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Editorial

T. Johnson (GB)

The Editorial Committee hopes all our readers had a good summer, and are now fit for the ensuing fray. We have in recent Editorials drawn attention to litigation matters. There has been a development over the summer which our readers are no doubt fully aware of, but which we think bears repetition.

The Presidency of the EU has presented to the Working Party on Intellectual Property (Patents) a working document on a European Union Patent Court. This Court is proposed to be a Central Court (seat to be decided) with the possibility of local and/or regional divisions. The Court would have responsibility for infringement, validity and related issues such as declarations of non-infringement and compulsory licensing. What, our readers may well ask, has this to do with the EPC? The answer is, a great deal for the Court is proposed to have jurisdiction over not only the Community Patent, should that come to pass, but over European patents too. So this is of importance to the European Patent Organisation as a whole, of which our Institute is of course an integral part.

Moreover, as we have stressed before, the Office, particularly its Examiners, should be aware of the possibility of this Court coming into being, and hopefully they will be reminded that the rights they are examining are of vital commercial advantage and could well be litigated/licensed or otherwise dealt with as part of the value of the applicant company.

In short, the EPO process does not stop with examination, in many ways that is only the start of the process of protection. All of us should be aware of this.

Nächster Redaktionsschluss für epi Information

Informieren Sie bitte den Redaktionsausschuss so früh wie möglich über das Thema, das Sie veröffentlichen möchten. Redaktionsschluss für die nächste Ausgabe der epi Information ist der **3. November 2008**. Die Dokumente, die veröffentlicht werden sollen, müssen bis zum diesem Datum im Sekretariat eingegangen sein.

Die Ausgabe 4-2008 der epi-Information wird auf der *epi* Website ab Ende Dezember 2008 on-line verfügbar sein. Bitte beachten Sie, dass Sie das Heft Mitte Januar 2009 erhalten werden.

Next deadline for epi Information

Please inform the Editorial Committee as soon as possible about the subject you want to publish. Deadline for the next issue of epi Information is **3 November 2008**. Documents for publication should have reached the Secretariat by this date.

Issue 4-2008 of epi-Information will be available on-line on the *epi* website by the end of December 2008. Kindly note that your personal copy will reach you by mid-January 2009.

Prochaine date limite pour epi Information

Veuillez informer la Commission de rédaction le plus tôt possible du sujet que vous souhaitez publier. La date limite de remise des documents pour le prochain numéro de epi Information est le **3 novembre 2008**. Les textes destinés à la publication devront être reçus par le Secrétariat avant cette date.

L'édition 4-2008 de epi Information sera disponible en ligne sur le site de l'*epi* à la fin de du mois de décembre 2008. Merci de noter que vous recevrez votre numéro mi-janvier 2009.

European Union Patent Jurisdiction
epi Response to the EU Presidency papers 7001/08 of 27th February2008[1], and 7728/08 of 19th March 2008[2].

epi represents all European Patent Attorneys from the 34 EPC member states, including all member states of the European Union. Our members are generally experienced in all aspects of patent law and are in particular represent the vast majority of applicants, patent proprietors and opponents in proceedings before the European Patent Office.

We consider that in any European Union Patent Jurisdiction there should be a central first instance court and only a limited number of national or regional first instance courts.

We support the proposal to have only a central second instance court.

We support the proposal that each case should be heard at first instance by a panel including at least three judges and at second instance by a panel including at least five judges. We consider that all of the judges should be experienced in patent matters and at least one of whom should be technically qualified. The judges should all be of different nationality to ensure consistency of decisions and spreading of competence.

We consider that infringement and revocation actions should be heard together – there should be no split jurisdiction.

We also consider that the principle of party choice should be respected in relation to representation before the Courts so that a party is free to choose any suitably qualified representative.

In our response to the Commission's consultation, we expressed support for EPLA because EPLA was designed to achieve an optimum quality and uniformity and because the participation of technically qualified judges and party representatives made EPLA optimally suited for patent litigation.

We would stress that, for a court which will give pan-European decisions regarding infringement and validity, quality should be beyond doubt. We therefore believe that only judges who are experienced in patent litigation should be appointed.

The current divergence in national case laws underlines the need for an EU patent court system whose first instance divisions are able to harmonize litigation practice. Mixed panels, with at most one judge of each particular nationality, are thus believed to be essential to achieve uniformity.

It is important that an EU patent court system is arranged so that it can efficiently handle patent cases, which are both technical and legal in nature. Therefore, we believe it to be essential that a technically qualified judge is a full member of the judicial panel both in first and second instances.

It is important to have a large number of technical judges available to the EU Patent Jurisdiction so that, for each case, a technical judge in the technical field of the litigated patent is available. It may be that the EU Patent Jurisdiction cannot offer full-time jobs to technical judges in certain technical fields and it may therefore need to be allowed that technical judges can continue their current jobs, subject, of course, to the condition that they are not allowed to decide a case they have already dealt with in another capacity.

We also believe that the system will only operate efficiently and will only be able to harmonize litigation practice if, at each instance, matters of infringement and validity are heard together. We believe that a split system will not lead to efficient litigation.

Our members are specialized in European patent law and represent their clients in validity-related procedures (both *ex parte* and *inter partes*) before the European Patent Office, including its Boards of Appeal. In a number of EU Member States, patent attorneys have independent representation rights. As only two examples we would refer to German patent attorneys, who are allowed to represent their clients independently in validity-related procedures before the Bundespatentgericht and the Bundesgerichtshof and UK patent attorneys, who are allowed to represent their clients before the Patents County Court and, if they also have a UK litigation certificate, are allowed to represent their clients independently both in infringement- and validity- related court procedures. We submit that European patent attorneys should not lose any existing representation rights concerning European Patents once the EU Patent Jurisdiction has taken up its duties.

We therefore consider that:

– all European patent attorneys should be able to independently represent their clients in validity-related procedures before the proposed EU Patent Jurisdiction without needing any further professional qualification; and
– that all European patent attorneys should be able to represent their clients in infringement-related cases before the EU Patent Jurisdiction if they have an appropriate additional qualification (e.g. as granted by CEIPI or a UK patent agent litigators certificate).

We would be pleased to discuss this matter with you should you require further explanation of our views.

1 (http://register.consilium.europa.eu/pdf/en/08/st05/st05954.en08.pdf) „EU Patent Jurisdiction – Main features of the Court system (first part); Remedies, procedures and other measures (second part)"

2 (http://register.consilium.europa.eu/pdf/en/08/st07/st07728.en08.pdf) „European Union Patent Jurisdiction – Preliminary Set of Provisions for the future legal instrument"

Representation in National Proceedings for Patent Matters

(Many entries have not been verified. Where there are blanks, the information has not been received.)

	PA title protected	Membership of Institute compulsory	Anyone can rep. pat. applicant before P.O.	PA must have tech. degree	PA must pass exam.	PA can rep. pat. applicant before P.O.	Atty-at-law can rep. pat. applicant before P.O.	Anyone can rep. in Court	PA can rep. in all Courts	PA can rep. in some Courts	PA with higher qual. can rep. in all Courts	PA can plead as of right in Court (where not allowed representation)	PA can assist as of right in Court (where not allowed representation)	Privilege for atty-at-law	Privilege for PA	PA and atty-at-law can practise together	Poss. to cumulate titles
AT	Yes		Yes[1]			Yes	Yes	No	No	In validity suits	–	No	Yes	Yes[3]	Yes[3]	No	No
BE	No	No	No	Yes	Yes	Yes	Yes	No	No	No	No	No	No		No[19]	No	Yes[13]
BG	No		No	No	Yes	Yes	No	No	No	No	No	No	No			Yes	
CH	No[20]	No	Yes[18]	No[19]	No[19]	Yes	Yes	No	No	No	No	No	No[19]	Yes	No[5]		
CY	No	No	No	No	Yes[20]	No	Yes	No	No	No	No	No	No	Yes	No	No	
CZ	Yes	Yes	No	No	Yes	Yes	Yes	No	No[8]	Yes[8]	No	–	–	Yes	Yes	No[2]	Yes
DE	Yes	Yes	No	Yes	Yes	Yes	Yes	No	No	In validity suits	–	Yes	Yes	Yes	Yes	Yes	Yes
DK	No	No	Yes			Yes	Yes	No	No	No	No	No	No	No	No		
EE	Yes							No	No[9]	Yes[9]				Yes	Yes		
ES	Yes	No	No	No	Yes	Yes	Yes	No	No	No	No	No	No	No	No	Yes	Yes
FI	Yes	No	Yes	Yes	No	Yes	Yes	Yes	Yes	–	–	–	–	Yes	No	No[17]	No[17]
FR	Yes		No	Yes	Yes	Yes	Yes	No	No	No	No	No	No	Yes	Yes	No[14]	No
GB	Yes	No	Yes	Usually[19]	Yes	Yes	Yes	No[22]	No	Yes[23]	Yes, P.A.L.[15]	No	No[22]	Yes	Yes[16]	No[14]	Yes
GR	No	No	No	No	No	Yes[4]	Yes	No	No	No	No	No	No	Yes	No	Yes	Yes
HR																	
HU	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	–	–	–	–	Yes	Yes[3]	No[10]	Yes
IE	Yes	No	Yes[1]	No	Yes	Yes	Yes	No	No	No	No	No	No	Yes	Yes	No	Yes
IS	No	No	Yes	No	No	Yes	Yes	No	No	No	No	No	No	Yes	No	Yes	–
IT	Yes	Yes	No	Yes	Yes	Yes	Yes	No	No	No	No	No	No	Yes	Yes	No	Yes
LI			No			Yes	Yes	No	No[9]	Yes[9]	–	–	–	Yes[6]	Yes[6]	Yes	Yes
LT						Yes			No	No	No	No	Yes	No	No		
LU	Yes	No	No	Yes	Yes	Yes	Yes	No	No	No	No	No	No	Yes	No	No	Yes
LV	Yes	No	Yes[19]	Or legal	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	?	Yes	Yes

MC			Yes			Yes	Yes	No	No	–	–	–	–	Yes	No		
MT																	
NL	Yes	Yes	No[12]	Yes	Yes	Yes	Yes	No	No	No	–	Yes	Yes	Yes	Yes	Yes	Yes
NO																	
PL	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	No	No	No	No	No	No	Yes
PT	Yes					Yes	Yes	No	No	No	No	No[7]	No[7]	Yes	No	Yes	Yes
RO	Yes	Yes	No		Yes	Yes	Yes[16]	No	No	Yes[16]	–	No	No	Yes	Yes[14]	Yes	Yes
SE	No	No	Yes	No	No	Yes	Yes	Yes	Yes	–	–	–	–	Yes	Limited	–	–
SI	Yes	No	No	Yes	Yes	Yes	No	No	No	No	Yes	No	Yes	Yes	Yes[11]	No	Yes
SK	Yes	Yes	No	No	Yes	Yes	Yes	No	No	No	No	No	No	Yes	No	Yes	Yes
TR		No	No	No	Yes	Yes	No	No	No	No	No	No	No	Yes	Not yet	Yes	Yes
EP	Yes	Yes	Yes	Yes	No	Yes	–	–	–	–	–	–	–	–	Yes	–	–

1 unless for gain or run as a commercial undertaking or run as professional undertaking
2 prohibited by internal regulation of Chamber of Attorneys-at-Law; however, not by Chamber of Patent Attorneys
3 except in criminal proceedings (and patent infringement can be a criminal offence)
4 but there are none
5 never decided
6 none has to show documents
7 but often does so
8 not on appeal (highest court only?)
9 in first and second instances (not in third instance)
10 but can have common ownership
11 privilege applies in civil proceedings, but is questionable whether it applies in criminal proceedings
12 after filing including after grant (proprietor instead of applicant); applicant itself does not need a representative; filing can be done by anyone
13 but none
14 permitted under Legal Services Act 2007 but not yet in force
15 but no rights of audience in High Court or Court of Appeal and no rights at all in House of Lords
16 limited to advice on IP matters
17 an exception could be made by the Society of Attorneys-at-Law
18 if resident or place of business in Switzerland
19 law in preparation
20 attorney-at-law bar exam
21 a technical degree is the norm but:
can be replaced by /;Law Society Final Examination/(, Bar Final Examination. Any other qualification (UK and non-UK) commonly accepted in the UK as being equivalent to a 1 st Degree in the UK/(; or can be waived: /;Persons with substantial, relevant work or educational experience may apply to the Baord for it in its discretion to waive the requirement for educational qualifications set out in paragraphs 6 and 7. The Board's decision shall be given in writing./(In practice very few do not have a technical degree.
22 In certain limited circumstances a self-represented person may bring along an adviser who does not however have rights of audience but may assist the self-represented person [a /;McKenzie friend/(]. Additionally, in appropriate circumstances, the court has the right to hear an unqualified representative, but this rarely happens.
23 In Patents County Court, and on appeal from the Comptroller to the High Court in patent matters, but no other rights.

2008-05-12

Report of epi Committee on Biotechnological Inventions for Council meeting Vilnius May 2008

Ann De Clercq (BE)
Chairperson

The Biotech Committee has last met on October 23rd 2007 in Munich. The following matters were discussed during this meeting and thereafter by email correspondence.

1. EPC2000

1.a. R. 30 EPC

OJEPO Special Edition 3 comments on the scope of Rule 30. It does not seem to be entirely clear concerning which sequences need to be in the listing. The EPO seems to have been inspired by the PCT Rules; it wants to force applicants to submit the listings on filing. The late fee is €200; if one misses the deadline one can use further processing. OJEPO seems to be inconsistent; initially it refers to sequences claimed or not, but publicly accessible sequences won't need to be disclosed if they are on a database (but then you will need to provide the accession numbers).

Although the original EPO Rules, when sequence listings were first required, only demanded sequences relating to the invention, later (in 1998) the EPO amended the Rules to cover all sequences, just like for PCT cases.

The Biotech Committee is concerned that the EPO will ask for replacement listings (and then incur a late fee) for only small 'errors', e.g. a sequence listed as 'human' rather than 'homo sapiens'. We think that a late fee is only payable if the EPO invites you, so if you file a new listing soon after filing, and before the invitation, then perhaps we don't need to pay the fee. Also no late fee is payable if the data carrier is damaged; the EPO will ask for another one.

We feel punished as these cases relate to biotechnology. We can always argue for non-payment of the fee, even though we think the EPO will not agree. Perhaps we could also ask for a possible extension. It seems that if the sequence listing is not in the case as originally filed then it won't be published with the specification, as it will not form part of the description (Rule 30(2)).

An additional problem is that Formalities Officers review the sequence listings, and not the Examiners, and they do not appreciate what the listing is for or whether it relates to the invention. Also we will not be able to delete sequences in a listing (or at least the original listing will still remain, as well).

The real risk is if you have a very strict interpretation of the rules, one could lose a case due to a technicality. We thus want some leniency otherwise the provision will be unfair. What happens when the invention changes, e.g. during prosecution – will we need to file another listing (and pay a late fee). And why only accession numbers? The EPO will already have sequences from prior patent applications (EP, WOs etc). We will also need the version or database release number. Perhaps the EPO wants all sequences in the listing in case you file a divisional to a previously unclaimed sequence. The Biotech Committee has put a lot of these points to the EPO in the meeting held with the Biotech Directors held on 24th October 2007, but they did not seem to be aware of these issues (yet) and we clarified our concerns.

1.b. Article 124

This point was discussed by our Committee and concerns the EPO's power to ask applicants for details of prior art on other cases 'to which the invention relates'. Apparently the AU PO withdrew their requirement for prior art details only yesterday. At what stage will Article 124 apply? Will this apply before or after the search report, or during examination?

1.c. 2nd and Further Medical Use Claims

We think that both types of claims will be available, even for pending cases. This was checked with the EPO directors in our meeting of October 24th 2007 and they seemed to agree.

1.d. T1020 and its application

It was discussed within the Biotech Committee whether this decision will still be applicable to the new style medical use claims?

2. EU Directive on biotechnological inventions and interesting cases

A case was reported which was before the Kinkeldey Board concerning late filed evidence for obviousness purposes (T433/05). We also noted (T1466/05) from Ellingham's board on sufficiency (harsh) on scope of antibody claims (here; only specific antibodies allowed).

Articles 53a and 53b

T1213/05 (Myriad Genetics case, BRCA gene) was discussed by our Committee. There were priority problems. A disclaimer of the priority sequences didn't work, nor did product by process claims (added matter as probes not originally disclosed for that purpose). Patentee was only allowed the claims he had on opposition (which were rather narrow, only to fragments). So they confirmed the strict approach to priority. The morality arguments advanced were all dismissed.

The EU has commissioned a report into the implementation of the Directive. It should be available soon and it will be interesting to see how they deal with the variance in implementation in certain EU States. Bo Hammer-Jensen was thanked for all his work in providing updates. We will prepare a report for EPPC summarizing the deviations in the implementation of the EU Biotech Directive in certain EPPC countries. Maybe we could get this published in the epi journal for information purposes of the epi members. All Members were requested to keep the committee updated. There is a case before the Courts concerning the application of the new rules to applications filed before the law came into force. It has been appealed.

3. Meeting with EPO Biotech Directors

The EPO had approved the minutes of our meetings with them of 2005 and 2006. A consolidated report covering both meetings has in the meanwhile been published in epi information.

Our last meeting with a delegation of EPO DG2 biotech directors took place on October 24th, 2007. Mrs. Gabriele Leißler-Gerstl from EPPC also attended. The minutes of this meeting will very soon be reviewed by the EPO and we intend to have them published this year still in epi information.

Our next meeting with the EPO Biotech Directors still needs to be scheduled and will possibly be combined with our Committee meeting and the Munich Council meeting.

4. Eurotab Meetings, etc

EPPC is asked to inform us of any relevant biotech matters that come up in meetings that they are aware of.

5. Sequence Listings

Siobhan Yeats (EPO Director) has raised this point to our Committee. We think she may want us to comment on whether we would accept filing of sequence listings electronically *only*. We might want to resist – are they pushing us towards electronic filing? Perhaps we should agree if there is no late fee. The Biotech Committee is of the opinion that anything that restricts the options of the applicant should be resisted.

6. Amicus Curiae briefs

The EPPC was responsible for preparing the amicus brief on G 1/07 (surgical methods, remotely touching upon diagnostic methods) and the Biotech Committee was responsible for the brief on G 2/07 (essentially biological processes; Art. 53b EPC), with the Biotech Committee assisting the EPPC on G 1/07 and the EPPC assisting the Biotech Committee on G 2/07. For G 1/07 and G 2/07 the briefs were filed respectively by end October and end December 2007.

No news yet on the outcome of G 2/06 (stem cells, WARF case), OP are scheduled for this June 2008. In the Edinburgh case (T1079/03) the Appeal Board had OP on 20 and 21 November 2007. The appeal is now withdrawn and the patent has been maintained on the basis of the claims upheld by the Opposition Division.

There has recently been a further referral to the Enlarged board, which could be combined with G 2/07. It is T1242/06 (Israel Agriculture), the Opponent is Unilever; EP-B-1,211,926. This case is now known as G 1/08. The Biotech Committee will decide shortly to prepare a possible new draft further amicus brief, if needed, and will pass this on to the EPPC for approval. There are interesting questions as to whether new Rule 23b(5) affects the interpretation of Art. 53b.

There is one further referral (G 2/08; dosage regimes; T1319/04) which the EPPC has asked the Biotech Committee to possibly comment on. This matter will be further discussed with EPPC.

7. Disclaimers

There have been some discussions on this aspect by the Galligani Board which is why the Biotech Committee got involved. This Board had been quiet on undisclosed disclaimer apparently. (T1102/00, T1050/99, T236/01 and T868/04). The point was originally noticed by Thierry Debled (BE). We think that if a feature is presented positively only then you cannot interpret that negatively and use this as a disclaimer. EPPC has asked us for a paper by the Spring, but this appears to be a general and not biotech, issue. Gaby Leissler-Gerstl would further liaise with EPPC about timing and who is to take this forward. We also asked the EPO if they have detected a trend and what instructions they are giving to their Examiners.

8. Biodiversity

More countries are introducing requirements for material of local origin such as Brazil, India, and Andean Pact Countries. Bo Hammer-Jensen is following up this issue for the Biotech Committee.

Report of *epi* Harmonisation Committee

Francis Leyder (BE)
Chairman

The Harmonisation Committee deals with all questions concerning the worldwide harmonization of Patent Law, and in particular within the framework of WIPO.

1. As reported previously, the Standing Committee on the Law of Patents (SCP) held its 12th Session in Geneva from 23 June to 27 June 2008. *epi* was represented as observer. The main agenda item was to discuss the information contained in a lengthy report prepared by WIPO (see *epi* Information 2/2008, page 57; the document is available from the WIPO website: http://www.wipo.int/meetings/en/details.jsp?meeting_id=15486).
2. Many delegations recognized that that document constituted a good basis for discussion. The SCP identified a non-exhaustive list of issues for further elaboration and discussion in the future (in no particular order):
   - Economic impact of the patent system
   - Transfer of technology
   - Competition policy and anti-competitive practices
   - Dissemination of patent information (including the registration of licenses)
   - Standards and patents
   - Alternative models for innovation
   - Harmonization of basic notions of substantive patentability requirements (e.g. prior art, novelty, inventive step, industrial applicability, disclosure)
   - Disclosure of inventions
   - Database on search and examination reports
   - Opposition system
   - Exceptions from patentable subject matter
   - Limitations to the rights
   - Research exemption
   - Compulsory licenses
   - Client-attorney privilege
   - Patents and health (including exhaustion, the Doha Declaration and other WTO instruments, patent landscaping)
   - Relationship between the patent system and the CBD (Genetic resources/Traditional knowledge/disclosure of origin)
   - Relation of patents with other public policy issues
3. As a result of the discussion, the SCP agreed that the document would remain open for further discussion at the next session of the SCP [planned during the first quarter of 2009]. The list of issues (see above) would remain open for further elaboration and discussion at the next session.
4. The SCP asked WIPO to establish, for the next session of the SCP, preliminary studies on four issues, which are not to be considered prioritized over the other issues:
   - Dissemination of patent information (*inter alia* the issue of a database on search and examination reports);
   - Exceptions from patentable subject matter and limitations to the rights, *inter alia* research exemption and compulsory licenses;
   - Patents and standards; and
   - Client-attorney privilege.
5. Finally, the SCP suggested that the Director General consider for 2009 organising a Conference on issues relating to the implications, including public policy implications, of patents on certain areas of public policy, such as health, the environment, climate change or food security.
6. At European level, the 34th meeting of the Committee on Patent Law (CPL), at which *epi* was also represented as an observer, was an opportunity for the national delegations, the EPO and the observers to informally exchange views on the harmonisation process.

epi Excess Liability Insurance 2008/2009

On 1 October 2008 the *epi* Excess Liability Insurance scheme will go into its twentieth year of existence. It aims to give better insurance coverage at a reasonable price to *epi* members.

The indemnity of basic professional liability insurance schemes is often limited to EUR 1.022.584. Therefore, the *epi* Excess Liability Insurance scheme indemnifies losses as far as they exceed EUR 1.022.584/equivalent. Its limit of indemnity is a further EUR 1.533.876 per loss so that – together with basic insurance – a total loss of EUR 2.556.400 is covered.

There is a collective indemnity limit to EUR 15.338.756 p.a. for all participating *epi* members which according to insurance calculations will hardly be reached. The premium for the *epi* Excess Liability Insurance scheme for the insurance year 2007/2008 amounts to **EUR 402,64** plus legal insurance tax.

Persons wishing to join the *epi* insurance policy should directly contact the broker, Funk GmbH, for all policy matters, application forms etc., and payments. Please make your payments to the broker's account mentioned herafter, free of bank charges, indicating the following reference „*epi* insurance 01 0047425000" (this is the *epi* client number with the broker) as well as your name.

epi invites each member to carefully consider joining the *epi* Excess Liability Insurance scheme since clients' claims may easily reach the sum of EUR 2.556.460 They may ruin your economic and professional situation if no adequate insurance cover is provided for. The *epi* Excess Liability Insurance scheme improves your insurance cover at a reasonable price and provides insurance cover for you as an *epi* member in all thirty-four EPC contractual countries regardless of where you exercise your profession.

For further information on the *epi* Excess Liability Insurance please contact:

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Next Board and Council Meetings

Board meetings:

77th Board Meeting: 11 October 2008, Barcelona

Council meetings:

65th Council Meeting: 24-25 November 2008, Munich
66th Council Meeting: 23 May 2009, Luxembourg

epi Artists Exhibition 2009

As reported in issue 2/2008 of *epi* Information the next *epi* Artists Exhibition will be held from

19 February to 6 March 2009
at
European Patent Office
PschorrHöfe building
Bayerstrasse 34, Munich.

A prerequisite for the exhibition is a large participation of artists from various countries. All creative spirits among the *epi* membership are invited to participate. Please disseminate the information!

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RESULTS OF THE EUROPEAN QUALIFYING EXAMINATION 2008

FIRST SITTING – Examination in full and modular sitting

Nationality	Candidates (in total)	PASSED				FAILED			
		Total	%	Examination in full	modular sitting (2modules)	Total	%	Examination in full	modular sitting (2modules)
AT	8	4	50,0	4	0	4	50,0	4	0
BE	12	1	8,3	0	1	11	91,7	5	6
CH	5	2	40,0	1	1	3	60,0	1	2
DE	219	87	39,7	67	20	132	60,3	101	31
DK	10	1	10,0	1	0	9	90,0	4	5
ES	35	9	25,7	4	5	26	74,3	10	16
FI	5	1	20,0	1	0	4	80,0	2	2
FR	72	38	52,8	24	14	34	47,2	26	8
GB	90	45	50,0	39	6	45	50,0	36	9
GR	1	0	0,0	0	0	1	100,0	0	1
HU	2	1	50,0	0	1	1	50,0	1	0
IE	6	1	16,7	1	0	5	83,3	5	0
IT	43	15	34,9	5	10	28	65,1	16	12
LU	1	1	100,0	1	0	0	0,0	0	0
NL	31	17	54,8	12	5	14	45,2	14	0
PL	3	2	66,7	1	1	1	33,3	1	0
PT	3	1	33,3	1	0	2	66,7	1	1
RO	1	1	100,0	1	0	0	0,0	0	0
SE	26	10	38,5	6	4	16	61,5	13	3
SK	1	1	100,0	1	0	0	0,0	0	0
AU	1	0	0,0	0	0	1	100,0	1	0
CA	1	1	100,0	1	0	0	0,0	0	0
CN	2	0	0,0	0	0	2	100,0	2	0
RU	1	1	100,0	0	1	0	0,0	0	0
UA	1	0	0,0	0	0	1	100,0	1	0
US	2	2	100,0	2	0	0	0,0	0	0
ZA	1	0	0,0	0	0	1	100,0	0	0
TOTAL	**583**	**242**	**41,5%**	**173**	**69**	**341**	**58,5%**	**315**	**96**

RESITTING -Examination in full
Total number of candidates: 55
Passed: 3 (5,45%); Failed: 52 (94,55%)

RESITTING – Examination in part
Total number of candidates: 1207
Passed: 428 (35,46%); Failed: 779 (64,54%)

The Assessment of priority cannot demand more than science can deliver or: How to apply the photographic approach in consideration of the resolving of the pictures taken[1]

Hans-Rainer Jaenichen[2] (DE) and Olaf Malek[3,4] (DE)

In the assessment of priority, the EPO practices a photographic approach. However, this does not necessarily mean that there must be literal identity. Each picture has its resolving power outside of which subject-matter is indistinguishable – in all technical areas, not only in biotechnology.

A. Introduction

According to Article 87(1) EPC, a claim of a European patent application is only entitled to a priority if the priority document already discloses the same invention as the one claimed in the European patent application. However, in many cases, the critical question arises: What is „the same invention"? The Opinion of the Enlarged Board of Appeal in *G 2/98*[5] is generally understood as answering this question by stating: it is the „photographic priority approach" that matters. This approach brings the allocation of priority in line with the assessment of novelty for which the EPO also applies a congruent „photographic approach". Such a narrow and strict interpretation of the concept of „the same invention" is considered to be necessary in order to comply with the principles of equal treatment of the applicant and third parties and to satisfy the principle of legal certainty (see *G 2/98*, point 9 of the Reasons). However, evidently, legal certainty about technical contents cannot go further than the scientific certainty that it is inevitably based on.

This logical necessity has been accepted without hesitation by the Technical Boards in the biotech arena for claims to proteins by taking into account the possible preciseness of protein analysis, i.e. when applying the photographic approach, the resolving power of the picture was taken account of. In the area of patenting DNA, however, the Boards have traditionally preferred to require complete identity of the DNA sequence disclosed in the priority document with that disclosed in the later application as filed. However, in none of these decisions, the respective Board has discussed that DNA sequencing is an error-prone measuring method, too, and whether, accordingly, priority rights could possibly be valid despite DNA sequence deviations within the methodological margin of error.

The limited preciseness of DNA sequencing as an influential fact of great relevance has been argued in detail by the Patentee in the diagnostically important breast cancer gene (BRCA1) case *T 1213/05*[6]. As is known, this case has been of outstanding symbolic political relevance – even the European Parliament felt obliged to discuss it and to criticize not only Patentee for filing the application, but also the EPO for granting a patent for the BRCA1 gene[7]. After revocation of a first BRCA1 patent in the first instance, an anti-gene patenting campaigner (the scientific expert of one of the opponents, named inventor on PCT application WO 98/49324 (PCT/EP98/02593) for a diagnostic target, apparently interested in breast cancer diagnosis) complimented the EPO for what he considered as a tightening of its criteria for the patenting of diagnostically relevant genes and methods and discouraging such patent claims, but still expressed that this was not enough[8]. Innumerable anti-BRCA1-patent articles got published. Opponent Greenpeace has emphatically pleaded that patenting the BRCA1 gene was life threatening for women. Even the WIPO Magazine said quite frankly that the BRCA1 cases of Myriad Genetics, Inc., and the University of Utah, demonstrated how technical grounds of patentability act as important safeguards of the public interest[9]. It must be very difficult for the EPO to come to truly independent decisions given all this public pressure.

More precisely, in *T 1213/05*, the EPO's Technical Appeal Board 3.3.04 had to consider whether a claim directed to a DNA encoding the BRCA1 protein was entitled to the claimed priority. The Board applied a strict identity requirement and denied this because of 15 nucleotide deviations between the 5592 nucleotide

1 submitted for publication on April 17, 2008; the present authors' view is their personal one.

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4 We are grateful to Dr. Christian Gugerell, European Patent Attorney, and to Dr. Niels Hölder, Rechtsanwalt, Vossius & Partner, Munich, Germany, for supporting us

5 All EPO Board decisions cited in this article are available from the EPO's homepage at www.epo.org

6 T 1213/05, „Breast and ovarian cancer/UNIVERSITY OF UTAH", taken by TBA 3.3.04 on September 27, 2007, written decision notified to the parties on December 12, 2007 and available from www.epo.org since February 11, 2008. Note that the authors of this article represented the Patentee in this case.

7 European Parliament Resolution on the patenting of BRCA1 and BRCA2, 04.10.2001

8 Matthijs, The European opposition against the BRCA gene patents, Familial Cancer 5 (2006), 95-102

9 WIPO Magazine, issue 4/2006, http://www.wipo.int/wipo_magazine/en/2006/04/article_0003.html

DNA sequence disclosed in the priority document and the one disclosed in the European patent appication, with the consequence that the claimed DNA lacked novelty (see section C.12, infra, for a detailed discussion). Only two weeks later, however, the EPO acknowledged in another Technical Board's decision, *T 250/06*[10], entitlement of a DNA claim to the relevant priority under *G 2/98* despite deviations in the DNA sequence. Thus, there must obviously be room for acknowledging priority under *G 2/98* despite DNA sequence deviations, if one wished to do so.

Given the scientific fact that DNA sequences frequently contain errors conditioned by the available sequencing protocols and given the encouraging decision *T 250/06*, we think that the hitherto applied practice to deny priority entitlement in case of one or more sequence deviations between the priority document and the later application as filed requires a critical revision. Fairness requires equal footing with what has been practiced in protein-chemistry before and after *G 2/98*. Doing so only depends on accepting that the photographic approach to priority and novelty cannot be more precise than the resolving power of the pictures taken.

B. Technical Background

Biological inventions relating to DNA or amino acid sequences play an important role in the intellectual property portfolios of the life science industry. In this context, „sequence" means a one-dimensional structure in which the monomers (nucleotides in the case of DNA and amino acids in the case of proteins) are arranged in a fixed order. A sequence is a chemical structural formula of the respective macromolecular compounds (i. e. DNA or proteins). DNA consists of four possible monomers: deoxyadenosine (abbreviated: A), deoxycytidine (C), deoxyguanosine (G) and deoxythymidine (T). They are linked together along a chain of alternating phosphate and sugar (deoxyribose) residues. It is furthermore important to understand that DNA sequences have a start and an end along which the genetic information is read by the cellular machinery. The start is conventionally called the 5'-end and the end the 3'-end. An exemplary DNA may have the following sequence:

5'-ATGGATTTATCTGCTCTTCGCGTTGAAGAA-3'[11]

As one knows from the famous Watson-Crick DNA double-helix structure, DNA normally exists in two aligned strands, i. e. two sequences, the coding strand and the complementary anticoding strand, A's binding to T's and G's to C's via hydrogen bonds, forming a curled, zipper-like ribbon. Conventionally, only the coding strand is denoted. DNA sequences that are described in biotechnological patents are typically much longer and may consist of hundreds or thousands of monomers.

Proteins are macromolecules made of one or more amino acid sequences, each consisting of a basic repertoire of 20 possible types of monomers[12]. They are also directional, the start called N-terminus and the end C-terminus. A short amino acid stretch may for example read:

Met-Asp-Leu-Ser-Ala-Leu-Arg-Val-Glu-Glu
or in the one-letter code:
MDLSALRVEE

DNA and amino acid sequences are linked to each other in that the DNA sequence carries the information for what the amino acid sequence is supposed to be. This relationship is generally referred to as „the DNA sequence encodes the amino acid sequence". In nature, decoding is done by enzyme and protein complexes which read the genetic information from the DNA sequences, transcribe it into RNA information („transcription") and then translate it into amino acid sequences („translation"), thereby synthesizing them. On paper, DNA sequences can be translated conceptually because, according to the universal genetic code, three specific nucleotides (the so-called „codon") each encode one specific amino acid residue. This coding pattern extends along a so-called open reading frame within the DNA sequence from the first to the last codon triplet.

Our above exemplary sequences are accordingly linked in the following manner:

5'-ATG GAT TTA TCT GCT CTT CGC GTT GAA GAA-3'
M D L S A L R V E E

When an inventor isolates a new protein-encoding DNA, the sequence of the DNA is normally determined in the first place. For this purpose, the so-called dideoxy chain-termination method developed by Sanger is conventionally applied, which – meanwhile highly automated – showed to be powerful enough for determining the sequence of entire genomes[13]. Without wanting to explain this method in detail, it is certainly of avail to understand that the Sanger method employs a DNA-synthesizing enzyme in order to partially reproduce the DNA sequence to be determined. From the pattern of the resulting DNA fragments, the target sequence can be derived. The pattern is determined by electrophoretically separating the fragments according to their size in a certain medium and detecting them subsequently (for example by optical fluorescence detection). In one sequencing run, several hundreds of nucleotides can be read. For a typical protein-encoding DNA, it is nec-

10 *T 250/06, „Opioid receptor genes/UNIVERSITY OF CALIFORNIA"*, taken by TBA 3.3.08 on October 11, 2007, written decision notified to the parties on October 27, 2007 and available from www.epo.org since December 24, 2007

11 The first 10 codons of the BRCA1 coding sequence as disclosed in SEQ ID NO: 1 of EP-B1 705 902.

12 The 20 possible monomers of amino acid sequences are alanine (abbreviated Ala or A), arginine (Arg or R), asparagine (Asn or N), aspartic acid (Asp or D), cysteine (Cys or C), glutamic acid (Glu or E), glutamine (Gln or Q), glycine (Gly or G), histidine (His or H), isoleucine (Ile or I), leucine (Leu or L), lysine (Lys or K), methionine (Met or M), phenylalanine (Phe or F), proline (Pro or P), serine (Ser or S), threonine (Thr or T), tryptophan (Trp or W), tyrosine (Tyr or Y), and valine (Val or V).

13 see, e.g., http://en.wikipedia.org/wiki/DNA_sequencing#Chain-termination_methods

essary to perform a lot of overlapping runs, determining the sequence of both DNA strands, in order to arrive at the actual DNA sequence with an acceptable accuracy.

However, as in every measuring method, DNA sequencing is error-prone. For example, certain types of sequence motifs, such as G/C-rich regions or highly repetitive DNA, may form local structures which lead to an inaccurate enzymatic reproduction of the target DNA sequence or hamper a sound resolution of the synthesized fragments. Even today, billions of nucleotides of DNA sequence being read and sophisticated techniques having been developed which allow the sequencing of a human genome within two months[14], discussions on methodological problems affecting the accuracy of the DNA sequencing process still continue. Quality assessments of up-to-date DNA sequencing reports showed less than 100 % accurate data[15,16]. In 1997[17], the scientific community engaged in this field agreed upon a standard for an improved sequence accuracy of so-called „finished sequences". According to this standard, as of 1997, a finished sequence should be no less than 99.99 % accurate (i. e. an error rate of no more than 1/10,000; ambiguities are to be counted as errors [15,16,18]). A finished sequence is defined as

> „to refer to a region of DNA sequence on which, after a best-faith effort by the sequencing laboratory to resolve all difficult regions and to generate a high quality, completely continuous representation, no further sequencing will be done."[15]

However, the quality assessments[15,16] showed that, even today, the standard aimed at in 1997 is not met in every case for finished sequences.

Furthermore, since preliminary results of sequencing projects (so-called „working drafts") were also held to be very useful, it was decided in a workshop of genome sequencing institutions that not only finished sequences, but also such „working drafts" should be published[15]. For them, the quality standard agreed upon was a sequence accuracy of at least 99.00 %[19].

In summary, it is generally accepted in the scientific community and a non-disputed fact that DNA sequencing – which is the mostly used basis for defining DNA inventions in patent applications – has a certain margin of experimental error. This needs to be taken into account in the priority assessment.

14 James Watson's genome was sequenced within two months; see Singer, Technology Review 2007, http://www.technologyreview.com/Biotech/18809/

15 Documentation on „Human Genome Sequence Quality Standards", http://www.genome.gov/10000923

16 Schmutz et al., Nature 429 (2004), 365-368

17 The first priority document of the patent application that eventually gave rise to *T 1213/05* was filed on August 12, 1994.

18 Bermuda Standards, http://www.gene.ucl.ac.uk/hugo/bermuda2.htm

19 The quality standard was set to be that the total number of Phred-20 bases in contigs greater than 1 kb must be at least four times the size of the clone insert (see ref. 15, page 5, last paragraph), which means an error rate of less than 1 % or an accuracy of at least 99.00 %.

C. T 1213/05 and Further Relevant Cases in Their Context

The established principle in the EPO is that the novelty assessment and the allocation of priority are done by the same approach: a photographic one. The question is, what is the resolving power of the photograph and does it have to be taken into account?

1. *T 73/88, „Snackfood/HOWARD", November 7, 1989, Technical Board 3.3.01, OJ EPO 1992, 557*[20]

T 73/88 dealt with a claim defining a snackfood inter alia by the feature „containing at least 5 % by weight of oil or fat". The priority document did not disclose 5 % but 8-20 %. The Board nevertheless acknowledged entitlement to the priority and formulated the principle that there is no loss of priority if the claim of the later application contains a technical feature not present in the priority document, provided that this feature does not change the character and nature of the claimed invention (Headnote I). Accordingly, the addition of non-essential features which merely limit the scope of protection was held not to invalidate a priority.

The addition of a feature, especially of a numerical value, not disclosed in the priority document, as in *T 73/88*, clearly differs from cases of deviating DNA sequences, as discussed herein. The 5 % were not within the margin of error of measuring 8-20 % oil or fat. The fact situation underlying *T 73/88* and the conclusion drawn by the Board therefrom showed that, at that time, there was a possibility to assess priority rights beyond the photographic approach. This possibility was disposed by *G 2/98* (section C.6., infra) in the justified interest of legal certainty.

2. *T 65/92, „HTLV/HARVARD COLLEGE", June 13, 1993, Technical Board 3.3.02*

In *T 65/92* the Board dealt with a situation in which the priority document indicated for a glycosylated polypeptide a molecular weight range of 61 to 65 kD, whereas the claim of the later application referred to a range of 61 to 68 kD. Despite this difference, the Board acknowledged entitlement to the claimed priority:

> „3.3 … Moreover, it is well known that molecular weight determinations by SDS-PAGE are per se not very precise. … Therefore, the lower and upper limits of a molecular weight range as determined by SDS-PAGE are generally regarded as approximate, not as exact values.
>
> *The difference in the upper limit of the molecular weight of the glycosylated form could also well be considered to fall within the experimental error when running gel electrophoresis*.
>
> 3.4 Given the facts depicted above, there is nothing on file which leads the Board to believe that the reported difference originates from a true structural difference between the product of the present

20 The dates mentioned in this and the following titles are the dates on which the decision was taken, e.g. in oral proceedings, unless indicated otherwise.

application and that of the priority document or from an attempt by the Appellant to cover – through the change of the upper limit from 65kD to 68kD – elements which have been recognised as essential only later.

3.5 All the essential features and elements which characterise the polypeptide of the present application are also disclosed in the priority document. These are the source of the polypeptide, the method for its preparation, the immunological reactivity, the approximate molecular weight of the unglycosylated and glycosylated forms.

3.6 In the Board's view, in the light of what has been stated above, the difference in the reported upper limit of the molecular weight range for the glycosylated form is not of such relevance as to bring to the conclusion that the present application and the priority document do not relate to the same invention. *It seems quite clear that a skilled person would interpret the two documents as relating in substance to the same subject-matter.*"

(*T 65/92*, sections 3.3 to 3.6 of the Reasons; emphases added)

Thus, obviously, the Board took the position that a deviation between the disclosure of a priority application and a European patent application within the experimental margin of error of SDS-PAGE (±5 %) does not destroy priority. It established thereby that the resolving power of the photograph is to be considered in and is the limit for the photographic approach in the assessment of priority rights.

3. T 624/91, „Aluminium alloy products/ALUMINIUM COMPANY OF AMERICA", June 16, 1993, Technical Board 3.2.02

The principle that a photographic approach in the assessment of novelty requires to examine the degree of resolving power is for example also applied in the field of metallurgy. In *T 624/91*, the Board had to determine the closest prior art disclosure vis-à-vis the claimed subject-matter, i.e. a process for manufacturing products from an aluminium alloy defined by a certain composition. The nominal lithium content of the prior art alloy was 2.5 %, while the claim referred to a range of 2.0 to 2.4 %. The Board considered that metallurgical production processes are known to not be ideally reproducible and that analysis methods are subject to errors so that a given nominal composition of an alloy always means a certain range around the nominal composition into which the majority of the analyses of the alloys fall (point 3.2 of the Reasons). Therefore, the Board regarded the value for the lithium content described in the prior art to fall under the claimed range, although not being comprised literally (point 5 of the Reasons).

Thus, in view of the parallels of the photographic approaches in the assessment of priority right and in the assessment of novelty, *T 624/91* is in line with *T 65/92* in that both decisions duly take into account what resolving power the respective photographs have and whether they are indeed reliably distinguishable.

4. T 923/92, „human t-PA/GENENTECH", November 8, 1995, Technical Board 3.3.04, OJ EPO 1996, 564

The t-PA decision was of key influence on the further jurisprudence regarding priority assessment in cases where sequence deviations were on issue. Yet, something was left unnoticed. It created the principle that, if there is an amino acid deviation (caused by a DNA sequence deviation) between a priority document and a later European application as filed, priority is lost (Headnote I). To bring this in line with the above-mentioned „photography" analogy, the Board concluded in *T 923/92* that the photographic approach is to be applied under the assumption that DNA sequencing methods had a limitless resolving power in 1982/83 when the t-PA applications were filed. This conclusion was not based on scientific facts in this respect. Apparently, it was not considered as being relevant because, as a basis for its decision, the Board stated that the skilled person knows that even a small structural modification can produce dramatic changes and would therefore consider the reference to the amino acid sequence of a protein as having not merely an informational character, but as being a primary technical feature linked to the character and nature of the product (point 8 of the Reasons).

The Board even dismissed experimental data provided by the Patentee which showed that the sequence errors were the result of errors in the assignment of three individual nucleotides during DNA sequencing and that, at any rate, when reproduced experimentally, they did not have a substantial effect on the production or activity of human t-PA. The Board qualified the quoted evidence as being restricted to the testing of a limited number of parameters, while many more existed, and as constituting at most a proof of similarity, but not of identity of the two polypeptides. The essential characteristic was seen in the primary amino acid sequence (point 10 of the Reasons).

Moreover, in the t-PA case, the Board discussed the relevance of decision *T 65/92*, which the Patentee has invoked to support the argument that the priority document and the patent disclosed and enabled in substance the same molecule (point XV):

„In decision T 65/92 […], the Board decided that a difference in the reported upper limit of the molecular weight of the glycosylated form of a polypeptide between the priority document and the European patent application (all other measured parameters being identical) did not reflect a true structural difference between the products of the two applications, especially in view of the fact that the molecular weight is able to be determined only approximately. *Contrary to that, in the present case the primary structure of human t-PA is not a parameter which is determined approximately, unless one relies on a general formula, which is not the case here.*"

(*T 923/92*, point 13 of the Reasons; emphasis added)

Thus, based on an improper comparison (margin of error of SDS-PAGE with the primary structure of human DNA rather than with the margin of error of the DNA sequencing method relied on for its determination) the Board, as a consequence, denied the existence of an inherent error rate for DNA sequencing methods. DNA pictures supposedly had a limitless resolving power – a technical impossibility. In essence, this approach to assessing priority is based on a literal identity requirement and not – as was going to be established only 5 years later by *G 2/98* (section C.6, infra) – on a photographic approach. It was, so to speak, the other extreme of *T 73/88*.

5. *T 1147/98, „Cartilage-inducing factor/CELTRIX PHARMACEUTICALS INC." July 14, 2000, Technical Board 3.3.04*

T 1147/98 followed the reasoning applied in *T 65/92*. It acknowledged entitlement to the claimed priority for a protein which was inter alia defined by reference to a product-by-process feature stating that the protein is isolatable by a process including a gel filtration step for recovering a molecular weight fraction of 10,000 to 40,000. The priority document disclosed for this fraction the range of 10,000 to 30,000. Thus, again the photographic approach was used upon duly taking into account the resolving power.

6. *G 2/98, „Requirement for claiming priority of the 'same invention'", May 31, 2001, Enlarged Board of Appeal, OJ EPO 2001, 413*

G 2/98 overruled any previous practice to assess priority generously as had been done in the „Snackfood" decision (*T 73/88*; see item 1, supra). This Opinion of the Enlarged Board clarified that the „same invention" requirement of Article 87(1) EPC meant that the priority document and the later application only relate to the same invention *if the skilled person can derive the subject-matter of the claim directly and unambiguously, using common general knowledge from the priority document as a whole*. Thus, the photographic priority approach was cast into stone. However, the emphasis on the skilled person in this context indicates that indeed the resolving power of the photograph can be taken into account. This is where *G 2/98* was considerably more lenient than *T 923/92*.

7. *„Case law of the Boards of Appeal of the European Patent Office", fourth edition, dated 2001*

The EPO released the fourth edition of the „White Book" in 2002. In section IV.B.1.3.3 entitled „Error margins and definition of limits", it referred to *T 65/92* and said that it is not yet clear how far this decision may still apply after *G 2/98*.

8. *T 351/01, „Tissue Factor Protein/GENENTECH", July 2, 2003, Technical Board 3.3.08*

T 351/01 concerns a claim to a polynucleotide encoding a tissue factor protein which was defined by reference to a DNA sequence. The priority document disclosed a DNA sequence which deviated from that of the application as filed by five nucleotides in the part not relating to the function, i. e. outside of the coding region (point 15 of the Reasons). The Board denied priority right for this claim because of these sequence deviations and referred in this context to *G 2/98* according to which, in a proper exercise of priority rights, no distinction must be made between technical features which are related to the function and effect of the invention and technical features which are not (point 16 of the Reasons).

Thus, the Board applied the photographic priority approach of *G 2/98* so as to mean strict identity and without considering the resolving power of the photograph, just as was done in *T 923/92*.

9. *T 70/05, „Apoptosis receptors/GENENTECH", February 7, 2006, Technical Board 3.3.08*

In *T 70/05*, the assessment of novelty of a claimed protein required to establish whether a prior art document according to Article 54(3) EPC was entitled to its priority. The Board denied entitlement to the priority since the amino acid sequence of the full-length protein, as derived from the sequenced DNA and disclosed in the priority document, differed at several positions from that in the application as filed (the Article 54(3) document); see point 11 of the Reasons. The Board based its decision on the „directly and unambiguously" criterion set forth in *G 2/98* (point 3 of the Reasons). Thus, again, the Board applied the photographic priority approach without taking into account the resolving power of the photograph, just as was done in *T 923/92* and resulting in a literal identity requirement.

10. *T 30/02, „Xylanase/NOVOZYMES", October 9, 2006, Technical Board 3.3.08*

In *T 30/02*, the Board had to assess whether a cited Article 54(3) document was entitled to its priority for a partial DNA sequence of 572 nucleotides encoding the partial sequence of a xylanase enzyme (point 9 of the Reasons). The DNA sequence disclosed in the priority document differed from the later DNA sequence in the application as filed by lacking two deoxyguanosine (G) residues at the 3'-end. The Board denied priority by pointing to *T 923/92* (points 15 to 24 of the Reasons). Thus, again, the Board applied the photographic approach as in *T 923/92*, that is, assuming a virtually limitless resolving power by requiring literal identity.

11. *T 435/06, „Oncoprotein kinase/THE REGENTS OF THE UNIVERSITY OF CALIFORNIA", May 16, 2007, Technical Board 3.3.04*

T 435/06 denied novelty of a claimed protein, which was characterized in the claim by a molecular weight determined in SDS-PAGE, over a prior art that disclosed a protein displaying the same functions but deviating in its molecular weight from the claimed one within the art-accepted experimental margin of error: ±5 %. The decision was made after *G 2/98* and therefore fully confirms that the practice established previously by *T 65/92* is still applicable, i. e. that, if the resolving power of the photo-

graph cannot distinguish between two objects, they have to be considered the same. In other words, the principle laid down in *T 65/02* was confirmed to the effect that deviations within the margin of error do not negatively affect priority entitlement. The written decision *T 435/06* issued on November 7, 2007 and became available via the EPO's online decision pool on December 13, 2007.

12. T 1213/05, „Breast and ovarian cancer/UNIVERSITY OF UTAH", September 27, 2007, Technical Board 3.3.04

T 1213/05, the politically delicate BRCA1 case, had to deal with the question whether priority is valid for the claimed BRCA1 DNA sequence given a deviation of 15 nucleotides within a coding sequence of 5592 nucleotides between the relevant priority document and the patent. The Board denied priority right by referring to *G 2/98*. Patentee defended its case by pointing out that the deviations did not exceed the experimental margin of error of DNA sequencing in 1994/95, when the BRCA1 DNA sequence was established (the sequencing preciseness was more than 99.7 %), and that the 15 deviating nucleotides had no bearing on the use of the sequence for its destined purpose, the diagnosis of predisposition to breast and ovarian cancer. Patentee demonstrated experimentally that, in more than 180,000 diagnoses relying on and applying the BRCA1 gene sequence set out in the relevant claim, the deviations did not matter. The Opponents did not even attempt to prove the opposite. Nevertheless, the Board categorically rejected Patentee's argumentation by pointing out:

> „[W]ith regard to Appellant I's [i.e. Patentee's] reflections on the interrelation between legal certainty and experimental certainty, the Board considers that the acknowledgement of an „allowable" margin of error for a specific detection method would be open for interpretation and would lead to ambiguity and vagueness."
>
> (*T 1213/05*; point 29 of the Reasons)

Furthermore, regarding the fact that Patentee provided experimental evidence that the sequence deviations did not – in more than 180,000 cases – impart the diagnosis of cancer-predisposing mutations, the Board referred to the finding in *G 2/98* that a strict and narrow approach had to be applied in the assessment of whether a priority document discloses the same invention as the later application and that, in this context, no distinction can be made between technically relevant and irrelevant features (points 30 to 34 of the Reasons). In light of the discussion of *G 2/98* in section C.6, supra, this is an interpretation that is not necessarily in line with what *G 2/98* really meant to say.

Moreover, the Board refused to refer three questions of law to the Enlarged Board of Appeal which were put forward by the Patentee and which basically dealt with the question as to whether the disclosure of a physical entity in a priority document and a later valid application, which only deviates by a measurement within the typical margin of error, can still be considered the same invention in accordance with Art. 87(1) EPC (points 36 to 41 of the Reasons).

The Board discussed the previous decisions *T 923/93*, *T 351/01*, *T 30/02* and *T 70/05* (see supra). In each of them the entitlement to a claimed priority was denied by the respective Board because of sequence deviations between the priority document and the later application as filed. In some cases, the deviations were considered relevant for the particular function of the DNA or the encoded protein, in others not. However, in none of these decisions, it was discussed whether priority rights are valid despite DNA sequence deviations because of the fact that DNA sequencing is *an error-prone measuring method*. This question was raised for the first time by the Patentee in *T 1213/05*.

The entire discussion set forth by the Board does not at all consider the judgment of a person skilled in the art. It solely relied on a strictly formal comparison. Thus, as opposed to its decision *T 435/06* taken shortly before in line with *T 65/92*, the same Board now took the position that it does not matter whether the resolving power of the photograph can distinguish between the object photographed in the priority document and the later application or not, resorting to legal certainty. When the inconsistent decision was announced in the oral proceedings, the parties to *T 1213/05* had no chance to refer to the inconsistency because they could not know about *T 435/06*. While the latter was made in oral proceedings on May 16, 2007, it only issued in writing on November 7, 2007, about six weeks after the oral proceedings in *T 1213/05*. Only the Board was aware of its earlier opinion. Nevertheless, it did not invite the parties attention to its findings in *T 435/06* when Patentee defended itself against the Opponents' argument that *T 65/92* was not applicable anymore after *G 2/98*.

13. T 250/06, „Opioid receptor genes/UNIVERSITY OF CALIFORNIA", October 11, 2007, Technical Board 3.3.08

On October 11, 2007, about two weeks after the oral proceedings in *T 1213/05*, Technical Board 3.3.08 decided *T 250/06* – and got it right. In that case, 7 out of 1821 nucleotides of a DNA sequence encoding a delta opioid receptor deviated between the priority document and the application as filed. This amounts to a sequencing accuracy of about 99.6 %. Board 3.3.08 took a pragmatic position and acknowledged priority because the Opponent was unable to substantiate that the deviations were technically relevant.

Specifically, the claim under consideration had the following wording:

> „1. A recombinant nucleic acid molecule comprising a nucleotide sequence encoding a murine delta opioid receptor which hybridizes under conditions of low stringency to a probe consisting of the nucleotide sequence shown in Figure 5 or to its complement."
>
> (*T 250/06*; point VII)

The objection for lack of priority right was based on the fact that the DNA sequence of Figure 5 of the priority document differed from Figure 5 of the patent by an additional seven interspersed nucleotides in the 3'-untranslated region. Nevertheless, the Board acknowledged the priority right despite these structural differences by pointing to the absence of evidence that hybridisation to the DNA of Figure 5 of the priority document would lead to a group of molecules different from that obtained by hybridisation to the DNA of Figure 5 in the patent. If there were such very rare molecules, which hybridize to the sequence of Figure 5 in the priority document and not to the sequence of Figure 5 in the patent in suit – or vice versa – , they can be ignored as *de minimis* (point 20 of the Reasons). Furthermore, the Board saw a difference to the situation underlying the t-PA decision (*T 923/92*) in that the differences in the recited probe sequence were held not to be meaningful (point 21 of the Reasons) – as proven by Patentee in *T 1213/05* more than a 180.000 times.

Thus, the Board effectively considered the limited resolving power of the photograph obtained by DNA sequencing.

D. A Technically Sensible Approach to Allocation of Priority

Given the above-summarized development in the jurisprudence, it would be appropriate to consistently apply the photographic approach to priority as prescribed in *G 2/98* in consideration of the resolving power of the picture taken. This would of course apply to inventions in all fields of technology. As far as DNA sequences are concerned, we suggest that two deviating sequences are to be considered as the same invention if

(i) the observed sequence deviations lie within the margin of error generally accepted for the DNA sequencing technology applied at the relevant filing date; and

(ii) the observed sequence deviations are not relevant for the technical effect of the claimed invention required for solving the technical problem.

Taking this approach would be fully in line with Technical Board 3.3.08's approach taken in *T 250/06* which was solidly based on *T 65/92*, *T 1147/98*, *G 2/98* and *T 435/06* when eventually putting scientific reality over formalism. This solely means to pay attention to how a person skilled in the art (not the formalist!) would compare the pictures taken at the priority date and at the later filing date for allocating a priority by the photographic approach. The requirement that the deviation must be technically irrelevant for solving the relevant technical problem avoids the opportunity to take advantage of coincidences, i.e. to acquire possession of a different invention that was never intended *ab initio*. In other words, the second proposed requirement establishes a fair and balanced extent of legal certainty for the applicant/patentee and for the public. What must be said here for once and all is that, self-evidently, the public must be an educated one, i.e. in order to avoid asymmetry any aspects of material patent law that the public wants to claim in its favour must also be seen through the eyes of a person skilled in the art. Anything else results in inequity.

These aspects are further discussed in the following.

1. How to Take Account of the Margin of Error

If a claimed compound is defined by reference to a measured value, it is well established in the case law (e.g. concerning protein inventions (*T 65/92*, *T 1147/98*, *T 435/06*) or metallurgy (*T 624/91*)) that the margin of error generally accepted for the measuring method applied cannot be ignored in the assessment of whether the same compound is disclosed in the priority document and the later application as filed or in a prior art document and a claim. This aligns priority and novelty assessment, is well taken, corresponds to pure logic and duly considers the point of view of a person skilled in the art. It is also in line with the generally applied concepts of „invention" according to which this term refers to technical teachings. For example, the German Federal Supreme Court (BGH) has defined an „invention" as being a „teaching for plan-conformant action utilizing controllable forces of nature for achieving a causally manageable result"[21]. The utilization of controllable forces is caused by the technical nature of inventions. Accordingly, and (still) in line with Article 52(1) EPC 2000[22], inventions are technical teachings, and the claims of a patent define the invention by reference to technical features. Thus, if the identity of the disclosed inventions is required under Article 87(1) EPC, it is necessary to compare the respective technical features in the same way as a skilled person would do it based on the information provided in the application documents and common general knowledge. If a technical feature is a measured value, the skilled person would of course take the margin of error inherent in the measuring method into consideration for said comparison. The skilled person would be aware of the fact that each measuring method has its typical error rate so that absolute identity cannot be required for taking the conclusion that two things are identical in spite of slightly different descriptions – anything else would be an unscientific and unrealistic assumption ignoring technology altogether. Therefore, each measured value has to be read together with a certain range surrounding it as defined by the established margin of error so that two values are regarded the same if their ranges overlap and if they are, thus, not significantly statistically different. This understanding of a comparison of the technical features has for example been applied by the Technical Boards in connection with assessing identity of proteins defined by reference to a molecular weight (see, e.g., *T 435/06*, as discussed in section C.11., supra). It is exactly this understanding that we apply when talking

21 German Federal Supreme Court (BGH) decision „Rote Taube" (Red Dove), GRUR 1969(12), 672-676; English translation of Headnote (a).

22 In contrast to Article 52(1) EPC 1973, the same Article of the EPC 2000 defines patentable inventions inter alia by referring to inventions „in all fields of technology".

about the resolving power of a photograph in context with the established „photographic approach".

As we have seen above (section B, supra), DNA sequencing is an error-prone measuring method. DNA sequences might suggest a 100 % reliability due to their apparently digital format, but such an understanding would be against the skilled person's knowledge. A DNA sequence is a measured value and, therefore, a skilled person would clearly consider that single deviations between two compared sequences can be due to measuring errors. If such deviations are within the limits of typical error rates, it would conceive that the sequenced DNA molecules are probably identical unless there are reasons to doubt it (for example in case of divergent sources from which the DNA was isolated).

Nevertheless, based on *T 923/92*, a pre *G 2/98* case, the Technical Boards have traditionally refused to take measurement-intrinsic error rates for DNA sequences into account. In point 29 of *T 1213/05*, the Board alleges that an allowable margin of error would be open for interpretation and would lead to ambiguity and vagueness. However, this statement does not answer the question of how the artificial approach is justified that DNA must be disclosed in a priority document with a precision going beyond state-of-the-art measuring methods. Thus, obviously, in contrast to other technical areas, the Board postulates legal certainty as an absolute requirement if priority rights of DNA inventions are at issue – without giving a legal or scientific justification for making DNA sequences so special. Importantly, such an unrealistic result can only be achieved contrary to the reasoning set forth in *G 2/98*, when the „same invention" issue – according to Article 87(1) EPC – is not considered with the eyes of a person skilled in the art.

In the t-PA decision (*T 923/92*, point 28; referred to in *T 1213/05*, point 25), the Board has made a distinction between the molecular weight measurement of a protein (like in *T 65/92*) and DNA sequence determination and contended that „the primary structure of human t-PA is not a parameter which is determined approximately". However, this is scientifically incorrect. *T 923/92* is based on a misunderstanding. It takes its justification from concluding that even small structural changes can theoretically produce dramatic functional changes and ignores entirely why such changes might be assumed. Thus, it did not properly consider the then existing case *T 65/92* which does not take satisfaction by looking at superficial differences but dealt with why the superficial differences were reported. Since DNA sequencing is a measuring method with its intrinsic margin of error, it is indeed justified to handle sequence deviations in the priority assessment according to the approach of *T 65/92*. DNA sequences are just results of a measurement not of magic. Naturally, *T 923/92* had no chance to consider the more lenient Enlarged Board decision *G 2/98* because this one only came out 5 years later.

Accordingly, if two DNA sequences differ from each other by a number of deviating nucleotides that is within the accepted margin of error of DNA sequencing at the relevant time, the sequences should be considered as indistinguishable. Otherwise, the „same invention" criterion embodied in the photographic approach would not be properly applied.

2. How to Consider Technical Effects of Sequencing Errors

For the sake of a fair balance of interests and legal certainty it appears to be necessary to additionally consider whether a given sequence error – once acknowledged as being within the art-accepted margin of error – coincidentally affects those technical properties of the claimed molecule that are relevant to solve the posed technical problem. Only if this is not the case, the inventions referring to these sequences can be considered the same within the photographic approach.

The t-PA decision (*T 923/92*) would stand against such an approach:

> „… the skilled person considers the primary amino acid structure of a protein as an essential feature thereof because it represents its chemical formula. The skilled person knows that the secondary, tertiary and quaternary structures of a protein are determined by the amino acid structure of the primary polypeptide chain and that these structural features in turn determine the physico-chemical and biological properties of the molecule, for example, its activity, immunological properties, glycosylation, cleavage by proteases, in vivo half-life etc.. The skilled person, while being aware on the one hand of the fact that allelic variations or other modifications of a given primary structure of a protein can result in molecules whose essential physical and biological characteristics remain unaffected, knows on the other hand that *even a small structural modification (e.g. the substitution or deletion of one amino acid) can produce dramatic functional changes. For these reasons, the skilled person would consider the reference to the chemical formula, i. e. to the amino acid sequence, of a protein as having not merely an informational character, but as being a primary technical feature linked to the character and nature of the product.*"
>
> (*T 923/92*; point 8 of the Reasons; emphasis added)

It is certainly correct that the primary amino acid structure is an essential feature of a protein and not merely of informational character. Indeed, such changes can hypothetically have dramatic consequences for the properties of the protein. However, the topic to be discussed here is whether any difference observed is a real one or only virtual, i. e. erroneously believed to exist. The approach taken in *T 923/92* leads into an inescapable trap. Patentee tested the influence of the virtually existing differences on production and several essential t-PA properties and documented that they had no consequences on these characteristics. The position that, nevertheless, the virtual differences could have caused any differences was entirely hypothetical. An entirely hypothetical assumption is a very unpopular basis for decisions on enablement. Thus, there

must be „serious doubts substantiated by verifiable facts" to prevail. Entirely hypothetical assumptions are actually problematic for parties to rely on in all patentability areas, e.g., novelty, inventive step, enablement and industrial applicability; see *T 179/01*, *T 1329/04*, *T 870/04*, *T 604/04* and *T 898/05*, to mention a few. Furthermore, if the hypothetical reservations made in *T 923/92* would be justified, there would be no pragmatic chance – if any at all – to realistically consider the (ir)relevance of sequencing errors. This would contradict *T 65/92*. The molecular weight of a protein largely depends on its primary structure (amino acid sequence) as well. For t-PA this would mean that, given a length of 527 amino acids, a 5 % margin error for SDS-PAGE meant a difference of ±26 amino acids. For the protein in *T 65/92* the difference between a 65 kD and 68 kD molecular weight could in fact have reflected a difference in primary structure of about ±27 amino acids. Why was this irrelevant? Not because it was of no influence on the function of the claimed HTLV glycoprotein with certainty. Only because it was accepted as a deviation within the margin of error of the applied measuring method. In other words, it was not even accepted as a real difference since it was statistically irrelevant. In *T 435/06* the molecular weight of 55 kD vs. 54 kD could have meant ±9 amino acids.

How could the „theoretical influence" of a sequence deviation be more effectively dealt with? Simply by applying the standard distribution of the onus of proof. At the EPO, it is a well-established principle that an applicant/patentee can support its case in relation to Article 56, 57 or 83 EPC, i.e. inventive step, industrial applicability and enablement, by submitting experimental data after the filing date as long as a complete invention has been disclosed at the relevant date of the application[23]. Once Patentee has submitted convincing evidence, the onus of proof shifts to either the Examining Division or the Opponent (in opposition proceedings).

Thus, in *T 923/92*, it would have been Opponents' turn to prove that against the file's evidence status the 3 sequencing error-conditioned amino acid differences indeed caused a difference in any relevant t-PA property.

Accordingly, in the BRCA1 case (*T 1213/05*), the Patentee would also have complied with its onus of proof. What would be more convincing than that in more than 180,000 diagnoses in which the entire BRCA1 coding sequence from each patient was determined, none of the sequence deviations played any role? Since the technical problem was the provision of the isolated BRCA1 gene as a tool for diagnosing a predisposition to breast or ovarian cancer (see *T 1213/05*, point 30 of the Reasons), the actually relevant technical property of the DNA sequence was therefore not affected by the observed sequence deviations at all.

On the other hand, if in reply to applicant's/patentee's evidence on file the Examining Division or the opponent can demonstrate that the sequence deviations within the margin of error indeed cause a technical difference relevant for the solution of the problem posed, then priority rights should be rejected in the interest of legal certainty. The bottom line is: we agree in this respect with *T 923/92* but effectively only if the balance of probabilities suggests that inadvertent sequence deviations are really key to function, not only hypothetically. In this respect, *T 250/06* got it right. The observed deviations were errors of only hypothetical relevance and there was no proof of any practical relevance by any of the Opponents. Thus, priority was awarded. *T 250/06* exemplifies how a reasonable compromise can be achieved between the interest of innovation and the public while paying due respect to legal certainty in the framework of *G 2/98*.

3. The Suggested Approach to Allocation of Priority Does not Contradict Fundamental Principles of the EPO's Jurisdiction

3.1 In the above, we have already shown that our proposed approach for examining priority rights in the case of DNA sequence deviations in the priority document is in line with *G 2/98*. In fact, it would bring the so far inconsistent jurisprudence of the EPO Biotech Boards concerning priority assessment of DNA inventions into conformity with the established practice in other technical fields where the assessment of priority rights takes into account the margin of error of measured values.

3.2 The suggested approach does not contradict *G 11/91*. In this decision, the Enlarged Board of Appeal set forth that a correction of an obvious error under Rule 88 EPC 1973 (now Rule 139 EPC 2000) must be within the limits of what a skilled person would derive directly and unambiguously, using common general knowledge, and seen objectively and relative to the date of filing, from the whole of these documents as filed, as stipulated by Art. 123(2) EPC (Headnote 1). The referral decision concerned a requested correction of an error in an amino acid sequence disclosed in an application as filed.

The herein suggested approach concerns the assessment of priority. It does clearly not attempt to correct incorrect DNA or amino acid sequences disclosed in an application as filed. The sequences would be considered by a person skilled in the art as they are – with a proper margin of error.

3.3 Considerations concerning priority rights are tightly connected with novelty considerations. Under point 5 of the Reasons for the Opinion *G 2/98*, the Enlarged Board of Appeal mentions as „the very aim and object of the right of priority: the protection from novelty destroying disclosures during a period of twelve months from the date of filing of the first application is necessary only in case of the filing of a subsequent application relating to the same invention." The intimate relationship between the assess-

23 *Jaenichen*, Alle Erfindungen sind gleichberechtigt – Klärung der Entscheidung T 1329/04 zugunsten der Vollständigkeit von DNA-Erfindungen ohne „Wet Biology"-Experimente, GRUR Int 2007 Heft 2, 104; *Stolzenburg/Ruskin/Jaenichen*, Of incomplete complete inventions: T 1329/04-3.3.8, epi Information 1 (2006), 15; *Stolzenburg/Ruskin/Jaenichen*, Von unfertigen fertigen Erfindungen, GRUR Int. 2006, 798

ment of disclosure in a prior art document in connection with novelty and the disclosure of „the same invention" in the context of priority allocation is discussed in detail in points 8 through 8.4 of *G 2/98*. Thus, if the herein suggested approach would be applied for the assessment of priority rights of DNA inventions, it would also be influential for the assessment of novelty – but not spectacularly. The resolving power of the picture has already been considered in the photographic novelty approach in the past: in *T 624/91* and *T 435/06*, for example. In the area of DNA patents the consequence would be that a DNA sequence disclosed in the prior art that is not identical to the particularly claimed one could nevertheless be novelty-destroying if the difference is within the art-accepted margin of error of DNA sequencing methods and if the difference is technically irrelevant. For example, there are situations where a first applicant files a patent application for a certain DNA molecule, the sequence of which is determined incorrectly at one position, and a second applicant subsequently files another patent application for the same DNA molecule, however, with the correct sequence, so that the first application is prior art under Article 54(3) EPC. Even if one assumes that the sequence error is within the art-accepted margin of error at the filing date and the error has no bearing on the function of the encoded protein as relevant for the technical problem solved, following the currently applied practice, the EPO accepts novelty for a claim in the second application directed to the specific DNA molecule because of the single sequence difference. However, if one applied the photographic approach as proposed herein, the DNA molecule disclosed in the second application would lack novelty over the one disclosed in the first application. We would consider the latter as the better approach since it would reward the first applicant with a fair scope of protection for its real contribution which would not be disturbed by a competitor's dependent patent relating practically to the same DNA molecule. In fact, if both patents are granted, third parties who want to use the invention in real practice would have to take two licences. This is impractical. Thus, duly taking into account the resolving power in cases of conflicting applications relating to DNA molecules would reinforce the well-established first-to-file principle, with all its benefits for legal certainty.

4. Advantages of the Proposed Approach for the Public and for the EPO

Applicants could try to arrange themselves with the literal approach as practiced in *T 1213/05* by not disclosing corrected sequences and using the one disclosed in the priority document for defining the DNA invention in the ultimate patent application. As long as the deviation from the real sequence would be irrelevant for solving the posed technical problem this would be irrelevant altogether. The scientific community, however, would profit from encouraging applicants to disclose the tentatively right sequence – at least for the sake of perfectionism.

Furthermore, applicants can refer in claims to deposited microorganisms harbouring cloning vectors carrying the relevant DNA – as far as available – in order to define their invention. This approach is entirely legitimate. However, such claims are more difficult to search – a disadvantage for the EPO.

5. Should We Seek Assistance from the Enlarged Board of Appeal?

There are decisions according to which deviating measurements within the margin of error or lacking significance were regarded as not destroying „the identity" of the invention disclosed in the priority and the later application or in a prior art document and a claim (T 65/92; *T 1147/98*, *T 435/06*, *T 624/91*, and *T 250/06*): they practice the photographic approach in consideration of the resolving power of the pictures. On the other hand, there are decisions in which „the identity" of the disclosed inventions was denied because absolute identity in the disclosed sequences was required (*T 923/93*, *T 351/01*, *T 30/02*, *T 70/05* and *T 1213/05*): they practice the photographic approach without consideration of the resolving power of the pictures. Patentee has already invited the Board's attention to this problem in *T 1213/05* and requested referral of the following questions to the Enlarged Board:

„(1) If a priority document and a European patent application as filed concern the same physical entity but describe it in deviating form relying on the same physical characterisation method, can a claim to the physical entity enjoy priority under Article 87 EPC since it relates to the same invention according to G 2/98, when said descriptions only deviate within the margin of error of the physical characterization method employed at the time when the physical entity was characterized?

(2) More precisely, if a claim defines an invention by reference to a nucleotide sequence (or an amino acid sequence translated therefrom) does this subject-matter enjoy priority under Article 87 EPC as interpreted by G 2/98 from a disclosure in a priority document of a nucleotide sequence (or amino acid sequence translated therefrom) differing to an extent which is within the margin of error of the sequencing method employed at the time the nucleotide sequence was determined, provided that there is no reasonable doubt with regard to the physical identity of the molecule described in the priority document and referred to in the claim under consideration?

(3) If the answers to questions 1 and 2 are no, are the answers any different if it has been established that the deviations are technically irrelevant for the use of the invention in normal practice?"

(*T 1213/05*; point 36 of the Reasons)

The Board refused the referral because it felt itself in a position to decide on the question of priority without having to deviate from earlier case law; *T 1213/05* at point 38. In particular, in point 34 of *T 1213/05* it considered the case law with regard to the entitlement of priority of a claim referring to nucleotide or amino acid sequences as „uniform and definite".

6. National Courts already Consider Margins of Error in Patent Infringement

Technical Board 3.3.04 stated in *T 1213/05* that „the acknowledgement of an allowable margin of error for a specific detection method would be open for interpretation and would lead to ambiguity and vagueness". This reluctance is in clear contrast to the case law of the relevant national courts that are to implement the patents granted by the EPO. The German Federal Supreme Court (BGH) has no problem to apply a purely technical margin-of-error principle in its jurisprudence. In its well-known judgments of March 12, 2003[24], the BGH ruled that unless the person skilled in the art understands a figure as being „critical" for the invention, figures, values and ranges comprise usual tolerances:

> „On the other hand, this does not mean that the person skilled in the art cannot consider a certain vagueness, for instance comprising usual tolerances, as being compatible with the technical semantic content of a figure."

In „*Cutting Blade I*"[25] literal infringement was concluded in a case where the angle of defendant's blade was within the margin of error of the blade angle referred to in the relevant claim. What was essential was how a person skilled in the art judged the value in the claim; loc. cit., at section II., 3.a. The BGH pointed out in section II., 3., d.:

> „Thus, the question how to understand an indication as to specific numerical values or measurement in the patent claim, depends on the competent technical understanding underlying the assessment by the trial judge in the individual case."

Accordingly, the range recited in the claim, 9° to 12°, actually encompassed *literally* 8° 40' since the art-accepted deviation in measuring blade angles was at least 20'; loc. cit. at section II., 4. In *„Cutting Blade II"*[26], the BGH applied the same principle but denied infringement of 10°-22°, preferably 16°, by 25° since the acceptable maximum tolerance would have been 3°. In these decisions, the BGH expressly referred to the famous „*Catnic*"[27] decision of the House of Lords of November 27, 1980, in which the House of Lords had already properly practiced a „margin of error" principle. When construing a claim specifying a „right angle", the House of Lords regarded deviations of 6° and 8° from a right angle as still making use of the protected teaching. It did not matter whether the claim referred to a „right angle" or 90°. In *„Kirin-Amgen v. Hoechst Marion Roussel"*[28], the House of Lords commented on the aspect of usual tolerances and margins of error discussed in the Catnic decision and in the above mentioned German cases[29]:

> „The notion of strict compliance with the conventional meanings of words or phrases sits most comfortably with the use of figures, measurements, angles and the like, when the question is whether they allow for some degree of tolerance or approximation. That was the case in *Catnic* and it is significant that the „quintet" of cases in which the German Bundesgerichtshof referred to *Catnic* and said that its approach accorded with that of the House of Lords were all concerned with figures and measurements. In such cases, the contrast with strict compliance is approximation."[30]

It is noteworthy that whereas the Technical Boards of the EPO are composed of a majority of technical members, both the BGH and the House of Lords are solely composed of legal members[31]. It is striking that although these courts have to deal with patent cases from all areas of technology, they are capable of dealing with margins of error without intolerable ambiguity and vagueness and without compromising legal certainty thereby. One should think that the EPO's Technical Boards, that have the convenience to solely deal with technical areas for which they are anticipated specialists, can be expected to keep up with the national courts.

E. Conclusion

G 2/98 prescribes a photographic approach to the assessment of priority. There is inconsistency in the EPO Biotech Boards' jurisprudence about how to apply it. This inconsistency has primarily been based on the tendency to automatically – pawlowianeskly – apply the „literal identity approach" of *T 923/92* when DNA sequences were concerned even though this decision issued before *G 2/98* established the more lenient „photographic approach". Specifically, the question that has been answered inconsistently by the EPO Biotech Boards is whether the resolving power of the picture taken at the priority date can/must be considered. We suggest that doing so is technically reasonable and also required when technical contributions and their relevance for the society are to be considered. The resolving power of the picture would be determined and considered by the person skilled in the art relevant for the assessment of enablement (*T 694/92* defines it). Consulting the formalist only, as done in *T 1213/05*, may be attractive for a variety of reasons but it is an inacceptable and inequitable oversimplification. Actually, the same Board, albeit in a different composition, has demon-

24 BGH GRUR 2002, 511 – Kunststoffrohrteil; 515 – Schneidmesser I; 519 – Schneidmesser II; 523 – Custodiol I; 527 – Custodiol II

25 BGH in GRUR 2002, 515 – Schneidmesser I

26 BGH in GRUR 2002, 519 – Schneidmesser II

27 House of Lords, R.P.C. 1982, 163 – Catnic Components Ltd. v. Hill & Smith Ltd.

28 House of Lords GRURInt 2005, 343.

29 Footnote 24

30 Loc cit, p. 347

31 In patent matters, they, however, usually retain technical experts.

strated how the photographic approach to analyzing whether a claim amendment is supported by an application as filed (new matter and novelty are assessed applying comparable standards) becomes a realistic one when consulting the person skilled in the art rather than the uncompromising formalist in *T 315/03* (the decision is actually interesting to read because it also had to sort out in an interesting framework whether a document was made freely available at a scientific conference or not).

When DNA sequences are concerned, the question would be whether the DNA sequence in the relevant claim only deviates from the one in the priority document within the art-accepted margin of error of the sequencing method applied at the priority date. This is in line with T 65/92, *T 1147/98* and *T 435/06*. In order to avoid „jumping ahead of others" (*T 81/87*) and to clearly respect legal certainty, it would then have to be checked whether there is any evidence showing that the virtual sequence deviations technically (coincidentally) matter for solving the technical problem posed. If this is not so, the same inventions are concerned.

Purely hypothetical effects of the deviations should not be dominating as was assumed in *T 923/92*. *T 250/06* applied the proper approach in this respect. Referring corresponding questions to the Enlarged Board would be better than continuing with the unreliable.

Already in 1989 *T 301/87* has expressly pointed out that a technical teaching in a patent is not to satisfy the perfectionist but the skilled person who handles the invention in normal practice. Accordingly, the person skilled in the art is the relevant instance, not the uncompromising formalist.

On April 1, 2008, the EPO has published a press release entitled „With patent applications on the rise, European Patent Office puts quality before quantity"[32]. The photographic approach to priority proposed herein that would consider the resolving power of the pictures taken and that would equally apply to the assessment of novelty, would offer the EPO a good opportunity to indeed do so. Patents that do not really but only virtually relate to a different technical contribution would not even be granted anymore. This would particularly support the intention of the EPO's President pronounced in the press release, namely to not just have more patents but only more good patents and it would support the EPO's pronounced desire „to continue to set the global benchmark in patenting".

32 http://www.epo.org/about-us/press/releases/archive/2008/20080401.html

Gaming: a key to the IP world

A. Gasnier (NL)

Most findings of the present article are based on the book 'The Patenting Paradox'. This book is the outcome of a 3-year PhD research carried out by the author at the Delft University of Technology in the Netherlands and sponsored by the Research Fund of the European Patent Organization. More information on the book is available at *www.patenting-paradox.com*.

IP education: needs and limits of classic solutions

Companies and research organizations have a growing need for IP education. A survey among 8,000 patent users showed that need. To the question „How would you improve IP management in your (client's) company?" these patent users have expressed that education is their first need, followed with cooperation and strategy development.

However, classic IP awareness lectures and workshops have often a limited impact and IP still remains an obscure and distant field for non-IP experts. In fact, when training engineers, researchers and business managers, it is often difficult to raise or sustain their interest in patents. Most classic awareness measures involve too passive teaching methods and bring a learning experience sometimes difficult to implement in the daily work.

What is missing in classic measures? Usually these measures focus on the 'hard' elements, the IP contents as such. And they leave aside the 'soft' aspects of learning such a specialized field. Non-experts are learning the most from a cognitive, almost emotional, experience.

From more than 10 years of experience in IP training, it has been observed that classic awareness measures tend to lack three ingredients to create the expected change of practice in companies: (1) demystifying IP per se, (2) establishing a collaborative network in context of the patent systems, and (3) providing the 'big picture' with practical keys for patent management.

Managers are often trained with gaming

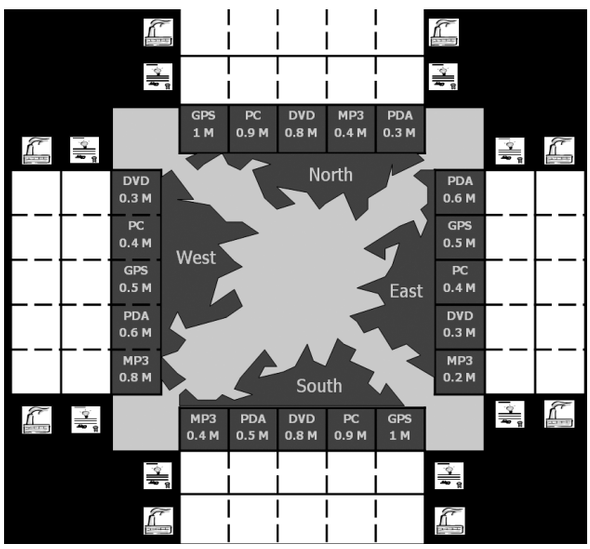
Many successful management games have already been developed, but until now there have been none that relate to patent management. At the same time, 'serious gaming' appears as the solution to lower expert walls and to allow a change of practice in companies. In fact, gaming encapsulates by essence the three missing

ingredients of classic IP awareness measures as listed above. Games: (1) simplify the reality through models; (2) render an expert field like IP accessible to non-IP experts; and (3) allows experimenting various scenarios and different practices. Also, games are very 'plastic' by nature: the same game can be used in different settings in terms of target groups, durations, and applications. In fact, one game can be educational at first but can also strengthen collaboration among various functions of the same company. It can also support strategy-making in a risk-free laboratory setting. In other words, gaming appears as the solution to the three needs expressed by the patent users of the above mentioned survey: education, collaboration and strategy.

To be effective, a new patent management game must address these needs and limitations of the classic solutions. One that has recently been developed does just that.

Patentopolis, a new game on patents

Patentopolis is a game to raise awareness on patent exploitation. It is usually played in a classroom. When playing the game, maximum 20 participants are pooled in five firms (teams) which compete in a global economy. This economy is defined by 20 markets combining five products (MP3, GPS, PDA, DVD, PC) in four regions (North, East, South, West). The five firms invest a seed capital by acquiring and exploiting tangible and intangible assets in these markets. The main game component of Patentopolis is a board representing this global economy and the distribution of assets between the firms therein. This board (shown below) is usually projected from a laptop on a whiteboard.



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Initially, the players receive the sales profits projections and are aware of the value of each market. Depending on whether one or two firms own the factory and the patent, plus the timing effect, the five firms experience all the IP scenarios and business transactions than occur in real life. The firms may own factories and act as manufacturer by selling products and making profits. The same firms or others may own patents and act as patentee by negotiating contracts and receiving royalties or by suing manufacturers-infringers. Some secure their markets and others license their technology or decide to create a joint-venture.

The game has a strong accent on people and interactions to bring the 'soft' aspect which is missing in the classic awareness measures. First, as a team, the players of the same firm decide on which IP strategy to adopt, which assets to acquire, and which IP offers to make. Thus, they have to agree on the type of offer (license, cross-license, option, assignment, joint-venture, co-ownership), the price (royalties, lump-sum, installments, equities), and the valuation methods (cost-, market- or income-based methods applicable directly during the game).

Taken at the European Patent Academy

Second, the participants of the same firm interact with other firms. They negotiate their IP offers and make or do not make deals. At that time, the firms have to assess risk and to balance gain-loss when deciding to contract, to sue or to be sued.

Taken at the European Patent Academy

Playing a game occurs through a series of rounds (years). Each round is a sequence of three steps with: (1) acquisition of assets through an auction; (2) transactions as described above; and (3) outcomes with the possibility to initiate infringement actions and the need to pay rene-

wal fees for maintaining the patents alive in the next round. Judgment is rendered with likelihoods that the decision may be favorable to patentees (damages, closing of the infringing factory, imprisonment) or favorable to manufacturers (no infringement). At the end of the game, a valuation of the five firms is made taking into account their respective tangible assets (factories) and intangible assets (patents). The winner is the firm with the highest value.

Current uses

Patentopolis has numerous applications; it can be used in different settings for specific audiences and goals. First and foremost, it is an awareness game and therefore may be used whenever there is a need to raise patent awareness. Typically, Patentopolis is embedded in a 3-hour awareness workshop with the following agenda: (1) introduction to the game; (2) playing a first game session; (3) intermezzo; (4) pursuing the game play; and (5) wrap up with valuation, ranking and discussion to move from game to reality.

Further, Patentopolis is a communication tool: (1) for the general staff, to convey a certain vision; (2) for cross-function groups, to establish a dialogue using a fictitious environment; and (3) for managers and other peer groups, to address complex issues and understand blockades.

Thus, potential users of Patentopolis can be found in companies, research organizations, universities, and patent offices. Patentopolis may also be used to teach IP at technology universities and management schools for (under)graduates.

The game can be tailored to these users' environment e.g. in terms of product and industry. It can also be customized to various business problems e.g. building new technologies and IP, partnering, and exploiting current IP portfolio. Also, it may integrate other intellectual assets e.g. trademarks and trade secrets.

Effectiveness

The effectiveness of 'serious gaming' has been demonstrated in many fields. Here, with Patentopolis, experiments involving 160 students and professionals have taken place in the Netherlands, France and Austria in the course of the above-mentioned PhD study. It has shown that this game is an effective tool for teaching IP. When playing Patentopolis, these participants have gained knowledge by learning faster and with a sustained interest, compared to regular lectures. They have also acquired new perceptions outside their regular jobs or roles by getting involved in the complete system when playing Patentopolis. Further, this game fosters teamwork and engagement: a group dynamic develops swiftly, even among groups that are usually not involved and active together. Last but not least, the game also tends to defeat reluctance: the participants who dislike games or patents before playing tend to be those learning the most at the end.

Interested in Patentopolis?

If you are interested in using Patentopolis in your (client's) company or research organization, you can find more information on Patentopolis via *www.patentingparadox.com*. A training of facilitators for in-house uses of Patentopolis usually takes one day, including: playing the game; overview of the rules; detailed review of how to prepare, set up and run a game; customization; and rehearsal. Organizing team-building events around Patentopolis is also possible. Such an event can also be organized with groups of more than 20 participants; it generally includes plenary sessions and parallel sessions with subgroups of 20 people to play Patentopolis. At the above web link, you will also find information on two other IP trainings: (1) a 1-day workshop 'Patenting' incl. an interactive 5-step method using online patent databases and tools, especially for researchers and engineers of R&D groups and technology departments; and (2) a 1-day lecture 'IP exploitation, strategies & management' with many examples of today's practices, especially for business developers and managers.

About Patentopolis and the author

Arnaud GASNIER started to design Patentopolis in 2000 and used it for the first time in 2003 in French universities. Between 2004 and 2007 he carried out a PhD study on how a game like Patentopolis may help companies further improve their patent management performance. He gives seminars and trainings for more than 10 years at universities, the European Patent Academy and, more recently, for companies.

Arnaud is Assistant Professor at the Faculty Technology, Policy & Management (TPM) of the Delft University of Technology. His main occupation is at the patent department of TNO, the Dutch research organization, as Assistant Director. Arnaud is a European Patent attorney with almost 15 years of international IP experience in France, Switzerland, USA, and Holland. He is the author of the book 'The Patenting Paradox – a Game Approach to Patent Management'.

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Die Inventivpsychologie und erfinderische Tätigkeit[1]

S. V. Kulhavy[2] (CH)

Teil 2 – Mentale Prozesse während der Entstehung neuer Lösungen technischer Probleme

Grundsatz

Während der Schaffung neuer Lösungen technischer Probleme gibt es keine Einschränkung des Wissens auf bestimmte Gebiete der Technik.

Eine einfache Lösung; Beispiel A

In diesem Beispiel handelt es sich um eine Anlage, welche aus mechanischen Bestandteilen zusammengesetzt ist. Diese Anlage ist im folgenden Patentanspruch definiert:

„Aufbereitungsanlage für Baumaterial, insbesondere für Schuttmaterial, mit einem Brecher und einer Sortiervorrichtung für das durch den Brecher bearbeitete Material, dadurch gekennzeichnet, dass eine Entstaubungsvorrichtung zwischen dem Brecher und der Sortiervorrichtung angeordnet ist."

Der *Nachteil* der ursprünglichen Aufbereitungsanlage bestand darin, dass Staub, welcher während dem Brechen von Bauschutt entstand, die Umgebung der Aufbereitungsanlage belastete. Die Aufbereitungsanlage stellt im vorliegenden Beispiel das *Objekt* dar, welchem der genannte Nachteil anhaftet. Es entstand das *Bedürfnis*, diesen Nachteil der Aufbereitungsanlage zu beseitigen. Das *Problem* war, mit welchen Mitteln man diesen Nachteil beseitigen kann, um dadurch das Bedürfnis zu befriedigen.

Die Person, welche sich vorgenommen hat, dieses Problem zu lösen, hat die Aufbereitungsanlage sowie die Gesamtsituation um diese Aufbereitungsanlage zunächst *apperzipiert*. Dies bedeutet, dass diese Person die Aufbereitungsanlage sowie die genannte Gesamtsituation mittels ihrer Augen aufgenommen und über den Denkapparat Vorstellungen darüber im Gedächtnis abgelegt hat. Aufgrund empirischer Apperzeption der Aufbereitungsanlage ist auch der Ort an der Aufbereitungsanlage im Gedächtnis abgelegt, an dem Staub aus dieser Anlage austritt. Auf die Apperzeption der Bestandteile des Objektes folgt die *Analyse* desselben, um die Zusammenarbeit der einzelnen Bestandteile dieses Objekts zu ermitteln. Im Gedächtnis sind nach dieser Analyse abgelegt statische Bilder bzw. Vorstellungen über die Beschaffenheit der Aufbereitungsanlage und dynamische Bilder bzw. Vorstellungen über die Abläufe an den Bestandteilen der Aufbereitungsanlage. Diese Vorstellungen stellen die *Komponenten* der Vorstellung des Objekts dar.

Sowohl die Bestandteile der Aufbereitungsanlage als auch die Abläufe, welche an diesen optisch feststellbar sind, sind im Gedächtnis der das Problem lösenden Person als bloss immaterielle Bilder abgelegt. Der Intellekt der lösenden Person ist in der Lage, wie dies bereits dargelegt wurde, die im Gedächtnis abgelegten Vorstellungen, d. h. sowohl die *statischen* als auch die *dynamischen Vorstellungen* einzeln zu handhaben, ohne dass dabei Arbeit im physikalischen Sinn geleistet werden muss. So kann sich die lösende Person eine andere Beschaffenheit der Aufbereitungsanlage als bisher im Voraus und mühelos vorstellen.

Die relevanten *Bestandteile* des Objekts sind ein Brecher und eine Sortiervorrichtung, welche auf den Brecher folgt. Diese Bestandteile des Objekts sind im einleitenden Teil des wiedergegebenen Patentanspruchs angegeben. Zum Stand der Technik gehören nicht nur diese Bestandteile einzeln, sondern auch die *Zusammenhänge* unter diesen, welche im einleitenden Teil des Patentanspruchs ebenfalls genannt sind. Bei jedem dieser Bestandteile des Standes der Technik wird eine ihrer und bei diesen Bestandteilen bereits bekannte *Wirkungsfähigkeit* ausgenützt. Beim Brecher ist dies die Fähigkeit desselben, Material zu brechen, d. h. zu zerkleinern. Bei der Sortiervorrichtung betrifft ihre Wirkungsfähigkeit eine grössenabhängige Trennung der durch den Brecher angelieferter Materialstücke unterschiedlicher Grösse voneinander.

Der Staub soll gemäss dem Bedürfnis aufgefangen werden, damit er die Umgebung der Anlage nicht belastet. Die allgemeine *Regel zur Lösung* eines technischen Problems besagt, dass man sich ein technisches Mittel besorgen soll, welches die zur Beseitigung des Nachteils erforderliche Wirkungsfähigkeit besitzt. Zur Beseitigung des Nachteils soll man sich im vorliegenden Fall daher ein *technisches Mittel* besorgen, welches die Wirkungsfähigkeit besitzt, Staub aufzufangen.

Man kann sich vorstellen, dass der Intellekt der lösenden Person bei Gedächtnis fragt, ob im Gedächtnis zumindest ein Mittel mit der genannten Wirkungsfähigkeit abgelegt ist. Daraufhin liefert das Gedächtnis die Antwort, wonach der Staubsauger ein Mittel ist, welches die gewünschte Wirkungsfähigkeit besitzt. Das Gedächtnis konnte diese Antwort deswegen geben, weil

1 Teil 1 „Psychologische und erkenntnistheoretische Grundlagen" wurde in epi Information 1/2008 veröffentlicht, S. 30 ff.

2 Patentanwalt in St. Gallen, Schweiz

der Staubsauger und seine genannte Wirkungsfähigkeit im Gedächtnis als ein *Wirkungspaar* abgelegt sind. Wenn man im Gedächtnis nach einer bestimmten Wirkungsfähigkeit fragt, dann verweist das Gedächtnis auf das im Gedächtnis mit dieser Wirkungsfähigkeit *assoziierte* technische Mittel, wie dies vorstehend im Einzelnen bereits erläutert wurde. Sich an ein technisches Mittel zu *erinnern* bedeutet, dass dieses technische Mittel bereits früher apperzipiert wurde.

Man kann diesen Sachverhalt auch ganz kurz, wie dies volkstümlich üblich ist, wie folgt zum Ausdruck bringen. Die lösende Person hat sich an den Staubsauger erinnert, welcher an der Aufbereitungsanlage angewendet werden kann. Diese Aussage ist ohne jegliche Zweifel richtig. Nur diese Aussage sagt uns nichts über jene mentalen Prozesse, welche zur Lösung eines Problems führen und mit welchen wir uns hier beschäftigen.

Die lösende Person beschloss, den Staubsauger als Mittel zur Lösung des offenen Problems einzusetzen. Dann musste sie sich noch überlegen, an welchem *Ort des Objekts*, d. h. an welchem Ort der genannten Aufbereitungsanlage, dieses technische Mittel anzuordnen ist, damit Staub aufgefangen werden kann. Aufgrund der Vorstellungen, welche durch die Apperzeption und die Analyse der Aufbereitungsanlage entstanden, kam die lösende Person zum Schluss, dass das technische Mittel zwischen dem Brecher und der Sortiervorrichtung am Brecher angebracht werden soll. Zur Lösung dieses Problems sind die *Vorstellungen aus dem Gedächtnis* in die Etage des Verstandes im Intellekt überführt worden, wo sie aufgrund des *Vorstellungsvermögens* des Intellektes zur fertigen Lösung *zusammengebracht* werden konnten. Die Regeln zur Durchführung dieser Synthese sind zuvor aus dem Gedächtnis in die Etage der *Vernunft im Intellekt* überführt worden. Die Zuordnung des technischen Mittels dem Objekt ist im kennzeichnenden Teil des hier einleitend wiedergegebenen Patentanspruchs definiert.

Dieses Beispiel mag als trivial erscheinen. Dennoch dürfte dieses Beispiel nützlich sein, weil es die grundlegenden Gedankengänge aufzeigt, welche während der Entstehung der Lösung technischer Probleme vorkommen.

Eine Kombinationslösung; Beispiel B

Bei industrieller Herstellung von Mosaikbelegen werden die Mosaiksteine maschinell auf eine Papierbahn gesetzt, welche sich kontinuierlich durch eine Maschine zum Setzen der Mosaiksteine auf die Papierbahn bewegt. Die Oberseite der Papierbahn ist dabei mit einem noch feuchten Klebstoff versehen, welcher die Mosaiksteine mit der Papierbahn zwar verbindet, welcher sich jedoch später mit Wasser auflösen lässt. Die Papierbahn verläuft durch die betreffende Setzmaschine und die Mosaiksteine werden in dieser Maschine auf die Oberseite der Papierbahn gesetzt, welche etwa 50cm breit ist. Dabei bilden die Mosaiksteine Quadrate, deren Seite praktisch 50cm lang ist. Zwischen zwei auf der Papierbahn aufeinander folgenden Quadraten ist eine Lücke frei, welche etwa 3cm breit ist. Im Bereich dieser Lücke muss die Papierbahn unterbrochen werden, damit einzelne Halbfabrikate zur Herstellung von Mosaikbelegen entstehen. Die freie Oberfläche der Mosaiksteine im jeweiligen Halbfabrikat bzw. Quadrat wird der zu belegenden Fläche zugeordnet, welche mit einem geeigneten Mörtel versehen ist. Nach Abbinden des Mörtels wird das sich jetzt an der Aussenseite der Mosaiksteine befindliche Papier abgewaschen.

Nach dem Austritt aus der Setzmaschine mussten die Quadrate durch einen Schnitt in der Lücke zwischen zwei aufeinander folgenden Quadraten voneinander getrennt werden. Der Nachteil war, dass der Klebstoff in diesem Moment noch klebfähig war, sodass das Messer, mit dessen Hilfe die Papierbahn händisch durchgetrennt wurde, schnell durch den Klebstoff verschmutzt wurde. Dies hatte zur Folge, dass man nach kurzer Zeit keinen sauberen Schnitt mehr durch die Papierbahn durchführen konnte usw. Es entstand das *Bedürfnis*, diesen Nachteil zu beseitigen. Eine Einrichtung zur Durchtrennung einer Mosaiksteine tragenden Unterlagsbahn aus Papier galt als das *Objekt*.

Die Aufgabe war es, eine Einrichtung anzugeben, welche eine saubere maschinelle Trennung der Quadrate voneinander während einer möglichst langen Zeitspanne ermöglicht. Diese Aufgabe definiert die *Wirkungsfähigkeit*, welche das zur Lösung des genannten Problems geeignete technische Mittel aufweisen soll. Die allgemeine Regel zur Lösung eines technischen Problems besagt, dass man sich ein technisches Mittel besorgen soll, welches die zur Beseitigung des Nachteils erforderliche Wirkungsfähigkeit besitzt. Eine Nachforschung im Stand der Technik ergab, dass es ein solches technisches Mittel im Stand der Technik noch nicht gibt. Die einzige Möglichkeit, dieses Problem zu lösen, war, sich ein solches technisches Mittel selbst zu erschaffen.

Aus der Apperzeption und der Analyse der Tätigkeit der Setzmaschine ging hervor, dass sich die Kanten des Schnittes in der Papierbahn im Bereich der genannten Lücke nach der Durchführung des Schnittes nach oben aufrollten. Dies hat man sich im Gedächtnis als eine *dynamische Vorstellung* abgelegt. Das Aufrollen der Papierkanten wurde sehr wahrscheinlich durch die Wirkung des auf der Oberseite der Papierbahn vorhandenen und noch feuchten Klebstoffes verursacht. Dieser Situation lag die *Vorstellung* nahe, dass das Messer zum Durchtrennen der Papierbahn von unten her, d. h. von der mit dem Klebstoff nicht versehenen Seite der Papierbahn auf diese einwirken sollte. Ferner wusste man aus einer im Gedächtnis bereits früher abgelegten Erfahrung, dass ein Messer schräg geneigt auf ein Papierstück einwirken muss, damit ein kontinuierlicher Schnitt durch das Papierstück durchgeführt werden kann. Aus der Zusammenlegung dieser Vorstellungen ergab sich die Erkenntnis, dass das Mittel zur Durchtrennung der Papierbahn ein Messer sein soll, welches unterhalb der Papierbahn angeordnet ist und welches sich während der Durchführung des Schnittes schräg gegenüber der Ebene der Papierbahn befinden muss.

Aus der Apperzeption und der Analyse der Tätigkeit der Setzmaschine ging ferner hervor, dass sich die

Papierbahn kontinuierlich bewegt und dass die Lücke zwischen zwei Quadraten verhältnismässig schmal ist. Folglich stellte man sich vor, dass der Schnitt durch die Lücke möglichst schnell durchgeführt werden muss. Aus früheren Apperzeptionen wurden im Gedächtnis der lösenden Person Erkenntnisse darüber abgelegt, dass man eine schnelle Bewegung eines Gegenstandes über eine längere Strecke mittel Hilfe von gespannten Schraubfedern erreichen kann. Dies ist eine der Wirkungsfähigkeiten von Schraubfedern. *Diese Erkenntnis führte zur Vorstellung*, dass man das Messer in der bereits genannten Anordnung auf einem durch Stangen geführten Wagen anbringt, welcher mittels Schraubfedern unter der Papierbahn in einem geeigneten Moment schnell bewegt werden sollte, damit der Schnitt in der Lücke durchgeführt werden kann.

Diese Lösung des genannten Problems wurde dann im folgenden Patentanspruch definiert:

„Einrichtung zur maschinellen Trennung der Quadrate aus Mosaiksteinen, welche auf einer mit einem Klebstoff versehenen Papierbahn aufgesetzt sind, wobei es eine Lücke zwischen zwei aufeinander folgenden Quadraten aus den Mosaiksteinen gibt, dadurch gekennzeichnet, dass ein Messer vorgesehen ist, welches sich unterhalb der Papierbahn befindet, dass dieses Messer an einem Wagen angebracht ist, welcher so ausgeführt ist, dass er sich quer zur Papierbahn bewegen kann, dass das Messer sich während der Durchführung des Schnittes in der Papierbahn in einer zu dieser geneigten Stellung befindet und dass Mittel vorgesehen sind, welche es ermöglichen, den Wagen samt dem Messer während der Durchführung des Schnittes quer zur Längsrichtung der Papierbahn ruckartig zu bewegen."

Es wäre möglich auch in diesem Beispiel B auf die mentalen Vorgänge tiefer einzugehen, welche zur Entstehung des neuen technischen Mittels im Einzelnen führten. Dies wäre jedoch nur eine Wiederholung dessen, was im Zusammenhang mit dem vorstehenden einfachen Beispiel A bereits und im Prinzip dargelegt wurde.

Die Beurteilung von Erfindungen

Wenn man wissen will, ob es sich im soeben besprochenen Beispiel B um eine Erfindung handelt, dann kann man zu diesem Zweck die Definition einer naheliegenden Lösung (*epi* Information, 1/2006, S. 30, l. Sp.) an dieses Beispiel anwenden.

Das lösungsgemäss verwendete technische Mittel galt während der Prüfung der entsprechenden Patentanmeldung als neu, wie dies die damals durchgeführte Recherche im relevanten Stand der Technik gezeigt hat. Wenn sich eine neue Lösung eines neuen technischen Mittels bedient, dann fällt diese Lösung nicht unter die Definition einer naheliegenden Lösung. Diese neue Lösung ergab sich somit nicht in naheliegender Weise aus dem Stand der Technik. Gemäss Art. 56 EPÜ bzw. Art. 33, Abs. 3 PCT beruht diese neue Lösung auf einer erfinderischen Tätigkeit. Gemäss Art. 52, Abs. 1 EPÜ bzw. Art. 33, Abs. 1 PCT gilt diese neue Lösung als Erfindung, für welche ein Patent erteilt werden kann. Wenn man sich bei dieser Beurteilung der Definition einer Erfindung bedienen würde (*epi* Information, 2/2007, S. 64, r. Sp.), dann kommt man zum selben Resultat.

Das Beispiel B soll vor allem zeigen, dass Erfindungen, welche sich eines neuen technischen Mittels (definiert im kennzeichnenden Teil eines zweiteiligen Patentanspruchs) bedienen, in der soeben beschriebenen, diskursiven Weise entstehen. Hiermit dürfte als widerlegt gelten, dass eine Erfindung, welche sich eines neuen technischen Mittels bedient, d. h. eine Kombinationserfindung, in einer nicht rational erfassbaren Weise entsteht, wie dies viele meinen.

Die Entdeckung einer bei einem bekannten Mittel noch nicht bekannten Wirkungsfähigkeit, welche die Grundlage für die Verwendungserfindungen darstellt, ist kein irrationaler Akt, welcher die Behauptung begründen würde, wonach die Entstehung einer Erfindung nicht rational erfassbar ist. Die Entdeckung einer Wirkungsfähigkeit ist nämlich das Resultat entweder eines Zufalls oder einer systematischen Suche.

Hiermit dürfte als bewiesen gelten, dass es nicht zutrifft, dass der Begriff Erfindung ein unbestimmter Rechtsbegriff ist. Folglich gilt es, dass die Grenze zwischen den naheliegenden und den nicht naheliegenden neuen Lösungen, d. h. die Stufe, wo der Bereich der erfinderischen Tätigkeit beginnt, rational erfassbar ist.

Schaffung neuer Lösungen mit Hilfe von Computern

Die mentalen Prozesse, welche während der Entstehung neuer Lösungen von technischen Problemen ablaufen, sind, wie dies aus den vorstehenden Ausführungen ersichtlich ist, verhältnismässig einfach. Die Schwierigkeiten bei der Entstehung neuer Lösungen technischer Probleme betreffen vielmehr die Möglichkeit, das technische Mittel oder die Bestandteile desselben mit den jeweils erforderlichen Wirkungsfähigkeiten im Stand der Technik zu finden. Denn die Menge der Informationen, welche das menschliche Gehirn während der Lösung eines technischen Problems zur Verfügung stellt, ist sehr beschränkt. Deswegen dauert es manchmal sehr lange, bis man die Lösung eines technischen Problems findet, nämlich, bis man mit einem technischen Mittel konfrontiert wird, welches die zur Lösung des bestehenden Problems geeignete Wirkungsfähigkeit besitzt. In dieser Hinsicht wäre die Mitwirkung der Computer mit ihren riesigen Speicherkapazitäten und mit ihren Arbeitsgeschwindigkeiten, welche für einen Menschen kaum nachvollziehbar sind, während der Entstehung neuer Lösungen technischer Probleme eine grosse Hilfe.

Kants Lehre und die Inventivpsychologie

Im Rahmen der Inventivpsychologie interessiert uns die Synthese von Bestandteilen des Standes der Technik zu neuen Lösungen technischer Probleme. Damit der Denkapparat Vorstellungen miteinander verknüpfen kann, müssen die zu verknüpfenden Vorstellungen von gleicher Qualität sein und sie müssen während der Verknüpfung derselben im Denkapparat vorhanden sein. Eine dieser zu verknüpfenden Vorstellungen kann während der Verknüpfung derselben durch eines der Sinnes-

organe als eine empirische Vorstellung erst geliefert werden. Das betreffende Sinnesorgan kann jedoch nur eine einzige der zu verknüpfenden Vorstellungen liefern. Die andere bzw. die anderen der zu verknüpfenden Vorstellungen müssen aus einer anderen Quelle zur Verknüpfung im Denkapparat antreten. Diese andere Quelle ist das Gedächtnis.

Kant befasst sich mit Gedächtnis und seinen Funktionen nicht. Dies lässt sich dadurch erklären, dass Kant sich auf die Kritik, d. h. auf die Beleuchtung der Vermögen von Vernunft und von Verstand beschränkt. Dies ist für die Schaffung neuer Lösungen technischer Probleme jedoch zu wenig. Deswegen berücksichtigt die Inventivpsychologie nicht nur den Intellekt sondern auch das Gedächtnis. Dies ist eine der wesentlichen Hinsichten, in welchen die Inventivpsychologie über die Kants Lehre hinausgeht.

Kant lehrt unter anderem auch, dass die Vernunft dem Verstand die Regeln liefert und er untersucht die Vernunft und den Verstand voneinander getrennt. Der Verstand mit seinen Inhalten könnte nicht funktionieren, wenn er die Regeln zur Behandlung seiner Inhalte von der Vernunft nicht laufend erhalten würde. Ein Computer, in welchem Daten vorhanden sind, kann ohne das ständige Eingreifen des Programms nicht funktionieren. Die Vernunft ohne die Daten im Verstand wäre eine leere Sammlung von Regeln bzw. Anweisungen, welche untätig sein müsste. Deswegen müssen die Vernunft und der Verstand als ein unzertrennliches Ganzes betrachtet werden, welches wir Intellekt nennen. Die Inventivpsychologie geht über die Kants Lehre auch in dieser wesentlichen Hinsicht hinaus. Die Einheit aus Vernunft und Verstand ist auch wegen der Zusammenarbeit des Intellekts mit dem Gedächtnis erforderlich.

Im Verstand entstehen auch Begriffe, und zwar nach Massgabe der betreffenden Regeln aus der Vernunft. Begriffe sind a priori Gebilde. Dies zeigt, dass a priori Erkenntnisse auf der Stufe Verstand entstehen. Die Entstehung von Begriffen war für Kant ein ziemliches Problem. Seine Beschreibung der Entstehung von Begriffen scheint nicht zutreffend zu sein. Vielleicht ist dem gerade deswegen so, weil er Gedächtnis nicht berücksichtigt hat, welches bei der Entstehung von Begriffen eine wichtige Rolle spielt. Wenn man die Entstehung von Begriffen richtig versteht, dann kann man auch die Funktion der Urteile und der Schlüsse richtig verstehen.

Schlussbetrachtungen

Der Autor dieses Beitrags hat die Definition einer naheliegenden Lösung in GRUR Int. 1975. S. 402 zum ersten Mal publiziert. Diese Definition ermöglicht, in einer rein rationalen bzw. diskursiven Weise darüber zu entscheiden, ob eine neue Lösung eines technischen Problems auf erfinderischer Tätigkeit beruht oder nicht. Seitdem gilt der Einwand, wonach erfinderische Tätigkeit eine mentale Tätigkeit ist und dass sich erfinderische Tätigkeit als solche nicht rational erfassen lässt, weil man über den Ablauf von mentalen Tätigkeiten kaum etwas weiss. Nur der Richter könne im Rahmen seines freien richterlichen Ermessens entscheiden, ob eine Erfindung vorliegt oder nicht. Insbesondere die Analyse der Beispiele A und B zeigt, dass sich der Ablauf der Denkprozesse während der Entstehung neuer Lösungen technischer Probleme rational sehr wohl beschreiben lässt. Durch diese rational erfassbare Beschreibung der mentalen Prozesse sogar während der Entstehung von Erfindungen, d. h. auch der erfinderischen Tätigkeit, dürfte der genannte Einwand als beseitigt gelten.

Da durch die vorliegenden Darlegungen die letzten Subjektivitäten aus diesem Wissensgebiet ausgeräumt worden sind, gilt dieses Wissensgebiet nunmehr als ein wissenschaftlich erschlossenes Gebiet. Ein neues wissenschaftlich erschlossenes Gebiet verdient auch einen Namen. Dieses Wissensgebiet kann Inventivpsychologie genannt werden. Dieses wissenschaftliche Gebiet liegt im Rahmen der Technikphilosophie. Da die vorliegenden Ausführungen auch im Rahmen der Vorschriften von Patent Cooperation Treaty (PCT) liegen, welchem die meisten Staaten dieser Erde beigetreten sind, gelten die vorliegenden Ausführungen auch in diesen Staaten, d. h. praktisch weltweit.

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