementation and dissemination of curriculum development projects* which have completed their development phase.

IDCnet differs from these curriculum development projects in that while it did seek to meet the needs of industry, there are no other external groups, such as formal associations from which it can seek approval or accreditation. Nor does IDCnet want to view Design for All as specialised education. Rather it sees that knowledge about Design for All should be 'infiltrated' into various disciplines and curricula.

IDCnet however, does place great store on informing policy making, because it is important in this time of changing curricula to make sure that the re-engineered curricula include Design for All. A survey completed on EU funded curriculum development projects in 1996-1998<sup>23</sup>, revealed that:

- Considering the content and methods, a high percentage of projects (66%) reported having an interdisciplinary focus. This may be related to the fact that much cutting-edge research is now being carried out in interdisciplinary areas and that the labour market expresses the need for fewer single subject specialists and for more people who are capable of working in interdisciplinary fields.

As noted above and elsewhere, Design for All is in essence a horizontal subject, which needs to be incorporated into design sectors of all types, everywhere where human users are involved.

- Problems led to readjustment of objectives: In two cases (13%), the development of joint (core) curriculum was replaced by the development of a broader body of knowledge. One of the greatest problems was the difficulty of integrating the courses or curricula into the existing study programmes. Institutional, national, and disciplinary barriers were mentioned by the project leaders as contributing factors.

This is one of the major reasons why IDCnet has as part of its activity to influence educational and research policies and strategies. Also, here the Bologna agreement and the implementation of the European Credit Transfer System come to support this interest.

### 3.2 European networks of higher education institutions

CESAER is the Conference of European Schools for Advanced Engineering Education and Research,<sup>24</sup> and has a membership of about 50 universities in Western and Central Europe. Although not directly involved with Design for All activities, the organisation monitors interdisciplinary curricula and is

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<sup>23</sup> Klemperer, A. and van der Wende, M. Erasmus Curriculum development projects, in Socrates 2000 Evaluation Study 23.10.2001

<sup>24</sup> <http://www.cesaer.org>

concerned especially about soft skills European engineers might need in the future.

Cumulus, European Association of Universities and Colleges of Art, Design and Media is an international design school and university network with more than 50 members originally from Europe, but since spring 2003 also from all other continents.<sup>25</sup>

Cumulus network started as an Erasmus, later a Socrates, initiative to encourage student and staff exchange between a small number of European design schools and universities. The University of Art and Design in Helsinki (UIAH) and the Royal College of Art in London, in co-operation with Danmarks Designskole, Gerrit Rietveld Academy, Universität Gesamthochschule Essen and Hochschule für Angewandte Kunst in Vienna initiated the Cumulus Network in 1990.

Over the years the network has expanded, and its role has become more strategic and political. The network has e.g. developed joint European curricula on master's degree level and it has supported countries, where design education has been only on the BA level, to develop MA degree courses and establish PhD education.

Design for All approach has so far been on the Cumulus agenda in a rather fragmentary way. Design for All approach was planned to become one of the focus topics in the development of the European Fellowship on Industrial Design in 1996-1997, a master's degree pilot programme, but the programme did not materialise. In May 2003, Design for All was the topic of the keynote speech and one of the workshops in the international Cumulus Conference in Tallinn with 300 participants round the world. It seems that the time is ripe, and social issues related to design are in the interest of especially young design students.

SEFI is the European Association for Engineering Education<sup>26</sup> and sees itself as a European Forum and a service to Institutions, academic staff, students and industry. Although not directly involved with policy making, it aims to contribute to the development and improvement of engineering education in Europe.

### 3.3 National professional organisations related to implementation of Design for All policies and practices

Professional organisations of designers or engineers on national level generally speaking have a lot of policy influence in relation to higher education. In some EU countries professional organisations play a definite key role in the accreditation of degree courses and curricula. Also in countries where the professional organisations do not have this role, they

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<sup>25</sup> <http://tmo.uiah.fi/cumulus/>

<sup>26</sup> <http://www.sefi.be>

still participate in the policy and strategy discussions to define the future direction of both education and research.

Many countries now have either a long term design policy programme or an architectural policy programme or both (see e.g., Designium,<sup>27</sup> and two publications, Quality and Content of International Design Education, Design Policy Report). The policy programmes are approved by the government and produced as a joint effort of major design/architecture bodies in the country.

In most of the policy programmes, be they on design or architecture, Design for All does not directly show. An exception in this case is the forthcoming Swedish design policy programme, which will have Design for All approach integrated in it. The architectural policy programme of Scotland also specifically mentions implementation of inclusive design.

In many design and architectural policy programmes sustainable development is mentioned, in some even the socially sustainable development. Also, equality or inclusion is mentioned in some policy programmes. Both socially sustainable development and equality or inclusion could perhaps be interpreted to pave the way to Design for All approach in the next phase. For example in Finland, both the Design 2005! Design policy programme and the architectural policy programme are half way through their five-year term, and in the mid-term report, both policy programmes are planning to mention the grown interest in Design for All approach.

The German Society for Informatics (Gesellschaft für Informatik) has developed a code of ethics which currently does not address design for all<sup>28</sup>. However, the code refers to "everyone wins solutions" ("jeder gewinnt-Lösungen") for determining the scope of activities of a professional.

Here it is worth mentioning also that some national designer organisations have joined the national member network in the European Design for All e-Accessibility network.

### 3.4 European networks or professional umbrella organisations related to implementation of Design for All policies and practices

EDeAN, The European Design for All e-Accessibility Network,<sup>29</sup> is the result of the eEurope 2002 action programme objective to establish Design for All centres of excellence networks in EU member countries during the year 2002.

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<sup>27</sup> <http://www.uiah.fi/subfrontpage.asp?path=1;1457;2160;7450;7451>

<sup>28</sup> <http://www.gi-ev.de/verein/struktur/index-ethik.html>

<sup>29</sup> <http://e-accessibility.org>

The national networks in all present EU countries have been established, including a Norwegian EDeAN network. The total number of member organisations in EDeAN is around 120 (February 2004). Member organisations are typically universities, research institutions, NGOs representing users, i.e. disability organisations or ageing persons' organisations. The total number of university or research institutions adds up to almost 45 % of all member organisations.

One of the major tasks for EDeAN, outlined by the eEurope 2002 action programme and further specifically defined by the EDeAN Charter from autumn 2003 is to participate in the development of Design for All curricula and the implementation of recommendations on European Design for All curricula, to be produced by the EU Commission by the end of 2003.

A number of EDeAN networks also participate in Design for All education development projects on the national level, i.e. Belgium, Finland, Spain and Sweden.

AAATE, the Association for the Advancement of Assistive Technology in Europe<sup>30</sup> is an established European network with a special focus on research on assistive technology, but the network has also actively contributed to the development of Design for All concept. Lately, discussion on the relationship between Assistive Technology and Design for All has been high on the agenda, especially interesting in relation to the development of R&D policies on AT and DfA in Europe.

EIDD, European Institute for Design and Disability, is a 10-year old network established in Dublin, Ireland in 1993 to include disabled persons in society through design. The approach of this network has later shifted to a more mainstream approach on inclusion and design — to enhance quality of life through Design for All.

Many national member networks or member organisations are also members of EDeAN. Many national EIDD networks also run local or national Design for All curriculum development projects.

Architect council of Europe, ACE,<sup>31</sup> currently represents around 350,000 architects in Europe. The council does not make a direct comment regarding Design for All, nor does it recognise the Council of Europe recommendations on DfA education for built environment. However, the ACE acknowledges the importance of sustainable development, which comprised of environmental protection, economic efficacy and social solidarity: the architect reconciles human well being, social needs and environmental quality.

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<sup>30</sup> <http://www.aaate.net/>

<sup>31</sup> <http://www.ace-cae.org>

BEDA, the Bureau of European Designer Associations<sup>32</sup> is the European umbrella organisation of national professional designer organisations. BEDA discusses the development of the design profession regularly with the European Commission, mainly with the DG on Enterprise and on Research.

In 2002, BEDA initiated a discussion among the major design actors in Europe to strengthen the role of the design field towards the European Commission. The initiative was titled DesignEurope. Design for All was identified by BEDA as one of the key fields of design, and EIDD was invited to represent the socially conscious approach to design in the initial DesignEurope discussions.

### 3.5 Governmental bodies in Europe, primarily ministries of education and those related to information society issues

Desk survey of education and research policy documents show that the state of the art in ministries of education in EU countries in general is that they do not have Design for All policies. Education and policy documents often refer to concepts like equality and inclusion, but Design for All is not explicitly mentioned.

An exception is Spain, where the most relevant event regarding the inclusion of DfA in Spanish curricula has to do with the recent 'Law on Equality of Opportunities, No Discrimination and Universal Accessibility for People with Disabilities'<sup>33</sup> of December 2003. According to the Tenth Final Disposition of this law the Government has to develop a DfA curriculum before two years, in every educational programme, including University. This applies to careers regarding both the built environment and the information society which is explicitly referenced.

Another important policy document is the 'First Accessibility National Plan 2004-2012'<sup>34</sup> of July 2003. The first (out of five) stated objective of this plan is 'to consolidate the DfA paradigm and to mainstream it into the new products, environments and services, and to disseminate the accessibility knowledge and application'. Some strategies are foreseen to achieve this objective. The Third Strategy is to 'Incorporate DfA in University Curricula' and includes the introduction of a specific DfA module in some university courses and a contest for Final Year Projects related with DfA. The Fourth Strategy relates to 'Incorporate DfA in Primary Education' and talks about introducing DfA Concepts and Accessibility to the Physical Environment to primary school children in the whole country.

Exception in Europe is also Norway, where 'universell utforming' policies — the term adopted from USA, universal design — are developed by all

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<sup>32</sup> <http://www.beda.org/>

<sup>33</sup> <http://www.sidar.org/recur/direc/legis/espa.php>

<sup>34</sup> [http://www.seg-social.es/imserso/discapacidad/docs/ipna2004\\_2012.pdf](http://www.seg-social.es/imserso/discapacidad/docs/ipna2004_2012.pdf)

sectorial ministries since 2002, including the ministry of education and research. The focus on the action programme, Handlingsprogram for universell utforming, is on 'improving functional qualities of solutions for all'. The focus therefore is on the built environment. The implication for education is improved quality in school and university environments, hence improving inclusion. The growing role of Information and Communication Technologies (ICT in Norwegian IKT) is also recognised in the programme.<sup>35</sup>

In Greece, a new Information Society strategy document is presently being prepared (December 2003) for 2004. The draft of this document shows that there is a shift away from a technical approach to a human centred approach. There is a note on the importance of education and the necessity of delivering online educational services that can be used by all, but mostly stress is placed on the need for all citizens to have access to public administration services and applications. This requires a DfA approach, which, it is explained, is not making specialised accommodations, but taking unified design approach which takes into account a wider range of problems than usual with regard to the accessibility and usability of Information Society Applications and Services, and the adaptation of and multi usage of applications and services to counteract the need for reliability, and sustainability of investment.

In 2004, a British Standard on 'Inclusive Design Management' will be published as part of the BS 7000 series, giving guidance to business and industry. Key drivers are the rapid ageing of populations, and the trend to include disabled and older people in the mainstream of society, both of which are supported by a growing body of legislation and UN declarations.

In Ireland, several government departments currently have responsibility for the development of ICT policy. This dispersal of responsibility means that policy making and information provision in Ireland in the areas of ICT and Design for All are not co-ordinated at present. DfA falls within the remit of the Department of Justice, where the Department of An Taoiseach (Prime Minister) is responsible for the provision of ICT policy whereas the responsibility for ICT educational policy lies firmly within the remit of the Department of Education.

Many statutory and non-statutory reports over the past number of years including the recent "eInclusion, Expanding the Information Society in Ireland"<sup>36</sup>, commissioned by the Information Society Commission and the Department of an Taoiseach, have stressed the need to provide Irish Citizens with access to and inclusion in Information and Communications Technology (ICT) training and education, however none have, as yet,

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<sup>35</sup> The Norwegian policy/action programme on Design for All / universal design: Handlingsprogram for Universell utforming, published by Miljøverndepartementet November 2002

<sup>36</sup> <http://www.isc.ie/downloads/einclusion.pdf>

stressed the need to include DfA in ICT curricula. The only explicit mention of DfA within this report, simply stresses that the adoption of DfA approaches and standards can ensure inclusion in the new Knowledge Society.

The experiences of delivering DfA within Irish Educational Institutions is such that although it is possible to implement the inclusion of DfA coursework across curricula without the need for ongoing or post-graduate research, the lack of communication between industry, research and education and clear commitment from the Irish government, inclusion is piecemeal and therefore lacks the impact required to sustain change.

The Nordic Council<sup>37</sup> is the forum for inter-parliamentary cooperation between Sweden, Finland, Denmark, Norway and Iceland. Nordic Cooperation on Disability and the Nordic Council on Disability policy are both organisations under the Nordic Minister council. These bodies are active in planning a more accessible and functional society for everybody.

In 2004 the Council of Ministers intends to formulate an action plan which would strengthen the notion of sector responsibility within the Minister Council for issues concerning people with restricted mobility and also for issues furthering the principles of universal design. Nordic Council on Disability Policy is an advisory and policymaking body for the Nordic Council of Ministers.

One of the aims of the Nordic Minister Council is to strive towards a socially sustainable development and a society of equal opportunities.

### 3.6 National bodies funding Design for All research

In Europe, the main responsibility for funding IST related projects falls on the state. However, actual practices can vary greatly from one country to another. In some cases, each Ministry has its own area of responsibility for ITS issues, in others the job falls on publicly funded R&D bodies. The emphasis on the Information society on European level has also seen the rise of Ministries or research bodies whose sole responsibility is ITS and the knowledge society research and development.

TEKES, the Finnish Technology Development Centre, as well as the Finnish Academy are both public bodies that have so far taken the main responsibility for funding ICT and eInclusion related projects in Finland. For example both fund the Future Home project undertaken by the University of Art and Design. However, Finnish Design for All education development project initiated by the Finnish Design for All network has sought funding from the Ministry of Education.

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<sup>37</sup> <http://www.norden.org>

EQUAL (Extend Quality Life) is a national research initiative in the UK designed to encourage university based academics and researchers to become involved with quality of life research for the benefit of older people and disabled people, and more generally to meet the challenges of the ageing population in the United Kingdom. Initiated by the Government's Office of Science and Technology, the objective of EQUAL spans all the research councils, e.g. the Engineering and Physical Sciences Research Council<sup>38</sup>, the UK Government's leading funding agency for research and training in engineering and the physical sciences.

The Federal Ministry for Research and Technology, Germany (Bundesministerium für Forschung und Technologie, BMFT) funded the InnoRegio Initiative KONUS with 18 Mio DM, (9 Mio Euro) to support educational use of IT for visually disabled people between 1999 and 2003.<sup>39</sup>

### 3.7 European bodies

In the EU context, Design for All related activities have been notably strong in the following areas: DG Employment and Social Affairs, DG Information Society, and in the context of framework programmes that guide the five-year long EU funded research and development programmes.

In the R&D framework programmes, Design for All has been implicitly included in the specific research programmes since the 4<sup>th</sup> framework programme from early 1990's onward. The presence of Design for All concept has been strongest in the programme field of Information Society Technologies, and to lesser extent in the field of Quality of Life. In the EU context, the development of European Information Society has long been high on the political agenda, and part of the agenda has been the objective Information Society for All. This can be considered to have affected the emergence and strengthening of Design for All approach.

Disability movement's activity cannot be forgotten here, neither can the realisation be forgotten, that ageing population will put new challenges in many realms of European life in the following decades. On the European level, the needs of disabled users and the needs of ageing users have often been the reason to raise the Design for All approach on the agenda too. For example, The European Disability Forum (EDF)<sup>40</sup> represents a broad range of disability organisation within EU and from Iceland and Norway and is active in promoting legislation based standardisation relying on Design for All principles.

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<sup>38</sup> <http://www.epsrc.ac.uk>

<sup>39</sup> <http://www.region-konus.de/>

<sup>40</sup> <http://www.edf-feph.org/en/welcome.htm>



eEurope initiative was launched in 1999 by the European Council and has since had a broad political impact leading to many initiatives in Member States and on European level. With regard to the establishment of centres of excellence in Design for All and the development of DfA Curriculum the key document was the eEurope 2002 Action Plan which specifically stated the need for these and also emphasised as one of its objectives the participation for all in the knowledge-based society.

If Design for All curriculum or education for ICT has since been mentioned in EU context, it has been done with direct reference to eEurope 2002 Action Plan, otherwise they can only be noted by their absence. Indeed, although the action plan that followed, eEurope2005, has in its aims to provide opportunities for people to participate in society, it has no specific action line on e-accessibility measures, a decision that was criticised for example by the EDF.

### 3.8 IT industry

The communications strategy and implementation of it for the European Year for Disabled Persons 2003 was developed by the communications agency Ogilvy, who also developed a collaborative partnership programme with ten major multinational companies mainly from information technology sector. These companies were involved in the Business and Disability seminar organised in Brussels in November 2003.<sup>41</sup>

One of the messages from the IT industry present in the seminar was that accessibility is not necessarily part of the professional practice for recent graduates and therefore industry needs to train them in-house. Companies like Microsoft emphasise the importance of awareness in ensuring their products are accessible. As Bonnie Kearney from Microsoft emphasised the awareness of developers of the needs and requirements of people with disabilities: "Microsoft works on partnering with educational institutions and seeks to impact their curricula, so that developers are taught about accessibility needs before they enter the marketplace".<sup>42</sup> The message is strong towards educational institutions.

### 3.9 Reference — USA

The US education and research system is non-centralized and the levels of institutions involved in development of education and research range from federal and government agencies to professional societies and discipline-based accrediting bodies. Notwithstanding, the role of legislation, especially the role of American with Disabilities Act (1990) and Electronic and Information Technology Accessibility Standards, Section 508 of the Rehabilitation Act Amendments (1998) are well recognised in the context

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<sup>41</sup> [http://www.eypd2003.org/eypd/about/partners\\_en.jsp](http://www.eypd2003.org/eypd/about/partners_en.jsp)

<sup>42</sup> [http://www.eypd2003.org/eypd/docs/walking\\_the\\_talk.pdf](http://www.eypd2003.org/eypd/docs/walking_the_talk.pdf)

of recent developments of Universal Design education and research in USA.<sup>43</sup> On the other hand, the role of individual champions should not be overlooked.<sup>44</sup>

One of the designers in USA whose work has been a major influence in universal design education is Ray Lifchez. He began teaching architecture at the University of California, Berkley in 1973, by involving users in the traditional design studio as a way to introduce students to the opportunities of designing for someone unlike themselves. Ray Lifchez tells himself that the root of his teaching universal design lied in his interest and involvement in the disability movement, coinciding with his arrival to Berkeley in 1970. At the time, the University of Berkeley had established a new institution, The Center for Independent Living, created by young people with physical disabilities. Alongside this subculture was the University of California itself, committed to making higher education accessible to physically disabled students.<sup>45</sup>

Two other individuals whose role can not be overlooked in this context are Ron Mace and Elaine Ostroff. Architect Ron Mace was the father of the Universal Design concept from 1985. Ron Mace significantly noted, in the context of Americans with Disabilities Act (1990), that minimum standards are an important part, but not the definition of universal design. His 1998 definition of universal design is much quoted: 'Universal design is an approach to design that incorporates products as well as building features, which, to the greatest extent possible, can be used by everyone.'<sup>46</sup>

Elaine Ostroff is the founding director of the Adaptive Environments in Boston and the director of the Global Universal Design Education Project. Her involvement in the development of universal design education in USA has been strong and energetic, and the Universal Design Education project she initiated at the early 1990's has progressed until the present time, the Universal Design Education Online, at <http://udeducation.org> is one of the major fruits of the long term development.

In the US system, the US Department of Education represents a government level institution, and its primary mission is to strengthen the Federal commitment to assuring access to equal educational opportunity

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<sup>43</sup> E.g. Elaine Ostroff: Strategies for Teaching and Recruiting Designers for an Inclusive World. Paper presented in the EIDD Scientific Contact Forum on 17 May 2002, Brussels; and Louise Jones: Integrating Universal Design into the Interior Design Curriculum, in Preiser, W.F.E. and Ostroff, E. (Eds.) Universal Design Handbook. New York: McGraw-Hill. Also: interview of Elaine Ostroff, former director of Adaptive Environments, Boston, USA and Laurie Ringaert, Managing Director of Universal Design Research Center at the North Carolina University, USA, on 6 Dec 2003, Washington DC.

<sup>44</sup> Interview with Elaine Ostroff, on 6 Dec 2003, Washington DC.

<sup>45</sup> Lifchez, R. 2002. 'Introduction'. In Ostroff, E.; Limont, M. And Hunter, D. Building a World Fit for People: Designers with Disabilities at Work. Boston, MA: Adaptive Environments Center.

<sup>46</sup> E.g. in Preiser, W.F.E. and Ostroff, E. (Eds.) Universal Design Handbook. New York: McGraw-Hill, 2002.

for every individual. Its tasks include supplementing and complementing the efforts of states, the local school systems and other instrumentalities of the states, the private sector, public and private nonprofit educational research institutions, community-based organizations, parents, and students to improve the quality of education. In the strategic plan 2002-2007, goal five closely relates to inclusion: '5.1 Reduce the gaps in college access and completion among student populations differing by race/ethnicity, socioeconomic status, and disability while increasing the educational attainment of all'.<sup>47</sup>

One of the key offices under the Department of Education in the universal design context is the Office of Special Education and Rehabilitative Services (OSERS)<sup>48</sup>. OSERS provides a wide array of supports to e.g. states in three main areas: special education, vocational rehabilitation and research. In the realm of research, The National Institute on Disability and Rehabilitation Research (NIDRR) provides leadership and support for a comprehensive programme of research related to the rehabilitation of individuals with disabilities. NIDRR has supported Universal Design education and research initiatives for years, e.g. through financial support to Universal Design Research Centres in the North Carolina State University and in the University of Buffalo, NY. The NIDRR funding is based on long term strategy development, and e.g. in the field of universal design experts are consulted for input to identify priority areas for research. The new five-year programme for universal design research will stand in force starting October 2004.

In the level of curriculum development in universities, accreditation of degrees lies with the Regional Accrediting Organisations and Accrediting Organisations in Specific Subjects. Regional Accrediting Organisations cover six territories and they accredit all degrees, in all subject areas, in an entire university. Accrediting Organisations in specific subjects cover e.g. arts, computer science, engineering&technology, and architecture. In this context, universal design education in USA has been advanced e.g. through position papers produced by the universal design experts.<sup>49</sup>

The primary role of the accreditation organisations is to produce performance criteria, which then are interpreted by individual schools. Performance criteria are produced in collaboration with professional organisations.

A large body of universal design teaching experiments exist by now in the US, some formally and in detail documented through elaborate pilot programmes like the Universal Design Education Programme, others shared at conferences and on web sites.<sup>50</sup>

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<sup>47</sup> <http://www.ed.gov/about/reports/strat/plan2002-07/plan.doc>

<sup>48</sup> <http://www.ed.gov/about/offices/list/osers/aboutus.html>

<sup>49</sup> Interview with Elaine Ostroff and Laurie Ringaert, 6 Dec 2003, Washington DC.

<sup>50</sup> See e.g. <http://www.udeducation.org> for an elaborate list.

A key effort to support the universal design education development in USA was initiated by the Adaptive Environments Center in Boston, Massachusetts, already in 1989. The Universal Design Education Project (UDEP) was planned when the Americans with the Disabilities Act (ADA) was about to be signed. The objective was to infuse universal design into the curriculum of five design disciplines — architecture, industrial design, interior design, landscape architecture, and urban planning.

UDEP was initiated with a grant from the National Endowment for the Arts, with additional funding from the NEC Foundation of America, the US Department of Justice, and the Center for Universal Design and some other foundations.

The project began in 1991 with the support of the professional design societies, who invited relevant faculties to submit proposals based on the culture of their own schools, and their own experience and teaching styles. The grass-root effort was chosen to support a range of teaching methods and to support local cultures. The UDEP advisory group assisted in the review process to select the schools.

The first pilot project was run in the academic year 1993-94 with twenty-two schools involved across USA. Some of the faculty teams were interdisciplinary, others were in architecture, industrial design, interior design, and landscape architecture but none from the urban design programmes. Many of the selected faculties selected through a competitive award process already had strong experience in teaching accessible design.<sup>51</sup> The whole pilot project is documented in detail in *The Strategies for teaching Universal Design, with case studies of twenty-one programmes* (Welch, 1995).

The faculty work was supported with several project components. Members of the advisory group had partnerships with each of the schools, and this contact included visits to the schools, with lectures open to the public, meetings with administrations, and critiques of student work. The faculty and project staff gave presentations of the project at the annual meetings of the related design societies, to generate interest in universal design.<sup>52</sup> Annual project meetings facilitated the growing faculty network. Faculty reported that the prestige of their awards were important in gaining recognition by their colleagues.

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<sup>51</sup> The following schools were selected to participate in the first UDEP pilot: California Polytechnic State University, Iowa State University, Kansas State University, Louisiana State University, Massachusetts Institute of Technology, Miami University, Michigan State University, North Dakota State University, Norwich University, Pratt Institute, Purdue University, Ringling School of Art and Design, State University of New York at Buffalo, Texas Tech University, University of Michigan, University of Missouri, University of South Florida, University of Southwestern Louisiana, University of Tennessee, Virginia Polytechnic Institute and State University, Virginia Polytechnic Institute and State University

<sup>52</sup> Design societies are involved in the accreditation of degrees.

Polly Welch and Stanton Jones, who were members of the faculty team in the second UDEP pilot at the University of Oregon, Eugene, have developed a process model for incorporating universal design into design education that builds on the UDEP experiences between 1993 and 2001. Welch and Jones identify a model for curriculum development model, where five elements are considered critical for enabling students to move from general awareness to engagement and integration, and finally, the ability to design inclusively: 1) learning technical/anthropometric information; 2) learning about user needs research; 3) learning from users involved in the design process; 4) developing self-awareness and, 5) engaging the social, political and ethical issues of inclusive design. Each component is necessary to universal design teaching and has more impact when taught in relation to the others.<sup>53</sup>

The process model presented above needs, according to Welch and Jones, to be supported by injection and/or infusion strategies to raise awareness about inclusive design. The injection method they describe as injecting a unit of teaching into a given course syllabus; injecting a course devoted to universal design into the curriculum, or offering a one-time event/workshop. Infusion techniques they propose are infusion of universal design into a subject area course; infusion of universal design problem into a studio problem; infusion of universal design into a single year of the curriculum, or infusion of universal design into the entire design curriculum.<sup>54</sup>

According to Welch and Jones, key elements that the US faculty participated in the UDEP pilots have been able to identify influencing the adoption of universal design include:

### **Attitudinal change**

Universal design teachers have found, in general terms, that attitude among students, faculty, and administrators is a greater barrier to infusion than the time and effort required to introduce and elaborate on the universal design materials.

### **Diversity of student body and faculty**

Design programmes in the US generally do not reflect the true diversity of the society itself.

### **Knowledge generation and scholarly development of faculty**

Research on universal design is primarily technology- and data-oriented or dissemination-focused. Articles in academic journals and trade magazines are considered a necessary pre-requisite for the dialogue on universal design to grow and mature.

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<sup>53</sup> Welch, P.; Jones, S.: Advances in Universal Design Education in the United States. In Preiser, W.F.E. and Ostroff, E. (Eds.) Universal Design Handbook. New York: McGraw-Hill. 2002.

<sup>54</sup> Ibid.

## **Programme accreditation and licensing exams**

The National Architectural Accreditation Board (NAAB), in its most recent requirements from 1998, distinguishes between the levels of accomplishment expected of graduates — awareness, understanding and ability. Students are expected to have ability to design both site and building to accommodate individuals with varying physical abilities. This means that 'they can correctly select the information appropriate to the situation, and apply it to the solution of specific problems'. They are only required to have understanding when it comes to their legal responsibilities with respect to accessibility. These requirements make clear the obligation of architecture schools to ensure that their students can apply the requirements of the ADA.

In the field of landscape architecture, the requirements are considerably less well formulated. The only mention of accessibility is not under an assessment of the curriculum but under educational facilities, where schools are expected to have 'safe, convenient, and barrier-free access'. While knowledge of the ADA Standards for Accessible Design are incorporated into questions on the landscape architecture licensing exam, there is no specific requirement to teach it in the requirements for accreditation of professional programmes.

## **Physical environments conducive of learning**

Many of the environments in which design is taught are rich with examples of noninclusive design. Schools should, according to Welch and Jones, take proactive steps to address the inequities.

The US experience related to universal design curricula development shows a large body of teaching experiments across the country. A vast majority of these experiments, at least the documented ones, relate to architecture, urban design, industrial design, interior design and landscape design. Some of these individual experiments go back decades, at least to the beginning of 1970's, even if a major change can be estimated to have taken place in early 1990's, with the emergence of Universal Design Education Project pilots, conducted in the fields mentioned above.

Universal design experiments in fields related to information technologies have merged later, especially in the context of Electronic and Information Technology Accessibility Standards (Section 508 of the Rehabilitation Act Amendments - 1998) and development of Web Accessibility Initiative Guidelines. Trace Center at the University of Wisconsin can be considered one of the leaders in the field.

Going back to the article in the Universal Design Handbook on Advances in Universal Design Education, Welch and Jones identify a number of challenges for development of universal design education. They claim that more effort is needed to cross-fertilise design programmes with some of the success stories already realised, especially for faculties looking for resources at both the course and curriculum scales. Effort should be put in

publication of scholarly work in academic journals to emphasize that the concept of universal design is a robust academic and professional topic. Dissemination of information on universal design will also enhance teaching and research within the academy in the future.

However, as Welsh and Jones claim, previous curriculum packages have not fared well, and have attracted few design teachers. The same is said by Elaine Ostroff: the United States is still on the very early stages of the process to bring universal design education into mainstream design education. The challenge is clear — 'strategies and components of a universal design-based curriculum must vary from one place to the next, due to the inevitable variation in people, place, curricular focus, and in overall acceptance of a new idea such as universal design' (Welsh and Jones, 2002).

The challenge stated above is quite likely true, not only in the context of individual universities and their strategies, but also in the context of policy developments in national, and in the case of USA, federal level, as it is true in the case of Europe and its nations. In IDCnet the challenge now remains to reflect the findings in the US with the knowledge we have gathered from the state-of-the-art in European countries. These findings will be the starting point of the analysis and production of recommendations in the final report on Design for All education and research policies and strategies.

### 3.9.1 Universal Design Research Project<sup>55</sup>

The Universal Design Research Project was a three year study funded by the U.S. Department of Education National Institute on Disability and Rehabilitation Research. This project was designed to gain an understanding of

- why and how companies adopt universal design,
- and what factors are the most important in making this decision.

In addition,

- factors which discourage or impede the adoption and successful practice of universal design are also being identified.

A second objective was to

- determine what those outside of companies can do to support universal design within the companies.

The list of internal factors impacting the adoption and successful practice of universal design by consumer product manufacturers includes, e.g., issues related to product designers and human factors resources:

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<sup>55</sup> [http://www.trace.wisc.edu/docs/univ\\_design\\_res\\_proj/udrp.htm](http://www.trace.wisc.edu/docs/univ_design_res_proj/udrp.htm)

- An effective human factors group or other knowledgeable internal resource group positioned to facilitate the practice of universal design.
- Policies and procedures that mandate and incorporate universal design into our product development process.

The list of strategies for facilitating the adoption and successful practice of universal design by consumer product manufacturers includes e.g. issues related to training and education:

- Incorporation of universal design into professional training programs in design and development of products and services.

As part of the Universal Design Research Project, a survey of former students of universal design education programmes was also conducted. An initial survey of 93 students from the "Design and Human Disability and Aging" course taught over the past eight years at UW-Madison has been completed. The project team was also interested in surveying the former students of other programs.<sup>56</sup>

In the following, both relevant legislation and institutions on federal and state level in USA, related to the development of Universal Design education and research policies, are identified to provide a point of reference for the state-of-the-art in Europe.

### 3.9.2 Legislation

- **Rehabilitation Act of 1973:**

<http://www.nationalrehab.org/website/history/act.html>

- The Rehabilitation Act prohibits discrimination on the basis of disability in programs conducted by Federal agencies, in programs receiving Federal financial assistance, in Federal employment, and in the employment practices of Federal contractors. The standards for determining employment discrimination under the Rehabilitation Act are the same as those used in title I of the Americans with Disabilities Act.

- **Americans with Disabilities Act 1990:** <http://www.ada.gov>

- The ADA prohibits discrimination on the basis of disability in employment, State and local government, public accommodations, commercial facilities, transportation, and telecommunications. It also applies to the United States Congress.
- The act comprises of 4 titles: Employment, State and Local Government Activities, Public Transportation, Public Accommodations, Telecommunications Relay Services

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<sup>56</sup> [http://www.tracecenter.org/docs/univ\\_design\\_res\\_proj/uwsturep.htm](http://www.tracecenter.org/docs/univ_design_res_proj/uwsturep.htm)



- **Electronic and Information Technology Accessibility Standards (Section 508 of the Rehabilitation Act Amendments - 1998)**
  - "requires that when Federal agencies develop, procure, maintain, or use electronic and information technology, they shall ensure that the electronic and information technology allows Federal employees with disabilities to have access to and use of information and data that is comparable to the access to and use of information and data by Federal employees who are not individuals with disabilities, unless an undue burden would be imposed on the agency. (1) Section 508 also requires that individuals with disabilities, who are members of the public seeking information or services from a Federal agency, have access to and use of information and data that is comparable to that provided to the public who are not individuals with disabilities."
    - <http://www.section508.gov>
    - <http://www.access-board.gov/sec508/508standards.htm#Background>
    - <http://www.access-board.gov/sec508/guide/act.htm>
- **Access Board** <http://www.access-board.gov>
  - Federal Agency Committed to Accessible Design

### 3.9.3 Education/Research - National Level

- **US Department of Education** <http://www.ed.gov>
  - In 1980, the U.S. Department of Education was created by bringing together offices from several other departments. Its original directive remains its mission today — to ensure equal access to education and to promote educational excellence throughout the nation.
- **DoE - Office for Civil Rights**  
<http://www.ed.gov/about/offices/list/ocr/index.html>
- **DoE - Office Special Education and Rehabilitative Services**
  - **The National Institute on Disability and Rehabilitation Research (NIDRR),**  
<http://www.ed.gov/about/offices/list/osers/nidrr/about.html>

"It is the mission of NIDRR to generate, disseminate and promote new knowledge to improve the options available to disabled persons. NIDRR's focus includes research in areas such as employment; health and function; technology for access and function; independent living and community integration; and other associated disability research areas."

- **National Centre for the Dissemination of Disability Research**  
<http://www.ncddr.org/>
  - Established in 1995, the NCDDR performs research, technical assistance and demonstration activities focusing on the dissemination and utilization of disability research funded by the National Institute on Disability and Rehabilitation Research.
- **Interagency Committee on Disability Research**  
<http://www.icdr.us/> is chaired by the Director of NIDRR. Authorized by the Rehabilitation Act 1973 is "mandated to promote coordination and cooperation among Federal departments and agencies conducting rehabilitation research programs."

#### 3.9.4 Accreditation (<http://www.rbs2.com/accred.htm> - essay on US system accreditation)

- **Regional Accrediting Organizations:** There are six regional accrediting organizations for universities in the USA, each with a different territory. These regional accrediting organizations accredit all degrees, in all subject areas, in an entire university.
  - The Council for Higher Education Accreditation (CHEA) <http://www.chea.org> is a private organization that coordinates the regional accrediting organizations, as well as the accrediting organizations in specific academic subjects.
- **Accrediting Organizations in Specific Subjects e.g.:**
  - **Arts:** <http://www.arts-accredit.org/intro.jsp>
    - National Association of Schools of Art and Design <http://nasad.arts-accredit.org/index.jsp>
      - The major responsibility of the National Association of Schools of Art and Design is the accreditation of education programs in art and design, including the establishment of curricular standards and guidelines for specific degrees and credentials.
      - NASAD works with other peer associations such as the American Craft Council (ACC), the Association of Independent Colleges of Art and Design (AICAD), the American Institute of Graphic Artists (AIGA), the Industrial Designers Society of America (IDSA), and the National Art Education Association (NAEA).
  - **Engineering & Technology**

The Accreditation Board for Engineering & Technology (ABET) <http://www.abet.org> has representatives from all of the major engineering professional societies in the USA, including the Association of Mechanical Engineers (ASME), the Institute of Electrical and Electronic Engineers (IEEE), and the National Society of Professional Engineers (NSPE), amongst many others.

- **Computer Science**

The Accreditation Board for Engineering & Technology, Computing Accreditation Commission (ABET-CAC) <http://www.abet.org/cac1.htm> . The Computing Sciences Accreditation Board (CSAB) <http://www.csab.org> participates in ABET. The CSAB includes representatives of the Association for Computing Machinery, the Computer Society of the Institute of Electrical and Electronic Engineers, and the Association for Information Systems.

- **National Architectural Accrediting Board**  
<http://www.naab.org/>

- **Full list here for nationally recognized accrediting agencies:**

[http://www.ed.gov/admins/finaid/accred/accreditation\\_pg4.html#Nationally%20Recognized](http://www.ed.gov/admins/finaid/accred/accreditation_pg4.html#Nationally%20Recognized)

### 3.9.5 Third Level Institutions

- **Trace Centre - College of Engineering - University of Wisconsin - Madison** <http://trace.wisc.edu>

- Trace Center Mission Statement: To prevent the barriers and capitalize on the opportunities presented by current and emerging information and telecommunication technologies, in order to create a world that is as accessible and usable as possible for as many people as possible.
- Universal Design / Disability Access program headquartered by Trace (Part of National Computational Science Alliance - Funded by National Science Foundation)
- University courses at University of Wisconsin-Madison, e.g. Design for Human Disability and Aging
- Maintains supported positions for graduate students
- Industry Training Course: "Designing for Usability, Flexibility & Accessibility"
- Universal Design Research Project (3 yr) funded by NIDRR
- Guidelines for the design of consumer products to increase their accessibility to persons with disabilities or who are aging

- Trace
- [http://trace.wisc.edu/docs/consumer\\_product\\_guidelines/toc.htm](http://trace.wisc.edu/docs/consumer_product_guidelines/toc.htm)
- Work primarily funded by NIDRR
  - **Centre for Universal Design - North Carolina State University**  
<http://www.design.ncsu.edu/cud/>
    - Funded by NIDRR as a Rehabilitation Engineering Research Center (RERC) on Universal Design and the Built Environment. The RERC's purpose is to 1) Improve the accessibility and usability of the built environment, and 2) Advance the field of universal design.
  - **IDEA Centre - University of Buffalo**  
<http://www.ap.buffalo.edu/idea/>
    - IDEA is dedicated to improving the design of environments and products by making them more usable, safer and appealing to people with a wide range of abilities, throughout their life spans. IDEA provides resources and technical expertise in architecture, product design, facilities management and the social and behavioral sciences to further these agendas.
    - Programs: e.g.
      - Innovative Product Development - This design program develops innovative assistive technology, building products and consumer products with universal design features.
      - Funded by NIDRR as a Rehabilitation Engineering Research Center (RERC)
        - E.g. "Universal Model Curriculum" project
  - **Universal Design Education Online** <http://www.udeducation.org>
    - The site supports the teaching of universal design and provides educators a place where to interact with each other. It aims to "develop a community of learners who exchange information for the benefit of all".
    - The project is conducted jointly with the IDEA centre in University of Buffalo, Centre for Universal Design in the North Carolina State University and the Global Universal Design Educator's Network<sup>57</sup>.
    - site supports educators and students in their teaching and study of universal design.

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<sup>57</sup> <http://www.universaldesign.net/>

- <http://www.udeducation.org/teach/index.asp> - list of courses/education applying Design for All/Universal Design principles, teaching techniques etc
- the project is separately funded from the RERC centres by NIDDR.

### 3.9.6 Other DfA/Universal Design Related Institutions and Organisations

- **National Endowment for the Arts** <http://www.nea.gov>
  - Activities relating to both the elderly and people with disabilities
  - Research: Various publication on universal access/accessibility and design for all: [http://www.arts.gov/pub/access\\_pub.html](http://www.arts.gov/pub/access_pub.html)
    - E.g. Design for Aging: An Architects Guide, by the National Endowment for the Arts and the American Institute of Architects, 1986
- **National Science Foundation** <http://www.nsf.gov>
  - Funding projects such as "Engineering Education for Inclusive Design" through its division of Engineering Education and Centres.
- **Education, Outreach and Training partnership for Advanced Computational Infrastructure EOT-PACI** <http://www.eot.org/>
  - **Mission:** to demonstrate the use of NSF PACI technologies and resources, to increase the participation of underrepresented groups and to enable broad national impact in education, government, science, business, and society with systemic, sustainable, scalable programs.
- **Industrial Designers Society in America** <http://new.idsa.org/index.htm>
  - One of the objectives: Raise the bar on design quality through professional development and continuing education...
    - Prepare suggested industry guidelines on the environment, universal design, etc.
    - Communicate/publish the elements of good design to the profession, students, public, and business
- **Adaptive Environments** <http://www.adaptenv.org/index.php>
  - Adaptive Environments is a 25 year old educational non-profit organization committed to advancing the role of design in expanding opportunity and enhancing experience for people of

all ages and abilities. Projects vary from local to international. All are characterized by collaboration and user participation.

- **Universal Design Education Project - e.g. University of Oregon** <http://www.uoregon.edu/~sij/udep/>
  - The Universal Design Education Project (UDEP) is a national effort organized by Adaptive Environments Center in Boston, MA to challenge existing values in design education by supporting curriculum development and teaching interventions that incorporate the principles and values of universal design.
  - Support came from the National Endowment for the Arts, the Disability Rights Section of the US Department of Justice, and private foundations.
- **Information Technology Technical Assistance and Training Centre** <http://www.ittatc.org/> <http://www.ittatc.org/>
  - charged with providing accessibility training and technical assistance related to Section 508 of the Rehabilitation Act and Section 255 of the Telecommunications Act
  - audience: industry, state officials, trainers, and consumers
  - funded by the National Institute on Disability and Rehabilitation Research (NIDRR)
  - located at the Georgia Institute of Technology in Atlanta, Georgia
- **Resna - Rehabilitation Engineering and Assistive Technology Society of North America** <http://www.resna.org>
  - "We are an interdisciplinary association of people with a common interest in technology and disability. Our purpose is to improve the potential of people with disabilities to achieve their goals through the use of technology. We serve that purpose by promoting research, development, education, advocacy and provision of technology; and by supporting the people engaged in these activities."
  - Technical Assistance Project - Policy Information Pipeline - Universal Design  
<http://www.resna.org/taproject/policy/initiatives/univdesign.html>
  - Funding from corporate sources

## 4 Conclusions and Next Steps

### 4.1 Key issues identified

It is estimated in the IDCnet deliverable D3.1 on identification of key knowledge sets for Design for All education, that in order to progress further with the work on content definition for curricula recommendations, the next part of the work package foresees the establishment of teaching pilots, to be undertaken at various institutions, associated to members of IDCnet. In most cases, these are not seen as whole courses, but as modules inserted into existing courses, or even topics within existing modules. This is partly because of the difficulty of introducing institution wise, new courses, and partly because the overall understanding is that Design for All is not, and should not be a discipline in its own right, but a horizontal action, that crosses boundaries, and that can most usefully be included within established courses.

The cross-disciplinary nature of Design for All bears consequences also for further development of Design for All education and research strategies and policies. It seems that in the majority of cases till now Design for All education and research strategies on the national level in Europe have been bottom-up initiatives, rather related to individual higher education institutions, and started by committed educators. The same can to a large degree be said about the US experience. In both contexts, Europe and USA, exceptions exist and collaborative strategies between groups of universities have emerged as have some national strategy efforts.

It is still rare for public sector actors to have Design for All strategies or policies — but it can be estimated that in many cases a step would be possible from using concepts like equality and inclusion also to using Design for All. Design for All can often be implicitly present even if the concept is not directly used. Partly this is due to differences in languages; Design for All translates in a number of forms.

In some countries bottom-up Design for All initiatives in individual universities led by committed educational experts on Design for All have led to a more elaborated Design for All education and research policy statements.

The Norwegian action programme on Universal Design (Handlingsprogram for Universell utforming, 2002) is so far the most extensive policy programme, covering all sectoral ministries.

Another development worth mentioning here is the policy programme produced in the UK by the Design Council, described in *'Living longer. The next context for design'* and the collaborative efforts between some UK universities and research and higher education related bodies like Department for Education and Skills (DfES) and Department of Technology and Industry (DTI) to influence research policies on inclusive design.

The Resolution ResAP(2001)<sup>58</sup> of the Council of Europe Committee of Ministers supports the introduction of the principles of universal design into the curricula of all occupations working on the built environment. The resolution was published in February 2001 and has been referred to by above mentioned policy cases in Norway and UK, as well as in many other curricula related developments. Another case of the European policy level developments is the objective identified in the eEurope 2002 action plan on production of recommendations for European Design for All curricula in the context of Information Society.

In conclusion, it seems clear that initiatives related to development of Design for All education and research policies and strategies can kick off through both bottom-up and top-down incentives. Both approaches are necessary and complement each other. Also, networking on both national and European level seems to encourage next steps in DfA education and research strategies. All this should have implications in recommendations related to further development of this IDCnet workpackage.

## 4.2 Next steps

As stated in the report D3.1 the progress of IDCnet DfA pilots will be reported on in deliverable 3.3. The aim of these pilots is both to demonstrate the robustness of the knowledge sets and skills, as well as to understand what needs to be done to introduce these topics into courses in a permanent way. The obstacles and problems, constructive ways to tackle them, and recommendations for their incorporation will provide input to the WP4, the work package on education and research policy strategies.

To support the production of recommendations on further development of Design for All education and research strategies and policies, the outcomes of this initial report and the results of the second IDCnet workshop to be organised in Sankt Augustin on 15-16 January 2004 will be analysed.

The IDCnet project partners will identify a set of strategy and policy related case studies from Europe. A series of interviews will be organised with key people related to these cases, to guide the development of recommendations. Case studies identified will represent both bottom-up and top-down approaches in strategy development, and additionally reflect both the injection and infusion approach evident in US experience.

The development of recommendations for DfA education and research policies and strategies in Europe will aim at recognising the challenge already identified in USA — that strategies must be sensitive to the inevitable variation in people, place, curricular focus, and in strategy and policy cultures in various EU countries.

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<sup>58</sup> <http://www.cm.coe.int/ta/res/resAP/2001/2001xp1.htm>



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