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Cyprus
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Denmark
Estonia
Finland
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Latvia
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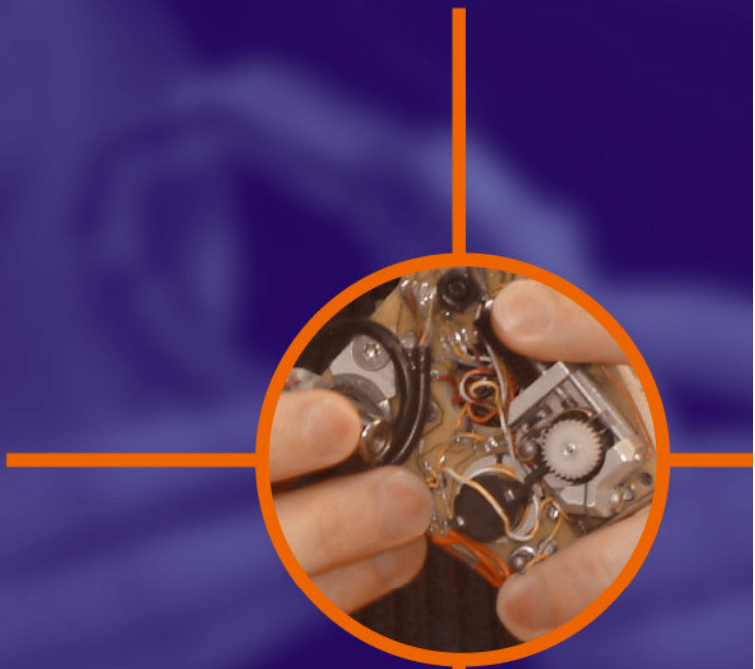
Building Technology Partnerships

IRC Innovation network

Innovation Relay Centre Network

TTT Definitions

Version 05 – Valid from 1st April 06







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Chapter 1. TTT definition

A Transnational Transfer of Technology (TTT) is

1. an agreement
2. between a developer and a recipient (the parties)
3. located in 2 distinct countries where there is an Innovation Relay Centre (IRC) or in other countries, according to paragraph 1.2 .
4. about a technology, a product, a process, an expertise or a know-how (the object)
5. that is innovative
6. that has an economic impact
7. that is achieved, thanks to IRC services

The valid kinds of agreements are defined in chapter 2. Chapter 1 describes the other characteristics of a TTT while in chapter 3 the process for claiming a TTT agreement is explained.

1.1. Description of the parties

Any legal or physical person can be a developer or a recipient, excepted for IRC and their personnel.

The **Developer** is the owner or source of the innovative technology, product, process, expertise, or know-how.

- Two companies can be considered as co-developers if they developed the technology together.
- The developer and recipient cannot represent the same company or organisation (or a branch of the same holder).
- The developer must be the one having directly developed the technology, owning the technology or having the rights to exploit it.
- Personnel of the IRC or the IRC itself may not be assimilated to developer and therefore exchanges of good practices between IRCs are not TTTs.

The Recipient is the organisation or company that acquires and uses the innovative technology, product, process, expertise, or know-how.

- The recipient can be the end-user.
- Intermediate and consulting companies are not eligible recipients.
- The recipient can be a distributor or a reseller if the object of the innovation is an innovative product and introduces a competitive advantage for the final clients using it.

1.2. Valid countries

The Developer and Recipient must be located in 2 distinct countries where there is an Innovation Relay Centre (IRC), i.e.: Member states of the European Union, Bulgaria, Romania, Iceland, Israel, Norway, Switzerland, Turkey and Chile.

Where an IRC extends over a national border then it is possible for both the Developer and Recipient to be clients of the same IRC.

Internationalisation of the IRC Network
Following the publication of the guideline for the internationalisation of the IRC network, since 1.4.2006 IRCs may use up to 10 % of their resources to build international technology partnerships beyond the Network's geographic reach.

Such partnerships are assimilated to TTT, but must come in addition to the intra-network TTT that each IRC committed to achieve.

1.3. Innovative character

The object of the agreement should focus on bringing a competitive advantage to the recipient. The innovative character should be assessed in the context of the recipient, not this of the developer.

1.4. Economic impact

If possible, the partners should describe the economic impact through and assessment of
- the number of jobs created or safeguarded
- the increase in company turnover
- the costs saved through an improved process or technology
- the Royalties or income generated from the transfer of know-how or a patent

When the partners are reluctant to provide the above information they should be invited to describe in simple words the expected economic impact. If they refuse this invitation, the IRC should propose their own assessment. IRCs should then for internal reporting purpose exclusively, describe the potential economic impact of the partnership.

1.5. Validation

The agreement must be validated by the developer and/or the recipient. This is done through the submission of a signed TTT statement letter, including **both parties' names and the signature** of the IRC's client(s). If two IRCs are involved, one should obtain the letter from the recipient and the other from the developer. When only one IRC is involved, **one letter should be obtained, from the party that was supported by the IRC.** When this TTT will be validated, the number of TTTs achieved will increase for the period related to the **date of signature of the contract**.
Ex: If the TTT has been signed between the companies during FP6-Y1 and is submitted to the IRC-S during FP6-Y2, this TTT will anyway belong to FP6-Y1.

If a client claims confidentiality, the information disclosed to the IRC Secretariat is treated as confidential. Nevertheless, to claim a TTT agreement IRCs must submit the signed TTT statement letter(s).

1.6. IRC Services

The agreement reported as TTT are one of the results of the IRC Network activity. Agreements reached without intervention of the network are not eligible as TTT. Clear evidence must be provided that the IRCs claiming the TTT significantly contributed to achieving the agreement.

1.7. When a TTT can be published as an IRC Network "Success Story"?

A "success story" is a TTT that meets the following additional criteria, required for publishing it as a success story of the IRC network:

- at least 2 IRCs must be involved in the Agreement
- The online TTT form must be fully completed by all the IRCs involved and must be validated by the IRC-S
- Both companies must agree to have the details of the technology transfer published, i.e. confidentiality should not be an issue
- Both companies must agree to be contacted by a journalist and foresee time for the publication process.

Chapter 2. Valid types of agreements

Valid types of agreement should include sufficient information to demonstrate that all aspects of the definition in chapter 1 are respected and should correspond to one of the types of agreement defined in chapter 2.

In exceptional situation, it is acceptable that the agreement between the recipient and the developer is not in a written form. In this case the signed TTT statement letters must clearly indicate the existence of an oral agreement and the starting date of the partnership.

2.1. Licensing Agreement

This covers the transfer of **certain rights** from the Developer of a technology, process or know-how to the Recipient, **in return for a fee or share of royalties**. An industrial franchise can be regarded as a type of license agreement. This type of agreement allows the franchise holder (Recipient) to obtain the franchisee's (Developer) know-how, or expertise in order to manufacture or exploit a product or knowledge that will be distributed under the franchisee's brand in a given territory.

2.2. Technical Co-operation

Technical co-operation requires that both parties - play an **active/creative role** by providing their expertise or know-how in order to:

- **Adapt** a technology, a product or a process for a new application or sector
- **Develop** a technology, a product or a process to meet new market needs

A technical cooperation agreement can comprise for instance the following cases:

- Co-development of a new product using the expertise of the Developer and the production facilities of the Recipient
- Co-development of a new version of an existing product to meet market needs
- Feasibility study including tests -customised for a specific application

A technical cooperation agreement is definitely **not**:

- A research project: A technical cooperation agreement should deliver a process or a product that is directly operational, which is not necessarily the case within a research project.
- An exchange of samples
- A simple conformity tests on samples: This is not enough for being considered as a feasibility study where a specific expertise exchange is needed.
- A non Disclosure Agreement (NDA)
- A simple training
- A consultancy work

2.3. Joint Venture

This type- of agreements is the most complete. It is a **strategic alliance** between two or more parties to undertake economic activity together. The parties agree to create a **new entity** together, by both contributing equally and they then share the revenues, expenses, and control of the enterprise. The venture can be for one **specific project** only, or a **continuing business** relationship. It implies the creation of a formalised link between companies, with the sharing of commercially sensitive information to allow the development of **new technologies, processes or products**.

2.4. Commercial Agreement with Technical Assistance

This includes any commercial agreements between 2 parties accompanied by a transfer of know-how or expertise, which should consist of:

- Assistance with starting up an installation
- Advice/training on the use of a new process
- Technical Training accompanying the transfer of the new product/process

Technical assistance ensures the effective start-up and/or maintenance of the transferred technology, but also covers the installation of technology (assembly; engineering work; testing; training).

2.5. Manufacturing Agreement (Subcontracting & Co-contracting)

These types of agreements are only valid if they involve some elements of the transfer of expertise, know-how, technology and/or training. The two valid types of agreements are:

a. Subcontracting: the Developer is the client and the recipient its subcontractor. The developer **transfers some of its specific know-how to the subcontractor to enable him to** perform the work required.

b. Co-contracting: the Contractor selects the subcontractor on the basis of **specific skills, expertise and know-how** it possesses **to jointly develop new processes and technologies**.

Chapter 3. Process for claiming a TTT agreement

The steps for claiming a TTT are the following:

1) The IRC starts filling in a **TTT form** via the online **TTT database** (www.ircnet.lu/src/ttt). In the **first section** of the form she/he described all aspects of the TTT, except the assistance provided by the second IRC for achieving the TTT agreement. While filling the form, the IRC demonstrates that the agreement fulfils the definition described in Chapter 1 and 2 of this document. The IRC identifies the other IRC involved, when relevant.
2) When 2 IRCs are involved the second IRC, identified in step 1 fills in the second section of the form that describes its involvement.
3) The database then enables both IRCs to print the **TTT form**, which must be sent to each IRC customer together with the official template of **TTT statement letter**. (http://www.ircnet.lu/docs/library/RB_NEW_TTT_statement_letter_final.doc.)
4) If only one IRC is involved, a signed TTT Statement letter from the party that was supported by the IRC must be obtained. When two IRCs are involved, one will obtain the signature from the developer and the other from the recipient.
5) The IRC then **uploads a scanned version** of the signed TTT statement letters to the TTT database. IRCs are responsible for keeping the original signed TTT statement letters in their records.
6) The IRC Secretariat assesses the TTT form and validates it when it is proved that the TTT definition is respected. This involves that
   - the developer and recipient are properly identified and located in valid countries,
   - the object of the TTT and the kind of agreement are indicated,
   - the innovative character and the economic impact of the object are clearly explained,
   - the involvement of the IRCS is demonstrated

   Statement letter from the recipient and the developer have to be both provided to the IRC-S before to be validated.

The agreement is then automatically counted within the performance indicators database of the respective IRCs, as an international or intra-network TTT.

Annexe 1: Examples of agreements

3.1. Licensing agreements

Safety in the sun

IRC Hessen/Rhineland-Palatinate and IRC Scotland were key players in a technology transfer venture enabling a German inventor to exploit an idea and a Scottish SME to implement a new strategy. The result is Sunsure, a filter that warns sun lovers when sunburn threatens.

Sunsure: this simple filter 'tells' sunbathers when it is time to get out of the sun.

Sun worshippers know the story only too well: enjoying their time in the sun, they are unaware when their skin begins to suffer from overexposure. Hours later, long after the skin has been damaged, it becomes hot, red, and painful. It may even blister. The victims have learned the hard way that sunburn is a delayed response to excess sunlight. Yet in reality, a subtle change in skin colour occurs around the time sun exposure reaches the limit between 'acceptable' and 'harmful'. The problem is that the naked eye cannot see this change.

A few years ago, a German inventor named Marcus Weiss decided to tackle this problem. He developed a filter that absorbs some components of natural light but lets other wavelengths pass through. When viewed through the filter, healthy skin appears grey, but skin reaching the critical exposure limit appears red. When this happens, it is time to get out of the sun. Weiss felt that his invention had commercial potential and set out to patent it.

Help with patenting

The path of a lone inventor is a difficult one, so Weiss sought assistance from his local Innovation Relay Centre - IRC Hessen/Rhineland-Palatinate. "One of our institute's functions is to provide regional funds and assistance for patenting," explains Amrie Landwehr from IRC Hessen/Rhineland-Palatinate. "This is how we first met Dr Weiss back in 1997. Later, we helped him look for prospective licensees. We drafted and disseminated a technology offer and kept on the lookout for relevant technology requests. We spoke to many companies and finally received a request via the IRC network that seemed very promising. It came from IRC Scotland and a company called Albyn of Stonehaven."

Albyn's new strategy

Albyn, near Aberdeen, was founded in 1973 to manufacture hand-made combs. Over the years it diversified into health and beauty products and travel packs, produced for UK retailers under the customer's brand. Gradually, however, Albyn began to feel the pressure of competition from the Far East. This prompted Albyn's management to conduct a comprehensive business review.

The review concluded that the company's local production facilities had become unsuitable for future needs, and that Albyn's key strength lay in developing products from the original ideas through market research, product design, manufacture and delivery. This led to a shift of focus from manufacturing to product development. By creating new products to be sold under the Albyn label, the company hoped to gain better control over its products and a two to three-year lead with each new product. Crucial to this strategy is the search for promising innovations.

In March 2001, Albyn learned about the IRC network through EurAlert, IRC Scotland's R&D information service, and realised that the network could provide precious assistance in the search for new ideas. The company got in touch with its local IRC office.

IRC teamwork

Jane Lawson of IRC Scotland remembers: "Albyn contacted us and I went up to Stonehaven. We prepared a technology request for dissemination via the IRC network, and began to search patent and technology databases for novelties in line with Albyn's activities. When IRC Hessen/Rhineland-Palatinate responded to the technology request, telling us about Dr Weiss's sunburn prevention filter, we informed Albyn immediately." Being specialised in health and beauty products and aware of the size of the potential market for such a device, Albyn felt that this would be the ideal product to develop and market under its own brand.

IRC Scotland organised a first meeting in London between Weiss, Albyn, and the IRCs. During a second meeting in Stonehaven the prospective partners agreed the outline of a licensing deal. The agreement gives Albyn exclusive rights to manufacture and market the device in the UK and USA.

Throughout the technology transfer and product development, both IRCs assisted their clients. The German IRC gave the inventor assistance in translating and negotiating, contributed to writing the proof of principle, and found a dermatology specialist qualified to sign it. IRC Scotland assisted Albyn with the confidentiality agreement and found answers to questions such as: "What claims can we make?", "Is this product a medical device?", and "Does the filter require compliance testing?". When the answers to the last two questions turned out to be yes, the German IRC found an institute in Bari, Italy to carry out the compliance tests.

A product is born

Today, a new Albyn product is about to hit the market: a skin-check filter called Sunsure. With Sunsure, sun lovers can enjoy the outdoors safe in the knowledge that they can avoid painful sunburn. A major UK retailer has announced its intention to sell Sunsure, and the product's developers expect a snowball effect. This success has been made possible by an inventor's ingenuity, a company's development efforts, and the teamwork and multifaceted assistance of two IRCs. Both IRC Scotland and IRC Hessen/Rhineland-Palatinate are pleased to have contributed to this successful, direct technology transfer from inventor to SME.

3.2. Technical cooperation agreement

Dyeing helps medical science

An IRC-network organised transnational technology transfer brokerage event allowed an Austrian research centre building a new microscope system to meet a German manufacturer of the fluorescent dyes the system required. This led to a technical co-operation agreement that has now resulted in a commercialised product.

The CytoScout fluorescence microscope system.

Biological and medical analysis is undergoing a revolution in miniaturisation as part of the growing field of nanotechnology. The entire human genome can now be analysed on a single 'chip' the size of a microscope slide. Chemicals such as proteins and drugs can be analysed at single-molecule resolution. These developments require new and ever more sensitive ways to detect biomolecules and monitor their changes. Key components are dye molecules that can be used as markers to label and identify specific molecules.

Meeting at the brokerage event

Dyomics GmbH, in Jena, Germany, specialise in manufacturing dyes for medicine and biology. "We are developing innovative dyes for many applications," explains Peter Czerney, founder and chief executive officer of Dyomics. "Our innovations include dyes that can be detected more simply than the alternatives, with less need for specialist equipment."

In a bid to find partners with applications for their dyes, Dyomics established contact with IRC South Germany. Details of what Dyomics have to offer were submitted to the IRC database, but it was a more direct approach that actually bore fruit.

Elke Römhild, an Innovation Consultant at IRC South Germany explains: "The IRC organises regular transnational technology transfer brokerage events across Europe, at which companies exhibit what they have to offer and can meet possible partners. We took Peter Czerney to one such event in Zurich, but that visit did not yield any results. However, we then went to another brokerage event in Stuttgart, where Dr Czerney met representatives of Upper Austrian Research (UAR)." This meeting was successful, because UAR were looking for exactly the kind of dyes that Dyomics were able to offer.

Building a new microscope system

UAR is a public-private partnership that draws on technology developed by Austrian universities. They have developed a new type of fluorescence microscope (the 'CytoScout'), using the fluorescence from the Dyomics dyes to detect the molecules the dyes are attached to. This is the result of a technical co-operation agreement reached between Dyomics and UAR once the IRC network had brought them together.

"The good thing about the Dyomics dyes is their optical extinction," says Max Sonnleitner, head of device development at UAR. Work to develop the new microscope began at the Institute of Biophysics at the University of Linz, to which Sonnleitner is also attached. "At the university we were doing this work with five lasers, one microscope and lots of optics in a system that is difficult to work with," Sonnleitner explains. "We decided to produce a modified microscope that is simpler to use and that everybody can work with more easily with single-molecule sensitivity."

In addition to ease of use, another key feature of the new UAR microscope is that it can scan large areas much faster than traditional methods. It can be used to study illnesses such as cancer, Alzheimer's disease, and much more.

Thanks to the collaboration between UAR and Dyomics, the new system is now commercially available. "We have just finished setting up the first external system at a biological research centre in Hungary," says Sonnleitner, "and we already have some other potential customers we are working with right now." He is glad that the IRC was able to facilitate the initial contact with Dyomics, and feels that the Dyomics dyes could possibly be applied more widely to other systems being developed by UAR.

The role of local knowledge

The process linking UAR with Dyomics came about thanks to the knowledge that IRC Austria already had about UAR. This is an example of the very close links between many IRCs and local small companies. Thomas Staltner, project manager at IRC Austria explains that his host organisation (CATT Innovation Management GmbH) is in the Upper Austrian Technology Network, which also has UAR as one of its most prominent members. "We knew all about UAR," Staltner says, "so when the brokerage event was being organised in Stuttgart we contacted UAR and asked if they wanted to participate." IRC Austria organised the subsequent visit to Stuttgart, and helped UAR to prepare a Technology Profile for the brokerage event's catalogue.

"This technical co-operation agreement is a good example of the services the IRC provides," says Staltner, "because it was quite difficult for UAR to find a producer of the dyes they needed." He explains that one major company had expressed some interest, but it had wanted to retain rights

over UAR's device. "So UAR was glad to find another company for technical co-operation without such restrictions." Staltner also highlights the point that the intervention of the IRC reduced the overall development costs of the project, by shortening the time involved.

Peter Czerney hopes the IRC network may help Dyomics to find new partners to work with on the other innovations now being developed by the company. His experience of the IRC means he will be happy to work with them again if new opportunities arise.

Looking underwater with the IRC Network

A small Greek technical development company has provided the expertise and equipment to allow a Swedish company to develop its robotic systems for underwater cleaning. The IRC network brought the two companies together, and will support their further co-operation.

The underwater cleaning robot, with camera attached

Weda is a long-established business in Södertälje, Sweden, specialised in making machines for underwater cleaning applications. Their cleaning machines are used in a wide range of environments, from swimming pools and drinking water towers to large reservoirs and sewage systems. "On some of our machines we use cameras," explains Klas Lange, Weda's managing director. "Normally we buy these from the USA or United Kingdom, and they are very expensive." The expense can be justified if the camera is absolutely essential, but some years ago Lange perceived a need for developing less expensive and more efficient camera systems, to allow cameras to be included as an option on a wider range of equipment. This need has been met thanks to an approach Lange received from IRC Central Sweden.

The IRC makes a link

Lars Berg, project manager at IRC Central Sweden, regularly receives recommendations from his wide network of contacts about companies that might benefit from the IRC's services. Weda was recommended to him in this way in 2001. Berg telephoned Weda to introduce himself, and a visit was arranged at which he explained all the services that the IRC can offer.

"They looked like a good company to work with," says Berg, "so I sent them some Technology Offers, including one from the Greek company Hellas Group Electronics (HGE), which develops

camera equipment. Klas Lange told me that this technology was very interesting, because it was something they were looking for, so a visit to Greece was arranged to discuss the possibilities for co-operation."

Constantine Karamanis, a consultant at IRC Hellenic in Greece, was able to accompany Lange on his visit to HGE and provide help with the discussions, including interpreting and translation services. For IRC Hellenic, this was a promising development in their relationship with HGE, which had begun some years earlier.

"We first met HGE during an exhibition, where we had a stand promoting the services of the IRC network," explains Karamanis. After learning about HGE's technology, the IRC worked with HGE to distribute a Technology Offer (TO) across the IRC network. This was the information which Lars Berg passed on to Klas Lange of Weda.

As a result of the meeting in Greece, Weda and HGE (now called Mariner Underwater Electronics) signed a technical co-operation agreement allowing Mariner to develop and supply a digital camera system for Weda, as the first step in what may prove to be a wider collaboration.

Improved and more cost-effective optics

"The technology being transferred under this agreement is an underwater camera with built-in LED lights," explains Marinos Pitas, the founder and owner of Mariner. "The camera transmits images to the operator, working with Weda's underwater cleaning robot. A new design for the optical system used in Weda's robot is also being discussed. The advantages of our technology are low power consumption, high performance of the optical system and the small volume resulting from the built-in light system as opposed to an external one. Our company also proposed an improved arrangement for transmission of the signal."

Klas Lange hopes that Mariner's expertise may be of continuing assistance in the development of improved underwater imaging systems. "I will be in Greece to see them again soon," Lange explains. "They are a technical development company so I think there may be possibilities for the joint development of other ideas that I have. There is certainly the potential for future co-operation to a larger extent than what we have today."

Help on many fronts

This transnational technology transfer agreement demonstrates vividly how the activities of the IRC network can bring together companies across Europe to produce collaborations that would never have happened otherwise. In Sweden, the initiative of Lars Berg in approaching Weda, before even being aware of what technology needs it might have, was crucial. In Greece, IRC Hellenic worked closely with Mariner to develop the original TO and also gave assistance in many other ways.

Constantine Karamanis, of IRC Hellenic explains: "The assistance given to Mariner was multidimensional. It is a small company, with significant experience and products, but without the personnel or the means to promote these products most effectively. After a company visit, we provided a technology and management audit and significant advice on both technology and management issues. This agreement represents a diversification for the company, and it was initially an idea of the IRC staff to diversify their product range, since their existing potential clientele was limited. The IRC also gave them advice on how to work with and treat foreign clients.

" Both Mariner and Weda are very happy with the way the IRC has supported them.

"I would not have found [Mariner] without the IRC," says Klas Lange, "and it is good to have a local contact in Sweden, and also have the chance to meet with a local IRC person in Greece. I would definitely make use of the IRC network again."

Marino Pitas of Mariner agrees: "I have already recommended the IRC to other companies."

3.3. Joint venture

Patient cards go electronic

A German software design company used an IRC brokerage event to find a partner in Hungary. The partners have devised a new mobile electronic system (VSWmobile®) for the collection and retrieval of medical information about patients in hospitals and clinics.

Heinz Vilsmeier with the VSWmobile®

As soon as a patient arrives at a hospital or clinic they begin to generate data, including their personal details, blood pressure, heart rate, medical history, results of blood tests and other diagnostic procedures. The data quickly accumulates, and traditionally it has often been stored in the form of written notes on 'patient cards'.

Capturing data with software

A few years ago, Heinz Vilsmeier, managing director of VSW Vilsmeier Systemware GmbH, of Berlin, became interested in bringing all this data-capture up to date. The idea was to use hand-held Personal Digital Assistants (PDAs) linked via a wireless network to a central computer server.

"We had good contacts with a specialised clinic for accident victims," explains Vilsmeier. "They had studied the potential for using PDAs in hospitals and found that it would make a lot of sense in emergency medicine. As a result of their interest we agreed to try to design the necessary software."

Vilsmeier had a problem, however, and one that is common to many innovative SMEs. His company is very small and writing the programs to convert the software design into a working solution would be a labour-intensive task requiring a team of specialists. "It would have been very costly to do this in Berlin," says Vilsmeier.

Fortunately, this is where the IRC network stepped in to help.

Meeting at the brokerage event

Katrin Schmohl, a consultant at IRC Northern Germany picks up the story, saying: "I knew that IRC Hungary were organising a transnational technology transfer brokerage event in Budapest, so I wrote to various ICT companies in our region inviting them to participate and learn about possible partners in Hungary." VSW were one of the companies who responded, leading Heinz Vilsmeier to make the trip to Budapest in June 2003.

It was a fortuitous journey, because one of the contacts Vilsmeier made was with Sándor Dankó, chief executive officer of a Hungarian software-development company called ITware. Vilsmeier and Dankó got talking, and soon realised that ITware could provide the expertise VSW was looking for at a cost that would make the collaboration commercially viable for both.

In September 2003 VSW and ITware signed a transnational technology transfer agreement allowing VSW's software designs to be executed by ITware's programmers. The agreement is a full technical and commercial joint venture, with the profits being split between the two companies. "We added our IT technology and software development expertise to Heinz Vilsmeier's knowledge of the requirements of clinics and hospitals, and his vast experience in clinical information systems," explains Dankó.

The collaboration has now produced the first software module for gathering medical history. It allows medical staff to collect data at the bedside, input it to their PDAs, with wireless transfer continuously storing the data on a central computer. Specialised security systems ensure that the information can easily be retrieved and added to, but only by the staff who are allowed to access any particular patient?s records.

Worldwide interest

The system, now called **VSWmobile®**, was demonstrated at MEDICA 2003, one of the biggest European fairs for medical technology. It attracted widespread interest from medical personnel from many different countries. A full clinical study testing the implementation of the system will begin in Berlin in June 2004. The partners also plan to build on the progress so far by developing a range of other software modules to widen the scope and variety of applications. Their work has the potential to revolutionise medical data storage, bringing it into the modern information technology world. Sony Business Europe has now also entered the partnership, and will provide the PDAs for the initial trial.

Without the help of the IRC network, however, VSW might still have been struggling to implement their software designs in a cost-effective manner. "The IRC is a great thing," says an appreciative Heinz Vilsmeier.

Katrin Schmohl of IRC Northern Germany reports that "the co-operation with VSW will continue." She believes that the IRC can give additional help to both VSW and Itware, to further explore and exploit opportunities for working with foreign partners.

Sándor Dankó of ITware agrees, adding: "The IRC has been a great help. Ever since the first meeting, Patricia Merei of IRC Hungary has monitored progress, helped by supplying information about MEDICA 2003, and is looking for more partners for further development."

Patricia Merei is the project manager at IRC Hungary who played a lead role in organising the brokerage event in Budapest where the two companies met. Reflecting on the wider importance of such events, she comments: "During the two-day event, 34 negotiations took place, based on the 24 profiles received from different countries, including Austria, Germany, Italy, and Hungary. These brokerage events offer a good platform for participants to get in direct bilateral contact with internationally active companies, universities and R&D organisations."

3.4. Commercial agreement with technical assistance

Networking in stained glass

A Maltese craftsman's idea has stimulated the development of an innovative computer-driven glass-cutting machine that may find a niche market worldwide. The initial idea was supported and transformed by the intervention of the IRC network.

A piece of work by G.M.C. Stained Glass.

"This story is a perfect example of networking," says Elizabeth Bain, innovation adviser at IRC Northern England. "It really involves two networks working together: the IRC network and the inter-company networks we can tap into."

One man in Malta

It began in Summer 2002 with G.M.C. Stained Glass, on the Maltese island of Gozo. This one-man stained glass design and manufacturing business was experiencing the problems of success. Proprietor George Camilleri was turning business away because he could not keep pace with customer demand. He had the idea of replacing his manual glass-cutting methods with a computer-driven laser cutting machine. But where could he find such a machine, or who might make one for him?

"I discovered the IRC by coincidence at a local trade fair," says Camilleri. It was a meeting that led to Joseph Grech, an executive at IRC Malta, drawing up a Technology Request to circulate Camilleri's requirements across the IRC network. Grech also conducted an extensive technology search, but could not find anything to meet Camilleri's needs.

Bill Faerestrand, an executive at IRC Scotland noticed the TR and immediately thought it might suit Mitchell Design Engineers (MDE), in Glasgow. "I know MDE very well," explains Faerestrand, "and they have a lot of laser and optics experience, so they were top of my list as soon as I read that Technology Request."

Moving through the networks

Faerestrand passed the TR to Alec Mitchell of MDE and mediated a lengthy dialogue between MDE and Camilleri to establish exactly what was required. "I made contact with lots of people doing laser cutting," says Mitchell, "and I also conducted a wide search for suitable technology over the web. I came to the conclusion that developing a laser cutting system would be extremely expensive and was not really the sensible way to proceed."

Mitchell began to think about other options. One of his own business contacts told him about a company in Glasgow that cuts out cards, and at this company Mitchell found a machine produced by Trucut Technology Ltd, in Manchester, England. Mitchell contacted Trucut, thinking they may be able to supply parts for a system that MDE could develop. "I discovered Trucut already had a machine for cutting rectilinear shapes in flat glass," says Mitchell. Trucut had considered developing more versatile systems to cut awkward shapes, but had not pursued the idea. Alec Mitchell's approach was the necessary stimulus for Trucut to start working with Camilleri and the contacts in the IRCs in Malta, Scotland and Northern England. Alec Mitchell was happy to pass the baton on to Trucut, in return for an appropriate fee for his development work.

Trucut's existing machines use computer-based designs to control a traditional glass-cutting wheel. "Cutting complex shapes in stained glass required extensive changes to the software," explains Graham Ride, Trucut's sales and marketing director. "We also had to refine the hardware to provide sensitive pressure regulation and improved lubrication of the cutting wheel."

Developing a machine to suit George Camilleri's requirements involved detailed negotiations, all completed at a distance thanks to the close involvement of the IRC as intermediary. Graham Ride reports that this help from the IRC was invaluable. He points out: "George Camilleri never had to fly over from Malta and we never had to take a machine over there during development. Working like this needed the IRC as a third party to help with everything, including handling the detailed contractual negotiations in an even-handed manner." In November 2003 Trucut and G.M.C Stained Glass signed a commercial agreement with technical assistance, which includes continuing work to refine the software that drives the cutting machine.

A technology that may spread

The end result of all this networking is that Camilleri has a machine that does what he needs, and he reports it is proving "very, very successful." His ability to handle orders has increased to the extent that he is now looking at possible markets across Europe, and is being assisted by the IRC with this search. Trucut are exploring the possibilities of applying the innovative technology more widely. "I take heart from the fact that if one person in Gozo can find a great deal of use for such a machine there must be many other people out there with the need for it," says Ride.

It could all have been so different, if Camilleri had simply been told that his original idea of a laser-based cutter was not feasible. Instead, the contacts made by the IRC network ensured a much happier outcome.

"George Camilleri was able to draw on all the resources of a network spread across all of Europe to meet his needs," says Joseph Grech of IRC Malta. "This is a great example of the help very small companies can get from the huge resources of the IRCs."

3.5. Manufacturing agreement

Extracting health from plants

The IRC network has brought together German specialists in the isolation of bioactive natural compounds and a Spanish producer of botanical extracts. They form a perfect match for the isolation, identification and production of novel health-promoting products derived from plants.

An extract of lemon verbena leaf, with bioactivity detected at Anoxymer's facility in Bavaria, is used to make the nutraceutical PlanoxL.

The natural chemistry of plants provides us with some of our most effective pharmaceuticals. Morphine, from the opium poppy, and the anti-cancer agent taxol, from the Pacific yew tree, are well-known examples. Plants also provide most of the vitamins and minerals we need to stay healthy. On the boundary between drugs and basic nutrients are a variety of plant compounds and extracts that may be used to promote well-being and health. Many such preparations have been termed "nutraceuticals", since they overlap the fields of nutrition and pharmaceuticals. Others are called "cosmeceuticals" since they span the boundary between cosmetics and pharmaceuticals. These substances are increasingly being incorporated in a range of "functional foods", which have been modified to perform a specific health or cosmetic function.

Testing for bio-activity

Anoxymer GmbH, a small spin-off company from the University of Regensberg, in Germany, are experts in testing materials for useful bioactivity, such as the ability to fight inflammation and act as anti-oxidants. They use a "Hen's Egg Chorioallantoic Membrane" test as a bio-assay to identify

chemicals with useful bioactivity. The membrane which separates a living chick embryo and yolk from the exterior is the actual test surface. "We can generate chemical damage on the membrane, then see what chemicals can stop that damage," explains Karim Balan, one of Anoxymer's managing directors. Chemicals found to have protective effects can then be used in functional foods to protect against inflammation and oxidising agents which have been linked to degenerative disease and ageing.

Calling on the IRC's help

Uwe Schussler, a scientific advisor at IRC Bavaria in Germany, met up with representatives of Anoxymer in February 2002 during a company mission to develop contacts between Spanish and Bavarian companies. The contacts available at this event were not what Anoxymer were looking for. Schussler says, "But I suggested to Anoxymer, that we could make an active search for the partners they needed, and that was the beginning of our contacts with them."

We have known of the IRC for years," says Balan, "but this is the first time we have used them to gain a transnational agreement." IRC Bavaria helped Anoxymer to draw up a technology offer (TO) to be advertised throughout the IRC network, offering Anoxymer's expertise to food and cosmetic companies wanting to screen plants for bio-active health ingredients.

Francisco Javier Gonzalez Sabater, a technical officer at IRC Cenemes in Spain, circulated this TO to several local companies. He maintains a database of local companies and their expertise and likely needs, as all IRCs do, to assist in matching them up with transnational partners. "Within a week, the local company Monteloeder confirmed their interest," says Sabater. Monteloeder and Anoxymer were immediately put in contact with each other by the IRCs.

A double agreement

Representatives of the two companies met several times. They discussed preliminary details for co-operation at the Health Ingredients Trades Fair in Paris, in September 2002. By January 2003, they were in a position to conclude two transnational technology transfer (TTT) agreements. One of these is a technical co-operation agreement, in which Anoxymer will test plant extracts provided by Monteloeder for useful bioactivity.

The other agreement is a manufacturing agreement, in which Monteloeder will manufacture "PlanoxL", an extract of the Lemon Verbena leaf which Anoxymer had already identified as having a high anti-oxidant potential and anti-inflammatory activity. "We will launch it by around mid-2004 as a nutritional supplement for joint health and as an anti-aging extract for the functional foods sector," says Karim Balan of Anoxymer.

In addition to collaboration on testing and production, the two companies will also work together to market their products. Monteloeder have good contacts in Japan which is a significant advantage for Anoxymer, who have no current links with that major market.

Satisfied clients

Vicente Cartagena, general manager of Monteloeder says, "We are very happy with the assistance provided to us by IRC Cenemes and we would certainly recommend the services of the IRC network to other companies." He feels the work of the IRC will allow his company to introduce very interesting products in the nutraceutical market.

Karim Balan also declares he is "very happy with the help given by the IRC". He adds that he would certainly recommend the service to other people.

Francisco Javier Gonzalez Sabater of IRC Cenemes says these two agreements offer an excellent example of the help the IRC can provide because "each company has specific skills suited to joint co-operation, but without IRC help Monteloeder would never have learned about Anoxymer's

technology." He also points out that the IRC were able to give Monteloeder assistance concerning regional financing programmes to cover some of the costs of the co-operation.

Both companies expect that the IRCs will continue to be of assistance to them in the future. In that context, Uwe Schussler of IRC Bavaria says, "there are some things under way that look rather promising, and we are also providing some support to Anoxymer to get financing from private and public investors."

Clever controls for HVAC systems

Intelligent controls for heating, ventilation and air conditioning systems have the potential to deliver several important benefits. They are energy efficient, compact and respond quickly to changes in temperature. The IRC network has helped to set up a manufacturing agreement between a Swedish heating company and a German electronics company to produce improved control units. As well as a better product, the deal promises increased turnover for both companies.

An ESBE actuator for controlling a valve in a heating or air conditioning system.

Global warming has brought more variable climatic conditions to many temperate zones, as anyone who sweated through the record high temperatures of the summer of 2003 knows. People now expect that their home and work environments should be comfortable whatever the conditions outside. ESBE AB of Sweden, a long-established company manufacturing a range of heating control

units, realised that the market was ready for compact but effective heating, ventilation and air-conditioning systems that could be easily retrofitted to homes and business premises. As it did not have the in-house knowledge to build more intelligence into its controls, ESBE turned to its local IRC for help.

Electronics on tap

IRC Central Sweden was the source of help in finding ESBE a partner outside Sweden. "ESBE is already quite a big company with 120 employees, but it still needed assistance to find the best supplier," says Lars Eskilsson, a consultant for IRC Central Sweden. "We worked together to prepare a detailed technology request, specifying the exact performance, shape and size of the HVAC control unit that they hoped to make. When we posted it on the IRC database we received a large number of replies from all over Europe."

"We reviewed all these offers," recalls Leif Tagesson of ESBE, "Some were very detailed, whilst others were just expressions of interest, so we short listed three of them. Eskilsson used the IRC network to put us in touch with these three through their local IRCs."

IRC Saxony was one of the first to spot ESBE's technology request. "As soon as I saw it, I realised the close match with our client SAIA-Burgess GmbH and sent it on to them," recalls Michael Naumann of IRC Saxony. "SAIA grew out of a former research centre for electrical mechanical engineering in the German Democratic Republic and was privatised 12 years ago after Germany was reunited. Now it has become the centre of competence for industrial drive solutions of a huge Swiss multi-national company and employs 169 people. Its combination of electronics design and advanced hardware production technology was just what ESBE needed."

On to agreement

SAIA emerged as the front-runner in September 2002. The two IRCs monitored negotiations, which proceeded rapidly. "We were able to help SAIA-Burgess with a technology audit to ensure that they matched ESBE's requirements and with plans for a visit to Sweden to assess the synergy of the partnership," adds Naumann. The two companies signed a manufacturing agreement before the end of the year and design and production of prototype new units began only a month later.

Both partners would already have known each other by reputation, which must have helped the agreement to proceed so quickly. But it took the IRC network to set the wheels in motion.

Intelligent control systems

ESBE's existing range of rotary, linear and thermostatic control systems run on hot or cold water. "We have always prided ourselves on our design," comments ESBE's Leif Tagesson. "Even if a system is not visible it can still look good. So if we could obtain more intelligent control of flow through the system, it could also be more compact and easier to install. The agreement with SAIA-Burgess will enable us to use their technology to motorise our own valves. By putting electronics into the actuators that alter the stroke of the valves, we can make them more responsive. The intelligence is in the set-up, which uses analogue control signals to set the valves rapidly. The system can therefore adapt itself very quickly through all the valves it controls. This speeds up the response time to changes such as a rise in temperature and so they are much more economical to run than systems with less sensitive actuators."

Potential for economic returns

This development is expected to bring significant economic benefits to both parties. "SAIA expects to provide electronics to the value of €500,000 and has improved its knowledge of HVAC design," says Naumann. ESBE is launching the first of its new range of linear valves and actuators, through promotion at a Trade Fair in Stockholm and an advertising campaign. "This is a robust and cost-

effective model that can handle moderate heating performance requirements for domestic and business use," says Tagesson.

The new model has already created one new job at ESBE and the estimated increase in turnover at the end of a year is €500,000. This agreement shows that IRCs can be beneficial to long-established large companies as well as smaller start-up businesses.